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Ethnic disparities in wealth in the United States: evidence from the Survey of Consumer Finances

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Abstract

Disparities in wealth between Whites and ethnic minorities in the United States are evident and persistent. This work uses data from 1989 to 2019 from the Survey of Consumer Finances - a nationally representative survey - to document differences between the Whites and the two most frequently interviewed ethnic minorities, namely Blacks/African-Americans and Hispanics/Latinos. The absolute and relative gaps in the amount of gross and net wealth are staggering: the two minority groups own cents on the dollars of the Whites. The structure of the families' balance sheets highlight that the ethnic gap is not just a question of the amount of wealth: the typical portfolio of a White household is not a scaled-up version of that of a Minority household.

I analyze the assets and liabilities of families at different levels of income, education and gross or net wealth and find systematic differences in ownership and allocation between Whites and Minorities. The former are much more likely than Blacks and Hispanics to own a house - the most important asset for the median family - as well as a private business. They are also much more exposed to financial markets in terms of stocks, bonds and funds held, thus their incomes are more diversified. Differences extend to the side of the liabilities, where Minorities are closer to Whites than in assets. Debt weighs less on the income of the median Black or Hispanic household but more on its assets, arguably because the two groups are unable to accumulate wealth as Whites do. Not only Minorities are less likely to own a house, they also have lower home equity when they own one. Finally, they are more likely than Whites to have student debt and credit card balances at high levels of wealth. I also discuss the disadvantages that minorities face in approaching the market for credit and report some evidence from the SCF.

Besides holdings and debt, the Whites are also better positioned in some factors indicated by the literature as determinants of wealth accumulation and financial well being. They have higher levels of education, better knowledge of financial literacy and earn higher incomes, whether employed or self-employed. They are more likely to receive inheritances and are more oriented towards savings than Minorities. I also document some ethnic differences in family structure, although the effect on wealth is less clear.

I conclude the work by performing multiple multi-factor regressions to evaluate the impact and the significance of the analyzed factors on the wealth of US families. Furthermore, I focus on the different extent to which White, Black and Hispanic families are affected, and on the difference attributable to ethnicity when all the other determinants are equal.

Summary

Household finance

Household finance deals with the choices of the households and the use of the resources at their disposal to attain their objectives. The field has gained relevance in recent years. The term “household finance” was first cited by the British-American economist John Young Campbell in 2006. The resulting paper arguably laid the foundations for future developments on the matter. Some topics of interest of household finance were approached earlier by other scholars (e.g., Haliassos and Bertaut (1995), Bertaut and Starr (2000), Bergstresser and Poterba (2004)). None of those works, however, explicitly mentioned household finance as a field of its own. Since the work of Campbell, an increasing number of scholars have studied the matter. Widely cited works that provide a comprehensive overview of the matter include Guiso and Sodini (2013) - the starting point for this work - and Gomes, Haliassos and Ramadorai (2021).

Household wealth accounts for a large portion of country wealth in the US. According to the latest release of the Financial Accounts of the United States by the Board of Governors of the FED[1], the total net worth of households and non-profit organizations amounted to 148,8 trillion US dollars as of 2023 Q1. To give an idea of the scale, households hold assets for a total of 168,4 trillion US dollars and debt for 19,6 trillion, while corporations hold 59,6 trillion in assets and 25,7 trillion in debt. Households therefore own assets for around 2,8 times the corporations and have slightly less liabilities than them. Since net worth is defined as an individual’s total assets minus his total liabilities, the aggregate wealth of households widely surpasses that of corporations. These figures suggest the relevance of household finance.

Households face a number of decisions throughout their life, from the day-to-day means of payment to insurance policies, pension plans and eventually advice from financial planners for financial choices and/or portfolio management. Such decisions depend on a number of factors, which tend to be combinations of a household’s idiosyncratic preferences and the surrounding environment. The latter plays an undoubtedly relevant role in a large country such as the US, where the heterogeneity of the citizens of different states is relevant.

Households have some unique traits with respect to other agents in the economy. As Guiso and Sodini (2013) point out, the main source of lifetime income for most households is human capital. Human capital is composed of factors such as a household’s skills, qualification and education, and has some specificities: it is very specific, intangible, illiquid and carries substantial risks. Housing, another asset that composes the majority of the median household stock, is illiquid too.

Households also have constraints on borrowing: unlike corporations, the access to assets they might want to own depends crucially on the particular type of liability. Badu, Daniels and Salandro (1999) make an example: some US households that did not get

[1] The interested reader can read the report at the following link: https://www.federalreserve.gov/releases/z1/20230608/z1.pdf

access to installment loans financed the purchase of vehicles with credit cards at strikingly high interest rates. Finally, the access to more sophisticated assets such as financial securities can be prevented by information barriers and transaction costs. All these features imply the choices of a household are crucial in their utility maximization. While the majority of households make decisions that do not deviate much from the ideal behaviors - described in the field of normative household finance - the chances of suboptimal choices or errors increase for the poorer and less educated ones (Campbell (2006)), with potentially serious consequences.

Ethnic differences in wealth

Wealth is indeed a crucial element of a human's life cycle. It allows families to improve the quality of their lives, exploit opportunities, save for retirement, and invest in development of human capital. It also acts as a security cushion in case of loss of job and in times of crisis. The extreme skewness of wealth is a well-known phenomenon: a significant fraction of it is in the hands of a very limited number of individuals. This, however, does not happen only at an aggregate level, but also between different ethnic groups. The ethnic gap in wealth and asset (or debt) ownership in the United States is undisputed. Although the fulcrum of social debates is the comparison between Black/African American and White individuals, discrepancies indeed do exist also between white and non-black minorities such as Hispanics and Asians (Campbell and Kaufman (2006), Kochhar, Taylor and Fry (2011)).

The relevance of racial wealth gap has been documented by many works throughout different decades. Some relevant examples of the 1990s are Blau and Graham (1990), Wolff (1992) and Oliver and Shapiro (1995). Some books acted as catalysts, raising awareness on the topic and inspiring later studies on racial and urban segregation. "*The Truly Disadvantaged: the Inner City, the Underclass and Public Policy*", written by Wilson (1987), and "*Black Wealth/White Wealth: A new perspective on racial inequality*" by Oliver and Shapiro (1995) are two examples. More recent studies are cited in the next chapters. The matter became even more relevant after the Great Recession of 2008. As I discuss later in the work, the crisis in the subprime mortgage market impacted much more heavily the minorities because it affected housing, which represents the bulk of household net worth especially at low levels of wealth. The already significant differences consequently widened both in relative and absolute terms.

Whites and minorities, however, do not only differ for the size of the wealth owned, but also for its composition. Portfolios of different ethnicities hardly resemble each other: assets and liabilities vary by means of both ownership rates - whether they are held in the first place - and allocation - their size relative to total wealth.

The literature about ethnic differences in wealth is rich and encompasses many perspectives. Some studies tackle the matter from a macroeconomic standpoint,

focusing on structure-level factors and different ownership opportunities that impair the ability of minorities to acquire key assets and accumulate wealth. Structure-level factors include different treatments in education and workplace environments, while different ownership opportunities include disparities in access to the markets for houses and for credit in general. Many discriminations of different nature perpetrated through the last century have undoubtedly fueled the increase of wealth disparities. Analyzing data from the same set of US families between 1984 and 2009, Shapiro, Meschede and Osoro (2013) observe the total wealth gap between white and African American households has tripled from $85,000 to $236,500 within the period. It is no surprise that the matter has become a central point of public policy discussions in recent times, with the evidence of these works highlighting the need for policy approaches to promote equality in the analyzed environments (e.g., Shapiro, Meschede and Osoro (2013), Sullivan et al. (2015), Kuhn et al. (2018)). The agreed consensus is that discriminatory behaviors are a serious threat to social equality and might undermine the concept of democracy altogether.

Another stream of literature investigates the matter at a microeconomic level, pointing at ethnic-specific cultural and behavioral factors. The argument is that differentials in wealth can result from one or more traits of specific ethnicities. Cultural factors include structure of families, such as composition, marital status, and number of kids. Behavioral attitudes result in different approaches to consumption and saving, the two sides of the same coin. The propensity to investment choices, either in private and public equity (businesses and stocks, respectively), can also play a role.

The scope of this work is to analyze the wealth of families considering both the points of view to provide a complete picture of the differences between ethnicities. After introducing the dataset used, I quantify the gap in the last thirty years. Then, I decompose the portfolios of households of Whites, Blacks and Hispanics. I continue by reviewing some of the determinants of wealth accumulation and measuring how they affect wealth; finally, I perform multivariate analyses to assess the impact on the different ethnic groups. This work adds up to the evidence already available with a comprehensive overview of the matter as well as its current status assessed with data from recent years.

The data source: the Survey of Consumer Finances

Precise information about households' stocks, attitudes and decisions is hard to gather. As most of the works about household finance rely on surveys, the accuracy of the survey and the quality of the collected data are the foundations for an accurate description of the population. This work is based on data from the Survey of Consumer Finances, one of the most widely used data sources for studies on household finance (Hanna, Kim and Lindamood (2018)). The Survey of Consumer Finances (SCF

hereafter) is a statistical survey for households of the United States sponsored by the Federal Reserve Board and the US treasury department. It has been conducted triennially since 1983. Each edition of the survey covers around 4,500 to 6,500 US families. The first section of this chapter contains a breakdown of the content of the SCF. The processes of sample selection and data imputation are explained in the second part.

Content

The questions of the SCF are very detailed and collect information on a wide range of characteristics. The set of questions has changed through time; for example, some questions were added in recent years. The vast majority of information, however, is available for all the editions since 1989. The latest available survey is dated 2019. The information gathered can be clustered in some macro-areas such as:

1. Demographics: age, gender, ethnicity, marital status, labor force participation, occupation category, etc.
2. Assets: types and dollar values of assets held. Financial assets range from more basic ones, like checking/saving/call accounts, certificates of deposits and pension funds, to more sophisticated ones, like stocks, bonds, and mutual funds. Real assets include residences, businesses, and vehicles.
3. Liabilities: types and dollar values of debt held, information on the lender and on the status of debt (e.g., whether some is past due), monthly payments, purposes and use
4. Shopping patterns and attitudes: shopping patterns include reasons behind the decision to borrow or invest money, and source of information used. Attitudes include financial literacy knowledge, drivers of the choice of checking accounts and reasons for saving.
5. Income and capital gains: dollar amounts and sources of incomes and capital gains or losses.
6. Hypothetical financial emergency responses: how the respondent would react to a financial emergency in terms of borrowing, spending, and prioritization of payments.

