Racial Wealth Gap Discussion Paper Series

JONATHAN W. WELBURN, PEDRO NASCIMENTO DE LIMA, KRISHNA B. KUMAR, OSONDE A. OSOBA, JONATHAN LAMB

Overcoming Compound Racial Inequity

Policies and Costs for Closing the Black-White Wealth Gap

Wealth is as much a reflection of today as it is the past. It is the accumulation of past and present income, assets, debts, and disparities. Differences in Black and white Americans' economic status show how the harms of the past—slavery, segregation, redlining, discrimination—live on in the present-day racial wealth gap.[1] The result is that white Americans make 73 percent more in annual income (based on average household incomes of $68,010 per year for non-Hispanic Americans versus $39,299 per year for Black Americans). White Americans are nearly two times more likely to own their homes, hold ten times more wealth, and are 28 times more likely to become millionaires than Black Americans (Board of Governors of the Federal Reserve Board, 2022; Kent and Ricketts, 2021).

KEY FINDINGS

- There is no evidence that the wealth gap could ever close without significant intervention. Wealth-allocation policies can close the racial wealth gap, but only if they are coupled with broader policies aimed at reducing overall wealth inequality in the United States.
- Over the past 30 years, the wealth gap has widened rather than narrowed.
- A wealth-allocation policy of $500 billion, spread equally across all Black households, could reduce median wealth disparity by 17 percent; a policy of $1.5 trillion could halve median disparity; and a policy of $3 trillion could eliminate median wealth disparity.
- Focusing instead on mean wealth disparity, a wealth-allocation policy of $7.5 trillion, spread equally across all Black households, could reduce mean wealth disparity by 50 percent, and a policy of $15 trillion could eliminate mean wealth disparity.
- Given the larger percentage of Black households toward the bottom of the wealth distribution, Black households benefit relatively more than white households by race-neutral allocations. The effect is, however, small: A 30-percent reduction in median disparity would require a total allocation of $9.6 trillion.
- Equal allocations to all Black households lead to better results for disparity compared with race-neutral policies that use small to moderate total allocation values. However, as wealth-allocation policy grows to include more households, race-neutral policies will have larger impacts on overall disparity.
- Targeted wealth-allocation policies are better at disparity reduction than their equivalent equal non-targeted policies. Under these targeted policies, median wealth disparity could be halved with a $760-billion policy and eliminated with a $1.6-trillion policy.

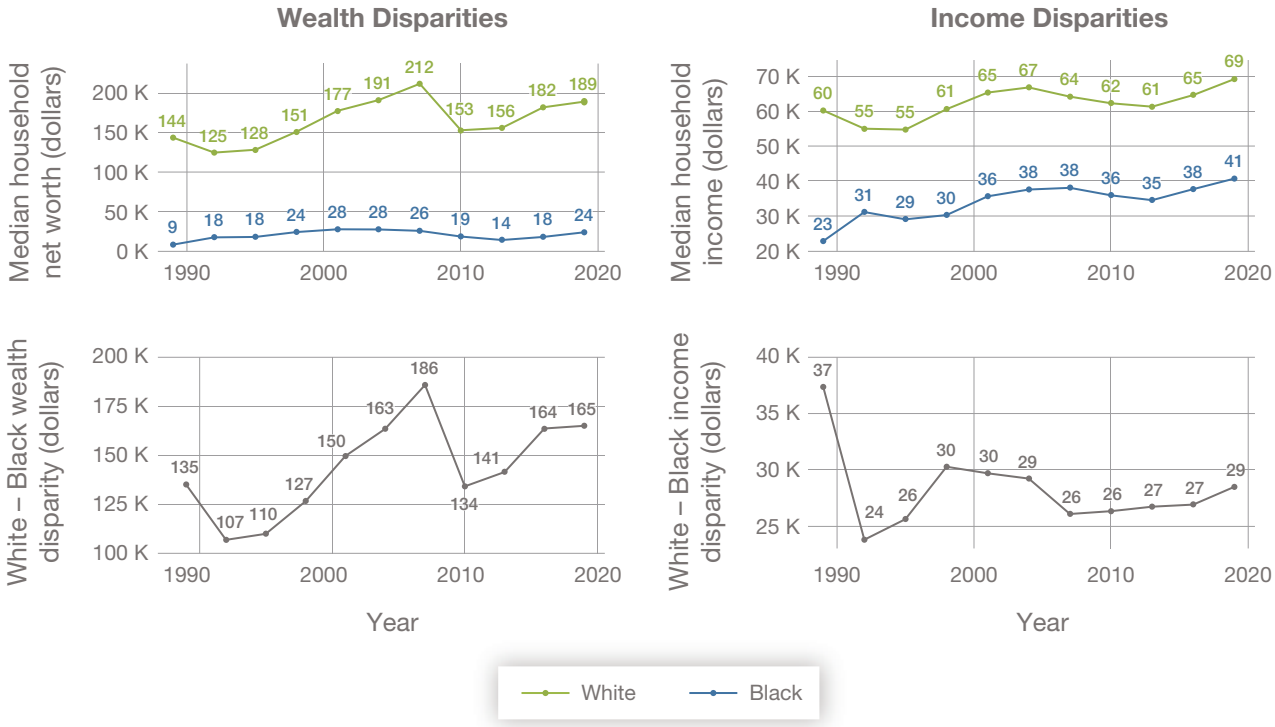
An Incessant Racial Wealth Gap in the United States

The United States' incessant racial wealth gap is the expansive result of a history of lost income and lost opportunity, compounded over time. Furthermore, there are few signs that the racial wealth gap will narrow. As Figure 1 demonstrates, the difference between median white and Black household incomes has consistently stayed above $24,000 while the wealth gap has persistently increased since 1992 (measured in 2019 dollars). In 1992, the median white household held $107,000 more wealth than the median Black household in real terms. That disparity increased steadily until reaching a maximum of $186,276 in 2007. Following significant losses in housing and investment asset values (assets disproportionally held by white households), in 2008, the median white household wealth fell by approximately $59,000 (from $212,000 to $153,000) while median Black household wealth fell by the smaller, yet proportional, amount of $7,000 (from $26,000 to $19,000). This temporary blip in the longer trend of a widening racial wealth gap underscores differences in the composition of white and Black wealth. With white households holding significantly more stocks, real estate, and other assets sensitive to cyclicality (see later Figure 4), the wealth gap itself appears to expand and contract with the business cycle. As a result, once the economy, and more specifically asset values, recovered from post-2008 lows, the wealth gap recovered too.

Yet, although much of the debate around the Black-white wealth gap focuses on disparity at the median, mean wealth disparity reflects an even more exaggerated difference in wealth between Black and white households. While the median racial wealth gap in 2019 was $164,000, the *mean* wealth gap was $840,000. Darity, 2021, has argued that it is the *mean* (the wealth difference for the average household) rather than the *median* (the wealth difference for the middle household in a data set) that should be used in considering policies for closing the wealth gap (e.g., reparations). Darity, 2021, further notes a statistical danger in focusing on median wealth calculations which, statistically, do not include the staggering levels of wealth held by predominately white households at the top end of the distribution.

FIGURE 1

Persistent Racial Wealth and Income Gaps



SOURCE: Authors' analysis of 2019 Survey of Consumer Finances (SCF) data (Board of Governors of the Federal Reserve Board, 2022).
NOTE: This figure shows trends in median household wealth and before-tax income in thousands of 2019 dollars by race from 1989 to 2019. The bottom two charts show white household wealth minus Black household wealth (left) and white income minus Black income (right).

The racial wealth gap not only perpetuates past harms but also worsens other disparities. Wealth inequality leads to differences in health outcomes, including life expectancy and infant mortality (Nowatzki, 2012), in addition to reduced economic opportunity. Higher wealth of parents is associated with higher educational achievement of their children (Karagiannaki, 2017; Pfeffer, 2018), lower debt levels for their children who do attend college and university (Addo, Houle, and Simon, 2016), and more job opportunities for their children (Corak and Piraino, 2011). Wealth gaps propagate to the point at which the wealth of both grandparents and parents affect the incomes of those parents' children (Toney and Robertson, 2021; Edwards, 2022; Pfeffer and Killewald, 2018).

Given the inertia of past and current disparities, it is unclear how the racial wealth gap could ever close over a meaningful time horizon in the absence of new governmental policies that directly target the wealth gap. If anything, 30 years of data on wealth and income distribution have shown persistent disparities that only seem to ease in periods of economic crisis (when asset prices plunge) and continue to widen over periods of economic expansion. Those who oppose any policy intervention to close racial wealth disparities need to grapple with the fact that Black households are left behind in the wealth-accumulation process.

With this outlook, it becomes clear that the Black-white wealth gap will not be eliminated with marginal improvements. Instead, broad systemic action that dramatically increases the wealth of Black households may be the only option to eliminate this disparity. In scale, such a policy would align closely with the reparations proposed by Darity and Frank, 2003; Coates, 2014; Darity and Mullen, 2020a, as well as others. However, such policy proposals raise many questions about the funding mechanism, value, and impact of such wealth allocations.

This analysis does not seek to offer definitive, prescriptive advice for policymakers. Rather, we highlight the first-order effect of allocations on the U.S. wealth distribution and associated trade-offs.

Against this backdrop, the use of a large wealth-allocation policy to distribute one-time, direct government payments to households may be one way to address historical inequities and close the present-day wealth gap. In this report, we consider a policy of wealth *allocations* as one in which government payments are made directly to households and financed through the sale of sovereign bonds and not a policy of wealth *reallocation* in which payments made to one household could be financed through taxes on another household.[2] We explore several questions raised by a wealth-allocation policy:

- How large should government allocations be?
- Should allocations exclusively target Black households, or should they be race neutral?
- Should allocations apply to all qualifying households equally, or should they seek to minimize racial disparities by targeting allocations to households based on their current wealth?
- How effective would allocations be, and at what cost?

We seek to provide insight into each of these questions through our quantitative analysis of current wealth distributions and a simple model of wealth allocations to eligible households with the objective of minimizing racial wealth disparity, henceforth referred to as "targeted" wealth allocations. We use 2019 data from the Survey of Consumer Finances (SCF), a triennial cross-sectional survey of U.S. households conducted by the Federal Reserve Board (Board of Governors of the Federal Reserve Board, 2022). The SCF provides unique data representing the distribution of wealth among U.S. households and has been used to track the evolution of wealth distribution in the United States for 30 years. We use SCF data to investigate the sources of wealth disparity, evaluate the potential first-order impacts of targeted allocations, and shed light on possible trade-offs of such allocations. To the best of our knowledge, this is the first study to use a multi-objective optimization framework and population survey data to shed light on racial equity trade-offs.

This analysis does not seek to offer definitive, prescriptive advice for policymakers. Rather, we highlight the first-order effect of allocations on the U.S. wealth distribution and associated trade-offs. We leave the analysis of the long-term effects that these targeted allocations engender—through impacts on health, educational achievement, and future wealth accumulation—for future study. Similarly, although debt-financed wealth allocations could lead to inflationary pressures and will lead to future costs,[3] they may also spur future aggregate growth as Black households reduce precautionary savings and increase their investment in human capital, real estate, equity markets, and entrepreneurship. Future analysis could explore the trade-off of debt and growth in detail.

