

# Wealth Stratification and Portfolio Choice

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## PRELIMINARY

### Abstract

This paper spotlights the widening racial wealth gap over the past decade as a function of existing wealth disparities and differences in asset allocation. Using the Survey of Consumer Finances we construct a new measure of wealth stratification that shows increasing wealth disparity for Blacks from 2007 to 2016, and a similar but less pronounced trend for Hispanics. We also analyze the influence of race/ethnicity on asset allocation and find evidence that Blacks and Hispanics tend to hold a smaller share of their assets in equity relative to Whites. We conclude not only that race/ethnic wealth stratification in the U.S. has increased over the past decade, but also that this increase can be attributed to the share of wealth invested in publicly traded equity by household race/ethnicity.

Keywords: Wealth inequality, portfolio choice, stratification measurement

JEL classification: D31, D63, G11

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# Wealth Stratification and Portfolio Choice

## Introduction

Numerous studies have documented the large and growing gap between rich and poor in the United States, as well as the chronic disparities in wealth and income between Whites and other racial and ethnic groups.<sup>1</sup> Worryingly, the racial wealth gap appears to have widened over the past ten years, despite a 25% increase in real GDP and a 6.4 percentage point decline in the unemployment rate during this time.

This paper explores the possible role of asset allocation as a contributor to the widening of the racial wealth gap over the past decade. Because a large swath of the population has very few assets, this explanation is relevant primarily to the upper half of the income distribution. Essentially, it addresses the question of why middle class and upper middle class Blacks and Hispanics have lost ground in recent years, relative to Whites.

This paper makes two contributions. One is to define a new metric of wealth inequality, based on racial/ethnic groups' representation in different wealth deciles, a gauge that has a natural interpretation in terms of socioeconomic stratification. The second contribution is an analysis of households' allocations, and the extent to which they depend on the level of assets and differ between racial and ethnic groups.

Our main conclusions are twofold. First, we show that stratification, as we define it, has increased since 2007 along with more commonly measures of the racial wealth gap. Second, we uncover significant differences between racial/ethnic groups in asset allocation: compared with Whites, Blacks and Hispanics tend to hold more of their assets in real estate, and less in either stocks or business equity. Consequently, these groups have not benefited as much as Whites from the past decade's spectacular increase in equity prices.

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<sup>1</sup>See, for example, Wolff (2014) Thompson & Suarez (2015), Wolff (2017) Kuhn *et al.* (2019).

Table 1: Descriptive statistics by asset decile, 2016

	Asset Decile										Average
	1	2	3	4	5	6	7	8	9	10	
Assets, \$1000s	0	2	14	64	129	206	303	469	902	5546	763
Net worth, \$1000s	-9	-12	-8	33	69	109	191	337	728	5243	668
Wage income, \$1000s	14	22	35	34	38	49	55	61	90	218	62
Education level	8	9	9	9	9	9	10	10	12	12	9
White share, %	43	47	58	60	69	73	80	78	84	87	68
Black share, %	29	29	21	22	18	13	11	9	5	2	16
Hispanic share, %	24	18	15	12	12	10	7	8	4	2	11

*Note:* The statistics for education level are medians, all others are means. The education variable represents the highest degree earned: 8 = high school graduate, 9 = some college but no degree, 10 = associate degree in a vocational or occupational program, and 12 = bachelor’s degree. The racial/ethnic shares do not sum to 100, due to the omission of the “other” and “decline to state” categories.

