The Dynamics of the Racial Wealth Gap

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Abstract: We study the dynamics of the racial wealth gap (the wealth of Black households relative to white ones) using a dynamic equilibrium model of overlapping generations. We match the model to the cross-sectional distributions of wealth and earnings by race. We find that equalizing earnings is critical for permanent reductions in racial wealth inequality, and that one-time transfers will have only transitory effects unless earnings are also equalized. Our results are robust to the introduction of racial differences in returns to saving, which only matter after earnings inequality is reduced.

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1 Introduction

In the United States, the average wealth of Black-headed households is approximately 20 percent that of white-headed ones. This 80 percent wealth gap is just as large today as it was in 1962, before Civil Rights era legislation was enacted to remove barriers to economic advancement.[1] The racial earnings gap is also quite large but only half the size of the wealth gap (roughly 40 percent). The size and persistence of the racial wealth gap have attracted significant attention from researchers and policymakers alike. Nevertheless, while a number of racial disparities likely play a part in sustaining the racial wealth gap, the relative importance of these factors is still not well understood. Why is the racial wealth gap so much larger than the racial earnings gap, and which factors are most important for closing it? Answers to these questions are critical for designing effective approaches to closing it.

We answer these questions using a dynamic stochastic general equilibrium model of heterogeneous-agents in the spirit of Bewley (1986), Imrohoroğlu (1989), Huggett (1993), and Aiyagari (1994). We study transition paths from today's economy to future steady states with different levels and sources of racial inequality. Households in the model (i) have a life cycle as in De Nardi (2004) in which they work, retire, and face increasing mortality risk; (ii) receive idiosyncratic earnings shocks over their lifetimes; (iii) may give or receive intergenerational transfers; and (iv) are heterogeneous in terms of wealth, earnings, expected bequests, and returns on capital. We allow all of these factors to differ by race. Our paper and its findings contribute to the new and growing literature studying the racial wealth gap with dynamic models of household saving, traditionally used in macroeconomics to study inequality; examples include Ashman and Neumuller (2020); Albuquerque and Ifergane (2025); Boerma and Karabarbounis (2023); Tan and Zeida (2024); Nakajima (2022); Brandsaas (2024); Kondo et al. (2025); Gordon et al. (2023); and Imrohoroglu et al. (2025).

Our quantitative exercises show that eliminating the earnings gap is the most important single factor for achieving sustained convergence in Black and white wealth. We calibrate the model using moments from the 1962 Survey of the Financial Characteristics of Consumers (SFCC), the 1983-2019 waves of the Survey of Consumer Finances (SCF), the National Longitudinal Survey of Youth 1979 (NLSY79), and other data sets. In particular, we match wealth and earnings concentration so that mean and median wealth are very different. We then examine transition paths to new steady states after some combination of the following changes: (i) the earnings gap is closed; (ii) there is a one-time wealth transfer equalizing Black and white wealth distributions; or (iii) a large gap in returns to savings is introduced.

Our model implies that the racial earnings gap is the dominant factor for determining the size of the racial wealth in the long run.[2] This result stands in contrast to those from statistical models that predict relative wealth as a function of contemporaneous variables. Such estimates find that

[1]For longer historical perspectives on the racial wealth gap, see Darity and Mullen (2020), Baradaran (2017), Derenoncourt et al. (2024), or Althoff and Reichardt (2024).

[2]In the short run, the initial wealth distribution is obviously an important factor as well.

a large racial gap in expected wealth remains after conditioning on earnings (Barsky et al. (2002)) and additional variables (Blau and Graham (1990), Altonji and Doraszelski (2005), Thompson and Suarez (2015)). This empirical result has given rise to a conventional wisdom that a 40 percent earnings gap is too small to generate an 80 percent wealth gap (Menchik and Jianakoplos (1997), Barsky et al. (2002)). However, contemporary variables other than earnings also have a difficult time explaining the racial wealth gap. Across all variables and mechanisms, when multivariate regression coefficients estimated from a sample of Black households are used to predict white household wealth via a Oaxaca-Blinder decomposition, most estimates in the literature explain less than one-third of the wealth gap (Scholz and Levine (2003)).[3]

In a broad class of structural models, the earnings gap will equal the wealth gap, at least in the long run; in the short run, the wealth gap is fixed and therefore need not have any connection to current earnings. Consider the permanent income hypothesis in the classic life-cycle savings models with complete markets in which every household consumes the same fraction of their lifetime wealth. In this environment, if initial asset holdings are equal, the wealth gap and the earnings gap are always equal, and if not, then they equalize in the long run. This result carries over quantitatively to incomplete markets models with homothetic preferences such as Aiyagari (1994). We break this equivalence by introducing non-homothetic preferences over bequests as in De Nardi (2004). With wealth as a luxury good, small differences in earnings are amplified by heterogeneous savings rates and lead to a large long run wealth gap, allowing the model to account for 88 percent of the racial wealth gap. Since all homothetic specifications produce wealth gaps approximately equal to the earnings gap (Section 2), non-homothetic preferences account for essentially all of the model's amplification from a 40 percent earnings gap to a 74 percent wealth gap—roughly four-fifths of the observed 43 percentage point excess of the wealth gap over the earnings gap.

Our first set of experiments study the connection between the pace of closure of the earnings gap and the convergence of the wealth gap. Suppose the earnings gap is immediately and permanently closed. Most moments of the wealth distributions take "only" decades to converge: within the first 50 years, the gap between the median Black wealthholder and the median white wealthholder falls below 15 percent, while even at the 95$^{\text{th}}$ percentile, the gap is under 25 percent. However, the pace of convergence is dramatically different if we focus on the top 1 percent, where the half-life of the gap is 172 years. Because wealth is highly concentrated, the behavior of the tail drives that of the mean, which therefore also converges slowly.[4]

In our next set of experiments, we study a one-time redistribution that equalizes the initial distribution of wealth by race. While large-scale reparations like those proposed by Darity and Mullen (2020) mechanically reduce the wealth gap in the short run, their efficacy in the long run is an open question. If redistribution of wealth is not accompanied by a change in the earnings gap,

[3] To take one prominent example, intergenerational transfers explain only 10 to 20 percent of the racial wealth gap. See Menchik and Jianakoplos (1997), Gittleman and Wolff (2004), McKernan et al. (2014), or Sabelhaus and Thompson (2023).

[4] Entrepreneurs are overrepresented in the top 1 percent (Cagetti and De Nardi (2008)). Both Boerma and Karabarbounis (2023) and Albuquerque and Ifergane (2025) show how frictions to entrepreneurial activity disproportionately affect Black households which accounts for the earnings gap at the very top which we take as given.

after 30 years the wealth gap is back to 50 percent of its original value and is completely restored after roughly a century. If instead redistribution is followed by a slow closing of the earnings gap, the transition to a steady state with perfect racial equality will be preceded by a period of widening wealth gaps.[5] During this period, Black households respond to the rising path of their future income by immediately increasing their consumption.[6]

Our benchmark exercise supposes that racial differences in returns to saving are small and tied to the earnings gap; specifically, white households receive a dividend equal to the profits the firm earns by not paying Black households their marginal product of labor. In our last set of experiments, we explore the consequences of introducing large and exogenous return differentials. If the earnings gap is left at its initial level, the long run wealth gap is almost unchanged even when white households receive twice as much return on their savings. If instead the earnings gap is eliminated but the return gap remains, our model predicts a sizable long-run wealth gap at the mean that is driven by gaps at the 99th percentile of wealth and above.

We interpret our findings as evidence of the importance of including dynamics in studies of the racial wealth gap. The remainder of the paper is organized as follows: Section 2 discusses the long run relationship between the earnings and wealth gaps in more detail; Section 3 describes our quantitative model; Section 4 maps our model to the data; Section 5 presents the results from our three exercises; and Section 6 concludes.

2 Racial Earnings and Wealth Gaps: The Long Run Relationship

There has been a long-standing presumption in the literature that gaps across racial groups in earnings and in wealth should be roughly equal. We begin by clarifying the logic underlying this presumption. In the classic partial equilibrium consumption-savings problem, every agent optimally consumes the same share of lifetime wealth. Suppose there are two households, A and B, with A having twice the permanent income of B. If both start with zero assets, then in the long run A will have twice the wealth of B.

As we show below, one resolution of this puzzle is non-homothetic savings behavior—the same mechanism that is widely used to explain why wealth is more concentrated than earnings (Straub (2019), De Nardi (2004)). The racial context provides a particularly clean setting in which to study this amplification because the racial earnings gap is directly measurable and has been stable over time.

To take an explicit example, suppose that the earnings of white and Black households are 1 and $\zeta < 1$, respectively, and that households can save using an instrument k with exogenous gross return R.[7] Let households have logarithmic preferences over consumption and a constant mortality rate

[5] In Section 5.2, we discuss the evidence for and against a causal link from wealth to earnings. This experiment is meant to capture aspects of that link without having to explicitly model the feedback mechanism.

[6] This retrenchment period would not appear in Derenoncourt et al. (2024) where savings rates are exogenous.

[7] In this section R denotes the gross return on savings. In the full quantitative model (Section 3), we follow the macro convention of writing the budget constraint in terms of the net return r, so that the gross return is $1 + r$.

$1-\psi_a<1$, and assume that there are no explicit motives for bequests. For simplicity, normalize the population size of each group to 1. The population measures for each age are

$$\begin{aligned}\mu_{i,1} &= 1-\psi_a \\ \mu_{i,t} &= \left(1-(1-\psi_a)\right)^{t-1}(1-\psi_a).\end{aligned}$$

Due to logarithmic utility, it is optimal for households to consume a constant fraction of their resources,

$$\begin{aligned}c_{w,t} &= \left(1-\beta\left(1-(1-\psi_a)\right)\right)R\left(k_{w,t}+\frac{1}{R-1}\right) \\ c_{b,t} &= \left(1-\beta\left(1-(1-\psi_a)\right)\right)R\left(k_{b,t}+\frac{\zeta}{R-1}\right),\end{aligned}$$

where the second term in parentheses is human wealth (the present value of labor income).

Now suppose there is an initial period in which only newborns exist. Then

$$\frac{k_{b,1}}{k_{w,1}}=\zeta.$$

Thus,

$$\begin{aligned}\frac{k_{b,2}}{k_{w,2}} &= \frac{Rk_{b,1}+\zeta-c_{b,1}}{Rk_{w,1}+1-c_{w,1}} \\ &= \frac{(R+1)\,\zeta-\left(1-\beta\left(1-(1-\psi_a)\right)\right)\left(R\zeta+\frac{\zeta R}{R-1}\right)}{R+1-\left(1-\beta\left(1-(1-\psi_a)\right)\right)\left(R+\frac{R}{R-1}\right)} \\ &= \zeta.\end{aligned}$$

That is, the wealth gap equals the wage gap perpetually. The reason is easy to see – households have a common marginal propensity to consume out of wealth. This result underlies a number of aggregation results (see for example Chatterjee (1994)), as it implies that relative wealth is constant over time. Since the result does not depend on ψ_a —except through its effect on the savings rate— it also applies to dynastic households with $\psi_a=0$. The equivalence also holds for any isoelastic utility function

$$u(c)=\frac{c^{1-\gamma_c}-1}{1-\gamma_c}$$

with $\gamma_c\geq 0$, which subsumes our logarithmic example with $\gamma_c=1$. It would also hold if we allowed households to annuitize their assets, paying a price $p=1-(1-\psi_a)$ to purchase the assets and surrendering them in the event of death, or if we introduced an explicit life cycle through age-dependent mortality or labor income.

The fact that the wealth gap is substantially larger than the earnings gap in the data has led researchers to search for explanations in other racial differences such as heterogeneous returns, beliefs about the likelihood of entrepreneurial success, and intergenerational transfers. Our calibrated model, however, produces the relationship between steady-state earnings and wealth gaps shown below in Figure 1. The wealth gap exceeds the earnings gap throughout, and the divergence is especially pronounced near the empirical earnings gap of 0.40.

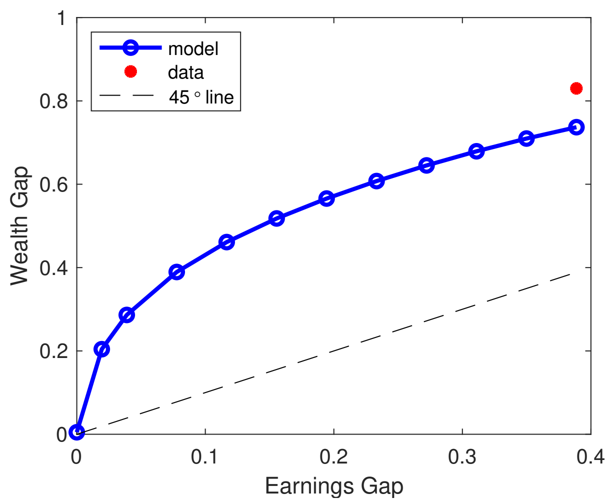


Figure 1: Long Run Racial Wealth and Earnings Gaps in Our Model

Note: This figure shows the long run racial wealth gap resulting in our calibrated model from a permanent gap in earnings. The dashed line demarcates the 45 degree line (i.e., equal gaps). The red asterisk represents the 2019 value.

We summarize the results of this subsection with a proposition.

Proposition 1. *Suppose that household preferences are homogeneous and homothetic, returns and mortality rates are equal across races, and initial resources for Black and white households are in the same proportion as relative earnings (ζ). Then the racial wealth gap is equal to the racial earnings gap in every time period.*

Isoelastic utility is the standard choice in macroeconomics because it is consistent with balanced growth and a lack of trend in interest rates. The equivalence of the earnings and wealth gaps is therefore the natural benchmark in the literature.

2.1 Non-Homothetic Preferences and the Wealth Gap

To break the equivalence between the earnings gap and the wealth gap, we need to alter the savings rate of households so that Black households save less than white households. We show now that introducing non-homothetic preferences over bequests can generate this wedge.

Consider households (both Black and white) with identical preferences over consumption and warm-glow from bequests, with functional form:

$$u\left(c, k'\right) = \frac{c^{1-\gamma_c}}{1-\gamma_c} + z\left(k'\right) \qquad \text{where} \qquad z\left(x\right) = \theta_1^b \frac{x^{1-\gamma_k}}{1-\gamma_k}.$$

The parameter θ_1^b controls the overall strength of preference for the size of bequests. We assume that $\gamma_k < \gamma_c$ so that there is a "luxurious savings" motive for estate accumulation (Straub (2019), Benhabib et al. (2015), Kaymak et al. (2020), Gaillard et al. (2023)). As discussed in Straub (2019), under this assumption the marginal utility of consumption falls faster than the marginal utility of bequests as wealth increases, concentrating the savings motive in the upper tail of the wealth distribution. Empirically, Llanes et al. (2025) and Dynan et al. (2004) document a strong positive relationship between saving rates and lifetime earnings, while Fisher et al. (2020) find a lower marginal propensity to consume among high-income and high-wealth households. Further support comes from Hubmer et al. (2025), who use Norwegian administrative panel data to decompose the sources of wealth accumulation over the lifecycle. They find that higher saving rates are the single largest factor explaining why the wealthiest households (top 0.1%) accumulate so much more wealth than mid-wealth households, accounting for 38% of the gap at age 50—more than inheritances (34%), returns (23%), or labor income (5%).

To illustrate the importance of this non-homotheticity, consider a standard perpetual youth version of Aiyagari (1994), in which household wages ϵ fluctuate randomly and there is a borrowing constraint (which we set to zero). Specifically, given a rental rate r and aggregate wage w, households solve the dynamic program

$$\begin{aligned} v_w(k,\epsilon) &= \max_{c\geq 0, k'\geq 0} \left\{\log(c) + \beta(1-(1-\psi_a)) E\left[v_w\left(k',\epsilon'\right)\right]\right\} \\ & s.t.\ \ c + k' \leq (1+r-\delta)k + w\epsilon \\ \\ v_b(k,\epsilon) &= \max_{c\geq 0, k'\geq 0} \left\{\log(c) + \beta(1-(1-\psi_a)) E\left[v_b\left(k',\epsilon'\right)\right]\right\} \\ & s.t.\ \ c + k' \leq (1+r-\delta)k + w\zeta\epsilon. \end{aligned}$$

Bequests are segmented by race and given only to newborns; a household with wealth k that dies is replaced by a newborn of the same race with wealth k and a draw of ϵ from the invariant distribution.[8] This economy is not amenable to analytical results, so we choose a plausible calibration and show how the exogenous wage gap is related to the endogenous wealth gap.[9]

[8]Computational note: newborns and households with zero wealth are not identical, which requires us to introduce a third state variable that indicates whether a household is newly born or not. Household behavior is independent of this state variable, but the distribution of wealth does depend on it.

[9]We set $\beta = 0.99$, $\delta = 0.025$, and $(1-\psi_a) = 0.01$. Aggregate output is produced using a Cobb-Douglas technology in capital and efficiency units of labor with capital's share of income being $\alpha = 0.36$, and ϵ evolves as an AR(1) in logs with autocorrelation $\rho = 0.95$ and innovation standard deviation $\sigma_\epsilon = 0.1$.

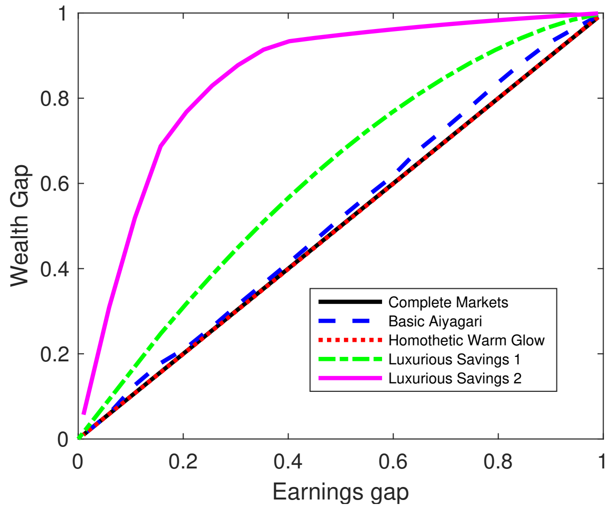


Figure 2: Long Run Racial Wealth and Earnings Gaps in a Simple Framework

Note: This figure shows the long run racial wealth gap resulting from a permanent gap in earnings. There are four specifications. 'Complete Markets' comes from the textbook consumption/savings model without income risk. 'Basic Aiyagari' introduces income risk and no borrowing. 'Homothetic Warm Glow' features adds a homothetic warm glow bequest function. 'Luxurious Savings 1' and 'Luxurious Savings 2' feature non-homothetic bequest functions. In the first non-homothetic case, $\sigma = 0.5$ and $\gamma = 0$. In the second, $\sigma = 0.1$ and $\gamma = 1$.

Figure 2 shows how the wealth gap (one minus the ratio of average Black wealth to average white wealth) varies as we move ζ from nearly 0 to nearly 1. While the introduction of precautionary savings and borrowing constraints does lead to some variation in savings rates between Black and white households, due to Black households generally being closer to their borrowing constraint, the difference is quantitatively unimportant; the wealth gap is nearly equal to the wage gap. We also consider a case with a superstar state (35 times the median productivity). Households enter this state from any other state with 5% probability and exit with a probability of 25%, drawing their new state from the invariant distribution upon exit. The effects are minimal, and the wealth gap lies only slightly below the 45 degree line.

Now suppose that we introduce a warm-glow bequest utility term $z(k')$. That is, a household seeks to maximize

$$v_a(k) = \max_{c \geq 0, k' \geq 0} \left\{ \log(c) + \beta(1 - (1 - \psi_a)) v_{a+1}(k') + \theta z(k') \right\},$$

with $\theta \geq 0$ being the relative strength of the bequest motive. First, consider the case where $z(\cdot)$ is logarithmic, so that preferences remain homothetic. Again, the wealth gap nearly equals the earnings gap. The intuition is simple – while $z(k')$ provides an additional force for saving, if it is homothetic, that force is evenly distributed across the population and therefore has no effect on relative behavior.

Next, suppose that

$$z(k') = \frac{(k' + \sigma)^{1-\gamma_k}}{1 - \gamma_k}$$

where $\sigma \geq 0$ and $0 < \gamma_k < 1$. The strength of the bequest motive increases with wealth under these parameter values (that is, warm glow is a luxury good in the utility function). Figure 2 shows that, if γ_k is small enough or σ is large enough, the wealth gap can be substantially larger than the wage gap. Since Black households are poorer, their preference for accumulating wealth is weaker and, consequently, they save less. In the stationary distribution, Black households therefore have less wealth than they would with homothetic preferences.

The contrast between the homothetic and non-homothetic specifications in Figure 2 isolates the role of this mechanism for the amplification from the earnings gap to the wealth gap. At the empirical earnings gap of 40 percent, all three homothetic specifications—complete markets, the basic Aiyagari model, and the model with a homothetic warm glow—produce wealth gaps that are approximately equal to the earnings gap. Non-homothetic preferences are therefore responsible for essentially all of the amplification from the earnings gap to the wealth gap. In our fully calibrated model (Figure 1), the 40 percent earnings gap generates a 74 percent wealth gap, accounting for roughly four-fifths of the 43 percentage point difference between the observed wealth gap and the earnings gap.

