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Master's Thesis

How can reparations reduce the racial wealth gap in the United States?

An analysis of the racial wealth gap's creation, preservation, and solution.

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Master of Philosophy in Economics
30 credits

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Submitted May 2022

Acknowledgments

This thesis is the concluding chapter of my seven years at the University of Oslo. The road to this point has been long, and includes an exploration into other majors and the difficulties of studying through a global pandemic. Still, I am very grateful to have been able to use my education in economics to write a thesis on a subject I am deeply interested in.

I wish to thank my supervisor Kalle Moene, not only for his valuable help throughout my writing but also for teaching his courses in an engaging way that helped me decide on the subject for my thesis.

Thank you to my friends and family who have supported me throughout my entire studies, and particularly through the stressful times of writing. I would especially like to thank Lars for always believing in me and for being my rock.

Any mistakes or inconsistencies in this thesis are entirely my responsibility.

Abstract

This thesis analyzes the Black-White racial wealth gap in the United States by examining how it was created by enslavement and continued through institutionalized discrimination. The focus is, in particular, on the exclusion of Black Americans from education and investment in real estate. I look at the scope of the wealth gap by evaluating general wealth in the United States and the different levels of ownership of assets between Black and White Americans, relating them to the previous discussion on discrimination. To ensure that what becomes an apparent wealth disparity is, in fact, a result of enslavement and exclusion, I consider other possible reasons for it and the continuance of the racial wealth gap. Once the Black-White racial wealth gap and its scope have been established, I turn to reparations as a means for reducing it. To evaluate reparations, I first discuss how they should be distributed to minimize the issue of moral hazard. I then calculate what the cost of a reparations plan could be, first with a model for the present value of wages and then with a more direct calculation based on the current value of the wealth gap. Lastly, I examine the ways in which reparations could be paid out. The thesis ends with a discussion on the social benefits of increasing the median wealth level for Black Americans, not only for that subpopulation but also for all citizens and the United States. I conclude that reparations should be made by distributing bond accounts to all children under 18 years in the United States, and eligible recipients over the age of 18 years should receive a lump sum with a value high enough to close the current median wealth gap. This will not only increase the median wealth level of Black Americans but increase general wealth in the United States.

Disclaimer on language use

Using race as a determining factor when writing about humans is outdated in most fields of study, but it is essential in the context of the United States, both historically and to highlight the significant racial disparities in the statistics. Thus, the terms relating to race that are used in official documents at this point in time in the United States will also be used in this paper.

It is important to note that not all Black families living in the United States today are direct descendants of enslaved people. However, since most of the data from the United States government that is used does not differentiate between Black Americans' origin, for simplicity, neither will I in this paper unless it is specified. The terms "Black" and "African American" will also be used interchangeably in some parts of the paper but refer to the same sub-population unless otherwise stated.

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1. Introduction

The United States has experienced a rapid growth in technology, population, and wealth over the past centuries. It has been considered a land of opportunity since the first European settlers populated it, and the country's prosperity is very much in tune with the nation's core values. However, the fast-paced changes have not proven prosperous for all. The foundation was built on the settlers' harsh exploitation of enslaved Africans. After several hundred years of direct slavery, the formerly enslaved were subjected to other discriminatory laws created to further the oppression of the Black population. The systemic discrimination continued into the late 1960s. There is reason to assume that Black Americans' exclusion from society has had a significant impact on their benefit from the growth of the United States.

The term "racial wealth gap" describes the disparity between different racial and ethnic groups' net worth in the United States. It is primarily used to discuss the gap between Black and White households, as it will be in this thesis. The concept of the racial wealth gap is that because of the repression and discrimination of the Black population, an enduring, intergenerational disparity has been created in access to and ownership of assets.

In this thesis, I will review how slavery and discrimination against Black Americans over time facilitated the racial wealth gap present in the United States today. This is done by examining both the direct effects on the population and the economic implications of the systems. Then, I will discuss reparations as a tool to close the wealth gap and the extent of such a repayment by using a model by Thomas Craemer (2015) for calculation and an estimate based on the current population and the value of the wealth gap. Lastly, I will explore the societal implications of reducing the racial wealth gap, both for the recipients of reparations and the United States as an entity.

The cost calculations in this thesis are based on a present value model for wages unpaid to the enslaved during slavery by Craemer (2015). Historical data on the United States population in the calculation is gathered from "Historical Statistics of the United States, Colonial Times to 1970", which includes the decennial censuses from 1790 to 1860. To estimate the enslaved population from 1776 to 1790, linear extrapolation of the average increase in population between 1790 and 1800 is used, while linear interpolation is used to estimate the population between the censuses. For estimates on wage levels in the same period, I use Officer and

Williamson's (2022) databank of unskilled labor costs and production workers' hourly compensation. As values for production workers' hourly compensation are unavailable from 1776 to 1789, these values are also found by linear extrapolation. The calculations have been done using Microsoft Excel. To account for the period of discrimination after 1860, a calculation by David Swinton on the financial benefit for White workers from employment discrimination against Black workers will be used.

Section 2 of this thesis provides an overview of the sources for the wealth disparity of Black Americans today by examining the exclusion from wealth accumulation they experienced during slavery and the ensuing discrimination, focusing in particular on discrimination in education and housing, as these resources are essential for building wealth. In Section 3, I present data on the wealth gap in the United States, both on the overall national level of wealth disparity and the distinct differences between Black and White Americans in levels of ownership of different assets and liabilities, and also the differences in family support, which often is determined by intergenerational wealth. Section 4 considers the creation of the wealth gap by looking at the wealth disparity among Hispanics, evaluating other possible explanations than slavery and discrimination, and lastly, by looking at the perseverance of the Black-White wealth gap over time. Section 5 includes a discussion of how reparations should be distributed, an approximation of the cost, and the forms reparations might take. A discussion of the political and economic feasibility of a repayment to descendants of enslaved follows in Section 6, where I also consider the social benefit of increasing the median wealth level of Black households. The thesis is concluded in Section 7.

2. Slavery and discrimination against Black Americans

To understand how the large racial wealth gap was created in the United States, it is crucial to consider how the access to wealth accumulation has been unequal for the different racial groups since the country's foundation. Black Americans came to be in the United States involuntarily because of slavery and faced other forms of discrimination and exclusion even after abolition, making intergenerational wealth near impossible. This chapter will examine the scope of the inequities that lead to the existing wealth disparity.

2.1. Slavery

The enslavement of Africans in what is now the United States started in the early 1500s, as Spanish explorers brought them over while settling in mainland North America. The proper establishment of the United States as a slave society is thought to have been in 1619 when the first Africans were brought as indentured servants to English North America (Austin, 2019, p. 3). Slavery existed in most societies in different forms before European colonialism, but the trans-Atlantic and intra-American slave trade made the United States a slave society. A slave state was especially evident in the South, where enslaved people made up a significant part of the population. As France abolished slavery in the late 1700s, this affected the plantations in their colonies in the West Indies. Plantations in the southern United States sought to meet the demand for products the French colonies had previously produced, such as cotton. By the 1850s, 75% of cotton imported to Europe came from plantations in the United States (Piketty, 2020, p. 232). The significant increase in production and exports in the South led to a large increase in the United States' per capita output. Between 1839 and 1859, the growth in per capita output was 33.38%, and between 18.7 and 24.3% of this is estimated to have been per capita growth deriving from enslaved people (Stelzner & Beckert, ©2021, p. 22).

The use of enslaved labor was prosperous, and the Act Prohibiting Importation of Slaves of 1807 (VCU Libraries Social Welfare History Project) did not give enslavers an incentive to reduce its use. Different domestic and intra-American transfer forms maintained the slave trade to a certain extent. Still, the most significant factor for the ensuing growth in the enslaved population was enslavers marginally increasing their living condition. Although the enslaved were still living in a highly destitute state by most standards, conditions were bettered enough to allow for a natural increase among the enslaved. The increase in the

number of enslaved due to reproduction made the population rise from around 1 million in 1800 to 4 million in 1860, a 300% increase in only 60 years (Piketty, 2020, p. 229).

Given the prosperity of slavery, a plan of instant abolition was not in the works, not even in the northern states, where some states had gradually abolished slavery since the early 1800s. The reason abolition became a political cause for the states of the North were the western territories in which the expansion of the United States had not yet reached. The North wanted the territories to be free, while the South feared that slaveless western states would leave them in a minority of states with slavery, thus leaving their way of life at risk (Piketty, 2020, p. 234). When Abraham Lincoln was elected President in 1860, he promised to refuse the extension of slavery into the West and to later slowly abolish slavery in the South. This led to the secession of 11 southern states that formed the Confederate States, separate from the Northern Union. After the seizure of Fort Sumter by the Confederates, Lincoln declared war, which became known as the American Civil War. After the Union's victory, Lincoln pushed Congress to sign the 13th Amendment, which stated that no man should be condemned to slavery (unless it is a punishment for a crime). The formerly enslaved people were emancipated by law in 1865 (Piketty, 2020, pp. 234-235).

2.2. Discrimination after the abolition of slavery

Although discussions of reparations and the racial wealth gap mainly mention the loss of wages from enslavement, the discrimination after abolition is equally important to consider. Abolishing slavery should have equated Americans, but the racial tensions from centuries of enslavement and extreme inequality did leave their traces. Thus, reviewing the discrimination during the era of Reconstruction, Jim Crow Laws, and the consequences of this treatment is essential to understand how the racial wealth gap came to be.

2.2.1. Segregation during Reconstruction and in the years following

The abolition of slavery did not immediately lead to racial equality in the United States. The post-abolition period from 1865 to 1877, also referred to as the Reconstruction era, was a period in which the United States tried to find a way to unite a separated nation and grant some rights to the formerly enslaved, including having the opportunity to be free workers (National Park Service, 2021). However, many formerly enslaved people's only chance of

work was sharecropping[1] for the plantation owners that had previously relied on forced labor. The desperation for land to farm was not the only reason formerly enslaved people ended up sharecropping. Many were also coerced to do so through violence and deception (Equal Justice Initiative, 2018, p. 24). Violence was used as a weapon for more than making formerly enslaved people keep working for White landowners. In 1868, Congress passed the 14th Amendment, which states that people born or naturalized in the United States should receive federal citizenship and thus be equal under the law (National Archives, 2022a). The 15th Amendment was passed a few years later in 1870 and made racial discrimination regarding voting rights illegal (National Archives, 2022b). Neither of these Amendments made an immediate de facto difference for previously enslaved people, as they were not enforced properly. Enforcement of the new Amendments was left to the individual states, and the White population in the Southern states, in particular, were not interested in equalizing the formerly enslaved people with themselves (Piketty, 2020, p. 244). Instead, to maintain White control in the South, violence was used through public lynchings and other forms of attacks on formerly enslaved people who tried to live the free lives they by law were entitled to have. The aggression against the Black population in the South was facilitated by Jim Crow laws from 1877, which made segregation legal and maintained the perception of Black persons being second-class citizens (Pilgrim, 2012). The lack of application of the Amendments and continued brutality against the Black population in the South left them systemically excluded and marginalized. This active oppression continued until the Civil Rights Act was passed in the 1960s.

Two significant exclusions that separated the Black population directly from society and the chance of economic growth and wealth accumulation were the discriminatory practices they faced in education and housing. Education and homeownership are efficient means for building wealth, so these factors, in particular, will be discussed.

2.2.2. Education

After abolition, the public school system was one of the public institutions segregated by law in the South. This segregation was upheld until *Brown v. Board of Education of Topeka* in 1954, in which the Supreme Court declared that racial segregation within public education

[1] Sharecropping is a form of farming where tenants rent a plot of land and give a portion of their crop to the landowner.

was unequal and thus unconstitutional. After *Brown v. Board of Education*, desegregation was delayed through political action, economic intimidation, and violence, mainly through groups against integration, such as White Citizens' Council (Equal Justice Initiative, 2018, p. 26). These groups ensured that Black parents who supported integration were punished by losing their jobs or being evicted from farms. White segregationists also took action to keep their own children out of schools that were actively taking steps towards desegregation. This was done through pupil placement laws, which placed students in schools based on seemingly "race-neutral" factors formed to maintain nearly all-White schools (Equal Justice Initiative, 2018, pp. 26, 28). The Court issued *Brown II* in 1954, which ordered public schools to integrate as quickly as they could, but again southern states used the ruling to delay complete desegregation. As some schools in the South started allowing Black students to enroll, they were met with protests and physical attacks from White segregationists. To avoid any attempts at integration, some states went so far as to close public schools and redirect state and local funds to give White children the possibility to enroll in private schools, leaving the Black children with no option for public education (Equal Justice Initiative, 2018, pp. 28-35). The federal courts tried to strike down the effort to keep White children from attending integrated schools, but could not legally reprimand the White parents' withdrawal of their children from the public school system.

As a result of all the actions taken to keep schools segregated, the desegregation of public education became a long and hard fight for civil rights activists. Although public education in the United States might be viewed as integrated and equal today, some argue that this is not the case. Studies find that public schools are still segregated, whether consciously or not. If the schools were truly equal, it is logical to assume that students in public schools came from different socioeconomic and racial backgrounds. On the contrary, Carnoy and García (2017) find that a White eighth-grader is 73.9% likely to attend a school with less than 25% Black or Hispanic students, while for a Black student, the likelihood is 13.8%. When looking at schools with a student body of 75% or more Black and Hispanic students, Black students are 42.8% likely to attend such a school, while only 2% of White students are (pp. 17, 25). This shows a clear trend of racial division. Looking at the amount of segregation in the public school system today is crucial because it is linked to the socioeconomic status of the students, and also because the proportion of Black and Hispanic students in a school is negatively correlated with individual achievement (Carnoy & García, 2017, p. 17). Considering socioeconomic status, a significantly higher fraction of Black and Hispanic students attends

high-poverty schools than their White and Asian peers. This is the case even for "non-poor" Black and Hispanic students (Carnoy & García, 2017, p. 16).

Although there is a high correlation between the proportion of disadvantaged minorities and the proportion of students eligible for free or reduced-price lunch (FRPL)[2], the achievement gap between students is more negatively affected by the proportion of minorities in the school. The achievement gap between, for example, White and Black students is more negatively affected by a higher proportion of Black and Hispanic students than it is by a higher proportion of impoverished students (Carnoy & García, 2017, p. 53). This is not to say that being impoverished is an advantage, as students with the same racial background from more impoverished families have not made consistent achievement gains compared to those from non-poor families (Carnoy & García, 2017, p. 52). In addition to FRPL, a measure of the students' achievements relative to socioeconomic status is the level of education of their parents, where Carnoy and García found that there was only a minor decrease in the achievement gap between children whose parents had less than a college education and those whose parents had some college or a completed degree (2017, p. 34).

From the data in Carnoy and García's study, it is apparent that students in the United States are divided by race and socioeconomic status, and as pointed out, the two are highly correlated. Considering how the racial makeup of schools relates to the achievement levels of the Black students, both individually and compared to their White peers, it is reasonable to assume that this impediment influences their aspirations and chances for higher education.

Table 1: Educational attainment for Black and White respondents

Educational attainment	**White respondents (in percent)**	**Black respondents (in percent)**
Less than high school diploma	9.6	12.8
High school graduate (or equivalent)	26.9	31.4
Some college or associate's degree	29.1	31.8
Bachelor's degree	21.3	14.2
Graduate or professional degree	13.1	8.8
High school graduate or higher	90.4	87.2
Bachelor's degree or higher	34.4	23.0

Data source: (U.S. Bureau of the Census, American Community Survey, 2019).