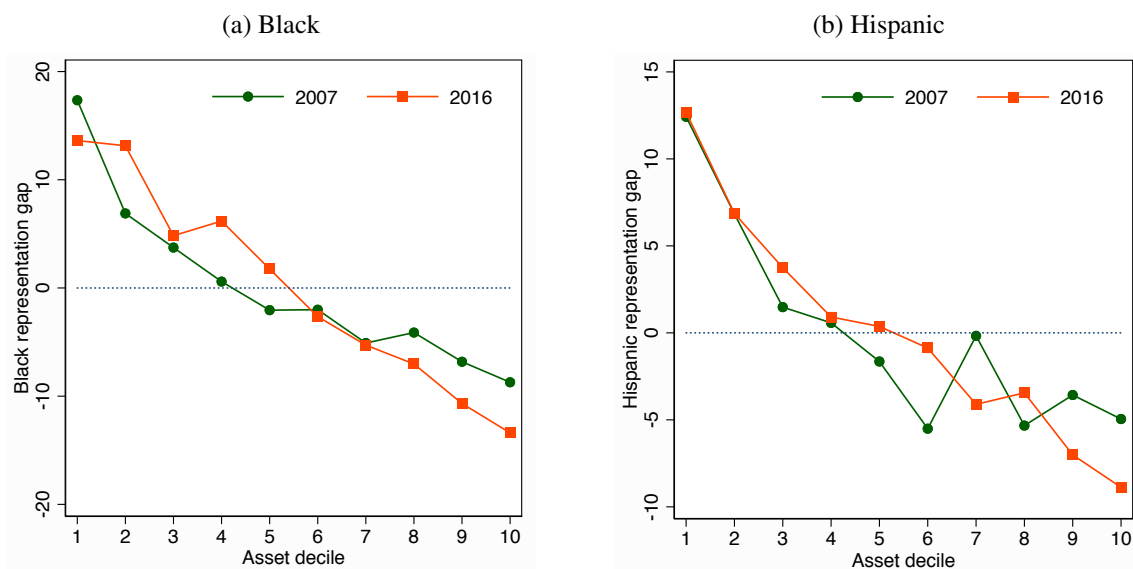
## Characterizing wealth stratification

Existing studies of income, and the racial/ethnic income/wealth gap typically focus on comparisons of income and wealth distributions, e.g. means and medians (Wolff 2014, 2017) or the “rank gap” between certain deciles (Kuhn et al. 2019.) These calculations provide answers to the question, “conditional on race, what is the value of a certain moment of the distribution?”

We propose a different way of looking at intergroup wealth disparity, one that corresponds more closely to the idea of stratification economics. Our method provides an answer to the question, “conditional on being in a certain percentile of the income/wealth distribution, what is the share of the population belonging to different racial/ethnic groups?”

Our approach to measuring wealth disparity is illustrated in Table 1, using data from the 2016 wave of the Survey of Consumer Finances (SCF). The asset deciles (based on the SCF’s total asset variable, minus the value of vehicles) correspond to the columns of the table. The first three rows report total assets, net worth, and wage income. The distributions’ skewness is readily apparent: the top decile owns 73% of all assets and earns 78% of all income, for example. The fourth row

Figure 1: Representation gaps, 2007 and 2016



*Note:* The lines represent the difference between the share of the racial/ethnic group in the decile, minus the group’s share of the overall population, expressed in percentage terms.

shows the positive correlation between material resources and education.

The last three lines of the table report the shares of Blacks, Whites and Hispanics in each of the ten deciles.<sup>2</sup> The table reveals a high degree of wealth stratification. Blacks and Hispanics comprise 29% and 24% respectively in the bottom decile, compared with 16% and 11% overall. These groups are severely underrepresented at the top end of the wealth distribution. Eighty-seven percent of the households in the top decile are White, and only 2% are either Black or Hispanic.

A complementary way to characterize the degree of stratification is in terms of the gap between a racial/ethnic group’s representation in a decile and the share of the overall population. Figure 1 display these gaps for Blacks and Hispanics, for 2007 and 2016, the years chosen to correspond to the period of time over which Wolff (2017) documented a widening racial wealth gap. Positive gaps signify over-representation in a decile, and negative gaps signify under-representation. The rightmost (red) square marker in Figure 1a, for example, is the –14 percentage point gap between

<sup>2</sup>The racial/ethnic categories in the SCF are based on the interviewee’s self-identification as white non-Hispanic, Black or African American non-Hispanic, and Hispanic. The shares omit the “other” category, which is not given in the public version of the SCF database; and those who declined to state their race and/or ethnicity. Consequently, the shares sum to less than 100.

Blacks' 2% share in the top decile and their 16% representation in the overall population.

The plot in panel Figure 1a shows that for Blacks, the representation gaps are larger in 2016 than in 2007, and thus the line connecting the markers is steeper. We interpret this as indicative of increasing stratification. The picture for Hispanics, Figure 1b, is less clear. The gaps are smaller in the middle of the distribution (the 5th and 6th deciles) but somewhat larger in the 3rd, 7th, 9th and 10th deciles. Overall, it seems the wealth distribution has become modestly more stratified for Hispanics in the past decade.

