The racial wealth gap, 1860-2020*

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Abstract

The racial wealth gap is the largest of the economic disparities between Black and white Americans, with a white-to-Black per capita wealth ratio of 6 to 1. It is also among the most persistent. In this paper, we provide a new long-run series on white-to-Black per capita wealth ratios from 1860 to 2020, using data from the US Census, historical state tax records, and a newly harmonized version of the Survey of Consumer Finances (1949-2019), among other sources. We combine these data with a simple framework of wealth accumulation by each racial group to show that even under ideal conditions, racial wealth convergence is a distant scenario given vastly different starting conditions under slavery. Further, the observed path of convergence indicates that the wealth gap is on track to persist indefinitely or even diverge due to differences in wealth-accumulating conditions for Black and white Americans since Emancipation. Our findings shed light on the importance of policies such as reparations, which address the historical origins of today's persistent gap, as well as policies that reduce wealth inequality and thereby improve the relative wealth position of Black Americans.

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1 Introduction

The racial wealth gap is the largest of the economic gaps between Black and white Americans, with a white-to-Black average wealth ratio of 6 to 1 in 2019. Further, the gap has been remarkably stable over the late 20th and early 21st centuries. Although there is a large literature focusing on the wealth gap in recent decades, less is known about the full historical evolution of the racial wealth gap. In this project, we use historical Census data, state tax records, the historical and modern Survey of Consumer Finances ("SCF+"), as well as additional data sources to document the evolution of the racial wealth gap over the last 160 years. A key contribution of this work will be a harmonized series of Black wealth and white-to-Black per capita wealth ratios in the US from 1860 to 2020, which we will make publicly available.[1]

Our paper addresses the following questions: What has been the long-run evolution of the racial wealth gap? Under what scenarios will the gap converge and under what time frame? What forces have shaped the gap, historically and in the present? We believe our findings will have implications for policies aimed at addressing racial wealth disparities.

We begin with an idealistic benchmark for racial wealth convergence over the last 140 years that assumes equal conditions for wealth accumulation (equal capital gains, rates of return, and savings rates) for each racial group. We take income convergence from the data, annualizing income growth rates for the two populations since 1870. Higher average income growth rates for Black Americans reflect racial income convergence over this period. Our simulation exercise reveals that even under these ideal conditions, the racial wealth gap would be 3 to 1 today and 2 to 1 in the year 2130, by which time Black and white incomes would have fully converged. We then turn to building a historical series for the actual evolution of the wealth gap since the 1860s.

Despite substantial scholarship on the contemporary racial wealth gap and its determinants, and a smaller literature documenting Black wealth gaps in the immediate decades after Emancipation, there is little empirical work to date on the evolution of the racial wealth gap over the full post-Emancipation period. Through an ambitious data collection and harmonizing effort drawing on several sources, we are working to fill in this missing time series, particularly the 100 years from the 1880s to the 1980s, when most modern wealth surveys with information on race begin. We do this by collecting and harmonizing information from historical southern state tax records, the Census of the Population, the Census of Agriculture, data on Black banks, and a newly constructed version of the Survey of Consumer Finances spanning 1949 to 2019 (see Kuhn et al. (2020)).

We observe three distinct phases in our long-run series on the racial wealth gap. First, given very low levels of initial wealth for Black Americans, the decades after Civil War are characterized by rapid convergence. Beginning in the 1910s, convergence slows considerably but continues for another 60 to 70 years. The last four decades, from the 1980s onwards, are characterized by

[1]Note, we define white wealth as the difference between total wealth and our estimates of Black wealth. For simplicity, we refer to this non-Black-to-Black wealth gap as the racial gap or the gap between white and Black Americans.

complete stagnation of the racial wealth gap. Indeed, if the most recent trends in the data continue, the racial wealth gap will worsen, not improve, in coming years. Another important observation is that observed convergence is slower than the benchmark model, suggesting unequal conditions for wealth accumulation between Black and white Americans that dates back to the late 19th century. Using the PSID and the SCF to estimate unconditional differences in capital gains, rates of return, and savings rates, we are able to match the slower pace of convergence over this full time period.

We are able to shed light on some of the long-run mechanisms behind slow convergence using the historical SCF, which covers the last 70 years. For example, Black households tend to hold more wealth in housing and less in stocks relative to white households. While housing wealth has appreciated since 1950, stock equity has appreciated by five times as much, leading white households to have enjoyed far greater capital gains over this period. Savings rates also differ by racial group although these differences can also be attributed to factors such as initial wealth, education, and age. These patterns point to potential mechanisms through which the gap persists or through which it might be ameliorated.

Finally, an analysis of patterns income growth and convergence as well as rising wealth-to-income ratios points to a role for wealth inequality in the recent worsening of the racial wealth gap. Racial income convergence stalled starting in the 1950s and wealth-to-income ratios have grown substantially for white Americans. Given this diminished role for income, and therefore savings, in racial wealth convergence, the growth of wealth at the top of the wealth distribution, which is almost exclusively white, has widened racial wealth disparities.

After documenting these patterns, we examine counterfactual scenarios under which wealth convergence could occur within a reasonably short time frame, for example by 2050. We begin by choosing capital gains, rates of return, income growth rates, and savings rates for Black households that would lead to convergence by this date. The results of this exercise highlight how implausible convergence is via manipulation of any of these parameters. In short, Black households would have to be endowed with orders of magnitude greater income growth, savings rates, and rates of return to close the racial wealth gap by 2050.

In a final section, we discuss the implications of our findings for policies aimed at reducing wealth inequality and the racial wealth gap. We note that policies such as a wealth tax or baby bonds may induce virtuous cycles by not only improving the relative wealth position of Black households, but through feedback effects that close gaps in savings rates and rates of return, for example. Still, while such policies are crucial for establishing a stable path of convergence, they are likely insufficient for addressing the vastly different initial wealth levels for Black and white Americans as a legacy of slavery. The wealth gap has largely followed a pattern of convergence in line with simple models of wealth accumulation under these starting conditions. Policies such as reparations may therefore be the most effective at hastening convergence given this reality.

Our paper contributes to several strands of literature on racial wealth differences—both historical and contemporary. A number of papers study the racial wealth gap in the post-Emancipation

years using state-level tax records and historical Census data. We review this literature and our contribution in detail in Section 2. A large literature focuses on the racial wealth gap and its determinants in the modern era.[2] This work has documented the role of marriage and family structure, income and demographics, differences in permanent income, inheritance, life cycle effects, the role of the Great Recession, and finally a suite of policies with potential for ameliorating the gap. Our paper contributes to this literature by providing a historical and long-run perspective. Even in a frictionless environment, closing the post-slavery racial wealth gap would take hundreds of years. From today's vantage point, which reflects both these initial conditions as well as decades-long disadvantages in wealth accumulation for Black Americans, only extreme distortions of savings rates, income growth, and capital gains can overcome the slow rate of convergence, while even a slight worsening of Black's conditions would easily set the racial wealth gap on a diverging path. Policies aimed only at savings and financial behavior and even income may therefore be insufficient for bringing about wealth convergence.

Our paper also contributes to the literature on wealth inequality and its long-run dynamics (Piketty, 2013; Piketty and Zucman, 2014; Saez and Zucman, 2016). These studies document rising wealth inequality in the 20th and 21st centuries, analyzing the role of returns on capital and rising top incomes, among other factors. We adopt a simple framework inspired by this literature to understand the evolution of the per capita white-to-Black wealth ratio over the last 160 years. The most simplified version of the model matches the basic shape of the long run gap we observe in our newly harmonized data. Allowing for differing wealth accumulation conditions per racial group enriches our simulation of the racial gap and generates an even better fit with the data, capturing in particular the complete stagnation and even reversal of racial wealth convergence in recent decades.

The rest of our paper is structured as follows. In Section 2, we review the literature on historical differences in wealth accumulation by Black and white Americans. Section 3, we start with a simple framework for wealth accumulation by racial group over the long run, initially equalizing savings rates, capital gains, and return on assets across racial groups to provide an ideal benchmark for the long-run racial wealth gap. Section 4 then describes the construction of our long-run series on the per capita white-to-Black wealth ratio. We discuss the patterns in our resulting harmonized series as well as the drivers of the different time series patterns in the racial wealth gap in Section 5. Section 6 discusses the policy implications of our findings, and Section 7 concludes.

2 Related literature on the historical racial wealth gap

The limited availability of wealth data for Black and white individuals before the 1980s has restricted much of the analysis of the literature to recent decades.[3] Nevertheless, a number of papers

[2] An incomplete list of such works include Pfeffer and Killewald (2019); Altonji et al. (2000); Altonji and Doraszelski (2005); Barsky et al. (2002); Charles and Hurst (2002); Chiteji and Stafford (1999); Gittleman and Wolff (2004); Wolff (2001).

[3] The PSID added a module on wealth in 1984, and past researchers have typically relied on post-1983 waves of the SCF.

investigate trends in Black and white wealth formation in the late 19th and early 20th centuries. These studies have largely relied US Census data and on property tax records from select Southern states that tabulated assessed wealth or tax payments separately for Black and white populations.

Du Bois (1901) uses tax records for the state of Georgia to document patterns in landholding by Black individuals in that state. Higgs (1982) uses specific data from Du Bois (1901) and the Comptroller-General of Georgia to illustrate a substantial increase in the total assessed value of Black wealth in Georgia over the period 1874-1915. Margo (1984) incorporates similarly disaggregated property tax data from the additional states of Louisiana, North Carolina, Virginia, and Kentucky, where he likewise finds sustained increases in aggregate Black wealth and declines in the per capita wealth gap in all of these states but Louisiana. [4]

Several studies have modeled and empirically demonstrated the critical role of the post-Civil-War racial disparity in wealth endowments for continued inequality in this period and beyond. Spriggs (1984) examines the accumulation of wealth by Black Americans in Virginia, noting that discrimination in land and labor markets inhibited racial wealth convergence in the decades after the Civil War. DeCanio (1979) uses a theoretical model to show that the redistribution of "40 acres and a mule" to Black families would have substantially improved their relative position, but in the best-case scenario would have only allowed Black families to eventually achieve half of per capita white wealth. A study by Canaday (2008) uses individual property tax assessment records for Calhoun County, South Carolina matched to complete count Census data and finds that both Black men and women experience faster wealth accumulation than white individuals between 1910 and 1919. Miller (2020) studies the impact of land grants to Black families in the Cherokee Nation after emancipation and finds reductions in the racial wealth gap in the Nation relative to the rest of the South.

Other scholarly work on this period has focused on cross-region differences in the number and nature of Black businesses and prosperous individuals. Schweninger (1989) and Schweninger (1990) documents the wealthy black entrepreneurial and planter class of freed Black people before the Civil War in the Lower South, especially in New Orleans, Charleston, and several other Louisiana parishes. Importantly, however, Schweninger (1989) claims this group's wealth largely deteriorated by 1870 whereas an emergent urban Black population in the Upper South continued to gain wealth by becoming farmers, skilled artisans, and small business owners, beginning in the 1840s, but particularly after emancipation.

A related literature focuses on racial inequality in homeownership. Collins and Margo (2011) traced the evolution of the racial homeownership gap from 1870 to 2007. The gap narrows in the 1870 to 1920 period but shows remarkable stability thereafter. These data do not incorporate information on the value of homes, however, which is only available starting in 1930 and for which complete count census data do not exist after 1940 (the full count 1950 census will not be declassified

[4] Margo (1984) argues that the part of this growth may be due to discriminatory over-assessment of Black-owned property for tax purposes—a pattern that has been documented in tax assessment today (Avenancio-León and Howard, 2019).

until 2022). A study by Akbar et al. (2019) documented how neighborhood racial transition in 10 northern cities during the first Great Migration led to changes in rental and house prices that eroded the value of Black homes and thus posed a barrier to Black wealth accumulation by 1940.

In prior work of two of this current project's coauthors, Kuhn et al. (2020) harmonized the historical and modern files of the Survey of Consumer Finances (SCF) creating a new dataset of household level wealth and income information for the US from 1949 to 2016. Although primarily focused on the role of asset prices and portfolio composition in wealth dynamics in the postwar period, the authors also provide a brief analysis of the racial wealth gap confirming stability and persistence in this large gap over the postwar period.

Our paper will provide the first comprehensive picture of the racial wealth gap from the Civil War through the present. Relative to prior literature, we plan to improve historical measures of Black and white wealth in three ways. First, we combine the data originally used in Margo (1984), the Georgia data by Du Bois (1901), and the 1860 and 1870 Censuses which recorded real and personal wealth; we also digitize county-level wealth by race for the six states with these data available. Second, we incorporate information from national estimates of Black wealth and aggregate wealth by Work (1922). Third, we are currently working to extend measures of Black wealth beyond the six southern states where we currently have data by predicting wealth out of sample using county characteristics from the Census of Population and the Census of Agriculture, available both in counties with wealth measures and those without.

A key contribution of this work will be a harmonized series of Black and white wealth per capita created by drawing from this large number of data sources. Before describing the construction of our historical series in detail and our resulting estimates, we begin with a conceptual framework for understanding how the racial wealth gap would evolve given starting conditions at the time of Emancipation.

3 Conceptual framework for long-run racial wealth gap dynamics

To provide a benchmark for the evolution of racial wealth gaps in the US over the last 140 years, we introduce a simple yet intuitive model of wealth accumulation for each racial group. In the spirit of Garbinti et al. (2020), average wealth for each group follows the transition equations below:

$$\begin{aligned} W_{t+1}^j &= (1+q^j)\left[W_t^j + s^j(Y_t^j + r^j W_t^j)\right], \text{where} \\ Y_t^j &= (1+g^j)Y_{t-1}^j. \end{aligned} \tag{1}$$

S $j = \{b, w\}$ represents the two racial groups (b for Black and w for white), W_t^j and W_{t+1}^j the real per capita wealth of group j at time t and $t+1$, and Y_t^j the per capita labor income of group j at time t, which evolves with a growth rate g^j. In the equation, wealth is accumulated with regard

to three distinct components: the rate of return r^j, the capital gains rate q^j, and saving rates of individuals s^j.

After some simple derivations, the white-to-Black wealth ratio at time t+1 (WR_{t+1}) can be expressed as:

$$WR_{t+1} \equiv \frac{W^w_{t+1}}{W^b_{t+1}} = WR_t \times \frac{1+q^w}{1+q^b} \times \frac{1+s^w\left(\frac{Y^w_t}{W^w_t}+r^w\right)}{1+s^b\left(\frac{Y^b_t}{W^b_t}+r^b\right)}, \tag{2}$$

and the growth rate of the racial wealth ratio from t to $t+1$:

$$\begin{aligned}\frac{WR_{t+1}}{WR_t} &= \frac{1+q^w}{1+q^b} \times \frac{1+s^w\left(\frac{Y^w_t}{W^w_t}+r^w\right)}{1+s^b\left(\frac{Y^b_t}{W^b_t}+r^b\right)} \\ &\approx \underbrace{\left(1+q^w-q^b\right)}_{\text{Differences in capital gains}} \times \underbrace{\left\{1+s^w\left(\frac{Y^w_t}{W^w_t}+r^w\right)-s^b\left(\frac{Y^b_t}{W^b_t}+r^b\right)\right\}}_{\text{Differences in savings from income}}.\end{aligned} \tag{3}$$

According to Equation 3, changes in the racial wealth gap can be explained by two distinct components, which are racial differences (i) in capital gains-induced wealth accumulation and (ii) savings-induced wealth accumulation from labor income and capital income.

As a starting point, we assume that q, r, and s are identical across the two racial groups. The purpose of this thought experiment is to analyze how the racial wealth gap would have evolved had Black and white households faced equal conditions for accumulating wealth after Emancipation. Equal q, r, and s would imply, for example, that Black and white households had equal access to financial markets and institutions and both groups were able to frictionlessly transmit wealth across generations over the last 140 years.

The only difference we allow is their income growth. We estimate annualized income growth rates for the two groups directly from the data. Over the full 150 year period, Black income per capita grew at a higher annualized rate than white (2.3% vs. 1.8%), indicating income convergence between the two groups over this period.[5] For q, r, and s we plug in annualized averages of national estimates from Saez and Zucman (2016), which are $q = 1\%$, $r = 6\%$, and $s = 5\%$. For initial values of the racial wealth gap, we use the white-to-Black per capita wealth ratio as observed in the 1870 Census (20:1) and the income ratio (3.6:1) constructed from historical estimates of Black and white per capita income.[6] we trace out the evolution of the white-to-Black per capita ratio under the model in Equation 1 and the parameters and starting conditions listed above.

[5] We take estimates of historical income per capita for each racial group from Margo (2016).

[6] The construction of the 1870 wealth ratio estimate is described in detail in Section 4. The income ratio is calculated using data from Margo (2016).

Figure 1 presents the evolution of the simulated wealth gap with equal wealth accumulation conditions across Black and white (black solid line). Overall, the simulated wealth gap follows a hockey-stick pattern. Convergence is rapid immediately post-Emancipation until the early-to-mid 20th century, after which convergence slows down considerably. This change in slope is substantial, such that full wealth convergence appears to be a distant scenario not yet in sight. A question arises at this point: under equal conditions for wealth accumulation, when would Black wealth converge to white wealth (a ratio of 1)?

Table 1 presents the observed wealth- and income ratio for the year 2020 and simulated wealth- and income gaps for future periods, with columns 2 through 4 presenting the gaps in the years 2020, 2050, and 2130. Even under equal conditions for wealth accumulation – that is, identical capital gains, rates of return, and savings rates – the wealth gap would not fully disappear within the next 200 years. 110 years from now, in the year 2130, by which time income would have fully converged according to our framework, the wealth ratio would be still by 1.8:1. Thus, our simple exercise shows that (i) full income convergence is not sufficient for closing the wealth gap, and (ii) even with equal wealth-accumulating conditions, initial inequality in 1870 was so severe that full racial wealth convergence may never occur.

What do the data show in terms of the dynamics of the wealth gap since Emancipation. We turn to the construction of our historical series and an analysis of the resulting patterns in the following sections.

4 Construction of the long-run racial wealth gap series

We build our estimate for the long-run racial wealth gap from four main sources. For the time period from 1860 to 1870, we rely on full count Census data. For the period from 1870 to 1922, we use state-level tax records in combination with aggregate wealth estimates for taxable wealth from Census reports. For the period from 1922 to 1936, we rely on estimates for black wealth from the *Negro Year Book* by Monroe Work in combination from Saez and Zucman (2016) for national wealth in the United States. For 1950 onwards, we rely on SCF+ data. Below we describe how we construct wealth gap estimates for the different time periods and compile the final data series.