[2] The by-proxy measure of poverty in Carnoy and García's study.

From Table 1, we see that levels of educational attainment in the United States are very different between White and Black Americans. There is a higher concentration of Black respondents whose educational attainment is less than or equal to a high school diploma and some college or an associate's degree, while more White respondents have a bachelor's, graduate, or professional degree. A college degree is often required to get a job with a livable wage and benefits such as insurance and pensions. Education also affects others than just the relevant individual, like how children of college-educated parents do better in school. This could be purely from having more monetary resources, but they might also be able to help their children with schoolwork, have valuable connections, or in other ways directly aid their children through their education. To summarize: education is an important tool for upward economic and social mobility, and the access to it neither has been nor is equal.

2.2.3. Housing

Another important contributor to wealth accumulation is owning real estate. In the process of abolition after the Civil War, General William T. Sherman and Secretary of War Edwin M. Stanton met with Black leaders in 1865 to discuss the future of the formerly enslaved people. This led to a field order issued by General Sherman, often referred to as the promise of "40 acres and a mule", in which it is stated that parts of coastal South Carolina, Georgia, and Florida would be owned and settled exclusively by the Black population (Miller, 2022). These were areas with a large population of freed enslaved people, and thus the land they had worked while enslaved was to be theirs by right. Orders such as General Sherman's should have been solidified as the 13th Amendment was ratified later the same year, which deemed slavery illegal de jure. Freed Black persons owning their land did not become the norm, and most were forced into new forms of submission through lease agreements such as the formerly mentioned sharecropping.

Urbanization grew rapidly during and after World War I as the demand for workers in the industrialized cities increased. For many people, especially Black workers, this meant leaving their former agricultural jobs in the South and moving to more industrial cities in the North. This created a new social composition in cities such as New York, which previously had been mainly inhabited by European immigrants. The sudden increase in the Black population led to social problems such as racism, overcrowding, and tougher competition for jobs (McGrew, 2018, p. 1018). As tensions grew, zoning became a tool for urban planners to rectify the newfound social issues by functioning as an instrument for racial segregation. Zoning was

first implemented in New York City in 1916 and started with the planning of single-family houses for White families only. These houses were mostly built on the outskirts of the cities and formed the suburbs as they are known today.

Other allusive methods of racial segregation were used to keep neighborhoods White, like private contracts forbidding both sales and rentals of homes to Black and Jewish people. The Federal Housing Administration (FHA) is a federal institution meant to make loans more available. Still, in the 1930s, the FHA instated mortgage guidelines that made contractors have racially restrictive contracts in order to receive funding for development projects in the suburbs. The FHA viewed the absence of such contracts too large of a monetary risk, as the "infiltration" of Black persons and other minorities into White neighborhoods, in their opinion, would lead to real estate depreciation and reduce stability in the communities. In addition, acquiring a private loan large enough to afford a house such as those in the suburbs was made near impossible for Black applicants, as the FHA operated with quality evaluations of urban neighborhoods. These were developed by the Home Owner's Loan Corporation (HOLC) and divided neighborhoods into four risk categories: red, yellow, blue, and green, with red being the least desirable (and thus held the highest risk in terms of loans), and green areas were most desirable because of their newness and homogeneity. The term "redlining" came from this practice and is a way to describe how those living and running businesses in the red zones were excluded from federally subsidized loans. Most of the population in the red areas were Black, which led to them being kept segregated from the White suburbanites through redlining. Although not explicitly stated, the red areas were often marked as they were precisely because of their racial composition. Without loans, Black Americans could not move to more desirable neighborhoods, and funding was also denied for home improvement in the red zones, which left them with deteriorating homes (McGrew, 2018, pp. 1021-1024). Obviously, these policies made wealth accumulation from real estate impossible for the Black population.

The discriminatory practices regarding loans were amplified as the second World War ended. President Franklin D. Roosevelt signed The Servicemen's Readjustment Act, also called the G.I. Bill of Rights, in 1944. The war had caused a halt in the building of private properties. The Act was meant to solve this problem by allocating resources to build homes, offer cheap mortgages to veterans, and sponsor college tuitions and other financial aid. This was supposed to boost all veterans economically and make a solid middle class, regardless of race.

However, in practice, only the White veterans were afforded the mortgages due to pre-existing discrimination based on neighborhood risk assessment.

While the Black population met with real estate exclusion in the cities, the sharecroppers in the South were left to choose between participation in the Civil Rights Movement or keeping their tenancy on White-owned land. During the 1950s and 60s, sharecroppers who had lived on and tended farms for years could face retaliation by simply trying to register to vote. The mass eviction of tenants led to "tent cities" appearing in the South, where Black families lived in conditions resembling those in refugee camps (Equal Justice Initiative, 2018, pp. 24-25).

After decades of fighting for the Civil Rights Movement, a Civil Rights Act was passed in 1968, and Title VIII of this Act (also called the Fair Housing Act) criminalized discriminatory practices in housing, such as refusal to rent or sell based on race (McGrew, 2018, p. 1039). Although the Act made it illegal to discriminate against potential tenants, loan applicants, and homebuyers because of their racial background, this did not mean that the prejudice against Black Americans in the housing market ceased to exist. A way for real estate brokers to profit off the racial tensions and implicitly further the residential segregation was to use what is called blockbusting. Since it was no longer legal to exclude based on race explicitly, brokers would use the White homeowners' fear of Black persons moving into White neighborhoods to pressure them into selling their house below market price. Then, the brokers would then sell the same house above market price to a Black household. The practice was upheld by the concern White families had that their area would become destabilized and unsafe and by Black families being restricted in which neighborhoods they could afford to live in. There is evidence that blockbusting is still happening, perhaps not as frequently, but as long as there is a chance of financial gain for the broker to use the strategy in the long term, it is likely to happen. A study on this subject finds that brokers considering tactics such as blockbusting faces a dilemma: keep neighborhoods all-White for higher prices and brokerage fees in return for a low turnover or trigger a change in the racial composition of the community to create a sequential pattern of transactions and fees, where the profit is realized more in the long term (Ouazad, 2015, p. 813). Either way, this shows that real estate agents still have an incentive to keep neighborhoods racially segregated, regardless of how it is achieved.

The phenomenon of homogeneity in neighborhoods does, to some degree, occur naturally. We like to live close to those similar to ourselves, either in terms of racial or ethnic

background, language, or income levels. This is to say that separation between different groups, to some extent, can be explained by our desire for likeness in our neighbors. But, as shown, it is not enough to explain the still prevalent level of racial segregation in the United States. Although there have been observed declines in segregation in the past decades, Black Americans are still the most residentially segregated population in the United States (Iceland, Weinberg, & Steinmetz, 2022, pp. 3-4).

This section has reviewed some of the United States' treatment of Black Americans from the institution of enslavement to more recent times. When the enslaved were legally freed from the extreme inequality they had been subjected to for several centuries, other legal restraints were implemented to prevent them from participating in society. As has been shown, two facets of society that the Black population have in particular been excluded from are education and housing. There is less explicit discrimination in education and housing today, but the systemic and previously legal exclusion has left its mark on presently living generations. As will be examined even more in the next section, access to education and the real estate market is essential for wealth accumulation, and the intergenerational aspect of wealth is also apparent in levels of education and ownership of real estate.

3. Wealth in the United States

To analyze the racial wealth gap, it is important to look at both the levels and distribution of wealth in the United States. This chapter will consider the total wealth held by Black and White households, but also go into detail of the specific components of wealth to understand the disparity in terms of the review in Section 2.

Several studies quantify the wealth distribution in the United States, and they all give different estimates for the scope of the racial wealth gap. To use data with as little bias as possible, statistics from the United States' central bank, The Federal Reserve System, and their Survey of Consumer Finances (SCF) is what will be primarily used (U.S. Federal Reserve System, 2021). Although the SCF only surveys a limited number of households, it is unique as it includes a selected oversample of households belonging to the very wealthy in society, a group that usually does not disclose detailed statistics on their family wealth (Williams, 2017, p. 313). The SCF is triannual, with the last survey being conducted in 2019. The statistics used below are mainly from the first quarter of 2019, as this is the data the Federal Reserve System uses for other analyses used in this thesis. It is important to note that the information is pre-pandemic and does not reflect the effects of the pandemic on income and wealth.

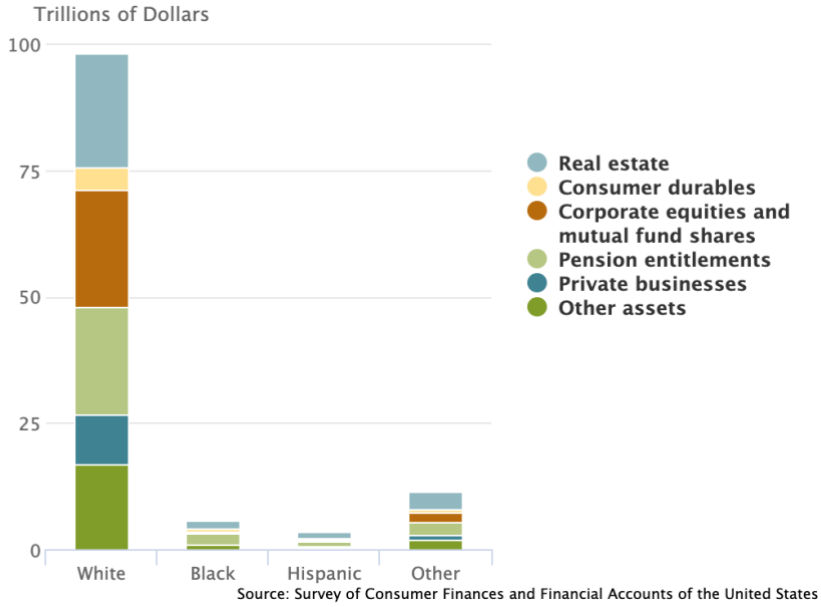
3.1. The scope of the racial wealth gap

The wealth gap can be seen when looking at both the mean and the median values for net worth. Still, there are some outliers in the United States economy, as the top 1% in terms of wealth in 2019 owned 30.7% of the total wealth in the United States, and as a result, skew the statistics considerably (U.S. Federal Reserve System, 2021). Thus, looking at the median value gives the most accurate estimate of the extent of the wealth gap.

Wealth is defined as the total assets minus total liabilities, which gives the net worth. The Survey of Consumer Finances divides assets and liabilities into categories showing how different components of wealth are distributed in the economy. In Figure 1, we see that the major components of assets are real estate, corporate equities and mutual fund shares, and pension entitlements. There are only two specified liabilities: home mortgages and consumer credits, which are seen in Figure 2. From the figures alone, it is strikingly apparent how most of the assets (and liabilities) in the United States are held by White households. It can be seen

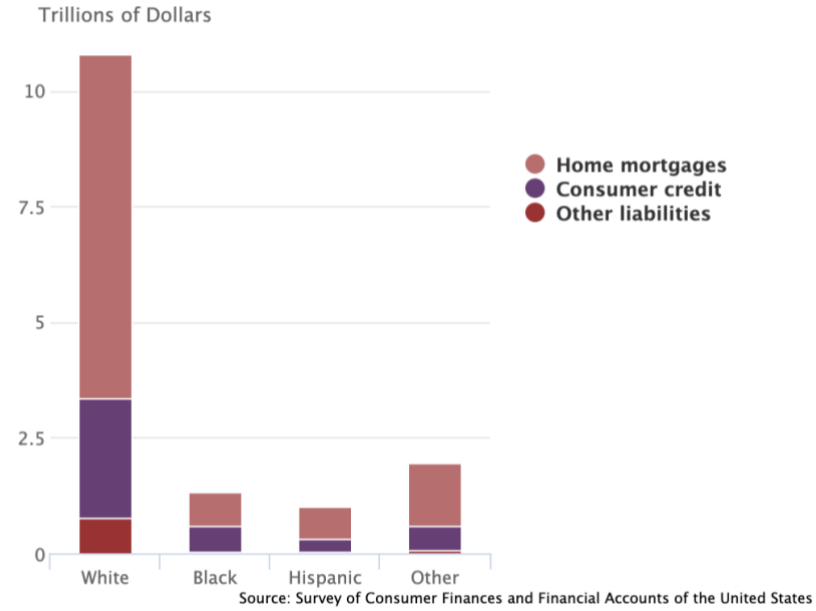
how the wealth disparity between White and Black families is large, but the Hispanic and other minority households also have significantly less than the White majority in the United States. This shows a general racial wealth gap in the United States and is also a matter to be discussed. If we were to look at a total redistribution of wealth in the United States, it is clear that this would include wealth to be allocated to those identifying as Hispanic or Other as well as the Black households. Still, this paper will continue to focus on the differences between White and Black households.

Figure 1: Assets by race in 2019: Q1



The distribution of assets in different wealth components between households sorted by race in the United States in the first quarter of 2019. Figure source: (U.S. Federal Reserve System, 2021).

Figure 2: Liabilities by race in 2019: Q1



The distribution of liabilities in different wealth components between households sorted by race in the United States in the first quarter of 2019. Figure source: (U.S. Federal Reserve System, 2021).

The numbers for Figure 1 and 2 are represented in Table 2 and show that when total liabilities are subtracted from total assets, the net worth of White households is more than 20 times larger than that of Black households. Although the figures and these numbers give a clear view of the wealth disparity, they include all households in the United States, including those who belong to the previously mentioned top 1% in terms of wealth. Thus, these values will only be used as a visualization of how the country's overall wealth is distributed.

Table 2: Total assets, liabilities, and net worth

Wealth Component	White Households (in US$ trillion)	Black Households (in US$ trillions)
Total assets	98.09	5.62
Total liabilities	10.78	1.32
Net worth	87.31	4.3

Total amount of assets and liabilities, and from this, the net worth of White and Black households in the first quarter of 2019. Data source: (U.S. Federal Reserve System, 2021)

To evaluate how prevalent the Black-White wealth gap is when comparing separate households, we can view the data for median and mean net worth for American households in 2019, presented in Table 3.

Table 3: Median and mean net worth of Black and White households

Race or ethnicity of the respondent	Median net worth, 2019 (in US$ thousands)	Mean net worth, 2019 (in US$ thousands)
White	188.2	983.4
Black	24.1	142.5

Data from the 2019 Survey of Consumer Finances. Based on the reference person in the household surveyed. Data source: (Bhutta, et al., 2020, p. 11).

From Table 3, the wealth disparity is evident in terms of mean and median net worth, but as explained earlier, the mean gives inflated values because of the extremely wealthy 1%. What is noticeable is that taking the percentage of net worth Black households have in terms of the wealth of the White households yields only a 2% difference for the median and the mean, for which the percentages are respectively 13% and 15%. It can be seen that on the median, White households have almost eight times the wealth of Black households, which supports the statement that a Black-White racial wealth gap does exist.

3.2. General wealth inequality in the United States

Wealth in the United States is unevenly distributed among all citizens, and is an important fact to consider when discussing the racial wealth gap. As seen in both Table 2 and 3, White

households have higher net worth than Black families on the median and mean. This is not to say that White families cannot be impoverished, and examining the state of wealth distribution in the United States and within-race inequality is necessary to evaluate the urgency of increasing the median level of wealth for Black Americans before addressing the wealth disparity in the White population.