Sampling techniques and multiple imputation

The Survey of Consumer Finances uses a dual-frame design for sampling. The first sample is based on a multi-stage area-probability design to ensure a robust coverage of the United States and a heterogeneous representation of behaviors of households from different areas. This sample accounts for around two thirds of the complete one. A second sample is then selected on the basis of income tax returns from the Statistics of Income Division of the Internal Revenue Service (IRS). It provides a representative sample of wealthy-households. High-income households are over-sampled to ensure an accurate measure of aggregate asset holdings. Individuals in the list of the wealthiest 400 people in the US – the Forbes 400 – are excluded.

The Survey uses a multiple imputation technique to resolve the issues of missing information and non-responses, as well as to protect the identity of respondents (Kennickell (1998)). Each original observation corresponds to five different implicates in the dataset. Sample replicate weights are then provided to calculate aggregate statistics. The techniques used imply the quality of the data collected by the Survey of Consumer Finances is high (Keister (2014)). See also Aizcorbe, Kennickell, and Moore (2003) for a more detailed description of survey design and sample selection.

Use of data

The focus of the work are the differences between the “White” ethnicity and the two largest ethnic minorities, namely “Black” and “Hispanic”. These categories are mutually exclusive. The question in the Survey that allows to operate such distinction asks in which race / ethnicity the members of the “primary economic unit” do identify. The latter – referred as “household” for simplicity – is the economically dominant individual (or couple) in the family. Considering non-mixed households, Whites are the vast majority, accounting for 71,1 percent of total observations from 1989, followed by Black/African American (13 percent) and Hispanic/Latino (8,5 percent). The aggregate of other ethnicities, which include respondents who identify as Alaska Native, American Indian, Asian, Native Hawaiian, Pacific Islander, and others, accounts for the remaining 7,4 percent. I use publicly available data from the last thirty years - therefore between 1989 and 2019 - equivalent to eleven consecutive editions of the Survey of Consumer Finances. Unless specified otherwise, all the demographic data like age, gender, education category and others refer to the household head.

The design of the SCF discussed in the previous section implies the sample is not drawn using simple random sampling. The sample weights must be therefore used for computing descriptive statistics such as mean, median and other percentiles as differences in figures between weighted and unweighted measurements can be large. Therefore, all the descriptive statistics are weighted with the provided sample weights. At the end of the second part, I perform multivariate analyses, where it is necessary to also consider the sample variance. The issue is addressed at the beginning of the dedicate section.

All monetary figures are in 2019 US (thousands of) dollars unless specified otherwise. In some cases, the sum of percentage values might not sum up precisely to 100% due to rounding.

Quantifying the gap

As discussed in the introduction, ethnic disparities do exist in both wealth and income of households. Wealth is the aggregate value of the stock of holdings of an individual, while income is defined as the remuneration received either in exchange for his labor, as return from his investment or, particularly in the case of the eldest, from pension

distribution. In recent years, a growing consensus that wealth provides a more comprehensive picture of inequality than income has emerged (Keister and Moller (2000), Spilerman (2000), Shapiro (2006)). These works document that wealth is much more skewed than income and that inequalities in wealth are much more significant than in income (Smith (1995), Shapiro (2006)). For these reasons, I choose to analyze inequalities through differences in wealth. According to the definition of most of the literature works, as well as the Survey of Consumer Finances, I consider the net worth of a household equal to the total assets he owns net of the total liabilities (or debt) he owes. Gross wealth, instead, is equal to the aggregate amount of assets owned, without considering debt.

Table 1 offers a first picture at an aggregate level. It shows the median and average net worth of the three ethnicities of US households by year, and the percentage of surveyed ones that reported a net worth equal to zero or even negative[2].

YEAR	1989	1992	1995	1998	2001	2004	2007	2010	2013	2016	2019	All years
*Median net worth**												
White	143,6	124,6	128,2	151,0	177,5	191,1	211,7	152,9	155,8	181,9	189,1	161,3
Black	8,6	17,7	18,2	24,4	27,9	27,7	25,9	18,7	14,4	18,2	24,1	19,9
Hispanic	9,9	12,1	20,9	15,5	16,9	20,8	26,0	19,5	15,2	22,0	36,1	19,5
Ratios												
White/Black	16,8	7,0	7,0	6,2	6,4	6,9	8,2	8,2	10,8	10,0	7,8	8,1
White/Hispanic	14,4	10,3	6,1	9,8	10,5	9,2	8,1	7,8	10,3	8,3	5,2	8,3
*Mean net worth**												
White	460,1	398,7	421,4	532,9	706,2	763,2	855,0	764,9	764,9	988,9	980,5	703,2
Black	82,5	86,1	73,5	100,8	103,5	152,3	166,0	117,0	108,7	146,8	142,3	119,2
Hispanic	90,0	96,7	102,8	137,0	127,8	168,6	229,8	136,5	118,4	203,6	165,5	149,7
Ratios												
White/Black	5,6	4,6	5,7	5,3	6,8	5,0	5,2	6,5	7,0	6,7	6,9	5,9
White/Hispanic	5,1	4,1	4,1	3,9	5,5	4,5	3,7	5,6	6,5	4,9	5,9	4,7
Households with no wealth [%]												
White	6,5	6,9	6,8	7,7	6,2	6,7	7,1	10,3	9,2	9,1	8,3	7,7
Black	30,9	22,0	22,2	19,3	19,3	18,0	20,5	22,2	26,2	19,1	19,7	21,6
Hispanic	26,2	26,2	18,7	22,3	19,7	13,3	15,8	15,9	16,1	12,9	11,2	17,1

*US$ thousands

Table 1: Median and mean net worth by year and percentage of respondents with net worth equal to zero or negative. Pooled data 1989-2019.

Since wealth distributions are skewed, the median is a better indicator of central tendency than the mean when no controls for distribution of resources are included. It can be noticed how the median values of wealth are significantly lower than mean values through all the time window. The difference between the two indicators gives an indication of the degree of wealth skewness: wealth is concentrated among the richest individuals. Interestingly enough, the mean and the median of minority households are more distant in relative terms than those of the Whites, suggesting wealth is more unevenly distributed in the former.

The gap is indeed impressive. The median wealth of the two minority groups did not differ significantly through the years. The aggregate of all years is $19,900 and $19,500 for Blacks and Hispanics respectively, compared to $160,000 for the Whites. The gap was around $110,000 in 1995, the year in which the median wealth of Whites

[2] Given the definition of net worth of the SCF, if a household happens to have more liabilities than assets, it can have a negative net worth.

was at a 30-year low. Excluding 1989, White households historically owned from 6 to 11 dollars for each dollar of the Blacks and from 5 to 10 of Hispanics. Seen another way, for each dollar of Whites, Black households held from 9 to 17 cents and Hispanics held from 10 to 20 cents. The ratios are lower - around 4 to 7 - but still impressive for average values. Another way to interpret the ratios is the number of average or median minority families whose wealth must be pooled to arrive at the resources of a single average/median White one. For example: 4 to 7 average Black families are needed to reach the net worth of a White one. This latter interpretation can offer a more direct view of the accumulation between families.

The share of minority households who reported zero or negative net worth has been significantly higher than that of the Whites. The Blacks have been the poorest ethnic group at the bottom of the social ladder: a Black household has been nearly three times as likely to have no wealth a White one. The numbers have been only slightly better for Hispanics, who have still been more than twice as likely to have no wealth as Whites. This data alone highlights that differences in wealth are persistent at every wealth level.

What is even more striking is that these significant differences persist while controlling for other factors correlated to wealth. Table 2 shows median values of net worth across time controlling for education. I control for education as it represents a common proxy for permanent income (Scholz and Levine (2004)). It is important to consider permanent income particularly for the minorities, given their higher unemployment rates (Blau and Graham (1990)).

Median net worth by education level [US$ thousands]												
YEAR	**1989**	**1992**	**1995**	**1998**	**2001**	**2004**	**2007**	**2010**	**2013**	**2016**	**2019**	**All years**
White												
No high school diploma/GED	87,5	58,6	72,7	70,3	85,9	68,7	90,7	57,2	61,1	65,9	71,8	71,9
High school diploma or GED	116,0	102,2	117,2	114,2	121,0	126,5	155,5	101,3	95,0	109,4	120,2	115,5
Some college	126,6	124,4	110,4	144,6	168,8	143,8	166,6	103,4	104,3	110,0	126,7	129,4
College degree	295,6	213,2	218,7	297,1	417,9	428,8	472,8	392,4	399,7	424,4	397,0	351,8
Black												
No high school diploma/GED	5,1	5,4	3,5	4,2	3,0	7,3	2,3	6,6	7,9	11,7	7,0	6,0
High school diploma or GED	5,1	7,2	20,7	17,9	26,6	24,1	16,6	14,5	8,9	11,6	15,2	14,6
Some college	31,1	31,1	20,0	47,8	26,3	33,7	46,1	13,0	13,6	14,7	16,1	22,1
College degree	75,5	78,5	52,6	112,3	135,5	109,1	89,9	98,2	39,2	72,5	72,5	80,2
Hispanic												
No high school diploma/GED	11,1	4,6	7,6	9,3	8,7	16,3	15,2	11,7	10,4	15,0	11,5	11,8
High school diploma or GED	2,3	8,0	26,7	11,2	13,6	13,5	28,9	23,3	17,0	30,7	54,0	18,3
Some college	50,7	13,7	31,5	37,0	21,2	38,6	34,8	16,9	18,9	17,2	43,6	29,2
College degree	3,6	61,3	105,1	180,4	147,4	154,1	123,9	74,9	61,4	81,4	112,7	96,2

Table 2: Median net worth by year and education level. Pooled data 1989-2019.

As the absolute gap of the Black is slightly higher than that of the Hispanic, education seems to impact the former group more. Nonetheless, significant differences in relative terms remain across all education categories. The median White household that did not attend college has 12 times the wealth of a Black one and 6 times that of a Hispanic with the same level of education. The multiples decrease to 6 and 4,4 if some college is attended, and 4,4 and 3,7 with a college degree. Considering wealth distribution, such a high multiple even among the most educated indicates the gap in absolute terms increases with education. As a matter of fact, it stands around $260,000 for

college graduates, which is more than double the absolute gap between non-college graduates (around $100,000). The trends outlined in earlier works (Scholz and Levine (2004), Sullivan et. al. (2015)) have continued in recent years.