For 1860, we rely on the wealth information for real estate and personal property from the full count Census data. In 1860, personal property included the value of the enslaved. To compute per capita wealth for the Black population, we include the enslaved and assume zero wealth for this group. For the count of the enslaved in 1860 we aggregate county-level statistics from Haines et al. (2010) and confirm that these match the number for the enslaved from the Census Black population report covering 1790-1915 Cummings and Hill (1918). The total number of Black individuals enslaved is 3,953,760; we include them with zero wealth in the data. We also assign zero wealth to all observations missing wealth data. For top-coded observations, we rely on the estimate from Saez and Zucman (2016) who report that the top 0.01 percent of tax units owned 8.8 percent of

total wealth in 1913, which is the earliest year for which such an estimate exists. We take the estimate for total taxable wealth from the Census publication "Wealth, Public Debt, and Taxation" (States. et al., 1924), which is 16,159,616,068 dollars in 1860 and use this to derive an estimate for average wealth of the top 0.01 percent of tax units. In the Census data, we consider the household to be equivalent to the tax unit. We replace all top coded observations by this estimate for average top wealth. In other words, we estimate that there are 533 tax units in the top 0.01 percent of the population in 1860 and we estimate average wealth for them of 2,668,456 dollars. Using these data, we compute per capita wealth for the white and Black populations and take the ratio as our estimate for the racial wealth gap in 1860.

We proceed similarly for 1870. There are two key differences. As 1870 was the first post-Civil-War Census, the formerly enslaved were enumerated for the first time as part of the US Black population, so we are directly able to estimate per capita wealth for the Black population. However, in addition to top-coding, the 1870 Census also suffers from censoring from below. Enumerators were instructed that values for personal property below 100 dollars should not be recorded. We impute average personal property below the 100-dollar threshold for 1870 and explain the details in Appendix D. The effects are very minor as we estimate that most households below the 100 dollar threshold for personal property indeed had no wealth at all. For the top coding, we apply the same approach as in 1860 to the 1870 data. In 1870, we estimate that there are 771 tax units in the top 0.01 percent with an average wealth of $3,432,867. The estimate for national wealth in 1870 is $30,068,518,507. Using these data, we compute per capita wealth for the white and Black populations and take the ratio as our estimate for the racial wealth gap in 1870.

For the period covering 1870 to 1922, we rely on state-level tax records from Arkansas, Georgia, Kentucky, Louisiana, North Carolina, and Virginia, described in the previous section above. Southern states were home to the vast majority of the black population until the early 20th century and 41% of the Black population lived in the six states for which we have tax data. Importantly this set of states includes both the Lower and Upper South, which featured different economic structures and demographics in both the ante-bellum and post-bellum period (see Schweninger (1990)). We estimate the growth rate of aggregate Black wealth in these states from 1870 to 1917 the last year the data are readily available. Specifically, we run a regression of log wealth on a time trend and state fixed effects. We estimate a time trend for wealth of 0.054 and we take this coefficient as our estimate of the average wealth growth rate for Black wealth after 1870. Appendix Figure B4 shows the pooled raw data with the predictions from the regression.

We find that after 1870, the prediction and the raw data align closely. We take the estimated wealth level for the Black population from the 1870 Census data and extrapolate forward using the estimated wealth growth rate until 1922. We stop in 1922 because it is the last year for which we have estimates for taxable wealth from the "Wealth, Public Debt, and Taxation" report. We construct wealth of the white population as the difference between total taxable wealth and the wealth of the black population. We construct wealth per capita for the Black and the white population by dividing the estimates of total wealth by the population estimates for the Black and

white population (linearly interpolated for the intercensal years). Using the constructed estimates for per capita wealth, we construct the wealth gap as the white-to-Black ratio of per capita wealth as before.

For the years between 1922 and 1940, we rely on estimates of aggregate Black wealth in the US from Work (1922). Estimates are available for three years within this window: 1926, 1930, and 1936. We combine Work's estimates with national wealth estimates from Saez and Zucman (2016) to construct the level of wealth of the white population by subtracting the Black from total wealth and divide by the populations for each respective group to arrive at per capita wealth estimates. As we believe Work's estimates are based off of state auditor reports recording wealth assessed for taxation, and given a documented ratio of assessed to market value of wealth for this time period of less than one, we adjust the wealth gap constructed from these estimates downwards by an adjustment factor derived from the average wealth ratios on either end of the 1926-1936 window. We explain the full details of this adjustment in Appendix B.2.1.[7]

For the period starting in 1950, we rely on data from the SCF+. To improve the accuracy of the estimates over time, we use three-year moving averages to construct the time series for average wealth of Black and white households and household sizes over time. We then compute average per capita wealth at three-year intervals over this time period based on the smoothed average household wealth estimates by the number of household members. Based on these per capita estimates for wealth of the Black and white population, we construct the racial wealth gap from 1950 to the present.

Figure 2 shows the resulting time series. Our current long-run series shows the rapid convergence in the racial wealth gap after Emancipation, continued progress over the late 19th and early 20th century followed by stagnation. Remarkably, the racial wealth gap in 1920 was only moderately higher than it is today. In addition, it appears that convergence has completely stopped. The slope in the wealth gap after 1970 is slightly positive. Under these conditions, if trends continue as they have over the last four decades, there is no indication that further progress will be made in closing the racial wealth gap.[8]

We also provide an alternative measure of the wealth gap in 1930 by combining data on housing wealth from the Population Census, farm wealth from the Census of Agriculture, and financial wealth from data on Black banks from Clarke (Clarke) and total US financial assets from Saez and Zucman (2016). Figure 3 depicts our benchmark series alongside an alternative wealth gap estimate based on these sources of wealth. 1930 is the only year for which all three sources on these different types of assets for Black Americans are available. Reassuringly, the wealth gap we obtain from this

[7] We present the full series alongside the unadjusted 1926, 1930, and 1936 estimates in Appendix Figure B7. The blue does show the unadjusted wealth gap based on the original Monroe Work data for 1926, 1930, and 1936.

[8] We also construct the inverse wealth gap (the ratio of Black-to-white per capita wealth) and the share of wealth owned by the Black population over time. We rely on the same underlying data for the construction. In each year, we construct the Black wealth share as total black wealth over the sum of total white and Black wealth which by construction is total wealth. We scale estimates in 1926, 1930, and 1936 as described before and smooth estimates after 1950 also accordingly. Appendix Figures B8 and B9 depicts these series.

alternative procedure is close to that of our benchmark series: 8.3 compared to 9.1.

5 The long-run evolution of the racial wealth gap

Departing from this idealized benchmark and examining the evolution of the wealth gap as observed in the data, convergence is an even more distant scenario. The actual wealth gap has declined more slowly relative to this stylized benchmark, suggesting that Black individuals have not enjoyed the same wealth accumulating conditions as their white counterparts. Further, in recent decades, not only did the wealth gap fail to continue to close, it has started to increase again. This recent reversal is an important departure from the benchmark model, which shows (slow) but continued convergence.

In the next sections, we highlight and discuss two distinct phases of racial wealth convergence: an initial period of rapid convergence where the Black population experiences high wealth growth rates stemming from low initial wealth and strong income convergence. Initial rapid convergence gives way to slower convergence that has stymied due to two forces: stagnating income convergence and rising wealth to income ratios, which amplify the role of wealth composition and parameters like the capital gains rate.

5.1 Rapid then slow convergence

In 1860, prior to Emancipation and the Civil War, 90% of Black individuals in the US were enslaved and often explicitly barred from property ownership under southern state slave laws.[9] They held just two cents for every dollar of wealth held by white individuals (see Figure 2). Just a few years after Emancipation, the racial wealth gap had decreased dramatically – from 56:1 in 1860 to 20:1 in 1870 – as freed persons rapidly sought better economic opportunity, accumulating land and property in both rural and urban areas of the South.[10] By 1900, the ratio had fallen another 50% to 10:1 from 20:1 just 30 years earlier.

This first phase of fast convergence can be explained by two factors. First, since Black individuals were starting from very low initial levels of wealth, even small level increases wealth translated into large relative growth compared with white individuals. Spriggs (1984) discusses this pattern in the early racial wealth gap in a study of early 20th century Black wealth accumulation in Virginia.

After an initial period of rapid decline in the wealth gap, wealth convergence slows down substantially. From 1900 to 1950, the racial wealth gap decreased by 30%, falling from 10:1 to 7:1. Convergence continued to slow down over the next several decades, stalling in the 1970s at a level

[9] See Schweninger (1990) for a history of Black property ownership prior to and after the Civil War.

[10] Free Black persons also faced restrictions on their right to accumulate property both before and in the immediate aftermath of the Civil War. In particular, a number of southern states passed Black Codes in 1865 and 1866 limiting the economic, social, and political rights of Black individuals, and, for example, restricting the type of property that formerly enslaved Black individuals could own (Schweninger, 1990).

similar to today's gap of 5.6:1.

As noted earlier, the observed slowdown in wealth convergence is more pronounced relative to idealized benchmark presented in Section 3. This stalled wealth convergence starting in the early-to-mid-20th century indicates that Black Americans have not faced the same wealth accumulating conditions as white Americans, in line with a well-established literature on racial inequality in financial markets and access to financial institutions as well as the impact of racial violence and segregation policies on economic activity and wealth accumulation (Albright et al., 2021; Aneja and Xu, 2020; Cook, 2014; Baradaran, 2017).[11]

For the post-1950 period, we are able to estimate returns on wealth portfolios (q, r) using the SCF+ and savings rates s using the PSID that are specific to each racial group.[12] A detailed description of the variables construction is provided in Appendix G. According to our estimates, the largest difference comes from capital gains ($q^w = 2.01\%$ vs. $q^b = 1.29\%$) and saving rates ($s^w = 7.2\%$ vs. $s^b = 5.4\%$), whereas differences in r are rather minor. When we use estimated values for q, r, and s by racial group and simulate convergence from 1950 to today (Figure 4), we closely match the slower pace of convergence relative to the benchmark model presented in Section 3.

5.2 Recent divergence: the role of capital gains amid stalled income growth

A further factor in the slowdown of convergence is a declining rate of income convergence. Black per capita income has a similar growth rate to white per capita income today and the income gap has not changed substantially since 1950. This is in contrast to the period 1870-1950 when Black income grew at an annualized rate of 2.5% compared to 1.8% for white income.

Not only has racial income convergence slowed over the second half of the 20th century, but in the last several decades income for both racial groups has grown more slowly compared to the past (annual growth rates of 1.3% for both groups). This implies that savings-induced wealth accumulation will play less of a role in the dynamics of racial wealth inequality going forward. Capital gains by contrast are swiftly becoming the main driver of the evolution of wealth. These overall changes in the dynamics of wealth have been the subject of a large recent literature (Piketty, 2013; Piketty and Zucman, 2014; Kuhn et al., 2020).

We use our long-run SCF data to provide estimates of portfolio composition of Black and white households since 1950. Averaging over the full period, the difference in portfolio composition across the two groups is striking. Housing and other non-financial assets make up 65% of the asset side of Black households' balance sheets while financial assets play a much more minor role. In particular, direct equity holdings of Black Americans are low, making up only 5% of total assets. For white

[11] Indeed, if we run our simulation assuming worse wealth accumulating conditions for Black, we closely match the slower pace of convergence, see Figure H1.

[12] Note that savings rate estimates are from the 1980s due to a lack of data on savings rates by racial group for previous time periods.

households, by contrast, housing and other non-financial assets make up a much smaller share – 42%. Business and direct stock holdings make up a similar share of assets for white households, 41%, compared to 20% for Black households. Examining the patterns in these differences over time reveal that they have been highly persistent. Over the full historical period, financial portfolios of white households have been more diversified portfolios than those of Black households.

Such pronounced portfolio differences between Black and white households implies that the "race between the stock market and the housing market" (Kuhn et al., 2020) has implications for the racial wealth gap. If housing prices boom (holding everything else constant), Black households would benefit more due to their high exposure to this asset class, thus potentially leading to a decrease in the racial wealth gap. In case of a stock market boom, however, the wealth distribution would become more unequal, as Black households profit less from the high capital gains.

We address the following question: given a household holds a certain asset class (irrelevant of their racial identity), how much wealth would they have been able to accumulate purely due to its capital gains/losses? Price data on stocks and housing we obtain from the Macrohistory Database by Jordà et al. (2019) and calculate their real capital gain rates.[13] Further, for simplicity, we assume that households' portfolio composition has stayed constant since 1950. Afterwards, we also present the accumulated capital gains of Black and white households on both their housing and stock wealth. Figure 7 presents the results.

Capital gains on housing has been quite stable until the 1990s, until the housing market experienced a boom in the 1990s. From 1971 to 2007, right before the Global Financial Crisis, house prices have increased by 10%. We see a drop in housing capital gains in the aftermath of the crisis that seems to persist for the next 5 years, but then recovers afterwards. Compared to real estate owners, stock owners have experienced much higher capital gains, especially starting from the 1990s. If households would have hold the same amount of stocks as in 1950, by 2020 they would have experienced a 40% increased in their stock wealth purely due to capital gains (for comparison, accumulated capital gains on housing in 2020 is slightly larger than 10%).

Differences in capital gains on housing and stocks lead to a divergence of the accumulated capital gains of Black and white households. Since Black households hold almost no equity, we observe that the divergence across Black and white starts from the 1990s, when stock prices grows more strongly than house prices. Keep in mind that in this exercise we assume equal capital gains within a certain asset class, so the divergence is solely coming from the differences in portfolio composition. In reality, the Black population has been exposed to discrimination and constraints with regard to their investment, starting from limited access to banks after Emancipation (Stein and Yannelis, 2020; Baradaran, 2017) and red-lining in the real estate market (Jackson, 1980; Aaronson et al., 2020), such that heterogeneity in capital gains within an assetc class may exist. Indeed, if we calculate race-specific capital gains using the PSID and compute the same exercise, we observe a

[13] The estimated capital gains on stocks and housing during 1950-2020 are presented in Table H1.

larger divergence of the accumulated capital gains on their portfolio.[14]

However, do all white households profit from the high capital gains in the stock market? There is consensus in the literature that mostly wealthy households hold stocks in their asset portfolio, driving the general wealth inequality over the last decades (Saez and Zucman, 2016; Piketty and Zucman, 2014; Kuhn et al., 2020; Xavier, 2020). Once we exclude the top 10% wealthiest households from the sample, the differences across Black and white households mostly disappear: White households of the the bottom 90% wealth distribution are more invested into housing assets and their equity holdings align with those of Black households.[15] Therefore, they accumulate wealth in terms of capital gains in a very similar way to Black households.

6 Policy implications: When (and how) will we reach convergence?

Based on the evidence described above, we now look ahead and ask under what scenarios would we reach convergence in the racial wealth gap. Strikingly, our results indicate that convergence may never happen: even under equal wealth accumulating conditions, it would take potentially hundreds more years to reach convergence (the white-Black ratio wealth ratio would still be 2:1 in 2130). If we estimate the conditions that would be necessary to bring about convergence in the near future, for example by 2050, Black households would either need 9.5% income growth, a 31% savings rate, or a 5.4% capital gains rate (see Figure 8).

These results highlight the importance of policies that directly address initial conditions in the white-Black gap stemming from the institution of slavery. Equalizing wealth accumulating conditions are crucial to set the racial wealth gap to a stable convergence path, however, will not be able not address the level of the gap efficiently. We illustrate this by analyzing the effect of reparations. Researchers and policymakers have introduced proposals for reparations, which specifically target the legacy of slavery on the racial wealth gap. For instance, Darity and Mullen (2020) analyze in their recent book how payments of approximately $267,000 per person among the 40 million eligible black descendants of the American enslaved would eliminate the racial wealth gap caused by systematic discrimination of the Black population prior to and after Emancipation. Our own calculations suggest that this policy would greatly eliminate the wealth gap, from a ratio from 6:1 to 1.3:1.

Still, direct interventions in the level of the gap have limited effect if Black households continue to face barriers for their wealth accumulation.[16] In order for reparations to be effective over the long run, it is crucial that Black and white households have at least equal wealth accumulating conditions. In Figure 9 we present three scenarios for reparation: one with equal wealth accumulating conditions,

[14] see Figure I1 and a description of the estimation method in Appendix H.

[15] See Figure Table I2 in the appendix.

[16] A recent working paper by Boerma and Karabarbounis (2021) argues for investment subsidies for Black individuals over direct transfers. They model the wealth gap persisting through Black individuals' pessimistic beliefs about returns on investment owing to a history of capital and labor market discrimination.

and second and third with higher capital gains for white (assuming other conditions being constant), one with realistic values coming from the data and the other with a somewhat smaller gap. Under equal conditions (black solid line), the white-Black gap after reparations increases slightly at the beginning, but converges to a value of 1.35:1. However, as soon as we assume higher capital gains for white, the racial wealth gap is directly on its way to divergence. With the realistic differences in capital gains coming from the data (dark grey dashed line), the white-Black wealth gap increases to a level of 3 within the next 50 years. Smaller differences in capital gains would slow down the divergence path, but will not converge in any time (light grey dashed line).

Of course, reparations-style policies may also have general equilibrium effects on the wealth accumulating conditions of Black Americans, something we abstract from in our discussion here. Among other policies, a wealth tax for households in the top 0.1% wealth distribution would help combat the recent divergence patterns in the white-Black wealth gap. As we have shown, the wealth divergence since the last recent decades seems to be exacerbated by the high capital gains from the wealthiest households who hold large amount of equity wealth. By taxing their wealth, the net capital gains on their wealth would decrease, leading to a closing in the gap across Black and white capital gains rates. Another policy with potential feedback effects is baby bonds. Zewde (2020) analyzes the effect proposals like "baby bonds" would have on wealth inequality and the racial wealth gap by allowing young adults to start with higher wealth, crucial not only for building a base for wealth accumulation, but also for enabling investment in education. Additionally, because baby bonds are a form of financial asset, this policy may also lead to greater inclusion of the Black population in financial markets. Overall, Black households would disproportionately benefit from a progressive baby bonds policy.

Convergence would likely be further accelerated through a combination of the policies discussed above as all three would not only disproportionately boost the relative wealth of Black Americans, but also move them into wealth groups with higher capital gains and savings as wealth levels have a significant affect on investment and savings behavior (Dynan et al., 2004; Juster et al., 1999; Kuhn et al., 2020).

7 Conclusion

We assemble a new historical series of white-to-Black per capita wealth ratios for the United States from 1860-2020. To do so, we draw on numerous data sources, including complete count historical US censuses, southern state tax records, and a recently published database harmonizing 70 years of the Survey of Consumer Finances. Our new long-run series captures three distinct patterns of convergence. After a period of initial rapid convergence in the racial wealth gap during the first 50 years after Emancipation, racial wealth convergence has slowed down substantially since the mid-20th century, with the wealth gap on a diverging path in recent decades.