The overall wealth gap has increased in the past decades and was doubled between the richest and the poorest families from 1989 to 2016. The Great Recession starting in 2007 magnified the differences, as only the wealthiest families experienced further growth in the years following it (Pew Research Center, 2020, p. 21). One of the cornerstones of the American dream has been belonging to the middle class and being situated such that one can support their family and afford smaller luxuries, and have loan eligibility for more costly investments. While 51% of Americans still belong to the middle class, this number has decreased from 61% in 1971 (Pew Research Center, 2020, p. 15). Not all who have moved from the middle-class decreased their socioeconomic status in these years, as some moved upwards in terms of income and wealth. One of the most extensive problems concerning the growing economic inequality is the level of middle-class and lower-class incomes, which has not increased nearly as much as that of the upper class. While the median income for middle- and lower-class families has increased by 49% and 43%, respectively, from 1970 to 2018, the upper-class median income has increased by 64% (Pew Research Center, 2020, p. 16).

Differences in income levels and, as a result, wealth inequality in the United States is an issue that affects all Americans. Therefore, it is important to examine the differences in wealth within racial groups as well as that between groups. Since the main focus of this paper is the racial wealth gap between Black and White households, the economic inequalities within these two groups will be reviewed. There is not much detailed data on the wealth inequality within different racial groups, as most studies focus on the interracial wealth disparity. There is, however, more information on the differences in income levels within racial groups, which will instead be used as an indicator for wealth, assuming that a higher income level further leads to higher wealth. Income is naturally only one way to get access to more assets, and wealth is often acquired over time, even across generations. Still, the net worth of households increases with income, as will be discussed more later; thus, the assumption holds for simple analysis.

The 90/10 ratio is a measure of income inequality and is the income ratio at the 90th percentile compared to the income at the 10th percentile. A Pew Research Center report using data from 2016 finds that the 90/10 ratio is 7.8 for White households and 9.8 for Black households (2018, p. 21). These values indicate that the 90th percentile earners make almost 8 and 10 times more than the 10th percentile for White and Black households, respectively. Another measure of income inequality, the Gini coefficient, is calculated in the same report and is 0.428 for White households and 0.446 for Black households. The values of the Gini coefficient indicate how well aggregate income is distributed – a value of 0 indicates perfect equality, while a coefficient equal to 1 means that all income is held by one single person (Pew Research Center, 2018, p. 21). The difference between the Gini coefficient of Black and White households is "only" 0.018. Still, as the national average is 0.442, it is clear that there is less inequality among White households than there is on average, while the opposite is true for Black households (Pew Research Center, 2018, p. 21).

The 90/10 ratio and the Gini coefficient values are as stated measures for income inequality and do not explicitly include wealth. Looking at Table 3, taking the difference between the mean and median net worth gives an estimate of the difference between the richest and the poorest within a racial group, as the mean often includes the wealthiest people in the United States, while the median does not. For White households, the mean is 5.23 times higher than the median, whereas it is 5.91 times higher for Black households. Evaluation of these values as measures of within-race wealth differences does give the same picture as the other measures. Although there is inarguably a high degree of income and wealth inequality within both racial groups, wealth inequality is higher among Black Americans.

3.3. Major components of assets

Examining the different ownership rates of the major components of assets in the Survey of Consumer Finances more in detail will give a better understanding of why the wealth is so unequally distributed between Black and White households. As will be shown in this section, the variations in ownership are largely associated with disparities in access to the wealth building activities reviewed in Section 2.

3.3.1. Real estate

One of the significant components of the population's assets is real estate. For many, buying a home is the most substantial financial investment they make in their lives, while for others, it is simply a safe asset in which to place already accumulated wealth. Especially in cities and other densely populated areas, investing in property is almost always a profitable investment – as long as the demand for housing, office spaces, and industrial builds is relatively high, the property's value will either remain stable or increase over time. In Table 4, we can see how homeownership is related to differences in median household net worth.

Table 4: Median net worth of households by housing status/homeownership

Housing status	Median net worth, 2019 (in US$ thousands)
Owner	255.0
Renter or other	6.3

Data from the 2019 Survey of Consumer Finances. Data source: (Bhutta, et al., 2020, p. 11).

On the median, homeowners of all racial backgrounds combined have a net worth around 40 times as high as those living in rentals or under other housing conditions. This underlines the importance of real estate as an asset for wealth. While Table 4 shows differences in homeownership for all persons surveyed, regardless of race, the disparity in homeownership when factoring in racial group belonging is also significant, as shown in Table 5.

Table 5: Distribution of homeowners and renters in the United States by racial group

Race or ethnicity of the householder	Homeowners (number of respondents)	Renters (number of respondents)	Homeownership rate (of total homeowners, in percent)	Renter rate (of total renters, in percent)
White	66,433	30,566	83.59	68.44
Black	7,397	9,717	9.31	21.76

Data source: (U.S. Bureau of the Census, American Housing Survey, 2019), using data on general national housing, and variables on tenure and race of householder. Total respondents of the survey: 124,135, wherein 79,475 are homeowners and 44,660 are renters.

The number of White respondents in Table 5 is higher than the number of Black respondents, which is why the homeownership and renter rate both are relatively high. However, the values in the table do show how a larger proportion of White respondents own a home than rents it, while the opposite is true for Black respondents. Not only is owning real estate directly a way

to increase wealth, but removes the cost of renting. Many homeowners do pay on mortgages for their house, but the mortgage is paid on an investment they have made. Spending income on rent instead of paying down a mortgage yields no return, but is necessary for some because they cannot get a home mortgage, usually from bad credit scores or lack of equities so that a down payment cannot be made.

3.3.2. Corporate equities and mutual fund shares

Another significant source of wealth in the United States is the share of corporate equities and mutual funds held by private actors. A few studies suggest that 10% of the racial wealth gap could be closed if Black households held the same asset portfolios as White households (Williams, 2017, p. 307). In Table 6, we see that stock ownership is relatively low on the mean for all households, but almost six times as many White households hold stock as Black households. The table also shows the percentage of families that own real estate other than primary housing and businesses.

Table 6: Ownership of stocks, real estate other than primary home, and private businesses

Variable (Mean values)	White households	Black households
Owns stock (%)	17	3
Owns other real estate (%)	21	9
Owns business (%)	14	6

Data from the 2013 Survey of Consumer Finances. Data source: (Williams, 2017, p. 315).

Although there are fewer differences in the ownership rates of other real estate and businesses than stock ownership, more White households hold these assets than Black households do. The ownership of other real estate and businesses is also a factor in wealth building. A different study reviews the lower rates of self-employment in the Black population and concludes that this could explain a further 10% of the racial wealth gap (Williams, 2017, p. 307). Control over real estate and businesses can be seen as measures of self-employment: owning a business directly so, while holding real estate is only sufficiently profitable to be defined as a form of self-employment on a larger scale. Some families might own a beach house or a cabin as a secondary house. Although this is inarguably an indication of wealth, it is not a lucrative business venture in the same way as owning several large residential and industrial units.

3.3.3. Pension entitlements

The third-largest share of assets in the United States is attributed to pension entitlements. The Survey of Consumer Finances includes all private investments made into retirement accounts, either through Individual Retirement Accounts (IRAs) or retirement plans offered by an employer. Retirement plans through employers are usually either defined contribution plans (DC) such as 401(k)s or defined benefit plans (DB), which are more traditional pensions (Bhutta, Chang, Dettling, & Hsu, 2020). The ownership of private retirement plans is at its highest level for all middle-aged families, but there are significant differences within this age group. 65% of White families own at least one retirement account, such as an IRA or a DC plan, while the ownership rate is only 44% for Black families (Bhutta, Chang, Dettling, & Hsu, 2020). One of the main reasons for this disparity is unequal access to employer-sponsored retirement plans. Of all workers in the United States, both in the private sector and those working under state and local government, 71% have access to retirement benefits. The take-up rate, which is the rate those with access do participate, is 79%. Of all American workers, 56% engage in the form of a private retirement plan (U.S. Bureau of Labor Statistics, 2019, p. 3). There are several characteristics related to access to retirement plans, and one variable in which significant differences can be seen is wage percentiles and is shown in Table 7.

Table 7: Access to retirement plans by wage percentile

Characteristic	**All retirement benefits (in %)**		
Average wage within the following categories	Access	Participation	Take-up rate
Lowest 10 percent	32	16	48
Lowest 25 percent	46	27	58
Second 25 percent	70	54	77
Third 25 percent	84	70	84
Highest 25 percent	90	80	90
Highest 10 percent	90	81	90

Data from National Compensation Survey 2019. Data source: (U.S. Bureau of Labor Statistics, 2019, p. 3).

The access to, participation in, and take-up rate of retirement benefits increase with the average wage level. This furthers the point that those at the highest wage levels are the ones who can genuinely build their wealth. The unequal access to jobs with higher pay is also essential to evaluate. Perhaps obviously, a full-time job usually pays a higher wage than a part-time job. Still, in return, full-time jobs often require education or being exceptionally skilled in a trade.

In some cases, having parents with a higher education level or otherwise well-established in their careers could also help their children access better jobs that might offer pension plans. So, the access to employer-sponsored pension plans is dependent on the kind of job one holds but is also dependent on the education level, family support, and other contacts of the individual, not simply whether or not one is employed. Table 8 shows precisely how significant the level of education is for the median value of both income and net worth.

Table 8: The median wealth and income of reference person in household by level of education

Education of reference person	Median net worth, 2019 (in US$ thousands)	Median income, 2019 (in US$ thousands)
No high school diploma	20.5	30.8
High school diploma	74.0	45.8
Some college	88.8	51.2
College degree	308.2	95.7

Data from the 2019 Survey of Consumer Finances. Data source: (Bhutta, et al., 2020, pp. 7,11).

From Table 8, it is apparent that the difference between having a high school diploma and having some college education is not too large, neither when considering net worth nor income. On the other hand, when looking at the median values for those with either no high school diploma or a college degree, there is a significant difference between net worth and income values. There is a steep increase in median income and net worth from no high school diploma to having one and from only having some college to earning a degree. As described in chapter 2.2.2, education achievement is racially unequal in the United States. Therefore, it is logical to assume that positive effects of education, such as opportunities for employer-sponsored pension plans, are also unequal in this regard.

For the share of assets in pension plans in the Survey of Consumer Finances in the first quarter of 2019, Black households' share is 40.8%, while it is 21.5% for White households. However, looking at the actual value of these assets, they are respectively $2.29 trillion and $21.08 trillion (U.S. Federal Reserve System, 2021). So, although Black households hold more pension plans in terms of shares of their assets, the value of these shares is only 11% of that of White households. On the median, of working-age families with participation in a private pension plan, White households have $50,000 saved in a retirement account. In contrast, Black households have about $20,000 saved in such accounts (Bhutta, Chang, Dettling, & Hsu, 2020). As has already been established, White households have a higher net

worth than Black households. The family's wealth is an important aspect when reviewing participation levels in retirement accounts. Many of the plans require a certain level of investment contributions. If the household does not already have enough savings to make these contributions, they will, by default, not be able to participate at all (Bhutta, Chang, Dettling, & Hsu, 2020).

3.4. Liabilities

As mentioned, liabilities held by private actors in the United States mainly include home mortgages and consumer credit. From both Figure 2 and Table 9, it can be seen that in terms of dollars, White households hold more liabilities than Black households.

Table 9: Components of liabilities in dollars and shares of total liabilities

Wealth Component	White households (in US$ trillion)	Black households (in US$ trillion)	White households (% of liabilities)	Black households (% of liabilities)
Home mortgages	7.43	0.72	68.9	54.5
Consumer credit	2.59	0.58	24.0	43.9
Other liabilities	0.76	0.02	7.1	1.5

Data from the 2019 Survey of Consumer Finances. Data source: (U.S. Federal Reserve System, 2021).

Holding more liabilities is not inherently harmful although it is a negative asset because it reduces net worth. On the contrary, especially having a home mortgage can be viewed as a positive resource because receiving a mortgage gives families wider access to participation in the housing market. As was explored in chapter 2.2.3, eligibility for home mortgages has historically been blocked by banks and other financial institutions for minorities. In addition, being eligible for a loan, in general, requires financial security and being able to afford down payments, which means a relatively high wealth is needed to qualify for a loan.

Not only is there an implicit difference in access to real estate to be seen in Table 9, but looking at the share of total liabilities supports the disparity. While 68.9% of liabilities of White households can be attributed to home mortgages, the percentage for Black households is 54.5%. However, looking at shares of liabilities being consumer credit, Black households' debt in this regard is almost 20% higher than that of White households. Taking out consumer credit loans could be a solution if a person is not eligible for mortgages or student loans, but with a much higher interest rate and thus higher prices in the long run. Consumer credit might also be the last resort in case of unforeseen expenses if the households do not have savings set

aside and cannot receive financial help from their relatives and friends. This enhances the intergenerational aspect of wealth and the importance of financial support from family and other close relations.

3.5. Family support

While income level is somewhat more specific for an individual, wealth is undoubtedly intergenerational, so inheritance and financial support from family are significant factors in access to further wealth accumulation. Looking at data for inheritance and other sources of family support in the United States from the 2019 Survey of Consumer Finances in Table 10, we see that although those who already have received an inheritance have inherited a similar amount on the median, White families are almost three times more likely to have received it than a Black family. In addition, more White families expect an inheritance than Black families, and they expect to inherit almost double the amount.

Table 10: Access to inheritances and other family support

	White respondents	**Black respondents**
Received an Inheritance (percent)	29.9	10.1
Conditional Median Inheritance (in 2019 US$ thousands)	88.5	85.8
Expect an Inheritance (percent)	17.1	6.0
Conditional Median Expected Inheritance (in 2019 US$ thousands)	195.5	100.0
Could get $3,000 from Family or Friends (percent)	71.9	40.9
Parent(s) Have a College Degree (percent)	34.4	24.8

Inheritances received and expected, in addition to other indicators of family support, given in thousands of 2019 US dollars or percent, as labeled. Data source: (Bhutta, Chang, Dettling, & Hsu, 2020).

Not only does a household's present monetary values decide spending and investments, but it is also influenced by the expectancy of future streams of income. For families not expecting to inherit, they will have to save to ensure future spending – but at the same time, having present costs such as leases, given that the household does not yet own property, decreases the possibility of saving sufficient funds for the future. Receiving, or expecting to receive, an inheritance reduces the need for saving for the future and, in turn, enables the (future) recipient to make larger investments such as real estate. In addition to direct inheritance, we see a disparity in the access to borrowing from family or friends if needed, which is an

essential resource if faced with a sudden economic crisis. Not having the possibility of private loans could push families into taking out personal loans from banks with high-interest rates. Even this is not a possibility for all families, as collateral, credit scores, and other risk measures are determinants of access to such loans. Taking out a personal loan, in turn, furthers the inability to save for future spending, as the loans might take many years to pay back in full.

Another indicator of family support is the level of the parents' education. In Table 10, the parents are those of the reference persons in the measured households. We see that 10% more of the reference persons in White families have parents with a college degree than those in Black households. As was reviewed in chapter 2.2.2, parents' education level mainly affects their children financially, as higher education is associated with higher levels of wealth while also indirectly impacting their potential to help through the children's schooling.

This section has reviewed the scope of the racial wealth gap between Black and White Americans, and in particular how prevalent it is when considering assets such as real estate, investments, pensions, and family support. The connection between households' share and value of assets and the societal exclusion discussed in the previous section is evident. A higher level of education can lead to a better paid job with benefits and pensions, which further allows for saving and investments, particularly in a home. Owning a home, savings and stocks can yield further financial gains, which could secure spending in the future for the person in question and their family. As wealth begets wealth, it has implicit positive effects on potential children as well. This opportunity of wealth accumulation was impossible for several generations of Black Americans living through enslavement and discrimination, and is manifested in the wealth disparity many of the descendants living today experience.