Measuring the Black-White Wealth Gap

Differences in average wealth between Black and white households are frequently referenced in discussions of the Black-white racial wealth gap (e.g., Shapiro, Meschede and Osoro, 2013; Hamilton and Darity, 2017). Although the racial wealth gap can be represented by summary statistics, these household wealth differences vary across wealth distributions. To shed light on the full distribution of wealth across racial groups, we analyzed 2019 SCF microdata.

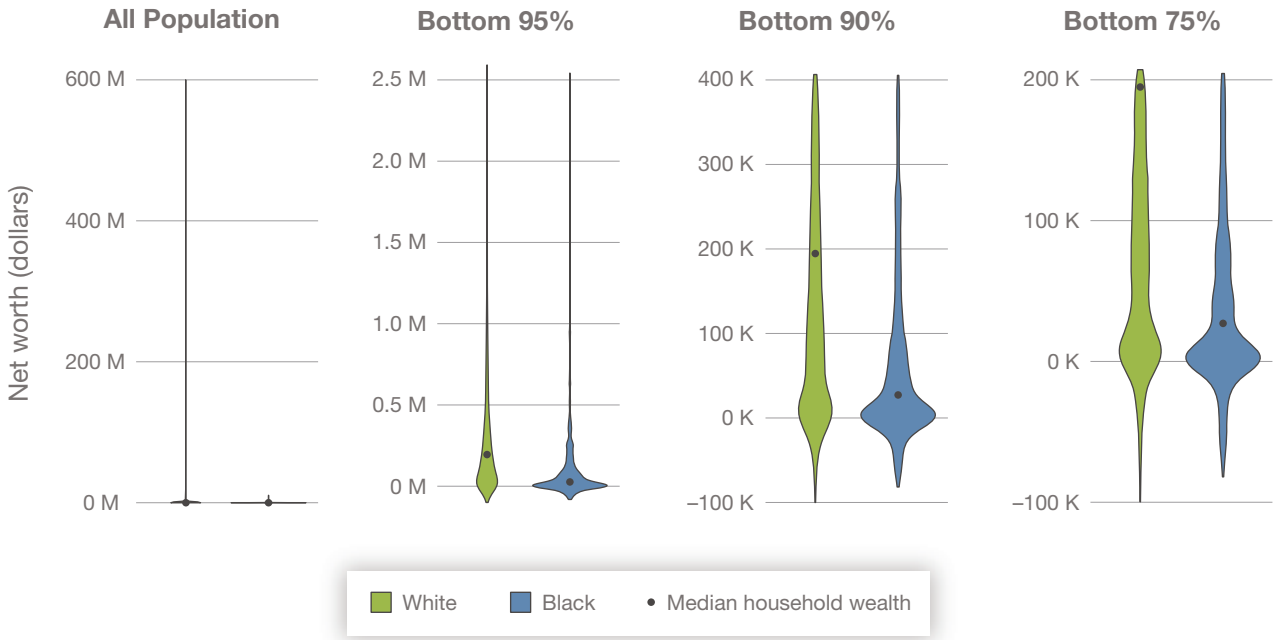
The SCF is designed to measure wealth within the United States and, in particular, emphasizes measuring wealth across the full distribution, including very high values. To visualize those differences and calculate the potential effect of alternative policies, we created a synthetic population of U.S. households using SCF microdata by using weighted resampling. This synthetic population of households, discussed in this section of the report, consists of 10 million households. We explain in Appendix A how and why we created this population (as opposed to using the survey weights directly).

Figure 2 visualizes the distribution of U.S. household wealth for white (shown in green) and Black (shown in orange) households in 2019 dollars by successively zooming in to both distributions moving from left to right. In each panel, for each distribution, the y-axis depicts the range of wealth, and the x-axis depicts the number of households at each level of wealth. Thus, the wider points of each graph reflect those levels where more households hold a given amount of wealth while the thinner points reflect those levels where few households hold a given amount of wealth.

The differences across the four panels are so stark and the U.S. wealth distribution is so skewed that to accurately convey both Black and white wealth distributions we had to truncate the vertical axis for a significant share of the population to emerge as having any visible wealth. The left-most panel of Figure 2, which displays the full distribution, including households in the sample with up to $600 million of wealth, conveys just how skewed both distributions are. The full white wealth distribution is characterized by a long skinny upper tail where few households hold more than $10 million in wealth. Relative to the high levels of wealth of some households, most household wealth is so relatively low that one could mistake it for nonexistent. Furthermore, compared with the white distribution, the left-most panel shows little to no Black households holding as much wealth as the wealthiest white households while, at this scale, the Black wealth distribution appears entirely concentrated near zero. The stark differences in wealth distributions mean that Black households, which represent 15.6 percent of the population, own only 2.9 percent of total wealth while white households, which repre-

FIGURE 2

U.S. Household Wealth Density Estimates, by Race, as of 2019



SOURCE: Author's analysis of 2019 SCF data (Board of Governors of the Federal Reserve Board, 2022).

The relative wealth difference remains high throughout the distribution, and the wealth difference is, in absolute terms, staggering toward the top.

sent 68.1 percent of the population, own 86.8 percent of total wealth (Aladangady and Forde, 2021). The skewed distributions shown in Figure 2 convey the inadequacy of comparing Black and white household wealth at the median, a statistic that is invariant to wealth changes in the upper tail of the distribution. However, the mean does capture the large impact of skewed wealth distribution as does the single measure of disparity across the distribution that we introduce later in this report.

The center left panel, which zooms in on the bottom 95 percent of the distribution (i.e., households with wealth under $10 million), shows that when the scale is adjusted, both Black and white distributions are skewed with long upper tails. At this scale, the differences in central tendency, or concentration, begin to emerge as well, revealing a higher level of concentration of Black household wealth near zero. This difference is further highlighted by zooming in on the bottom 90 percent (i.e., households with wealth under $1 million) shown in the center right panel where a large gap in median wealth (depicted as a black dot in each distribution) between Black and white households becomes clearly visible.

Further zooming in on the bottom 75 percent of the distribution in the right-most panel (i.e., households with wealth under $250,000 dollars) reveals the difference between white and Black median wealth in which the median value of wealth (i.e., 50th percentile) for white households approaches the same level of wealth held by a Black household in the 75th percentile. The right-most panel also reveals the differences in negative household wealth in which the Black distribution has more concentration around low levels of negative wealth relative to the white distribution, but the white distribution has a longer, skinnier tail in the negative direction. As we discuss later in the "Decomposing the Racial Wealth Gap" section, this difference may reflect larger access to credit and higher levels of investment grade debt (e.g., mortgage debt) held by white households.

Figure 2 conveys that the significant differences between Black and white wealth extend beyond median wealth to include the shape of each respective wealth distribution. Although both distributions have long tails, most households in the upper tail are white while Black household wealth is more concentrated toward zero.

The Racial Wealth Gap

Table 1 shows pairwise differences between white and Black wealth, $W_{w,p}$ and $W_{b,p}$, respectively, partitioned by distribution percentiles with 5-percent increments. For every fifth percentile, Table 1 compares white wealth ($W_{w,p}$) with Black wealth ($W_{b,p}$) and calculates the wealth difference. For example, at the 50th percentile, the median value for white households ($W_{w,50\%}$) = $189,000, and the median value for Black households ($W_{b,50\%}$) = $24,100. Pairwise differences are then shown as the difference ($W_{w,p}-W_{b,p}$) and the absolute value of the difference $|W_{w,p}-W_{b,p}|$. Thus, at the median, both the difference and the absolute difference is $W_{w,50\%}-W_{b,50\%}$ = $165,000, while absolute pairwise differences at the 20th and 80th percentiles are $18,400 and $605,000. However, these numbers are not directly comparable because, increasingly, wealth at higher ends of the distribution results in larger differences in wealth in absolute value. Consequently, we normalized the absolute wealth difference to compare wealth differences across percentiles.

Because white wealth is generally larger than Black wealth, we normalized by white wealth and cal-

TABLE 1

White-Black Wealth Gap as of 2019 for Selected Wealth Percentiles

Percentile	White Wealth $W_{w,p}$	Black Wealth $W_{b,p}$	Difference $W_{w,p} - W_{b,p}$	Absolute Difference $\lvert W_{w,p} - W_{b,p} \rvert$	Relative Difference $\lvert W_{w,p} - W_{b,p} \rvert / W_{w,p}$
0	$ –630.0 K	$ –350 K	$ – 279 K	$279 K	–44.3%
5th	$ –11.4 K	$ –40 K	$28.6 K	$28.6 K	–251.1%
10th	$930	$ –12.9 K	$13.8 K	$13.8 K	1488.2%
15th	$8.0 K	$ –2.23 K	$10.2 K	$10.2 K	127.9%
20th	$18.4 K	$1.00	$18.4 K	$18.4 K	100%
25th	$40.3 K	$401	$39.9 K	$39.9 K	99.0%
30th	$66.3 K	$1.56 K	$64.7 K	$64.7 K	97.6%
35th	$91.0 K	$4.26 K	$86.7 K	$86.7 K	95.3%
40th	$118 K	$7.94 K	$110 K	$110 K	93.2%
45th	$150 K	$13.3 K	$137 K	$137 K	91.2%
50th	$189 K	$24.1 K	$165 K	$165 K	87.2%
55th	$230 K	$39.1 K	$191 K	$191 K	83.0%
60th	$284 K	$50.7 K	$233 K	$233 K	82.2%
65th	$349 K	$69 K	$280 K	$280 K	80.2%
70th	$435 K	$85.1 K	$350 K	$350 K	80.5%
75th	$573 K	$114 K	$459 K	$459 K	80.1%
80th	$771 K	$166 K	$605 K	$605 K	78.5%
85th	$1.04 M	$226 K	$811 K	$811 K	78.2%
90th	$1.61 M	$324 K	$1.29 M	$1.29 M	79.9%
95th	$3.70 M	$585 K	$3.12 M	$3.12 M	84.2%
100th	$1.96 B	$57.4 M	$1.90 B	$1.90 B	97.1%

SOURCE: Author's analysis of 2019 SCF data (Board of Governors of the Federal Reserve Board, 2022)
NOTE: This table is constructed from our synthetic population data set created using the SCF microdata. We explain in Appendix A how this synthetic population file was constructed. The median quantile estimates in this table match the median SCF official estimates contained in the SCF time-series summaries. The total sample consists of 65 percent of white households and 14 percent of Black households. B = billion; K = thousand; M = million.

culated the relative wealth difference $|W_{w,p}-W_{b,p}|/W_{w,p}$. The relative difference at the 20th percentile rounds to 100 percent (by coincidence, not construction). Although this value can be interpreted as white households holding 100 percent of the combined wealth of Black and white households at the 20th percentile, or even more intuitively as Black household wealth being approximately 0 percent of white household wealth at the 20th percentile (i.e., $1–|W_{w,p}–W_{b,p}| / W_{w,p}$), this interpretation also holds in comparison with other relative pairwise differences. The median relative difference is lower at 87.2 percent (i.e., the median Black household wealth is 12.8 percent of median white household wealth) and the 80th percentile relative difference is even lower at 78.5 percent (i.e., Black household wealth is 22 percent of white household wealth).

The results in Table 1 reflect remarkably consistent wealth gaps across the distribution. On the lowest end, large negative wealth values for white households relative to Black households may reflect greater access to credit and debt—the building blocks of wealth acquisition—for white households than Black households.[4] The largest relative differences

between white and Black wealth exist at the bottom of the distribution; however, the relative wealth difference remains high throughout the distribution, and the wealth difference is, in absolute terms, staggering toward the top.