2.2 The Role of Incomplete Markets

The preceding analysis demonstrates that incomplete markets alone – even with the addition of a superstar earnings state that generates substantial precautionary savings – does not meaningfully separate the earnings gap from the wealth gap; in fact, it can even go the wrong direction as Black households, who have lower earnings, will tend to save more as they are nearer the borrowing constraint. Non-homothetic preferences over bequests are essential for generating a wealth gap that substantially exceeds the earnings gap.

Nevertheless, we retain incomplete markets in our quantitative model. The combination of idiosyncratic earnings risk and borrowing constraints generates a realistic distribution of wealth across the population. In particular, the precautionary savings motive and heterogeneous earnings histories produce the observed dispersion in wealth holdings within racial groups. While uninsurable idiosyncratic labor income risk does not drive the *gap* between racial groups, it is essential for matching the empirical wealth *distribution*.

3 Model

The economy is populated by overlapping generations of households each having a life cycle. A household's state variables are its wealth, k, its labor productivity, ε, its age, a, its schooling level, s, and its race, $j \in \{W, B\}$. While (k, ε, a) can change every period, schooling s and race j are permanent states.

Demographics and the life cycle A model period is 5 years. In any period, there is a unit continuum of living households divided between Black and white in time-invariant fractions χ and

$1-\chi$, respectively. Households begin life as 20-year-olds ($a=1$) and face increasing mortality risk as they age. At age $a_b=7$ (50-year-olds) households receive a bequest $b\geq 0$, and they retire at age $a_r=10$ (65-year-olds). Any household that survives to $\bar{a}=16$ (100-year-olds) dies with certainty at the end of the period. When a household dies, it is replaced by a newborn of the same race. The newborn household's level of schooling, s, takes one of three values: less than high school, high school, or college, and is drawn from a distribution f_s. We assume that the newborn's education state is positively correlated with the education of its parent. After the newborn's schooling level has been determined, its initial labor productivity is drawn from a schooling-dependent distribution $f_{\varepsilon}(s)$. In our baseline, both f_s and $f_{\varepsilon}(s)$ do not depend on the race of the household. The estate of the deceased household is reallocated to living households. The details of this process and their interpretation in terms of bequests and inter-vivos transfers are described later in this section.

Effective labor supply and the earnings process During its working life, a household supplies $\bar{h}$ hours inelastically to the market each period. While all households supply the same number of hours, the efficiency content of their hours differ. Labor productivity depends on two components, both of which depend on schooling: a deterministic age-earnings profile and a transitory shock. Within a schooling group, the transitory shock follows a Markov chain with transition matrix $\pi(\varepsilon,\varepsilon',s,j)$ and invariant distribution $f(\varepsilon,s,j)$. One of the ε states is a very rare and very productive *superstar* state (Castañeda et al. (2003)). In combination with non-homothetic warm-glow preferences for saving, adding superstars allows the model to better capture the right tail of the wealth distribution. For the normal-to-normal worker (i.e., non-superstar) transitions, the Markov chain approximates an AR(1) process in logs whose parameters are specific to each level of schooling s:

$$\log\left(\varepsilon'\right)=\rho_{\eta}(s)\log(\varepsilon)+\eta' \qquad \eta\sim\mathcal{N}\left(0,\sigma_{\eta}^{2}(s)\right).$$

Any normal worker productivity level can transition to the superstar state with a very small probability. When a superstar transitions back to one of the normal worker states, it draws from the invariant distribution over those normal productivity states.

The effective labor of a household with age, a, schooling, s, race, j, and transitory shock, ε, is

$$\Phi(a,s,j)*\varepsilon*\bar{h},$$

where $\bar{h}$ is exogenous labor supply. When a household reaches retirement age, its labor productivity is fixed at its level during the household's final working-age period, $\bar{\varepsilon}$.

The total amount of income a household earns from supplying n units of effective labor depends on its race, with Black households earning less than white households. The racial earnings gap in our model then arises from different returns on effective labor. In this way, the model interprets any Black-white earnings gap that is not explained by age and education as the product of discrimination. Alternatively, we could have ascribed the earnings difference to racial differences in household labor productivity that are not captured by age and schooling levels (e.g., racial differences in the quality of education (Neal and Johnson (1996), Nielsen (2020), Thompson (2024)) or in household formation patterns (Caucutt et al. (2021); Gayle et al. (2015))).[10] In Appendix E.1, we explore the implications of assuming that most of the earnings gap in the data arises from differences in labor productivity rather than discrimination.

Retirement A non-superstar retired household receives a social security benefit $\Omega(s, \bar{\varepsilon}, j)$ equal to a constant fraction of labor earnings of a working age household with the same skill, productivity, and race. These benefits are funded from a social security tax, τ_{SS}, on workers. Social security benefits and payments are capped: superstars are treated the same as the highest normal productivity households in terms of their tax liability and retirement benefit.

Asset market Households cannot purchase insurance against labor productivity shocks, but they can save in an asset that returns $1 + r$ units of consumption tomorrow. Households accumulate savings both to fund consumption in retirement (a life-cycle motive) and to self-insure against income risk (a precautionary motive). This behavior generates a distribution of wealth as households experience different sequences of labor productivity shocks.

Transfers and inheritances When a household dies, a fraction $(1 - \nu)\, k$ of its estate is transferred to a newborn household of the same race. Because newborn households begin their life cycle at working age, this endowment leads to some newborns starting with more assets than others. In one sense, these transfers are not technically inter-vivos since they occur upon the parent's death; however they are very similar in spirit in that they are received early in a child's working life and cause asset positions to differ among young households. The remaining estate is given as a bequest. Because it is infeasible to track every parent-descendant link through perpetuity, we pool these bequests across all deceased households of the same race and redistribute them according to a lottery to same-race households of age a_b. Note that because we will assume that households have "warm-glow" preferences for bequeathing wealth, they have exactly the same motivation to amass an estate for the bequest pool as they would if their wealth were transferred to a descendant.

Households that are younger than bequest age are aware that they may receive a bequest in the future. We assume that they have full knowledge of the bequest levels and their associated probabilities of occurring. The parameters of the bequest lottery are discussed in detail in Section 4.2.

[10] We refer to completed levels of educational attainment, such as a high school or college degree, as schooling levels. We use academic achievement to refer to the skills acquired during education, an important dimension of which is typically measured by standardized test scores.

Preferences Households have preferences over consumption and warm-glow from leaving an estate. We assume the following functional forms:

$$u(c) = \frac{c^{1-\gamma_c}}{1-\gamma_c} + z(k') \qquad \text{where} \qquad z(x) = \theta_1^b \frac{x^{1-\gamma_k}}{1-\gamma_k}.$$

The functional form for utility over estates, $z(x)$, comes from De Nardi (2004). The parameter θ_1^b controls the overall strength of preference for the size of bequests.[11]. We assume that $\gamma_k < \gamma_c$ so that there is a "luxurious savings" motive for estate accumulation (Straub (2019), Benhabib et al. (2015), Kaymak et al. (2020), Gaillard et al. (2023)). As discussed in Straub (2019), under this assumption, as household wealth increases the marginal utility from an additional unit of consumption falls faster than the marginal utility of building the estate, pushing the savings motive into the wealth tail.[12] Empirically, Llanes et al. (2025) and Dynan et al. (2004) find a strong positive relationship between saving rates and lifetime earnings, and Fisher et al. (2020) find a lower marginal propensity to consume among high-income and high-wealth households.

The warm-glow specification for estate accumulation serves two purposes. First, it allows the model to speak to the role of inheritance differences for maintaining the wealth gap; and second, it generates a thick right tail in the wealth distribution. Reproducing the high degree of US wealth inequality requires adding features to the standard incomplete markets environment (De Nardi and Fella (2017)), and warm-glow is a parsimonious way of achieving this concentration.[13]

Production A stand-in firm purchases effective labor and rents capital from households. Using these inputs, the firm produces output according to a Cobb-Douglas production function $Y = AK^{\alpha}N^{1-\alpha}$ where aggregate capital is $K = K_B + K_W$ and aggregate effective labor is defined analogously. Capital depreciates at a constant rate δ, and the return on capital received by a household is the marginal product of capital minus the depreciation rate, $r = MPK - \delta$.

Firm profits and dividends The baseline model mechanism for inducing a racial gap in earnings is a simple form of wage discrimination. The firm cannot distinguish between Black and white workers until it hires them. Once the firm has hired workers, it pays white workers their marginal product of labor and Black workers only a fraction $\varphi(B) < 1 = \varphi(W)$ of theirs. As a consequence of wage discrimination, the firm earns profits equal to $[1 - \varphi(B)]\, wN_B$ (Appendix G illustrates this

[11] θ_1^b corresponds to θ in the illustrative model of Section 2; the shift parameter σ from that section is set to zero here

[12] In De Nardi (2004) $\gamma_k = \gamma_c$, so the non-homothetic behavior is induced by a positive shifter parameter (i.e., $x = k' + \theta_2^b$). We find that this shifter primarily acts to reduce the savings of low-wealth households, and its effect fades quickly as household wealth increases and θ_2^b becomes small relative to k'.

[13] Cagetti and De Nardi (2008) point to three main features that, when added to the baseline model, can generate a thick right tail as observed in the wealth distribution seen in the data: bequests, heterogeneous rates of return on capital, and heterogeneity in the earnings process for the richest. It has been shown that one can generate a thick-tailed wealth distribution using capital income risk (Hendricks (2007), Benhabib et al. (2015)), an extremely high wage reached with very low probability (Castañeda et al. (2003)), or voluntary bequests (De Nardi (2004), De Nardi and Yang (2014)). See Stachurski and Toda (2019) and Sargent et al. (2020) for recent developments in this literature.

detail.). We can express $\Phi(a, s, B) = \varphi(B) \Phi(a, s, W)$.

There are several options for how to treat these profits. In the baseline, we rebate the profits to white households through a dividend that is proportional to their wealth, $D(k, W)$. We allocate the dividends in this manner in order to close the model. One may legitimately worry that our results are strongly affected by this choice, since it increases the effective rate of return for white households; however, it turns out that how we distribute these profits is not critical. Alternative treatments of firm profits, including returning them lump-sum to white households or discarding them via wasteful government spending, produce transition paths that are nearly identical to the baseline. There are two reasons for this invariance. First, relative to average income, the dividend is small, owing in large part to the low relative population share of Black households. Thus, the premium to white savings is also very small. Additionally, in most of our exercises, the earnings gap diminishes over time, which shrinks this dividend payment. In Section 5.3, we conduct a sensitivity analysis which imposes much larger return gaps and find that even implausibly large differences in returns have modest effects on the wealth gap in the presence of an earnings gap.

Household problem Formalizing the household's problem recursively, the Bellman equation is

$$V(k, \varepsilon, a, s, j) = \max_{c,k'} \left\{ u(c) + (1 - \psi_a) z(k') + \psi_a \beta \mathbb{E}\left[V(k', \varepsilon', a+1, s, j) \right] \right\}$$

subject to

$$\begin{cases} c + k' \leq y(\varepsilon, a, s, j) - \tau \tilde{y}(\varepsilon, a, s, j) + (1+r) k + D(k, j) & \text{when} \quad a < a_r \quad \text{and} \quad a \neq a_b; \\ c + k' \leq y(\varepsilon, a, s, j) - \tau \tilde{y}(\varepsilon, a, s, j) + (1+r) k + D(k, j) + b & \text{when} \quad a = a_b; \\ c + k' \leq \Omega \tilde{y}(\bar{\varepsilon}, a, s, j) + (1+r) k + D(k, j) & \text{when} \quad a \geq a_r \end{cases}$$

where ψ_a is the conditional probability of surviving from age a to $a+1$, and

$$\begin{aligned} y(\varepsilon, a, s, j) &= \varphi(j) \Phi(a, s, W) \varepsilon w \bar{h} \\ \tilde{y}(\varepsilon, a, s, j) &= \min\{ \varphi(j) \Phi(a, s, W) \varepsilon w \bar{h} \ , \ \varphi(j) \Phi(a, s, W) \varepsilon_n w \bar{h} \}. \end{aligned}$$

The expression for $\tilde{y}(\varepsilon, a; s, j)$ just guarantees that a household with a superstar productivity level neither pays more into nor receives more from social security than the most productive normal household. Finally, we assume that households cannot borrow so $k' \geq 0$.

4 Calibration

4.1 Steady State Interpretation

We interpret the period 1962-2019 as a steady state of the model because racial gaps in wealth and earnings are constant over this period. Our quantitative exercises that follow use the model calibrated to this steady state for understanding (i) the contributions of various mechanisms to the persistence of the racial wealth gap and (ii) how effective policies targeting these mechanisms would be at closing the wealth gap. We note that, given the persistence of the racial wealth and earnings gaps over recent decades, these exercises do not necessarily represent forecasts about their paths. We discuss additional evidence for this assumption in Section 5.

Figure 3 shows the stability of the wealth and earnings gaps over the past six decades and Table 1 presents statistical confirmation of this stability. Both the figure and the table use data from the 1962 Survey of Financial Characteristics of Consumers (SFCC) and the 1983-2019 waves of the Survey of Consumer Finances (SCF).[14] We define gaps as 1 - $\frac{\mathbb{E}[Y|\text{Black}]}{\mathbb{E}[Y|\text{white}]}$ where Y is either net worth, wage and salary income, or total labor income (wage and salary income plus the labor share of business income). We estimate regressions specified as

$$\text{Gap}_{Year} = \beta_0 + \beta_1 \left(\text{Year} - 1989 \right) + \epsilon_{Year},$$

centering at 1989 as the approximate midpoint of the time period 1962-2019. We estimate some regressions from 1989 onward due to the standardization of variables from this point in the SCF, and we stop at 2019 for all specifications due to COVID-19.

The absence of a trend in the racial wealth gap is visible in the black series in the figure, and also in the first two rows of the table. The black dots plot the wealth gap in each survey year, and the black line shows the OLS fit over 1962-2019. As the first row of the table confirms, the estimated time trend is statistically insignificant. The only significant time coefficient among the wealth-gap regressions is for the 1989-2019 subsample, where the positive β_1 indicates that the gap actually increased by 0.05 from a baseline of 0.80; this result appears driven by a temporarily low value in 1992 rather than a high value in 2019.

The earnings gap exhibits a similar pattern, shown in green in the figure and in the last three rows of the table. The green dots and solid green line plot the racial gap in wage and salary income along with its OLS fit; the green X's show the gap in total labor income, which also includes the labor share of business income.[15] The third row of the table confirms that the time trend in the total labor income gap over 1989-2019 is statistically insignificant. Among the wage and salary regressions (rows four and five), the only coefficient approaching significance is for 1962-2019, where the positive β_1 again indicates that the racial earnings gap increased–by 0.06–over this period.

Finally, we highlight one caveat with regards to race in our steady state interpretation. While we view it as reasonable to treat race as a fixed, exogenous household state over the 1962-2019 period, we acknowledge that it may be less tenable over longer horizons due to the increased rate of formation of interracial households. For example, the share of recently married Black Americans in interracial unions rose from 5 percent in 1980 to 18 percent by 2015 (Livingston and Brown (2017)). To the extent that racial categories continue to evolve in this manner, the long-horizon

[14] Appendix A describes the details of our data work with the SFCC and SCF.

[15] We do not plot or use data on total labor income for the years before 1989 because the SCF codebook indicates that in some years before 1989 questions about business income led many respondents to interpret them in a way that makes it difficult to recover business earnings.

counterfactuals in Section 5 should be interpreted as thought experiments about the mechanisms governing wealth dynamics rather than literal forecasts.[16]

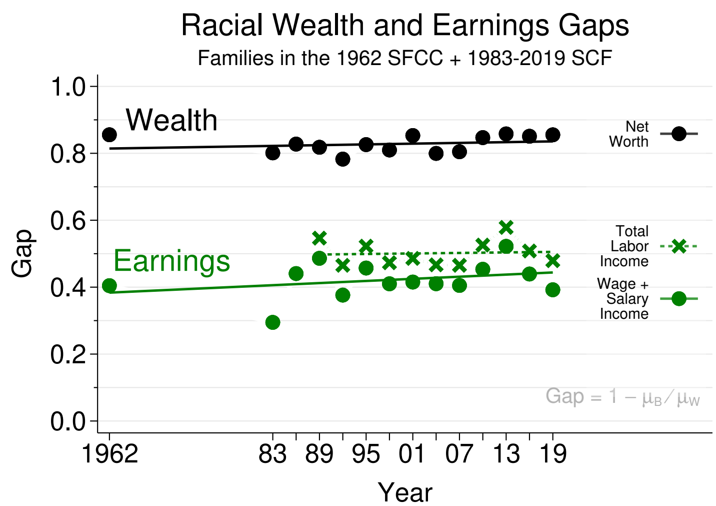


Figure 3: Wealth and Earnings Gaps

Note: See the main text for variable definitions and Appendix A for full details on variable construction.

Table 1: Time Trends

Gap	Regression Results β_0	$\beta_1 \times \Delta_y$	β_1 P-Value
Wealth			
1962–2019	0.82	0.02	0.44
1989–2019	0.80	0.05	0.03
Total Labor Income			
1989–2019	0.50	0.01	0.84
Wage and Salary Income			
1962–2019	0.41	0.06	0.29
1989–2019	0.43	0.00	0.92

Note: This table reports results from regressions of the form $\text{Gap}_{Year} = \beta_0 + \beta_1(Year - 1989) + \epsilon_{Year}$ where we measure gaps as Gap = 1 - $\frac{\mathbb{E}[Y|\text{Black}]}{\mathbb{E}[Y|\text{white}]}$. The reported P-Value is for β_1. See the main text for variable definitions and Appendix A for full details on variable construction.

Appendix B shows that these results are consistent with other measurements made in the literature.

4.2 Parameters

Preferences Household supply $\bar{h} = 0.3$ hours of labor. We set $\gamma_c = 2.0$ so that the intertemporal elasticity of substitution in consumption is 0.5. Table 2 displays the remaining calibrated parameter values governing household preferences and production technology. The discount factor, β, and warm-glow savings parameters, θ_k and γ_k, are calibrated to minimize the model distance from three wealth moments in the data: the ratio of wealth-to-income, the Gini coefficient of wealth, and the racial wealth gap (one minus the ratio of mean Black wealth to mean white wealth). Using moments calculated from the SCF, we target values of 4.8, 0.85, and 0.83, respectively. The model matches the wealth-to-income ratio of 4.8 and a wealth Gini of 0.85. The wealth gap in our calibrated model is 0.74. Although this is much larger than the earnings gap, it is still short of 0.83. The difficulty matching the empirical wealth gap arises at the bottom of the wealth distribution

[16]Even under the assumption that increasing interracial marriage would lower the racial wealth gap in the long run (or even eliminate it as a concept), the effect on our transitions is not obvious as it would depend on assortative matching patterns in these households.

where Black and white households are too similar. Without adding race-specific shocks like wealth-destruction as in Kondo et al. (2025), household formation as in Ashman and Neumuller (2020), or incarceration risk as in Imrohoroglu et al. (2025), it is not possible for the model to exactly match the racial wealth ratios at or below the median. If we reweight the objective function to prioritize matching the wealth gap at the expense of other moments, we would get a wealth Gini that is too large with far too many agents at the borrowing constraint.[17]

Table 2: Calibration for Baseline Steady State with 5-Year Periods

Parameter	Value	Data Set / Moment	Target	Model
Preferences				
Risk aversion, γ_c	2.0	Standard Value		
Bequest preference, $\theta_k^{\dagger}$	0.95	2019 SCF Wealth Gini	0.85	0.85
Degree of non-homotheticity, $\gamma_k^{\dagger}$	0.62	1962 SFCC, 1983-2019 SCF Racial Wealth Gap	0.83	0.74
Discount Factor, $\beta^{\dagger}$	0.58	Annual. Wealth/Income	4.8	4.8
Technology				
Capital Share, α	0.36	Capital Income Share	0.36	0.36
Total Factor Productivity, A	1.99	Mean Income	1.0	1.0
Hours work, $\bar{h}$	0.3			

† Calibrated internally to match the listed moment.

The calibrated value of γ_k is 0.62, which is in line with estimates from both Gaillard et al. (2023) and Straub (2019). The discount rate $\beta = 0.58$, which may initially strike the reader as rather low; however, two things should be considered. First, a model period is five years; at an annual frequency, the value is 0.90. Second, our non-homothetic savings function increases the marginal return to saving. In order to hit our wealth-to-income target, the household discount factor must be lower.[18]

Production The total factor productivity (TFP) parameter A equals 1.99, which normalizes period output to 1. We follow the literature and set the elasticity of output with respect to capital, α, to 0.36. Capital depreciates at an annualized rate of 5 percent.

Government The tax rate on labor income is 17.0 percent. This rate clears the government budget constraint when the retiree benefit parameter, Ω, implies a replacement rate of 40 percent of last period labor earnings.

[17] It is also worth noting here that Thompson and Suarez (2015) estimate a wealth gap of 0.77 using an augmented SCF measure that accounts for defined benefit pensions.

[18] For instance, in Gaillard et al. (2023), $\beta = 0.90$, and in Straub (2019) it is 0.89.

Intergenerational transfers The parameters governing the transfer of wealth across generations (shown in Table 3) are set to match the stylized facts in Hendricks (2001). The model bequest age $a_b = 7$ corresponds to ages 50-54. Bequests b to middle-age households take one of three values: 70 percent receive no bequest, 28 percent receive a small amount b_2, and 2 percent receive a large amount b_3, where b_3 is set to 70 percent of the inheritance pool.