4. The creation of the racial wealth gap

Although it might seem obvious that the racial wealth gap was created by the system of slavery and discrimination, it is important to evaluate other possible reasons. In this section, the wealth of another large minority in the United States, Hispanics, will be examined to consider the difference in inequality between the two population groups. Other possible societal and personal reasons for economic inequality will be discussed as well. Lastly, the perseverance of the Black-White wealth gap will be reviewed.

4.1. Wealth disparity among Hispanics

As pointed out earlier, Black Americans are not the only minority with less wealth than White Americans. Hispanics are another minority group who have less wealth and have also been met with discriminatory practices in the housing market and public education. When talking about Hispanics in the United States, it is mainly used as an umbrella term for those with origin from the Spanish-speaking countries in Central and South America. These are countries that Spain colonized in the mid-1400s. Slavery was a massive part of this Western colonization and was a direct predecessor to North American slavery. As a result, many Hispanics are descendants of enslaved people, either of people taken from Africa or of Natives who were enslaved.

A question arises when considering all this: how does the discrimination of Hispanics differ from that of the Black population, and is this difference a determining factor in differences in wealth? Firstly, migration from Central and South America to the United States happened in different waves. Many Mexicans, in particular, became United States citizens after the annexation of southern and western states that had previously been under Mexican rule. Still, most of the immigration to the United States by Hispanics has been economic immigration, as the demand for workers in the United States increased rapidly along with the industrial development from urbanization (Gutiérrez, 2020).

Many Hispanics in the United States and elsewhere in America today are descendants of enslaved people, as the trans-Atlantic slave trade led to 11.4 million enslaved Africans to disembark in Middle and South America (SlaveVoyages, n.d.). Some of these enslaved were likely moved to mainland North America after Spain abolished slavery, but considering the significant number of enslaved, this was likely the case for only a fraction of the population.

In addition to the enslaved Africans, there are records of how indigenous Americans in these regions were also enslaved in the beginning of the Spanish colonization. The enslavement of indigenous people was not prolonged, however, as it was prohibited by the Spanish crown relatively early in the colonization (Phillips Jr., 2011, pp. 330-331). Except from the enslaved that were potentially moved within the Americas after the European countries abolished slavery, the Hispanic population was not enslaved in the independent United States, and have as a result not been treated as such. On the other hand, the Black population had been treated as second class citizens by the White enslavers in the United States for several hundred years before slavery was abolished. While Hispanics immigrating to the United States likely experienced racism and discrimination, that treatment, however unjust, does not have the same implications as the institutionalized racism against Black Americans which continued post-abolition. Both minorities were and by some are still treated as "inferior". Still, when defining which group has gotten the worst treatment objectively, the historical implications of the discrimination and institutionalized racism in the United States have to be considered.

Further, when looking at the differences in income and wealth today, White families are undoubtedly wealthier than both minorities. Still, those identifying as Hispanic in the Survey of Consumer Finances in 2019 did have both marginally higher median income and significantly higher median wealth than those identifying as Black. In 2019, the median wealth for a Black family was $24,100, while it was $36,200 for Hispanic families. This was an increase of 33 and 65%, respectively, from the previous survey in 2016 (Bhutta, et al., 2020, pp. 7, 11). We can tell that wealth increases for both minorities, but Hispanic families have more wealth and have increased their wealth significantly more than Black families have. As mentioned previously, Hispanics and other minority groups still have much less on the median than the White population. This is a factor in need of evaluation if the redistribution of wealth in the United States is to be equal. However, when discussing racial wealth gaps and reparations for slavery in the United States, it is evident that the discussion principally should be focused on how to increase the wealth of Black Americans.

4.2. Other possible reasons for the wealth gap

There could be several societal and personal reasons for the prominent general and racial wealth gap in the United States besides slavery and discrimination. In Pew Research Center's survey on economic inequality in the United States (2020), most Americans primarily

attribute economic inequality to other reasons than racial discrimination. More than four-in-ten name the outsourcing of jobs, the tax system, and problems with the educational system as the main contributors to economic inequality. Individual factors are also blamed for the differences, such as different life choices and starting points regarding opportunities (Pew Research Center, 2020, p. 30). If these factors are (and have been) the main reasons for economic inequality, and thus implicitly the wealth gap, slavery and subsequent discrimination should not have been the main contributors to unequal wealth distribution between Black and White Americans.

The outsourcing of jobs to other countries is named one of the most significant contributors to economic inequality. Outsourcing is a relatively new phenomenon and is possible thanks to globalization and specialized research and development, allowing for the best possible use of countries' comparative advantages. A working paper reviewing the wage levels in the United States between 1980 and 2016 finds that between 50% and 70% of changes in the wage structure are driven by automation and only to a lesser extent by outsourcing to other countries (Acemoglu & Restrepo, ©2021, p. 37). The change in the wage structure has been an increase in wage inequality. Automation being a significant contributor to economic inequality might seem obvious, as the advancement of technology has made it possible to displace certain working groups. However, more Americans still believe this is less of a contributor to unemployment than outsourcing is (Pew Research Center, 2020, p. 31).

The tax system is also pointed to as a reason for economic inequality. Most Americans who think there is too much economic inequality also think there should be tax increases on the wealthiest to reduce the disparity. Still, few think their own income should be taxed higher. In Pew Research Center's survey, among those belonging to the top 7% in terms of adjusted income, only 34% think the government should raise their taxes (2020, p. 40). This highlights one of the main inequality problems in the United States tax system: while federal taxes might be more progressive, in many cases, state and local taxes are still highly regressive (Wiehe, et al., 2018, p. 3). Progressive taxes increase with the taxable amount, while the opposite is true for a regressive tax, so if taxes are to be used as a tool for adjusting economic distribution, it is essential to underscore how regressive taxation is the illness for which the cure is progressive taxation. This can be seen from the ITEP[3] Inequality Index, which considers

[3] The Institute on Taxation and Economic Policy

whether incomes are more or less equal after taxes than before. Texas is a state with a regressive tax system, and on average, the top 1% of earners have an income that is 124 times higher than that of the bottom 20% before taxes. After paying taxes, this average income increases to be 140 times higher. In a state with more progressive taxation, like New Jersey, the top 1% on average earn 126 times as much as those in the bottom 20%, and after taxes, the difference is reduced to 124 times as much (Wiehe, et al., 2018, p. 6). Although there is still economic inequality between the top and bottom earners, it is clear that progressive taxation decreases inequality while a regressive tax increases it. However, federal implementation of progressive taxes will not be possible as long as most of the wealthiest people in the United States are not willing to be taxed higher on income and wealth. Even though it is ultimately up to the federal, state, and local government to revise the tax system, democratically elected leaders rarely make choices highly disfavored by their voters. Voters would like their elected officials to act in their best interest, which is especially important in regard to the wealthiest in the United States, as private donors are often largely funding the campaigns of political candidates and parties. Considering this, the people's opinion on taxation undoubtedly does matter to the government.

According to those surveyed by Pew Research Center, the third-largest external contributor to economic inequality is problems with the educational system (2020, p. 30). As discussed in section 2.2.2., there has been and still is a high degree of both economic and racial discrimination in the American school system, and educational differences is with certainty contributing to economic inequality. As has been established, it is also closely intertwined with racial inequalities due to slavery and discrimination, and as such, the two should not be viewed as unrelated causes of economic inequality.

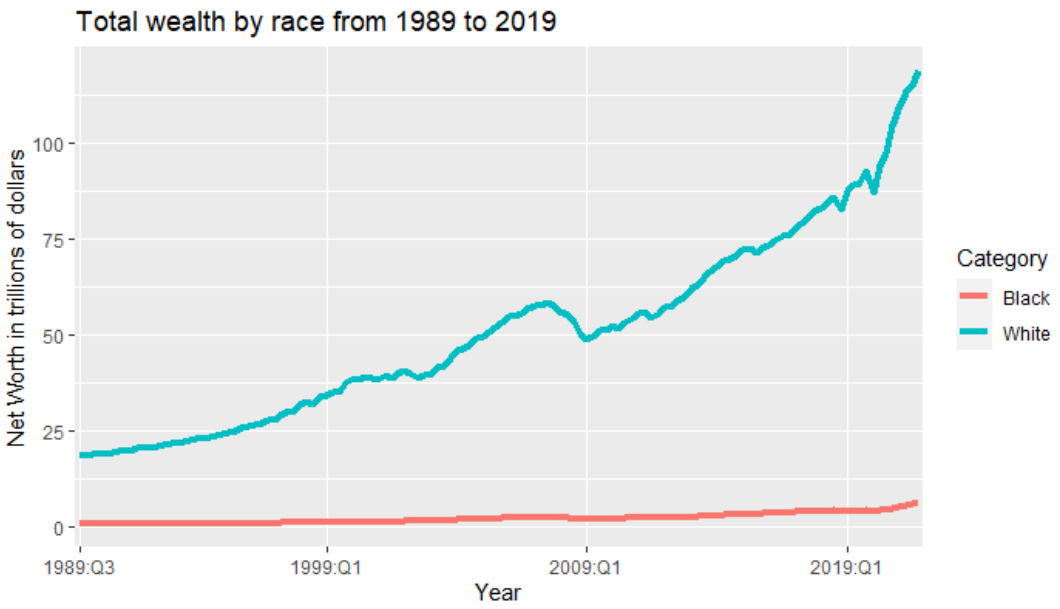
Personal decisions are also named as causes of income and wealth inequality. An attributing factor mentioned by the respondents regards the opportunities people start with. Unequal opportunities mainly determine what kind of education, jobs, and connections one can get to help facilitate wealth accumulation, so unequal opportunities are indeed a source of inequality, and 40% of Americans agree with this (Pew Research Center, 2020, p. 31). Everyone starts with different prospects for life, essentially regardless of racial or ethnic group, but as reviewed in section 2, it is not equally unequal for everyone. Another individual component named is life choices and the idea of "working hard" to reach one's goals. The perception is that if one wants to get ahead in life, all a person needs to do is work hard

enough, which is a philosophy as many as 60% of Americans believe to be true (Pew Research Center, 2020, p. 33). The two views on personal choices are paradoxical – if everyone can get ahead by working hard, that would imply that everyone's starting point was equal. Still, as mentioned, many people also believe unequal opportunities are the reason for economic inequality. Thus, the two statements cannot simultaneously be true.

4.3. Perseverance of the racial wealth gap

Another way to ascertain the Black-White racial wealth gap is to examine the gap over time. Data from The Survey of Consumer Finances on wealth distribution by variables such as racial or ethnic group can be found from the third quarter of 1989. Figure 3 shows the distribution of wealth held by White and Black households in the United States from the third quarter[4] of 1989 to the first quarter of 2019. What can be seen in Figure 3 is that even though both White and Black households have increased their wealth in the past 40 years, the growth and amount of Black households' wealth pales in comparison to that of White households. Although some recesses seem to have hit harder for White households, as can be observed at the time of the economic recession around 2009, their growth in wealth has recovered and continued steadily.

Figure 3: Total wealth by race from 1989 to 2019



Households are shown as by legend. Graphs for "Hispanic" and "Other" have for presentational clarity not been included. Data source: (U.S. Federal Reserve System, 2021).

[4] The first reported SCF data is from Q3 of 1983

To get a clearer view of the graphs in Figure 3, the wealth of the two groups is presented in ten-year intervals from 1989 until 2019 in Table 11.

Table 11: Total wealth by race from 1989 to 2019

Date	Total Wealth of White Households (in US$ trillion)	Total Wealth of Black Households (in US$ trillion)
1989: Q3	18.49	0.78
1999: Q1	34.25	1.26
2009: Q1	48.92	2.11
2019: Q1	87.20	4.29
Increase from 1989 to 2019	68.71	3.51

1989 value is shown for Q3, as this is the first point in the data set. Others are chosen from Q1, as values from 2019 used throughout this paper are from Q1. Data source: (U.S. Federal Reserve System, 2021)

The dollar values of the different years confirm what is seen in the figure: both groups of households have increased their wealth, and the scale of growth is much larger for White households. Examining these values more in detail shows that wealth for White households has increased by 371.6% from 1989 to 2019, while for Black households, the increase has been 450%. By looking at percentages, the wealth growth has been more prominent for Black households since 1989. Although this is positive in terms of reducing the wealth gap, it has not been nearly enough to make a significant difference. In 1989, the wealth of White households was 23.7 times as large as that of Black households, while in 2019, White households' wealth is 20.3 times as large. This shows a trend of reduction in the differences between White and Black households, while also showing how a large racial wealth gap still exists.

Although the values on wealth distribution presented above only go back 40 years, some assumptions about wealth distribution can be drawn based on the review so far. Considering that Black families were not allowed to own assets while enslaved, there would not have been much wealth to mention from the period of slavery. It has been established that the discrimination Black persons met with post-abolition, especially in the real estate market and in education, also made the acquisition of valuable assets such as a home difficult. It is natural to assume that there was some wealth as they were no longer forbidden by law to hold it, but as they were not legally considered equal until the late 1960s, wealth held by Black families would have grown at a relatively low level until that time. Considering then that Black persons should, in theory, be treated equally and thus have the exact same opportunities for

wealth accumulation from approximately 1970 until there are concrete values in the SCF in 1989, this leaves a possible growth period of 19 years.

By using values for the annual effective federal funds rates (EFFR) (U.S. Federal Reserve System, n.d.) as the average annual interest rates on investments, if Black families were to invest $1,000 in 1970, the value with interest returns would be $5,107 in 1989. If we then consider a family that could invest for a more extended period, using the first available EFFR from 1955, a 1955 investment of $1,000 would be $8,693 with returns in 1989. Using the Consumer Price Index (U.S. Bureau of Labor Statistics, n.d.) gives a measure of average inflation from 1970 to 1989 and from 1955 to 1989. Adding inflation gives a real value of the $5,107 in 1989 of $16,320, while the real value of $8,693 would be as much as $40,220.

These values support the assumption that achieving the wealth already held by many White families has been near impossible for Black families. This estimation also only holds if the assumption that there was no discrimination after the late 1960s is true. It has been argued that this is not the case, and the economic disparity from the period might be even greater than approximated. The theoretical accumulation from investments would naturally not be the actual growth for all Americans, regardless of racial group, and is meant to be an assumption of wealth accumulation over time for households on the median in terms of wealth. Thus, the discussion is not to say that had it not been for discrimination, there would be complete wealth equality today. However, if the average Black family had the same opportunities in terms of investing in assets as the average White family since abolition, there is reason to believe that the wealth gap on the median would be at least smaller when considering the large growth of investment shown above.

The differences in investment might not be completely attributed to discrimination in this period, as the personal savings rate or saving behavior of different households is also a factor to consider.

Table 12: Liquid assets and equities for Black and White households

	White households	Black households
Has Liquid Assets (percent)	98.8	96.8
Conditional Mean Liquid Assets (thousands of 2019 dollars)	8.1	1.5
Has Direct or Indirect Equity (percent)	60.8	33.5
Conditional Median of Equities (thousands of 2019 dollars)	50.6	14.4

Data from the 2019 Survey of Consumer Finances. Data source: (Bhutta, Chang, Dettling, & Hsu, 2020).

As shown in Table 12, the percentage of ownership of liquid assets was very high for both Black and White households in the 2019 Survey of Consumer Finances, with only a 2% difference. However, the conditional mean for these liquid assets differs significantly, as White households, on average, will hold $6600 more in liquid assets than Black households. The most significant difference is in direct or indirect equity ownership, as about 27% more White households hold equitable assets than Black households do. This is supported by the data in Table 6, where we saw how White households hold more equities such as stocks, real estate, and businesses. The Black households that do hold direct or indirect equity hold only 29% of the conditional median that White households do for these assets.