We show that this basic shape of convergence can be well explained by a simple wealth accumu-

lation model. Given extremely low levels of Black wealth under slavery, even modest accumulation can imply a high growth rate for Black wealth that greatly exceeds that of white wealth, thus generating rapid convergence. However, as the racial wealth gap decreases, convergence slows and differences in returns on wealth and savings across Black and white households begin to matter more for the shape of convergence. Given existing differences in the wealth accumulating conditions for white and Black individuals, our analysis suggests that full wealth convergence is still an extremely distant or unattainable scenario.

Further, the slowdown in racial income convergence, which previously played a critical role in accelerating saving-induced wealth accumulation of Black Americans during the first 80 years after Emancipation, stalled in the mid-20th century. This combined with slower income growth overall has led to an outsized role for capital gains in wealth accumulation. With asset prices booming since the 1980s, white households, who tend to be more invested in equity, have benefited much more from higher capital gains than Black households, for whom housing continues to be the most important asset.

Our results thus emphasize the importance of policy interventions that bot target the level of the wealth gap, such as reparations, as well as interventions that aim to equalize wealth accumulating conditions across these two groups in order to maintain a stable path to convergence.

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Figure 1: Simulation of the racial wealth gap under equal conditions

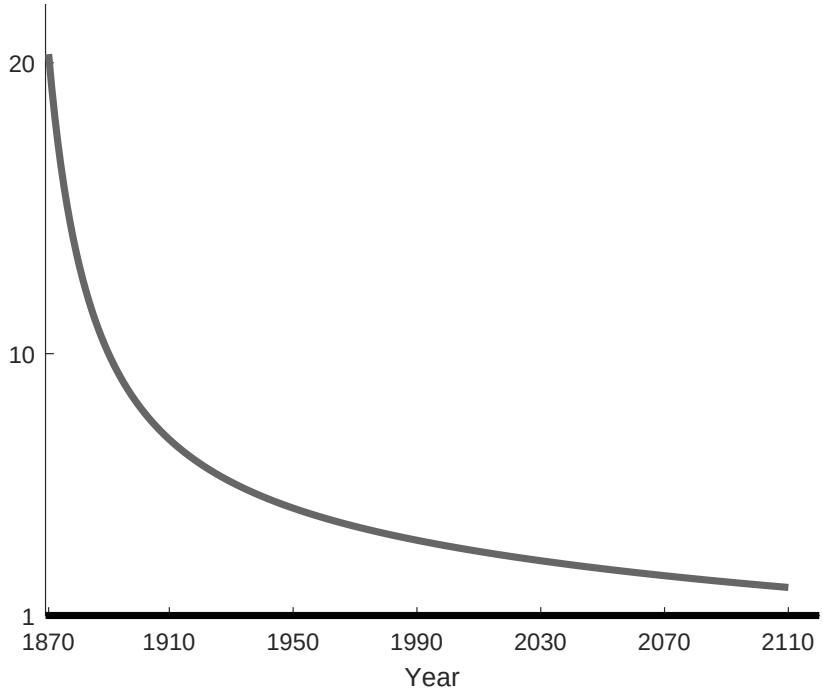
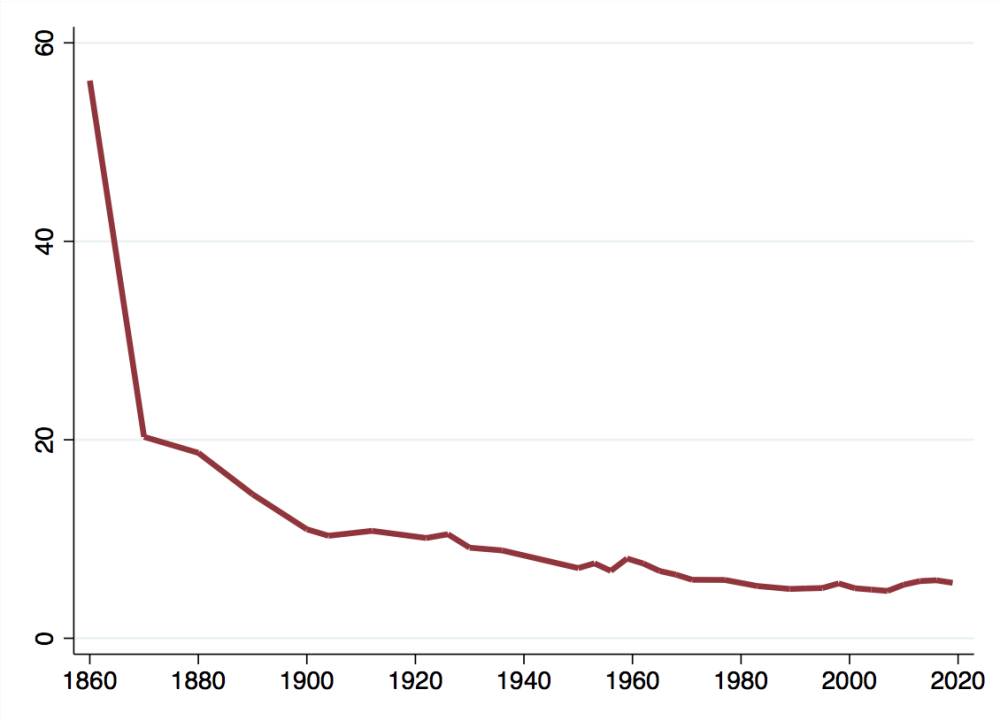


Figure 2: White-Black wealth ratio: 1860-2020



Authors' series.

Figure 3: White-Black wealth ratios by type of wealth: 1860-2020

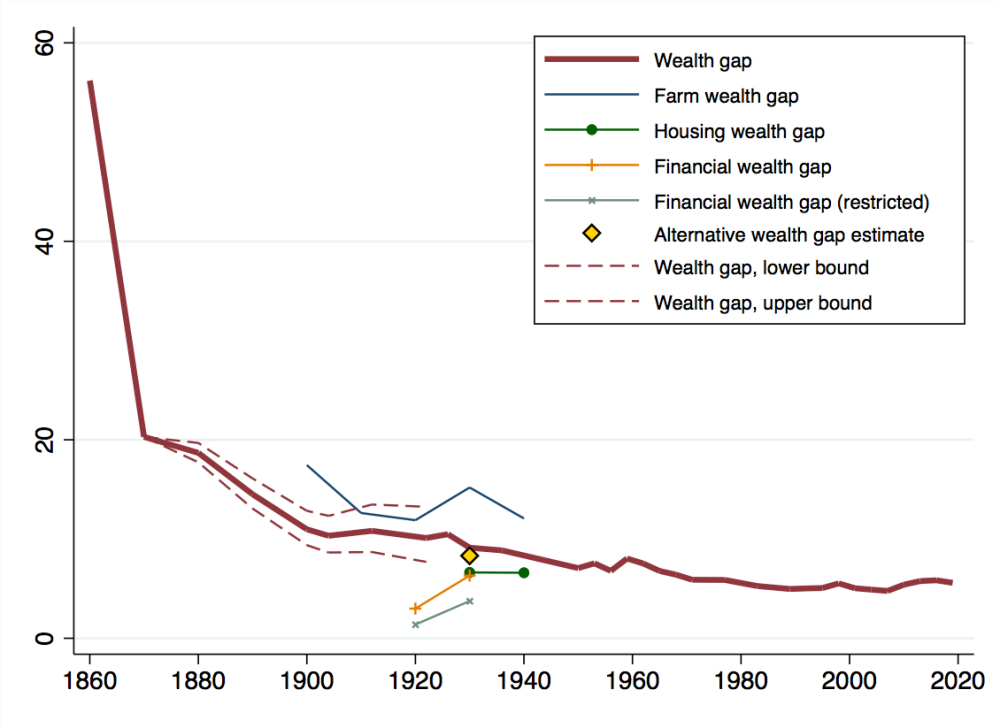


Figure 4: Simulation exercise with worse wealth accumulating conditions for Black Americans

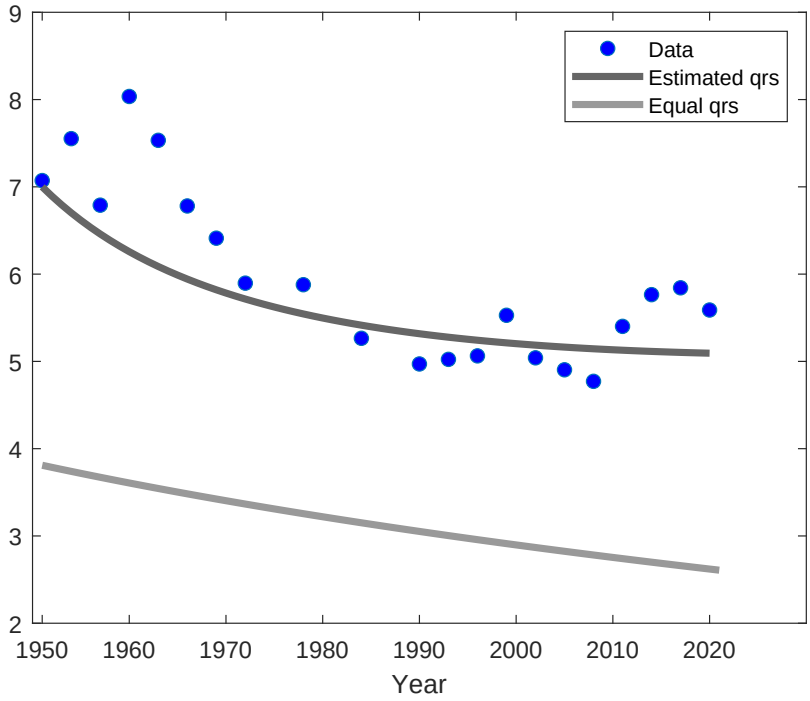


Figure 5: White-Black income ratio, 1870-2020

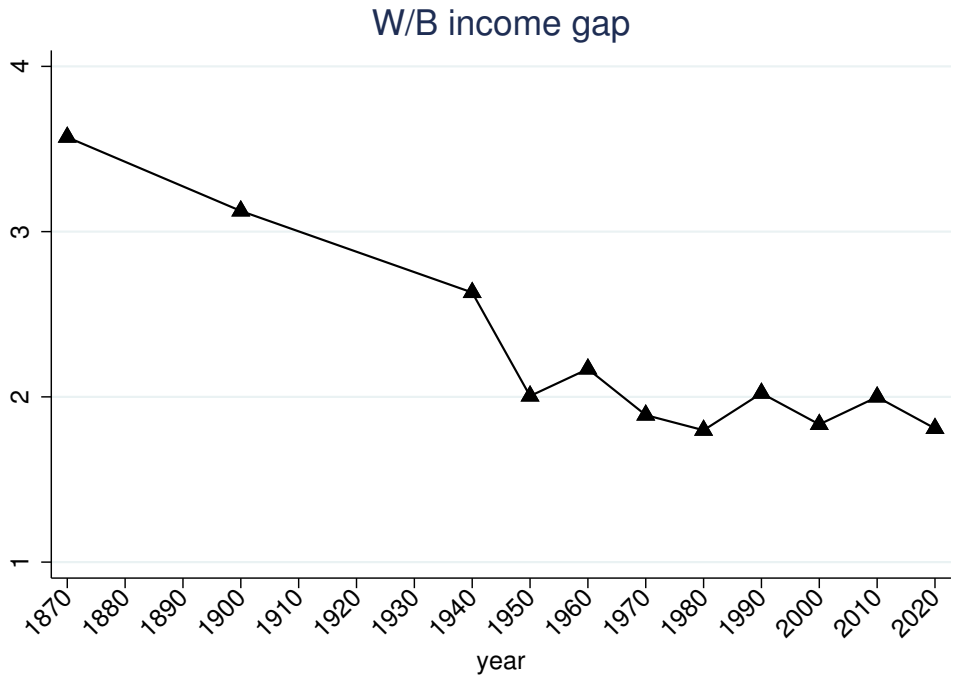


Figure 6: Per capita wealth-to-income ratios of Black and white.

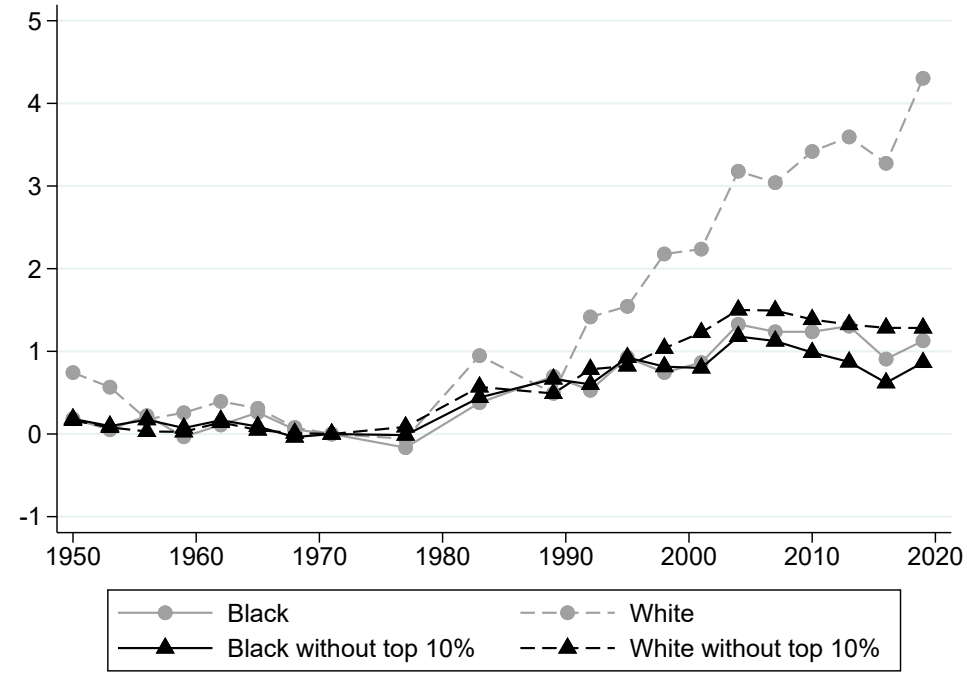
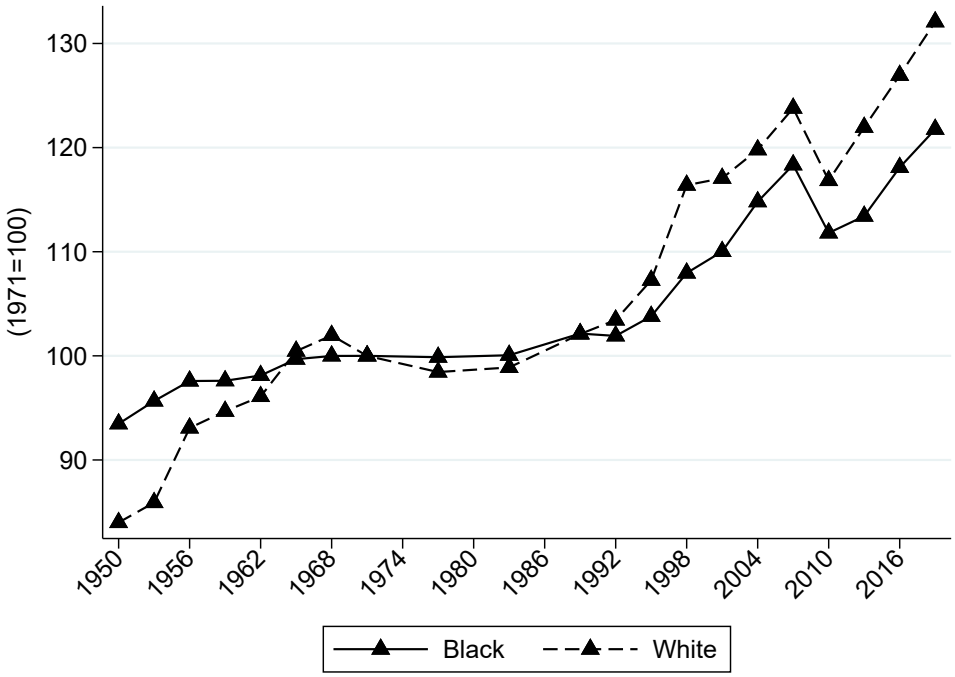


Figure 7: Growth in accumulated capital gains, 1950-2020



Notes:Growth rate of accumulated capital gains based on 1950 portfolio levels, indexed to 1971=100.

Figure 8: Wealth convergence in 2050?