The fraction of a deceased household's estate that flows into the bequest pool, ν, is 75 percent, which is in line with estimates from studies of the SCF. Avery and Rendall (2002) calculate ν to be 0.78 using lifetime inheritances in the 1989 SCF, and the individual-level data on transfers received in Feiveson and Sabelhaus (2019) generate a ν of 0.76 in the 1996-2016 SCF.

Table 3: Calibration: Intergenerational Transfers and Demographics

Parameter	Value	Study / Data Set
Intergenerational Transfers		
Bequest Share, ν	0.75	Avery and Rendall (2002) Feiveson and Sabelhaus (2019)
Prob. of no bequest, $Pr(b_1)$	0.70	Hendricks (2001)
Prob. of small bequest, $Pr(b_2)$	0.28	Hendricks (2001)
Prob. of large bequest, $Pr(b_3)$	0.02	Hendricks (2001)
Demographics		
Share Black (%), χ	11.5	1960-2000 US Census
Mortality rates	Appendix D	Arias et al. (2016)

Mortality and Population Shares The survival probabilities ψ_a are estimated using data on all-gender survival probabilities for white individuals in Table 20 of Arias et al. (2016).[19] We set the share of Black population in the economy, χ, to 11.5 percent, the average Black share in the US Decennial Censuses between 1960 and 2000.

Educational Attainment In our baseline, we assume that the conditional probability of a child attaining a particular education level, f_s, does not differ by race. This implies that both racial groups have the same proportions of educational attainment. We impose this on the model for simplicity.

We take the distribution of attainment for white respondents in the NLSY79, shown in Table 4, as the stationary distribution of educational attainment. While one could infer an intergenerational educational transition matrix from the same data, this would lead to an inconsistency between the assumed initial distribution of education and the stationary distribution implied by that transition matrix. We instead search for a transition matrix with an invariant distribution equal to the initial

[19] Arias et al. (2016) is a Centers for Disease Control National Vital Statistics Report, and we use estimates representing age-specific 2012 survival probabilities. The rates are displayed in Appendix D. In our baseline calibration, mortality rates are only a function of age. Imposing racial mortality differences produced no meaningful difference in the implied wealth gap path.

distribution from the data. Naturally, such a transition matrix is unlikely to be unique so we impose two constraints on our search.

1. The probability that a child has the same education level as their parent is identical to that rate in the NLSY79 data.

2. Transitioning to an adjacent educational state should be more likely than to a distant one.

Restriction (1) sets the diagonal of the transition matrix equal to the diagonal of the matrix of transition rates observed in the data. Restriction (2) only affects children with parents in the no high school or college education states. A child with a no high school (college) parent must be more likely to end up in the high school state than the college (no high school) one.

The resulting intergenerational transition matrix across attainment levels is shown in Table 5. With the exception of the No HS state, the child's education is most likely to be the same as their parent's. The transitions from No HS to College or from College to No HS are uncommon.

Table 4: Educational Attainment Stationary Distribution (%)

No HS	12
High School	64
College	24

Note: The column reports the stationary distribution of educational attainment in our model, taken from the distribution of white respondents in the NLSY79.

Table 5: Educational Attainment Transition Probabilities (%)

		Child		
		No HS	High School	College
	No HS	31.3	59.8	8.9
Parent	High School	11.8	73.0	15.1
	College	3.0	42.9	54.1

Note: Each row reports the probability that a newborn household attains a particular education level given the education level of their parent. For example, a newborn household whose parent household had no high school degree has a 31.3, 59.8, and 8.9 percent chance of having, respectively, no high school degree, a high school degree, or a college degree.

Labor income process We measure household earnings, or labor income, over the life cycle using the National Longitudinal Survey of Youth 1979 (NLSY79). The NLSY79 sample was born between 1957 and 1964 and has been followed with annual (1979-1994) and biennial (1996-2022) surveys. Respondents were aged 14-22 at the date of the 1979 survey.[20]

Household labor income is measured as the sum of the respondent's labor income and, if present, that of either their spouse or partner. Labor income includes wage and salary income, the labor share of business income, military income, and public assistance. We set the labor share of business income to 0.90, in line with the estimates in Kuhn and Ríos-Rull (2016) of 0.886, 0.934, and 0.863,

[20]Despite the fact that respondents were aged 55-64 at the time of the 2022 survey and households in our model retire at age 65, we estimate the process using only the ages 20-59 as the lifecycle for our labor income process. The reason is that the 2022 survey is impacted by COVID-19 and in the 2020 survey the sample sizes are not uniform for each year in the 60-64 age bin, which could create bias.

respectively, for the 2013, 2010, and 2007 SCF samples.[21] Nominal incomes are converted to real 2019 dollars using the R-CPI-U-RS series.

We estimate the age-income profiles $\Phi(a, s, j)$ using regressions of household income on a quadratic of age. Figure 4 shows the age-income profiles, $\Phi(a, s, j)$, estimated from the NLSY79. Two primary features are evident, related to the level and steepness of the profiles. First, the level of the profiles for Black-headed households shown in blue are shifted down relative to the profiles for white-headed households shown in red. This shift is not enough to move white high school graduates ahead of Black BA holders over the entire life cycle, but the shift is large enough to make white households with no high school degree receive incomes comparable to those of Black high school graduates. Second, while the profiles all exhibit an inverted-U shape, the profiles are flattest for the low attainment groups, with white BA holders having the steepest profiles.

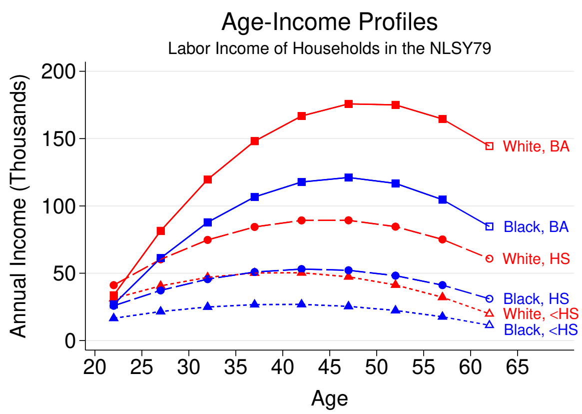


Figure 4: Age-Income Profiles by Race and Schooling in the NLSY79

Note: This figure shows the age-income profiles estimated from the NLSY79 that are used to calibrate the model. See the main text for variable definitions and Appendix C.1 for full details of estimation.

Given the estimates of Φ, we then estimate $\rho_\eta(s)$ and $\sigma_\eta(s)$ parameters via maximum likelihood. The estimated ρ and σ parameters are displayed in Table 6 and full specification of the likelihood is presented in Appendix C.1.

We set the superstar earnings state to 95.5 which is the ratio of the top 0.01 percent of earners relative to the median in 2019 SCF (Table 7) for white households.The persistence of the superstar state is 0.75.

[21] In Appendix A we present estimates of the labor share in the SCF from 1989 to 2019 using the methodology from Kuhn and Ríos-Rull (2016) and find that 0.90 is a reasonable representation of the estimates over this time period. Public assistance in the NLSY79 includes Aid to Families with Dependent Children (AFDC), food stamps/the Supplemental Nutrition Assistance Program (SNAP), Supplemental Security Income (SSI), other public assistance, or welfare.

Table 6: Calibration:
Earnings Process

Parameter	$\rho_\eta(s)$	$\sigma_\eta(s)$
Earnings Process		
No Degree	0.79	0.76
High School	0.83	0.61
BA	0.72	0.59

Note: While the age-income profiles are estimated conditional on schooling and race, the persistence and uncertainty parameters ρ and σ used in the calibration and shown above are those estimated conditional on schooling for white households.

Table 7: Calibration:
Superstar Earnings State

Parameter	Value
Superstar State	
Superstar-to-median earnings	95.5
Superstar population share (%)	0.01

Note: These values are calculated from the 2019 Survey of Consumer Finances (SCF).

Model Fit to Non-Targeted Wealth Moments We consider how untargeted wealth moments in our calibrated model compare to their analogues in the 2019 SCF, the most recent pre-pandemic wave and the terminal year of the 1962–2019 period we interpret as a steady state. The first two rows of Table 8 show that the model captures the long right tail of the wealth distribution. The bottom two-thirds of the wealth distribution holds 5 percent of wealth in the data compared to 6 percent in our model. The bottom three-quarters of the wealth distribution holds 9 percent of wealth in both the the steady state of our calibrated model and in the data. And the bottom 90 percent of the wealth distribution holds 25 percent of wealth in the model compared to 24 percent in the data. The model also does a good job of capturing the concentration of wealth in the very top of the right tail, with 58 percent of wealth held by the top 1 percent compared with 63 percent in the data.

Turning to the conditional distributions of wealth by race, the model captures wealth concentration in the top of the Black distribution, with the model slightly overstating the degree of concentration in the top of the Black distribution. The fifth and sixth rows of Table 8 show that the model does an even better job of recreating the wealth concentration in the top of the white distribution.

Table 8: Distribution of Wealth Share

	Bottom (%)							Top (%)
	5	25	33	50	66	75	90	1
Overall								
Model	0.00	0.00	0.00	0.01	0.05	0.09	0.25	0.42
Data	-0.01	-0.00	-0.00	0.02	0.06	0.09	0.24	0.63
Black								
Model	0.00	0.00	0.00	0.02	0.08	0.15	0.38	0.17
Data	-0.04	-0.04	-0.04	-0.03	0.02	0.08	0.29	0.68
White								
Model	0.00	0.00	0.00	0.01	0.05	0.09	0.25	0.40
Data	-0.00	-0.00	0.00	0.03	0.07	0.11	0.26	0.65

Note: This table compares moments of the wealth distribution in the calibrated steady state of the model to that from the 2019 Survey of Consumer Finances. "Black" and "White" refer to the the conditional wealth distributions by race.

Model-Implied Savings Rates Our calibrated steady state also implies savings rates by race that are informative about the mechanisms sustaining the wealth gap. We define the individual savings rate at each state as

$$s = \frac{k' - k}{k' + c - k},$$

where k is current wealth, k' is the savings decision, and the denominator equals after-tax income. Table 9 reports the population-weighted average of this rate for workers and retirees of each racial group.

Table 9: Average Savings Rates in the Initial Steady State

	White	Black	Difference
Workers	-7.9	-4.4	$+3.5$
Retirees	-52.7	-58.7	-5.9
Overall	-21.3	-20.6	$+0.7$

Note: Entries are population-weighted average individual savings rates (percent) in the calibrated steady state. The savings rate is defined as $(k' - k)/(k' + c - k)$, where the denominator equals after-tax income. Positive differences indicate a higher savings rate for Black households.

All average savings rates are negative because of the life-cycle structure of the model: retirees draw down their wealth, pulling the population average well below zero.

Two features of these results are noteworthy. First, among workers, the average Black savings rate is *higher* than the average white savings rate (-4.4 vs. -7.9 percent). This pattern is consistent with a precautionary motive: lower wealth and lower expected future income cause Black workers to consume a smaller fraction of their income. However, because Black households earn less, their savings *levels* (rate $\times$ income) remain lower than those of white households. It is this difference in savings levels, not savings rates, that sustains the wealth gap in the model.

Second, the overall average savings rate is nearly identical across the two groups (-21.3 vs. -20.6 percent). This near-equality is not a coincidence. In our overlapping-generations steady state, each racial group's aggregate wealth is individually stationary—bequests are within-race, and the distributions are time-invariant—so the *aggregate* savings rate for each group is approximately zero by construction.

Derenoncourt et al. (2024) estimate that Black households have a savings rate that is 1.3 percentage points lower than that of white households. Their concept is closer to an aggregate or macroeconomic savings rate: the ratio of changes in group-level wealth to group-level income. When we compute an analogous object in our model, both groups have an aggregate savings rate near zero, because aggregate wealth is constant for each group in steady state. This makes the aggregate concept uninformative for cross-race comparisons in any stationary environment.

The individual-level concept in Table 9 reveals a richer picture. The fact that Black workers save at a *higher* rate yet accumulate less wealth underscores a central point of our analysis: the racial wealth gap is sustained not by differences in savings behavior per se but by differences in earnings that reduce the level of savings. This interpretation is consistent with the broader finding from our quantitative exercises that eliminating the earnings gap is the most important factor for achieving sustained convergence in Black and white wealth.

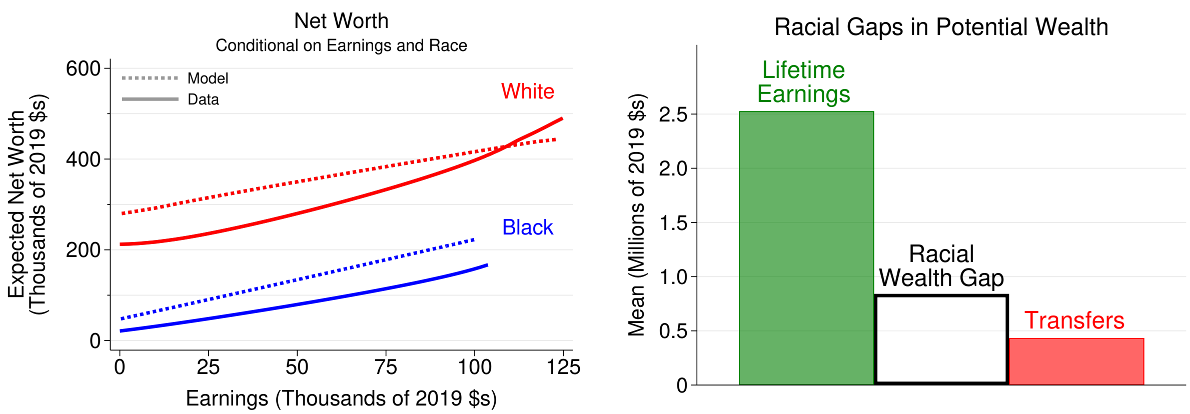
4.3 Earnings vs. Wealth

Large gaps in wealth by race are present not only at the mean, but at every earnings level (Barsky et al. (2002)). This fact has been cited as evidence to discount the importance of earnings for sustaining the racial wealth gap (Hamilton et al. (2015), Darity et al. (2020), Addo et al. (2024)). However, the steady state of our model, which generates the racial wealth gap primarily through differences in earnings, also produces this cross-sectional pattern (Figure 5a). What matters is present discounted value of lifetime earnings, not earnings at one point in time, and differences in lifetime earnings dwarf those in intergenerational transfers.

Following Feiveson and Sabelhaus (2018), we measure mean earnings conditional on race using the NLSY79, and mean transfers as 10.1 and 3.8 percent of annual earnings for, respectively, white and Black-headed households using the updated estimates of transfers in Sabelhaus and Thompson (2023). We define the racial gap in potential wealth as the difference in the Black and white levels of compounded average lifetime income between ages 18 and 60 from either source using an annual interest rate of 3 percent.[22] Figure 5b shows the results of this exercise. For the sake of comparison,

[22] See Appendix C for data details.

we also include the racial wealth gap in the 2019 SCF.[23] At $2.5 million, the racial gap in lifetime earnings is 3.0 times the cross-sectional racial wealth gap. In contrast, the racial gap in lifetime transfers is only $0.4 million or 0.5 times the racial wealth gap. If anything, the surprising fact is that the racial wealth gap is so *small*. The likely reason lies in Figure 4: at each education level, the income profile for white households is steeper and so we would expect them to save less at early ages.



(a) Wealth Conditional on Earnings and Race

(b) Racial Gaps in Potential Wealth, by Source

Figure 5: Revisiting Previous Results in the Literature

Note: The left panel shows local linear regression estimates of Conditional Expectation Functions (CEFs) of family net worth conditional on family earnings. The sample age range is 30 to 64 for both the data and the model. All variables are measured in 2019 dollars. The right panel shows the difference across race in mean lifetime earnings (green), mean wealth in the 2019 SCF (white with black outline), and lifetime intergenerational transfers (red).

5 Quantitative Exercises

In this section we conduct three types of exercises. First, we study the importance of various mechanisms in the model for the determination and dynamics of the racial wealth gap. Second, we conduct a policy exercise, inspired by the reparations movement, in which the initial wealth distributions are equalized across racial groups and analyze the resulting transitional dynamics. Third, we explore how robust our results are to the introduction of racial differences in the returns to saving.

The stability of the racial earnings and wealth gaps since 1962 raises a natural question for the counterfactual exercises: what would it take for these gaps to begin closing, and how long would convergence take? Our exercises do not attempt to predict a specific triggering event. Rather, they are designed to isolate the contribution of different mechanisms—earnings convergence, wealth redistribution, and return heterogeneity—to the dynamics of the wealth gap. The exercises are motivated by ongoing policy debates, including proposals for reparations (such as US House bill HR40), anti-discrimination enforcement, and investments in educational equity, as well as

[23] Authors' calculation, matching the calculation in Bhutta et al. (2020).

by the more fundamental question of *how quickly* Black-white wealth convergence could occur under favorable conditions. By studying what would follow if the earnings gap closed, rather than predicting when or why it will close, the model provides quantitative guidance on the relative importance of different channels and the timescales over which policies would operate.

We initialize our experiments in the steady state of the model. An obvious question is how a steady state could have been reached by 1962 given that, as Derenoncourt et al. (2024) document, the Black-white wealth ratio converged rapidly in the preceding century, moving from roughly 23:1 in 1870 to 11:1 in 1922 and 5:1 by 1960.[24] Several considerations help reconcile these observations with our steady state assumption. First, the post-emancipation period was characterized by enormous structural transformations–the dismantling of legal barriers to Black economic participation, industrialization, urbanization, and the Great Migration–that fundamentally reshaped the economic environment for Black households. These changes are qualitatively different from the counterfactual exercises we study in Section 5, which alter specific mechanisms within an otherwise stable economic structure. Second, convergence from the extreme starting point of near-zero Black wealth following emancipation is likely inherently faster than convergence from a more moderate ratio, as households with very little wealth have the strongest incentives to accumulate. Indeed, our own transition experiments in Section 5 exhibit exactly this pattern of initially rapid convergence that decelerates over time: when the earnings gap is eliminated, the wealth gap falls from 75 to 50 percent within 40 years, but then slows markedly, remaining at 25 percent after 180 years. The same pattern holds across the wealth distribution, with the median converging within a few decades while the mean–pulled by the slowly converging top tail–takes far longer (Figures 7 and 8). This suggests that the rapid pre-1960 convergence following massive structural change, and the subsequent stabilization documented in Figure 3, are consistent with a transition that initially moved quickly and then settled into the neighborhood of a steady state by the early 1960s.

5.1 Eliminating the Earnings Gap

To investigate the role of the earnings gap on the evolution of the wealth gap, we solve for the economy's transition path under an extreme counterfactual: what if starting from 2019, the racial earnings gap disappeared? An MIT shock equates $\Phi(a, \theta, j = B)$ to $\Phi(a, \theta, j = W)$ so that conditional on age and education, Black and white households are paid the same wage on their effective hours. As a consequence, the firm earns zero profits, and the dividend to white households vanishes.[25] In the long run, race becomes a superfluous state variable: a white and a Black household with the same wealth, productivity, age, and education solve exactly the same problem, and therefore are identical. Along the transition however, race remains relevant but only for households younger than bequest age. This is because over the transition, the wealth distribution is still unequal by race causing per-capita estate wealth to be greater for white households.

[24] When stated in terms of ratios, we measure the wealth gap as fluctuating between 1962 and 2019 over the range 4.6:1 and 7.0:1, with a mean of 5.9:1.