This supports the theory that Black and White households have different saving behaviors, as more White households invest in more diverse and risky assets. As was mentioned in section 3.3.2., a few studies suggest that differences in portfolio choices could account for about 10% of the Black-White wealth gap. The low levels of investments in riskier assets by Black households could be explained by a lack of resources to invest, but could also be due to higher risk aversion and high information costs of acquiring newer forms of assets. However, it is at the same time possible that financial brokers created a cultural bias in Black and other minority communities against investing in risky assets by primarily targeting White investors. Other financial institutions and industries that have focused marketing on Black households, such as real estate and certificates of deposits, have taken a larger share of Black investors (Choudhury, 2003, p. 13). In conclusion, some of the wealth differences in terms of savings could be explained by different saving behaviors in Black and White households. Still, Black families were also excluded from certain investments such as riskier assets with higher potential returns, both directly so until the late 1960s and indirectly through lack of resources and complete information about the market.

In summary, while some of the disparity in wealth accumulation for Black families might be explained by societal and personal factors that seem separate from slavery and institutionalized discrimination, many of these factors are, in reality, deeply intertwined with it. Reviewing the treatment of enslaved Black Americans, both during and after enslavement, and their descendants in terms of social equality and access to wealth makes it clear that today's wealth disparity is mainly a result of the many years of injustice the Black population has been subjected to.

5. Reparations

Reparations are meant to be a financial compensation for the exploitation Black persons were subjected to during slavery. In later years, there has been a focus on additional reimbursement for the subsequent discrimination that made wealth accumulation difficult. Either way, reparations are viewed as an efficient tool to close the racial wealth gap existing today.

5.1. Distribution of reparations

Before considering what solution for reparations would be the most efficient, it is essential to assess the possible difficulties with the distribution of reparations. Defining who is entitled to receive reparations is difficult, as no person who lived under enslavement is alive today. The nearest solution would then be to award descendants of enslaved people. As discussed, wealth begets wealth, and many Black Americans today live with the consequences of their ancestors' exclusion from wealth accumulation. Still, as mentioned at the beginning of this thesis, not all Black Americans are descendants of enslaved people. Excluding those who either have immigrated themselves or know for sure that their family immigrated to the United States after abolition, lineage tracing is difficult for those who might be descendants of enslaved people. A critical factor in this is that enslaved people were not included in the United States censuses. From 1790 to 1840, the enslaved were only mentioned in terms of the statistics related to the enslavers. In the 1850 and 1860 censuses, enslaved people were mentioned by assigned numbers and other factors such as sex, age, and "faults". It was not until the first census after the Civil War, in 1870, that all Black Americans were mentioned by name, and that is when many were first registered officially by a surname. Even those in the free Black population were not mentioned by name in a census until 1850. (National Archives and Records Administration, 2012, p. 1). Considering this, it is clear why the exact tracing of lineages proves difficult. Still, using concrete proof such as lineage is essential to the discussion of reparations. Darity and Frank (2003, p. 327) use the moral hazard principle to explain why documentation of ancestry is needed. The moral hazard principle states that when there is asymmetric information, the risk of a transaction depends on the actors' moral behavior. In the case of reparations, the risk is that people who are not descendants of enslaved will try to receive reparations through deception. Not all actors act in good faith, and as a result, people who never had an incentive to identify themselves as Black might do so if there is a chance to receive benefits from it.

To avoid exploitation of reparation payments by people who do not have any familial connection to the era of enslavement, clear proof of ancestry must be in place. In addition to documents providing confirmation, it should be shown that the claimant has identified as "Black" or other similar identifiers in legal government documents before the distribution. Darity Jr. and Frank suggest that this self-identification should have happened at least ten years before initiating a reparations program (Darity Jr. & Frank, 2003, p. 327).

A calculation of the exact number of recipients would require access to documentation of enslaved from several hundred years back and possibly connect documents of enslavers to the people they owned. As this is highly time- and resource-demanding, the following discussion will consist of other authors' estimates and estimates based on the present-day United States population. It should not be interpreted as more than an approximation.

A way to estimate eligible Americans is to consider the total number of people who self-identified in the United States American Community Service as such. In 2019, almost 42 million people identified as the single racial group "Black or African American". If those who identify as "Black or African American in combination with one or more races" are added to this number, this population was almost 47 million people. These population values can further be divided into native-born and those born outside U.S. territories. Of native United States citizens, approximately 38 million people identify as Black or African American alone, and 42 million is the population if those who identify as another group in combination with Black or African American are included (U.S. Bureau of the Census, American Community Survey, 2019).

Counting all native-born Americans who identify as either only Black or African American or Black or African American in combination with other groups as descendants of enslaved is only a rough estimate. One possibly significant factor the estimate does not consider is how many belong to these groups that could be children of at least one immigrant and does not necessarily have any connection to slavery in the United States. The United States Census Bureau's most recent count of people with at least one foreign-born parent is from 2013. The number of second-generation immigrants was about 36 million people in 2013, or 12% of the total population in the United States (Trevelyan, et al., 2016, p. 3). Considering this, there is a possibility that those who self-identify as Black or African American and are native-born overlap with those who have at least one parent that immigrated to the United States. Still, if

one of the parents is a United States native and identifies as Black or African American, both the parent and the child should be eligible for reparations upon confirmation of lineage to an enslaved person in the United States.

Darity and Mullen estimate that 40 million Americans are eligible for reparations as descendants of enslaved people (Darity Jr. & Mullen, 2020b, p. 6). Considering the approximate number of Americans who identify at all as Black or African American of 42 million, and assuming that a fraction of this population is not descended from enslaved people due to immigration or other factors, Darity and Mullen's estimate of 40 million people entitled to reparations will be used forward.

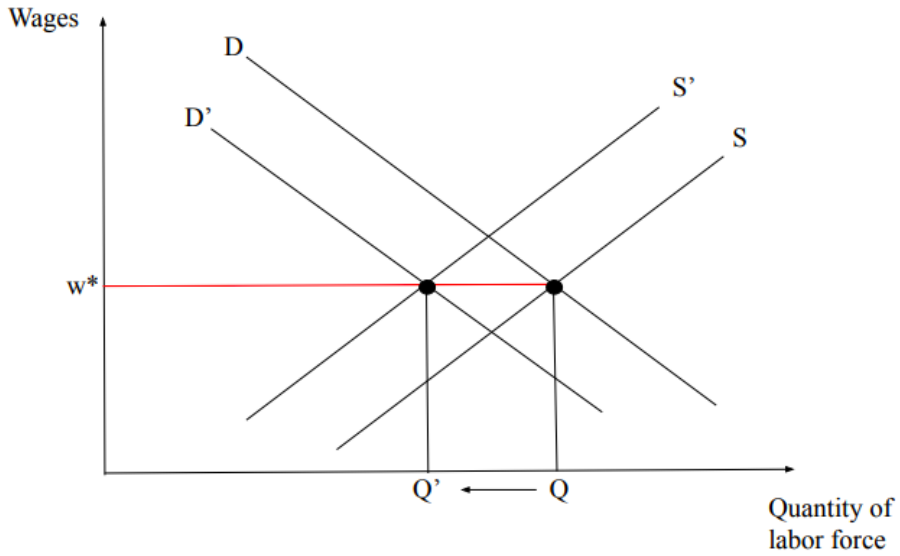
5.2. An approximation of the cost of reparations

Economists have used different calculation methods to arrive at the cost of reparations for slavery over the years. Some factors that have been used include free labor wage costs, market prices of enslaved people, and the output value of production under slavery. Some also deduct the upkeep of enslaved from the sum of reparations, as this was an "expense" for the enslavers. This section will use a model for present value estimate of enslaved labor by Thomas Craemer (2015) for the wage loss under enslavement. One weakness of the model of present value of wages, which is also addressed by Craemer (2015, pp. 647-648), is that the system of slavery might have decreased the market price of free labor.

Darity and Mullen (2020a, pp. Chapter 13, Section 3, Paragraphs 6&10) are critical to Craemer's calculation of reparations because of their claim that if there had been no enslavement, wages would have been higher, and the potential earnings for Black Americans that were not able to participate in a free labor market should be higher than the estimate of labor value during slavery.

Figure 4 shows the market equilibrium for wages with and without enslavement in Craemer's model. The enslaved did not receive any direct wages, so the wage level represented is for all laborers defined as what it costs to pay for the work, not necessarily what the workers earn.

Figure 4: Wage level for labor with and without enslavement in Craemer's model



D and S (D' and S') are demand and supply in a free labor market (in a market with enslaved labor), w* is the equilibrium wage, Q is free-market quantity, and Q' is enslaved labor quantity. Drawn on the figure by Craemer in (Craemer, 2015, p. 648).

Craemer's counterargument to Darity and Mullen is that if all the enslaved suddenly became free laborers, there would be a large increase in supply of free labor. A simultaneous increase in demand for free workers would occur, but the increase in demand is dependent on the workers' productivity. Craemer indicates that productivity under enslavement and free labor most likely did differ, and that there is reason to believe that free workers had higher productivity. The assumption is that free laborers would be better rested and more motivated, which could give the same productivity needed in less working hours, thus reducing the total labor demanded (Craemer, 2015, pp. 647-648). In the figure, it can be seen that the wage levels are equal in the free labor market and the labor market with forced labor in Craemer's model. The use of forced labor reduces the need for free labor and causes a low wage level, but does not necessarily indicate that wages would be much higher without slavery. Under the assumption that the supply of workers increases significantly more than the demand without forced labor, the free labor wage would not increase noticeably from the wage level in a forced labor market. Thus, there are two effects that become equalized in the model: the supply of workers increases under free labor, but the demand likely decreases because the productivity of free laborers increases and reduces the work hours needed to complete the same amount of labor as under enslavement.

Craemer's argument of productivity increase of free laborers does not account for the cost of living. To reach a high level of productivity, it is an advantage for the worker to be well-rested and fed. This is the case for enslaved as well and could be regarded as an expense for the enslavers. The average price of an enslaved person in 1850 was $400, and the real price of $400 in 1850 was approximately $13,500 in 2020 prices (Williamson & Cain, 2022). This is obviously a large expense, and it is reasonable to assume that the enslavers would wish to get high returns on their investment. That would give the enslavers an incentive to give the enslaved somewhat decent shelter and enough sustenance to keep productivity high. This is not to imply that the enslaved were not living under extremely oppressed conditions both physically and mentally, and the incentive for the enslavers to give the enslaved enough nourishment was purely financial. However, it is important to take into account that this cost would need to be covered by the workers themselves if they were free laborers. Assuming an average household in the late 1700s or early 1800s where the man in the household is the only laborer, his wage will have to support himself, his wife, and their children, if not also other family members. Necessary purchases for the household would be food items that could not be gathered or hunted, fabric for clothing, and other supplies needed for the home. With only one wage to pay for necessities, there is reason to assume that only what was strictly needed was bought and that there was not much spare money to spend on leisure. Considering this, the productivity might not be that much higher for a free worker, especially not if higher productivity is measured by nutrition or leisure and rest. The largest difference in productivity between free and forced labor might then be attributed to motivation. Then again, enslaved laborers did not have a choice to be motivated, as the enslavers forced them to work whether they were motivated or not, and presumably pressured the productivity of the enslaved to an extreme maximum. There are evidently more factors to consider when estimating the wage level both with and without enslavement. Concluding that the different levels in productivity, an increase in supply and a reduction in demand of free labor would result in approximately equal levels of wage disregards these factors, is highly theoretical, and does not account for the actual lived lives of workers in the time period. Even though using the present value of average market wage to calculate reparations is not without its criticism, it is a sufficient estimate for this analysis, as it does give a relatively realistic estimate for the owed unpaid wages from the period of enslavement.

Craemer's model presents two scenarios: one where the working hours of enslaved is counted as 12 hours, which is viewed as the daylight working time, and one where the all 24 hours of

the day are counted as working hours. The scenario of 24 hours will be used in this analysis because, as Craemer himself points out, the enslaved were never free to spend their time leisurely, and any time spent on eating or resting was a form of investment for the enslavers to ensure the productivity of the enslaved. Additionally, many plantations in the southern United States did produce relatively cheap yet filling food such as rice and other grains, and as such, using some of the crop yields to feed the enslaved would not be such a large direct expense. This is why the upkeep of enslaved is not deducted in this model, even though it was an expense for the enslavers. Not deducting the cost of food and other investments in the enslaved might make the wages, estimated as equal to the cost of compensating a worker, lower than they in reality were. However, with the assumption that some of the costs are low in the long run as the yields from both grain and cotton production in part can be used as resources for the enslaved, it will be assumed that this difference is not significant. Even if it was, it is again important to remember that this extra cost paid by the plantation owners was simply a contribution to increase the productivity of the enslaved and as a result, increase the output of their plantations. This estimation also includes enslaved of all ages even though those under a certain age might not count as active laborers. Still, they were born or bought into enslavement for use in forced labor and should be counted even if they did not work the year in question.

Craemer uses historical statistics from the United States Bureau of the Census (1975) on population and data from Lawrence Officer and Samuel Williamson (2022) on nominal wages in the model. This analysis will use the same data sources but differs somewhat in final estimates. The reason for the differences could be mistakes in this calculation or differences in values chosen for the estimates compared to Craemer but is difficult to disclose for certain, as complete data sets are not shared in Craemer's paper.

A note on the calculation is that even though slavery was not abolished until 1865, there are no wages added in the period from 1860 to 1865, as this was when the Civil War was ongoing. The war did most likely change the labor market, as able, working-age men were needed as soldiers rather than farmers. The war reduced the gross domestic product of the United States, which was likely, in part, a result of the reduction in production (Craemer, 2015, p. 650). In addition, the war was a large expense in itself, contracting a federal debt of $2.3 billion in 1865, which was equal to 30% of the United States income (Piketty, 2020, p. 237). It is probable that most enslaved were still working as forced laborers, and being

soldiers did not necessarily make them free, but the implication is that the war made certainty in censuses and other official documents difficult.

The estimated hourly compensation of a production worker was $0.017 in 1776. This value is found through extrapolation of data on costs of unskilled labor, which is available from 1774, and the first available hourly compensation of a production worker from 1790. Estimates of the population of enslaved are found in using historical statistics (U.S. Bureau of the Census, 1975, pp. 14 (Series A91-104),18). Linear extrapolation was used to find missing values from before 1790, while linear interpolation was used to find population values in the years between the decennial censuses for further analysis.

The population of enslaved was 697,681 in 1790 and grew to 893,602 in 1800, which was a population growth of 195,921 over the decade. This can be averaged to an annual population growth of 19,592.1. Using this value to extrapolate the missing values from 1776 to 1790 by reducing the population by 19,592.1 for each year backward until 1776, this gives an approximate population of 423,392 enslaved in 1776. From 1776 to 1860, the debt is estimated as next year's uncompensated work hours for the enslaved, multiplied by that year's production worker hourly compensation, which is then added to the previously unpaid total. The total sum is compounded with an interest rate of 3% from 1777 onward.
In the example calculation shown below, the values differ somewhat from the values in Table A4 of the appendix, as the calculations in the appendix use all available decimals.