It is impressive to notice that white households in which the reference person did not have any high school diploma or GED[3] systematically owned much more than the minority ones who attended some college. Considering pooled data, Whites with no high school diploma have had respectively 3,3 and 2,5 times the wealth of Blacks and Hispanics college attendees. Moreover, Black college graduates owned around the wealth of Whites with no diploma. Table 3 below shows the net worth of families controlling for level of income.

Median net worth by income quartile [US$ thousands]												
YEAR	**1989**	**1992**	**1995**	**1998**	**2001**	**2004**	**2007**	**2010**	**2013**	**2016**	**2019**	**All years**
White												
0 - 24,9	20,8	29,0	31,4	30,2	43,2	30,6	49,2	19,1	18,7	21,4	28,7	29,0
25 - 49,9	86,9	76,2	77,4	87,4	104,1	100,7	111,8	80,4	74,1	88,6	102,5	90,5
50 - 74,5	143,7	135,8	117,2	160,4	169,4	196,3	210,6	150,1	147,5	194,7	204,1	164,8
75 - 100	388,7	313,6	321,2	431,1	584,4	653,8	690,2	560,6	583,3	791,3	683,5	523,3
Black												
0 - 24,9	0,3	0,6	1,8	5,6	3,5	3,9	3,1	3,1	2,7	4,0	2,4	2,5
25 - 49,9	13,7	16,8	25,8	30,3	20,6	24,2	20,2	18,2	14,6	20,4	20,3	20,2
50 - 74,5	84,0	69,6	62,1	69,7	81,8	94,4	65,9	77,3	36,6	68,9	74,0	68,9
75 - 100	133,8	188,9	160,1	200,6	182,4	303,0	330,8	202,4	173,0	227,7	325,4	227,8
Hispanic												
0 - 24,9	1,2	1,3	1,3	2,0	3,8	4,6	4,9	5,9	5,4	3,9	7,5	3,9
25 - 49,9	11,1	15,7	15,0	14,3	13,4	18,6	21,1	15,9	13,2	23,6	22,0	16,9
50 - 74,5	62,8	20,6	40,1	65,3	83,8	102,6	91,2	63,6	42,7	59,3	72,1	62,2
75 - 100	122,1	190,9	148,2	306,1	190,8	348,5	500,2	186,0	182,0	201,2	256,2	222,4

Table 3: Median net worth by year and income quartile. Pooled data 1989-2019.

Relative gaps are slightly more narrow controlling for income quartiles, but the figures remain far from close. Both the tables also present evidence of wealth disproportion within ethnic groups.

Having observed the differences in net worth as a whole, I now break it down into the two components of the equation that determine it. As stated earlier, a household's net worth is equal to its assets minus its liabilities. Thus, these two components represent the highest level at which wealth can be decomposed. Table 4 below shows median values of the assets and liabilities and the ratio between the median assets and debt of the Whites and those of the minorities.

[3] The GED is the General Educational Development Test. It consists of a series of tests that indicate whether a student has a high school level of education. It is different from the high school diploma.

YEAR	1989	1992	1995	1998	2001	2004	2007	2010	2013	2016	2019	All years
*Median assets**												
White	193,9	185,4	194,8	225,1	265,0	300,1	331,4	275,6	257,0	280,6	305,4	252,1
Black	14,1	31,5	31,9	39,3	63,1	59,1	63,9	49,1	41,5	48,8	51,9	45,2
Hispanic	15,5	17,9	48,4	41,8	26,5	42,0	63,4	50,2	36,7	47,0	70,7	40,1
Ratios												
White/Black	13,7	5,9	6,1	5,7	4,2	5,1	5,2	5,6	6,2	5,7	5,9	5,6
White/Hispanic	12,5	10,4	4,0	5,4	10,0	7,1	5,2	5,5	7,0	6,0	4,3	6,3
*Median liabilities**												
White	15,2	16,3	19,4	25,2	28,0	42,0	42,6	44,1	35,1	36,4	36,0	28,5
Black	1,7	2,1	2,8	3,9	8,5	11,5	14,2	9,9	11,9	17,3	10,6	7,8
Hispanic	5,8	2,7	12,7	6,1	5,8	9,4	21,6	13,1	8,6	9,6	14,0	9,2
Ratios												
White/Black	9,2	7,6	6,9	6,4	3,3	3,6	3,0	4,5	3,0	2,1	3,4	3,7
White/Hispanic	2,6	6,1	1,5	4,1	4,8	4,5	2,0	3,4	4,1	3,8	2,6	3,1

*US$ thousands

Table 4: Median assets and liabilities by year. Pooled data 1989-2019.

Looking at the relative gap in assets and liabilities owned, it is straightforward to see that the ratio for assets has always been higher than the one for liabilities. This indicates that Minorities are much closer to Whites in the amount of debt owned than in assets. The trend, outlined by Chiteji (2010), has been valid since 1989, and became even more relevant in recent years. The consequences are discussed in one of the next sections.

The presented evidence underscores the magnitude of disparities between White and minority households. Ethnic wealth gaps have long existed and are incredibly large, especially at the median. They are significant also among the better educated and those with higher earnings, suggesting that many factors can play a role. Blacks and Hispanics are respectively between two and three times more likely than Whites to have zero or negative wealth, and the assets of those who have some wealth amount to cents on the dollars of the assets owned by the Whites. The fact that these inequalities are less significant among liabilities contributes to amplifying the absolute gap.

The portfolios of households

This first part aims at presenting descriptive information on the composition and value of the portfolios of the households in the US, and the evolution of both through time. The topics that will be investigated include composition of household wealth and specific choices of assets and liabilities (ownership and asset allocation) of the different ethnicities. The data will be analyzed both at an aggregate level, therefore including all households, and controlling for various factors besides ethnicity, such as monetary ones (e.g., net/gross wealth and income) or demographic ones like age, family structure or level of education.

Tangible assets

The descriptive analysis of household wealth considers only tangible assets, which is property that can be held and has a definitive value. Intangible assets, such as human capital, are more complicated to evaluate and out of the scope of this work. The

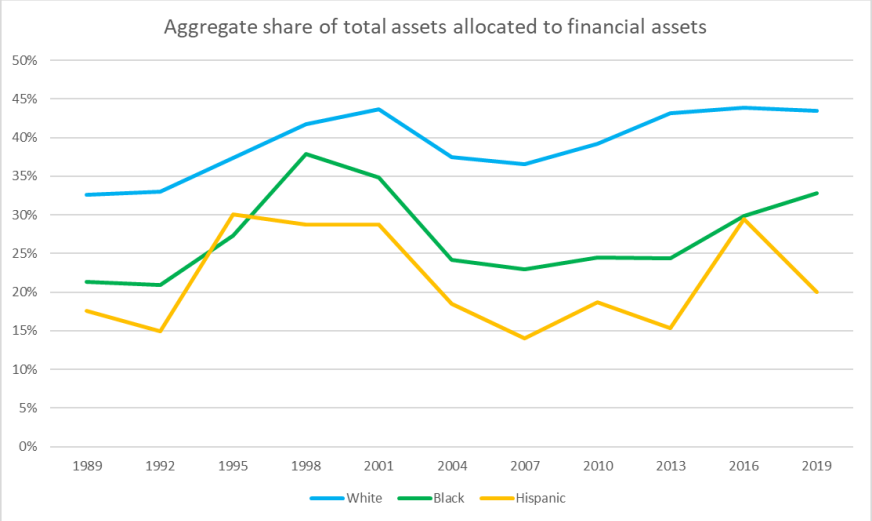
broadest distinction that can be operated in the assets of a household is between *real* assets and *financial* assets.

Real assets have a physical form, and their intrinsic value derives from their physical qualities. Real assets typically owned by households include property, either residential and non-residential, business equity and durable goods like cars and other vehicles. These assets typically have low correlation with financial assets, the other macroscopic category. Some real assets serve a dual purpose. For example, housing is both a durable consumption good from which the owner derives utility, and an investment asset that allows the investor to hold housing equity. Finally, real assets are exposed by risks not related to the markets: they involve maintenance costs, and they can be damaged.

Financial assets are not physical. The International Monetary Fund (IMF) formally defines them as "*financial claims arising from contractual relationships entered into when one institutional unit provides funds to another*"[4]. They range from cash and checking accounts to "primary" securities like stocks and bonds to derivative securities, which exist as a result of primary securities as the ones mentioned. An example of derivative security is a mortgage-backed bond. Financial assets are typically more liquid than real assets as the marketplaces where they trade have higher volumes and trading frequency.

Aggregate level

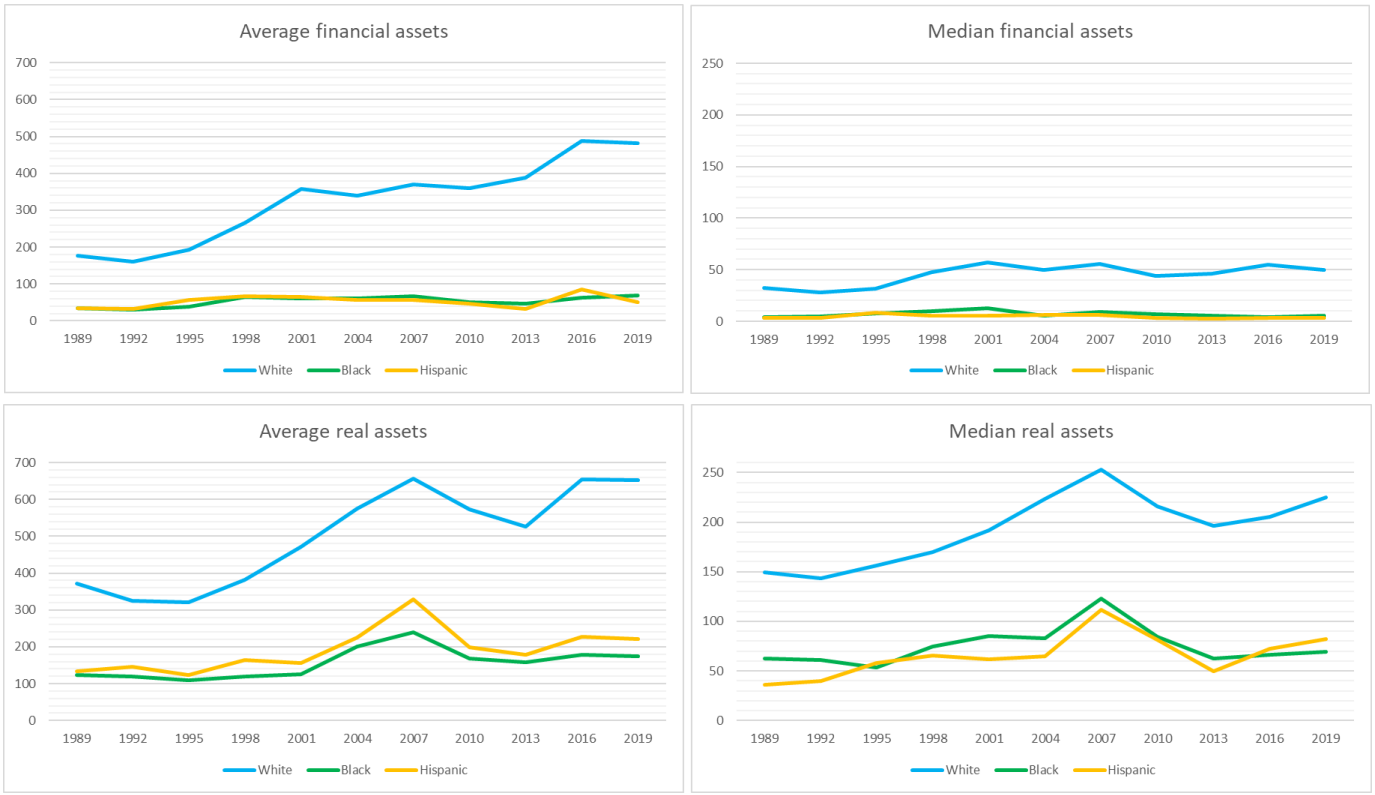
Graph 1 compares the weight of the two main categories though years. I plot the share of financial assets over total assets by year. The complementary share is therefore the one of real assets.