A Measure of Racial Wealth Disparity

To represent the differences in wealth between Black and white households that exist across the distribution shown in Table 1, we introduce a measure of racial wealth disparity, *D*. This measure draws inspiration from the GINI index—a widely used statistical measure of income and wealth inequality—and uses pairwise differences between wealth at each percentile, *p*. As shown in Equation 1, we define racial wealth disparity as a normalized average of differences between white and Black wealth where *np* is the number of percentiles (i.e., the average of relative differences in Table 1). We normalize the difference at each percentile, *p*, by the level of white wealth ($W_{w,p}$) to avoid weighting differences at the upper end of the distribution more than those at the lower end given the high degree of skewness in the overall wealth distribution:

$$D = 1/n_p \sum_{P} \frac{\left| W_{w,p} - W_{b,p} \right|}{W_{w,p}} \qquad (1)$$

This measure of wealth disparity exhibits useful properties. First, a lower *D* measure implies less disparity, and in a society in which race is not associated with wealth, the disparity measure is zero. Second, the if the wealth of households of any race deviates from the wealth of their counterparts *at the same percentile of their respective race,* this measure will reflect this fact. Third, the measure weighs *relative, not absolute* differences at each percentile as equally important. This implies that a $10,000 gap is more important for households with $50,000 of wealth than it is for households with $1 million of wealth. Finally, this measure is a general disparity measure consistent with common measures of wealth inequality; if $np = 1$ and $p = 0.5$, then *D* is the relative wealth gap at the median, which is often used as a measure of racial wealth disparity. If *D* is near zero, then the wealth distributions of white and Black households are nearly identical. If *D* is near 1, then Black households hold an insignificant amount of wealth compared with white households. If $np = 1$ and $p = 0.5$ and if $D = 0.8$, then the median Black household owns only 20 percent (i.e., 1 – 0.8) of the wealth of a median white household. This measure could only be greater than one if Black households were systematically wealthier than white households. This racial equity measure exhibits discriminant validity in the sense that it does not imply overall wealth equity. Although other measures could also be devised,[5] we chose this measure for its relative simplicity and interpretability.

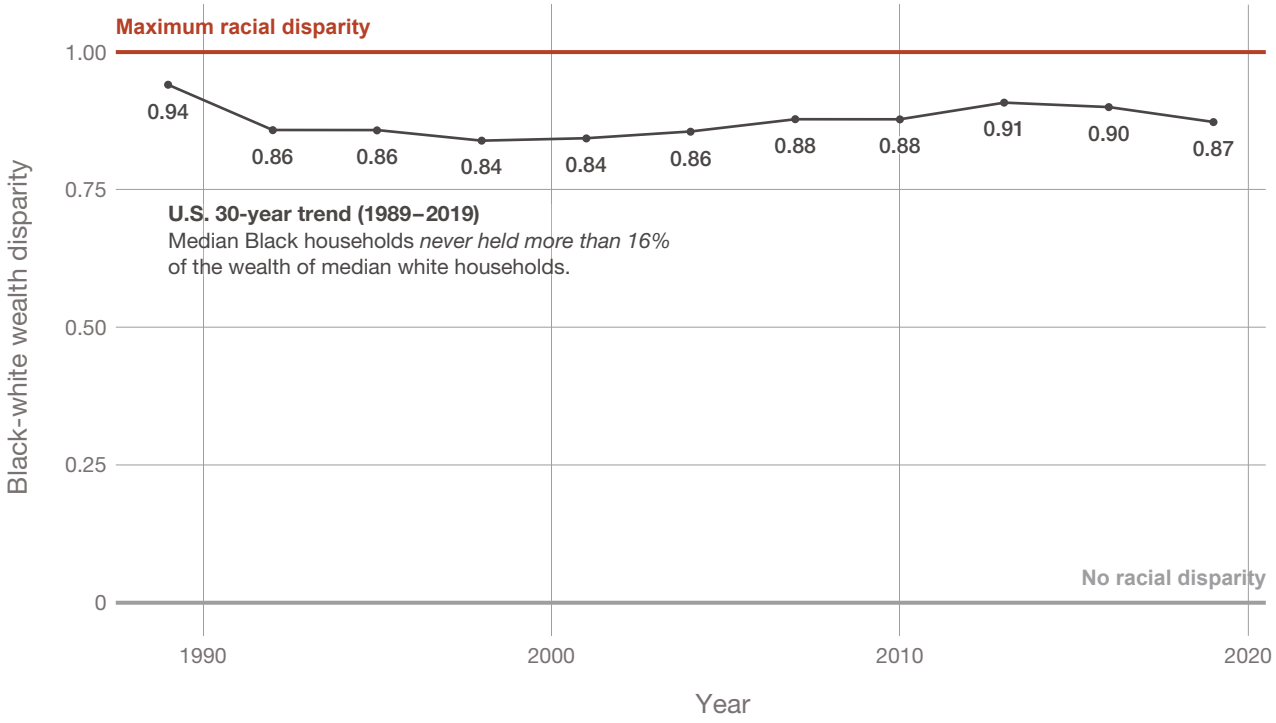
Figure 3 displays the disparity measure *D*, considering only the median disparity. In a society in which the median Black household holds the same level of wealth as the median white household, the disparity measure should be zero. However, as the figure demonstrates, the current level of Black-white disparity in the United States is near 0.87, implying that Black households hold only 13 percent of the wealth of white households, and the minimum disparity over the past 30 years is 0.84 in 1998.

Decomposing the Racial Wealth Gap

The racial wealth gap stems from significant differences in asset holdings and in liabilities. Figure 4 shows that the wealth gap is not just a number but a significant difference in the composition of wealth. Panel A, left, displays the differences between median asset values for white and Black households as of 2019, in thousands of dollars, while Panel B, right, displays the ratio between medians. In comparison with the median Black household, the median white household held $25,000 more in unrealized capital gains, $29,000 more in business equity, $80,000 more in primary residences, and $98,000 more in other real estate investments. Furthermore, Figure 4 shows that, at the median, white households own 2.3 times more in retirement accounts, 3.4 times more in stock holdings, and 7.8 times more in other types of managed assets. With the wealth gap skewed toward volatile assets (e.g., housing, stocks) relative to stable assets (e.g., savings bonds, life insurance), the difference in the composition of wealth explains, in

FIGURE 3

The Black-White Wealth Disparity Is Not Closing



SOURCE: Author's analysis of 2019 SCF time-series summary data (Board of Governors of the Federal Reserve Board, 2022).

NOTE: This figure plots the measure of Black-white wealth disparity introduced in Equation 1, considering only median disparity, from 1989 to 2019. The plot includes the entire possible range of this measure to highlight that the trends in Black and white wealth have been minimal toward reducing disparities relative to a line of no racial disparity. For example, a disparity value of 0.87 implies that median Black households hold 13 percent of the wealth of a median white household. A disparity of 0 implies no disparity.

part, the cyclicality of the racial wealth gap shown in Figure 1.

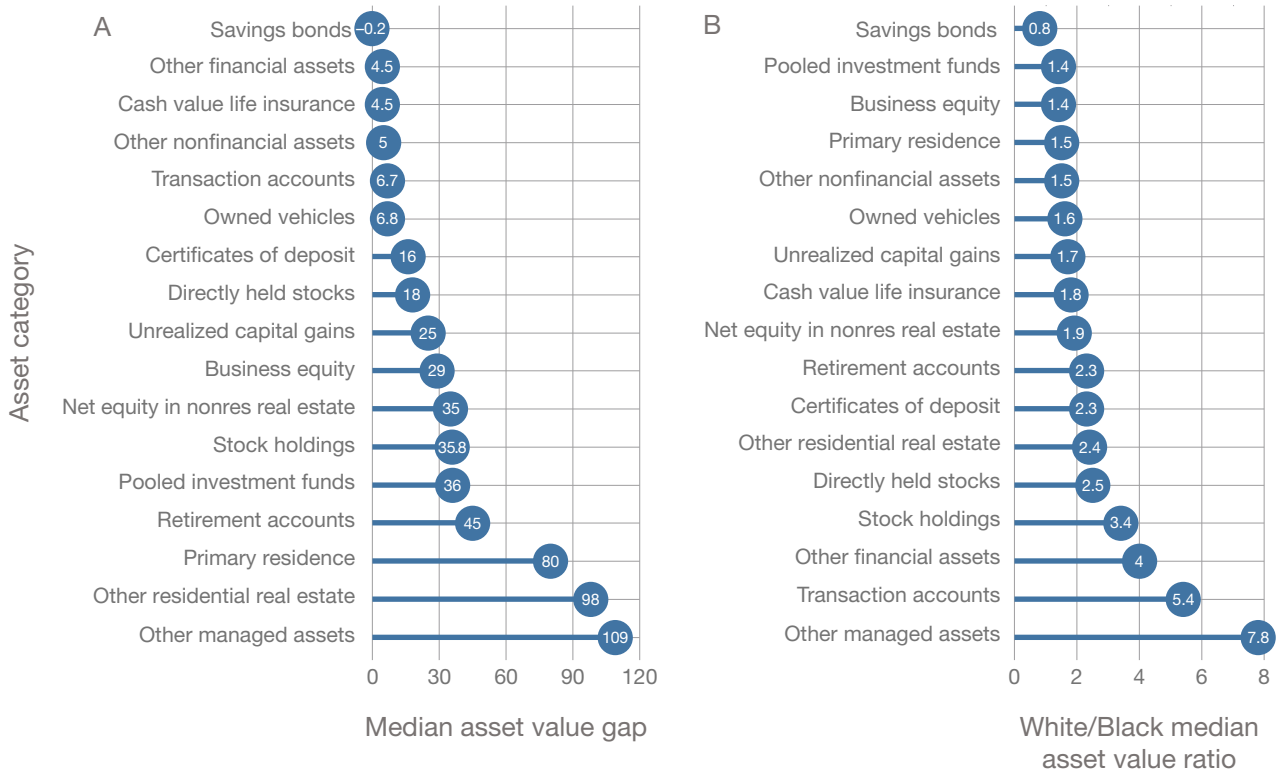
Although the wealth gap is largely driven by differences in asset sources, the differences in wealth—and the building blocks of wealth—are also reflected in differences in the composition of debt. Figure 5 shows gaps in liabilities between Black and white households. Panel A, left, displays the difference between median debt value for white and Black households as of 2019, in thousands of dollars. Panel B, right, shows the ratio between these median values. Relative to white households, Black households owe $7,000 more in education installment loans and $1,800 more in other lines of credit—debt often in the form of short-term high-interest loans. Yet, Figure 5 reveals what Table 1 suggests: Greater access to credit and higher wealth allows white households to also accrue higher debt, largely through real estate. In comparison with Black households, white households have $9,000 more in home equity lines of credit, $14,000 more in home-secured debt, $20,000 more in mortgage debt, and $50,000 more in real estate debt. Importantly, higher levels of residential debt provide white households with higher levels of leverage for further consumption and wealth accumulation. Thus, while white households own more wealth in terms of assets, they also own more so-called good debt, which has the potential to generate future gains.

Closing the Black-White Wealth Gap

Because of the significant and persistent gaps in income and wealth, meaningful progress in narrowing the Black-white wealth gap may require historic intervention. In this section, we consider possible interventions by assessing the potential impact of

FIGURE 4

Sources of Racial Wealth Gaps: Assets



SOURCE: Author's analysis of 2019 SCF data (Board of Governors of the Federal Reserve Board, 2022).