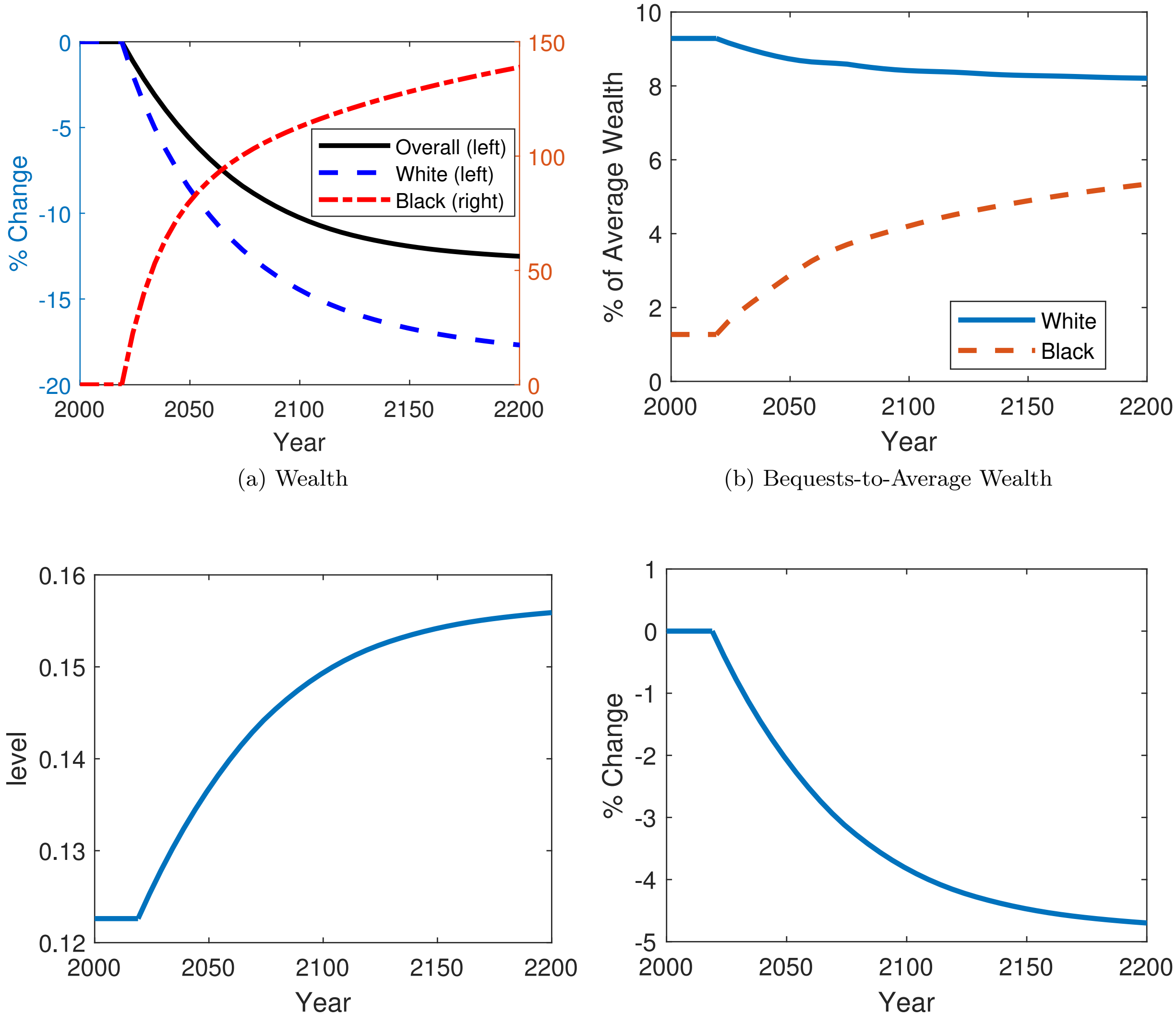
[25] Appendix E.1 shows that similar dynamics would obtain if we were to alternatively assume that earnings differences were mainly due to differences in productivity.

In this experiment households have perfect foresight and immediately begin adjusting to the new long run equilibrium. Closing the wealth gap, however, takes time since wealth must be accumulated, and this process is compounded by the presence of a luxurious savings motive and separate bequest pools. Over time, these two factors fade away as the Black wealth distribution converges to the white one.[26]

We solve the model in general equilibrium. This is important because the economic changes under consideration are massive in scale and would have substantial effects on the level of aggregate wealth and factor prices.[27] This can be seen in Figure 6. Black wealth grows rapidly after racial earnings are equalized, doubling over roughly 50 years (Panel 6a). Meanwhile, the loss of dividends causes the effective return on wealth for white households to drop immediately from 15.9 percent to 12.6 percent which causes a 14 percent decline in white wealth over the same time period. On net there is a moderate reduction in the level of capital which increases the interest rate rises over time and reduces wages since effective labor supply is fixed. Eventually, the interest rate exceeds the initial effective return to white households (Panels 6c-6d). Even as the wealth gap closes, the two bequest pools (shown in Panel 6b in per capita terms and scaled by average wealth) remain far apart for many years. This slow convergence has only a modest effect on most households since few of them receive any sizable bequest, but it contributes substantially to the evolution of the wealth gap in the tails.

[26]The separation of bequest pools slows the convergence of the wealth gap. In Appendix H, we solve the model with shared bequest pools. The results could informative for thinking about the consequence of interracial pairing.

[27]Allowing for general equilibrium effects is even more consequential if the earnings gap also reflects productivity differences. See the discussion in Appendix E.1.



(a) Wealth (b) Bequests-to-Average Wealth

(c) Interest Rate (d) Wage

Figure 6: Aggregates

Note: Transition paths of key aggregates following an immediate elimination of the earnings gap.

Figure 7 plots the path of the wealth gap $(1 - \frac{K_B}{K_W})$ for the first 181 years of the transition. The gap closes from 75 percent to 50 percent in the first 40 years and to 37 percent after 100 years. After that time the convergence rate slows markedly so that the gap is still 25 percent in 2200.

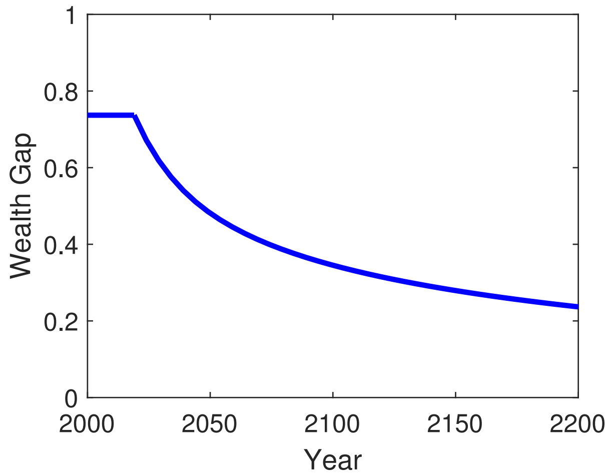


Figure 7: Eliminating the Earnings Gap

Note: This figure shows model predictions for the path of the racial wealth gap after the racial earnings gap is removed. The wealth is defined as one minus the ratio of mean wealth by race (i.e., $1 - \frac{K_B}{K_W}$).

When we look at the convergence of the full race-specific wealth distributions, and not just the means, two distinct themes emerge from the experiment where the earnings gap is eliminated. First, equalizing earnings by race is very effective at closing the wealth gap below the top tail. Figure 8 plots the Black-white wealth gap measured at the same percentile of the respective wealth distributions. After earnings are equalized, the gap between the median Black wealthholder and the median white wealthholder (shown in the solid blue line) falls below 15 percent within the first 50 years. The wealth gap above the median follows suit, even up to the 95$^{\text{th}}$ percentile (as shown by the dashed red line).[28]

The second theme is that convergence of the mean takes considerably longer than convergence of the 50th or even 95th percentiles. This is because the bulk of wealth in either distribution lies far out in the right tails, which converge very slowly due to the luxurious saving motive.[29] This result can be seen in the elevated level of the dashed green line in Figure 8 representing the average gap above the 99th percentile.

Another way of characterizing the slow pace of convergence in the tails is displayed in Table 10. This reports how long it takes to reduce the wealth gaps at the mean and in the top 1 percent to shrink by 50 percent when the earnings gap declines at a constant rate every period. In the baseline case where the earnings gap is immediately closed, this takes 172 years for the top 1 percent, compared with 69 years for the mean. The top 1 percent takes considerably longer to close than the rest of the distribution regardless of the assumed rate at which earnings are equated.

The unequal rates of convergence between the top tail and the rest of the wealth distribution highlights differences in wealth accumulation mechanisms and in effective policies. Faster conver-

[28]Sabelhaus and Thompson (2023) call this part of the wealth distribution, that is the 50th to 95th percentiles of wealth, the "reasonably attainable" level of wealth.

[29]Albuquerque and Ifergane (2025) show that wealth differences in the top 1 percent of the wealth distribution account for approximately one-third of the racial wealth gap in the SCF from 1989-2019.

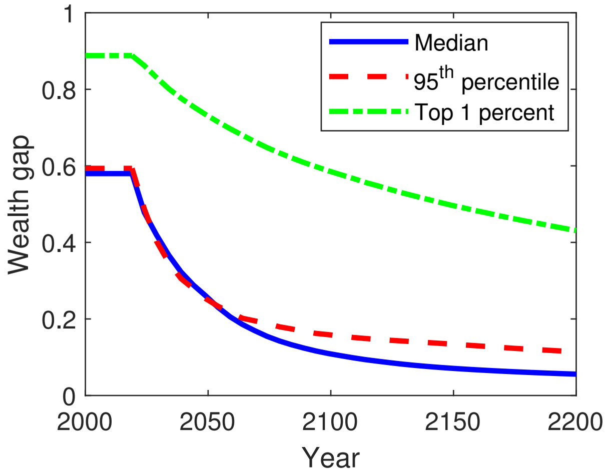


Figure 8: The Tail Converges Slowly

Note: This figure shows model predictions for the path of the racial wealth gap after the racial earnings gap is removed. The "top 1 percent" is the average of this group.

Table 10: Years until wealth gap is half-closed

Earnings gap closure rate	Ratio of . . . Means	Top 1%
Instant	69	172
3.0% / Year	124	225
2.0% / Year	154	259
1.0% / Year	243	374
0.5% / Year	418	625

Note: This table reports the number of years until the wealth gap is half of its initial value under different assumptions about the path of the earnings gap. The wealth gap is measured in two ways: the ratio of means or the ratio of average wealth in the top 1 percent of each distribution . 'Halfway closed' for these measures are 37.6 percent and 44.9 percent, respectively.

gence outside of the top tail is consistent with evidence from Black et al. (2024), Kaymak et al. (2020), and Sabelhaus and Thompson (2023) which stress that most potential wealth derives from lifetime earnings. In contrast, the slow convergence in the top tail stresses the unique factors affecting savings among the very wealthy. For example, Boerma and Karabarbounis (2023), Albuquerque and Ifergane (2025), and Bradford (2003) have documented how racial differences in both expected and realized rates of return to entrepreneurship sustain the wealth gap. Additional factors behind the long right tail of wealth include heterogeneity in inheritances (Hubmer et al. (2025)) and in returns to capital (Kaymak et al. (2020), Fagereng et al. (2020), Bach et al. (2020)), either of which are likely to widen the racial wealth gap.

5.2 The Effect of Large-Scale Wealth Transfers

Academics and policymakers have proposed large reparation packages as a policy tool for eliminating the racial wealth gap.[30] Our model is well-suited to consider the consequences of large redistribution programs under a range of scenarios for the future path of the earnings gap.

We begin by imagining a one-time wealth redistribution that equates the distributions of wealth by race but does not alter the level of aggregate wealth in the economy. This redistribution is accomplished through a surprise, one-time, state-contingent, lump sum wealth tax with positive taxes on white households and negative ones on Black households. We interpret this exercise as a stylized "ideal" wealth redistribution program in which the policymaker's goal can be achieved

[30]For example, US House of Representatives Bill HR40 proposes establishing a commission to study the effects of racial discrimination and recommends including reparations in the form of direct wealth transfers. There is a debate about the philosophical or legal merits of direct wealth transfers (Darity and Mullen (2020)). Here we focus exclusively on their effect on the racial wealth gap.

with no distortions. In practice, such a policy would almost certainly involve distortionary taxation, engender wasteful tax avoidance, and encounter formidable political resistance.

After equalizing the wealth distribution, we solve for the equilibrium path of the wealth gap when the earnings gap remains permanently at its initial level. We find that the racial wealth gap rapidly re-emerges. The wealth gap transition path is plotted in Figure 9 panel (b). After 30 years the wealth gap is back to half its initial level, and within a century has reopened by more than 90 percent. This rapid reappearance of the gap highlights the central importance of reducing the earnings gap if any progress toward reducing the wealth gap is to be sustained.

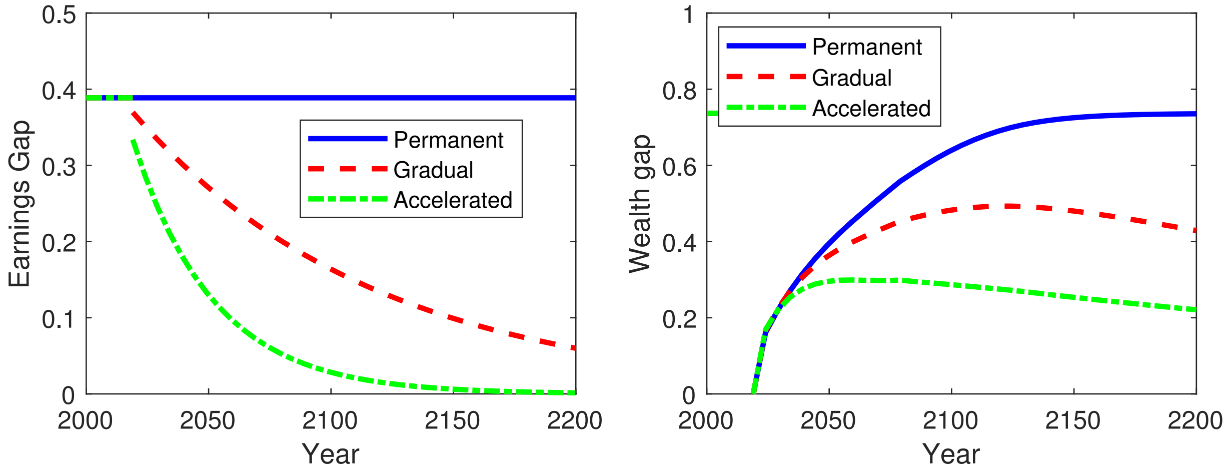
Given this result, what is the appropriate benchmark for the path of the earnings gap after wealth equalization? In particular, the model does not have a feedback mechanism from wealth into earnings. The best empirical evidence currently available suggests that wealth is not the primary driver of earnings (Chetty et al. (2020)), and recent evidence on the feedback from wealth to earnings via college attendance (Bulman et al. (2021)), college attainment (Carlson et al. (2019), Bartik et al. (2021)), or neighborhood effects (Aliprantis et al. (2024)) suggests that these mechanisms are relatively weak.[31] Historical examples of this kind of large wealth transfer in the US are also consistent with earnings being relatively invariant to wealth transfers (Bleakley and Ferrie (2016), Ager et al. (2019)). Nevertheless, a large wealth transfer might increase the effect of wealth on earnings (Bayer et al. (2025)), potentially through additional mechanisms like job-search insurance (Pilossoph and Wee (2021), Algan et al. (2003), Bloemen and Stancanelli (2001)) and capital for entrepreneurship (Doorley and Pestel (2016)). If a feedback loop from wealth to earnings is strong enough, then the massive reparations experiment considered here could generate a virtuous cycle in which more equal wealth reduces the earnings gap, which in turn limits the emergence of a new wealth gap.

Rather than attempt to embed all these feedback mechanisms directly into the model, we instead assume that wealth redistribution causes the earnings gap to close over time. The absence of a direct feedback channel from wealth to earnings is obviously a limitation of our framework; rather than complicate the model with explicit mechanisms (some of which we reference in Section 6), we try to bracket the range of outcomes that feedback mechanisms might produce by considering exogenous paths for the earnings gap that close at different rates. In Figure 9a, we examine two cases. The first case is a "gradual" path where the earnings gap decays by 1 percent each year. Under this scenario the earnings gap is half its initial size after 64 years, and 90 percent closed after another 160 years. The second case is more "accelerated." The earnings gap decays at 3 percent per year, reaching half-closure in 18 years and 90 percent closure after another 50 years.

Figure 9b plots the paths for the wealth gap which are non-monotonic. The wealth effect induces Black households to boost their consumption substantially.[32] As a result, the wealth gap initially follows the permanent earnings gap path, reopening rapidly. Eventually, the earnings gap

[31] See Oreopoulos (2021) for a discussion of the related literature on college completion.

[32] Here endogenizing the feedback from wealth to earnings could matter since, depending on the exact mechanism, there could be an additional incentive to save in order to increase earnings. How this would change the path of the wealth gap however is not clear since it may affect both white and Black households in similar ways.



(a) Earnings Gap

(b) Wealth Gap

Figure 9: One-Time Transfer

Note: This figure shows model predictions for the racial wealth gap after a one-time wealth transfer that equalizes the Black and white wealth distributions. Under the solid blue line the earnings gap remains permanently fixed at its initial level, while under the other two lines the earnings gap closes over time. The rates of closure for the 'gradual' and 'accelerated' are 1 percent per year and 3 percent per year, respectively.

is sufficiently small that the wealth gap begins a slow, uninterrupted decline to zero. Both the level and the timing of the peak of reopening depend on the pace of earnings gap closure. In the accelerated scenario, the wealth gap reaches a maximum of 30 percent 40 years after redistribution, while in the gradual scenario, it takes a little over a century for the wealth gap to peak at 49 percent.

While any actual reparations proposal would certainly be much smaller than the one in this exercise, and even allowing for considerable uncertainty around the size and pace of the effect on the earnings gap, some period of reversion in the wealth gap following the transfer is likely. Policymakers aiming to achieve quick progress on the wealth gap through large-scale reparations programs should anticipate this period of reversal and recognize the importance of also tackling the earnings gap for mitigating the size and duration of the reopening.

5.3 Racial Gaps in Returns to Savings

The baseline model assumes that both Black and white households can save at the same market interest rate r. However, because firm profits are reallocated through a proportional dividend, the *effective* return on wealth is $r + D$, where D equals the ratio of the dividend to average white wealth. As a result, even if R is the same for both racial groups, white households earn a higher effective return on their savings as long as firm profits are positive. In the initial steady state with a large earnings gap, white households receive an extra 60 basis points (0.6 percentage points) on their annual return.

There is empirical evidence that Black and white households earn similar returns on capital after controlling for factors like income, education, and other demographics (Gittleman and Wolff (2004), Gutter et al. (1999)). The best-studied asset is owner-occupied housing, and here the evidence points to homogeneous returns (Diamond and Diamond (2024); Kahn (2024); Wolff (2022); Kermani and Wong (2021)). On the other hand, others argue that there are differences in rates of return which could contribute to the wealth gap (Altonji and Doraszelski (2005); Hurst et al. (1998); Conley (2001); Petach and Tavani (2021)). Differences in returns on savings could potentially arise from wealth effects on portfolio choice, intergenerational social learning (Chiteji and Stafford (1999); Boerma and Karabarbounis (2023)), or race-specific wealth shocks like the collapse of the Freedmen's Savings Bank (Bogan et al. (2025); Edwards (2024); Baradaran (2017)), arbitrary confiscation of property (Kondo et al. (2025)), and predatory housing market contracts (George et al. (2019); Akbar et al. (2025)).

We investigate the sensitivity of our results to the inclusion of a predictable and permanent return gap would affect our baseline by imposing a wedge between the market rate and the return paid to Black households, r_b. Let $r_b = (1 - \Delta)\, r$ for $0 < \Delta < 1$. Mechanically, this wedge further increases firm profits rebated to white households.[33]

In the presence of a sizable earnings gap, such as the one in the initial steady state, even introducing large differences in returns has only a negligible effect on the wealth gap. In Figure 10, the wealth gap under the initial steady state (blue line) is plotted against the transition path under $\Delta = 0.50$. We consider $\Delta = 0.50$ to be large relative to the overall heterogeneity in returns found in papers like Kaymak et al. (2020) and Fagereng et al. (2020). For example, Kaymak et al. (2020) document return differences by income in the US irrespective of race and find Δ's on the order of 0.50 only between the top 1 percent of income and the bottom 90 percent.

Allowing firms to rent capital from Black households at half price causes the savings premium enjoyed by white households to immediately jump by an additional 18 basis points. This increase discourages (encourages) Black (white) savings, which in equilibrium reduces the dividend. In the long run, white wealth rises by 6.6 percent from its initial level while Black wealth falls by 12.4 percent, causing the wealth gap to go from 74 percent to 78 percent, meaning that a 250 percent higher effective return for white households only produces a wealth gap that is 4 percentage points larger.

[33] Note that households face no return risk here. Kondo et al. (2025) introduce "wealth destruction" shocks that imply much larger return risk for Black households.

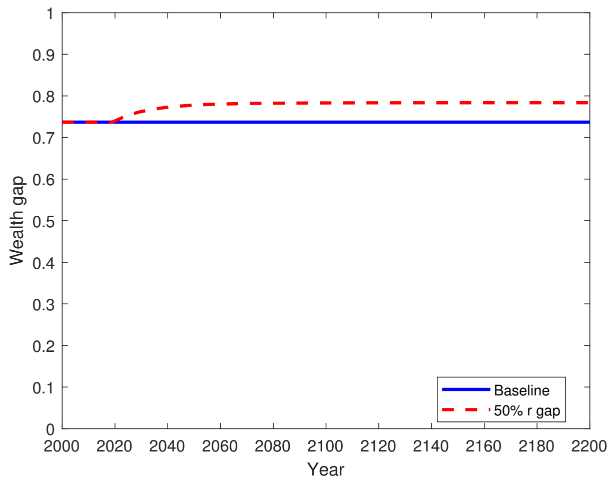


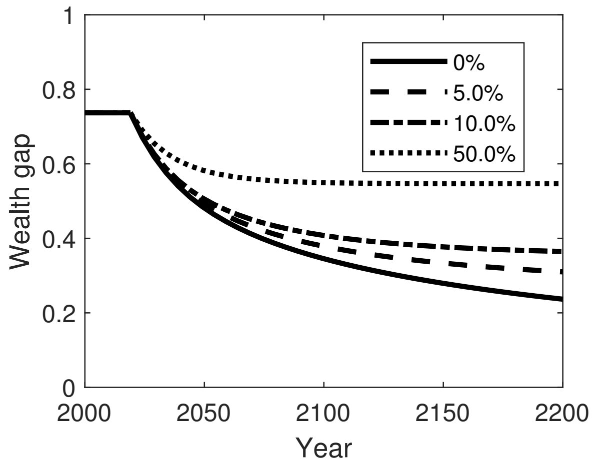
Figure 10: Permanent Return Gap and Earnings Gap

Note: This figure shows the transition paths for racial wealth gap when the earnings gap is unchanged from its initial level and a 50 percent return gap is added onto the model.