[4] Source: Monetary and Financial Statistics Manual & Compilation Guide (MFSM) (MFSCG) -- Classification of Financial Assets and Liabilities -- June 2014 (imf.org)

Graph 1: Aggregate share of total assets allocated to financial assets. Pooled data 1989-2019.

Two observations can be made. First, the aggregate amount of real assets is higher than the one of financial assets for all the three ethnicities. Second, minority households have allocated lower amounts of their wealth to financial assets than Whites. Rephrasing the sentence, Blacks and Hispanics have more wealth in real assets than in financial assets than Whites. The share of financial assets of the minorities has ranged from one fifth to less than one third of wealth, while Whites allocated around 40%. Since, as stated, financial assets have higher liquidity than real ones, a first observation is that portfolios of the Whites could be more liquid than those of the minorities.



Graph 2 (top-left): Average amount of financial assets by year (US$ thousands). Pooled data 1989-2019.
Graph 3 (top-right): Median amount of financial assets by year (US$ thousands). Pooled data 1989-2019.
Graph 4 (bottom-left): Average amount of real assets by year (US$ thousands). Pooled data 1989-2019.
Graph 5 (bottom-right): Median amount of real assets by year (US$ thousands). Pooled data 1989-2019.

Graphs 2 to 5 contain mean and median values of financial and real assets conditional on ownership. The shapes of the curves suggest that the gap has increased through the years. To quantify such an increase, I observe that in 1992 mean and median values of financial wealth were at a 30-year low. I calculate that Whites have increased their financial wealth by a factor of 3 in the period 1992-2019. The same factor is 2,3 for Blacks and 1,54 for Hispanics. Likewise, real assets were low for all ethnicities in 1995. From 1995 to 2019, Whites increased their real wealth by a factor of 2 compared to a factor of 1,6 for the Blacks and 1,8 for Hispanics. This gives an impression of how much the gap in gross wealth has widened in recent years.

Looking at gaps in terms of multipliers, Whites own - at median - around 5 to 10 dollars for each dollar of the minorities in financial assets and, considering real assets, from 2 to 3 dollars for each dollar of the minorities. Relative gaps are more pronounced for financial assets than for real ones. One can therefore reasonably expect a higher heterogeneity in choices and allocation across wealth classes on the financial side of the assets.

Share of total assets [%]	White						Black					Hispanic					
Net wealth percentile	0-19,9	20-39,9	40-59,9	60-79,9	80-100	Top 5%	0-19,9	20-39,9	40-59,9	80-100	Top 5%	0-19,9	20-39,9	40-59,9	60-79,9	80-100	Top 5%
REAL ASSETS	86,9	83,8	80,2	69,4	56,5	56,2	84,8	81,5	80,2	65,5	65,6	89,2	88,6	87,3	84,6	70,9	70,3
Vehicles	23,8	17,5	9,7	6,3	1,6	0,9	25,8	17,9	9,0	2,3	1,1	30,3	22,4	10,2	5,8	2,2	1,4
Primary residence	58,1	61,8	64,1	53,4	19,9	13,5	54,8	60,4	64,8	26,5	11,6	57,6	62,6	70,0	66,9	27,0	15,1
Other real estate	3,1	2,7	3,6	5,4	11,6	12,3	3,2	2,3	5,0	18,1	17,8	1,1	2,5	4,9	8,4	17,2	17,4
Businesses	1,3	0,9	2,1	3,6	22,5	28,5	0,7	0,6	1,2	17,4	33,9	0,1	0,9	1,8	3,1	24,0	35,8
Other real assets	0,6	0,9	0,7	0,7	0,9	1,0	0,3	0,3	0,2	1,2	1,2	0,1	0,2	0,4	0,4	0,5	0,6
FINANCIAL ASSETS	13,0	16,2	19,8	30,6	43,4	43,6	15,2	18,6	19,8	34,5	34,4	10,9	11,4	12,7	15,4	29,1	29,7
Cash and cash equivalents	5,4	6,2	6,3	8,3	6,9	6,3	6,0	4,8	4,8	5,6	3,7	5,2	4,6	3,7	3,7	5,8	6,7
Directly held equity	0,4	0,6	0,8	1,6	8,1	9,8	0,3	0,4	0,5	3,0	4,2	0,0	0,1	0,3	0,7	4,2	5,4
Indirectly held equity	0,3	0,4	0,9	1,9	7,9	9,2	0,3	0,2	0,4	5,2	10,1	0,1	0,1	0,2	0,5	3,5	4,4
Fixed income securities	0,1	0,2	0,5	1,4	5,0	5,8	0,2	0,1	0,3	1,4	1,4	0,0	0,1	0,2	0,7	1,3	1,9
Cash life value insurance	0,9	1,5	1,7	2,0	1,2	1,0	1,7	3,8	3,2	2,6	1,7	0,5	0,9	1,2	1,9	1,6	1,1
Pension equity	4,9	5,8	8,2	13,4	12,2	9,6	5,6	7,8	9,2	12,5	8,2	4,2	4,4	6,1	6,8	10,0	7,9
Pension fixed income	0,4	0,6	0,7	1,3	1,2	0,9	0,3	0,7	0,7	2,5	3,0	0,4	0,6	0,5	0,8	1,2	0,5
Other financial assets	0,6	0,9	0,7	0,7	0,9	1,0	0,8	0,8	0,7	1,7	2,1	0,5	0,6	0,5	0,3	1,5	1,8

Table 5: Share of household total assets by net worth quintile and 5%. Pooled data 1989-2019.

Table 5 contains the share of wealth allocated to the main classes of assets for White and minority households at different levels of net worth. The classes are described in detail in the Appendix. Some trends are common to all ethnicities. The bottom quintiles allocate resources in a similar way. Their portfolios are significantly tilted towards real assets, which account for more than 80% of assets held. Overall, besides primary residence, they own primarily vehicles and cash or cash equivalents (i.e., liquid assets and quasi-liquid accounts). As wealth increases, so does the weight of pension securities, composed mostly of equity securities. The portfolios of households in the bottom three percentiles are not very sophisticated: financial assets never account for more than 30 percent of total holdings. The presented evidence confirms previous findings that the median household possesses a relatively simple portfolio (Carroll (2000), Calvet, Campbell and Sodini (2009)). The riskiest assets of the two main groups, namely public equity securities and private businesses, separate the wealthiest 20% from the rest of the population, coherently with the findings of previous literature that portfolios of the richest are tilted towards riskier assets (e.g., Schooley and Worden (1996), Carroll (2000) and, more recently, Fagereng et. al. (2020)).

Differences between the two main categories - financial and real assets - are more pronounced in high-wealth households. Real assets are respectively around 66% and more than 70% of total assets of Blacks and Hispanics in the wealthiest 20%. The share is only 56% for the Whites. The same holds considering the wealthiest among the wealthy, i.e., the top 5%. Wealthiest minority households hold more in real assets - and conversely less in financial assets - than Whites. This is coherent with the trends observed in graphs 1-4 above: the wealthiest of the minorities, who own assets of higher value, can play a role in reducing absolute gaps in real assets and consequently increasing the gap in financial assets.

Primary residence is the largest asset for the vast majority of households of each ethnicity. It accounts for more than 50% of wealth for households in the bottom three quintiles, never more than 30% of those in the top quintile, and around 14 to 15% of the wealthiest 5%. A trend common to all the levels of net wealth is the higher weight of primary residence for the minorities. I discuss this trend more extensively in one of the next sections. Businesses, either managed with active or inactive interest, are a significant share of wealth only for the top quintile and 5%, for which vehicles represent a negligible share. This does not mean that only wealthy households own or participate in businesses, but that the wealthiest households own or participate in highly valuable businesses. Finally, Whites do hold more in conspicuous and visible items like jewelry, furniture, equipment, and leisure goods ("other real assets").

On the financial side, cash represents from 4 to 8 percent of assets, but no pattern emerges for the level of wealth. Conversely, clear trends emerge for financial securities: Blacks and Hispanics allocated less than Whites to both fixed income instruments and public equity securities, either held directly or through mutual funds. The statement holds at each wealth level, but differences are wider among wealthiest households, who generally allocate higher amounts to shares. Whites of the top quintile and 5% allocate around 4-5% more of their total wealth to stocks than minorities. Figures are similar for fixed income and indirectly held equity: the gap is around 3 to 4 percentage points. These trends are comprehensively analyzed in a dedicated section.