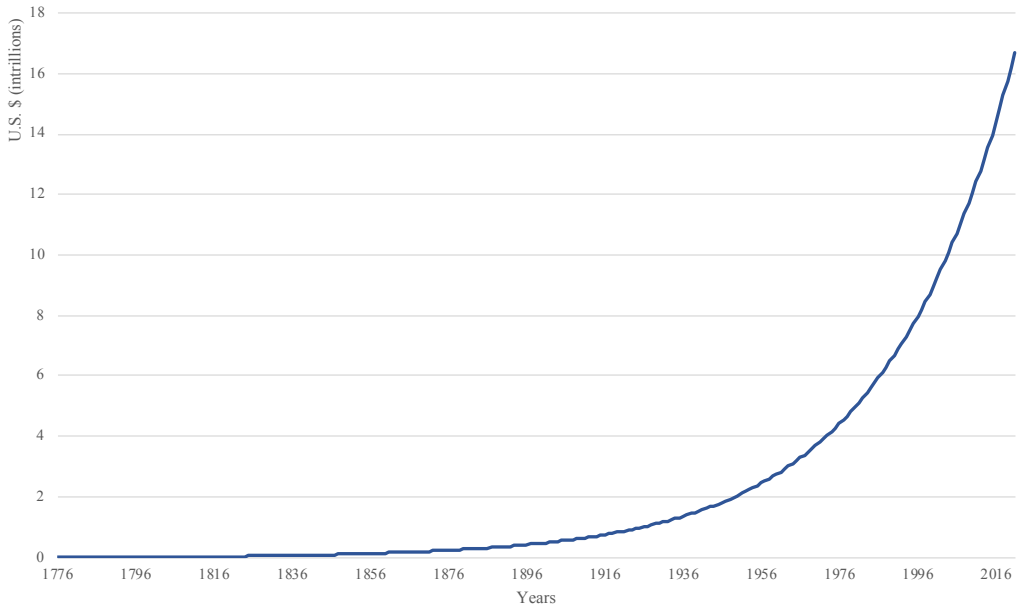
$$\text{Total spent working hours per enslaved in 1776} = (365\times 24)=8760$$

$$\text{Total spent working hours for all enslaved in 1776} = 8760\times 423{,}391.6= 3{,}708{,}910{,}416$$

$$\text{Nominal compensation of all enslaved for 1776} = \$0.017/\text{hour} \times 3{,}708{,}910{,}416 \text{ hours} = \$63{,}051{,}477$$

Since this compensation was not paid in 1776, it is added to an estimate of total compensation in 1777 and compounded with the 3% interest rate, which continues to be done until and including 1860. In 1860, the value of the cumulative sum of owed wages with a 3% annual interest was $1.43 billion. From 1860 to 2021, the value from 1860 is estimated without more contributions to the sum, but still with 3% annual interest, which gives a 2021 value of $16.7 trillion. The estimates for population, wages, and value of reparations for all years between 1776 and 1860 are available in the appendix.

Figure 5: Value of reparations from 1776 to 2021 with 3% annual interest



The graph shows the cumulative sum of unpaid wages with an annual return of 3% in 20-year intervals. Data sources: (Officer & Williamson, 2022) and (U.S. Bureau of the Census, 1975).

The estimated value of $16.7 trillion does account for wages lost due to slavery and for interest returns from 1776 until 2021. Still, it does not include the potential loss of wages due to the period of discrimination after abolition. In 1983, Bernadette Chachere and Gerald Udinsky calculated the benefit for White workers due to employment discrimination against Black workers in the period 1929 to 1969. Their estimation does not subtract social benefits received by Black Americans in this period, but this is done in an analysis by David Swinton. He estimates that White workers benefitted $500 billion from the discrimination (Darity Jr. & Mullen, 2020a, pp. Chapter 13, Section 3, Paragraph 19-20). We know that discrimination from wealth accumulation did not just occur through employment, but using the value for employment discrimination can estimate some of the costs of the inequalities faced by the Black population between abolition and the passing of the Civil Rights Acts in the late 1960s. Using the average annual Consumer Price Index (U.S. Bureau of Labor Statistics, n.d.) for 1983 and 2021 to calculate the 2021 value of $500 billion gives:

$$\frac{CPI\ 2021}{CPI\ 1983} * 1983\ value = \frac{270.97}{99.6} * \$500{,}000{,}000{,}000 = \$1{,}36\ trillion$$

Adding the estimates from the present value model and Swinton's calculation gives an estimated cost of reparations for slavery and discrimination of approximately $18.06 trillion.

Assuming as before that the number of people eligible for reparation payments is 40 million, the average price per capita is $451,500. Today, the median difference in net worth between Black and White Americans is $164,100, as seen in Table 3, so a one-time lump sum payment to all Black Americans of $451,500 would overturn the gap. Even though the value owed to Black Americans is estimated to be $18.06 trillion, this does not mean that it is feasible, especially not in the short run. In the fourth quarter of 2021, the gross domestic product (GDP) in the United States was valued at $24 trillion (Bureau of Economic Analysis, 2022), so an immediate transfer of reparation would cost almost 75% of the entire GDP. The difficulty of such a transfer would be the availability of the amount and the effect on inflation over time by releasing large sums of liquid assets to consumers. Thus, if reparations are as large as $18.06 trillion, the payments should be made over time. A reparations plan will probably be structured to be paid as installments regardless of the sum because of the economic impact of the large sums in question. Still, considering the magnitude of this estimation, which only benefits certain people in the population, it might meet too much resistance politically to ever be achieved.

If the goal is for the reparations plan to be more immediate, an option is to estimate the value by directly considering the wealth gap and attempting to fill this. As above, the median Black-White wealth gap for households is $164,100. The average household size for those who identify as Black or African American, either alone or in combination with other groups, is 2.58 persons (U.S. Bureau of the Census, American Community Survey, 2019), so the median wealth gap per person is $63,605. If this on the median is what each eligible person would receive, the total cost of reparations would be around $2.5 trillion, which might be a more feasible sum. This amount only fixes the problem existing today and does not consider the past that led to it nor the wealth lost as a result. This is not equal to stating that reparations should make Black households wealthier than White households on the median, but simply filling the gap without accounting for all related factors would be an incomplete solution. Since there are relatively many outliers in the United States economy in terms of extremely wealthy persons, Darity and Mullen (Darity Jr. & Mullen, 2020a, pp. Chapter 13, Section 3, Paragraph 24) argue that this estimate should be done using the mean values instead, which from Table 3 gives a wealth gap of $840,900 per household or $325,930 per person. The total cost would then be $13 trillion, which is still a lower estimate than the one made based on the model of present value of wages and Swinton's estimates. Although it is lower than the $18.06 trillion estimate, estimating the sum needed to close the racial wealth gap by using the

mean values does include how some White households, in particular, have been able to build wealth over time, an opportunity not afforded Black households.

5.3. Forms of reparations

A problem to consider when evaluating the form of repayment can be viewed through the transfer problem, initially used by John Keynes and Bertil Ohlin to evaluate German repayments after World War I. The transfer problem is mainly used for transfers between two countries, one making a loan payment to the other, and considers whether such a transfer becomes a burden or a blessing for the paying country (Darity Jr., Lahiri, & Frank, 2010, p. 249). The problem can be reformulated to review a payment from non-Black to Black Americans. This has been done through a general-equilibrium model by Darity Jr., Lahiri, and Frank (2010) and is used to evaluate different forms of reparations. Their result is much the same as the one Keynes reached in 1929: unless specific trade requirements are placed upon the transfer, the donor will be more beneficial after the relocation of assets than before, and in the case of reparations to Black Americans, the consequence could be the racial wealth gap increasing instead of becoming smaller. An efficient trade requirement that could reduce this adverse effect is having the payment from White households financed by them reducing consumption of non-Black produced commodities, and by Black households using their reimbursement to increase their consumption of Black-produced commodities (Darity Jr., Lahiri, & Frank, 2010, pp. 258-259). This issue would then be primarily relevant if the reimbursement is made as a lump sum payment without any clear guidelines for spending. Controlling how a lump sum payment will be used after reception could prove difficult. Thus, direct payments could be a less efficient form of reparations if the goal is to direct the money towards wealth accumulating investments.

5.3.1. Bond payments

A form of reparations could be bond payments, the most currently discussed plan being “baby bonds”. A baby bond is a federally sponsored bond account set up for each child upon birth, with wealth being built up in the account over time through annual contributions and returns on the accounts. This form of reparation has been discussed in various forms over the past 20 years and has had a revival through Senator Cory Booker’s (D-NJ) introduction of the American Opportunity Accounts Act in the Senate. In this bill, every child would receive an account with the same initial bond value, but the annual contributions would be adjusted after household income. In addition, the introduced Bill has restrictions on spending. When the

account owner accesses the account, it must be spent on "qualified expenses" such as education, homeownership, retirement, or investments in similar assets that lead to income and wealth accumulation (Booker, 2021). These restrictions could reduce the transfer problem discussed above.

A study done by Naomi Zewde (2020) evaluates the effect of baby bonds by using values from the Panel Study of Income Dynamics (PSID) to estimate young adults' median wealth with and without being given such bonds at birth. Zewde finds that the median net worth for young adults increases from $2,900 to $57,845 for Black households and from $46,000 to $79,143 for White households (2020, p. 11). The financial support of baby bonds does not eliminate the racial wealth gap in the estimation. Still, it does reduce it significantly, from White households having almost 16 times the wealth of Black households to having 1.4 times the wealth.

The difference between Booker and Zewde's baby bond policies is that while Booker wants the annual amount contributed to be dependent on means-testing of the household's income level, Zewde uses the household's level of wealth as a measure. Although both factors would be tested every year, income is a more volatile variable. A household's income level can quickly change due to unforeseen circumstances such as job loss or a need for geographical relocation. Even though the level of wealth is not entirely unaffected by sudden financial difficulties, it is a more stable variable than the level of income. Wealth usually takes time to accumulate but, in return, has the advantage of being valuable over time.

The American Opportunity Accounts Act highlights an essential requirement for a reparations plan in order to reduce the wealth gap between Black and White Americans over time: to reduce the likelihood of a transfer problem and other adverse consequences, the payment should be directed toward wealth-increasing assets. So, instead of baby bonds directed towards these investments, another form of reparations could be directly giving the recipients parcels of land or scholarships for education.

5.3.2. Land grants

The idea of repaying descendants of enslaved with land can be traced back to General Sherman's promise of 40 acres per freed person, as mentioned in chapter 2.2.3. Forty thousand freedmen did receive a total of 400,000 acres of land following the field order, but

were forced to give it back to former plantation owners when Lincoln's successor Andrew Jackson overturned the order (Gates Jr., n.d.). As discussed in the section on housing discrimination, this had an impact on the rate of homeownership for Black Americans and likely contributed to the differences in home ownership today, so revisiting this promise is highly relevant in the discussion of reparations. Darity Jr. and Mullen (2020b) estimate that if 40 acres were to be distributed for each household, this would equal 10 acres per person. They use the enslaved population in 1865 of 4 million to arrive at a total acreage of 40 million that should have been given to the emancipated people by the order. With an average price of an acre at $10 in 1865, this would have been valued at $400 million. The 2020 value of $400 million compounded at a 6% interest rate is $3.1 trillion (Darity Jr. & Mullen, 2020b, pp. 9-10).

The land pledged to the emancipated by the field order was privately owned land, so the plantation owners eventually forcing the formerly enslaved off the land might have been inevitable. Thus, if repayment today is done by land grants, the distribution should be of federally owned land. The United States government owns and manages 640 million acres of land, which is 28% of the landmass in the country (Congressional Research Service, 2020, p. 1). Naturally, some of this land is protected for conservation through agencies such as the National Park Services and could not be considered in a possible distribution of land grants. However, much federal land is still administered by multiple use mandates, and the government is free to lease or sell federal territory that is not classified as a protected area. Considering protected areas and other areas unsuitable because of the terrain, agricultural areas are the most abundant type of federal land left to distribute.

If we consider the value of United States farm real estate, it was $3,380 on average per acre in 2021 (U.S. Department of Agriculture, 2021, p. 9). Using this value per acre instead of the average rate of return and inflation adjustment, the total value of 40 million acres using the $3,380 value per acre would be $135.2 billion. If reparations are to be paid through land grants given from federally owned land and the amount of acreage per person is still to be 10 acres, 400 million acres of disposable federal land is required for 40 million possible recipients of reparations. Of federally managed land that is not mainly regulated for preservation, most is governed by the Forest Service and the Bureau of Land Management. These agencies own 193 million and 245 million acres, respectively, a total of 438 million acres with a 2021 value of $1.59 trillion (Congressional Research Service, 2020, p. 1). This is

enough to grant 10 acres per person, but would not be possible, as all of the 438 million acres would not be accessible for this purpose. Not to mention it would not be politically feasible to endow that much federal land for personal use, no matter the reasoning. So, instead of keeping the promise of 40 acres verbatim, the United States government could use some of the federally managed lands to build community-driven buildings that would help the Black communities locally.

Instead of explicitly giving parcels of land, the government could also help fulfill the promise by granting funds to homebuyers. Federally managed institutions that help those who cannot receive mortgages from private financial institutions do exist. However, as discussed in section 2.2.3, the Black community has historically been met with discrimination especially in the mortgage market. Establishing a government agency that not necessarily only gives home mortgages to Black households, but that focuses on helping them in particular by having resources allocated for this purpose could potentially solve one of the main difficulties of wealth accumulation for Black families: access to real estate.

5.3.3. Educational support

As is also specified as a qualified expense in the American Opportunity Accounts Act, educational support such as scholarships for higher education could be a form of reparations. This type of reparations would naturally only be relevant for a limited number of eligible Americans, namely those who have not yet acquired a degree and still have an incentive to do so. Access to higher education in the United States is different from many countries in that high annual tuitions are required by most colleges, even by public educational institutions. In the academic year 2018-2019, the average tuition price after the deduction of grants and scholarships for undergraduate students was $13,900 at public institutions, $27,200 at private nonprofit institutions, and $23,800 at private for-profit institutions (Irwin, et al., 2021, p. 27). The average length of undergraduate studies in the United States is four years, so the tuition price must be multiplied by four.

In the 2019 Survey of Consumer Finances, the median income for White respondents was $69,000, while it was $40,300 for Black respondents (Bhutta, et al., 2020, p. 7). So, if the respondent is to help pay college tuition for their child at a public institution, this equals almost a third of the Black respondent's annual earnings and a fifth of the White respondents'. While that is a significant fraction of both groups' annual income, it is a more considerable

expense for Black families. Payment of college tuition could also come from savings, but savings are part of what constitutes a household's wealth, and as has been ascertained, Black households come out less favored in this regard as well. As it is today, schools and various associations offer need-based financial aid by the level of income of the student's household. However, many forms of financial aid for education in the United States are still mainly merit-based. Merit-based aid requires that the student excels either academically or athletically. Having financial access to higher education being merit-based is unequal in its nature. As a result, it is one of the contributors to the differences in academic attainment shown in Table 1. Being excluded from higher education because of a lack of financial resources is undoubtedly an issue that affects people from all backgrounds. Still, as the Black households in the United States are less financially endowed both in terms of income and wealth, there is reason to believe that this affects underprivileged Black students to a broader extent.