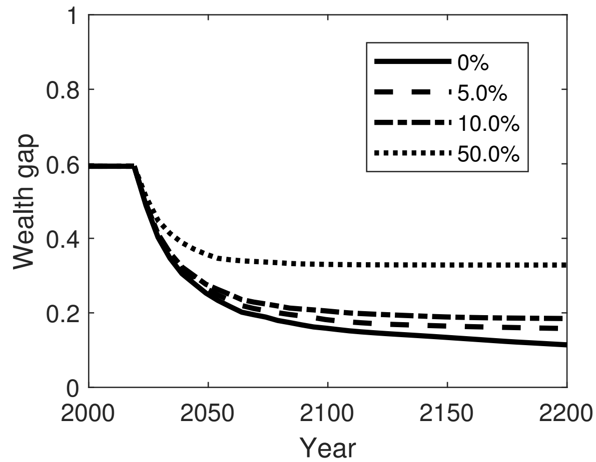
In contrast, return gaps have a sizable effect on the wealth gap if the earnings gap is small. In this case return gaps matter in the long run and, critically, operate almost entirely through the upper tail of the wealth distribution. To illustrate these points, we repeat the earnings gap elimination exercise from Section 5.1 but include return gaps of different sizes. As in the previous exercise, we run a $\Delta = 0.50$ case, but we also solve smaller, more empirically plausible cases as well. Specifically, we add cases where $\Delta = 0.10$ and $\Delta = 0.05$.

Figure 11a plots the path of the racial wealth gap for each scenario, highlighting that return gaps can matter in the long run when the earnings gap is closed. Under the 50 percent scenario, the dividend premium for white households starts out small but grows over time. This pattern arises because eliminating the earnings gap reduces profits relative to the baseline; however over time, profits rebound as Black households amass wealth. In the long run, the effective return multiple going to white households is 240 percent, very similar to its value in Figure 10. As a consequence, the transition path for the wealth gap quickly diverges from the baseline (no earnings gap and no return gap) path. Instead of vanishing as in the baseline, with a 50 percent return gap the wealth gap instead converges to 55 percent.

Naturally, the other two Δ cases imply much smaller dividend premia. At their peaks the effective return for white households is 17.3 percent and 8.7 percent larger than the Black effective return in the 10 percent and 5 percent cases, respectively. Even then, the wealth gap paths in these cases only begin to really diverge from the baseline path after 50 years. In the long run, a 10 percent return gap produces a 35 percent wealth gap, while under the 5 percent return gap case the wealth gap is 28 percent.



(a) Wealth Gap at the Mean



(b) Wealth Gap at 95^{th} Percentile

Figure 11: Permanent Return Gap; No Earnings Gap

Note: The left panel shows the transition paths for racial wealth gap (ratio of means) when the earnings gap is eliminated instantly, but permanent return gaps are introduced. The right panel shows the transition paths for the racial wealth gap at different parts of the wealth distribution after the earnings gap is eliminated, but permanent return gaps are introduced.

As before, the wealth tails are mainly responsible for the wide long run gaps. This can be seen in Figure 11b where the wealth gaps at the 95^{th} percentile are well below the analogous mean wealth gaps in Figure 11a. With the exception of the $\Delta = 0.50$ case, differences in the return gap have only small effects on racial wealth differentials up to the 95^{th} percentile of wealth, and then only after many years have passed. These exercises again stress the importance of closing the racial earnings gap for reducing the wealth gap, both in terms of the pace of progress and the breadth of households affected.

6 Conclusion

This paper highlights the importance of the earnings gap between Black and white households for understanding the persistence of the large racial wealth gap. When savings behavior is non-homothetic, inequality in earnings combines with initial differences in wealth to magnify the disparity between the racial groups. A heterogeneous-agents dynamic stochastic general equilibrium model augmented with a luxurious bequest motive can account for roughly 85 to 95 percent of the observed racial wealth gap. Even if the earnings gap is eliminated immediately, the wealth gap closes very slowly. A one-time transfer program that equalizes the initial wealth distribution by race but does not alter the earnings gap has only a transitory effect on the racial wealth gap.

Our results underscore the importance of understanding the sources of continued differences in earnings between Black and white households. Some primary suspects include segregated schools and neighborhoods, segregated social and employment networks, differences in household formation, segregated consumer markets, financial constraints on educational attainment, and discrimination in the labor market. The results in this paper indicate that policies aimed at reducing the earnings gap would be most effective at eliminating the racial wealth gap and would in fact be necessary to permanently eliminate it.

Several extensions could enrich the analysis. Incorporating interracial household formation, which has risen substantially over recent decades, would allow for endogenous evolution of racial wealth categories. Modeling an explicit feedback from wealth to earnings—for example, through educational investment or entrepreneurship—could sharpen the predictions of the wealth-transfer exercise in Section 5.2. Finally, while our robustness analysis shows that return heterogeneity has modest effects in the presence of an earnings gap, richer models of portfolio choice and financial access could reveal interactions that our framework does not capture.

References

Addo, F. R., W. A. Darity Jr, and S. L. Myers Jr (2024). Setting the record straight on racial wealth inequality. In *AEA Papers and Proceedings*, Volume 114, pp. 169–173.

Ager, P., L. P. Boustan, and K. Eriksson (2019). The intergenerational effects of a large wealth shock: White Southerners after the Civil War. *NBER Working Paper 25700*. DOI: 10.3386/w25700.

Aiyagari, S. R. (1994). Uninsured idiosyncratic risk and aggregate saving. *The Quarterly Journal of Economics 109*(3), 659–684. DOI: 10.2307/2118417.

Akbar, P. A., S. L. Hickly, A. Shertzer, and R. P. Walsh (2025). Racial segregation in housing markets and the erosion of Black wealth. *The Review of Economics and Statistics 107*(1), 42–54.

Albuquerque, D. and T. Ifergane (2025). Entrepreneurship and the racial wealth gap. *SSRN Working Paper 4943318*.

Algan, Y., A. Chéron, J.-O. Hairault, and F. Langot (2003). Wealth effect on labor market transitions. *Review of Economic Dynamics 6*(1), 156 – 178. DOI: 10.1016/S1094-2025(02)00013-3.

Aliprantis, D., D. Carroll, and E. Young (2024). What explains neighborhood sorting by income and race? *Journal of Urban Economics 141*, 103508.

Althoff, L. and H. Reichardt (2024). Jim Crow and Black economic progress after slavery. *The Quarterly Journal of Economics 139*(4), 2279–2330.

Altonji, J. G. and U. Doraszelski (2005). The role of permanent income and demographics in black/white differences in wealth. *Journal of Human Resources XL*(1), 1–30. DOI: 10.3368/jhr.XL.1.1.

Arias, E., M. Heron, and J. Xu (2016, November 28). *United States Life Tables, 2012* (65, 8 ed.). Washington, DC: Centers for Disease Control and Prevention (CDC).

Ashman, H. and S. Neumuller (2020). Can income differences explain the racial wealth gap? A quantitative analysis. *Review of Economic Dynamics 35*, 220–239.

Avery, R. B. and M. S. Rendall (2002). Lifetime inheritances of three generations of whites and blacks. *American Journal of Sociology 107*(5), 1300–1346. DOI: 10.1086/344840.

Bach, L., L. E. Calvet, and P. Sodini (2020). Rich pickings? Risk, return, and skill in household wealth. *American Economic Review 110*(9), 2703–2747.

Baradaran, M. (2017). *The Color of Money: Black Banks and the Racial Wealth Gap*. Cambridge, MA: Harvard University Press.

Barsky, R., J. Bound, Kerwin Ko' Charles, and J. P. Lupton (2002). Accounting for the black-white wealth gap. *Journal of the American Statistical Association 97*(459), 663–673. DOI: 10.1198/016214502388618401.

Bartik, T. J., B. Hershbein, and M. Lachowska (2021). The effects of the Kalamazoo Promise Scholarship on college enrollment and completion. *Journal of Human Resources 56*(1), 269–310.

Bayer, P., K. K. Charles, and J. Park (2025). The long road to equality: Racial capital and generational convergence. *Mimeo., Duke University.*

Benhabib, J., A. Bisin, and S. Zhu (2015). The wealth distribution in Bewley economies with capital income risk. *Journal of Economic Theory 159*, 489 – 515.

Bewley, T. F. (1986). Stationary monetary equilibrium with a continuum of independently fluctuating consumers. In W. Hildenbrand and A. Mas-Collel (Eds.), *Contributions to Mathematical Economics in Honor of Gerard Debreu*, pp. 79–102. North Holland.

Black, S. E., P. J. Devereux, F. Landaud, and K. G. Salvanes (2024). The (un)importance of inheritance. *Journal of the European Economic Association*, jvae056.

Blau, F. D. and J. W. Graham (1990). Black-white differences in wealth and asset composition. *The Quarterly Journal of Economics 105*(2), 321–339. DOI:10.2307/2937789.

Bleakley, H. and J. Ferrie (2016, 03). Shocking behavior: Random wealth in Antebellum Georgia and human capital across generations. *The Quarterly Journal of Economics 131*(3), 1455–1495.

Bloemen, H. and E. Stancanelli (2001). Individual wealth, reservation wages, and transitions into employment. *Journal of Labor Economics 19*(2), 400–439. DOI: 10.1086/319566.

Boerma, J. and L. Karabarbounis (2023). Reparations and persistent racial wealth gaps. *NBER Macroeconomics Annual 37*(1), 171–221.

Bogan, V. L., L. A. Kramer, C. Liao, and A. Niessen-Ruenzi (2025). Generational race-based trauma and financial market participation. *Mimeo., Duke University.*

Bradford, W. D. (2003). The wealth dynamics of entrepreneurship for black and white families in the US. *Review of Income and Wealth 49*(1), 89–116.

Brandsaas, E. E. (2024). Illiquid homeownership and the bank of mom and dad. *Mimeo., Federal Reserve Board*.

Bulman, G., R. Fairlie, S. Goodman, and A. Isen (2021, April). Parental resources and college attendance: Evidence from lottery wins. *American Economic Review 111*(4), 1201–40.

Cagetti, M. and M. De Nardi (2008). Wealth inequality: Data and models. *Macroeconomic Dynamics 12*(S2), 285–313.

Carlson, D. E., F. Elwert, N. Hillman, A. Schmidt, and B. L. Wolfe (2019). The effects of financial aid grant offers on postsecondary educational outcomes: New experimental evidence from the Fund for Wisconsin Scholars. *NBER Working Paper 26419*.

Castañeda, A., J. Díaz-Giménez, and J.-V. Ríos-Rull (2003). Accounting for the US earnings and wealth inequality. *Journal of Political Economy 111*(4), 818–857.

Caucutt, E. M., N. Guner, and C. Rauh (2021). Incarceration, unemployment, and the racial marriage divide. *Mimeo., CENFI*.

Chatterjee, S. (1994). Transitional dynamics and the distribution of wealth in a neoclassical growth model. *Journal of Public Economics 54*(1), 97–119.

Chetty, R., N. Hendren, M. R. Jones, and S. R. Porter (2020). Race and economic opportunity in the United States: An intergenerational perspective. *Quarterly Journal of Economics 135*(2), 711–783.

Chiteji, N. S. and F. P. Stafford (1999, May). Portfolio choices of parents and their children as young adults: Asset accumulation by African-American families. *American Economic Review 89*(2), 377–380.

Conley, D. (2001). Decomposing the black-white wealth gap: The role of parental resources, inheritance, and investment dynamics. *Sociological Inquiry 71*(1), 39–66.

Darity, Jr., W., F. R. Addo, and I. Z. Smith (2020). A subaltern middle class: The case of the missing "Black bourgeoisie" in America. *Contemporary Economic Policy*.

Darity, W. A. and A. K. Mullen (2020). *From Here to Equality: Reparations for Black Americans in the Twenty-First Century*. University of North Carolina Press.

De Nardi, M. (2004). Wealth inequality and intergenerational links. *The Review of Economic Studies 71*(3), 743–768.

De Nardi, M. and G. Fella (2017). Saving and wealth inequality. *Review of Economic Dynamics 26*, 280–300.

De Nardi, M. and F. Yang (2014). Bequests and heterogeneity in retirement wealth. *European Economic Review 72*, 182–196. DOI: 10.1016/j.euroecorev.2014.09.004.

Derenoncourt, E., C. H. Kim, M. Kuhn, and M. Schularick (2024). Wealth of two nations: The US racial wealth gap, 1860-2020. *The Quarterly Journal of Economics 139*(2), 693–750.

Diamond, R. and W. F. Diamond (2024). Racial differences in the total rate of return on owner-occupied housing. *NBER WP 32916*.

Doorley, K. and N. Pestel (2016). Labour supply after inheritances and the role of expectations. *IZA Discussion Paper No. 9822*.

Dynan, K. E., J. Skinner, and S. P. Zeldes (2004). Do the rich save more? *Journal of Political Economy 112*(2), 397–444.

Edwards, J. H. (2024). *Savings and Trust: The Rise and Betrayal of the Freedman's Bank*. W. W. Norton & Company.

Fagereng, A., L. Guiso, D. Malacrino, and L. Pistaferri (2020). Heterogeneity and persistence in returns to wealth. *Econometrica 88*(1), 115–170.

Feiveson, L. and J. Sabelhaus (2018, June 1). How does intergenerational wealth transmission affect wealth concentration? *FEDS Notes*. DOI: 10.17016/2380-7172.2209.

Feiveson, L. and J. Sabelhaus (2019). Lifecycle patterns of saving and wealth accumulation. *FEDS Working Paper 2019-010*. https://doi.org/10.17016/FEDS.2019.010.

Fisher, J. D., D. S. Johnson, T. M. Smeeding, and J. P. Thompson (2020). Estimating the marginal propensity to consume using the distributions of income, consumption, and wealth. *Journal of Macroeconomics 65*, 103218.

Gaillard, A., C. Hellwig, P. Wangner, and N. Werquin (2023). Consumption, wealth, and income inequality: A tale of tails. *Chicago Fed Working Paper 2023-43*.

Gayle, G.-L., L. Golan, and M. Soytas (2015). What accounts for the racial gap in time allocation and intergenerational transmission of human capital? *FRB St. Louis Working Paper 2015-18*.

George, S., A. Hendley, J. Macnamara, J. Perez, and A. Vaca-Loyola (2019). *The Plunder of Black Wealth in Chicago: New Findings on the Lasting Toll of Predatory Housing Contracts*. Duke University: The Samuel DuBois Cook Center on Social Equity.

Gittleman, M. and E. N. Wolff (2004). Racial differences in patterns of wealth accumulation. *Journal of Human Resources XXXIX*(1), 193–227. DOI: 10.3368/jhr.XXXIX.1.193.

Gordon, G., J. B. Jones, U. Neelakantan, and K. Athreya (2023). Incarceration, employment, and earnings: Dynamics and differences. *Review of Economic Dynamics 51*, 677–697.

Gutter, M. S., J. J. Fox, and C. P. Montalto (1999). Racial differences in investor decision making. *Financial Services Review 8*(3), 149–162.

Hamilton, D., W. Darity Jr, A. E. Price, V. Sridharan, and R. Tippett (2015). *Umbrellas Don't Make It Rain: Why Studying and Working Hard Isn't Enough for Black Americans.* New York: The New School.

Hendricks, L. (2001). Bequests and retirement wealth in the United States. *Mimeo., Arizona State University.*

Hendricks, L. (2007). Retirement wealth and lifetime earnings. *International Economic Review 48*(2), 421–456. DOI: 10.1111/j.1468-2354.2007.00433.x.

Hubmer, J., E. Halvorsen, S. Salgado, and S. Ozkan (2025). Why are the wealthiest so wealthy? New longitudinal empirical evidence and implications for theories of wealth inequality. *SSRN Working Paper*.

Huggett, M. (1993). The risk-free rate in heterogeneous-agent incomplete-insurance economies. *Journal of Economic Dynamics and Control 17*(5), 953–969. 10.1016/0165-1889(93)90024-M.

Hurst, E., M. C. Luoh, F. P. Stafford, and W. G. Gale (1998). The wealth dynamics of American families, 1984-94. *Brookings Papers on Economic Activity* (1), 267–337.

Imrohoroglu, A., C. Kumru, and J. Lian (2025). Racial disparities in crime and wealth. *Mimeo., University of Southern California.*

Imrohoroğlu, A. (1989). Cost of business cycles with indivisibilities and liquidity constraints. *Journal of Political Economy 97*(6), 1364–1383.

Kahn, M. E. (2024). Racial and ethnic differences in the financial returns to home purchases. *Real Estate Economics 52*(3), 908–927.

Kaymak, B., D. Leung, and M. Poschke (2020). Accounting for wealth concentration in the US. *Mimeo., Université de Montréal.*

Kermani, A. and F. Wong (2021). Racial disparities in housing returns. *NBER Working Paper 29306.*

Kondo, I. O., S. L. Myers, Jr, W. A. Darity, Jr, and T. H. Zeida (2025). Racial wealth inequality accounting: 1860 - 2020. *Mimeo., Minneapolis Fed.*

Kuhn, M. and J.-V. Ríos-Rull (2016). 2013 update on the US earnings, income, and wealth distributional facts: A view from macroeconomics. *Federal Reserve Bank of Minneapolis Quarterly Review 37*(1).

Livingston, G. and A. Brown (2017, May 18). *Intermarriage in the U.S. 50 Years After Loving v. Virginia* (Technical Series Paper #96-03 ed.). Washington, DC: Pew Research Center. Available at https://www.pewresearch.org/social-trends/2017/05/18/intermarriage-in-the-u-s-50-years-after-loving-v-virginia/.

Llanes, E., J. P. Thompson, and A. H. Volz (2025). Do the rich save more? Answering an old question with alternate measures of earnings and wealth. *Mimeo., Boston Fed.*

McKernan, S.-M., C. Ratcliffe, M. Simms, and S. Zhang (2014). Do racial disparities in private transfers help explain the racial wealth gap? New evidence from longitudinal data. *Demography 51*(3), 949–974.

Menchik, P. L. and N. A. Jianakoplos (1997). Black-white wealth inequality: Is inheritance the reason? *Economic Inquiry 35*(2), 428–442. DOI: 10.1111/j.1465-7295.1997.tb01920.x.

Nakajima, M. (2022). Monetary policy with racial inequality. *Mimeo., Philadelphia Fed.*

Neal, D. A. and W. R. Johnson (1996). The role of premarket factors in black-white wage differences. *Journal of Political Economy 104*(5), 869–895. DOI: 10.1086/262045.

Nielsen, E. (2020). Test questions, economic outcomes, and inequality. *Mimeo., Federal Reserve Board.*

Oreopoulos, P. (2021). What limits college success? a review and further analysis of holzer and baum's *Making College Work*. *Journal of Economic Literature 59*(2), 546–73.

Petach, L. and D. Tavani (2021). Differential rates of return and racial wealth inequality. *Journal of Economics, Race, and Policy 4*(3), 115–165.

Pilossoph, L. and S. L. Wee (2021). Household search and the marital wage premium. *American Economic Journal: Macroeconomics 13*(4), 55–109.

Sabelhaus, J. and J. P. Thompson (2023). What role for 'generational wealth' in explaining racial wealth disparities? *Mimeo., Boston Fed.*

Sargent, T. J., N. Wang, and J. Yang (2020). Stochastic earnings growth and equilibrium wealth distributions. *Mimeo., NYU*.

Scholz, J. K. and K. Levine (2003). US black-white wealth inequality: A survey. *Mimeo., University of Wisconsin.*

Stachurski, J. and A. A. Toda (2019). An impossibility theorem for wealth in heterogeneous-agent models with limited heterogeneity. *Journal of Economic Theory 182*, 1–24.

Straub, L. (2019). Consumption, savings, and the distribution of permanent income. *Mimeo., Harvard University.*

Tan, E. and T. H. Zeida (2024). Consumer demand and credit supply as barriers to growth for black-owned startups. *Journal of Monetary Economics 143*, 103543.

Thompson, J. P. and G. A. Suarez (2015). Exploring the racial wealth gap using the Survey of Consumer Finances. *Federal Reserve Board WP 2015-076*. DOI: 10.17016/FEDS.2015.076.

Thompson, O. (2024). Human capital and black-white earnings gaps, 1966–2019. *Journal of Economic Behavior & Organization 227*, 106707.

Wolff, E. N. (2022). Heterogenous rates of return on homes and other real estate: Do the rich do better? Do Black households do worse? *NBER Working Paper 30543*.

A Data Appendix: The Survey of Consumer Finances (SCF)

A.1 Overview

We measure the joint distribution of earnings and wealth at a point in time using the triennial Survey of Consumer Finances (SCF), which began in 1983 and has been most recently released for 2019. We also use a precursor to the SCF, the 1962 Survey of Financial Characteristics of Consumers (SFCC). For the sake of comparison, in some cases we use the SCF+ from 1963 to 1977, which comprises archival data from historical waves of the SCF (Kuhn et al. (2020)).

Our SCF and SCFF samples consist of families with heads or respondents who are (i) either Black or white and (ii) aged 20-100. We interpret the "Nonwhite" group in the 1962 SFCC as being identical to the "Black or African American" group under the 1997 US Office of Management and Budget Classification Standards (OMB (1997)) for defining race. This choice is not obvious, so we discuss evidence on its reasonableness in the next Section, A.2.