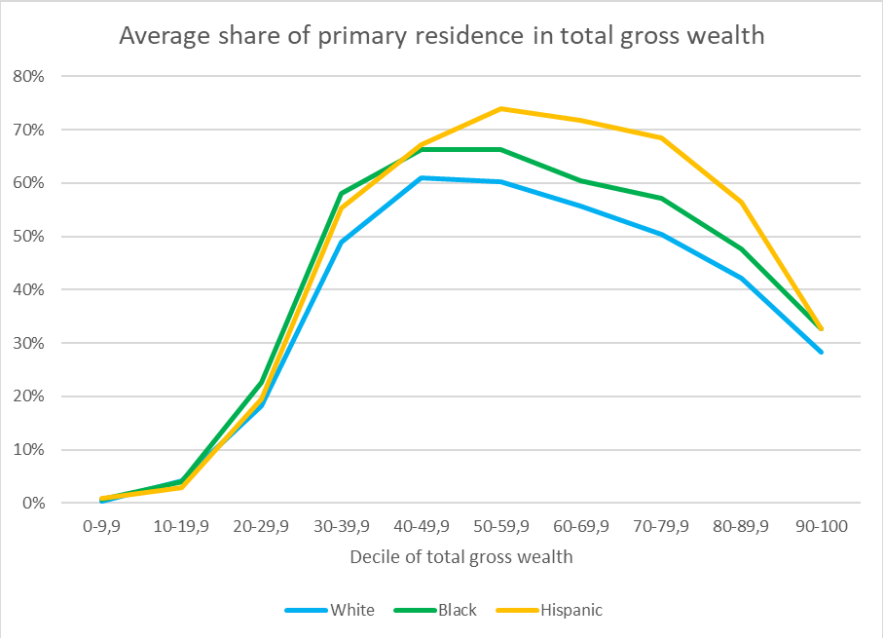
I focus my analysis on the asset classes that literature works indicated as potential structural factors of wealth disparities across the ethnicities. I analyze primary residence and private businesses among real assets and income-generating financial securities for the financial side.

Primary residence

Primary residence is the most important asset on the portfolio of the median household (Keister and Moller (2000), Shapiro (2006)). It is the asset of highest value of many families, especially those who do not held private businesses. Likewise, a first mortgage – the amount borrowed for the purchase – is the largest liability of the median household. The access to homeownership is crucial because houses provide considerable benefits – both financial and social – to individuals. First, they generally appreciate over time and generate wealth for their owners. Second, as I discuss later, homeownership enhances the possibility of a household to apply for credit: owners can borrow against their equity positions to increase the liquidity if needed. Third, the actual value of a house goes well beyond its financial value. The utility it yields to a family makes it the asset whose ownership is the least questionable of all: a house provides a sense of security and control on the living space of individuals. Finally, houses can be passed over through generations. As I discuss in one of the next sections, inheritances are important in wealth accumulation.

Homeownership itself incorporates many of its cultural, social and demographic determinants of wealth accumulation. For example, homeownership generally increases with age: as individuals grow older, they accumulate more wealth and can afford to buy a home. Individuals with better education, higher incomes and more solid credit standings are more likely to own a house. Many studies document the importance of homeownership in wealth disparities. Keister and Moller (2000) analyze data of US households and conclude homeownership can explain much of the wealth gap among the poorest. Maroto (2016) reaches similar conclusions. Sullivan et al. (2015) analyze data from the 2011 wave of the Survey of Income and Program Participation and observe that differences in homeownership account for around 30% of the median ethnic wealth gap. Shapiro, Meschede and Osoro (2013) observe the same set of US families between 1984 and 2009 using data from the PSID and assert the number of years of homeownership are the most relevant factor to explain the gap.

To quantify more precisely the importance of primary residence, I plot the average share of gross wealth the three ethnicities have in primary residence at different levels of gross wealth.



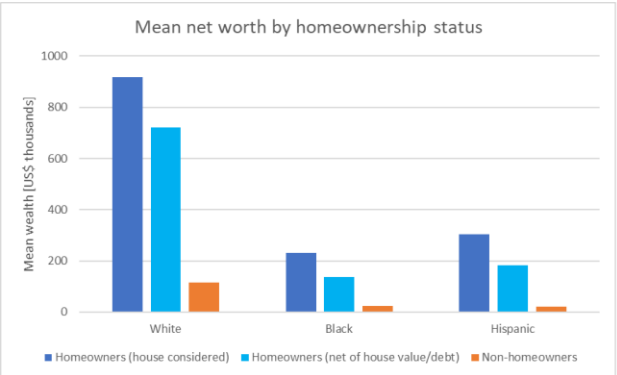
Graph 6: Average share of primary residence in total gross wealth. Pooled data 1989-2019.

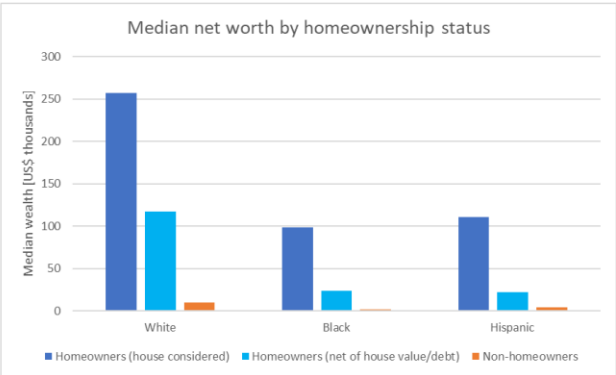
The graph shows that primary residence represents the majority of wealth owned for the median household of all three ethnicities. It represents at least half of total assets of a household from the fourth to the eighth decile of gross wealth. The steep increase between the third and the fourth decile suggests that most families acquire residence around that level of gross wealth. Such a low share in the first two decades - less than 5% - is arguably the consequence of the very limited homeownership rates: these families have too few assets to acquire a house.

When primary residence becomes relevant on household holdings - from the fourth decile onwards - it amounts to a higher share of assets for the minorities. Black households have between 5 and 7 percent more of their assets in primary residence than Whites. The gap is even higher for the Hispanics in the top half of gross wealth: houses represent 14 to 18 percent more of their assets with respect to Whites. As households accumulate gross wealth, primary residences weigh less on their portfolios as they can allocate resources to other assets like other real estate holdings (not primary) and private businesses. Even in the top 10% of gross wealth, both minorities have 4% more of their assets allocated in their primary residence.

These findings suggest that Blacks and Hispanics are more exposed to the housing markets than Whites. Thus, fluctuations in the real estate market can impact Blacks and Hispanics more than Whites. The Great Recession of 2008, arguably the worst economic downturn in recent times, had its roots in the housing market. Wolff (2012) analyzes data from the SCF to investigate the impact it had in wealth gaps between ethnicities. He documents that Blacks and Hispanics suffered higher declines in homeownership and home equity (which I discuss in one of the next sections). The crisis has exacerbated ethnic differences between Whites and minorities: the latter lost more wealth than Whites in percentage terms and experienced more foreclosures (Kochhar, Taylor and Fry (2011), Pfeffer, Danziger and Schoeni (2013), Shapiro, Meschede and Osoro (2013), Choi et. al. (2019)).

Graphs 7 and 8 show the differences in mean and median net worth by homeownership status. Homeowners have incredibly more wealth than non-homeowners. For example, the average white family without a house has 13 cents for each dollar of the average homeowner. Similarly, Black and Hispanic families without a house have respectively 10 and 7 cents for each dollar of homeowners. Differences remain if the house is factored out from the portfolios. The light blue columns show the mean net worth net of the value of the house and of the debt against it. The balances of homeowners remain way higher than the ones of non-homeowners.





Graph 7: Mean net worth of households by homeownership status. Pooled data 1989-2019.
Graph 8: Median net worth of households by homeownership status. Pooled data 1989-2019.

Table 6 contains homeownership rates and mean and median values of primary residence conditional on ownership through the years.

	1989	1992	1995	1998	2001	2004	2007	2010	2013	2016	2019	All years
White												
Homeowners [%]	70,5	70,3	70,6	72,0	74,3	76,1	75,6	75,2	73,8	72,5	73,7	73,2
Average house value*	221,3	205,7	198,5	227,1	277,0	354,4	386,6	329,9	304,1	339,3	354,9	295,0
Median house value*	149,2	152,0	151,9	157,3	187,8	223,7	246,9	206,2	197,7	212,7	230,0	191,4
Black												
Homeowners [%]	42,4	43,4	42,7	46,1	47,5	50,8	49,2	48,5	45,9	44,6	45,0	46,1
Average house value*	122,8	117,6	117,4	129,3	137,4	190,4	257,5	179,3	162,7	184,2	199,3	168,4
Median house value*	89,5	82,2	96,8	110,1	115,5	141,0	185,2	141,4	120,8	131,9	150,0	122,8
Hispanic												
Homeowners [%]	41,9	39,9	42,9	44,3	44,0	47,3	50,1	49,1	44,4	45,5	47,6	45,6
Average house value*	164,8	151,2	162,2	169,0	174,3	254,4	332,7	219,6	203,4	243,2	259,7	223,5
Median house value*	109,4	112,6	136,9	149,4	143,0	173,5	222,2	153,2	164,7	168,0	200,0	165,0

*[US$ thousands]

Table 6: Descriptive statistics for primary residence. Pooled data 1989-2019.

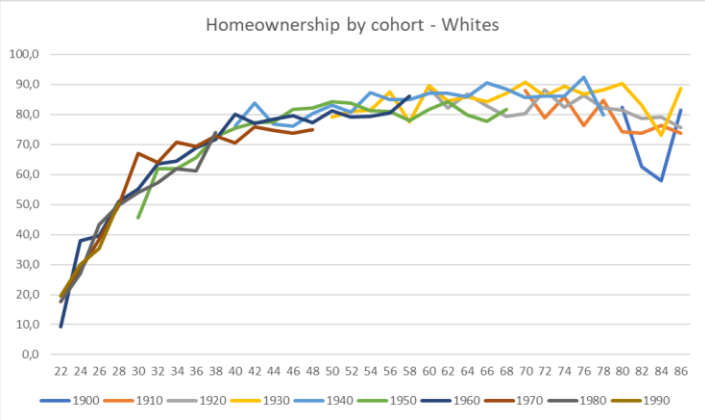
All the presented figures highlight significant differences between the ethnic groups. The gap in ownership is undoubtedly striking: while more than 70% of white households historically owned a house, the percentage for both minorities barely reached 50%. The gap is approximately around 20-25%, in line with the findings of earlier works (e.g., Kim (2000)).