Helping Black students close this gap in access to higher education through scholarship reparations would benefit them in terms of wealth. Firstly, using credit loans to pay college tuition would be obsolete. As seen in Table 9, consumer credit accounts for 44% of Black households' liabilities. Although it has been discussed how some of this high percentage might be explained by people turning to consumer credit as a way to afford houses if they do not have access to mortgages or family support, it is likely that for the same reason, some might take out consumer credit loans to pay tuition fees. In addition, many explicit student loans have the same structure as a regular consumer credit loan. Reducing this share of liabilities does not necessarily reduce the total liabilities for a household but could direct them into more wealth accumulating investments, such as real estate or stocks. In the longer term, sponsoring higher education can lead to the recipient having access to higher-paying jobs, often including a job with better and more pension benefits, and in other ways, save money and accrue wealth. This further gives Black households an improved opportunity to buy real estate, help their family and friends financially, and continue the pattern for their children if they wish to do so, as it has been indicated previously how influential the educational level of parents is on their children.

Another way of paying reparations through educational support is to cancel existing student debt. In addition to having larger shares of general consumer credit, Black households also have a more significant burden in terms of student debt. The difference in average loan

amounts is not what causes the disparity, as White households on the median had $19,100 in student loans, and Black households had $20,000 in 2016. The inequality is in the number of loan takers, as 20.2% of White households held student loans while the share for Black households was 30.7% (Charron-Chenier, Seamster, Shapiro, & Sullivan, 2020, p. 20).

Student debt cancellation for all Americans regardless of racial group identity is a policy that has been recommended as it, in the long run, could lead to an increase in GDP and a decrease in the average unemployment rate. This could be possible with minimal inflationary pressure and modest increases in interest rates (Fullwiler, Kelton, Ruetschlin, & Steinbaum, 2018, p. 50). This is due to the cancellation stimulating economic activity more than it costs the government. As mentioned above, not having to take loans to get through school and pay them back with interest over several decades after graduation does give the ability to invest money elsewhere. However, in terms of the racial wealth gap, a general student debt cancellation does not significantly reduce it. With cancellations up to $50,000, the net worth increases for Black borrowing households, but it increases proportionally to the net worth of White borrowing households. The relative change is much higher for the Black households, but this is explained by how low their median average wealth was before the cancellation. The same pattern exists when evaluating the effects of cancellation on the entire population, not only the households holding the student loans (Charron-Chenier, Seamster, Shapiro, & Sullivan, 2020, pp. 19, 21). Thus, student debt cancellation might be an efficient tool to generally reduce wealth disparities and increase economic activity in the United States, but should not be the primary tool for reducing the racial wealth gap.

6. Discussion

Thus far, the thesis has considered the reasons for introducing a plan of reparations and possible forms such a plan could take. Still, there are other potential implications of repaying the descendants of enslaved to evaluate, mainly whether or not this is politically feasible. A survey by the University of Massachusetts Amherst conducted in December of 2021 found that 62% of respondents think the government should not repay descendants of enslaved with cash payments. Further, 58% of respondents are against free college tuition, and 57% are against housing assistance for descendants of enslaved (2021, p. 9). The survey only has a sample size of 1,000 people but does adhere to a sampling frame on gender, age, race, and educational level so that there is a wider range of respondents and will therefore be used to conclude on a larger scale.

The survey reveals that some of the discussed forms of reparations are opposed by a majority of Americans. The forms of reparations included in the survey only benefit Black Americans, which might be the reason for the opposition. When discussing reparations, a common counterargument is that no one who lived during slavery, either as enslavers or enslaved, is alive today. In light of this, the opinion is that people should neither be held financially responsible for it nor be entitled to any payment on behalf of their ancestors. That argument holds to the extent that no direct inflictors nor victims are still alive. But, as has been discussed meticulously, the main contributor to the Black-White wealth gap has been the unequal access to wealth accumulating activity, first through the period of enslavement and then through other eras and methods of discrimination. The ramifications of the intergenerational aspect of wealth cannot be overlooked and should be used as the main argument for reparations.

It is apparent that Black Americans suffered under enslavement while many White Americans profited off it, and as a result, it is the Black population who should receive reparations. However, much of the hostility toward reparations for descendants could be due to its exclusivity. To reach a consensus on a reparations plan, it might be necessary to implement a program not limited to benefit Black Americans, such as the previously discussed baby bonds. This could potentially solve the issue of general wealth and income inequality in the United States. Although the most significant wealth gap is between Black and White Americans, the level of economic inequality is large in general in the United States, as discussed in chapter

3.2. Implementing a program such as the Opportunity Accounts Act would not immediately solve this inequality, as the bonds are not released until the child turns 18. Still, over time it could reduce national economic inequality.

The goal of reparations should not be to make Black Americans more endowed than White Americans but rather to equalize the wealth level on the median. This cannot be done with baby bonds alone, as it would only help future generations, even if those who have not yet turned 18 years old are afforded some sum equal to what bond payments would be after 18 years of accumulation. This still leaves a majority of descendants without any reparations. Baby bonds are an efficient form of reparations as they strengthen and equalize young Americans' wealth, but they should be supplied with bonds to Black Americans over the age of 18. As calculated in section 5.2., the cost of eliminating the wealth gap directly based on the number of eligible recipients in the population will be around $13 trillion. The estimated cost of the Opportunity Accounts Act is approximately $60 billion annually (Committee for a Responsible Federal Budget, 2019). The cost would be over at least 18 years, so at least one generation would receive a complete account, totaling the cost at $1.1 trillion, not including inflation, and assuming a stable population growth.

In theory, this would create a total expense of approximately $14 trillion in less than two decades. This expense could be covered by increasing the average tax level for the wealthiest in the United States. The population in the United States in the 2020 census was 331,449,281, where the taxable population between 18 and 64 years old consists of 202,846,960 people. The top 20% of earners is then a subpopulation of 40,569,392 people (U.S. Bureau of the Census, n.d.). As discussed previously, taxes in the United States are generally regressive. On average, the lowest 20% of earners pay 11.4% in taxes, while the average tax rate for the top 20% of earners is 8.1%. The average income of the top 20% is $294,533 (Wiehe, et al., 2018, p. 4). Suppose the average tax paid by the top 20% is increased to the same level as for the bottom 20%. In that case, tax revenues from this income group alone will increase to approximately $1.36 trillion annually. This is likely a modest estimate, as the calculation is based on the lowest average income level for percentiles within the top 20%. Some households would also need to be excluded from the calculation as they might be eligible for reparations themselves and, as such, should not be expected to pay for it. Still, as shown in Table 3, even the inclusion of more wealthy Black Americans shows a clear wealth gap between Black and White households, which is reasonable to assume also holds for income

levels, especially considering the previous discussion of the correlation between the two. If this tax increase is specifically allocated to pay a reparations bill of $14 trillion, it will take a little over ten years to pay down the bill.

Another argument against reparations is the fear that placing such a burden on the non-Black population would punish the less wealthy and create more economic disparity among White Americans. This will not be the case if the repayment is made through progressive taxation, where only the wealthiest pay the bill. There is reason to believe that a significant fraction of those who belong to the top 20% earners, who also hold 71 % of the nation's wealth (U.S. Federal Reserve System, 2021), hold much of their wealth due to their family owning plantations and other businesses that used forced labor. As mentioned in section 4.2., tax increases are typically an unpopular political policy. Still, there is a chance it is possible to push the policy through if a consensus can be reached that it will reduce the level of wealth inequality in the United States. If the tax rate of at least those in the top 20% of earners is kept at the same level or higher after reparations are paid, further redistribution of wealth is possible. There is a relatively high level of economic inequality in general in the United States, and if the government wishes to, the increased tax revenues could be used to decrease economic disparities for all Americans over time.

In addition to being a financial compensation to descendants of the enslaved, increasing the median wealth level for Black households will be a social benefit for all actors in the economy: the government, businesses, and consumers. The United States has a mixed economic system with some government regulation and ownership, but also facets of capitalism such as a competitive market regulated by supply and demand. Increasing the wealth level for Black households will increase the overall median wealth in the United States. A higher level of median wealth could decrease consumers' expenditures, such as loans, which would lead to higher consumption and levels of investment. More consumption and investments will benefit both private businesses and the government. Higher government income could be spent on the citizens through increased investments in federally owned health care, education, and infrastructure. This investment by the government in its citizens would increase the country's human capital, which could further increase the population's income and wealth levels.

Lastly, no matter how financial reparations are made, they are a mere formality unless the United States government issues a joint apology for the treatment of the Black population through slavery and the era of discrimination after the Civil War. The House of Representatives and the Senate have each agreed on resolutions to apologize, but there has been no joint resolution or presidential apology. The legislative branch and the President, as leader of the executive branch, should collectively recognize the harm done to the Black population and how the profit and growth the United States experienced were a result of it.

7. Conclusion

The United States is a prosperous country, to such an extent that it is one of the world's economic leaders. However, the prosperity has largely been built on the exploitation of other human beings. It has been explored in this thesis how this exploitation and subsequent exclusion from society has inhibited the advancement of Black Americans and created the large racial wealth gap that can be observed today. The institution of slavery brought Africans to the United States and gave them an extremely oppressed start in the country. After being treated as chattel, the societal perception of Black Americans was hard to change, especially in the South, and dictated society's treatment of them in the hundred years between abolition and the passing of the Civil Rights Acts. White Americans had the opportunity to build their wealth as they had access to education, banking, and housing. They were also recipients of government aid such as the Servicemen's Readjustment Act. Compared to this, the wealth accumulation of Black Americans in the same period was fractional. Although more Black households have gained entry into these wealth-building activities now, the intergenerational component of wealth has left their current level of median net worth significantly low compared to their White counterparts.

This should be the main argument for reparations: The enslavement and discrimination of the Black population was inhumane, and even though this oppression eventually became illegal, the United States has not repaid its debt to the victims of slavery and injustice. The use of forced labor had a significant impact on the output and profits made in the United States. Even so, Black Americans were denied the opportunity after abolition to participate in the growth through investments and savings, despite the country's wealth being primarily built on their suffering.

An approximation of the cost of reparations has been calculated using two methods. The first used a model by Craemer to estimate the present value of wages owed for the work done by the enslaved with an annual interest rate of 3%, which gave a 2021 value of around $16.7 trillion. Adding a compensation for discrimination after enslavement calculated by David Swinton, the total compensation in 2021 value equal to $18.06 trillion. The other estimation used the nominal value of the wealth gap between Black and White Americans today to determine the sum needed to close the racial wealth gap directly. This estimation gives a cost

of $2.5 trillion if the median value of the wealth gap is considered and $13 trillion if the mean value is used as a measure instead.

Different forms of reparations that have been reviewed would have different impacts on the racial wealth gap itself but also additional societal impacts. I have concluded that the most efficient and feasible form of reparations would be through bond payment programs such as baby bonds, which are federal bond accounts created for children upon birth. The contribution to these accounts should be based on means-testing of households' wealth levels to ensure certainty and stability in the payments made to the account. In addition to granting baby bonds for at least one generation, the federal government should grant reparations to those over the age of 18 by affording them a lump sum equal to the estimated accumulation of a baby bonds account. Whether this lump sum should be released with restrictions on spending is a question that should be explored further in future research.

Finally, I have discussed how reparations in the short run could reduce the Black-White wealth gap and, if structured accordingly, might increase the general median wealth level and reduce economic inequality in the long run. Although there is not yet majority support for reparations in the United States, its advocates should keep up the efforts to convince opponents that reparations are needed and that implementing them is not only beneficial for Black Americans, but could be used to make the United States truly prosperous for all.

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Appendix

A.1. Estimating the average hourly compensation for workers under enslavement

The values of costs of unskilled labor from 1776 to 1860 are from Lawrence H. Officer and Samuel H. Williamson's website (2022), as are the values of production workers' hourly compensation from 1790 to 1860.

The missing values of production workers' hourly compensation from 1776 to 1789 are extrapolated using the method used by Thomas Craemer (2015):
First, it is assumed that the production workers' hourly compensation follows the trend of the cost of unskilled labor. Then, the nominal cost we wish to find for a certain year can be determined by dividing the former year's nominal cost by the quotient of the cost of unskilled labor index in the former year divided by the current year's cost of unskilled labor index.

Example: Using the nominal value of production workers' hourly compensation for 1790 divided by the quotient we get from dividing the cost of unskilled labor index in 1790 by the cost index in 1789 gives:

$$\text{Production workers' hourly compensation in } 1789 = \frac{0.02}{\frac{37}{42}} = 0.023$$

This is done for all years from 1790 back to 1776 to get the scope of data needed for the analysis. The costs of unskilled labor index and production workers' hourly compensation are shown in Table A1.

Table A 1: Cost of unskilled labor index and production workers' hourly compensation from 1776 to 1860

Year	**Costs of Unskilled Labor** (index 1860 = 100)	**Production Workers' Hourly Compensation** (nominal dollars)	Year	**Costs of Unskilled Labor** (index 1860 = 100)	**Production Workers' Hourly Compensation** (nominal dollars)
1776	32	0.017	1813	87	0.05
1777	35	0.019	1814	97	0.05
1778	36	0.019	1815	92	0.05
1779	31	0.017	1816	111	0.05
1780	41	0.022	1817	93	0.05
1781	43	0.023	1818	72	0.05
1782	39	0.021	1819	75	0.05
1783	36	0.019	1820	67	0.04
1784	34	0.018	1821	74	0.05
1785	44	0.024	1822	68	0.05
1786	40	0.022	1823	80	0.05
1787	48	0.026	1824	78	0.05
1788	48	0.026	1825	68.9	0.05
1789	42	0.023	1826	68.9	0.05
1790	37	0.02	1827	68	0.05
1791	43	0.02	1828	67	0.05
1792	43	0.02	1829	68	0.06
1793	48	0.03	1830	67	0.06
1794	45	0.03	1831	65	0.06
1795	63	0.03	1832	67	0.05
1796	62	0.04	1833	68.9	0.06
1797	61	0.03	1834	75.7	0.05
1798	69	0.04	1835	75.7	0.05
1799	52	0.04	1836	78.6	0.05
1800	60	0.04	1837	92.2	0.06
1801	71	0.04	1838	77.7	0.06
1802	75	0.04	1839	81.6	0.06
1803	57	0.04	1840	69.9	0.06
1804	72	0.05	1841	73.8	0.06
1805	62	0.05	1842	75.7	0.06
1806	86	0.05	1843	78.6	0.06
1807	69	0.05	1844	77.7	0.06
1808	68	0.05	1845	75.7	0.06
1809	104	0.05	1846	74.8	0.06
1810	88	0.05	1847	69.9	0.06
1811	91	0.05	1848	83.5	0.07
1812	92	0.05	1849	81.6	0.06

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Table A 1: Cost of unskilled labor index and production workers' hourly compensation from 1776 to 1860, continued

Year	**Costs of Unskilled Labor** (index 1860 = 100)	**Production Workers' Hourly Compensation** (nominal dollars)
1850	82.5	0.06
1851	81.6	0.06
1852	86.4	0.07
1853	85.4	0.07
1854	90.3	0.07
1855	93.2	0.07
1856	94.2	0.07
1857	99	0.07
1858	93.2	0.08
1859	101.9	0.08
1860	100	0.08

A.2. Estimating the population of enslaved from 1776 to 1860

All population values between those from the decennial censuses from 1790 to 1860 are estimates, using linear inter- and extrapolation as Craemer does in his paper (2015).