In the SFCC and SCF we measure wealth as net worth, which includes home equity, individual retirement accounts (IRAs), and many other financial/nonfinancial assets and debts.[34]

We consider two measures of labor market earnings. We are able to measure the first definition of earnings, wage and salary income, further back in time. In the 1962 SFCC and 1983-2019 SCF we measure wage and salary income as total family income from wages and salaries.[35]

In the 1989-2019 SCF we measure a second definition of earnings, household labor income, as the sum of wage and salary income plus the labor share of business and farm income. For each survey we follow Kuhn and Ríos-Rull (2016) to estimate the labor share of business and farm income as the sample-wide ratio of unambiguous labor income (wages plus salaries) to the sum of unambiguous labor income and unambiguous capital income (income from non-taxable bonds, interest income, income from dividends, and capital gains). This last variable can be constructed from the public summary file as the sum of the variables *intdivinc* and *kginc*. Then we follow Kuhn and Ríos-Rull (2016) to define labor earnings as wages and salaries of all kinds, plus this fraction of business and farm income.

We calibrate the model to a labor share of business and farm income of 0.90. Figure 12 shows 0.90 is broadly consistent with the SCF from 1989 to 2019 when following the methodology from Kuhn and Ríos-Rull (2016).

For 1989-2019 we obtain wealth and earnings in real 2019 dollars from the "Summary Extract Public Data" files. For 1983 and 1986 we obtain wealth and earnings in nominal dollars from the Edited and Imputed Version of the Stata format "Full Public Data Sets." For the 1962 SFCC we obtain wealth and earnings in nominal dollars from the "Full Public Data Set," but a major difference from subsequent waves of the survey is that we must construct our own net worth variable in terms of total assets minus total debts. We construct total assets and total debts from the list of component variables according to the SCF definitions to match the net worth programs for 1983

[34] The full list is available at https://www.federalreserve.gov/econres/files/Networth%20Flowchart.pdf.

[35] The sources of earnings are the head, wife, and other family members in 1962; the respondent and spouse in 1983-1986; and anyone in the family in 1989-2016.

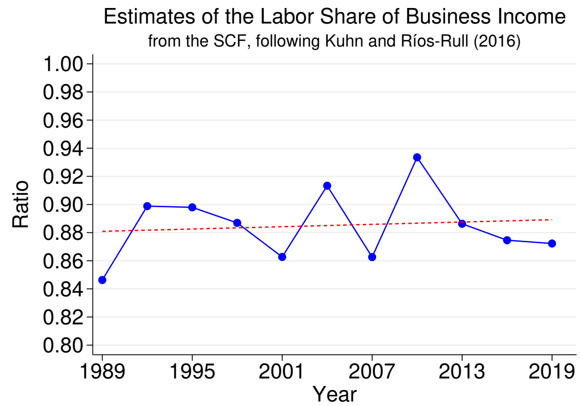


Figure 12: The Labor Share of Business Income in the Survey of Consumer Finances (SCF)

Note: See the Appendix text for a description of how this variable is defined following the methodology in Kuhn and Ríos-Rull (2016).

onward. We obtain the SCF+ data from the data archive of Kuhn et al. (2020). Since the CPI-U-R series only goes back to 1977, we deflate nominal values in 1962 using the CPI-U and nominal values in 1983 and 1986 using the CPI-U-R. The financial variables already converted to real 2019 dollars in the 1989-2019 "Summary Extract Public Data" files were deflated by SCF staff using the CPI-U-R.

A.2 Racial Categories in the 1962 SFCC

In the 1962 SFCC the surveyor assigned household heads to one of three mutually exclusive categories: "White," "Nonwhite," or "Not Ascertained." These categories do not match the US Census Bureau categories established by the 1997 US Office of Management and Budget Classification Standards (OMB (1997)). Mapping previous racial and ethnic categories in the US Census to the currently used categories is a convoluted process (Pratt et al. (2015)). Aside from the issues this fact raises about how we interpret racial statistics (Zuberi (2001)), this fact also raises a measurement issue for our analysis.

Mapping race from the 1983-2016 waves of the SCF to current racial categories is not straightforward because the surveys convolute race and ethnicity. We assign race to families based on the race of the survey respondent, who must choose one mutually exclusive choice. In 2016, for example, respondents are asked which category best describes them among "white, Black or African-American, Hispanic or Latino, Asian, American Indian or Alaska Native, Hawaiian Native or other Pacific Islander, or another race."

Mapping race in the 1962 SFCC survey to current racial categories is less straightforward than choosing the mapping for later waves. Race was determined in the SFCC by the surveyor in 1962, which simplifies our task relative to respondents choosing their racial identity (Dahis et al. (2019)).[36] The 1962 SFCC labels the family head as being one of three mutually exclusive categories: "White,"

[36] Race became self-identified starting in the 1989 SCF.

“Nonwhite,” or “Not Ascertained.” In our analysis we interpret these categories in terms of the current US Census Bureau categories established by the 1997 US Office of Management and Budget Classification Standards (OMB (1997)).

Of the weighted sample in the 1962 SFCC, white, nonwhite, and not ascertained respondents make up, respectively, 79.5, 9.5, and 11.0 percent of the sample. In the 1960 census, white and Black individuals are, respectively, 88.6 and 10.5 percent (US Census (1961)). Thus, the numbers would be reasonable if marginally white groups – white groups by today’s terms that were historically viewed as being white in a marginal or inferior way, such as Jews, Greeks, Italians, and Irish (Painter (2015)) – combined with Hispanics to form the 11.0 percent of “not ascertained” family heads in the 1962 SFCC. The remaining share of “nonwhite” respondents in the 1962 SFCC corresponds closely with the share of Black individuals in the US population at the time.

With these considerations in mind, we interpret “nonwhite” in the 1962 SFCC as meaning “Black” in today’s terms and we interpret “white” and “not ascertained” in the 1962 SFCC as meaning “white” in today’s terms. Relevant data show that these appear to be reasonable interpretations. Nearly all of the US population was either white or Black in the 1960 Census. Of the nonwhite population in the 1960 census, 92.1 percent were “Negro” (US Census (1961)).[37] Although the Hispanic origin question was first introduced in the 1970 census, Gratton and Gutmann (2000) have used other variables, such as birthplace, maternal birthplace, mother tongue, and having a Spanish last name, to impute how respondents to censuses before 1970 would have responded to the Hispanic origin question had it been posed in those earlier censuses. Figure 13 shows the results of their analysis; it is likely that about 3 percent of the US population was Hispanic in 1960.

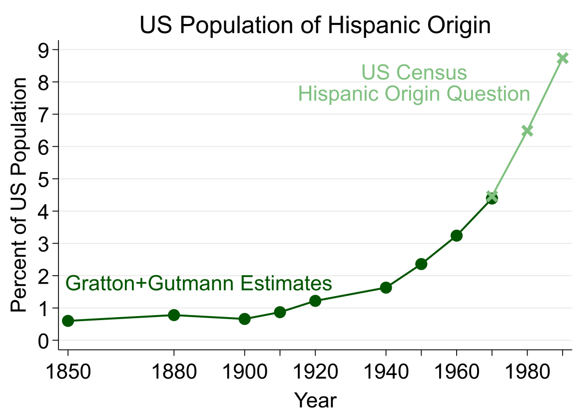


Figure 13: Hispanic Population in the US over Time

Evidence on educational attainment also supports our choices for mapping the racial categories in the 1962 SFCC to today’s racial categories. BA attainment would be higher than expected if “not ascertained” family heads were mapped to “Black.” This can be seen by looking at levels (Figure 14) or ratios (Figure 15).

[37]The 1960 Census questionnaire asked if each person was “White, Negro, American Indian, Japanese, Chinese, Filipino, Hawaiian, Part Hawaiian, Aleut, Eskimo, (etc.)?”

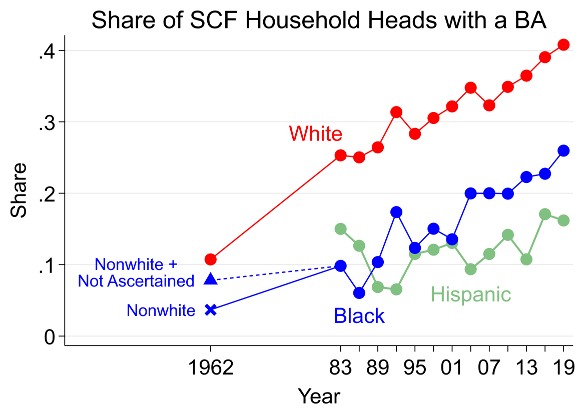


Figure 14: Educational Attainment in the SCF

Focusing on ratios, our interpretation of "nonwhite" respondents in the 1962 SCF as being Black, and only those respondents, implies trends of educational attainment that are consistent with the trends in other data sets that more precisely and consistently defined "Black" as a category. In contrast, if we were to interpret respondents in both the "nonwhite" and the "not ascertained" groups as being Black, the 1962 SFCC would imply unrealistic rates of educational attainment for Black Americans in 1962. To see this formally, we estimate a regression where the dependent variable is the ratio of Black to white BA attainment, the independent variable is year, and we use both the CPS and SCF data from 1963 onward. In terms of the errors from this regression, the error for the 1962 SFCC prediction would have a z-score of 2.1 or 11.4 if we measured Black as, respectively, either "nonwhite" or "nonwhite + not ascertained."

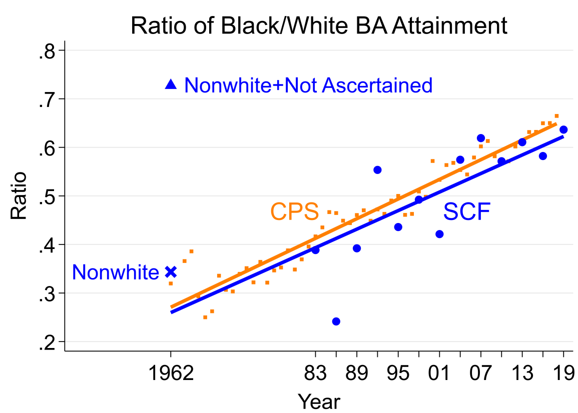


Figure 15: Educational Attainment in the SCF and CPS

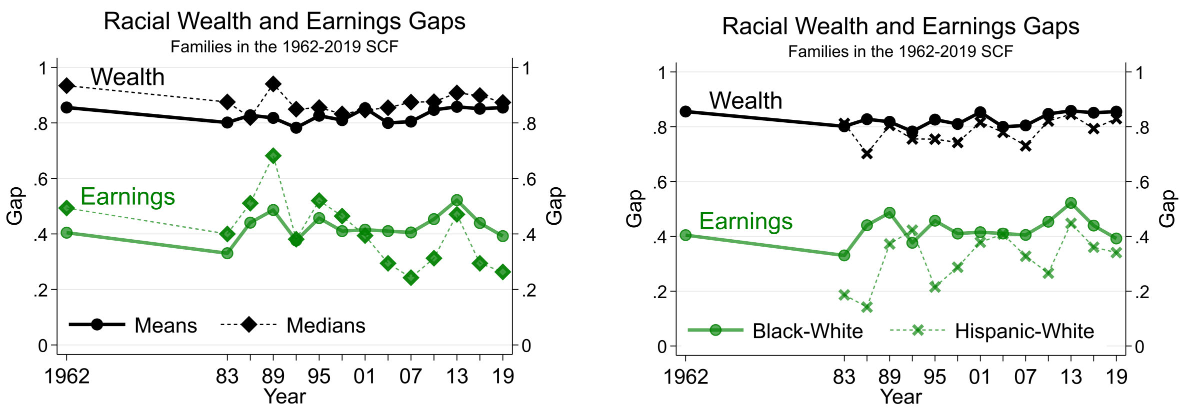
A.3 Alternative Wealth Gap Measures

A.3.1 Means Versus Medians

Figure 16a shows that when measured in terms of medians rather than means, the wealth gap is larger and the earnings gap has a higher variance. Measured in terms of medians, the wealth gap hovers closer to 0.9. Declines in the earnings gap from 2001-2010 would appear to be driven less by improvements in the earnings of Black households and more by declines in the earnings of white households.

A.3.2 The Hispanic-White Wealth Gap

Figure 16b shows that the Hispanic-white wealth gap is not much smaller than the Black-white wealth gap. While the Hispanic-white earnings gap appears to be slightly lower than the Black-white earnings gap, this difference is not economically large in most years. We note that measurement issues can complicate a direct comparison of Black-white and Hispanic-white gaps (Duncan and Trejo (2007)).



(a) Measuring Gaps with Means v. Medians

(b) Black Gaps v. Hispanic Gaps

Figure 16: Measures of the Wealth and Earnings Gaps

B Data Appendix: Additional Data Sets

The levels and trends of the racial wealth and earnings gap documented in Section 4.1 are consistent with many studies using many data sets. Table 11 shows the analogous gaps found in other studies in the literature. The wealth gap is stable across studies. The earnings gap is more sensitive than the wealth gap to the unit of observation, the time period over which it is observed, and as shown above, whether it is measured via medians rather than means.

Table 11: Estimates of the Racial Wealth and Earnings Gaps in the Literature

Study	Data Set(s)	Unit of Observation	Income Gap	Wealth Gap
Labor Income (Earnings)				
This Paper	1989-2019 SCF	Families	0.50	0.83
Barsky et al. (2002)	1984,1989,1994 PSID	HHs with head 45-49	0.44	0.82
Semega and Kollar (2022)	2018 CPS	HHs	0.40	–
Gayle et al. (2015)	1968-1997 PSID	Men	0.41	–
Bayer and Charles (2018)	1970+2000 Census; 2005-2007 ACS	Men 25–54	0.52 (median)	–
Total Income				
Wolff (2018)	1983-2016 SCF	Families	0.52	0.82
Blau and Graham (1990)	1976+1978 NLS	Fam. or Ind. 24-34	0.35	0.82
Terrell (1971)	1967 SEO	Families	0.41	0.81
Lifetime Earnings				
Sabelhaus and Thompson (2022)	2019 SCF	Families 40-59	0.40	0.84

Relevant for our estimates of the earnings gap, Barsky et al. (2002) find an income gap of 44 percent in the 1984, 1989, and 1994 waves of the Panel Study of Income Dynamics (PSID) when focusing on households with heads aged 45-49 . Bayer and Charles (2018) provide a detailed analysis of changes in race-specific income distributions since 1940. The estimate in their paper most directly comparable to ours is a median income gap from 1970 to 2007 of 52 percent when focusing on men aged 25-54. We calculate the gap from Census data in Bayer and Charles (2018) by averaging the 1970, 2000, and 2007 values of the last row for "Earnings level gap" in Table I. Also relevant for our study is Wolff (2018), who finds an average gap of 52 percent in the 1983-2016 waves of the SCF when looking at total income rather than labor income. Other studies measuring total income at different time periods found gaps closer to ours measured with labor income. Terrell (1971) found a gap of 41 percent using the 1967 Survey of Economic Opportunity and Blau and Graham (1990) find a gap of 35 percent in the 1976 and 1978 National Longitudinal Surveys of Young Men and Women.

The racial wealth gap is even more consistently corroborated across many studies using many data sets. Terrell (1971) found a wealth gap of 81 percent using the 1967 Survey of Economic Opportunity. Blau and Graham (1990) find a wealth gap of 82 percent in the 1976 and 1978 National Longitudinal Surveys of Young Men and Women. Barsky et al. (2002) find a gap of 82 percent in the 1984, 1989, and 1994 waves of the Panel Study of Income Dynamics (PSID) when focusing on households with heads aged 45-49. Wolff (2018) finds an average wealth gap of 82 percent in the 1983-2016 waves of the SCF.

Recent work documenting the racial wealth and earnings gaps using the SCF+ are typically more focused on the full distribution rather than simply mean differences, but nevertheless find results in terms of levels and trends that are comparable to those in our analysis (Kuhn et al. (2020), Derenoncourt et al. (2024)).

C Data Appendix: The National Longitudinal Survey of Youth 1979 (NLSY79)

Sample We measure labor market outcomes over the life cycle using the National Longitudinal Survey of Youth 1979 (NLSY79). The NLSY79 sample was born between 1957 and 1964, and was followed with annual (1979-1994) and biennial (1996-2016) surveys. Respondents were aged 14-22 at the date of the 1979 survey and aged 51-60 at the date of the 2016 survey. The NLSY79 has a core sample that is nationally representative and four supplemental samples designed to oversample poor whites, Blacks, Hispanics, and military personnel. Our analysis is based on the white respondents in the core sample and Black respondents in either the core sample or the Black supplemental sample, which follows the approach in Keane and Wolpin (2000).

Race There are many degrees of freedom when defining race in the NLSY79. While Black and Hispanic respondents are identified directly, the sampling frame from which white respondents are taken is non-Black/non-Hispanic. In addition to this sampling frame, we eliminate respondents from our non-Hispanic white category using their response to the first question asked about the racial/ethnic origin group with which the respondent most closely identifies. Specifically, we eliminate respondents in the non-Black/non-Hispanic sample from the white category if they respond that their origin is Black, Chinese, Filipino, Hawaiian or Pacific Islander, Indian-American or Native American, Asian Indian, Japanese, Korean, Vietnamese, Chicano, Mexican, Mexican-American, Other Hispanic, Other Spanish, Other, or None. This definition yields 3,379 white males in the original sample, consistent with Cunha and Heckman (2016). We assign race to each household based on the race of the respondent.

Schooling (Educational Attainment) We measure respondents' schooling level, or educational attainment, in the NLSY79 in terms of three levels: less than high school, high school diploma, or BA/college degree. We follow Bhattacharya and Mazumder (2011) and measure attainment primarily using information on years of completed schooling by age 26, noting that choosing a later age would lower the returns to attainment (Aliprantis et al. (2025), Bárány et al. (2023)). Alternatively, measuring attainment using information on respondents' highest degree received would result in 7.6 percent fewer observations, and creates discrepancies for an additional 4.1 percent of respondents in our sample. In the case of a discrepancy between these measures, we use information about the highest degree as follows: For those who report receiving a college degree while completing 15 or less years of schooling, we assign *college degree*. For those who report not receiving a college degree while completing 16 or more years of schooling, we assign *high school diploma*. And we assign *less than high school* to those likely to have received a GED; this group reported "high school diploma (or equivalent)" in terms of their highest degree received, but have 11th grade or lower as their highest grade completed. We assign educational attainment to each household based on the attainment of the respondent.

Earnings Household labor income, or earnings, is measured as the sum of the respondent's labor income and, if present, that of either their spouse or partner. Labor income includes wage and salary income, the labor share of business income, military income, and public assistance.[38] Public assistance in the NLSY79 includes Aid to Families with Dependent Children (AFDC), food stamps/the Supplemental Nutrition Assistance Program (SNAP), Supplemental Security Income (SSI), other public assistance, or welfare. Nominal incomes are converted to real 2019 dollars using the R-CPI-U-RS series. We assign earnings to households by age using the respondents' age at the survey minus one. When calibrating the model, we generate average earnings over five-year age windows by averaging each household's earnings over the observed ages in the given window.

C.1 Estimating the Earnings Process on the NLSY79

Recall from the main text the state variables age a, schooling s, and race j, and that household i's pre-tax household earnings y_i are

$$y_i = \Phi(a_i, s_i, j_i) \cdot \exp(\varepsilon_i(a))$$

with

$$\varepsilon_i(a+1) = \rho(s_i, j_i)\, \varepsilon_i(a) + \eta_i(a) \qquad \text{where} \qquad \eta_i(a) \sim \mathcal{N}(0, \sigma(s_i, j_i)^2).$$

We use schooling×race-specific quadratic functions of age to estimate Φ as the mean of labor market income in each household's category for age, schooling, and race. The estimated $\Phi(a, s, \text{Black})$ and $\Phi(a, s, \text{white})$ are shown in Figure 17.

Figure 17: Age-Income Profiles by Race and Schooling in the NLSY79

Note: This figure shows the age-income profiles estimated from the NLSY79 that are used to calibrate the model.

Given our estimates of Φ and the data on observed earnings y, for each household we observe

$$\varepsilon_i(a, s, j) = \log\left(\frac{y_i(a)}{\Phi(a, s, j)}\right).$$

[38] We set the labor share of business income to 0.90; see Appendix A.1 for details.