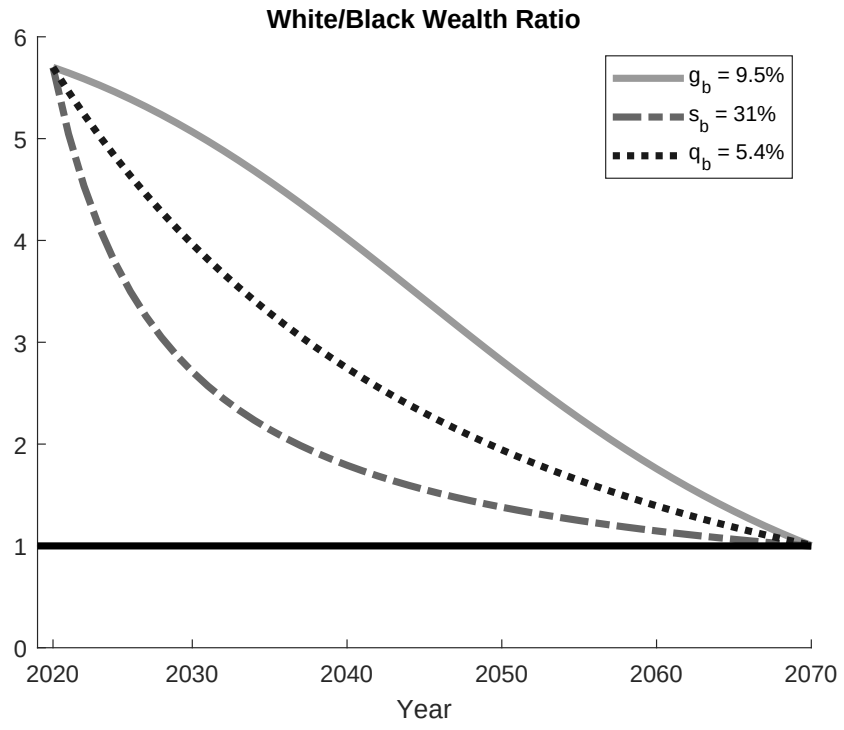


Figure 9: Wealth convergence under Darity and Mullen (2020) reparations

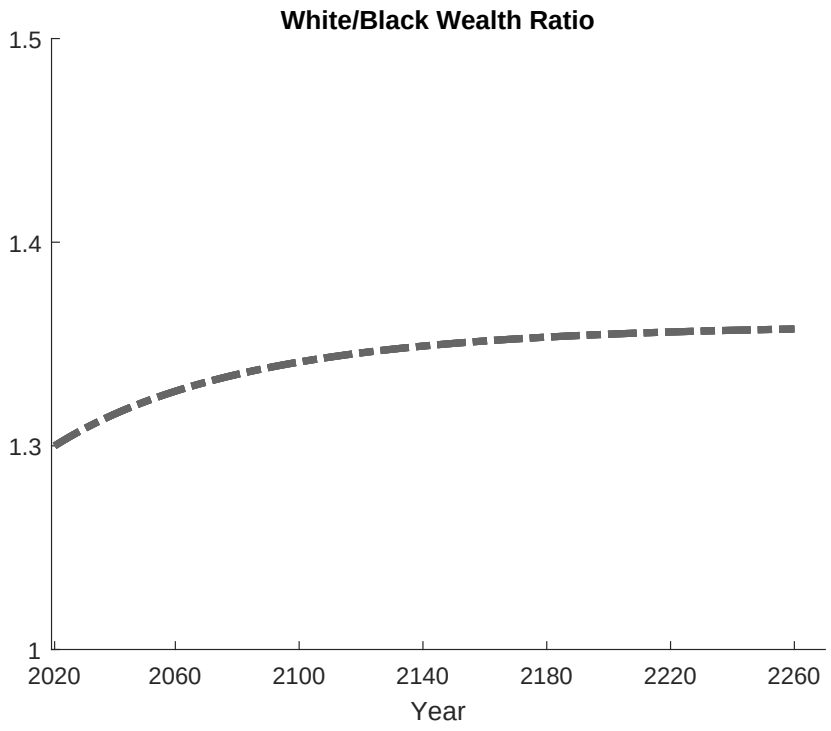
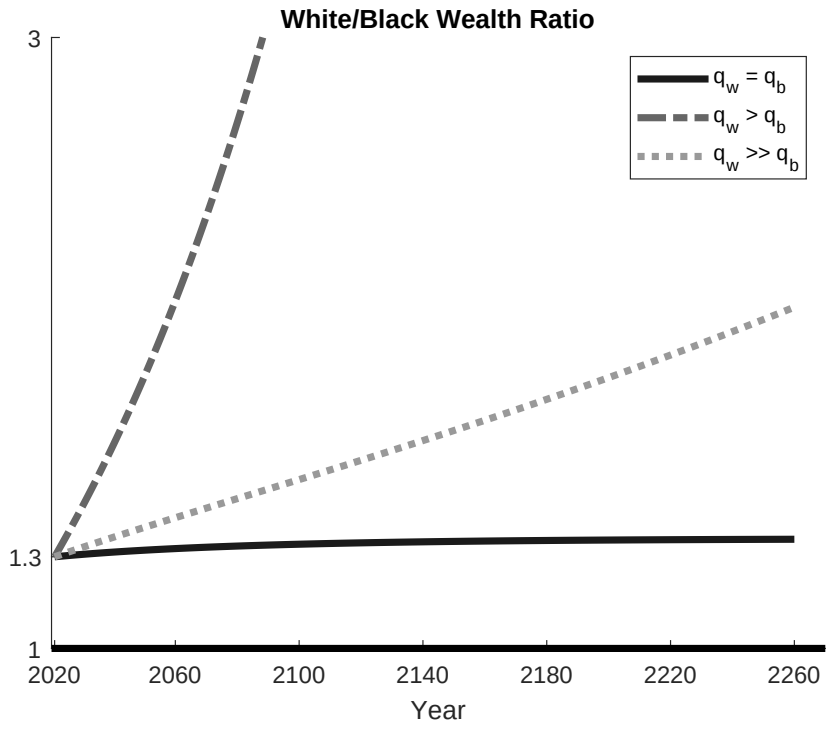


Figure 10: Wealth convergence under Darity and Mullen (2020) reparations



	2020 (data)	2020	2050	2130
Wealth ratio (W/B)	5.7	3	2.4	1.8
Income ratio (W/B)	1.5	1.7	1.5	1

Table 1: Simulated wealth gap: 2020-2100

Table 2: Portfolio shares

Decade	Other nonfin	Housing	Business	Equity	Liquid assets	Other fin
White						
1950	0.03	0.31	0.37	0.19	0.11	-
1960	0.02	0.33	0.30	0.24	0.10	-
1970	0.02	0.37	0.24	0.27	0.10	-
1980	0.04	0.45	0.24	0.11	0.12	0.04
1990	0.05	0.44	0.19	0.08	0.13	0.11
2000	0.05	0.39	0.18	0.14	0.09	0.15
2010	0.04	0.39	0.19	0.13	0.08	0.17
2020	0.03	0.33	0.22	0.17	0.07	0.18
Average	0.03	0.38	0.24	0.17	0.10	0.08
Black						
1950	0.05	0.49	0.36	0.05	0.05	-
1960	0.07	0.56	0.20	0.12	0.05	-
1970	0.07	0.61	0.15	0.11	0.06	-
1980	0.09	0.65	0.11	0.01	0.10	0.04
1990	0.09	0.62	0.08	0.01	0.07	0.13
2000	0.08	0.57	0.07	0.04	0.06	0.19
2010	0.07	0.60	0.09	0.03	0.05	0.16
2020	0.07	0.53	0.10	0.04	0.07	0.20
Average	0.07	0.58	0.15	0.05	0.06	0.09

Online appendix for "The racial wealth gap, 1860-2020"

Appendix A Data sources for historical racial wealth gap series construction

We investigate the evolution of the racial wealth gap using a variety of national and state-level sources. Specifically, our wealth data were assembled from state fiscal reports (1866-1916); the US decennial Census (1860 and 1870); aggregate Black wealth estimates by Monroe Work (1863-1936); and the historical and modern Survey of Consumer Finances (1949-2019). Additionally, we use population data from the Census as well as the Census Bureau's report on the U.S. Black population from 1790 to 1915. In this Appendix, we describe key data sources in detail.

US Decennial Censuses, 1860 and 1870 We obtain our earliest measures of per capita Black and white wealth at the national level, from the 1860 and 1870 waves of the US Census. We use the IPUMS version of the complete count censuses for these years (Ruggles et al., 2021). We begin our analysis in 1860 as the 1850 Census only recorded real property and not personal property, which included the enslaved and accounted for a significant source of total wealth prior to the Civil War [17] Therefore we begin our analysis in 1860.

Importantly, the 1860 Census of Population does not include a count of the enslaved, who were enumerated in separate slave schedules. We aggregate Haines et al. (2010) data on the enslaved Black population by county.[18]

The 1870 Census of Population is the first full accounting of the Black population in the United States. For the 1870 Census, enumerators were instructed to record personal property for those with at least $100 and real property for all.

Southern state auditor reports, 1866-1916 For the years following Emancipation, we rely on southern state auditor reports analyzed in Higgs (1982) and Margo (1984) to understand Black wealth accumulation and racial wealth gaps in the South between the Civil War and World War I. We used the website HathiTrust Digital Library (`https://www.hathitrust.org/`) to access annual tax auditor reports for available Southern states in available years in the period 1866-1916. Data were obtained directly from such reports for the following states: Louisiana, North Carolina, Virginia, Kentucky, and Arkansas. These reports provide either county-level aggregates of assessed wealth by racial group or aggregate tax payments by racial group. In the latter case, we imputed Black and

[17] We estimate that personal property made up 42% of total wealth in 1860.

[18] These estimates correspond to the Census's 1918 publication "Black Population 1790-1915" (Cummings and Hill, 1918).

white aggregate wealth by assuming the Black-white ratio of property tax payments equalled the wealth ratio and multiplying the former by the state's reported aggregate wealth for that year or an adjacent year, drawing from the imputation strategy employed by Margo (1984). We also included similar data from Georgia, which had been previously assembled by Du Bois (1901). To complete the early state-level dataset, per capita wealth observations from Margo (1984) were combined with population figures to calculate aggregate wealth levels by race in years where the corresponding state fiscal report was not found online and additional years were taken from Work (1922). Figure B1 depicts an excerpt from the Virginia state auditor report for the fiscal year ending in 1904.

Monroe Nathan Work's *The Negro Year Book* Currently, for additional estimates of Black wealth at the national level in the early 20th century, we digitize figures from Monroe Nathan Work's *The Negro Year Book: An Annual Encyclopedia of the Negro* for the years 1926, 1930, and 1936. While information on Work's methodology is limited, the estimates seemingly incorporate extensive research conducted by Work on the growth of Black churches, farmlands, businesses, and other assets on top of additional indicators of Black social and economic progress. Notably, Work includes state-level wealth estimates in his yearbooks that are consistent with the data we digitized from state auditor reports, suggesting these state-level records figure prominently in his estimation of national Black wealth. Work's national Black wealth estimates are low compared to the 1870 Census, likely due to being drawn from assessed rather than market-value-based estimates of wealth; however, once the levels are adjusted, the trend matches well with the data from Census and the historical SCF, available from 1949 onwards. More details on these adjustments are provided in Section B and Appendix B.2.1.

Sources on national wealth in the late 19C and early 20C Throughout the 1880 to 1940 period, we calculate white wealth as the difference between estimated Black wealth and total wealth in the United States. Given the demographic makeup of the country during this period and patterns of wealth-holding in the Census, we believe this generates a reasonable estimate of white national wealth. For the years 1880 to 1922, we obtain national wealth estimates from the US Census Bureau report on "Wealth, Public Debt, and Taxation" that was published until 1922,[19] covering national wealth and state breakdowns from 1850 to 1922. For the years 1926, 1930, and 1936, we incorporated estimates from Saez and Zucman (2016) on aggregate wealth for the United States.

Historical Survey of Consumer Finances (SCF+) Finally, from 1949 to the present, we utilize a newly harmonized series of the Survey of Consumer Finance (SCF+), which provides micro-level data on households' socioeconomic characteristics and wealth composition. The SCF+ is an extension of the Survey of Consumer Finances (SCF) provided by Kuhn et al. (2020). Before the modern Survey of Consumer Finances (SCF), which the U.S. Federal Reserve Board has conducted every three years since 1983, the Survey Research Center of the University of Michigan gathered

[19] Early editions were titled "Wealth, Debt, and Taxation."

data on household income and wealth along with their demographics at an annual frequency from 1947 to 1971, and again in 1977. Kuhn et al. (2020) extract this historical data based on the original codebooks and match the variables across the historical and modern waves. The final dataset allows us to study the joint distribution of income and wealth consistently over the period from 1949 to 2019.

Wealth in the SCF+ comprises marketable wealth, which is the current value of all marketable assets net the current value of debts. Assets include liquid assets (certificate deposits, checking and savings accounts, call and money market accounts, housing and other real estate, bonds, stocks, corporate and non-corporate equity, and defined contribution retirement accounts. Total liabilities are the sum of housing debt, car loans, education loans, loans for consumer durables, credit card debt, and other non-housing debt. We exclude social security and defined benefit pension claims, which are not available over the full period. Using these data, we compute decadal averages of per capita wealth by race.

Additional state tax records We have identified several sources of individual-level pre-World-War-II tax records from additional southern states and other localities. Our plan is to link selected years for states that will maximize our coverage of Black wealth to complete count censuses where we observe an individual's race. This extends the method of Canaday (2008)–who linked individuals from a single county in South Carolina–to all counties in all states where records are available. Thus far, we have identified the following states where promising additional records are available: Virginia, Texas, Tennessee, and Mississippi. We have already begun digitizing tax records for New Orleans, for which race-specific property estimates are missing in the Louisiana state auditor reports. To construct measures of Black wealth outside the South, we are focusing on the tax records of New York and Philadelphia, which are available in microfilm in the time period of interest. Our digitization and Census-linking approaches are detailed in Appendix **??**.

Finally, we are also digitizing county-level wealth information for Black and white populations from the six southern states for which these data are readily available in auditor reports. We intend to combine these data with other sources of data to predict Black wealth in counties outside the states for which we have county-level wealth data by race.

1900-1940 Censuses of Agriculture The 1900-1940 Censuses of Agriculture recorded information on farm values and farm ownership separately by racial group. Although these data provide information only on the farm sector, agriculture was a key sector of both employment and land ownership for Black Americans in the South, particularly in the decades following Emancipation.

1930 and 1940 Census of Population The 1930 Census is the first to ask households about the value of their homes. Given the importance of real estate as a source of Black wealth as we document in Section 5.2, the aggregate value of farms and homes owned by Black Americans will

provide an important second estimate of national Black wealth prior to the SCF+ series, which begins in 1949.

Black banks Information on the deposits and liabilities of Black banks covering the period are available from Harris (1936), Work (1922), Stein and Yannelis (2020), and Ammons (1996). These data cover a time period that overlaps with race-specific farm ownership and farm values data from the Census of Agriculture as well as data on housing values from the Census of Population. We intend to use these data to refine our measures of Black wealth for the pre-WWII period and to provide additional information on the composition of Black wealth during this time period. The data on bank holdings are particularly important for non-southern Black wealth where agricultural land is a less likely source of wealth.

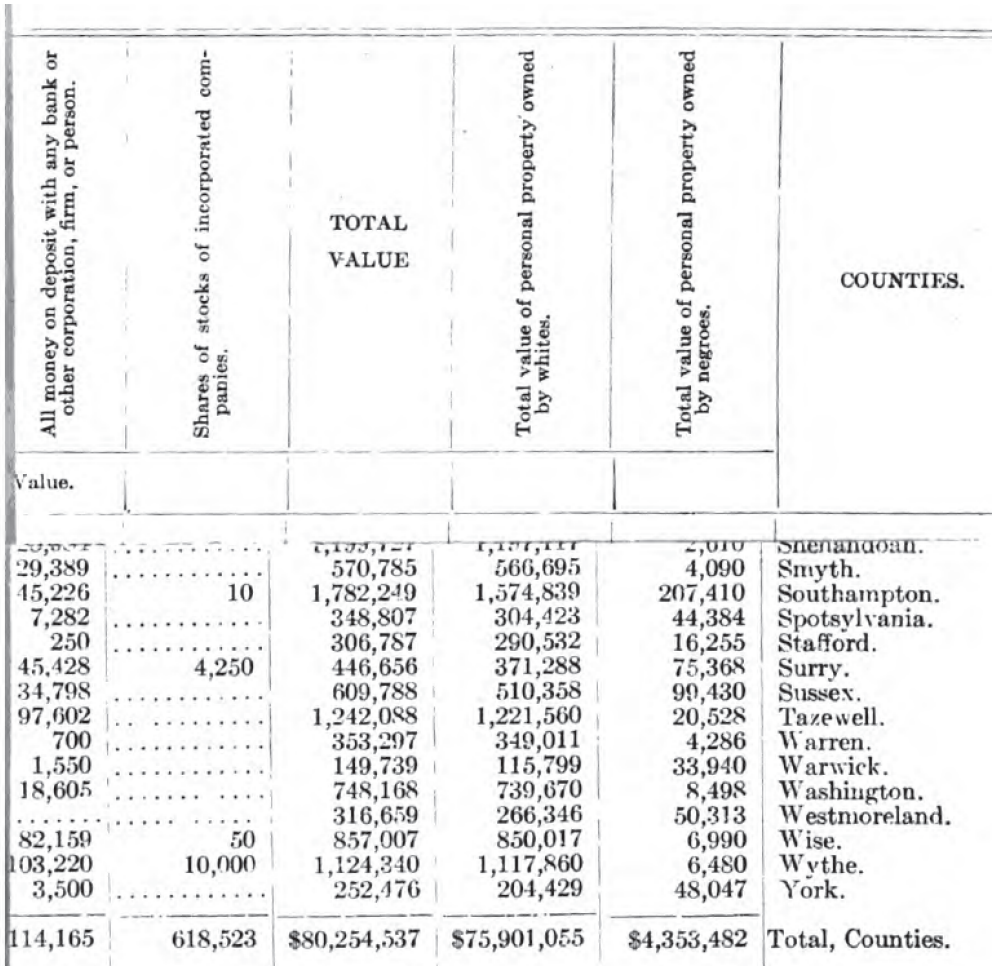
Appendix B Additional details on construction of the historical racial wealth gap series

This appendix provides additional details on the construction of our long-run series.

B.1 Digitization of state auditor reports

We digitize state auditor reports for six states that assessed wealth (or recorded total tax payments on assessed wealth) separately for the Black and white populations in those states between the 1860s and the early 20th century. The six states are Virginia, Kentucky, Arkansas, Georgia, Louisiana, and North Carolina. Figure B1 below shows an excerpt from the 1903-1905 auditor report for the state of Virginia.

Figure B1: Virginia auditor report, 1903-1905



All money on deposit with any bank or other corporation, firm, or person.	Shares of stocks of incorporated companies.	TOTAL VALUE	Total value of personal property owned by whites.	Total value of personal property owned by negroes.	COUNTIES.
Value.					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Shenandoah.
29,389	.....	570,785	566,695	4,090	Smyth.
45,226	10	1,782,249	1,574,839	207,410	Southampton.
7,282	.....	348,807	304,423	44,384	Spotsylvania.
250	.....	306,787	290,532	16,255	Stafford.
45,428	4,250	446,656	371,288	75,368	Surry.
34,798	.....	609,788	510,358	99,430	Sussex.
97,602	.....	1,242,088	1,221,560	20,528	Tazewell.
700	.....	353,297	349,011	4,286	Warren.
1,550	.....	149,739	115,799	33,940	Warwick.
18,605	.....	748,168	739,670	8,498	Washington.
.....	.....	316,659	266,346	50,313	Westmoreland.
82,159	50	857,007	850,017	6,990	Wise.
103,220	10,000	1,124,340	1,117,860	6,480	Wythe.
3,500	.....	252,476	204,429	48,047	York.
114,165	618,523	$80,254,537	$75,901,055	$4,353,482	Total, Counties.