NOTE: This figure shows unadjusted ratios and differences in median values, in thousands of 2019 dollars. For more-detailed statistics, including the percentage of Black and white households with each asset type, see Appendix B. Nonres = nonresidential.

large wealth allocation policies on the Black-white racial wealth gap. In doing so, we elucidate the following questions:

- How large would wealth allocations need to be to significantly impact racial wealth disparity?
- How does the impact of wealth allocations exclusively to Black households (i.e., reparations) differ from race-neutral allocation policies?
- What is the first-order, immediate impact of targeted, disparity-reducing allocations to qualifying households based on their current wealth?

To address these questions, we define objectives in terms of the disparity measure, describe policy levers and constraints for analysis, and compare results from implementing four potential policies.

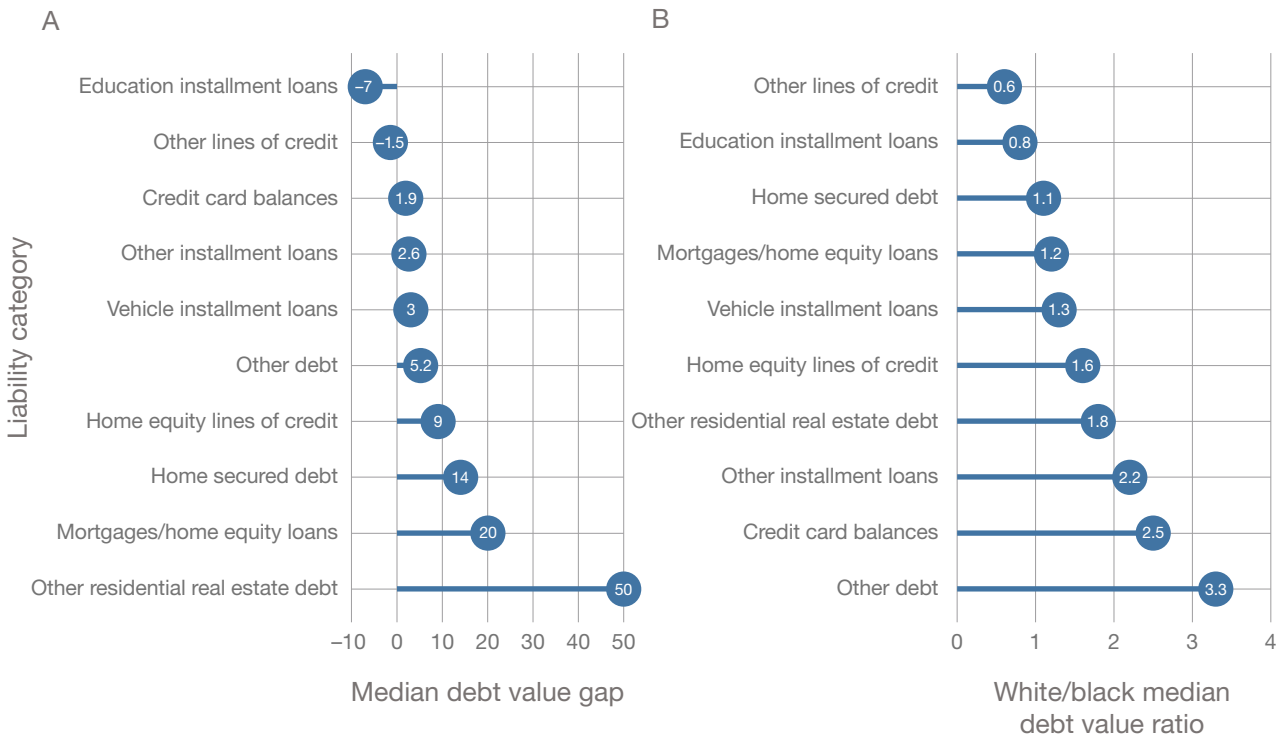
Levers and Constraints: Eligibility Criteria and Total Allocation

In this analysis, we consider two eligibility criteria. The first is the race of the eligible households. Reparations policies exclusively target Black households (r = Black) while so-called race-neutral policies, such as baby bonds,[6] allocate wealth to all households (r = all races/ethnicities). The second is the wealth of the eligible household; we consider a threshold maximum value of wealth, $\widetilde{W}$, in which households would be eligible for the wealth-allocation policy. Finally, the total monetary value allocated to all eligible households A and the number of eligible households n_e determine all households' post-allocation wealth $W'_{i,r}$ of household i of race r as follows:

$$\mathbf{W}'_{i,r} = \begin{cases} \mathbf{W}_{i,r} + \frac{\mathbf{A}}{\mathbf{n}_e}, & \text{if } \mathbf{W}_{i,r} \leq \widetilde{\mathbf{W}} \text{ and } r \in \{\text{Black, all races}\} \\ \mathbf{W}_{i,r}, & \text{otherwise} \end{cases} \quad (2)$$

FIGURE 5

Sources of Racial Wealth Gaps: Liabilities



SOURCE: Author's analysis of 2019 SCF data (Board of Governors of the Federal Reserve Board, 2022).

NOTE: This figure shows unadjusted ratios and differences in median values, in thousands of dollars. For detailed statistics, including the percentage of Black and white households with each liability type, see Appendix B.

As Equation 2 implies, we assume that each eligible household would receive the equal resulting allocation A/n_e. We further assume that eligibility would always be determined by current wealth, such that the least wealthy households (in terms of n_e) would receive an equal wealth allocation. As we will show later, this policy choice has important implications for our analysis.

Four Disparity-Reducing Policy Archetypes

We developed archetypes to analyze four potential disparity-reducing policies. First, we evaluate wealth-allocation policies wherein wealth would be distributed to all Black households, which closely resembles a reparations policy that would provide equal allocations to the descendants of enslaved people. For an example of such a policy, see Darity and Mullen, 2020b, which describes a policy for wealth allocations that targets the mean wealth gap while providing eligibility criteria for recipients, a key difference from the more generic policy that we discuss in this report, which applies to all Black households. We refer to this policy hereafter as **equal allocations to all Black households**. This policy does not use a wealth-eligibility criterion and results in a allocation of an equal amount for all Black households given the total allocated value chosen.

We refer to the second policy as equal allocations to all households, in which we allow every household to be eligible for a wealth allocation. Notably, this policy is far different than reparations and, as we will soon demonstrate, provides further evidence that race-targeted policies are necessary to close the racial wealth gap. This second type of policy does not change absolute wealth disparities, but it marginally reduces *relative* disparities

because the absolute difference of wealth becomes smaller relative to a growing white household wealth denominator. This second type of policy represents a scenario in which Black and white wealth would grow at the same absolute rate in parallel. As Figure 1 demonstrates, this could be a plausible and, perhaps, optimistic scenario if observed trends in wealth follow recent trends in income growth. This scenario would materialize if the wealth and income trajectories continue to increase while the difference between white and Black wealth were to remain constant. This scenario can be understood as a comparison scenario in which market forces and policies would result in the distribution of equal amounts of wealth to all households.

For the third and fourth policies, we analyze the impact of a given total allocation in which policymakers set the wealth eligibility threshold to achieve the maximum reduction in disparity. For example, if policymakers were willing to mobilize $1 trillion to minimize racial wealth disparities, we could determine the wealth eligibility criteria that would result in the minimum racial wealth disparity. For our analysis, we chose wealth eligibility criteria and a total allocation that could produce the maximum reduction disparity measure, using multi-objective evolutionary optimization (see Appendix A for details). We modeled this for a wide range of total allocation values. First, we consider *all* Black households as eligible, which we henceforth refer to as targeted allocations to Black households. Second, we perform the same analysis allowing all races to receive the allocation. We refer to the results of the race-neutral formulation as targeted allocations to all households. Within each policy experiment, households that are eligible always receive the same allocation, as stated in Equation 2.

Finally, we consider three variations of our disparity measure in our analysis. The first variation includes only the median disparity. A second variation uses the mean disparity. However, although easily interpretable, considering only the median or the mean disparity as the objective function can influence our results, and equal means or medians do not imply aligned distributions. Given the wealth differences displayed in Table 1, we examine a third variation that restricts the wealth disparity measure to include only between the 15th and the 90th percentiles of the wealth distribution in our sample. Removing the bottom end of the distribution from the wealth disparity measure is necessary because including the wealth of white households with no wealth implies an infinite disparity measure. For this reason, we start at the 15th percentile, where white households own $8,000 of wealth. Finally, we do not use the upper end of the wealth distribution in our model because the policies that we analyze are not designed to remove disparities at that region of the distribution.

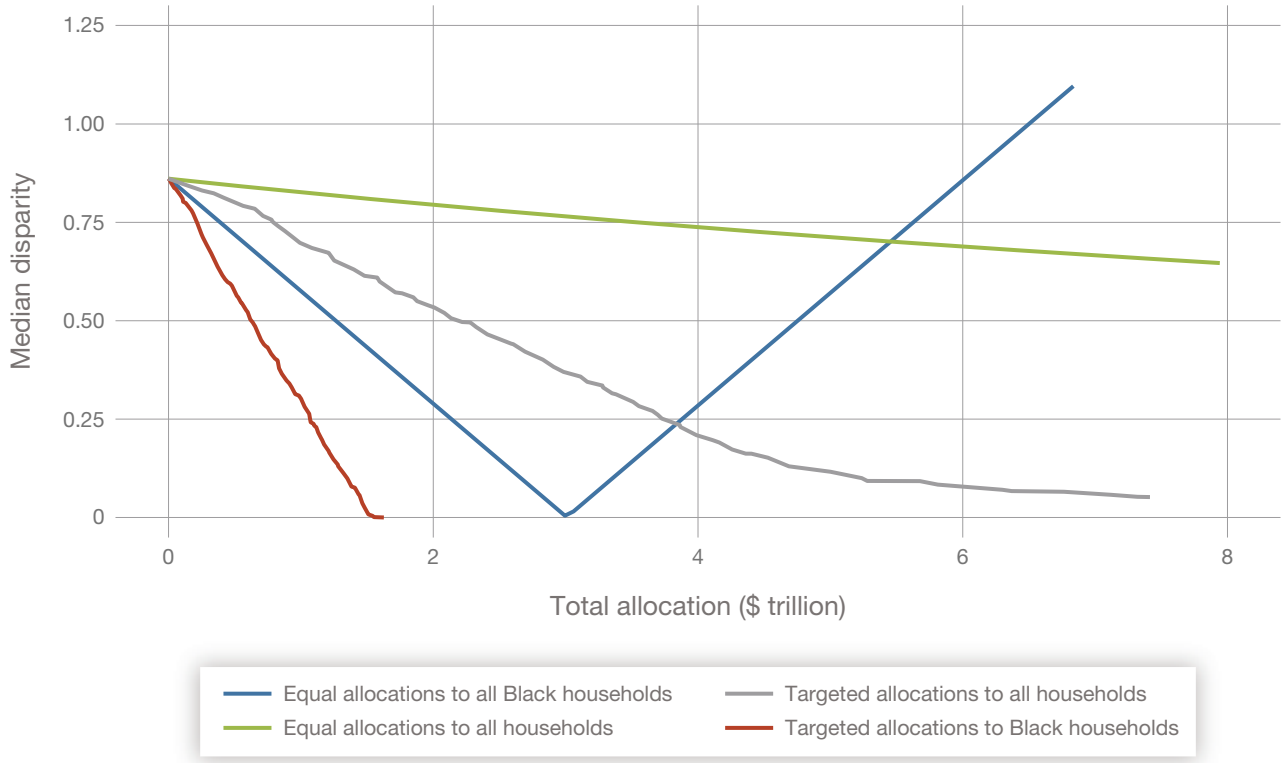
Implications of Wealth-Allocation Policies on Black-White Wealth Disparity

Figure 6 depicts our analysis of four potential wealth-allocation policies and the impact of each on median racial disparity: (1) equal allocations to all Black households, or reparations (blue); (2) equal allocations to all households (green); (3) targeted allocations to Black households (red); and (4) targeted allocations to all households (gray). Here we define *median disparity* as $\widetilde{D}$, where $n_p = 1$ and $p = 0.5$ (see Equation 2).