To specify the likelihood of the earnings process parameters, the assumption of a minimum earnings level $\underline{y}$ imposes that the $\varepsilon_i(a,s,j)$ are censored observations from a true process

$$\varepsilon_i^*(a+1) = \rho\left(s_i, j_i\right)\, \varepsilon_i^*\left(a\right) + \eta_i\left(a\right)$$

where

$$\varepsilon_i\left(a\right) = \begin{cases} \underline{\varepsilon_i^*}\left(a\right) = \log\left(\frac{\underline{y}}{\Phi(a_i,s_i,j_i)}\right) & \text{if } \varepsilon_i^*\left(a\right) < \underline{\varepsilon_i^*}\left(a\right) \\ \varepsilon_i^*\left(a\right) & \text{if } \varepsilon_i^*\left(a\right) \geq \underline{\varepsilon_i^*}\left(a\right) \end{cases}.$$

Thus, given $\Phi\left(a, s, \text{Black}\right)$ and $\Phi\left(a, s, \text{white}\right)$, we can estimate ρ and σ parameters via maximum likelihood, where the log-likelihood is

$$LL\left(\rho, \sigma | \varepsilon\right) \propto \sum_{i:\varepsilon_i(1)=\underline{\varepsilon_i}(1)} \log\left[\Pr\left(\varepsilon_i^*\left(1\right) < \underline{\varepsilon_i^*}\left(1\right) | \rho, \sigma, \text{race}_i\right)\right] + \tag{1}$$

$$\sum_{i:\varepsilon_i(1)>\underline{\varepsilon_i}(1)} \log\left[f(\varepsilon_i(1)|\rho, \sigma, \text{race}_i)\right] + \tag{2}$$

$$\sum_{a=2}^{A}\left[\sum_{i:\varepsilon_i(a)=\underline{\varepsilon_i}(a)} \log\left[\Pr\left(\varepsilon_i^*\left(a\right) < \underline{\varepsilon_i^*}\left(a\right) | \rho, \sigma, \varepsilon_i\left(a-1\right), \text{race}_i\right)\right] + \right.$$

$$\left.\sum_{i:\varepsilon_i(a)>\underline{\varepsilon_i}(a)} \log\left[f\left(\varepsilon_i\left(a\right) | \rho, \sigma, \varepsilon_i\left(a-1\right), \text{race}_i\right)\right]\right].$$

The estimated parameters are displayed below in Table 12.

Table 12: Parameter Estimates for the Earnings Process

	Black		White	
Highest Degree	ρ	σ	ρ	σ
No Degree	0.79	0.87	0.79	0.76
High School Diploma	0.84	0.72	0.83	0.61
BA+	0.79	0.61	0.72	0.59

Note: This table reports maximum likelihood estimates of race×schooling-specific parameters of a 5-year earnings process estimated on the NLSY79.

C.2 Details of the Lifetime Earnings Calculations in Section 4.3

Section 4.3 conducts an accounting exercise in the spirit of Feiveson and Sabelhaus (2018) where we assume that potential wealth is not consumed, but instead compounds at an interest rate of 3 percent per year.

We measure mean earnings conditional on race using the NLSY79. As opposed to the measurement of earnings in the calibration and numerical exercises, which includes transfers and business earnings, for the calculations here our earnings variable is defined as wage and salary income.

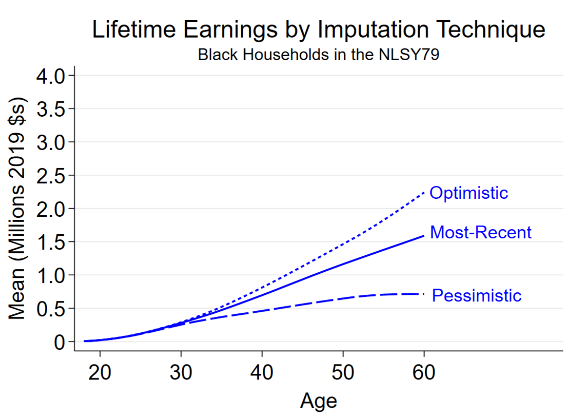
We measure mean transfers as 10.1 and 3.8 percent of annual earnings for, respectively, white and Black-headed households using the updated estimates of transfers in Sabelhaus and Thompson (2023). These numbers are from Table 4, Panel A, Rows 3 and 4. Sabelhaus and Thompson (2023) use an improved measure of inheritances and inter-vivos transfers developed in Feiveson and Sabelhaus (2018) to account for transfers found in the SCF outside of its inheritance module. They find considerably larger levels of transfers than the previous literature. For example, relative to Gittleman (2014) they find twice the probability of receiving a transfer and an average transfer size that is between 2.5 and 6 times as large.

We calculate racial gaps as the difference in Black and white levels of compounded average lifetime income from these sources from ages 18 to 60.

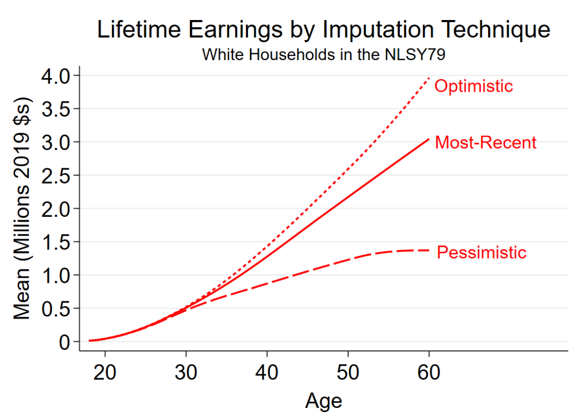
One difference between our measurement of earnings in this exercise and the earnings process used in the calibrated model is that for this exercise in Section 4.3 we impute earnings at each age. Computing lifetime earnings from ages 18-60 with the NLSY79 is complicated because the NLSY79 became a biennial survey in 1996. To account for the biennial nature of the NLSY79, as well as data simply missing over the life cycle, we impute missing earnings at a given age as the respondent's most recent non-missing household earnings.

Figure 18 shows lifetime earnings using our preferred most-recent imputation technique, along with versions of the optimistic and pessimistic techniques from Nielsen (2015). For a missing earnings observation at age a, our optimistic technique imputes the respondent's maximum household earnings observed between ages 18 and age $a-1$. Our pessimistic technique analogously imputes the respondent's minimum household earnings observed between ages 18 and age $a-1$. For this exercise we keep earnings reported as \$0, which is a non-trivial share of the reported earnings measured using wage and salary income alone.

Figures 18a and 18b show that our preferred most-recent imputation technique arrives at mean incomes by age and race closer to the optimistic technique than to the pessimistic technique.



(a) Black Households



(b) White Households

Figure 18: Lifetime Earnings in the NLSY79 by Imputation Technique

D Data Appendix: Mortality and Attrition

D.1 Mortality Data

The survival probabilities $\psi(a)$ used in all of the numerical exercises in the text are estimated using data on all-gender age-specific 2012 survival probabilities for white Americans in Table 20 of Arias et al. (2016). Figure 19 shows these survival probabilities along with those for Black individuals.

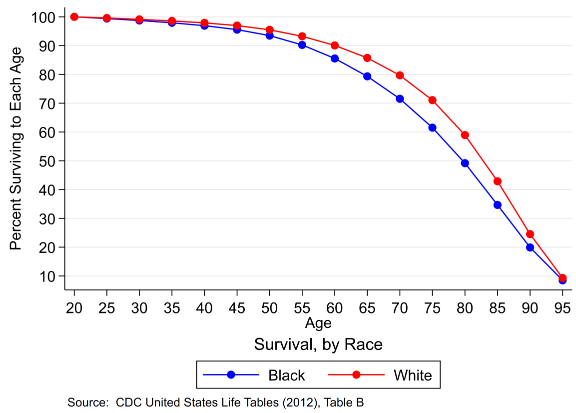


Figure 19: Survival Probabilities

As Figure 19 shows, Black Americans have lower survival probabilities than white Americans, particularly after age 50. There are two reasons we use the white survival schedule for both racial groups in all of our exercises. First, introducing race-specific mortality would require specifying a convergence path for the mortality gap in each transition experiment, adding a degree of freedom that is tangential to the paper's focus on earnings and wealth dynamics. Second, the quantitative effect of this difference on the wealth gap is small: when we impose race-specific mortality in the initial steady state, the implied racial wealth gap increases by only a few percentage points relative to the baseline.

The modest effect may seem surprising given the sizable mortality differences in Figure 19, but it reflects the interaction between life expectancy and the bequest motive. In models with strong warm-glow bequests, shorter life expectancy has two opposing effects on wealth accumulation: it reduces the horizon over which households save for their own consumption, but it also brings the bequest motive—which is a luxury good in our framework—closer to the present, potentially increasing savings among wealthier households. Foltyn and Olsson (2024) show that the net effect of life expectancy on wealth accumulation is ambiguous in the presence of strong bequest motives and depends on calibration details. In our calibration, these offsetting forces largely cancel, leaving the racial wealth gap nearly unchanged when race-specific mortality is introduced. We therefore abstract from mortality differences in order to keep the transition experiments focused on the channels of primary interest.

D.2 Attrition in the NLSY79

Differential attrition in the NLSY79 could generate mismeasurement of differences in Black-white earnings gaps. For example, mortality differences amplified cross-sectional earnings gaps into larger lifetime earnings gaps in the early 1900s (Karger (2020)). And in the more recent NLSY97, even in respondents' 20s there is evidence of differential mortality by race that is correlated with exposure to violence (Aliprantis and Chen (2016)).

Here we assess the importance of attrition in the NLSY79 for the estimation of our earnings process. The results suggest that racial differences in attrition are unlikely to create major biases in our life cycle analysis using the NLSY79.

We compare a given survey year's sample size of respondents aged 18 or older relative to the 1983 survey, the year with the largest such sample. Figure 20 shows attrition in terms of both the entire Black and white samples, as well as the Black and white samples with earnings present. Contrary to the concerns discussed above, in the most recent years the Black sample has experienced less attrition than the white sample. However, the relative share without earnings data is consistently higher for the Black sample than for the white sample. By the most recent wave of the survey in 2020 reporting earnings in 2019, attrition was about 30 percent of the sample for both the Black and white samples.

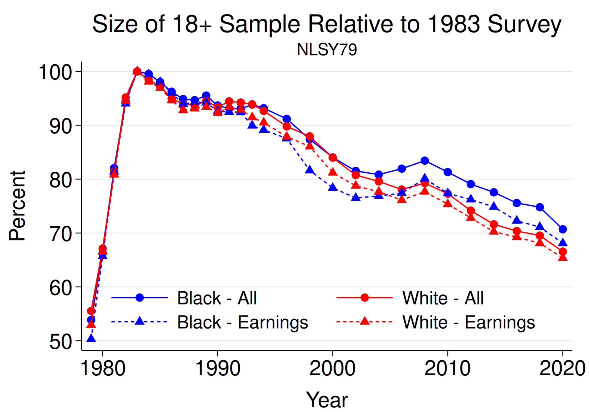


Figure 20: Attrition and Imputation in the NLSY79

E Robustness Appendix

E.1 What if the Earnings Gap Reflects Productivity Differences?

The baseline model attributed the earnings gap to a differential between a Black worker's marginal product and their wage. Because we are primarily concerned with how an earnings gap exacerbates and prolongs wealth gaps, the origins of the earnings gap, though important, lie beyond the scope of this project. Nevertheless, it is worthwhile to consider an alternative to the pure discrimination mechanism. What if the earnings gap reflected, either in part or it total, differences in labor market productivity? Here we are thinking of not of inherent differences in ability, but rather of different average levels of input into human capital. Such factors could reflect differences in school or neighborhood quality driven by socioeconomic differences (Bond and Lang (2018)) and resulting in different skill levels (Neal and Johnson (1996), Nielsen (2020), Thompson (2024)). They could also arise from the misallocation of talent: when individuals optimally invest in human capital and select careers in the face of discriminatory barriers, the result is lower measured productivity for the affected group even absent any innate differences in ability (Hsieh et al. (2019)).

A model with labor productivity gaps We can adjust the model in Section 3 to allow for the racial earnings gap to be at least partially attributable to differences in labor productivity. Assume that in the initial steady state a fraction q of the earnings gap is explained by productivity differences, with the remaining $1 - q$ coming from discrimination. The earnings gap between a Black and white household of the same age, education, and productivity shock is

$$\begin{aligned} g_e &= 1 - \frac{\Phi\left(a, s, r = B\right)\varepsilon\bar{h}}{\Phi\left(a, s, r = W\right)\varepsilon\bar{h}} \\ &= 1 - \frac{\Phi\left(a, s, r = B\right)}{\Phi\left(a, s, r = W\right)}. \end{aligned}$$

Given a value of q, we denote the labor productivity of a Black household as

$$\widehat{\Phi}\left(a, s, r = B\right)\varepsilon = \left(1 - qg_e\right)\Phi\left(a, s, r = W\right)\varepsilon. \tag{3}$$

Notice that when $q = 0$ (i.e. entirely discrimination), Equation 3 implies that $\widehat{\Phi}\left(a, s, r = B\right) = \Phi\left(a, s, r = W\right)$ as in the baseline. When $q = 1$, $\widehat{\Phi}\left(a, s, r = B\right) = \Phi\left(a, s, r = B\right)$, there is no discrimination and no firm profits.

In this exercise, we will contrast the baseline path for the wealth gap to one arising from an alternative with $q = 0.85$. While it is inherently difficult to pin down such a parameter (Lang and Spitzer (2020)), we consider this second case of $q = 0.85$ to be a reasonable interpretation of recent estimates in the literature (Nielsen (2020), Thompson (2024)).

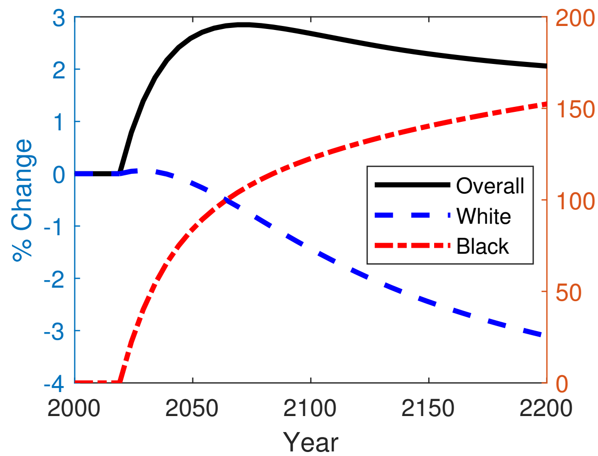
Attributing the earnings gap to labor productivity is not without consequence in the model. In the baseline, closing the earnings gap had no affect the amount of effective labor in the economy. Eliminating the earnings gap only affected the productive capacity of the economy through aggregate wealth. In contrast, closing the earnings gap with productivity differences implies that a significant fraction of the labor force becomes permanently more productive (Table 13), allowing for larger general equilibrium effects.

Table 13: Permanent Change in Effective Labor (Percent)

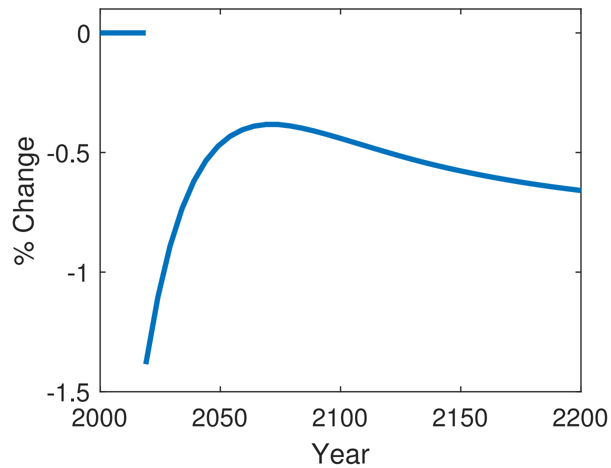
White	Black	Aggregate
0.0	49.3	4.0

Note: This table reports immediate and permanent percentage increase in effective labor, relative to the initial steady state, which occurs as a result of eliminating the earnings gap when the earnings gap reflects differences in productivity.

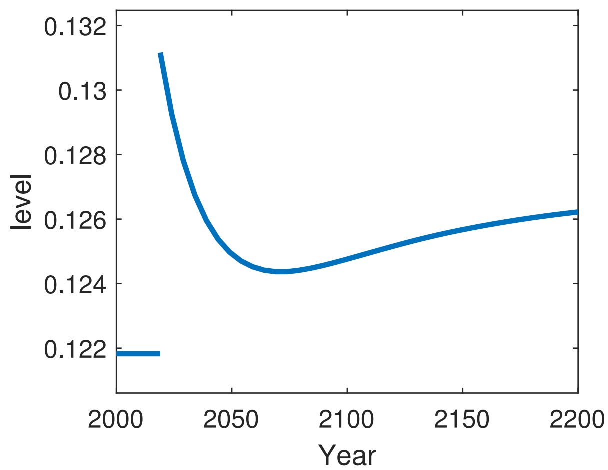
The dynamics for wealth and the factor prices are displayed in Figure 21. The sudden increase in efficiency labor units causes a build up of capital (Panel a). Unlike in the baseline where long run total wealth fell by 13 percent, in this scenario it rises by 1.5 percent (this is displayed by the black line on the left axis). The trajectory for Black mean wealth is very similar to its baseline (red dashed line on the right axis), but the trajectory for mean white wealth is very different (blue dashed line on the left axis). Initially it starts rising in response to the jump to a higher interest rate (Panel c). As Black wealth increases, the interest rate declines, leading white households to slow their saving. Eventually, white wealth declines past its initial steady state level, but compared to the baseline the fall in long run white wealth is substantially smaller (−6.4 percent vs. −20.4 percent).



(a) Wealth



(b) Wage



(c) Interest Rate

Figure 21: Aggregates

Note: Panel (a) plots the transition path of wealth relative to initial wealth. White and aggregate wealth changes correspond to the left vertical axis while Black changes are shown on the right vertical axis. Panels (b) and (c) plot the change in the aggregate wage and the path of the interest rate relative to their initial values.

Taken together, the slightly higher trajectory for Black wealth is more than offset by less dissaving from white households, causing the wealth gap to close more slowly than in the baseline (Figure 22). As before, differences in the wealth tail are driving most of the disparity in convergence. For instance, it takes an extra 40 years relative to the baseline for the wealth gap close halfway; however, when the wealth gap measured at the 95^{th} percentile there is almost no difference in the two half-lives. Whether the source of the earnings gap is discrimination or productivity differences certainly matters for which policy interventions will be most effective at closing the earnings gap. The findings just presented, however, indicate that the results in our analysis are driven by the existence of an earnings gap and not by its source.

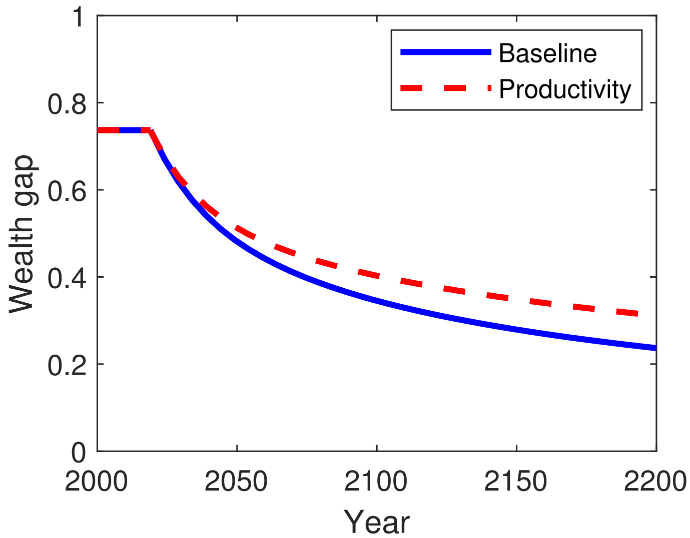


Figure 22: Eliminating the Earnings Gap

Note: This figure shows model predictions for the path of the racial wealth gap after the racial earnings gap is removed. The wealth gap is defined as one minus the ratio of mean wealth by race (i.e., $1 - \frac{K_B}{K_W}$).

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E.2 Alternative Division of Estates between Newborns and Middle-aged Households

In the main text, ν, the model parameter governing the share of estates going to middle-aged households, is calibrated to 0.75 in accordance with studies using the Survey of Consumer Finances data. Here we consider how altering the value of this share affects our results.

In each case, the economy starts in the initial steady state from the main text (i.e., the one calibrated with $\nu = 0.75$). Then we assume that the earnings gap is eliminated immediately and plot the ensuing transition path of for the wealth gap. Along with the change to the earnings gap, the value of ν is also permanently changed. Figure 23 plots these transitions paths.

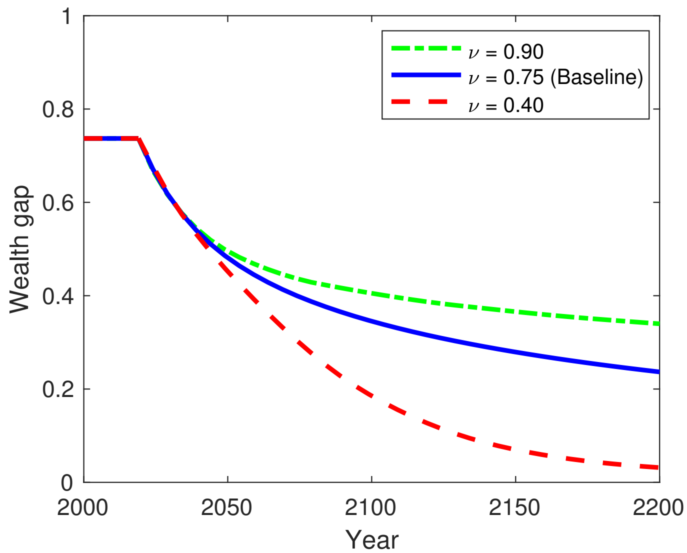

Figure 23: Eliminating the Earnings Gap: Share Sensitivity

Note: This figure shows model predictions for the path of the racial wealth gap after the racial earnings gap is removed under different values for middle-aged households' share of estate wealth. The wealth gap is defined as one minus the ratio of mean wealth by race (i.e., $1 - \frac{K_B}{K_W}$).