These reports were originally analyzed by Higgs (1982) (Georgia only) and Margo (1984) (the remaining five states) to understand post-Civil-War wealth accumulation by Black Americans as well as the racial wealth gap during this perio.d

B.1.1 Comparison of historical state wealth ratios to Margo (1984)

Below we compare our estimates for the white-Black per capita wealth ratio derived from our digitization of state auditor reports to those of Margo (1984). Table B1 shows that results are broadly similar for most states with Louisiana being the exception. This is due to the fact that the Louisiana state auditor reports exclude data for Orleans Parish, which includes New Orleans. Margo (1984) assumes that country parish ratios apply to the state overall, for which aggregate wealth is available, and computes the state-wide wealth ratio this way. We use a different approach to account for the possibility of greater wealth holding by Black Americans in New Orleans relative to the country parishes. We take the 1870 Census and compute white-to-Black wealth ratios in New Orleans. We then subtract total country parish wealth from total wealth in Louisiana to derive

wealth in New Orleans every year for which tax data are available. Assuming that the white-to-Black wealth ratio in New Orleans holds constant over time, we compute Black and white wealth in New Orleans using this method and then recompute the per capita wealth ratio for the state of Louisiana using these adjusted measures for aggregate Black and white wealth in the state.

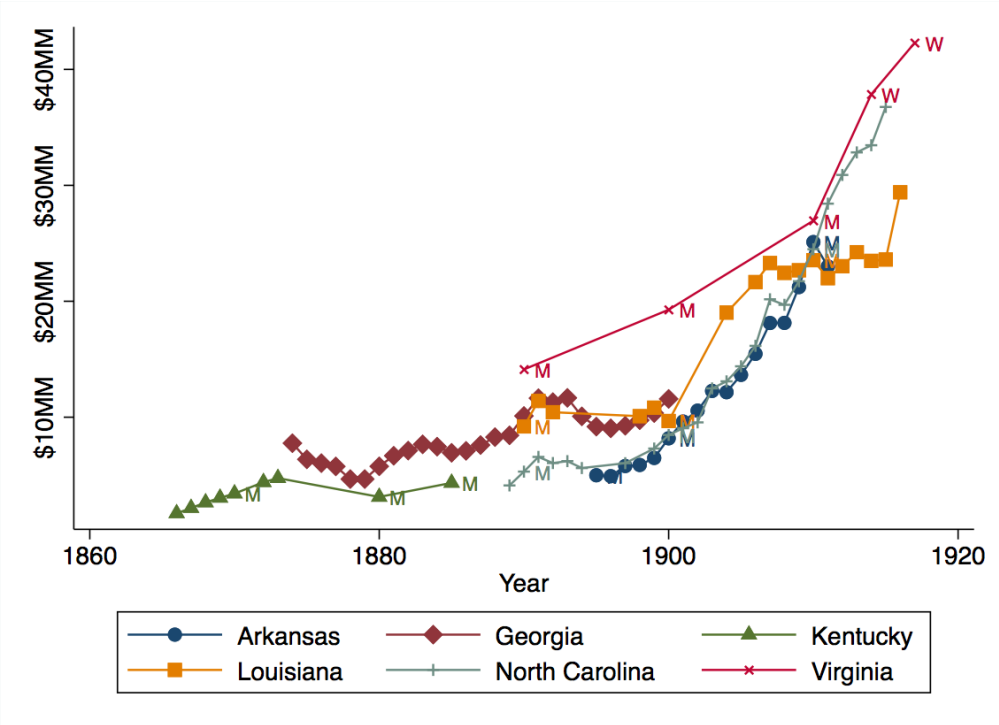
Table B1: Average white-Black wealth ratios: Margo (1983) & DKKS (2020)

	1870	1880	1885	1890	1895	1900	1910	1910
Arkansas								
Margo(1983)						9	7	6
DKKS(2020)						9	7	6
Georgia								
Margo(1983)								
DKKS(2020)		36	36	32	26	24	23	
Kentucky								
Margo(1983)	36	22	22	19				
DKKS(2020)	33							
Louisiana								
Margo(1983)					18		20	25
DKKS(2020)					14		16	19
North Carolina								
Margo(1983)					17		13	9
DKKS(2020)					17		12	9
Virginia								
Margo(1983)					19		14	10
DKKS(2020)							13	11

Source: Margo (1983): Margo's (1983) data originally collected from southern state auditor reports and reported for selected years in Table 1. DKKS (2020) calculated from their new digitization of these same reports and supplemented by W.E.B. Du Bois's data on property holdings by race in Georgia from 1877 to 1900.

Figure B2 plots aggregate Black wealth in each of the six states. Here, wealth has been adjusted using the Warren-Pearson Index so as to be in $1910-1914. Each of the six states shows substantial accumulation of Black wealth over this period.

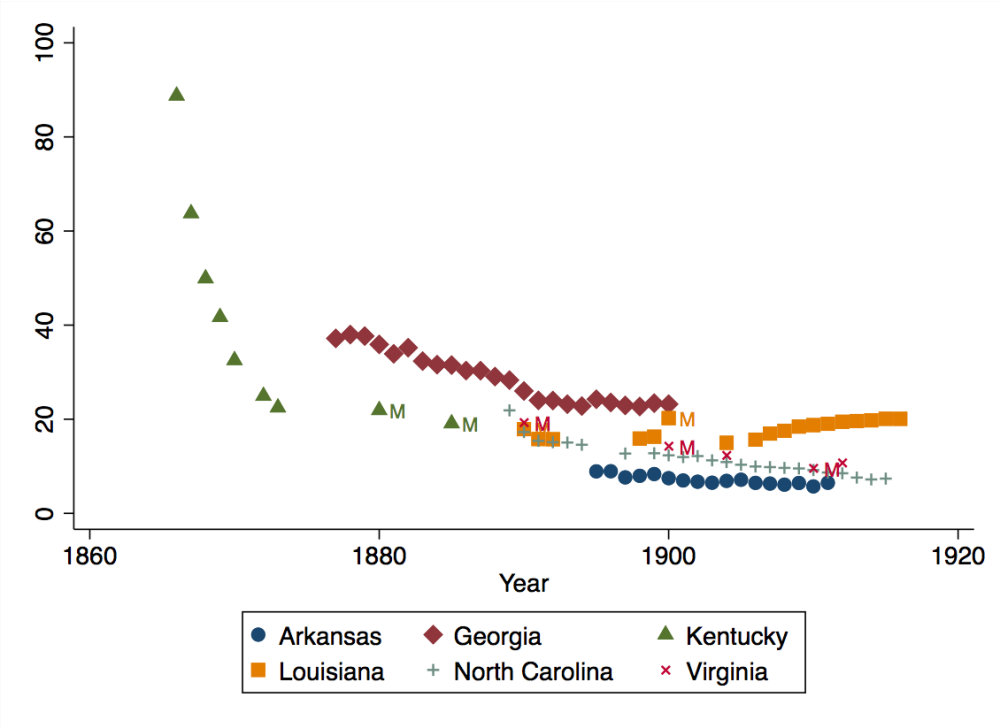
Figure B2: Aggregate Black wealth by state, 1860-1920 (1910-1914 $)



Notes: Estimates adjusted to be in real $1910-1914 using the Warren-Pearson Index. *Source*: State auditor reports; Margo (1984): "M"; Work (1922): "W".

Figure B3 plots the white-to-Black per capita wealth ratios for each state. The pattern of rapid initial convergence followed by a slowdown in convergence that we document in our national series is replicated for these six states.

Figure B3: White-Black per-capita wealth ratio by state, 1860-1920



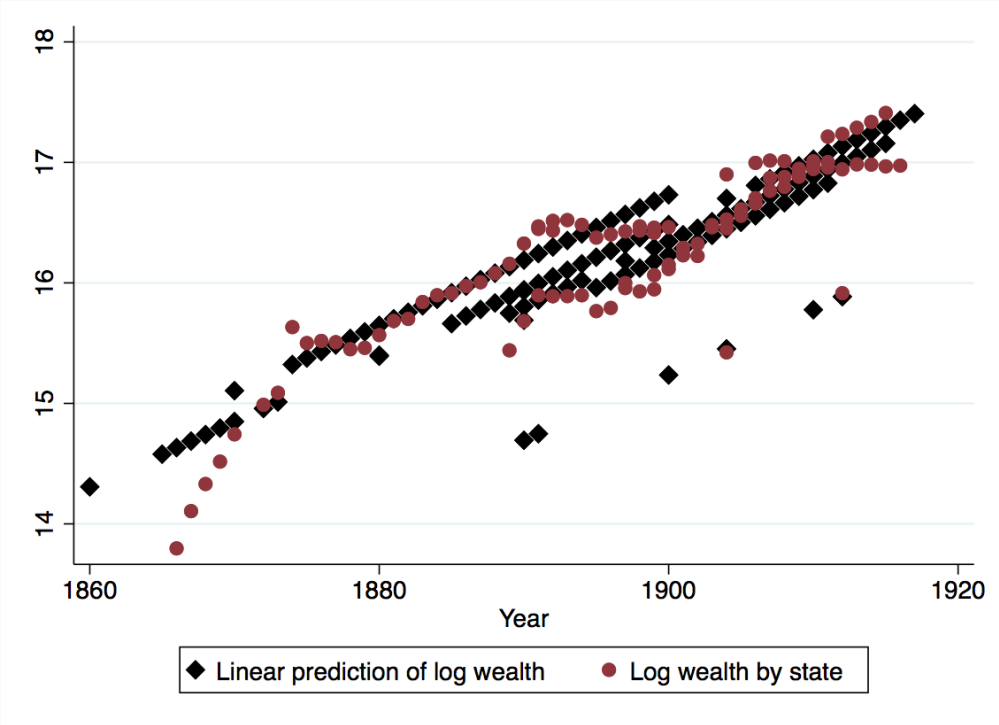
Source: State auditor reports; Cummings and Hill (1918); Margo (1984): "M".

We use these data to estimate growth rates in Black wealth which we then use to extrapolate Black wealth as recorded in the 1870 Census until the year 1922, the last year for which we have national wealth estimates from the Census Bureau's "Wealth, Public Debt, and Taxation" report. Figure B4 plots predicted log wealth against observed log wealth for the six states in a linear prediction of wealth over time, including state fixed effects.

B.2 Black wealth estimates from Monroe Nathan Work's *Negro Year Book*

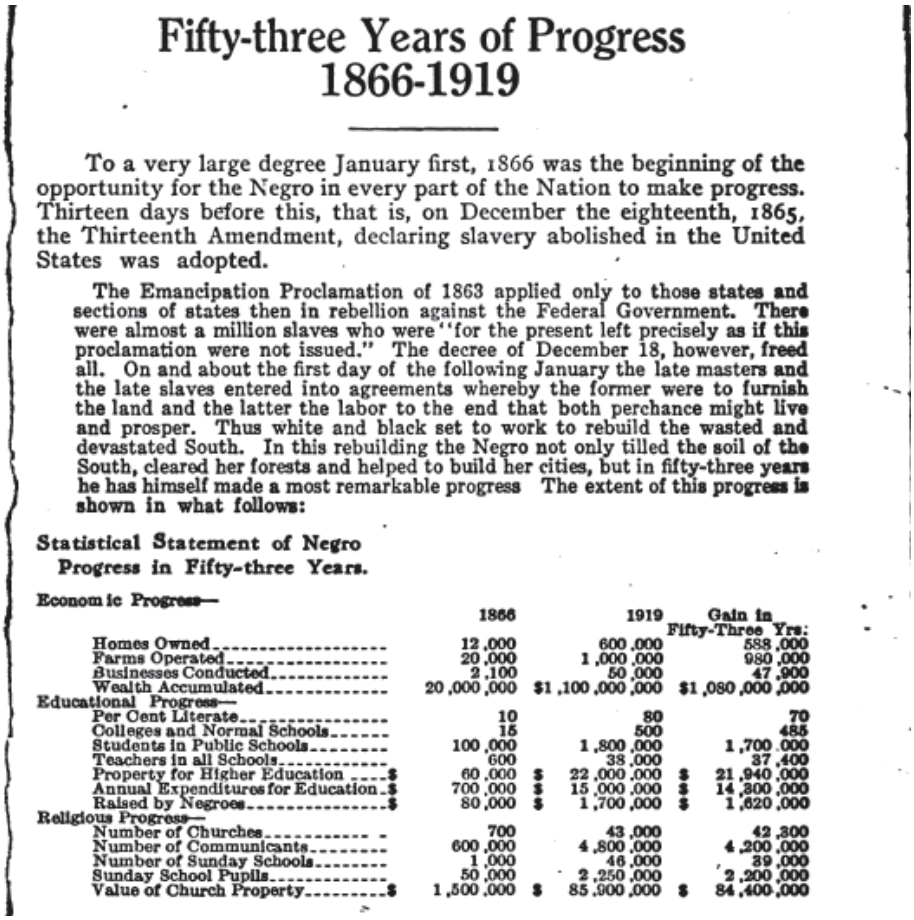
Monroe Nathan Work (1866-1945) was a sociologist who published an annual encyclopedia on the status of Black Americans called the *Negro Year Book*. In it, he provides the only national estimates of Black wealth in the early 20th century that we are aware of. Figure B5 gives an example of the presentation of these types of estimates in these annual reports. We digitize these estimates and make adjustments based on the fact that they likely extrapolate from the reports discussed in Appendix B.1 above. We describe the adjustment procedure in detail below.

Figure B4: Log wealth and predicted log wealth for six southern states



Notes: Log wealth and log wealth predicted using a linear time trend and state fixed effects. States included are Kentucky, North Carolina, Georgia, Arkansas, Virginia, and Louisiana. *Data sources*: *Southern state auditor reports; Work (1922);Margo (1984).*

Figure B5: Excerpt from *The Negro Year Book* (Work, 1922)



Fifty-three Years of Progress 1866-1919

To a very large degree January first, 1866 was the beginning of the opportunity for the Negro in every part of the Nation to make progress. Thirteen days before this, that is, on December the eighteenth, 1865, the Thirteenth Amendment, declaring slavery abolished in the United States was adopted.

The Emancipation Proclamation of 1863 applied only to those states and sections of states then in rebellion against the Federal Government. There were almost a million slaves who were "for the present left precisely as if this proclamation were not issued." The decree of December 18, however, freed all. On and about the first day of the following January the late masters and the late slaves entered into agreements whereby the former were to furnish the land and the latter the labor to the end that both perchance might live and prosper. Thus white and black set to work to rebuild the wasted and devastated South. In this rebuilding the Negro not only tilled the soil of the South, cleared her forests and helped to build her cities, but in fifty-three years he has himself made a most remarkable progress The extent of this progress is shown in what follows:

Statistical Statement of Negro Progress in Fifty-three Years.

	1866	1919	Gain in Fifty-Three Yrs.
Economic Progress—			
Homes Owned	12,000	600,000	588,000
Farms Operated	20,000	1,000,000	980,000
Businesses Conducted	2,100	50,000	47,900
Wealth Accumulated	20,000,000	$1,100,000,000	$1,080,000,000
Educational Progress—			
Per Cent Literate	10	80	70
Colleges and Normal Schools	15	500	485
Students in Public Schools	100,000	1,800,000	1,700,000
Teachers in all Schools	600	38,000	37,400
Property for Higher Education	$ 60,000	$ 22,000,000	$ 21,940,000
Annual Expenditures for Education	$ 700,000	$ 15,000,000	$ 14,300,000
Raised by Negroes	$ 80,000	$ 1,700,000	$ 1,620,000
Religious Progress—			
Number of Churches	700	43,000	42,300
Number of Communicants	600,000	4,800,000	4,200,000
Number of Sunday Schools	1,000	46,000	39,000
Sunday School Pupils	50,000	2,250,000	2,200,000
Value of Church Property	$ 1,500,000	$ 85,900,000	$ 84,400,000

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http://www.hathitrust.org/access_use#pd-google

B.2.1 Adjusting estimates from Work (1922)

Incorporating these racial wealth gap estimates results in a large upward jump in the time series for the racial wealth gap when compared to the Census data that precedes these points and the SCF+ which follow them. When comparing the estimates for total wealth from Saez and Zucman (2016) to the numbers for taxable wealth in 1922 from "Wealth, Public Debt, and Taxation," we find that the numbers closely align, with the Saez and Zucman (2016) estimate at 92.7% of the number from "Wealth, Debt, and Taxation." If anything, a lower national estimate would result in a lower racial wealth gap as the residually determined wealth of the white population would be smaller. This comparison strongly suggests that the higher estimate stems from the estimates for Black wealth from Work (1922).

We surmise that the estimates from Work (1922) are based on the same state-level tax records we use to estimate Black wealth for the early 20th century. One reason is that he describes changes in wealth in the same states for which auditor report breaking down wealth by racial group are available. Assessed values for tax purposes are substantially below their market value in these years. Appendix Figure B6 which excerpts from States. et al. (1924) shows the ratio of true to

assessed values for the early 20th century. If estimates in Monroe Work are based on tax records, then they will understate on average wealth of the Black population relative to the estimates for total wealth that are used to construct the wealth of the white population as a residual. We therefore scale the racial wealth gap for these three years by assuming a linear time trend between 1922 and 1950.

We proceed as follows. We first construct the linear time trend between the average wealth gap over the period from 1912 to 1922 as starting point and 1950 and 1953 as the end point of the linear trend. We compare the average wealth gap for 1926, 1930, and 1936 implied by the linear trend to the average wealth gap implied by the original estimates from Work (1922). We take the ratios of these averages as the scaling factor we apply to the original Work estimates to adjust them in levels. Using this approach, we keep the time series variation implied by the Work estimates and only adjust their levels over time. The resulting adjustment factor is 0.603, which implies that we scale down the wealth gap by about 40 percent. Reassuringly, adjustment factor is similar to the assessment ratios depicted in Appendix Figure B6, the state-level average of which is 57%.