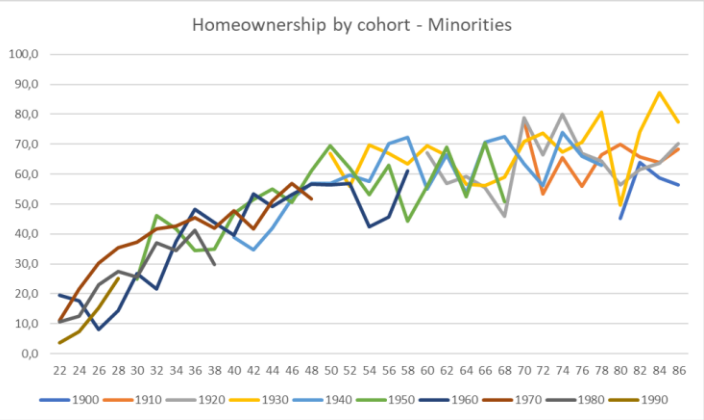
Table 7 below shows the percentage of households without primary residence controlling for income. Households with low incomes are intuitively more disadvantaged, but significant differences exist even at high levels of income. Minority families in the top 25% of earnings without a house are almost twice as many as White ones. The rightmost section focuses on households with kids. As I discuss in a later section, Blacks and Hispanic families are generally more numerous than White ones. A higher share of minority households without a house has one or more kids with respect to Whites. This suggests the hurdles deriving from the lack of homeownership are more likely to persist across generations of the former.

Households without primary residence [%]						
	Panel 1: no house			Panel 2: % of Panel 1 with kids		
Income quartile	Whites	Blacks	Hispanics	Whites	Blacks	Hispanics
0 - 24,9	50,2	70,9	74,1	24,7	45,8	51,0
25 - 49,9	33,8	54,2	57,1	34,5	54,1	65,4
50 - 74,9	22,0	38,4	36,6	38,3	52,9	65,3
75 - 100	9,1	17,6	17,0	38,2	50,5	58,5

Table 7: Descriptive statistics for households without primary residence. Pooled data 1989-2019.

Homeownership also depends on the age of the individual. As age, time and cohort effects cannot be observed simultaneously, I choose to observe age and cohort effects. I plot homeownership rates for cohorts of 10 years between 1900 and 1990 of Whites (Graph 9, left) and Blacks and Hispanics (Graph 10, right). I choose to pool together the two minority groups as I do not notice differences between them.





Graph 9 (left): Homeownership (%, y-axis) by age (x-axis) and cohort - Whites. Pooled data 1989-2019.
Graph 10 (right): Homeownership (%, y-axis) by age (x-axis) and cohort - Minorities (Blacks and Hispanics pooled). Pooled data 1989-2019.

Age effect is unsurprisingly strong for both ethnicities: homeownership increases with age because as households age they have more stable incomes and have accumulated the resources necessary for the purchase. The shapes of the curves formed by the different cohorts suggest that white households get to own a house way earlier in life than minorities: the curve of the Whites bends earlier and has an asymptotic trend, while the ownership trajectory of minorities is more linear. In other words, the homeownership gap by age peaks among the younger. For example, about 70% of White families where the head is aged 40 owned a house compared to only 45% of minorities. Generally speaking, the earlier a family buys a home, the greater the likelihood that the home will appreciate in value and create more wealth. Whites, who possess a home earlier in life, can begin to accumulate wealth earlier than minorities.

Moreover, homeownership gaps have persisted among specific age cohorts over time: Whites have had higher ownership than Minorities at each cohort, and the age gap has perpetuated at each cohort. While homeownership of the Whites increased with age at nearly every cohort, the trend is much more erratic for the Minorities. The 1960 cohort is a clear example. This evidence indicates that the age effect has been stronger for the Whites across cohorts. While the homeownership of the Whites is more regular, that of the Minorities has been much more volatile. A possibility is that the latter, arguably more constrained, are more affected by dynamics of the housing market than the former.

A direct consequence of non-homeownership is that individuals are forced to rent. While this might not be a problem for households with greater income, it can be for

those who are more constrained. Unequal treatments in the rental market can also be a problem. There is an unfortunate long history of evidence (see references of Yinger (1998)) documenting that discrimination starts from the very first moments of negotiations. In an interesting research, Hanson, Hawley and Taylor (2011) examine email text of landlord correspondence and identify patterns of subtle discrimination: landlords use more positive language with and respond quicker to Whites than to African Americans. The same is documented earlier by Carpusor and Loges (2006), who conduct a similar study based on the names of rent applicants. The recourse to rents is analyzed in one of the next sections.

Besides ownership rates, dollar values of residences of owners also differ significantly. Whites hold houses of higher value than both minorities, but the gap with the Blacks is much wider than with Hispanics. Considering pooled data (column “All years” of Table 6), the median value gap with the Hispanics is $26,500 - about 14% of the median value of the home of a white - and around $68,700 for the Blacks, 36% of the median value. Given that, as I showed in the previous section, median holdings do not differ significantly between the two minorities, homeownership can potentially explain a higher fraction of the wealth gap with the Blacks.

The value of housing intuitively does not only depend on its stock characteristics, but also on how the market price changes through time. The appreciation of a residence increases the wealth holdings of the possessor. Some academic works observed the rates of return on houses and found disparities attributable to ethnicity. Flippen (2004) performs hedonic price analyses on data from the Health and Retirement Study and Census of the 1990s. He finds houses of Blacks and Hispanics in segregated areas experience lower price growth even after controlling for differences across neighborhoods in socioeconomic and housing stock characteristics. Kim (2000) reaches similar conclusions and quantifies the premium of all-white neighborhoods compared to all-minority ones to about 3% a year. This further complicates the relationship with housing.

In sum, Blacks and Hispanics are significantly disadvantaged compared to Whites when it comes to primary residence. The former are less likely to own a house at each level of income. Younger Whites are more likely to own a house, but differences remain even among the oldest individuals. They also have houses of greater value than the minorities. I observe that if no controls are introduced, homeowners of each ethnic group are substantially richer than non-homeowners even considering wealth net of housing components. These findings, paired with the evidence of discrimination in the rental market and lower rates of return on housing suffered by the minorities, suggest that homeownership plays an important role in the accumulation of wealth besides its own contribution.

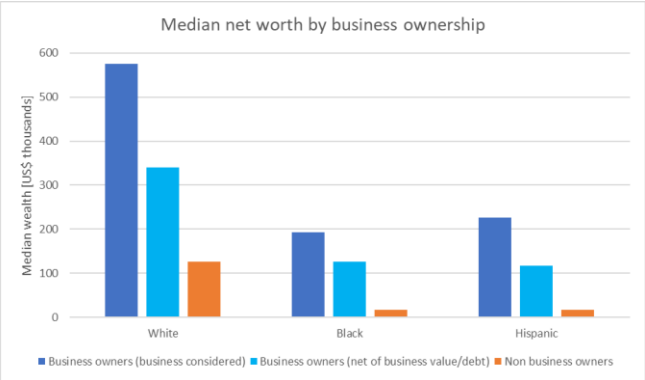
The presented evidence about homeownership status and housing do not consider the equity position of the households, which equals the market value of the house minus the outstanding debt collateralized by it. Homeownership is naturally linked with

housing debt: many households use mortgage debt to finance the purchase of their house and use home equity as collateral to secure other debt. The financial position of a household who fully owns his house, meaning has no debt collateralized by it, is presumably different from that of one with debt on it even if both are technically homeowners, meaning both can use it. I discuss the reliance of debt on primary residence in one of the next sections.

Private businesses

Businesses are arguably the riskiest class of asset among real assets. The SCF distinguishes between businesses with active and non-active interest. Around 14 percent of households of each wave from 1989 to 2019 owned a business with active interest, while only 2 percent had non-active interests. The former are therefore more relevant. There are multiple ways in which businesses play a role in the wealth gap. First and foremost, businesses that are successfully run can appreciate in value over time and allow for asset accumulation. Second, they can be transferred across generations so that the household maintains the property. Households who inherited a business consequently have higher wealth than those who did not ceteris paribus. Businesses also enable households to establish creditworthiness and secure mortgage or business loans. As all these factors contribute to wealth accumulation, lack of business ownership can impact economic opportunities (Oliver and Shapiro (1995)).

Pooled data from the SCF suggests business owners are much wealthier than non-owners. Graphs 11 and 12 highlight that business owners of the three ethnic groups are significantly richer than their non-owner peers. Moreover, White owners are by far the richest: the wealth gap with the minorities is around $1,600,000 at mean and $360,000 at median. As for primary residence, the statement holds also if business items are not considered in the wealth of the households.



Graph 11: Mean net worth of households by business ownership. Pooled data 1989-2019.
Graph 12: Median net worth of households by business ownership. Pooled data 1989-2019.

Actively managed businesses can entail self-employment, which substitutes for labor force participation. Self-employed individuals are less exposed to discriminatory labor practices perpetrated on the basis of ethnicity, which have been extensively

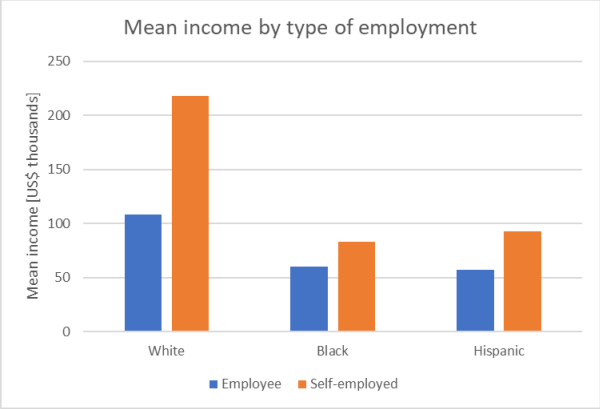
documented (Turner et. al. (1991), Darity and Mason (1998), Altonji and Blank (1999), Fryer and Pager (2013)). Considering pooled data from 1989-2019, the log of odds ratio between business ownership with active interest and self-employment among workers is 3,31. Thus, correlation between the two is positive and significant.

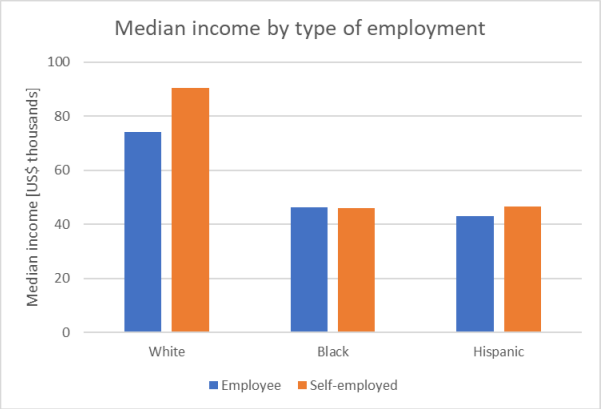
Percentage of business owners among workers [%]							
Income quartile	White	Black	Hispanic	**Education level**	White	Black	Hispanic
0 - 24,9	12,8	3,6	2,5	No high school diploma/GED	16,5	4,5	4,8
25 - 49,9	12,8	4,4	5,2	High school diploma or GED	16,6	5,3	5,9
50 - 74,9	17,1	9,3	8,2	Some college	17,7	7,0	7,0
75 - 100	29,8	18,9	18,4	College degree	25,7	13,4	15,1
Life cycle stage					White	Black	Hispanic
Not married/LWP + children					9,8	4,3	4,2
Not married/LWP + no children + reference person age < 55					11,1	5,7	5,3
Not married/LWP + no children + reference person age ≥ 55					15,6	5,3	6,1
Married/LWP + children					23,4	10,8	7,7
Married/LWP + no children					26,3	12,5	8,4

Table 8: Percentage of self-employed workers by income, education and life cycle stage. Pooled data 1989-2019.