Based on the representation gaps plotted in Figure 1, we propose the following index of wealth stratification for group  $i$ ,  $S_i$ :

$$S_i = \frac{1}{k} \sum_{j=1}^k |s_{i,j} - \bar{s}_i| \quad (1)$$

where  $s_{i,j}$  is the share of group  $i$  the population in the  $j$ th quantile, and  $\bar{s}_i$  the group's overall population share. In other words,  $S_i$  is the mean absolute deviation of the difference between a group's representation in a quantile, minus the group's overall population share. For Blacks, our stratification index (with  $k = 10$ , corresponding to the deciles plotted in Figure 1) increased from 5.7 in 2007 to 7.9 in 2016. The index for Hispanics also rose, albeit by a smaller amount: from 4.2 in 2007 to 4.9 in 2016.

## Race, ethnicity and portfolio choice

This section explores the role systematic differences in the asset mixes held by Blacks and Hispanics may have played in exacerbating the racial wealth gap in the past decade. Our results show that relative to Whites, these groups tend to hold smaller shares of their assets in stocks and business equity. Consequently, they missed out on much of the increase in aggregate wealth associated with the 2.5-fold increase in stock prices from 2007 to 2019.

As has been pointed out in other work (e.g. Gittleman and Wolff, 2004; and Kuhn *et al.*, 2019) disparities in asset levels are not sufficient to account for changes in wealth distribution; a necessary condition is differences in the rates of returns on the assets held by different groups. Our

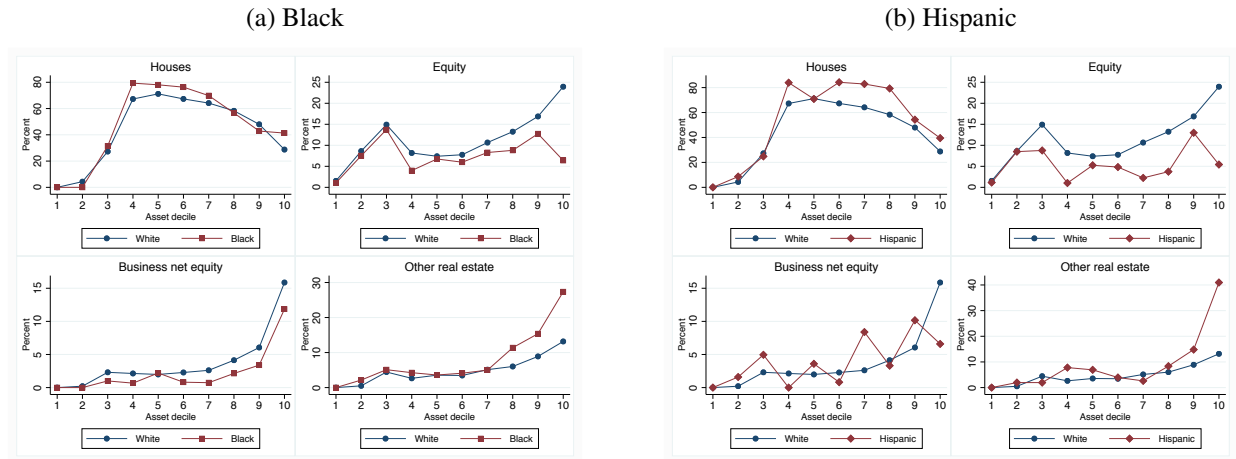
analysis complements [Gittleman & Wolff \(2004\)](#), which looks at assets' rates of returns; and [Wolff \(2014 and 2017\)](#), which reports descriptive statistics on racial/ethnic groups' asset allocations and calculates the contribution of "ROR effects." It is also in the same spirit as [Thompson & Suarez \(2015\)](#), which utilizes reduced-form regressions of net worth on household characteristics.