Figure B6: Excerpt from US "Wealth, Public Debt, and Taxation" report

Per Cent of Estimated True Value of Real Property and Improvements Represented by Assessed Valuations

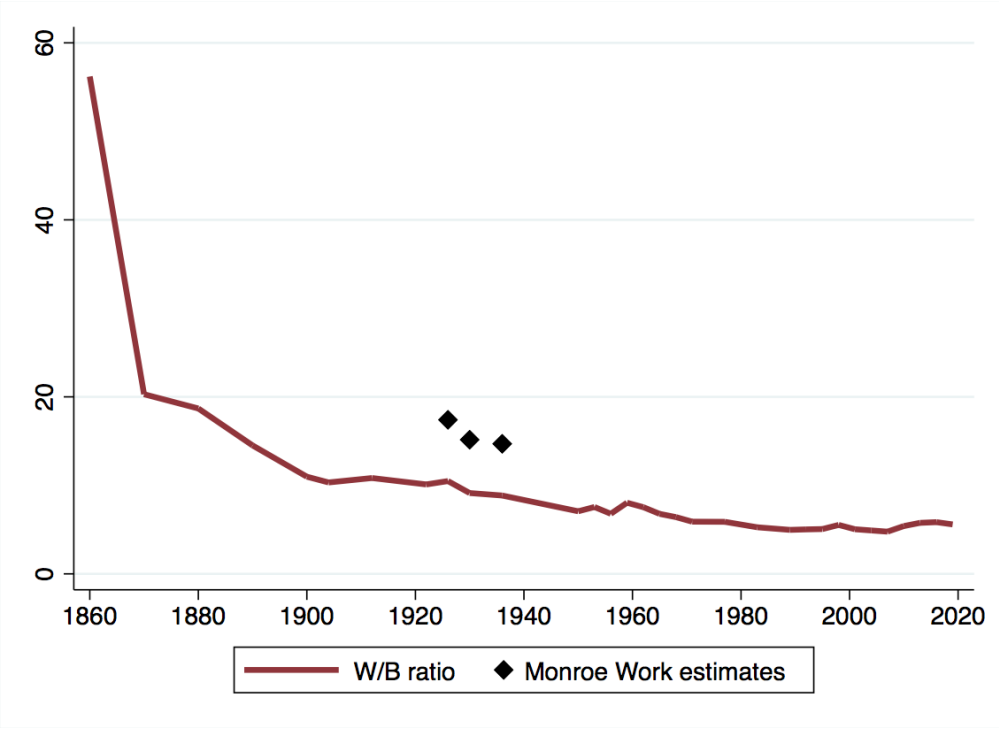
State	1922	1912	1904	1900	State	1922	1912	1904	1900
Alabama	47.7	40.0	45.9	46.7	Nebraska	70.1	15.0	17.7	18.7
Arizona	81.0	50.0	33.5	34.6	Nevada	50.0	30.0	37.7	36.5
Arkansas	22.6	28.0	38.7	39.4	New Hampshire	79.5	100.0	65.4	65.4
California	46.6	45.1	49.2	51.1	New Jersey	63.2	54.1	54.1	54.1
Colorado	73.6	25.0	40.4	30.8	New Mexico	43.0	25.7	25.7	35.4
Connecticut	63.2	66.7	80.7	80.2	New York	84.8	66.7	90.1	64.6
Delaware	77.5	56.7	56.7	56.6	North Carolina	75.7	60.0	60.0	54.2
District of Columbia	90.8	66.7	66.7	66.7	North Dakota	76.0	17.2	30.6	30.5
Florida	20.0	35.5	35.5	35.7	Ohio	70.2	90.0	46.4	47.6
Georgia	37.9	52.5	52.5	54.0	Oklahoma	62.3	[1] 50.0	25.1	24.5
Idaho	50.0	85.0	41.8	41.7	Oregon	43.5	63.5	30.1	29.8
Illinois	24.1	18.0	14.7	14.1	Pennsylvania	57.8	58.6	58.6	57.5
Indiana	80.2	45.0	60.3	62.1	Rhode Island	80.0	75.2	75.2	75.3
Iowa	12.7	11.7	19.8	20.1	South Carolina	20.3	33.3	46.5	47.1
Kansas	65.7	72.4	22.9	24.4	South Dakota	82.6	46.2	46.2	45.8
Kentucky	71.0	62.2	62.2	62.8	Tennessee	57.8	60.0	61.1	61.8
Louisiana	68.9	40.0	53.3	53.8	Texas	40.2	50.0	48.5	49.3
Maine	52.0	73.8	73.8	73.6	Utah	61.4	33.3	42.8	44.0
Maryland	64.0	65.8	65.8	65.5	Vermont	55.0	70.0	71.8	71.7
Massachusetts	77.5	90.6	90.6	90.4	Virginia	40.7	50.8	55.3	58.1
Michigan	85.2	58.7	62.7	62.7	Washington	28.0	42.3	46.0	47.7
Minnesota	34.7	37.1	37.7	36.6	West Virginia	40.0	49.7	49.7	51.2
Mississippi	44.5	54.8	54.8	54.2	Wisconsin	85.3	75.0	71.0	36.9
Missouri	59.1	40.0	40.5	42.0	Wyoming	72.4	100.0	31.4	30.2
Montana	28.7	43.5	43.5	45.7					

[1] Revised basis; in the report for 1912 the basis used was 25 per cent.

Data sources: *States. et al. (1924)*.

Figure B7 plots the full series containing adjusted estimates from Work, as well as the unadjusted estimates for 1926, 1930, and 1936.

Figure B7: Historical racial wealth gap series with unadjusted Work estimates

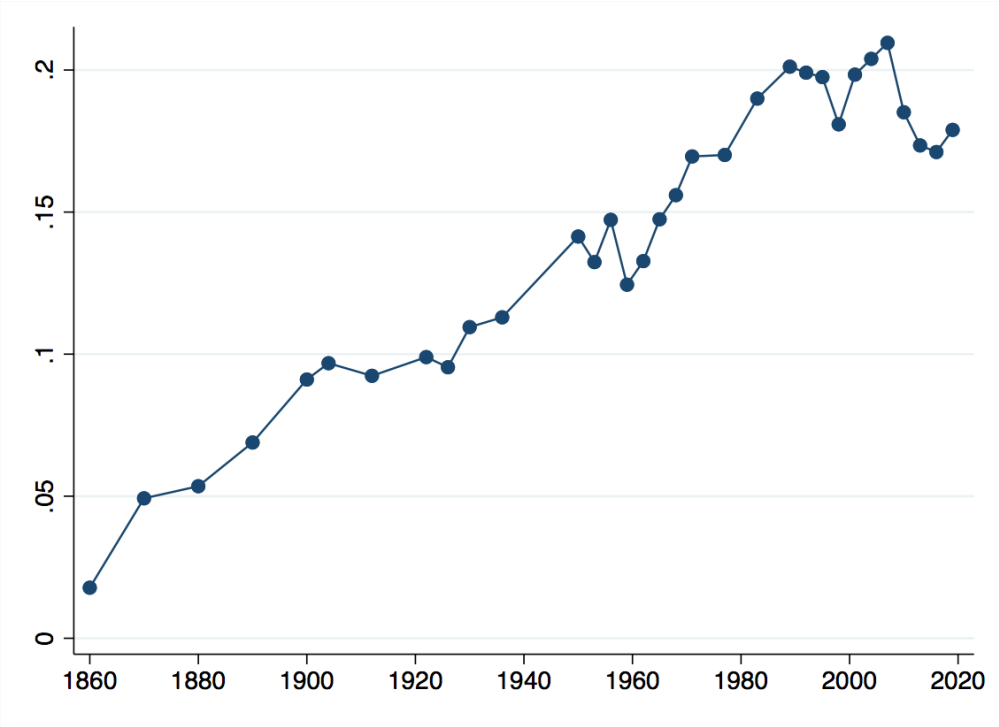


Data sources: *Authors' series, including unadjusted estimates of the 1926, 1930, and 1936 wealth gap constructed using estimates from Work (1922) and Saez and Zucman (2016).*

Appendix C Alternative measures of the racial wealth gap since 1860

We also provide a series of Black-to-white wealth ratios since 1860–Figure B8 below–and the Black share of national wealth since 1860, Figure B9, which we discuss in detail in Appendix Section C.1 below.

Figure B8: Black-to-white wealth ratio: 1860-2020

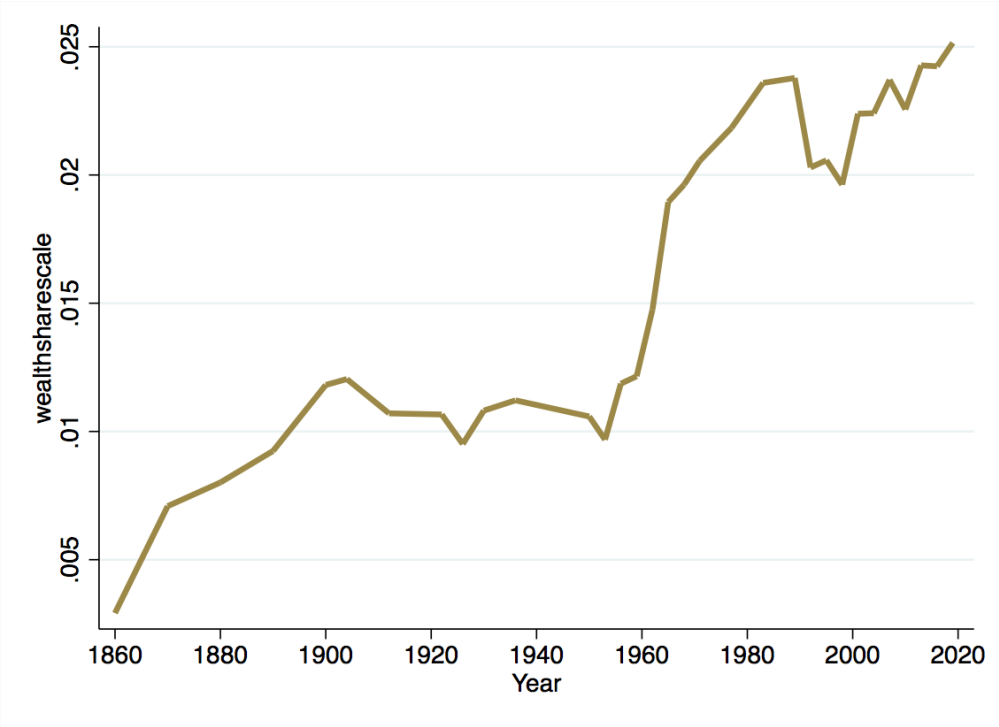


Data sources: *Authors' series of the Black-to-white per capita wealth ratio from 1860 to 2020.*

C.1 Black Americans' share of national wealth, 1860-2020

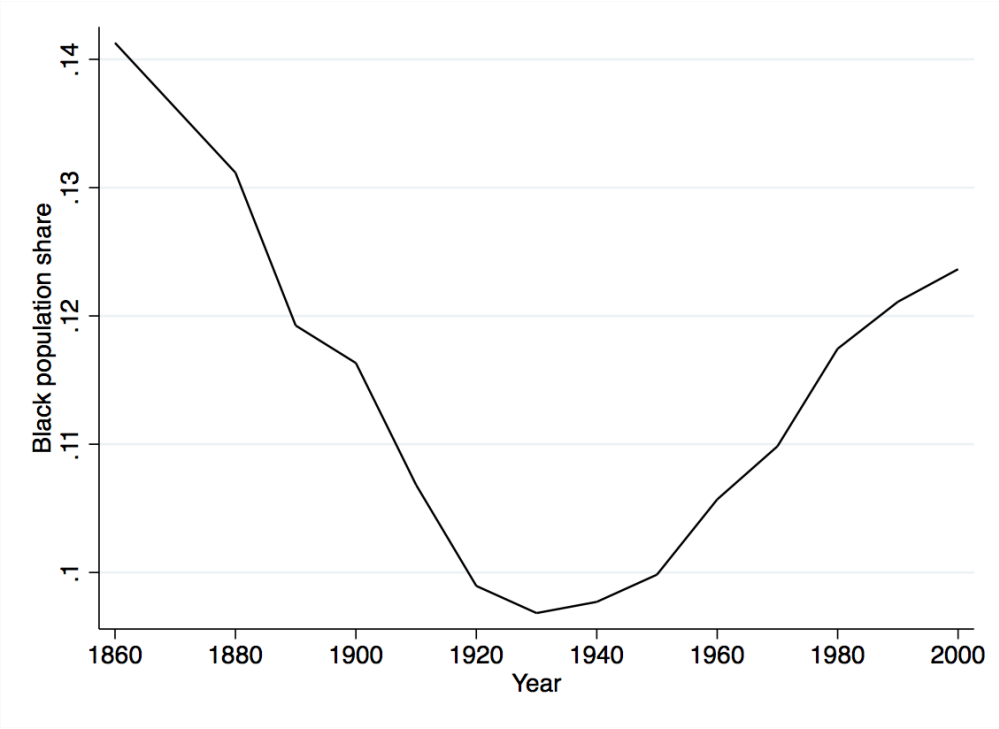
Black per capita wealth has been a steadily growing share of white per capita wealth. In 1870, five years after the end of the Civil War, the Black population in the US held just 0.5% of the nation's wealth despite representing 14% of the population. The Black share of wealth increased steadily over the late 19th century but saw little change from 1900 to 1940. The share then increased dramatically from 1950 to 1980. We hypothesize that the reason behind these time series fluctuations is that the Black share of national wealth reflects both per capita Black wealth growth and changes in the Black population share. We depict the time series of the Black population share in Appendix Figure B10. From 1860 to 1940, a period which encompasses the era of mass European migration to the United States (approximately 1880 to 1920), the Black population share of of the US population fell from around 14% to less than 10%. Between 1950 and 1980 the Black population share climbed back up to just under 12%. In the early 20th century, the forces of rapid Black per capita wealth growth and declining Black population share counteracted each other, producing a flat trend in the Black share of national wealth. From 1950 to 1980, continued Black per capita wealth growth and a rebound in the Black share of the population combined to produce a large increase in the Black share of national wealth. Still, by 2020, the Black share of national wealth is low relative to the population share, at 2.5% compared to over 12%.

Figure B9: Black share of national wealth: 1860-2020



Data sources: *Authors' series of the Black share of national wealth from 1860 to 2020.*

Figure B10: Black share of US population: 1860-2020



Data sources: *Authors' series of the Black share of the US population from 1860 to 2020.*

Appendix D Alternative assumptions around bottom-censoring in the 1870 Census

In the first step, we consider the 1860 Census data that does not has no censoring at 100 dollars for personal property. We use these data to estimate the share of persons with personal wealth of zero conditional on having wealth below 100 dollars. For the black population, we include the enslaved population of 3,858,866 persons with personal property of 0 dollars. We find that 99.4% of the black population and 97.5% of the white population in 1860 that report personal property below 100 dollars report zero dollars of personal property. In the entire population only 15.1% of all individuals, 17.3% of white individuals and 1.3% of black individuals, report positive values for personal property in 1860.

We then consider the 1870 data and find that the recording of personal property in 1870 also contains slightly above 80,000 non-zero observations below 100 dollars whereas there should be none (54,000 white individuals, 26,000 black individuals). We consider these records as the result of data collectors not following the instructions and also recording values below 100 dollars. Based on these records, we estimate separately for the black and white population conditional means for personal property below 100 dollars in 1870, i.e., we compute the conditional mean for positive

personal property below 100 dollars for black and white individuals. For black individuals, we get a mean of 39 dollars and for white individuals a mean of 48 dollars. We impute these means to a fraction of individuals that according to our 1860 estimates should have non-zero personal property below 100 dollars, i.e., we match the 1860 share for the black and white population with "true zeros." Before the imputation, average personal property of black individuals was 15 dollars and it is 15 dollars after the imputation. For white individuals, we have 248 dollars of average personal property before the imputation and 249 dollars including the imputation. The share of individuals with zero wealth in the group of individuals with less than 100 dollars is 99.8% for white individuals before the imputation and it is 97.5% after the imputation. For black individuals, the share of black individuals with zero personal property conditional on having less than 100 dollars of personal property is 99.4% after the imputation unchanged from the 99.4% before the imputation. The shares for zero wealth after the imputation are targeted based on the 1860 data.

In both years, we replace missing observations with zeros. In 1860, we replace 2,004 observations for real estate and 1,608 observations for personal property. In 1870, we replace 329 observations for real estate and 355 observations for personal property.

Appendix E Homeownership and housing gap analysis

We construct a time series of Black and white homeownership rates from Census, which can be compared to the series published by Collins and Margo (2011). First, we extract all housing value and homeownership information from the full count Census data in 1860, 1870, 1900, 1910, 1920, 1930, and 1940. We then add data from ACS for 1960 to 2019. To construct a homeownership dummy in 1860 and 1870, we consider if households report positive real estate wealth, following Collins and Margo (2011). For 1860, we add the enslaved population and assume that a counterfactual household size for enslaved Black persons is equivalent to the household size of free Black persons in 1860, or about five individuals. The resulting share of 20% of counterfactual household heads among the enslaved population corresponds to the share in the free Black population (19.2%). We replace all missing housing values with zeros.

We construct time series for housing values and homeownership rates by collapsing data for homeownership and housing values by year for Black and non-Black heads of households.[20] Thus, unlike our measures of the wealth gap, the housing gap and homeownership gap are per household and not per capita. Home values in the Census data are only available in from 1930 onwards. From 1960 onwards, we use American Community Survey (ACS) data. Housing values in these data are top coded with time varying top coding levels.

[20]Note, we do not make age or gender restrictions on household heads as in Collins and Margo (2011).

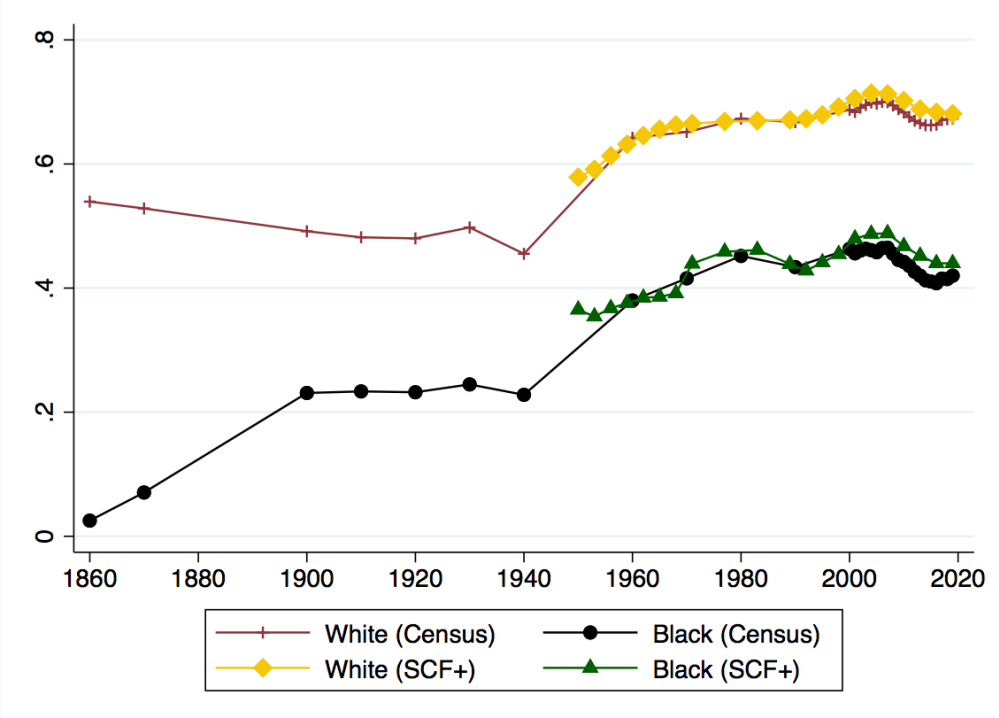
Table E1: Top-coding of home values in Census and ACS

Census	Top Code
1960	$35,000
1970	$50,000
1980	$200,000
1990	$400,000
2000	$1,000,000
ACS (2000-2007)	$1,000,000

We currently do not adjust the housing wealth series from ACS for top-coding but provide a comparison to data from the SCF+ that does not have top-coding of housing values. We also replace values coded as missing by zeros. We collapse data annually using Census-provided weights.