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The wealth gap disappears more slowly as a greater fraction of estate wealth is transferred to middle-aged households as opposed to newborns. This occurs for two reasons. First, because of the steeper profile of young households' earnings, they have a greater desire to consume. This dissipates wealth differences more rapidly. Second, estate wealth that goes to newborns is divided among all households of the same race within the cohort while estates that are placed into bequest lottery are concentrated among a minority of middle-aged households. This concentration of wealth interacts with the luxury aspect of savings so that white households end up saving more.

F Appendix: Age-Wealth Profiles

Figure 24 shows age-wealth profiles in the 2019 SCF and in the model. The level for the SCF data is shown on the left axis in terms of 2019 dollars, and the level for the model is shown on the right axis as the ratio of the mean for the age×race group to total income in the model.

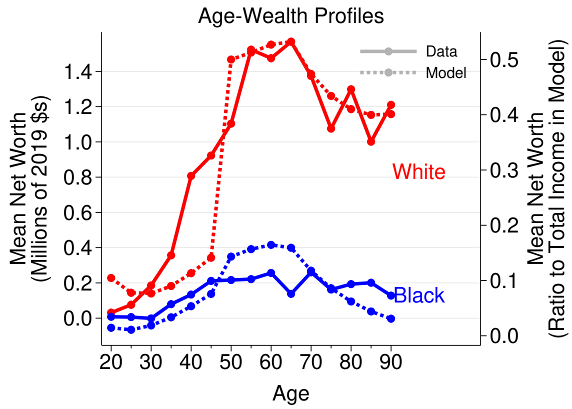


Figure 24: Wealth Conditional on Age and Race

Note: This figure shows mean wealth by age and race in the 2019 Survey of Consumer Finances (SCF) and in the steady state of our model.

G Appendix: The Firm's Problem

The firm maximizes profits by choosing capital and the aggregate labor input from households. It takes the prices, $r+\delta$ and w, and the earnings gap, $\varphi(B)$ for Black households as given to solve the problem:

$$\max_{K,N} AK^{\alpha}\left(N_B+N_W\right)^{1-\alpha}-(r+\delta)\,K-\varphi\,(B)\,wN_B-wN_W$$
$$s.t. \quad N_B+N_W=N.$$

We assume that the firm cannot distinguish between Black and white workers before hiring them. Thus at a given equilibrium wage w^*, all else equal,Black workers will have lower labor supply, since they in fact receive the lower wage $\varphi(B)w^*$.

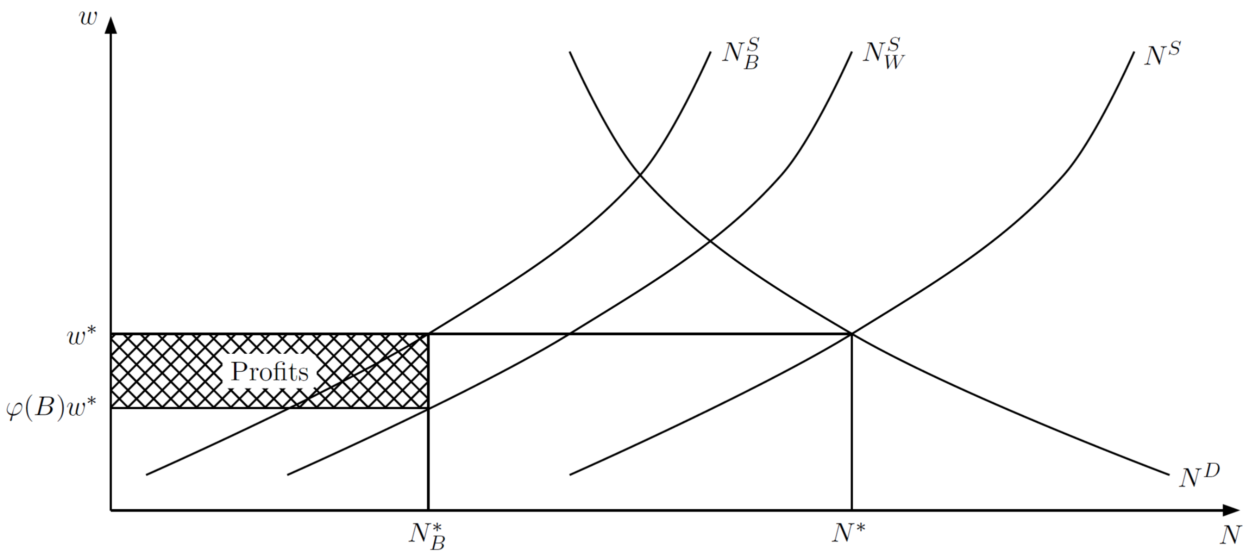


Figure 25: Profits in the Firm's Problem

H Shared Bequest Pools

Interracial marriages represented 19 percent of new unions in 2019 (Parker and Barroso (2021)). Marriage patterns help explain racial differences in for economic outcomes (Binder et al. (2022), Chetty et al. (2020), Goldman et al. (2024)), with the direction of causality going in both directions (Caucutt et al. (2021)). One way to consider the consequences of interracial marriage in our model is to conduct a numerical experiment sharing bequest pools across race. While trends in interracial marriage do not map onto our model neatly, this numerical experiment does give a sense of the consequences of the accelerated mixing of wealth that would arise from increasing rates of interracial marriage.[39]

In the baseline, the stocks of bequest wealth are separated by race. These stocks comprise three-quarters of total intergenerational transfers with the remainder going to a newborn working households (a proxy for the effect of inter-vivos transfers on a household's initial wealth position).

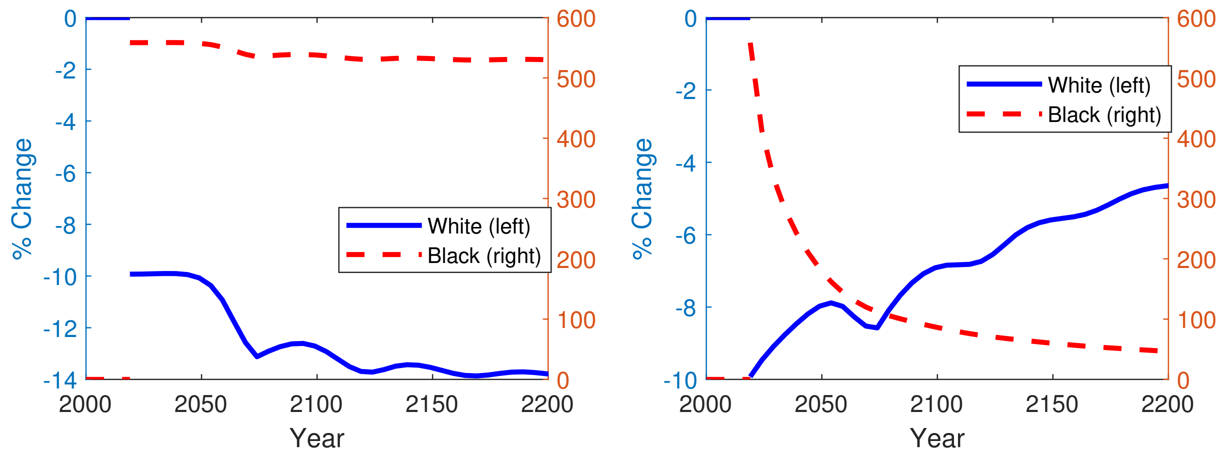
We conduct a counterfactual experiment in which Black and white households draw from a single joint pool. The probability of receiving a bequest of a specific size as well as the proportions of each bequest size relative to the assigned bequest becomes the same across race.

Compared to the baseline of separated bequests, pooling estate wealth causes white households to receive somewhat lower expected bequests and Black households to receive substantially larger ones. If the earnings gap is unchanged (Figure 26 panel (a)), expected bequests are five times larger for Black households than they are in the initial steady state. White households start with a 10 percent reduction in expected bequests, and this decreases further over time to 14 percent. Panel (b) shows a very different story when the earnings gap is closed immediately. While the initial transfer is the same as in the permanent earnings gap case, over time Black households amass wealth leading them to contribute more and more to the shared estate pool. The expected white bequest *rises* over time, as Black expected bequests converge to their long run value under the baseline.

At roughly 1 percent in magnitude, the change in expected bequests from pooling is quite small for white households as a share of their mean wealth (Figure 27 panel (a)) regardless of what occurs with the earnings gap. For Black households (panel b), the change is substantial. When the earnings gap remains at its initial level, pooling bequests is equivalent to a permanent long run wealth transfer from white to Black households of 10 percent of Black wealth. Without an earnings gap, the wealth transfer starts high and declines as Black households build up the same mean wealth as white households.

Across all cases, pooling bequests amounts to large, recurring, and – when the earnings gap remains open– permanent wealth transfers from white to Black households. Naturally, these lead to much more rapid declines in the wealth gap. Figure 28 plots the racial wealth gap when bequest pools are suddenly shared rather than separated. For comparison, we also plot the baseline transition path under which the earnings gap is eliminated immediately and bequest pools remain

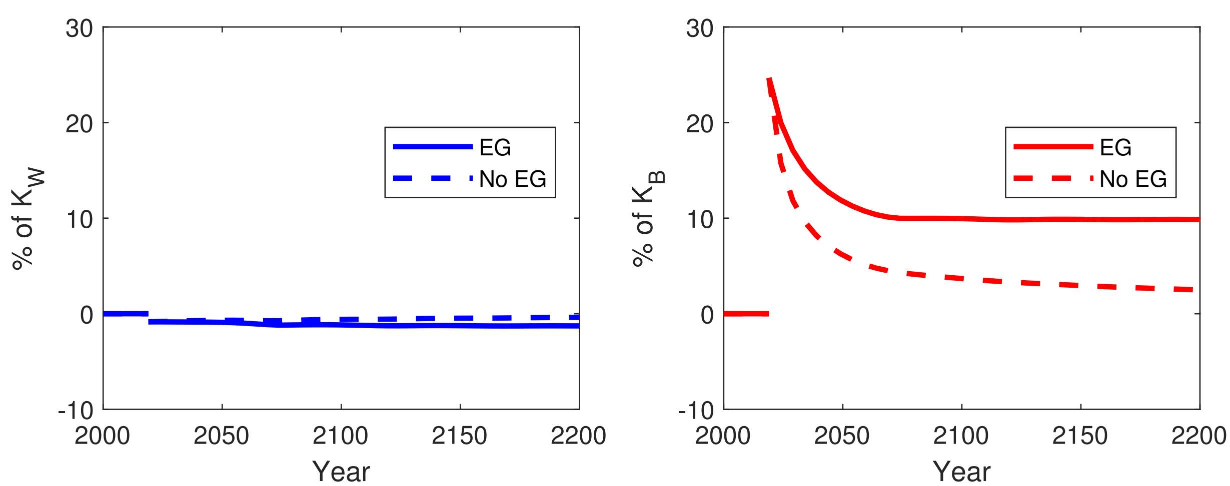
[39] Complicating the interpretation of this experiment is that the definition of race itself could evolve in important ways due to interracial marriage, especially over the long periods considered here.



(a) Permanent Earnings Gap (b) Earnings Gap Eliminated

Figure 26: Change in Expected Bequests after Pooling Estate Wealth,
Relative to Initial Expected Bequests

Note: These figures plot the change in expected bequests from pooling estate wealth across race relative to leaving it separated. In panel (a), the earnings gap remains permanently fixed at its initial level, while in panel (b) the earnings gap is eliminated starting in 2019.



(a) White (b) Black

Figure 27: Change in Expected Bequests after Pooling Estate Wealth,
Relative to Mean Wealth of Racial Group

Note: These figures plot the change in expected bequests from pooling estate wealth across race relative to leaving it separated. These figures plot ratios of expected bequests to average wealth by race both under the permanent earnings gap (EG) case and the instantly eliminated (no EG) case.

separate forever. In the first case (red dashed line), the earnings gap is fixed permanently to its initial level. If the earnings gap is unchanged, after a few decades the wealth gap is cut by more than half and settles to its new permanent level of 32 percent. This rapidly accelerated pace of wealth equalization is more apparent when comparing the two 'no earnings gap' cases. Instead of taking centuries, the wealth gap disappears before 2100.

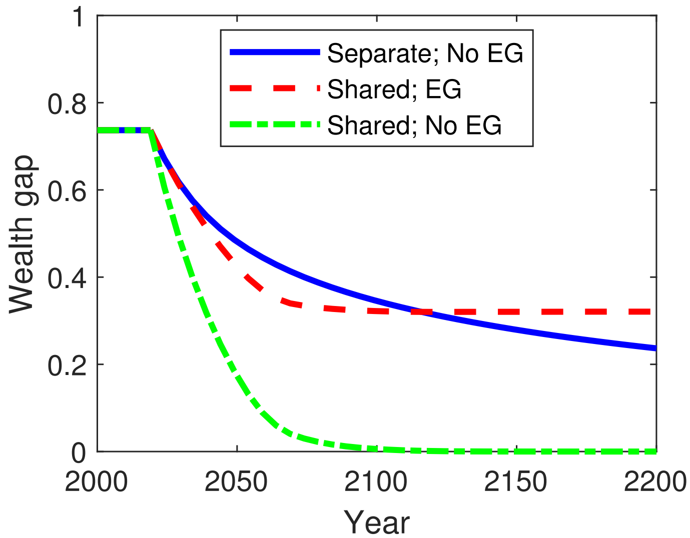


Figure 28: Shared Bequest Pool

Note: This figure shows the transition paths for racial wealth gap under three scenarios. "Shared" indicates that households draw bequests from a joint pool of wealth while "Separate" indicates that bequest pools are segregated. "EG" indicates that the baseline racial earnings gap is permanent while in "No EG" this gap is set to zero instantly. Note that "Separate; No EG" is the same path as in Figure 7.

It should be stressed that these counterfactuals are not intended to represent any polices under consideration. Large and highly persistent wealth transfers of the magnitudes shown would almost certainly lead to enormous political reactions which would likely slow or even reverse the model's wealth gap transitions. Nevertheless, while none of these experiments maps cleanly into a policy, together they demonstrate how – in contrast to the one-time wealth redistribution in Section 5.2 – *recurring* wealth transfers when combined with effective earnings gap closure speed up the pace of wealth equalization.

Appendix References

Aliprantis, D., D. Carroll, and C. L. Reynolds (2025). The nonequivalence of college equivalents. *Journal of Income Distribution.* Forthcoming.

Aliprantis, D. and A. Chen (2016, May 2). The consequences of exposure to violence during early childhood. *Federal Reserve Bank of Cleveland Economic Commentary.*

Arias, E., M. Heron, and J. Xu (2016, November 28). *United States Life Tables, 2012* (65, 8 ed.). Washington, DC: Centers for Disease Control and Prevention (CDC).

Barsky, R., J. Bound, Kerwin Ko' Charles, and J. P. Lupton (2002). Accounting for the black-white wealth gap. *Journal of the American Statistical Association 97*(459), 663–673. DOI: 10.1198/016214502388618401.

Bayer, P. and K. K. Charles (2018). Divergent paths: A new perspective on earnings differences between black and white men since 1940. *The Quarterly Journal of Economics 133*(3), 1459–1501.

Bhattacharya, D. and B. Mazumder (2011). A nonparametric analysis of black-white differences in intergenerational income mobility in the United States. *Quantitative Economics 2*(3), 335–379.

Bhutta, N., A. C. Chang, L. J. Dettling, and J. W. Hsu (2020, September 28). Disparities in wealth by race and ethnicity in the 2019 Survey of Consumer Finances. *FEDS Notes.*

Binder, A. J., C. Walker, J. Eggleston, and M. Murray-Close (2022). Race and mobility in US marriage markets: Quantifying the role of segregation. *US Census Bureau CES Working Paper 22-59.*

Blau, F. D. and J. W. Graham (1990). Black-white differences in wealth and asset composition. *The Quarterly Journal of Economics 105*(2), 321–339. DOI:10.2307/2937789.

Bond, T. N. and K. Lang (2018). The black-white education scaled test-score gap in grades K-7. *Journal of Human Resources 53*(4), 891–917.

Bárány, Z. L., M. Buchinsky, and P. Corblet (2023). Late bloomers: The aggregate implications of getting education later in life. *NBER Working Paper 31874.*

Caucutt, E. M., N. Guner, and C. Rauh (2021). Incarceration, unemployment, and the racial marriage divide. *Mimeo., CENFI.*

Chetty, R., N. Hendren, M. R. Jones, and S. R. Porter (2020). Race and economic opportunity in the United States: An intergenerational perspective. *Quarterly Journal of Economics 135*(2), 711–783.

Cunha, F. and J. Heckman (2016). Decomposing trends in inequality in earnings into forecastable and uncertain components. *Journal of Labor Economics 34*(S2), S31–S65.

Dahis, R., E. Nix, and N. Qian (2019). Choosing racial identity in the United States, 1880-1940. *NBER WP 26465*.

Derenoncourt, E., C. H. Kim, M. Kuhn, and M. Schularick (2024). Wealth of two nations: The US racial wealth gap, 1860-2020. *The Quarterly Journal of Economics 139*(2), 693–750.

Duncan, B. and S. J. Trejo (2007). Ethnic identification, intermarriage, and unmeasured progress by Mexican Americans. In *Mexican Immigration to the United States*, pp. 229–268. University of Chicago Press.

Feiveson, L. and J. Sabelhaus (2018, June 1). How does intergenerational wealth transmission affect wealth concentration? *FEDS Notes*. DOI: 10.17016/2380-7172.2209.

Foltyn, R. and J. Olsson (2024). Subjective life expectancies, time preference heterogeneity, and wealth inequality. *Quantitative Economics 15*(3), 699–736.

Gayle, G.-L., L. Golan, and M. Soytas (2015). What accounts for the racial gap in time allocation and intergenerational transmission of human capital? *FRB St. Louis Working Paper 2015-18*.

Gittleman, M. (2014). An examination of inheritances using the panel survey of income dynamics. In *Inheriting Wealth in America: Future Boom or Bust?* Oxford University Press.

Goldman, B., J. Gracie, and S. R. Porter (2024). Who marries whom? The role of segregation by race and class. *US Census Bureau CES Working Paper 24-30*.

Gratton, B. and M. Gutmann (2000). Hispanics in the United States, 1850-1990. *Historical Methods 33*(3), 137–153.

Hsieh, C.-T., E. Hurst, C. I. Jones, and P. J. Klenow (2019). The allocation of talent and US economic growth. *Econometrica 87*(5), 1439–1474.

Karger, E. (2020). The black-white lifetime earnings gap. *Mimeo., University of Chicago*.

Keane, M. P. and K. I. Wolpin (2000). Eliminating race differences in school attainment and labor market success. *Journal of Labor Economics 18*(4), 614–652.

Kuhn, M. and J.-V. Ríos-Rull (2016). 2013 update on the US earnings, income, and wealth distributional facts: A view from macroeconomics. *Federal Reserve Bank of Minneapolis Quarterly Review 37*(1).

Kuhn, M., M. Schularick, and U. I. Steins (2020). Income and wealth inequality in America, 1949–2016. *Journal of Political Economy 128*(9), 3469–3519.

Lang, K. and A. K.-L. Spitzer (2020). Race discrimination: An economic perspective. *Journal of Economic Perspectives 34*(2), 68–89.

Neal, D. A. and W. R. Johnson (1996). The role of premarket factors in black-white wage differences. *Journal of Political Economy 104*(5), 869–895. DOI: 10.1086/262045.

Nielsen, E. (2015). The income-achievement gap and adult outcome inequality. *Finance and Economics Discussion Series, Federal Reserve Board.*

Nielsen, E. (2020). Test questions, economic outcomes, and inequality. *Mimeo., Federal Reserve Board.*

OMB (1997, October 30). Revisions to the standards for the classification of federal data on race and ethnicity. *Federal Register 62*(210), 58782–58790.

Painter, N. I. (2015, June 20). What is whiteness? *The New York Times.*

Parker, K. and A. Barroso (2021). In Vice President Kamala Harris, we can see how America has changed. *US Census Bureau CES Working Paper 24-30.* Published February 25.

Pratt, B. M., L. Hixson, and N. A. Jones (2015). *Infographic: Measuring Race and Ethnicity Across the Decades, 1790-2010.* Washington, DC: US Census Bureau.

Sabelhaus, J. and J. P. Thompson (2022). Racial wealth disparities: Reconsidering the roles of lifetime earnings and intergenerational transfers. *Federal Reserve Bank of Boston Working Paper 22-3.*

Sabelhaus, J. and J. P. Thompson (2023). What role for 'generational wealth' in explaining racial wealth disparities? *Mimeo., Boston Fed.*

Semega, J. and M. Kollar (2022, September 13). *Income in the United States: 2021.* Washington, DC: US Census Bureau. Report Number P60-276.

Terrell, H. S. (1971). Wealth accumulation of black and white families: The empirical evidence. *Journal of Finance XXVI*, 363–377. DOI: 10.2307/2326053.

Thompson, O. (2024). Human capital and black-white earnings gaps, 1966–2019. *Journal of Economic Behavior & Organization 227*, 106707.

US Census (1961, March 31). *Advance Reports: General Population Characteristics of the 1960 Census of Population, United States* (PC(A2)-1 ed.). Washington, DC: US Bureau of the Census.

Wolff, E. N. (2018). The decline of African-American and Hispanic wealth since the Great Recession. *NBER Working Paper 25198.* DOI: 10.3386/w25198.

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