Under the simplest policy, equal allocations to all Black households, median disparity linearly decreases as the total allocation amount decreases: A total allocation of $500 billion leads to a reduction in median disparity of 17 percent, while a total allocation of $1.5 trillion leads to a 50-percent reduction in median disparity. Median disparity would be eliminated (at zero) by allocating a total of $3 million. In practical terms, these policies mean that each Black household would receive approximately $84,000 by allocating $1.5 trillion and $168,000 by allocating $3 trillion.[7] As shown in Figure 6, median disparity decreases linearly until the total allocation exceeds $3 trillion. Above this threshold, Black household median wealth begins to rise above white household median wealth. Once the total allocation exceeds roughly $6 trillion, the equal allocations to all Black households policy begins to drive an overall increase in disparity.

FIGURE 6

Impact of Wealth Allocations on the Median Black-White Wealth Disparity, by Policy



For comparison purposes, we include the impact of equal allocations to all households in Figure 6. Given the larger percentage of Black households toward the bottom of the wealth distribution, Black households benefit relatively more than white households by race-neutral allocations. The effect is, however, small: A total allocation of $500 billion leads to a 1-percent reduction in median disparity, while a 30-percent reduction in median disparity requires a total allocation of $9.6 trillion.

As discussed in the previous section, the targeted allocation policies are the result of a stochastic multi-objective optimization process that generates many solutions, which form an approximation of *an efficiency frontier*—the set of policies resulting in the minimum racial disparity at each allocation level. That is, each targeted allocation line can be understood as an efficiency frontier where our optimization algorithm could not find an allocation policy using the policy levers available that resulted in less disparity *while using fewer dollars*.[8]

Targeted allocations can lead to meaningful gains in efficiency as a policy lever. In Figure 6, the red line reflects a steep reduction in median disparity as a result of targeted allocations to Black households compared with targeted allocations to all households. A total allocation of $500 billion to Black households leads to a reduction in median disparity of roughly 35 percent, while allocating $760 billion leads to a 50-percent reduction in median disparity and an allocation of $1.6 trillion is needed to eliminate median disparity. In comparison, the race-neutral policy of optimally targeted allocations to all households has non-linear effects on median disparity and requires a large total allocation value to reduce disparity. For example, a total allocation of $500 billion leads to a reduction of roughly 7 percent in median disparity, while a total allocation of $2.6 trillion leads to a 50-percent reduction in median disparity. Because the largest relative differences in wealth are at the lower end of the distribution, the race-neutral policy would become increasingly inefficient at decreasing disparity as the number of eligible house-

holds expanded to higher percentiles. The result is a slow and expensive convergence to reach zero disparity. However, highly skewed wealth distributions can make closing the wealth gap at the *mean* level of disparity instead of the median a desirable policy strategy, which we have done by showing the impact of each policy on the mean disparity in Figure 7.

Figure 7 shows the mean wealth disparity as a function of total allocation and each policy. Figure 7 presents similar patterns to those shown in Figure 6, except that closing the mean disparity requires a larger total allocation. Mean disparity is halved with an total allocation of $7.5 trillion and is eliminated with an allocation of $15 trillion. Under the equal allocation to all households policy, $15 trillion reduces the mean disparity by only 11 percent (from 0.86 to 0.77), and it could reduce the mean disparity by 25 percent (from 0.86 to 0.64) in a best-case scenario in which allocation values are optimally targeted to reduce levels of mean disparity. As the plot demonstrates, targeting households in the low-end of the wealth distribution does not make a difference if only Black households are eligible (the red line is on top of the blue line) because any allocation directed to Black households has the same effect on the mean disparity. However, targeted allocations have an effect on the mean disparity if all races are eligible for them (the gray line is below the green line) because targeting based on wealth will tend to prioritize Black households.

Although Figures 6 and 7 show the potential effect of policies on the median and mean disparities, the impact of each policy on the Black-white wealth disparity across the entire wealth distribution, as defined by D in Equation 2, is quite different. Although disparity can be reduced through wealth-allocation policies at the median or at the mean, the results in Figure 8 reveal that disparity cannot be eliminated across the full distribution through equal allocations. Like the previous two figures, Figure 8 compares the resulting impact on disparity associated with each policy: (1) equal allocations to all Black households (blue); (2) equal allocations to all households (green); (3) targeted allocations to Black households (red); and (4) targeted allocations to all households (gray).

The impact of each policy leads to nonlinear impacts on overall disparity. For all values of wealth

FIGURE 7

Impact of Wealth Allocations on the Mean Black-White Wealth Disparity, by Policy

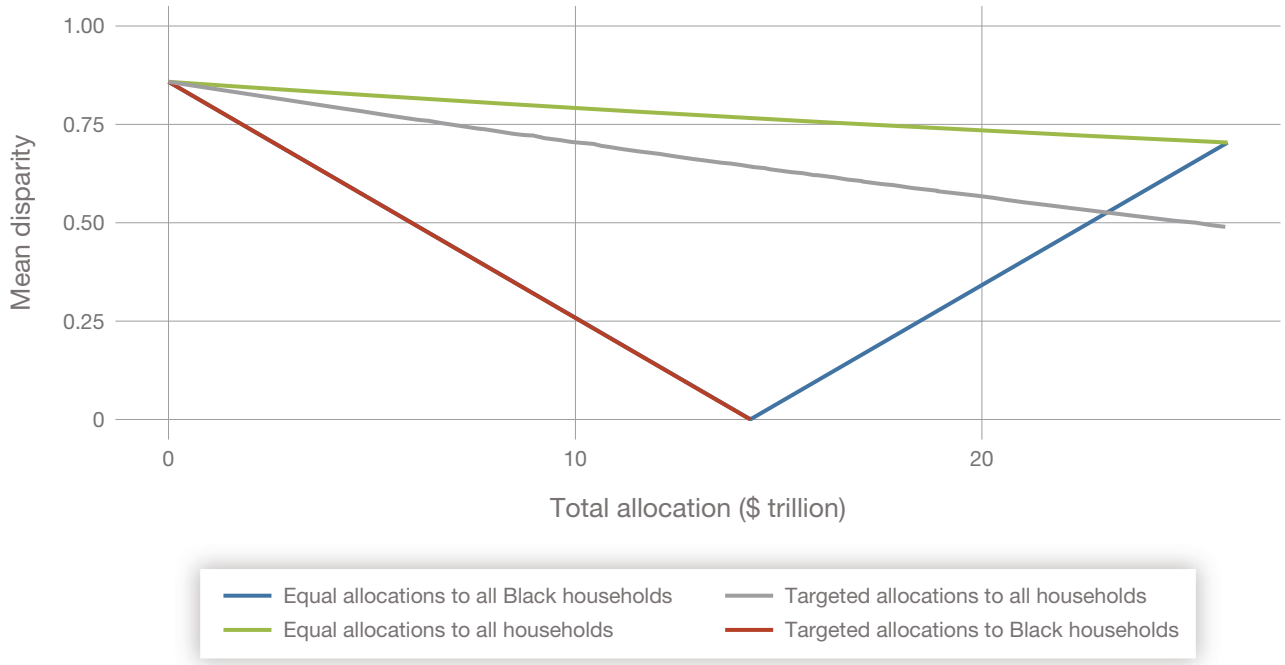
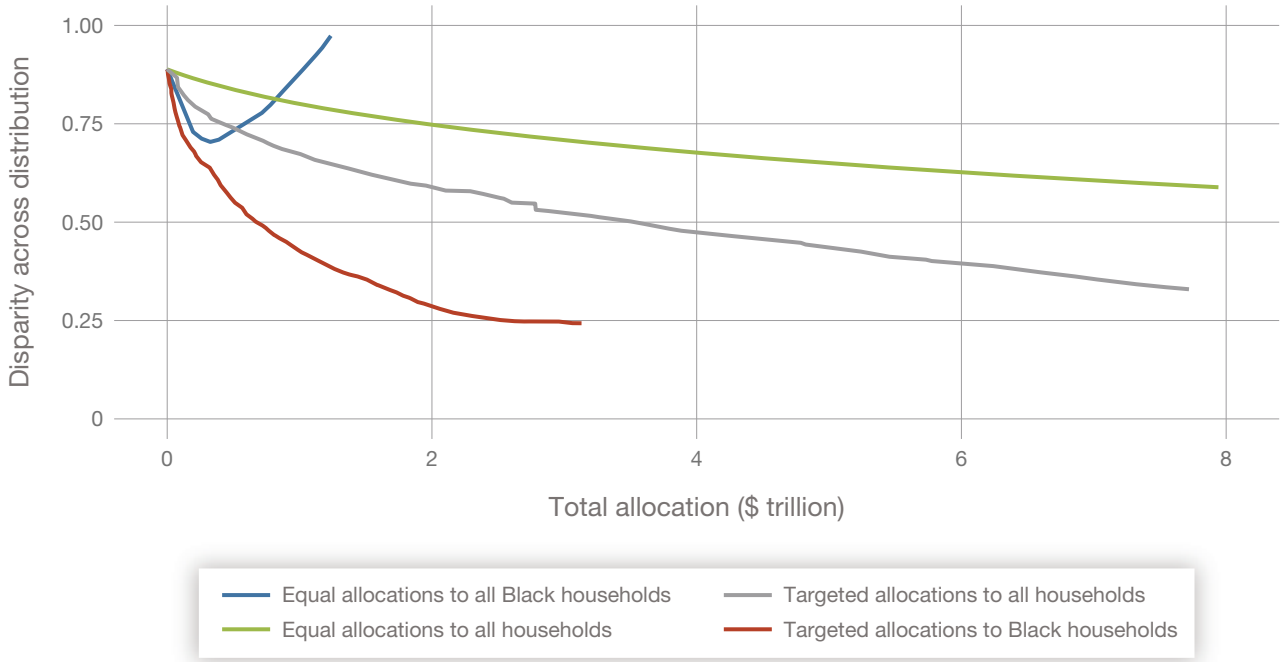


FIGURE 8

Impact of Wealth Allocations on the Overall Black-White Wealth Disparity, by Policy



allocations, targeted allocations to Black households dominates all other policies, and targeted allocations to all households always dominates equal allocations to all households. Under the targeted allocations to Black households policy, a total allocation of $500 billion leads to a 37-percent reduction in overall disparity, while a total allocation of $930 billion reduces the overall disparity in half. In comparison, a total allocation of $500 billion leads to a roughly 17-percent reduction in disparity with targeted allocations to all households and a 6-percent reduction in disparity with equal allocations to all households.

However, equal allocations to all Black households lead to trade-offs in terms of overall disparity. As Figure 8 shows, the disparity is strictly decreasing until the total allocation value reaches just under $400 billion. At this point, Black household wealth begins to rise above white household wealth at the lower end of the distribution enough to drive increases in overall disparity. Once the total allocation exceeds roughly $1 trillion, equal allocations to all Black households begin to drive an increase in overall disparity.