To construct housing values and homeownership rates in the SCF+ data, we take the value of housing assets and consider a household an homeowner if the household reports positive housing assets. We collapse data by SCF+ survey year using survey weights.

Figure E1: White and Black homeownership rates from 1860-2020



Data sources: Census (IPUMS version), ACS, and SCF+.

Figure E1 shows white and Black homeownership rates from Census and ACS that are linearly

interpolated for years when no data are available. The series also shows homeownership rates in the SCF+ after 1950. Results are highly consistent with Collins and Margo (2011). Homeownership rates for white households slightly decline rate between 1860 to 1940, a strong increase between 1940 and 1960, and a slightly increasing but rather constant trend after 1960. For Black households, there is a large increase in homeownership rates between 1870 and 1900. Between 1900 and 1940, Black homeownership rates remain flat at just over 20 percent. Homeownership rates for Black households increased strongly between 1940 and 1960 from around just over 20 percent to almost 40 percent. There is a slightly increasing trend between 1960 and 2007 but also a large drop in the aftermath of the financial crisis of 2008. Today, homeownership rates of Black and white households are again at the levels of 1970 and a large racial homeownership gap persists.

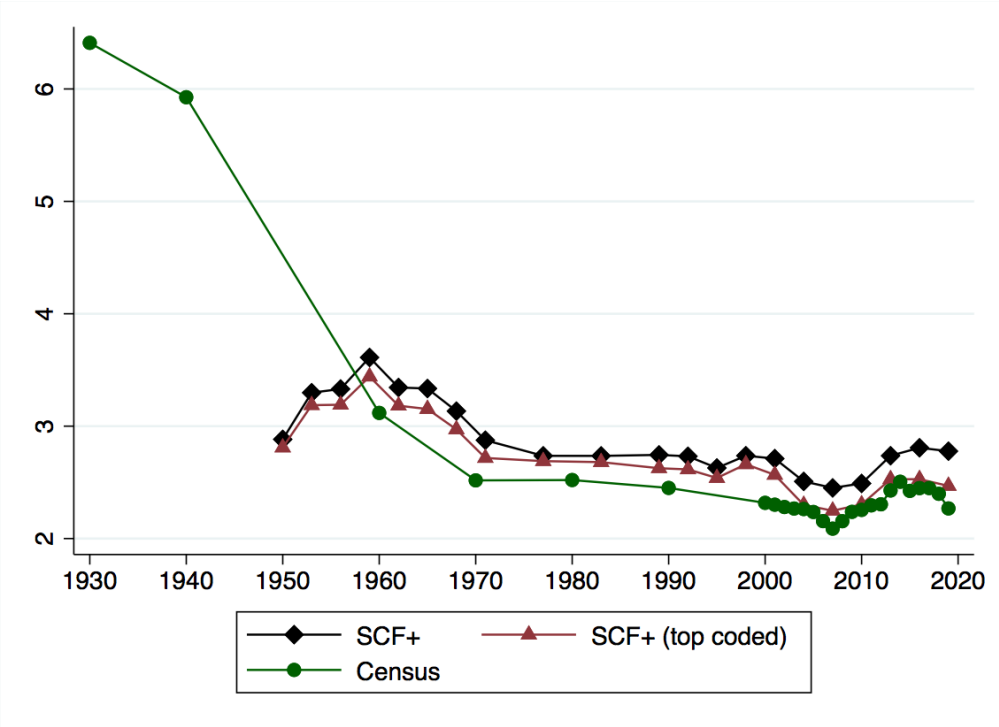
The post-1950 data allows a comparison between SCF+ and Census data. To improve estimates of the time series trends, we construct moving averages across three survey waves in the SCF+. Whereas the time series of homeownership rates for non-Black households can by accurately estimated using single survey waves, the moving average improves the estimated time series for Black households. Figure E1 shows the estimated time series relative to the estimates from Census data and show that the two estimates align closely, partly due to the fact that the SCF+ data has been stratified to the national homeownership rate.[21] The flatter slope of the increase in homeownership rates between 1950 and 1960 for both groups suggests a slightly more rapid increase during World War II.

In the next step, we compare the home values of Black and white households. We construct a housing value gap similar to our wealth gap series with the key difference that our housing gap is a per household gap, not a per capita gap. The gap that represents the ratio of the average home value of white households to Black households. We do not condition on homeownership so that the average home value also includes households with zero housing wealth. We also do not subtract debt to get home equity but consider the gross value of housing. In the SCF+ data, we again use three-wave moving averages as discussed above in the construction of homeownership rates. We offer two estimates based on SCF+ data. One estimate uses the reported housing value from the survey and the second one that we refer to as "top-coded" does not report values above the top-coding limit of the Census from the nearest Census wave (See Table E1 for Census top-coding values over time).

Figure E2 shows the resulting home value gap series. Home value gaps in Census align with those in the SCF+ data starting in 1960. In 1960, the ratio of average white households' housing assets to average Black households' housing assets was 3 and declined between 1960 and 1970 to around 2.5 where it still stands today. The gap moved downwards during the 1990s and 2000s, but increased substantially again after the financial crisis of 2008. The SCF data shows a higher home value gap after 1960 at around 2.7, but shows a similar trend to the gap estimated from Census data. When we impose top coding from the nearest Census survey on the SCF+ data, the housing gap is only modestly reduced. Before 1950, the Census data shows a much higher home value gap

[21] The SCF+ also match trends in and levels of homeownership rates by age.

Figure E2: White-to-Black per household home value ratio 1930-2020



Data sources: Census (IPUMS version), ACS, and SCF+.

of 6 in 1940 and 6.5 in 1930. This gap reduces strongly and is cut in half between 1940 and 1960. One reason for this is the stronger relative increase in homeownership rates for Black households in the decade of World War II. The homeownership rate increased over this time period by about 15 pp from 25% to 40% for the Black population and by 20 pp for the white population (from 45% to 65%). Expressed as a growth rate, the homeownership rate for the Black population grew by about 60% (from 25% to 40%) and by 44% for the white population (from 45% to 65%), so that there was a larger growth at the extensive margin in housing wealth for Black households over this time period.

Appendix F Alternative wealth gap estimate fo 1930

We construct an alternative estimate of the racial wealth gap in 1930 combining three different sources on Black wealth: county-level Census of Agriculture data with estimates of total farm value by owner status and racial group; microdata from the Census of Population with estimates of home values for all homeowners and information on their racial group; and data on Black banks from Clarke (Clarke). In addition to these, we draw on Saez and Zucman (2016) for total bank assets in 1930.

Below, we detail how we construct white and Black farm wealth, housing wealth, and financial

wealth.

Farm wealth gap Tabulations of the Census of Agriculture from 1900 to 1940 provide breakdowns of total farm land and building value by racial group (nonwhite and white) and owner status (owner, manager, or tenant). We calculate white farm wealth as the difference between total farm land and building value across all operated farms regardless of ownership status and total farm land and building value of nonwhite *owned* farms. We compute per-capital farm wealth gaps from these two measures using the number of nonwhite and white individuals:

$$\text{Per capita farm wealth gap} = \frac{\text{Farm wealth}^{W}/\text{White pop}}{\text{Farm wealth}^{NW}/\text{NW pop}}$$

where $\text{Farm wealth}^{W} = \text{Farm value}^{\text{All}}_{\text{operated}} - \text{Farm value}^{\text{NW}}_{\text{owned}}$ and $\text{Farm wealth}^{NW} = \text{Farm Value}^{\text{NW}}_{\text{owned}}$.

Housing wealth gap We use the Census of Population microdata from 1930 and 1940 to calculate housing wealth gaps. The 1930 Census is the first census in which enumerators elicited home values from homeowners enumerated in the Census. We construct per capita housing wealth values as follows:

$$\text{Per capita housing wealth gap} = \frac{\text{Housing wealth}^{W}/\text{White pop}}{\text{Housing wealth}^{B}/\text{Black pop}}$$

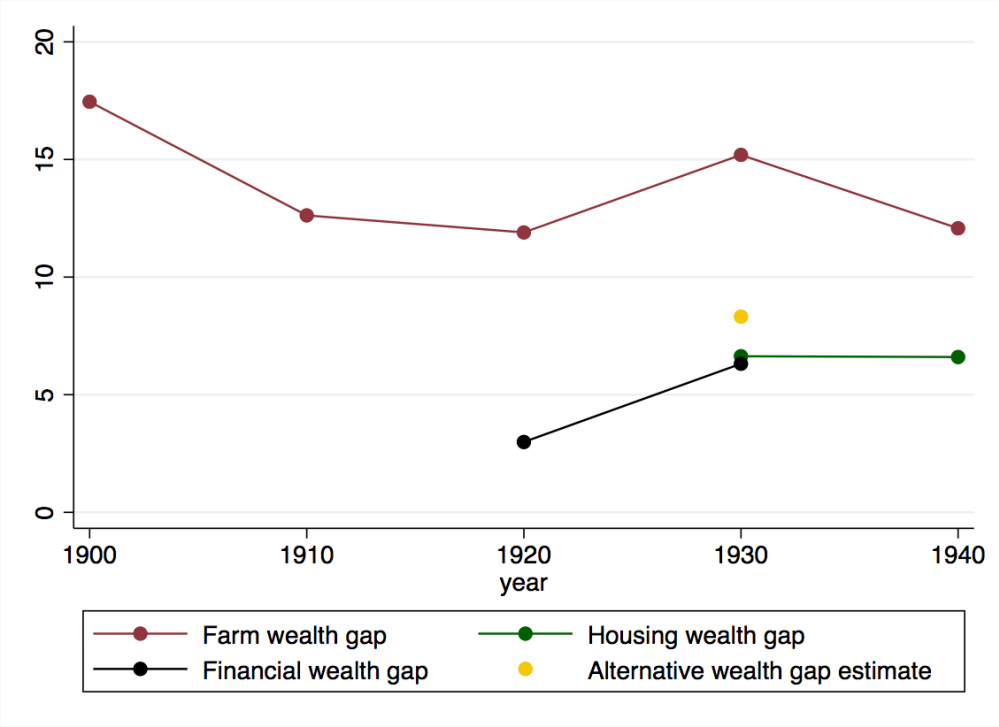
Financial wealth We use data on Black banks form Clarke (Clarke) as a proxy for total financial assets of Black Americans in 1930. In the balance sheets data for Black banks, not all financial asset categories are listed–for instance, pensions, royalties, etc. We therefore calculate two measures of total US financial wealth, one excluding forms of wealth not listed in the balance sheet data for Black banks and the other including all assets. The first financial gap measure can be interpreted as an equity plus fixed incom plus deposits ratio. The second measure makes the strong assumption that Black households did not have any financial wealth in the form of pensions. Below is our measure of financial wealth per capita for each racial group:

$$\text{Per capita financial wealth gap} = \frac{\text{Fin. wealth}^{W}/\text{White pop}}{\text{Fin. wealth}^{B}/\text{Black pop}}$$

where $\text{Fin. wealth}^{W} = \text{Resources}^{\text{US banks}} - \text{Resources}^{\text{Black banks}}$ and $\text{Fin. wealth}^{B} = \text{Resources}^{\text{Black banks}}$.

Figure F1 shows these different gaps as well as an alternative overall wealth gap that sums farm, housing, and financial wealth for each racial group and divides by their respective populations.

Figure F1: White-to-Black per household home value ratio 1930-2020



Data sources: Census of Population (IPUMS version); Census of Agriculture (ICPSR version); Clarke (Clarke); Saez and Zucman (2016).

Appendix G Calculating race-specific q, r, and s

The racial wealth gap since Emancipation exhibits higher values compared to our benchmark wealth accumulation model that assumes equal wealth accumulating conditions across Black and white. This implies that in reality, Black households have faced worse conditions, due to the history of discrimination. Indeed, if we assume lower q, r, and s, we match the evolution of the racial wealth gap very well, see Figure H1.

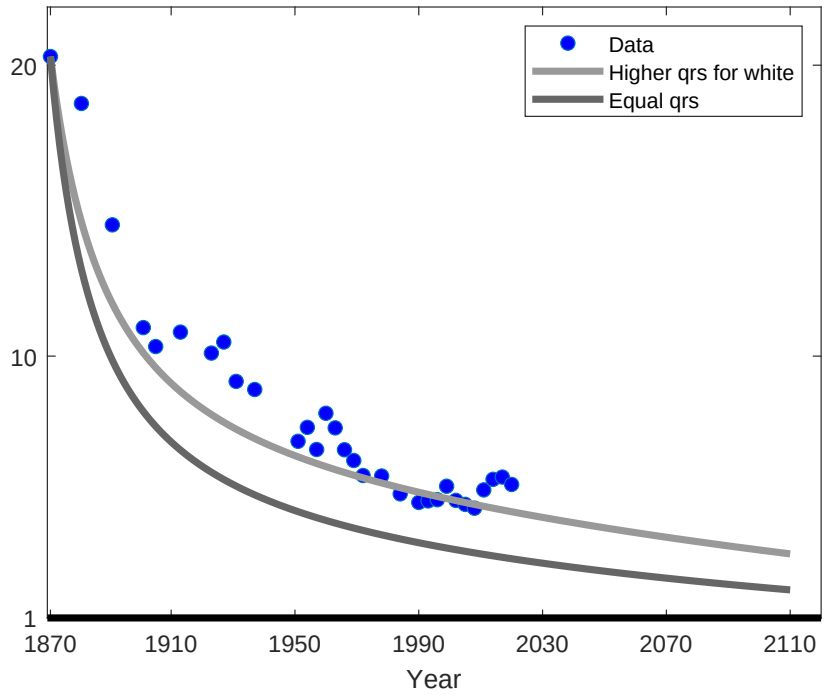


Figure H1: Simulation exercise with worse wealth accumulating conditions for Black

Even though we are not able to calculate race-specific q, r, and s for the whole period since Emancipation, from the post-1950 period, we have information on household-level socio-economic characteristics and wealth from the SCF+ and the PSID. In this appendix, we provide in detail how we construct the variables.

G.1 Returns on wealth: 1950-2019

We define the total return on an household's asset portfolio as a weighted sum of the return on different asset classes with regard to its share of total wealth:

$$R_w = \sum_c \omega_c R_c, \tag{4}$$

where R_c denotes the return on asset class c and ω_c its weight as a share of total wealth. In turn,

the total return R_w can be decomposed into (1) capital gains, which reflect asset price fluctuations, and (2) a yield component, which captures the net income generated by the asset. We estimate these two components separately for Black and white households and examine how the differences affect their wealth accumulation.

Capital gains Capital gains may also explain the slowdown in Black-white wealth convergence, as portfolio compositions differ substantially by racial group. We first calculate the average yearly rate on capital gains of different asset classes (equity, housing, and business) and calculate the average Black- and white capital gain rates according to their portfolio composition that we estimate from the SCF+. For real estate and equity, we use the values provided by the Macrohistory Database of Jordà et al. (2019).[22] To calculate capital gains of businesses, we use data from the US Financial Accounts.[23] We assume that liquid assets do not yield any capital gains. Afterwards, we calculate the average capital gains rate of Black and white household's total asset portfolio using equation (4). Table H1 presents the yearly average capital gains rate from 1950 to 2019.

Table H1: Real capital return on portfolio, yearly average over 1950-2019

	Average capital gain	White	Black
Equity	5.50%	0.94%	0.28%
Liquid assets	0%	0%	0%
Housing	0.8%	0.30%	0.50%
Business	3.37%	0.81%	0.51%
Total on portfolio	1.99%	2.01%	1.29%

Note: Race-specific capital gains are calculated using the average capital gain of a specific asset class multiplied by the average share of this asset of the total portfolio during 1950-2019 (see Table 2).

Between 1950 and 2019, stock equity has experienced the highest price increase with an average rate of 5.5%, followed by business equity (with 3.37%). Housing, on the other hand, had much lower capital gains with an average of 0.8%. In total, white households have earned on average 2.01% on their total portfolio due to capital appreciation, which is about 1.6 times higher than the capital gains of the average portfolio of Black households (1.29%).[24]

[22] We deflate the nominal capital gain rates provided in their dataset.

[23] For noncorporate equity, we use the series "Nonfinancial noncorporate business; proprietors' equity in noncorporate business (wealth)," and for corporate equity the series "Households and nonprofit organizations; corporate equities." Both series are deflated by the CPI deflator.

[24] These estimates, however, assume that Black and white households are exposed to the same asset price development. In reality, they may hold assets of different quality, due to race-specific discrimination in the asset market. For instance, in the real estate market, institutionalized racial discrimination in lending practices among financial institutions may have restricted Black households' access to real estate in high-rated neighborhoods (Jackson, 1980; Akbar et al., 2019). We address this issue in Appendix H and calculate different capital gains rates of Black- and white households using the PSID. Results show that the difference in capital gains is larger when allowing for different

Yields on wealth Another channel that can affect the wealth gap is differential returns by racial group within a given asset class. We address this channel by calculating yields on different asset classes by racial group using the method of Moskowitz and Vissing-Jørgensen (2002) and Kartashova (2014) using data of the SCF+. Specifically, we calculate average annualized yields over two waves t and $t+1$ using information on the value of an asset and the value of the associated income flow during the year preceding it. For example, the average annualized yield R over two consecutive waves t and $t+1$ is computed as the geometric average of returns R_1 and R_2:

$$R_1 = \left(1 + \frac{3CI_{t-1}}{P_t}\right)^{\frac{1}{3}} \tag{5}$$

$$R_2 = \left(1 + \frac{3CI_t}{P_t}\right)^{\frac{1}{3}} \tag{6}$$

$$R = (\sqrt{R1 \times R2} - 1) \times 100, \tag{7}$$

where CI represents the capital income and P the price of an asset.[25]

For the whole sample period 1950 to 2019, the SCF+ provides information on two aggregate sources of capital income. First, there is an aggregated variable that includes income from interest, dividends, and rent. Second, business income data is available. Only after 1983 does the SCF+ include information on capital income of different asset classes, including non-taxable investments such as municipal bonds, dividend income, other interest income, and income from rents, royalties, and trusts. We utilize both information and first estimate yields of the two broad capital income definitions for the whole sample period 1950-2019, and afterwards estimate yields on four different asset categories for the post-1989 period: (1) interest-bearing assets (includes all liquid assets, certificates of deposit, directly and indirectly held bonds, and the cash value of life insurance), (2) public equity (households' direct holdings of stock and other public equity that are indirectly owned through mutual funds), (3) business (unincorporated- and incorporated businesses), and (4) real estate. For the period 1989-2019, we closely follow the method of Xavier (2020) to calculate the yields on wealth. In the following, we provide information on which data is used to estimate income flows of different asset classes. Table H2 presents the averages of the estimated values.