We can illustrate graphically the interaction between wealth levels, race/ethnicity and portfolio allocation. We break total assets down into five categories for the purpose of calculating asset shares. The first consists of the primary residence (HOUSES in the SCF extract). The second is equity. This is more complicated, since stocks are held in many different forms (e.g. directly, in retirement accounts, etc.) Conveniently, the SCF provides an estimate of the total value of stocks held in the various types of accounts (EQUITY), and this is what we use in our calculations. Third is net equity of unincorporated businesses (BUS in the dataset). Fourth is other real estate, which we define as the sum of residential property excluding the primary residence (ORESRE) and net equity in non-residential real estate (NNRESRE). Finally, there is a catch-all residual category consisting of financial assets other than equity, which includes things like bank accounts, certificates of deposits, and bonds held either directly or in mutual funds.

Figure 2 illustrates, using data from the 2007 SCF wave, how asset allocation depends on asset levels and race/ethnicity. The year 2007 is chosen because it corresponds to the first (pre-recession) of the two waves we used in the previous section in calculating the degree of stratification. (Earlier and later waves give very similar pictures.) The general patterns are similar for all three groups: the share of assets allocated to housing exhibits a hump-shaped pattern, rising sharply for wealth levels above the fourth decile. The shares allocated to stocks and non owner-occupied real estate generally increase with wealth, as does business equity. The share of assets in non-equity financial assets falls sharply at wealth levels associated with home purchases, and increases somewhat as wealth rises.

Figure 2a depicts the Black/White breakdown. There are pronounced quantitative differences in the groups' allocations, some of which are distinct functions of the level of wealth. Most no-

Figure 2: Portfolio shares as of 2007



*Note:* The lines are the shares of total assets, less vehicles, allocated to each asset, expressed in percentage terms.

tably, Blacks' holdings of stocks are lower than Whites' at all wealth levels, and the gap widens noticeably above the sixth decile. Similarly, business equity makes up a small share of Blacks' portfolios, relative to Whites'. The flip side is that Blacks' holdings of houses are somewhat larger at the middle of the distribution, and the share of assets in other real estate is significantly higher at the top end of the distribution. Overall, Blacks hold relatively more real estate and less equity than Whites.

Similar patterns emerge from a comparison between Hispanics' and Whites' asset allocations, as shown in Figure 2b. The shapes of the two groups' curves are comparable; but like Blacks', Hispanics' portfolios are more heavily weighted towards real estate.

We turn next to regression analysis to determine whether the patterns observed in Figure 2 can be attributed to membership in a particular racial/ethnic group, rather than other household-specific factors that happen to differ between the groups. We regressed each of the five asset shares on three sets of variables. One is the log of assets and its square, to pick up the observed nonlinear relationship between portfolio allocation and wealth. The second set consists of level and interaction terms involving the Black and Hispanic dummies and the log of assets, capturing inter-group differences in asset allocation. The third is a set of controls for age, number of children,

and education. The results are in Table 2.

The coefficients on the interaction terms involving race/ethnicity and asset levels reveal statistically and economically significant differences in asset holding patterns, even controlling for demographics. In the equity share regression, the  $-0.59$  coefficient on the interaction between Black and log assets indicates that the gap in equity holdings increases with wealth: relative to a comparable White household, a Black household with a median level of assets (relative to the distribution for the entire population) allocates 4.4 percentage points less of its assets to equities: at the 90th wealth percentile, the gap is  $-6.7$  percentage points. We observe the same tendency for Hispanic households: the  $-1.0$  coefficient on the interaction term implies  $-5.0$  and  $-9.0$  percentage point differences for households at the median and 90th percentiles of wealth, respectively.

The positive coefficients on the interaction term in the regressions for houses and other real estate reflect a tendency for Blacks and Hispanics to hold larger shares of their assets in real estate relative to Whites. For Black households, the differences in the share assets held in houses are 5.4 and 9.3 percentage points for households at the median and 90th percentiles of the wealth distribution respectively. For Hispanics, the differences at the median and 90th percentiles are 4.5 and 11.4 percentage points.

The systematic differences in asset composition documented here are one potential cause of the increasing wealth stratification described previously. Measured by the Case-Shiller index, house prices as of 2016 had only just recouped the previous decade's losses. Whites, on the other hand, who tended to be more heavily invested in equities, benefited immensely from the spectacular stock market gains over the same period. Hence, differences in the assets' rates of return is one reason why Blacks' and Hispanics' representation in the top half of the income distribution declined.