Moreover, the red line (targeted allocations to Black households) stops at roughly $3 trillion. This occurs because this line is the result of an optimization exercise and reflects an efficiency frontier (i.e., the optimization algorithm did not find any policy that reduced disparity at a lower cost). Allocating more than $3 trillion to the same Black households increases the overall disparity measure because such allocations create disparities driven by the bottom of the white household distribution. Therefore, this result demonstrates that overall racial disparity will not be eliminated solely with allocations to poor households, even if the allocations are targeted to Black households. Racial wealth disparities could be substantially mitigated by such policies, but they will not be eliminated.

The results in Figure 8 point to potential limitations and trade-offs associated with wealth-allocation policies. The policy of equal allocations to all Black households leads to better results for disparity, compared with race-neutral policies that use small to moderate total allocation values. However, as a wealth-allocation policy grows in total value, race-neutral policies will have larger impacts

on overall disparity. That is, a policy of equal allocations to all Black households, which narrows disparity at the median, may increase overall disparity. In all cases, targeted wealth-allocation policies are better at disparity reduction than their equivalent equal allocation to all households policies. This points to potential gains in efficiency, such as providing wealth allocations to households with low levels of wealth first.

Furthermore, none of policies that we evaluate would eliminate wealth disparity across the entire distribution. To eliminate Black-white wealth disparity, a policy would need to allocate the pairwise difference ($W_{w,p} - W_{b,p}$; column 4 in Table 1) to Black households for each percentile. That would mean allocating $13,800 to Black households at the 10th percentile and $811,000 to Black households at the 85th percentile. Such a policy, allocating far more to wealthy households than to poor households, has obvious pitfalls. It also reflects a broader problem.

Ultimately, narrowing the wealth gap between Black and white households runs up against the headwinds of massive wealth inequality across all households. With white households at the 95th percentile holding 19 times more wealth than the median white household and 30 times more wealth than the median household in general, trying to close the racial wealth gap at the upper tail by augmenting Black household wealth may be the wrong goal. Instead, the policies that we evaluated could achieve progress in narrowing the Black-white wealth gap across the overall distribution only if coupled with broader policies aimed at reducing overall wealth inequality.

In all cases, targeted wealth-allocation policies are better at disparity reduction than their equivalent equal allocation to all households policies.

Discussion

Wealth, more than income, is the dominant economic force for households (Ali et al., 2021; Esposito and Villaseñor, 2018; Fox, 2016; Nowatzki, 2012; Toney and Robertson, 2021; Pfeffer and Killewald, 2018). Wealth facilitates access to housing, education, health, and well-being. It also reflects how the present-day economy holds onto the past, compounding past gains along with past harms. The resulting chasm between the wealth of Black and white households far outpaces the current gap in income. Any hope at progress in achieving equitable economic outcomes and opportunities between Black and white households is quickly undermined by the persistence of the racial wealth gap which, if anything, appears to be widening rather than narrowing (as evidenced by the historical trends shown in Figure 1 and in studies on the long-term effects of wealth interventions in other countries, such as Banerjee, Duflo, and Sharma, 2021). With white households owning substantially more wealth in appreciable assets (housing and stocks), Black households are left further and further behind as growth in assets exceeds growth in incomes. Attempts to catch up through wealth-building opportunities, such as education, leave Black households shouldering more student loan debts yet earning consistently lower incomes—*and less wealth*—for that education. Against these forces, there is no evidence that the incessant racial wealth gap in the United States will ever close on its own.

This has led to calls for historic interventions that seek to address the nation's history of harms, unpaid labor, stolen assets, de jure segregation, and denied opportunity, all of which underpin the present-day wealth gap. Notable proposals include reparations (e.g., Coates, 2014; Rothstein, 2017; Darity and Mullen, 2020a), the introduction of H.R. 40—a Bill introduced in Congress every year since 1989 that calls for a commission to study and develop reparations proposals, as well as race-neutral

In terms of average wealth disparity, our analysis finds that wealth-allocation policies can close the racial wealth gap.

policies for narrowing the gap, such as baby bonds (e.g., Hamilton and Darity, 2010).

This report contributes to the ongoing discussion about policies aimed at narrowing the racial wealth gap through a descriptive analysis of racial disparity across the wealth distribution and the potential, first-order impact of policies that seek to narrow the gap through wealth allocations to Black households. The equal allocations to all Black households policy most closely resembles current calls for reparations through a large, one-time allocation given equally across all Black households, which is similar to the policy with targeted allocations to Black households (based on household wealth), which would give more money to households at the lower end of the distribution.

We compared these results with race-neutral policies that allocate wealth to all households equally and another that targets households based on their current wealth—a policy that most closely resembles baby bonds. The analysis is deliberately simplified. We leave the dynamics of future growth and intergenerational wealth allocations to be covered in the eighth report in this series. The analysis is also informative because it allows us to expose opportunities for narrowing the wealth gap while elucidating challenges in the objective of narrowing racial disparities across the wealth distribution.

Similarly, the policies discussed in this report lead to a natural question: How will the policies be paid for, and who will foot the bill? In this report, we have assumed that each policy is debt-financed. Of course, other options exist beyond debt financing, and policies do not need to require one-time allocations and could, instead, distribute allocations over time. Although our simplified assumption inherently leads to future costs, long-run dynamics may not be so simple. Reducing disparity can have a positive impact on aggregate output (Brueckner and Lederman, 2015; Deininger and Squire, 1998). Additionally, the policies that we considered may also lead to future gains in aggregate growth as Black households reduce precautionary savings and increase their investments in human capital, real estate, equity markets, and entrepreneurship. Each factor could lead to expansions in the tax base, which could offset future fiscal impacts. Future research should work toward answering this nuanced question in detail, by exploring fiscal impacts and the trade-off of debt and growth, through multi-period and multi-agent models.

In terms of average wealth disparity, our analysis finds that wealth-allocation policies can close the racial wealth gap. Darity and Mullen, 2020a, provides an extensive summary of strategies for calculating the value of reparations that could compensate for past harms. In its summary, calculations range from a rather low end of $168 billion to the moderate value of $3 trillion, to the high end of $12.6 trillion. We took a different perspective, focusing on closing the wealth gap, and our analysis finds that a wealth-allocation policy of $500 billion, spread equally across all Black households, could reduce median wealth disparity by 17 percent; a policy of $1.5 trillion could half median disparity; and a policy of $3 trillion could eliminate median wealth disparity. Notably, however, others argue that it is the *mean* wealth gap that should be targeted, not the median (Darity and Mullen, 2020a; Darity, 2021). Focusing on the mean, our analysis finds that a wealth-allocation policy of $7.5 trillion, spread equally across all Black households, could reduce mean wealth disparity by 50 percent, and a policy of $15 trillion could eliminate mean wealth disparity.

The other policies that we analyzed differ from traditional calls for reparations but provide further

For narrowing the wealth gap, it is hard to see another path than a historic intervention. The Black-white wealth gap exhibits no sign of contracting without it.

insight into potential policies for narrowing the racial wealth gap. Our analysis presents the expected maximum reduction in the Black-white wealth disparity measure (Equation 1) for any given dollar amount of allocations. Under these targeted policies, median wealth disparity could be halved with a $760-billion policy and eliminated with a $1.6-trillion policy, meaning that it is impossible to reduce the median disparity with smaller allocations.

Instead of a policy prescription, these results should be interpreted as a feasibility frontier. Policies that result in allocations that target the low end of the wealth distribution in a race-neutral way could also have disproportionate impacts on Black households, given that the highest relative wealth differences exist at the low end of the distribution, and could be more feasible politically because of their positive impacts on low-wealth white households. However, such policies would be also less efficient at achieving the goal of reducing racial disparities; the race-neutral policies would require a larger allocation cost and would ultimately be unable to feasibly eliminate disparity at the median.

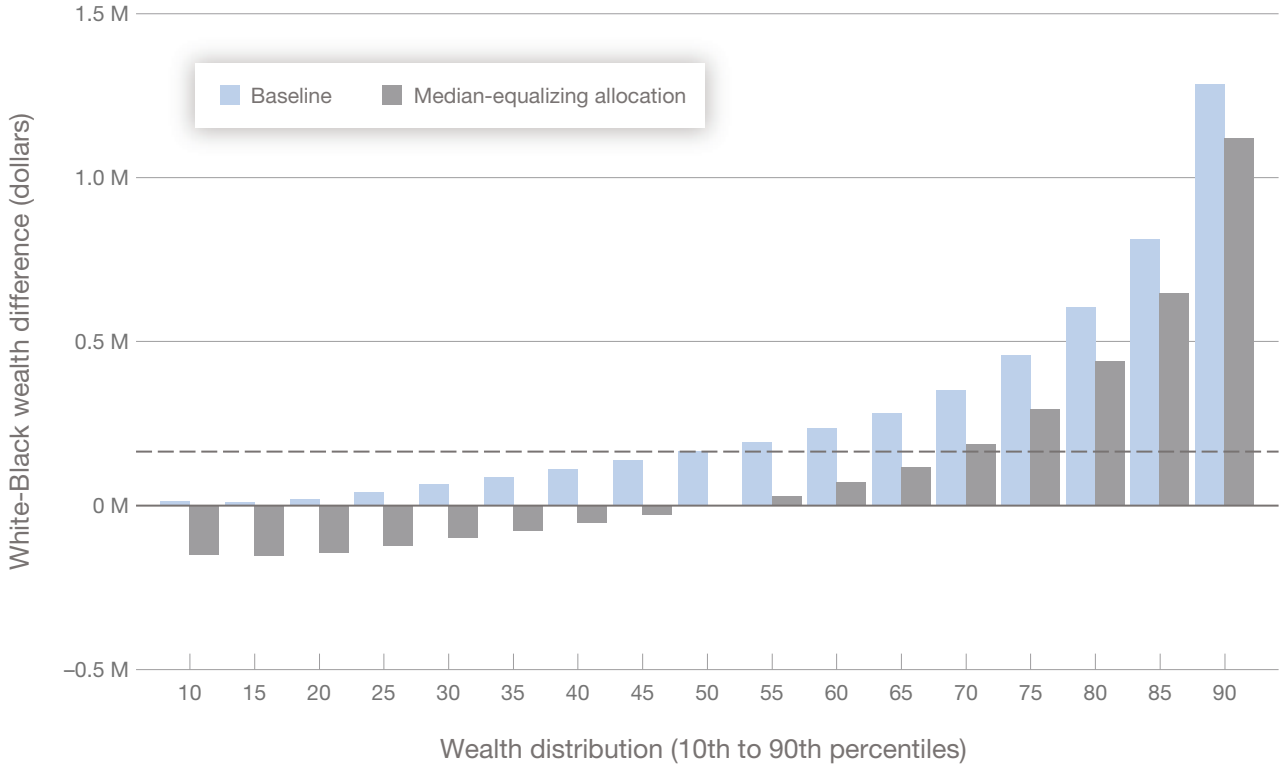
Yet, when we consider a measure of disparity across the entire wealth distribution, our analysis reveals trade-offs. For allocations under $1 trillion, the policy most closely resembling reparations (equal allocations to all Black households) leads to overall reductions in disparity. However, once the total allocation exceeds $1 trillion, disparity can increase above the current level as Black household wealth at the lower end of the distribution rises well above the wealth of poor white households. Of course, this is not the objective of a reparations policy, which strictly seeks to address harms against Black households, not white households, and entirely separate policies that target overall wealth disparity could address the wealth of all households at the bottom of the distribution. However, our measure of overall disparity identifies a potential point at which white households may feel economically left behind, which might create political challenges, regardless of historical merit.