The population numbers from 1776 to 1789 are estimated through linear extrapolation by using the average annual population change from 1790 to 1800 of 19592.1 people per year. Example: Subtract 19,592.1 people from the 1790 population to get the estimated 1789 population:

$$697{,}681 - 19{,}592.1 \approx 678{,}089$$

The population between decennial censuses are estimated with linear interpolation, using the average annual change in the population over ten-year periods shown in Table A3.
Example: To find the estimated population in 1809, we can use the population from the 1810 census and the average change in the population of enslaved between 1800 and 1810:

$$\text{Population in 1809} = \text{Population in 1810} - \text{Avg. population change from 1800 to 1810}$$

$$\text{Population in 1809} = 1{,}191{,}362 - 29{,}776 = 1{,}161{,}586$$

Table A 2: Population of enslaved in the United States from 1776 to 1860

Year	Enslaved population	Year	Enslaved population
1776	423392	1813	1295365
1777	442984	1814	1330032
1778	462576	1815	1364700
1779	482168	1816	1399368
1780	501760	1817	1434035
1781	521352	1818	1468703
1782	540944	1819	1503370
1783	560536	1820	1538038
1784	580128	1821	1585139
1785	599721	1822	1632239
1786	619313	1823	1679340
1787	638905	1824	1726440
1788	658497	1825	1773541
1789	678089	1826	1820641
1790	697681	1827	1867742
1791	717273	1828	1914842
1792	736865	1829	1961943
1793	756457	1830	2009043
1794	776049	1831	2056884
1795	795642	1832	2104724
1796	815234	1833	2152565
1797	834826	1834	2200405
1798	854418	1835	2248246
1799	874010	1836	2296087
1800	893602	1837	2343927
1801	923378	1838	2391768
1802	953154	1839	2439608
1803	982930	1840	2487449
1804	1012706	1841	2559135
1805	1042482	1842	2630822
1806	1072258	1843	2702508
1807	1102034	1844	2774195
1808	1131810	1845	2845881
1809	1161586	1846	2917567
1810	1191362	1847	2989254
1811	1226030	1848	3060940
1812	1260697	1849	3132627

Continued on next page.

Table A 2: Population of enslaved in the United States from 1776 to 1860, continued

Year	Enslaved population
1850	3204313
1851	3279258
1852	3354202
1853	3429147
1854	3504092
1855	3579037
1856	3653981
1857	3728926
1858	3803871
1859	3878815
1860	3953760

Table A 3: Average annual population change between decennial censuses

Years	Average annual change in population over ten-year period
1790-1800	19592.1
1800-1810	29776
1810-1820	34667.6
1820-1830	47100.5
1830-1840	47840.6
1840-1850	71686.4
1850-1860	74944.7

A.3. Calculation of the value of reparations

The calculation of the value of reparations as present value of wages owed was done using the previously calculated values. The values from 1776 to 1860 while wages are still added are presented in Table A5. The values in columns six, seven, and eight are in nominal dollars.

The total number of work hours to be paid for is estimated in the fourth column by multiplying the total population of enslaved (column two) with 8760 hours, which is the total amount of work hours in a year if the time the enslaved were working is considered as all 24 hours of the day. The compensation owed for the current year is calculated in the fifth column by multiplying the total number of working hours (column four) with the nominal value of the hourly compensation of a production worker (column three).

Since the wages were not paid to the workers in any of the years, they are added up for each year in column six. Column six then includes the unpaid compensation of the current year added to the unpaid compensation from former year(s) from column five. For each year the compensation goes unpaid it is compounded with an interest rate of 3%, calculated in column seven. This is the compensation owed up until the current year with interest. There is no interest in the first year, as there is not yet a sum owed to charge interest on. Column eight is the accumulated compensation owed. In the first row, the sum is only the compensation of the current year because interest is not accrued until *after* the first year. The subsequent sums in column eight are the values of the current and former years' compensation with the interest on the principal sum added.

The calculations for the value of the compensation after 1860 are presented in Table A6. The value in the second column is in nominal dollars.
From 1860 there is no more added wages, so the accumulated value up until and including 1860 from Table A5 ($143 billion) is the principal sum for calculating the annual values with a 3% annual interest rate:

$$1861 \text{ value} = 1860 \text{ value} \times (1+0.03) = \$143 \text{ billion} \times (1.03) = \$147 \text{ billion}$$

The growth ends in 2021 with a value of $16.7 trillion.

Table A 4: Calculation of reparation, presented in table with relevant inputs

Year	Population	Production Workers' Hourly Compensation (nominal dollars)	Total work hours (Population × 8760 hours)	Compensation owed for current year (nominal dollars)	Current and former years' compensation	Interest rate of 3% for previous years' unpaid compensation	Sum of compensation in current year
1776	423392	0,017	3708910416	64154126	64154126		64154126
1777	442984	0,019	3880537212	73415569	137569695	66078750	203648445
1778	462576	0,019	4052164008	78852921	216422616	141696786	358119402
1779	482168	0,017	4223790804	70777035	287199651	222915295	510114946
1780	501760	0,022	4395417600	97411958	384611609	295815641	680427250
1781	521352	0,023	4567044396	106152924	490764533	396149957	886914490
1782	540944	0,021	4738671192	99896312	590660844	505487469	1096148313
1783	560536	0,019	4910297988	95551745	686212589	608380670	1294593259
1784	580128	0,018	5081924784	93397537	779610126	706798967	1486409092
1785	599721	0,024	5253551580	124949335	904559460	802998429	1707557890
1786	619313	0,022	5425178376	117301154	1021860615	931696244	1953556859
1787	638905	0,026	5596805172	145214404	1167075019	1052516433	2219591452
1788	658497	0,026	5768431968	149667424	1316742443	1202087270	2518829713
1789	678089	0,023	5940058764	134855388	1451597831	1356244716	2807842547
1790	697681	0,020	6111685560	122233711	1573831542	1495145766	3068977308
1791	717273	0,020	6283312356	125666247	1699497789	1621046489	3320544278
1792	736865	0,020	6454939152	129098783	1828596573	1750482723	3579079296
1793	756457	0,030	6626565948	198796978	2027393551	1883454470	3910848021
1794	776049	0,030	6798192744	203945782	2231339333	2088215357	4319554691
1795	795642	0,030	6969819540	209094586	2440433919	2298279513	4738713433
1796	815234	0,040	7141446336	285657853	2726091773	2513646937	5239738710
1797	834826	0,030	7313073132	219392194	2945483967	2807874526	5753358493
1798	854418	0,040	7484699928	299387997	3244871964	3033848486	6278720450
1799	874010	0,040	7656326724	306253069	3551125033	3342218123	6893343156
1800	893602	0,040	7827953520	313118141	3864243174	3657658784	7521901958
1801	923378	0,040	8088791280	323551651	4187794825	3980170469	8167965294
1802	953154	0,040	8349629040	333985162	4521779987	4313428670	8835208656
1803	982930	0,040	8610466800	344418672	4866198659	4657433386	9523632045
1804	1012706	0,050	8871304560	443565228	5309763887	5012184618	10321948505
1805	1042482	0,050	9132142320	456607116	5766371003	5469056803	11235427806
1806	1072258	0,050	9392980080	469649004	6236020007	5939362133	12175382139
1807	1102034	0,050	9653817840	482690892	6718710899	6423100607	13141811505
1808	1131810	0,050	9914655600	495732780	7214443679	6920272226	14134715904
1809	1161586	0,050	10175493360	508774668	7723218347	7430876989	15154095335
1810	1191362	0,050	10436331120	521816556	8245034903	7954914897	16199949800
1811	1226030	0,050	10740019296	537000965	8782035867	8492385950	17274421817
1812	1260697	0,050	11043707472	552185374	9334221241	9045496943	18379718184
1813	1295365	0,050	11347395648	567369782	9901591023	9614247878	19515838902
1814	1330032	0,050	11651083824	582554191	10484145215	10198638754	20682783969
1815	1364700	0,050	11954772000	597738600	11081883815	10798669571	21880553386
1816	1399368	0,050	12258460176	612923009	11694806823	11414340329	23109147152
1817	1434035	0,050	12562148352	628107418	12322914241	12045651028	24368565269
1818	1468703	0,050	12865836528	643291826	12966206067	12692601668	25658807736
1819	1503370	0,050	13169524704	658476235	13624682303	13355192249	26979874552
1820	1538038	0,040	13473212880	538928515	14163610818	14033422772	28197033589

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Table A 4: Calculation of reparation, presented in table with relevant inputs, continued

Year	Population	Production Workers' Hourly Compensation (nominal dollars)	Total work hours (Population × 8760 hours)	Compensation owed for current year (nominal dollars)	Current and former years' compensation	Interest rate of 3% for previous years' unpaid compensation	Sum of compensation in current year
1821	1585139	0,050	13885813260	694290663	14857901481	14588519142	29446420623
1822	1632239	0,050	14298413640	714920682	15572822163	15303638525	30876460688
1823	1679340	0,050	14711014020	735550701	16308372864	16040006828	32348379691
1824	1726440	0,050	15123614400	756180720	17064553584	16797624050	33862177633
1825	1773541	0,050	15536214780	776810739	17841364323	17576490191	35417854514
1826	1820641	0,050	15948815160	797440758	18638805081	18376605252	37015410333
1827	1867742	0,050	16361415540	818070777	19456875858	19197969233	38654845091
1828	1914842	0,050	16774015920	838700796	20295576654	20040582133	40336158787
1829	1961943	0,060	17186616300	1031196978	21326773632	20904443953	42231217585
1830	2009043	0,060	17599216680	1055953001	22382726633	21966576841	44349303473
1831	2056884	0,060	18018300336	1081098020	23463824653	23054208432	46518033084
1832	2104724	0,050	18437383992	921869200	24385693852	24167739392	48553433245
1833	2152565	0,060	18856467648	1131388059	25517081911	25117264668	50634346579
1834	2200405	0,050	19275551304	963777565	26480859476	26282594369	52763453845
1835	2248246	0,050	19694634960	984731748	27465591224	27275285261	54740876485
1836	2296087	0,050	20113718616	1005685931	28471277155	28289558961	56760836116
1837	2343927	0,060	20532802272	1231968136	29703245292	29325415470	59028660761
1838	2391768	0,060	20951885928	1257113156	30960358447	30594342650	61554701097
1839	2439608	0,060	21370969584	1282258175	32242616622	31889169201	64131785823
1840	2487449	0,060	21790053240	1307403194	33550019817	33209895121	66759914938
1841	2559135	0,060	22418026104	1345081566	34895101383	34556520411	69451621794
1842	2630822	0,060	23045998968	1382759938	36277861321	35941954424	72219815745
1843	2702508	0,060	23673971832	1420438310	37698299631	37366197161	75064496791
1844	2774195	0,060	24301944696	1458116682	39156416313	38829248620	77985664932
1845	2845881	0,060	24929917560	1495795054	40652211366	40331108802	80983320168
1846	2917567	0,060	25557890424	1533473425	42185684792	41871777707	84057462499
1847	2989254	0,060	26185863288	1571151797	43756836589	43451255335	87208091924
1848	3060940	0,070	26813836152	1876968531	45633805120	45069541687	90703346806
1849	3132627	0,060	27441809016	1646508541	47280313661	47002819273	94283132934
1850	3204313	0,060	28069781880	1684186913	48964500573	48698723070	97663223644
1851	3279258	0,060	28726297452	1723577847	50688078420	50433435591	101121514011
1852	3354202	0,070	29382813024	2056796912	52744875332	52208720773	104953596105
1853	3429147	0,070	30039328596	2102753002	54847628334	54327221592	109174849926
1854	3504092	0,070	30695844168	2148709092	56996337426	56493057184	113489394610
1855	3579037	0,070	31352359740	2194665182	59191002607	58706227548	117897230156
1856	3653981	0,070	32008875312	2240621272	61431623879	60966732686	122398356565
1857	3728926	0,070	32665390884	2286577362	63718201241	63274572596	126992773837
1858	3803871	0,080	33321906456	2665752516	66383953758	65629747278	132013701036
1859	3878815	0,080	33978422028	2718273762	69102227520	68375472370	137477699890
1860	3953760	0,080	34634937600	2770795008	71873022528	71175294345	143048316873

Table A 5: Value of reparations from 1860 to 2021 with 3% annual interest

Year	Value with annual 3% interest (nominal dollars)	Year	Value with annual 3% interest (nominal dollars)
1860	143048316873	1897	427031651751
1861	147339766380	1898	439842601303
1862	151759959371	1899	453037879342
1863	156312758152	1900	466629015723
1864	161002140897	1901	480627886194
1865	165832205124	1902	495046722780
1866	170807171277	1903	509898124464
1867	175931386416	1904	525195068198
1868	181209328008	1905	540950920244
1869	186645607848	1906	557179447851
1870	192244976084	1907	573894831286
1871	198012325366	1908	591111676225
1872	203952695127	1909	608845026512
1873	210071275981	1910	627110377307
1874	216373414260	1911	645923688626
1875	222864616688	1912	665301399285
1876	229550555189	1913	685260441264
1877	236437071845	1914	705818254502
1878	243530184000	1915	726992802137
1879	250836089520	1916	748802586201
1880	258361172206	1917	771266663787
1881	266112007372	1918	794404663700
1882	274095367593	1919	818236803611
1883	282318228621	1920	842783907720
1884	290787775479	1921	868067424951
1885	299511408744	1922	894109447700
1886	308496751006	1923	920932731131
1887	317751653536	1924	948560713065
1888	327284203142	1925	977017534457
1889	337102729236	1926	1006328060490
1890	347215811114	1927	1036517902305
1891	357632285447	1928	1067613439374
1892	368361254010	1929	1099641842555
1893	379412091631	1930	1132631097832
1894	390794454380	1931	1166610030767
1895	402518288011	1932	1201608331690

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Table A 5: Value of reparations from 1860 to 2021 with 3% annual interest, continued

Year	Value with annual 3% interest (nominal dollars)	Year	Value with annual 3% interest (nominal dollars)
1933	1237656581641	1969	3587073248079
1934	1274786279090	1970	3694685445522
1935	1313029867463	1971	3805526008887
1936	1352420763487	1972	3919691789154
1937	1392993386391	1973	4037282542828
1938	1434783187983	1974	4158401019113
1939	1477826683622	1975	4283153049687
1940	1522161484131	1976	4411647641177
1941	1567826328655	1977	4543997070413
1942	1614861118515	1978	4680316982525
1943	1663306952070	1979	4820726492001
1944	1713206160632	1980	4965348286761
1945	1764602345451	1981	5114308735364
1946	1817540415815	1982	5267737997424
1947	1872066628289	1983	5425770137347
1948	1928228627138	1984	5588543241468
1949	1986075485952	1985	5756199538712
1950	2045657750530	1986	5928885524873
1951	2107027483046	1987	6106752090619
1952	2170238307538	1988	6289954653338
1953	2235345456764	1989	6478653292938
1954	2302405820467	1990	6673012891726
1955	2371477995081	1991	6873203278478
1956	2442622334933	1992	7079399376832
1957	2515901004981	1993	7291781358137
1958	2591378035131	1994	7510534798881
1959	2669119376185	1995	7735850842848
1960	2749192957470	1996	7967926368133
1961	2831668746194	1997	8206964159177
1962	2916618808580	1998	8453173083952
1963	3004117372837	1999	8706768276471
1964	3094240894023	2000	8967971324765
1965	3187068120843	2001	9237010464508
1966	3282680164469	2002	9514120778443
1967	3381160569403	2003	9799544401797
1968	3482595386485	2004	10093530733851

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Table A 5: Value of reparations from 1860 to 2021 with 3% annual interest, continued

Year	Value with annual 3% interest (nominal dollars)
2005	10396336655866
2006	10708226755542
2007	11029473558208
2008	11360357764955
2009	11701168497903
2010	12052203552840
2011	12413769659426
2012	12786182749208
2013	13169768231685
2014	13564861278635
2015	13971807116994
2016	14390961330504
2017	14822690170419
2018	15267370875532
2019	15725392001798
2020	16197153761851
2021	16683068374707