## **Conclusions and policy implications**

Our main findings are twofold. First, using our proposed metric and data from the Survey of Consumer Finances, we documented an increase in wealth stratification by race and ethnicity from



2007 to 2016. Second, we showed that one contribution to the increasingly skewed wealth distribution is the tendency for Blacks and Hispanics to hold less of their assets in equities, relative to Whites. Consequently, these groups have not benefitted as much as Whites from the post-2007 stock market boom.

One possible explanation of our findings on portfolio choice, supported by experimental evidence on financial decision making found by [Bursztyn \*et al.\* \(2014\)](#), is that Blacks and Hispanics suffer from self-reinforcing negative peer effects through social learning and social utility. For example, negative prior beliefs about the stock market brought about by the internalization of racial stereotypes would not only lead to a lower level of stock market participation by Blacks and Hispanics, but also one that persists.<sup>3</sup> Furthermore, this story does not preclude findings by [Bogan & Darity \(2008\)](#), if the resources used to create business equity (available only to immigrant racial/ethnic groups) include access to networks and wealth in their home country, and a critical distance from American racial tropes. In this scenario, aggregate wealth disparities among racial/ethnic groups will continue to persist without proper policy intervention.

Our findings relate to the supposition that the use of macro policy to alleviate wealth inequality is limited. For instance, expansionary policy intended to “lift all boats” may in fact have the perverse effect of widening wealth stratification among these groups, since the already-rich benefit the most from rising asset prices. However, to the extent that an economic expansion also helps individuals get jobs and experience, the value of human capital will increase as well. Micro policies, on the other hand, are much more promising. A child development investment account program like the one proposed by [Hamilton & Darity \(2010\)](#) would ameliorate the representation gap by asset decile, but the negative social effects on asset allocation by race/ethnicity would still persist. Instead, once such accounts are established, an opt-out financial education through community development is one possible avenue for mitigating the negative social effects and also a fruitful avenue for future research.

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<sup>3</sup>See [Ards \*et al.\* \(2014\)](#) for evidence supportive of a similar mechanism in the mortgage market.

Table 2: Asset share regressions

	Houses	Equity	Business	Other RE	Other financial
Log assets	9.63*** (37.4)	0.74*** (9.87)	-0.20*** (3.35)	0.055 (0.97)	-10.2*** (46.8)
Log assets squared	-0.59*** (17.2)	0.044*** (3.84)	0.28*** (27.4)	0.19*** (19.4)	0.26*** (9.22)
Black	-0.92 (0.63)	-0.70 (1.10)	-0.66* (2.50)	0.45 (1.18)	2.29 (1.74)
Black * log assets	1.01** (3.12)	-0.59*** (5.22)	-0.12 (1.59)	0.48*** (3.82)	-0.30 (1.07)
Hispanic	-6.72*** (3.77)	1.25 (1.58)	0.51 (1.11)	-0.35 (0.76)	4.95** (3.01)
Hispanic * log assets	1.79*** (4.83)	-1.00*** (7.77)	-0.13 (0.88)	0.90*** (5.77)	-0.66* (2.00)
Other race/ethnicity	0.48 (0.36)	-1.91** (2.68)	-0.73 (1.49)	0.30 (0.54)	2.16 (1.95)
Age	9.10*** (9.45)	1.29* (2.37)	-1.23*** (3.45)	-1.07* (2.53)	-9.16*** (10.6)
Age squared	-0.82*** (9.29)	-0.18*** (3.69)	0.020 (0.62)	0.10* (2.44)	0.98*** (12.2)
Children	3.17*** (11.9)	-1.47*** (10.9)	-0.050 (0.43)	-0.041 (0.36)	-1.65*** (7.40)
Education	-2.87*** (25.8)	1.18*** (21.0)	-0.31*** (6.70)	-0.094 (1.64)	2.01*** (20.3)
Constant	19.7*** (7.43)	-4.22** (2.78)	5.15*** (5.30)	2.49* (2.22)	79.4*** (33.4)
$R^2$	0.277	0.085	0.096	0.063	0.413

*Notes:* The dependent variable is the share of assets allocated to the categories given in the column headers, expressed as a percent. Age is expressed in decades (e.g. 40 years old = 4). Education is the highest level attained, as defined in Table 1. Absolute values of  $t$ -statistics in parentheses, calculated using robust standard errors. Asterisks denote statistical significance: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . The number of observations is 21,240 in all regressions.

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