Table 8 contains the percentage of self-employed workers controlling for various factors. A persistent fact, no matter the control, is the higher self-employment rate of the Whites. Blacks, on the contrary, are the least likely to be self-employed. Hispanics are not so different from Whites when controlling for actual income, but differences are wide when controlling for education. Recalling that education is a proxy of permanent income, the evidence confirms the early findings of Butler and Herring (1991), who investigate patterns of self-employment across different ethnicities analyzing data from the General Social Surveys between 1983 and 1987. After controlling for correlates such as demographics, education and income, they find African American and Hispanics are less likely to be self-employed. They argue minorities are more inclined to the labor market as they receive higher rates of returns on their human capital with respect to the self-employment market. Fairlie and Meyer (1999) reach similar conclusions.

I plot the mean and median income of employees compared to self-employed households in graphs 11 and 12. Differences in mean income are much larger than in median income, suggesting the income of wealthiest self-employed individuals of all ethnicities are disproportionately higher than wealthiest employees. The relative gap is much wider for the Whites: business owners earn, on average, twice as much as employees. At median, the income gap exists for the Whites - around $15,000 - but disappears for both minorities. This suggests that while among Whites with “normal” income business owners earn more than employees, it might not be the case for minorities. In other words, self-employment might “pay” more on the income of the median white household than on that of a median Black or Hispanic.





Graph 11: Mean income of households by type of employment. Pooled data 1989-2019.
Graph 12: Median income of households by type of employment. Pooled data 1989-2019.

Having observed that minorities are less likely to be self-employed than Whites, it is reasonable to expect that they are also less likely to own businesses with active interest. Table 9 shows figures of pooled data from 1989 to 2019 with the same controls of table 8. Minority workers are considerably less likely to own businesses than Whites even at high levels of income. Differences do not decrease with controls. Fairlie (2004) noted the lower business ownership of Blacks and Hispanics with respect to Whites and Asians earlier in the late nineties using data from the Current Population Survey and observed no evolution in rates in the observed period. Ownership rates of Black and Hispanic households are close, suggesting the choice to possess them, net of the opportunities and constraints, have similar outcomes.

Percentage of business owners among workers [%]							
Income quartile	White	Black	Hispanic	**Education level**	White	Black	Hispanic
0 - 24,9	12,8	3,6	2,5	No high school diploma/GED	16,5	4,5	4,8
25 - 49,9	12,8	4,4	5,2	High school diploma or GED	16,6	5,3	5,9
50 - 74,9	17,1	9,3	8,2	Some college	17,7	7,0	7,0
75 - 100	29,8	18,9	18,4	College degree	25,7	13,4	15,1
Life cycle stage					White	Black	Hispanic
Not married/LWP + children					9,8	4,3	4,2
Not married/LWP + no children + reference person age < 55					11,1	5,7	5,3
Not married/LWP + no children + reference person age ≥ 55					15,6	5,3	6,1
Married/LWP + children					23,4	10,8	7,7
Married/LWP + no children					26,3	12,5	8,4

Table 9: Descriptive statistics for workers who own a business (I). Pooled data 1989-2019.

Credit is indeed a fundamental building block of entrepreneurial ventures, especially for those on small to medium scale. Limited access to capital and unfavorable treatments in the credit market can hamper the possibilities to secure financing to start and develop the venture and crowd out the business market. Blanchflower, Levine, and Zimmerman (2003) analyze data from the 1993 wave of the Survey of Small Business Finances. They control for credit worthiness and differences in small-sized White and Black firms and find that black-owned businesses are twice as likely as white-owned ones to have credit denied. Blanchard, Zhao, and Yinger (2008) observe the same trends. Asiedu et. al (2012) analyze later waves and document discriminations in obtaining credit (Blacks) and loan renewals (both Blacks and

Hispanics). They find minority-owned firms pay higher interest rates - about one percent - than white-owned ones. These findings can arguably affect ownership rates of businesses.

Moving to the monetary values conditional on ownership, it emerges that the similarities between Blacks and Hispanics are limited to pure ownership. Table 10 shows descriptive statistics for workers who own a business controlling for income. The first observation is that business represents a substantial portion of wealth - more than 30% - of the owners at each level of income. Focusing on the ethnicities, Blacks have lower shares of their assets in businesses. As a consequence, the median value of a business run by a Black individual is about half and one third the one of a Hispanic and a White one respectively. The multiples do not change controlling for income. Since, as discussed earlier in the section, businesses allow wealth accumulation, households who own businesses of lower value are likely to accumulate lower wealth and benefit less from their appreciation. The rightmost section of Table 10 shows the median values of unrealized capital gains or losses on businesses, calculated as the difference between the current value of the business and the value at which the business could be sold. Black households unsurprisingly have the lowest capital gains in absolute terms. Hispanic business owners are instead much closer to Whites: businesses represent a similar - in some cases higher - share of their assets. The relative median value gap of business is quite high at low levels of income but decreases as income grows. As the absolute gap does not increase in income, businesses are not considerably different in value, especially among the wealthiest.

Values of businesses for possessors									
	Median value of business*			Percent of total assets [%]			Median unrealized capital gains/losses on businesses*		
Income quartile	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
0 - 24,9	50,2	12,8	29,0	39,2	34,7	38,7	8,3	3,6	1,3
25 - 49,9	55,1	17,9	32,9	32,2	30,7	32,9	9,4	2,0	12,2
50 - 74,9	86,7	27,5	64,8	30,4	22,7	27,6	16,5	8,8	11,6
75 - 100	248,6	83,5	219,6	28,9	26,6	37,5	66,4	8,2	50,1

*[US$ thousands]

Table 10: Descriptive statistics for possessors of businesses (II). Pooled data 1989-2019.

Finally, Table 11 can shed more light on the way different ethnicities acquire businesses. Active business owners were asked to indicate the modality through which they got possession of their business. Section 1 shows figures for all businesses. Inheritance and “network effects” have been stronger for the Whites: the percentage that inherited a business or joined an existing one is higher than in both minorities. Blacks and Hispanics have been equally likely to start a business from scratch, and less likely than the Whites to buy, inherit, or join one. As acquiring an existing business is often safer than starting a new one from scratch, minorities can be more exposed to business risk, especially at the beginning of their venture. Whites, conversely, are more likely to acquire businesses via “safer routes”.

Active business owners by acquisition of business [%]						
Section 1: all businesses	White		Black		Hispanic	
Bought / Investment	15,9		12,0		12,5	
Started	75,2		83,6		83,5	
Inherited / Given	5,2		2,5		1,8	
Joined / Became partner / Promotion	3,7		1,9		2,2	
Section 2: businesses compared to median value	White		Black		Hispanic	
*Median value of business**	135,6		38,4		66,3	
	Below	Above	Below	Above	Below	Above
Bought / Investment	8,1	26,0	2,8	21,4	8,2	18,4
Started	87,1	59,9	94,5	72,6	85,4	80,9
Inherited / Given	2,1	9,2	0,6	4,2	3,0	0,3
Joined / Became partner / Promotion	2,7	5,0	2,1	1,7	3,4	0,5

*[US$ thousands]

Table 11: Percentage of active business owners by acquisition of the business. Pooled data from 2010-2019.

In Section 2 I separate active business owners on the basis of the value of their business. Percentages in the columns “Below” refer to owners whose business is worth less than the group median, while the others are under “Above”. The trends of Section 1 are amplified in the top half of each group. It is interesting to notice that the chance of inheritance for Whites and Blacks - who are more likely to inherit than Hispanics (see Section 1) - is much higher with businesses of high value. This fact further underscores the importance of wealth accumulation, especially bearing in mind that, as illustrated earlier in the chapter, a business accounts from 25 to 35 percent of the assets of an owner. It must be noted, however, that Black individuals manage the smallest businesses of the three groups. The advantage of wealth accumulation is undoubtedly higher for Whites, who hold the largest enterprises, and likely contributes - at least to some extent - to the wealth gap.

To sum up, the disparities across ethnicities extend to private business ownership, where the Whites are better positioned. There are also differences between Hispanics and Blacks, with the former better off than the latter. Minorities are less likely to be self-employed and, consequently, more likely to work for someone else. Self-employed Whites enjoy higher average and median incomes than employees. The same is true for Blacks and Hispanics at mean, but not at median, suggesting that self-employment yields more than employment to the median White than to a Black or a Hispanic. When households choose to own a business, the share of assets allocated is roughly the same across ethnicities. This means that Blacks and Hispanics have businesses of lower value than Whites and, in turn, can capitalize less from their appreciation. Furthermore, as Whites are more likely to inherit a business, the differences likely continue across generations, also considering that the mentioned are more likely to acquire or join a business than to start one.

Financial securities

Since the work of Haliassos and Bertaut (1995), limited participation in financial markets has received considerable interest by the literature. The studies primarily focused on the choice to participate in public equity markets and the share of financial assets allocated to risky securities. Many determinants of participation and stockholding have been identified. Family background can play a role (Chiteji and

Stafford (1999)). Education generally increases the chance of stockholding (Haliassos & Bertaut (1995)) as well as the share of risky assets conditional on ownership (Guiso, Haliassos, and Jappelli (2003), Campbell (2006)). Private business ownership, on the contrary, can substitute for public equity since it carries idiosyncratic risk (Heaton and Lucas (2000), Cocco, Gomes and Maenhout (2005), Fang et al. (2009)). Ethnicity itself also plays a role. Differences can be caused by income risk and unequal access to credit of minorities (Bertaut & Starr-McCluer (2000)), or unfavorable treatments in the financial services industry (Loury (1998)).