1. Interest-bearing assets: This asset category includes all liquid assets, certificates of deposit, directly and indirectly held bonds, and the cash value of life insurance. Capital income on this asset is the total annual interest income that the households report.

2. Public equity: Public equity is defined as the sum of households' direct holdings of stocks and other indirectly held stocks through mutual funds. The income flow are the dividends generated by these assets.

capital gains rates within the same asset class.

[25] We also calculate yields on wealth utilizing the method of Bartscher et al. (2020). Results remain robust.

3. Private business equity: Wealth from private businesses are defined as the share of net equity in non-publicly traded businesses, which includes both unincorporated and incorporated businesses. We estimate the profits generated by private businesses by closely following the method of Moskowitz and Vissing-Jørgensen (2002) and Kartashova (2014). They adjust the reported income from businesses for corporate taxes, retained earnings, and the unreported labor income of entrepreneurs.

4. Real estate: Exact data on the total income generated by real estate is not provided by the SCF+. Rather, the households are asked to report their overall earnings on rent, royalties, and trust. We follow the method of Xavier (2020) and extract the capital income that is exclusively generated by rent. We assume that if (1) households do not own primary residence or any real estate or (2) they do not own any other real estate and has declared royalties, their reported income is associated with royalties or trust, but not rents. We deduct these values from the total income of this category.

   Figure H2 presents the yields calculated with the above-mentioned method for 1989-2019 and Figure H3 are the yields with the more rough estimates of capital income for the whole period 1950-2019. Remember that for pre-1989 period, the SCF+ only provides two broad categories of income flows of assets, namely (1) income from dividends, interest, and rent, and (2) business income. Therefore, for the first category we aggregate financial wealth and real estate wealth to calculate the yields.

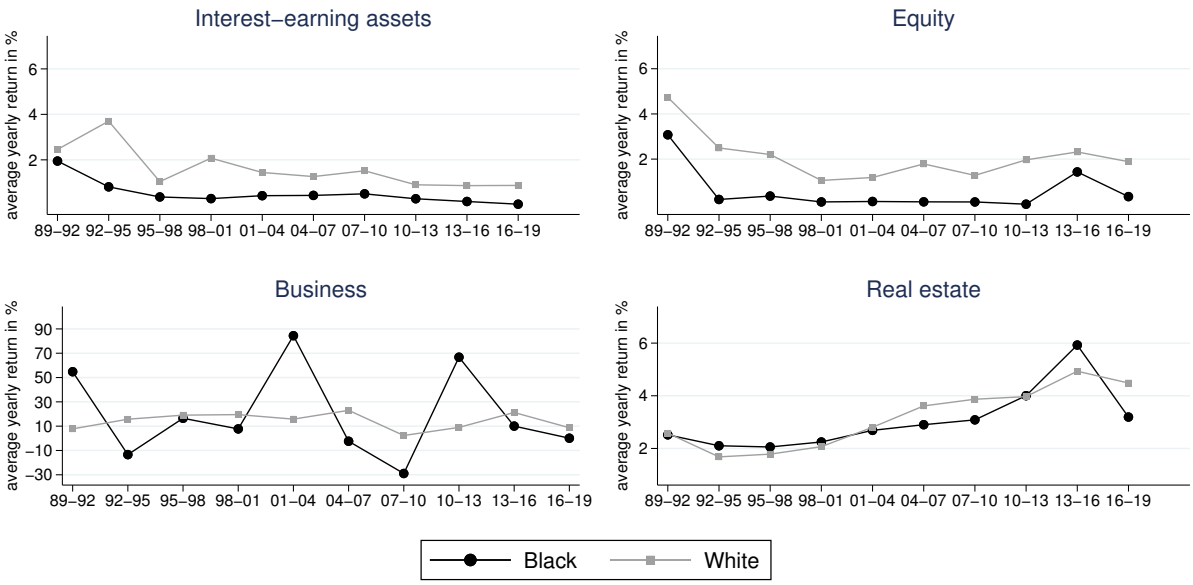


Figure H2: Yearly yield on different asset classes

For the whole sample period 1950-2019, Black households have slightly higher yields on their wealth (3.04% vs. 2.72%). However, estimates for Black households are volatile due to small

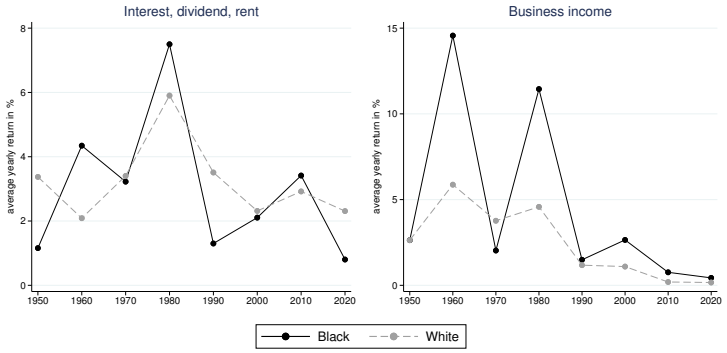


Figure H3: Yearly yield on different asset classes, 1950-2019

Table H2: Yearly average yield on wealth

Asset	White	Black
1950-2019		
Interest, dividend, rent	3.0%	3.13%
Business	3.21%	5.84%
Total yield	2.72%	3.04%
1989-2019		
Interest-earning assets	1.62%	0.53%
Public equity	2.1%	0.59%
Private businesses	12.12%	17.37%
Real estate	3.18%	3.07%
Total yield	4.64%	4.45%

Note: The total average yield is calculated as a weighted sum of the yield of the four asset categories (interest-earning assets, public equity, private businesses, and real estate) with respect to the average portfolio share in Table 2.

numbers of Black households in the SCF+, giving rise to potentially greater measurement error.[26] . If we turn to the estimated yields for the post-1989 period, Black households have lower yields than white households, except for in business wealth (which is also highly volatile for Black households, probably due to limited data). Interestingly, there is a large difference in yield on financial assets, for public equity in particular. On average, white households earn 2.1%, while Black households earn only 0.59%. Nevertheless, the yield on the total portfolio does not differ substantially across Black and white households, as real estate generates similar yields for these two groups, which comprises almost 60% of Black asset portfolios.

In summary, we explored the extent to which Black and white households have accumulated wealth at different rates from 1950 to 2019 due to differences in capital gains and yields. Our results suggest that this may be the case to some extent: on the one hand, white households enjoyed 1.5 times higher appreciation than Black households via capital gains on total portfolios. On the other hand, yield on capital does not differ substantially across Black and white households.

G.2 Differences in saving rates

Finally, we also address the hypothesis that different saving rates across Black and White households may explain the wealth gap. The literature shows that savings rates of households depend heavily on their socioeconomic characteristics such as age, income, and wealth (Juster et al., 1999; Dynan et al., 2004). It is also possible that experiences of historical betrayal by banking institutions may have reduced some Black households' trust in the financial system.[27] Baradaran (2017) describes the failure of the Freedman's Bank in 1874 after bank leaders mismanaged the funds and engaged in speculative lending. The incident purportedly led to the loss of about half of accumulated freed persons' savings after the Civil War.

We adopt the method of Dynan et al. (2004) and estimate the so-called *active* saving rates of households for the period 1984-2017, which reflect the amount of money that households actively supply for new investment.[28] For this we utilize data of the Panel Study of Income Dynamics (PSID). Active savings are defined as the following:

- Active savings =
  - + Active savings in main dwelling
  - + net amount invested in real estate (excluding main dwelling)
  - + change in the net value of vehicles
  - + net amount invested in business

[26] The time series of the yields are provided in Figure H3 in Appendix **??**.

[27] For example, Alsan and Wanamaker (2018) find that the Tuskegee experiment reduced Black men's trust in the medical system leading to higher mortality and reduced longevity among that population relative to other demographic groups.

[28] Total saving rates, which is the change in net wealth in proportion to income, include capital gains and therefore not suitable in visualizing the pure amount of money households additionally invest in wealth.

+ net amount put into IRA

+ net investment into stocks

+ change in the value of cash assets

+ change in the net value of other assets

- change in the value of other debt

Active savings in main dwelling is not straightforward and thus be estimated separately for households that live in the house and those who moved out. If the family did not move, the active savings are the reduction in mortgage principal. If the household moved out, then the change in the net value of the house is considered as active savings. Also, we consider the value of additions and improvements to the house as active savings as well. For real estate, vehicles, business, IRA, and stocks, the PSID provides information on how much money the households actively put in (or cash out) since the previous wave. We use this information to calculate the active savings for these asset categories. Finally, the PSID assumes that the change in cash assets and other (financial) assets is purely driven by active savings. Nevertheless, the category "other assets" may include interest-generating assets, such as this assumption may overestimate the pure amount households have actively saved. Therefore, we assume a 1% annual real rate of return for this asset category and deduct this amount from its change in value.

The active saving rate is then calculated by taking the ratio of active savings and the sum of total family income during the two consecutive waves. Figure H4 presents the results for 1989-2017. Note that the starting from 1990s, the PSID does not provide information on the amount of income taxes. Therefore, we cannot calculate the saving rates of households with respect to their *disposable income*. Nevertheless, our estimates in Figure H4 is quite in line with the NIPA measures of saving rates, with a slight level shift (our estimates being lower than the NIPA). Nevertheless, this is an important channel that we must address in the near future.

In addition, we calculate the saving rates of Black- and White households for three different income groups: the bottom 50%, 50%-90%, and the top 10% of the whole income distribution. Table H3 presents the results.

	White	Black
Bottom 50%	6.08%	4.11%
50%-90%	7.97%	6.15 %
Top 10%	10.02%	8.75%
Total	7.23%	5.39%

Table H3: Active saving rates across different income groups

Overall, Black households on average have lower active saving rates than White households. The

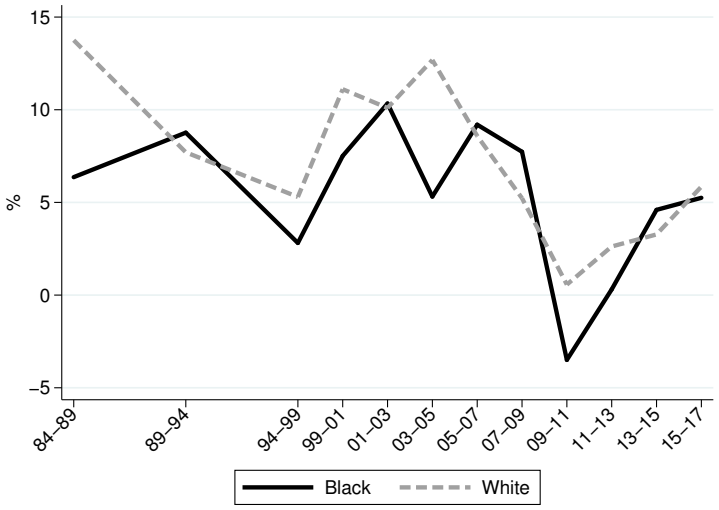


Figure H4: Average annualized saving rates: 1984-2017

difference is the highest among the bottom 50% of the income distribution, where White households have 47% percent higher saving rates, with a decreasing trend as we move to the upper groups (30% for 50%-90% and 15% for the top 10%). During the whole time period, White households have 34% higher saving rates than Blacks.

It is worth noting that here we are looking at the unconditional saving rates as we are interested in examining differences in wealth accumulation conditions that are driving the slow wealth convergence. Nevertheless, it is interesting to analyze whether saving rates of Black- and White households would significantly differ once we condition the saving rates for other socioeconomic characteristics such as wealth, education, or age. A simple regression analysis shows that once we control for these characteristics, the race of the household head does not have a significant effect on saving rates. This first-order result provides more evidence for the hypothesis that differences in saving rates can be explained by socioeconomic differences, rather than for instance, different preferences or trust levels towards the banking system compared to White households.

Appendix H Heterogeneous capital gains: the PSID

We calculate capital gains across the two racial groups by utilizing the data of the Panel Study of Income Dynamics (PSID). The PSID is a nationally representative longitudinal study of US families over time since 1968. Starting from 1984, the PSID introduces a detailed wealth module, where households are asked to report their holdings in different asset classes. One advantage of the PSID over the SCF+ is its panel dimension, which is useful for estimating the change in households' investment decisions over time that allows us to estimate capital gains for each asset class separately. In every wave, respondents are asked to report the present value of their asset, i.e. how much money they would receive if they sold it today. In addition to the current value of an asset, households are

also asked to report whether they have further invested (or withdrawn) money in the asset since the last survey wave. In order to obtain a clean measure of the pure capital gain of an asset, we need to subtract this actively invested amount. The average yearly return on capital of an asset i during two waves t and $t-p$ is calculated as follows:

$$cg_{i,t,t-p} = \left(\frac{W_{i,t} - AS_{i,t}}{W_{i,t-1}} \right)^{\frac{1}{p}} - 1 \tag{8}$$

where $W_{i,t}$ is the current value of an asset i at time t, AS_t the actively invested (or de-invested) amount, and $cg_{i,t,t-p}$ is the rate of capital gain or loss. Again, we calculate capital gains of three asset categories: equity, housing, and business. As data is available starting from 1985, we are able to calculate capital gain rates during 1989-2017.[29] Table I1 presents the results.

Table I1: Yearly capital gains on wealth

Asset	Average		White	Black
	PSID	Other		
Equity*	4.03%	6.73%	5.78%	0.98%
Liquid assets	0%	0%	0%	0%
Housing	2.70%	1.03%	2.37%	2.16%
Business	5.56%	4.89%	6.17%	2.78%
Total on portfolio	3.01%	2.64%	3.36%	1.72%

Note: The total capital gain on portfolio is calculated as a weighted sum of the capital gain rates of the asset categories with respect to their average portfolio share. The second column provides estimates of capital gains using external sources such as the Macro History Database of Jordà et al. (2019) and the Financial Accounts.

* Prior 2001, the PSID does not provide information on pure stock holdings, as they combine the information on stock holdings in form of IRAs.

Indeed, the rate on capital gains/losses differ substantially across Black and White households. In particular, capital gains differ greatly for business- and stock equity wealth, where on average White households experienced capital gains of 5.78% on stocks and 6.17% on businesses, while only

[29] Before 2001, the PSID does not separate between private stock investment and investment in IRAs. Therefore, capital gains on stock equity is calculated for the 2001-2017 period. Note that our capital gain measures are exposed to measurement error, as the answers to the amount actively invested in assets are very noisy. Especially for Black households, there are much less data points compared to White households, which also affects the quality and accuracy of our capital gain rate measure. Therefore, we adjust for outliers for each asset type in a different way because, for instance, business wealth is very scarce among Black households and thus must be adjusted in another way than the value of main dwelling. Nevertheless, our measures provide insights to which degree capital gains on different types of assets may differ across Black and White households.

0.98% and 2.78% for Black households, respectively. For housing, capital gains do not substantially differ, with White households having on average 0.1 times higher capital gains on their main dwelling and other real estate. For private businesses, White households experienced approx. 2% higher gains. As a result, capital gain on the whole asset portfolio for White households is 1.95 times higher than for Black households. This is slightly larger than the ratio we obtain by assuming equal capital gain rates (1.6).

Finally, if we assume heterogeneous capital gains, total accumulated capital gains for Black and white households would diverge even more:

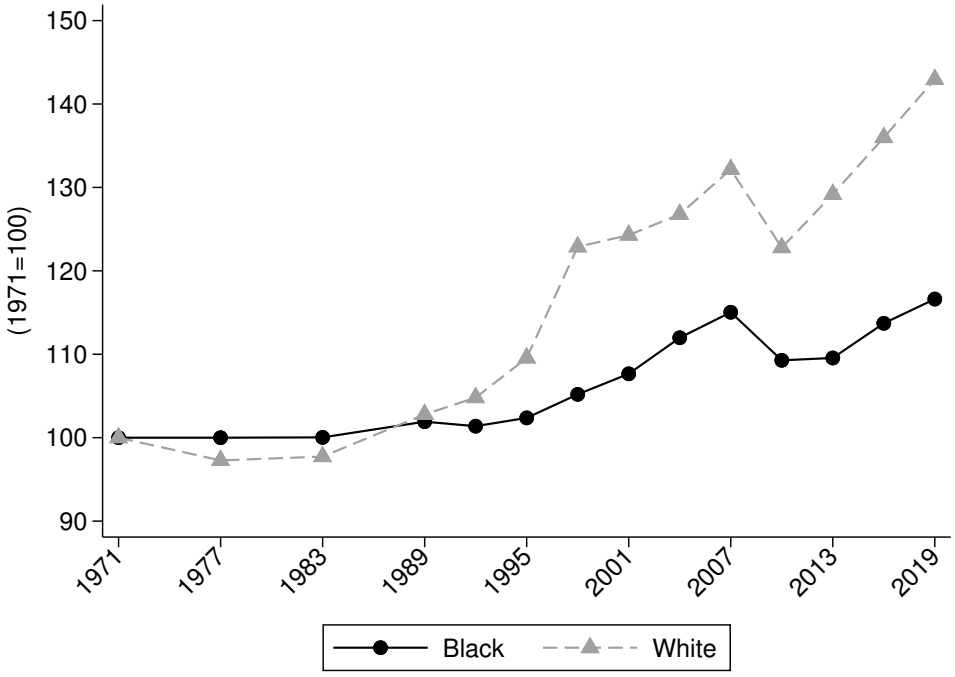


Figure I1: Growth rate of accumulated capital gains assuming heterogeneous capital gains within asset classes

Appendix I Portfolio composition across the income- and wealth distribution

Table I2: Asset shares along the wealth and income distribution

	White			Black		
	b50	mid	t10	b50	mid	t10
Wealth groups						
Equity (dir + indir)	3%	11%	26%	3%	7%	15%
Business	1%	6%	33%	1%	7%	38%
Housing	66%	60%	25%	69%	65%	34%
Income groups						
Equity (dir + indir)	12%	16%	26%	5%	8%	15%
Business	14%	15%	32%	9%	11%	23%
Housing	52%	48%	27%	65%	58%	47%