Other policies that we evaluated only partially avoid the disparity challenge. Each could, strictly speaking, reduce disparity; however, none could eliminate it. Ultimately, the overall headwinds of wealth inequality are a barrier to eliminating the racial wealth gap. Figure 9 illustrates one example wealth-allocation policy, which eliminates median disparity by allocating $165,000 equally to all households, and its impact at percentiles across the distribution before (blue) and after (gray) the allocation. Figure 9 illustrates that the challenge is statistical; the wealth distribution is so heavily skewed, with the vast majority of wealth at the upper tail held by white households, that the racial wealth gap can be closed at the median through straightforward one-time allocations but not overall. The wealth distributions of white and Black households cannot be made equal only with the policies analyzed in this report.

For narrowing the wealth gap, it is hard to see another path than a historic intervention. The Black-white wealth gap exhibits no sign of contracting without it. Our analysis conveys that, to a first order, one-time allocations to Black households can meaningfully narrow the wealth gap at the median. Truly eliminating the racial wealth gap, however, will require solving the broader societal challenge of wealth inequality—doing that will extend benefits to Americans of all races.

FIGURE 9

First-Order Impact of Wealth Allocations Across the Wealth Distribution



NOTE: The dashed line represents the value of the median wealth gap, $165,000, which is distributed to households shown in the figure.

Appendix A. Technical Details

This appendix presents technical details on our use of the SCF data and the multi-objective optimization algorithm used in our analysis. First, we explain how we generated a synthetic population data set that allowed us to estimate the first-order consequences of alternative wealth-allocation policies. Finally, we provide more details on the multi-objective optimization procedure that we used, which allowed us to shed light on the potential trade-offs inherent to the wealth-allocation policies that we analyzed.

Synthetic Population Generation

Our goal was to evaluate a set of policies that allocate wealth to households based on a set of established criteria. Equations 1 and 2 assume that the decisionmaker has information on the distribution of wealth among households and that the sample of households used is *random*. For our modeling purposes, we created a synthetic population using weighted resampling based on SCF's weights (w_i) for each household (i) included in the sample. Moreover, the density plot presented in Figure 2 requires a random sample. We created the synthetic population sample by resampling the SCF microdata with replacement data, using probability $w_i/\Sigma w_i$ for each household. If the population size of the synthetic population is large enough, the **point estimates** of percentiles calculated from this population and those calculated using SCF's weights will match. To verify that the percentile estimates from this synthetic population are asymptotically unbiased, we generated a sample of 10 million households and calculated the wealth percentiles as shown in Table 1. The disparity measure calculated using Equation 1 can be calculated for the median using the time-series data provided by the SCF and with the synthetic population method used by our model. We found that the disparity measure is 0.8725542 if one uses the median provided in the time-series and is 0.8727562 if one uses the synthetic population, which demonstrates that our approach is asymptotically unbiased. This synthetic population provides a representation of the wealth distributions of Black and white households that can be used in the multi-objective optimization framework discussed below, as well as in the agent-based model presented in another report in this series.

Many-Objective Evolutionary Optimization of Equity Goals

Many-objective evolutionary optimization algorithms are a class of heuristic algorithms used to optimize multiple objective functions without the need to aggregate the outcomes into a single objective function (Deb, 2001). These algorithms are particularly useful when there is no known closed-form solution to the problem and no derivative information on the objective function. In this report, we employ this technique to trace Pareto surfaces and to determine the maximum reduction in disparity that can be achieved by equal allocations at any level of total allocation.

The purpose of multi-objective optimization is to illuminate Pareto-optimal trade-offs between a decisionmaker's conflicting objectives. Under our framework, we considered a society that wishes to reduce racial wealth disparity by distributing equal allocations to eligible households while mobilizing the minimum amount of resources. The set of solutions that are better than all other solutions in at least one objective are considered *nondominated* or *Pareto-optimal*. The "optimal" solutions presented in Figures 6 and 7, therefore, present these Pareto surfaces: Our algorithm could not find policies that reduce racial wealth disparities *and* require a lower wealth allocation following the simple rules described in this report. Although this simple model is likely not realistic for a long-term assessment (e.g., we do not model any non-mechanical effects), it does offer an order-of-magnitude estimate of the allocations necessary to initially close the racial wealth gap, considering the current wealth distribution in the United States, based on our disparity measure. To the best of our knowledge, no previous analysis has employed this approach.

We used the NSGA-II algorithm to perform our analysis. This algorithm allowed us to search the parameter space for Pareto-optimal equity/allocation trade-offs without having to place arbitrary weights on those outcomes (Deb et al., 2002). We used the

total allocation A and disparity measure *D* outcomes to be minimized, and the wealth eligibility $\widetilde{W}$ and the total allocation as a fraction of total wealth $A/\Sigma W_i$ as decision variables. We used a population size of 100 solutions and iterated over 50 generations. We used a cross-over probability of 70 percent and mutation probability of 20 percent. Our implementation used the *nsga2* function from the *mco* R package. Because we performed one optimization run using the median disparity as an outcome and another run using all percentiles between 15 percent and 90 percent of wealth, the optimization required 10,000 model evaluations (i.e., 100 x 50 x 2), which took one hour to run with a population size of 12,860 households (one household for each 10,000 real households). We also verified that the model produces nearly identical results with a larger synthetic population size of 64,300 or 128,860 households (one household for each 2,000 and 1,000 real households, respectively), and it also produced nearly identical results with 70 population generations rather than 50 generations, suggesting that the optimization routine was in fact finding the approximate Pareto surface regardless of those parameters.

As currently implemented, our optimization approach does not provide information on sampling uncertainty, and we do not present standard errors for our estimates. As stated before, the disparities between Black and white households are so wide that sampling uncertainty becomes a second-order concern. If one is interested in estimating confidence intervals for our estimates, doing so could be possible at a moderate computational cost. One might use bootstrapping to repeat the optimization exercise for each bootstrapped sample *or* simulate the solutions found by running the optimization model in a larger sample over each bootstrap sample. This exercise could require many model evaluations and would find very similar policies and the same point estimates in our model runs with large sample sizes.

Appendix B. Assets and Liabilities

Table B.1 shows the composition of household wealth in terms of assets and liabilities. The median household values (in thousands of dollars) are broken out by race and are unconditional on asset/liability ownership. The table also shows the value of the absolute white-Black difference, the relative difference (ratio), and the percentage of white and Black households that hold each asset and liability type.[9]

TABLE B.1

Assets and Liabilities

	Median Household Holdings		Absolute Difference	Relative Difference	Percentage of Households with Any Assets or Liabilities (%)	
Category	White	Black	White–Black	White / Black	White	Black
Assets						
Business equity	99	70	29	1.41	16.5	4.81
Cash value life insurance	10	5.5	4.5	1.82	20.8	21.5
Certificates of deposit	28	12	16	2.33	9.85	3.02
Directly held stocks	30	12	18	2.5	18.6	6.74
Net equity in nonresidential real estate	75	40	35	1.88	7.83	2.59
Other financial assets	6	1.5	4.5	4	8.43	7.53
Other managed assets	125	16	109	7.81	7.95	1.22
Other nonfinancial assets	15	10	5	1.5	8.96	1.62
Other residential real estate	170	72	98	2.36	15.1	8.17
Owned vehicles	19	12.2	6.8	1.56	89.3	71.5
Pooled investment funds	123	87	36	1.41	11.9	1.78
Primary residence	230	150	80	1.53	73.7	45
Retirement accounts	80	35	45	2.29	57.3	35.1
Savings bonds	0.75	1	−0.25	0.75	9.82	2.68
Stock holdings	50.8	15	35.8	3.38	60.8	33.5
Transaction accounts	8.2	1.5	6.69	5.45	98.8	96.8
Unrealized capital gains	60	35	25	1.71	77.1	47.2
Liabilities						
Credit card balances	3.2	1.3	1.9	2.46	44.5	47.7
Education installment loans	23	30	−7	0.767	20	30.2
Home equity lines of credit	24	15	9	1.6	6.07	1.09
Home-secured debt	130	116	14	1.12	47.4	27.7
Mortgages home equity loans	138	118	20	1.17	44.4	27.3

Table B.1—Continued

	Median Household Holdings		Absolute Difference	Relative Difference	Percentage of Households with Any Assets or Liabilities (%)	
Category	White	Black	White–Black	White / Black	White	Black
Other debt	7.5	2.3	5.2	3.26	4.86	5.37
Other installment loans	4.8	2.2	2.6	2.18	10.5	9.9
Other lines of credit	2	3.5	-1.5	0.571	1.47	1.24
Other residential real estate debt	110	60	50	1.83	5.5	2.87
Vehicle installment loans	14	11	3	1.27	37.4	33.8

SOURCE: Author's analysis of 2019 SCF time-series data (Board of Governors of the Federal Reserve Board, 2022).

Notes

[1] This report follows Associated Press style conventions for the capitalization of Black and white as categories of race. See Associated Press, 2020; and Daniszewski, 2020.

[2] A key aspect of bond sales is the voluntary nature of bond purchase, which contrasts to reallocation through taxation while creating a debt to be honored in the future. Although the final incidence of the returns to and cost of bond financing depend on factors outside the scope of our study, one possibility is that bond-based wealth allocations stimulate economic growth in general and accelerate wealth accumulation among recipients (e.g., through home ownership, increased educational attainment, improved health, and investment in financial instruments and companies). The increased economic activity might generate the revenue needed to pay much, possibly all, of the bond premia, though if not, the remainder may be paid by reducing the budgets of federal agencies, raising taxes, or both.

[3] Darity and Mullen, 2020a, discusses approaches for minimizing inflation risk from reparations policies.

[4] We assumed that household debt finances investments with a positive net return, an assumption that is later supported by the data shown in Figure 5.

[5] An alternative approach to characterizing differences in the wealth distribution of white and Black households could be to use a chi-square goodness-of-fit statistic. Let p determine each percentile of the distribution of white households. One could compute a chi-square statistic to determine how far the Black household wealth distribution is from the white distribution. Consider a hypothetical city with 10,000 white households and 10,000 Black households. One could compute $\chi^2 = \frac{\sum(h_{bp} - h_{wp})^2}{h_{wp}}$, where $h_{b,p}$ is the number of Black households within each wealth percentile, p, and $h_{w,p}$ is the number of white households within each wealth percentile. In a society in which race and wealth are independent, x^2 tends to zero and our disparity measure D is also zero. The difference between our measure and a chi-square measure is that it also accounts for the magnitude of the wealth differences, but both measures would converge to zero in a society in which race and wealth are independent.

[6] Baby bonds are a proposed policy for endowing every U.S.-born child with a government-financed trust account, created at birth and accessible at age 18. Although baby bonds could be given to all children at birth, they are often discussed as a way to endow children from lower-income families with disparity-reducing allocations. Hamilton and Darity, 2010, proposes this progressive implementation as a solution for eliminating the racial wealth gap over time.

[7] The value per household that eliminates disparity should equal the median wealth gap, which is $165,000. The difference in our results, which calculate a per household value of $168,000, reflects a small sampling error.

[8] Interpreted as a frontier, the set of policies identified delineate a feasibility space, and the region below those curves is infeasible.

[9] All code used for modeling and analysis was written in the R programming language and is available upon request.

References

Addo, Fenaba R., Jason N. Houle, and Daniel Simon, "Young, Black, and (Still) in the Red: Parental Wealth, Race, and Student Loan Debt," *Race and Social Problems,* Vol. 8, No. 1, March 2016, pp. 64–76.

Aladangady, Aditya, and Akila Forde, "Wealth Inequality and the Racial Wealth Gap," Washington, D.C.: Board of Governors of the Federal Reserve System, FEDS Notes, October 22, 2021.

Ali, Omer, William A. Darity, Jr., Avra Janz, and Marta Sánchez, "The Association Between Wealth Inequality and Socioeconomic Outcomes," *AEA Papers and Proceedings*, Vol. 111, May 2021, pp. 211–215.

Associated Press, "Explaining AP Style on Black and White," July 20, 2020.

Banerjee, Abhijit, Esther Duflo, and Garima Sharma, "Long-Term Effects of the Targeting the Ultra Poor Program," *American Economic Review: Insights*, Vol. 3, No. 4, December 2021, pp. 471–486.

Board of Governors of the Federal Reserve Board, "Survey of Consumer Finances (SCF)," webpage, March 10, 2022. As of July 1, 2021: https://www.federalreserve.gov/econres/scfindex.htm

Brueckner, Markus, and Daniel Lederman, "Effects of Income Inequality on Aggregate Output," Washington, D.C.: World Bank Group, Policy Research Working Paper 7317, June 2015.

Coates, Ta-Nehisi, "The Case for Reparations," *The Atlantic*, June 2014.

Corak, Miles, and Patrizio Piraino, "The Intergenerational Transmission of Employers," *Journal of Labor Economics*, Vol. 29, No. 1, January 2011, pp. 37–68.

Daniszewski, John, "Why We Will Lowercase White," *AP Style Blog*, July 20, 2020. As of August 11, 2022: https://www.apstylebook.com/blog_posts/16

Darity, William A., Jr., "The True Cost of Closing the Racial Wealth Gap," *New York Times*, April 30, 2021.

Darity, William, Jr., and Dania Frank, "The Economics of Reparations," *American Economic Review*, Vol. 93, No. 2, May 2003, pp. 326–329.

Darity, William A., Jr., and A. Kirsten Mullen, *From Here to Equality: Reparations for Black Americans in the Twenty-First Century*, Chapel Hill, N.C.: University of North Carolina Press, April 2020a.

Darity, William, Jr., and A Kirsten Mullen, *Resurrecting the Promise of 40 Acres: The Imperative of Reparations for Black Americans*, New York: Roosevelt Institute, June 2020b.

Deb, K., "Nonlinear Goal Programming Using Multi-Objective Genetic Algorithms," *Journal of the Operational Research Society*, Vol. 52, No. 3, 2001, pp. 291–302.

Deb, K., A. Pratap, S. Agarwal, and T. Meyarivan, "A Fast and Elitist Multiobjective Genetic Algorithm: NSGA-II," *IEEE Transactions on Evolutionary Computation,* Vol. 6, No. 2, 2002, pp. 182–197.

Deininger, Klaus, and Lyn Squire, "New Ways of Looking at Old Issues: Inequality and Growth," *Journal of Development Economics*, Vol. 57, No. 2, 1998, pp. 259–287.

Edwards, Kathryn A., *Accounting for Black-White Wealth Differences: A Stylized Model of Wealth Accumulation*, Santa Monica, Calif.: RAND Corporation, RR-A1259-1, 2022. As of December 7, 2022: https://rand.org/pubs/research_reports/RRA1259-1

Esposito, Lucio, and Adrián Villaseñor, "Wealth Inequality, Educational Environment and School Enrolment: Evidence from Mexico," *The Journal of Development Studies*, Vol. 54, No. 11, 2018, pp. 2095–2118.

Fox, Liana E., "Parental Wealth and the Black-White Mobility Gap in the U.S.," *Review of Income and Wealth*, Vol. 62, No. 4, December 2016, pp. 706–723. As of 2022-04-25T20:28:03:

Hamilton, Darrick, and William A. Darity, Jr., "Can 'Baby Bonds' Eliminate the Racial Wealth Gap in Putative Post-Racial America?" *Review of Black Political Economy*, Vol. 37, No. 3–4, January 2010, pp. 207–216.

———, "The Political Economy of Education, Financial Literacy, and the Racial Wealth Gap," *Review,* Vol. 99, No. 1, First Quarter 2017, pp. 59–76.

Karagiannaki, Eleni, "The Effect of Parental Wealth on Children's Outcomes in Early Adulthood," *Journal of Economic Inequality*, Vol. 15, No. 3, April 2017, pp. 217–243.

Kent, Ana Hernández, and Lowell Ricketts, "Wealth Gaps Between White, Black, and Hispanic Families in 2019," *On the Economy Blog*, Federal Reserve Bank of St. Louis, January 5, 2021.

Nowatzki, Nadine R., "Wealth Inequality and Health: A Political Economy Perspective," *International Journal of Health Services*, Vol. 42, No. 3, July 2012, pp. 403–424.

Pfeffer, Fabian T., "Growing Wealth Gaps in Education," *Demography*, Vol. 55, No. 3, March 2018, pp. 1033–1068.

Pfeffer, Fabian T., and Alexandra Killewald, "Generations of Advantage. Multigenerational Correlations in Family Wealth," *Social Forces*, Vol. 96, No. 4, June 2018, pp. 1411–1442.

Rothstein, Richard, *The Color of Law: A Forgotten History of How Our Government Segregated America*, New York: W.W. Norton & Company, Liveright Publishing, 2017.

Shapiro, Thomas, Tatjana Meschede, and Sam Osoro, *The Roots of the Widening Racial Wealth Gap: Explaining the Black-White Economic Divide*, Waltham, Mass.: Institute on Assets and Social Policy, February 2013.

Toney, Jermaine, and Cassandra L. Robertson, "Intergenerational Economic Mobility and the Racial Wealth Gap," *AEA Papers and Proceedings*, Vol. 111, May 2021, pp. 206–210.

Acknowledgments

We are especially grateful to Kathryn A. Edwards and Jessica Welburn Paige for their joint project leadership of this discussion paper series.

We are also very grateful to many others outside the project team whose support and critical feedback has strengthened our analysis. We are grateful to William (Sandy) A. Darity, Jr., James Hosek, and Lowell R. Ricketts for their thorough and insightful reviews, which have enhanced the quality of this report. We are grateful to Algernon Austin, Mehrsa Baradaran, William A. Darity, Jr., Darrick Hamilton, Trevon Logan, Sam Myers, David Pate, Bill Rodgers, Louise Seamster, Bill Spriggs, and Steve Strongin for their participation in an external advisory group during the early stages of this work.

Additionally, we are grateful to our RAND colleagues, including Katherine Carman for her persistent feedback and advice through the quality assurance process, to Lisa Jaycox and Darleen Opfer for their leadership and support of this project, to Stephanie Lonsinger for her careful editing of the report, and to Monette Velasco for overseeing the publication process for this report. Finally, we are grateful to Jhacova Williams for many great discussions and for her related work, which undoubtably influenced ours.

About the Authors

Jonathan W. Welburn is a researcher at the RAND Corporation and a faculty member at the Pardee RAND Graduate School who specializes in operations research and computational economics. He uses an interdisciplinary approach to systemic risks, market failures, and policies for narrowing the racial wealth gap. He holds a Ph.D. in operations research.

Pedro Nascimento de Lima is an associate engineer at the RAND Corporation and a Ph.D. candidate at the Pardee RAND Graduate School. His research uses modeling and high-performance computing to answer policy questions with computational experiments. He holds an M.S. in production engineering.

Krishna B. Kumar is a senior economist at the RAND Corporation; vice president, International; and a faculty member at the Pardee RAND Graduate School. He holds the Distinguished Chair in international economic policy. His research focuses on economic growth and development and macroeconomics. He holds a Ph.D. in economics.

Osonde A. Osoba is a senior AI researcher at LinkedIn with a focus on fairness and an adjunct information scientist at the RAND Corporation. His research weaves together the principled application of artificial intelligence and machine learning with diverse facets of policy research and the careful examination of the implications of automated or data-driven decision systems. He holds a Ph.D. in electrical engineering.

Jonathan Lamb is an assistant policy researcher at the RAND Corporation and a Ph.D. candidate at the Pardee RAND Graduate School and an assistant policy analyst at the RAND Corporation. He is interested in developing tools and methodologies for long-range planning and global sustainable development. He holds a B.S. in human-centered design and systems thinking.

About This Report

This report is part of the RAND discussion paper series *Investigating the U.S. Racial Wealth Gap*, which can be found at www.rand.org/racial-wealth-gap.

Wealth is the accumulation of past and present income, assets, debts, and disparities. Differences in Black and white Americans' economic status show how the harms of the past—slavery, segregation, redlining, discrimination—live on in the present. The result is that white Americans make 73 percent more in annual income, are nearly two times more likely to own their homes, hold ten times more wealth, and are 28 times more likely to become millionaires than Black Americans.

Under current conditions and without intervention, it is unclear if and how the racial wealth gap could ever close over a meaningful time horizon. Recognizing the strength and persistence of the United States' racial wealth gap, Americans have called for historic policy interventions to address long-standing inequities and current wealth disparities. Proposed actions often include large wealth allocations, in the form of one-time government payments, to Black households. This potential policy device raises several questions: How large should government allocations be? Should allocations exclusively target Black households, or should they be race neutral? Should allocations apply to all qualifying households equally, or should they target households based on their current wealth? How effective would allocations be, and at what cost?

This report provides insight into these questions based on a quantitative analysis of current wealth distributions, a measure of racial wealth disparity, and a model of disparity-reducing wealth allocations. We use data from the Survey of Consumer Finances, a survey conducted by the Federal Reserve Board, to investigate the sources of wealth disparity, estimate the potential first-order impacts of government allocations, and shed light on the possible trade-offs of one-time allocations.

RAND Education and Labor

This study was undertaken by RAND Education and Labor, a division of the RAND Corporation that conducts research on early childhood through post-secondary education programs, workforce development, and programs and policies affecting workers, entrepreneurship, and financial literacy and decisionmaking.

More information about RAND can be found at www.rand.org. Questions about this report should be directed to Jonathan_Welburn@rand.org, and questions about RAND Education and Labor should be directed to educationandlabor@rand.org.

Funding

Funding for this research was provided by gifts from RAND supporters and income from operations.

The RAND Corporation is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest.

Research Integrity

Our mission to help improve policy and decisionmaking through research and analysis is enabled through our core values of quality and objectivity and our unwavering commitment to the highest level of integrity and ethical behavior. To help ensure our research and analysis are rigorous, objective, and nonpartisan, we subject our research publications to a robust and exacting quality-assurance process; avoid both the appearance and reality of financial and other conflicts of interest through staff training, project screening, and a policy of mandatory disclosure; and pursue transparency in our research engagements through our commitment to the open publication of our research findings and recommendations, disclosure of the source of funding of published research, and policies to ensure intellectual independence. For more information, visit www.rand.org/about/research-integrity.

For more information on this publication, visit www.rand.org/t/RRA1259-2.

Illustration by Pete Soriano, from Atlas Illustrations/Adobe Stock and dar/Adobe Stock

www.rand.org