As I previously outlined, differences in ownership of financial assets between ethnicities are not restricted to stocks, but encompass also indirectly held equity (i.e., pooled investment funds) and fixed income securities. I refer to the three categories as “income-generating financial securities”. I include both equity (held directly or through mutual funds) and fixed income instruments to differentiate for risk. I do not consider retirement accounts for some reasons. First, individuals have much more control over actively held stocks, funds, and fixed income securities than in retirement accounts. For example, while there are no constraints on the transactions one can make with directly held securities, withdrawals prior to the retirement age can be associated with limitations and penalty fees. Second, while stocks, funds and bonds can be purchased and exchanged early in life, retirement accounts are intended to be used only after an individual has retired. Finally, contrary to the former, the ownership and balance on retirement accounts depend on the labor income of the individual (e.g., wages and income from businesses), which in turn depends on employment. In other words, the access to stocks, bonds and funds is less dependent on the labor market, and thus less limited than for retirement accounts.

Income-generating financial securities can contribute significantly to the accumulation of wealth. Fixed income instruments provide stable income at relatively low risk, and interest earnings of most of them are tax deductible, therefore the taxable income of the household can be reduced. Public equity has higher long-term returns than less volatile investment opportunities. Households that do not own stocks or equity funds will arguably have less wealth in the long run. Kochhar, Taylor and Fry (2011) observe that after the Great Recession, the stock market rebound faster than the housing market. Minority households, who owned less stocks and mutual funds than minorities, remained impaired for more time. Fixed income and public equity securities allow owners to diversify their income. The returns of both are influenced by market performances or country-level dynamics (returns on US government bonds, for example, depend also on the monetary policies and operations of the FED). Since these returns are uncorrelated from salary and private business incomes, they can represent an insurance against human capital risk.

Income can intuitively play a role in the ownership of financial securities. The higher the income of an individual, the higher the capacity he has to invest in financial assets. Also, investment plans are often structured on the actual and expected income. Table

12 contains the ownership rates of three different types of financial securities controlling for income.

Percentage of households holding financial securities [%]												
	Directly held equity			Indirectly held equity			Fixed income instruments			Any of the three		
Income percentile group	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
0-19,9	6,0	0,8	0,4	3,9	0,4	0,2	3,8	0,2	0,3	11,0	1,2	0,9
20-39,9	10,9	2,3	0,8	7,8	1,2	0,5	7,1	1,0	0,6	19,6	4,0	1,6
40-59,9	15,7	6,1	3,1	11,1	3,0	2,0	8,8	2,4	1,2	26,9	9,9	5,7
60-79,9	21,8	12,8	8,0	15,8	6,9	5,6	11,9	5,1	3,4	34,8	20,2	14,1
80-89,9	30,4	21,7	16,0	22,1	13,0	10,6	15,1	8,6	7,5	45,5	35,1	25,8
90-100	50,6	26,9	30,9	39,4	18,4	15,2	30,6	13,3	9,7	68,5	38,6	41,0
ALL HOUSEHOLDS	20,5	5,7	3,9	15,0	3,2	2,4	11,7	2,3	1,6	32,0	9,1	6,5

Table 12: Percent of households holding financial securities. Pooled data 1989-2019.

Percentage of households holding equity directly [%]												
	Private business ownership						College attendance					
	No private business			Private business			No college			Some college/College degree		
Income percentile group	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
0-19,9	5,5	0,7	0,4	15,5	6,6	3,7	3,1	0,4	0,3	11,0	1,9	1,1
20-39,9	10,8	2,3	0,8	12,4	0,2	0,6	8,4	1,7	0,6	14,3	3,1	1,3
40-59,9	15,4	5,6	3,1	17,7	12,2	2,7	11,3	3,8	2,4	19,5	7,8	4,5
60-79,9	21,6	12,4	8,2	22,8	16,1	6,5	14,7	8,2	5,7	25,6	14,9	10,4
80-89,9	30,5	22,7	15,6	30,0	16,4	18,4	22,8	15,9	9,4	32,7	23,6	19,8
90-100	48,8	23,9	28,6	53,4	35,3	37,3	37,4	17,4	17,1	52,4	29,3	35,9
ALL HOUSEHOLDS	18,6	5,1	3,5	31,0	15,0	9,9	10,8	2,4	1,8	27,5	9,6	8,2

Table 13: Percent of households holding equity directly with controls. Pooled data 1989-2019.

Ownership rates of all the three ethnicities increase in income, but the differences remain impressive. Whites are at least twice as likely as minorities to hold any financial securities even at the top 10% of income. The rightmost section (in gray) shows the percentage of households who own at least one of the three categories. The figures can be compared with the sum of the shares of the different columns to have a measure of the concentration of the securities. Those of the Whites are more concentrated than those of the minorities, meaning White households are more likely to own more than one class. The higher concentration of securities between the Whites underscores even more the differences in ownership and suggests that Whites are more diversified - at least in terms of classes of financial assets. The increase in ownership of securities is steady across income for the Whites - from 11% of the lowest percentile to almost 70% in the top 10 percent of income - but much more modest for the minorities. In the top 10% of income, around 40% of Blacks and Hispanics hold at least one class, for an ownership gap of 30%.

Directly held equity, i.e., individual stocks, are the riskiest group of the three, but also those that can potentially offer higher returns. I investigate some of the findings of the literature about stock ownership in Table 13, where I report the percentage of stockowners controlling simultaneously for income and private business ownership first (leftmost section) and then for income and education (rightmost section). The percentage of holders is higher among those who own private businesses and attend college. Even though business ownership and education somewhat smooth the differences in relative terms, the gaps remain large.

Such findings can have direct consequences on the financial stability of the household. Minority households, who have lower ownership rates, are less diversified and more

exposed to housing risk and human capital risk. This means they can be more vulnerable to job volatility, discrimination in the workplace, and other labor dynamics. An even more direct consequence is the limited reliance on income and capital gains these instruments offer. Such returns are of two forms: capital gains, or appreciation of the instrument, and proceeds from interest and dividends. Table 14 contains figures of the returns of the securities and the weight these have on aggregate income.

Returns on income-generating financial securities									
	Average interest/dividend income share of total income [%]			Average interest and dividend income [US$ thousands]			Average unrealized gain/loss on stocks and funds [US$ thousands]		
Income percentile group	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
0-19,9	13,3	6,6	7,5	3,5	2,1	2,9	8,4	-1,9	-3,1
20-39,9	10,1	3,4	3,3	3,7	1,7	1,2	7,2	-0,8	1,2
40-59,9	7,2	2,5	2,0	4,3	2,0	1,2	12,2	1,3	-7,6
60-79,9	6,3	2,7	1,5	5,7	2,3	1,2	22,0	-5,2	3,2
80-89,9	5,4	1,7	1,8	7,7	2,4	2,6	33,0	9,3	14,8
90-100	7,5	2,3	3,9	42,9	8,5	13,7	229,7	25,6	76,3
ALL HOUSEHOLDS	7,6	2,8	2,5	13,9	2,9	4,2	77,2	3,7	17,5

Table 14: Returns on financial securities. Pooled data 1989-2019.

The leftmost section highlights that, at aggregate level, interest and dividends income compose around 7,5% of total income of the Whites while only 2,8% and 2,5% for minorities. This fact further confirms the lower exposure of minorities to financial markets. The average income of the Whites is unsurprisingly the highest among the three at any level of income. Depending on the level of income, Blacks and Hispanics earn respectively from 60 to 20 cents and from 85 to 22 cents for each dollar of the Whites from financial securities. Finally, Whites could have capitalized more than minorities on the sale of these returns.

To conclude, table 15 contains the percentage of financial assets that households have in cash. Interestingly enough, Blacks and especially Hispanics have a higher fraction of their financial assets allocated to cash than Whites. Differences persist across all income levels and are high even for the high earners. For example, while cash is - on average - 24% of financial assets of the Whites in the top 10% of income, the share is 34% for the Blacks and 37% of the Hispanics. This evidence is coherent with the findings of Oliver and Shapiro (1995): in their book "*Black Wealth, White Wealth*", they observe that Black households at high income levels save more, while Whites invest in more wealth generating instruments. While it is true that the figures in table 15 represent a unidimensional fact that likely has explanations beyond simple preferences, the difference with the Whites among the top earners - who are likely far from cash-constrained - is interesting, especially if paired with the prior evidence of differences in income-generating securities.

Average cash share of financial assets [%]			
Income percentile group	Whites	Black	Hispanic
0-19,9	76,2	79,1	91,3
20-39,9	61,3	63,6	83,1
40-59,9	49,2	51,5	65,3
60-79,9	37,6	41,1	50,1
80-89,9	30,1	35,4	40,0
90-100	23,5	34,0	37,2

Table 15: Average share of cash of financial assets. Pooled data 1989-2019.

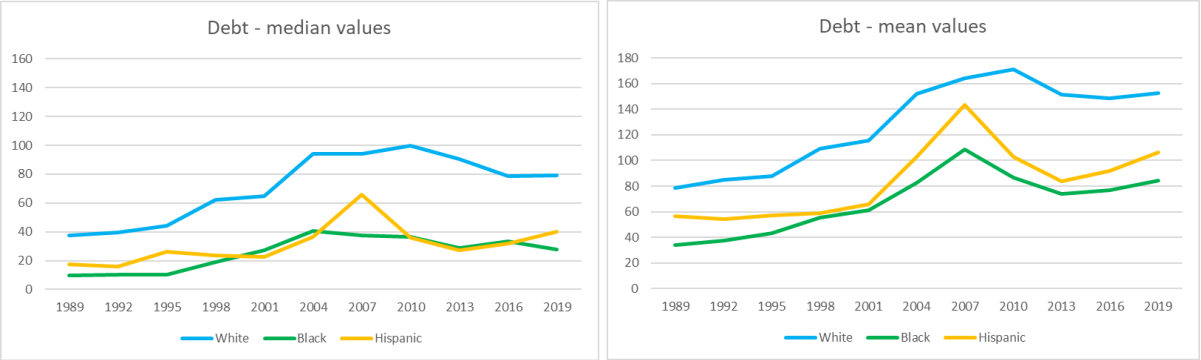
The presented evidence confirms previous findings about the different extent to which ethnicities rely on financial markets. Blacks and Hispanics invest less in financial securities at every level of income. Ownership rates are closer, but still distant, controlling simultaneously for income and education or business ownership. As minorities are less exposed to the financial markets, they earn less either in dividends or in capital gains. Also, their incomes depend more on wages and income from business than for the Whites. At the same time, they hold a large share of financial assets in cash or cash equivalents no matter the level of income.

Liabilities

In this section I explore the other component of the accounting equation of net worth: liabilities. The liabilities of a household are the aggregate of all the different kinds of outstanding debt on its balance that has not been repaid yet to the lender.

Aggregate level

Graphs 13 and 14 show mean and median balances of outstanding debt (in thousands of US dollars) held by debt holders through the years.



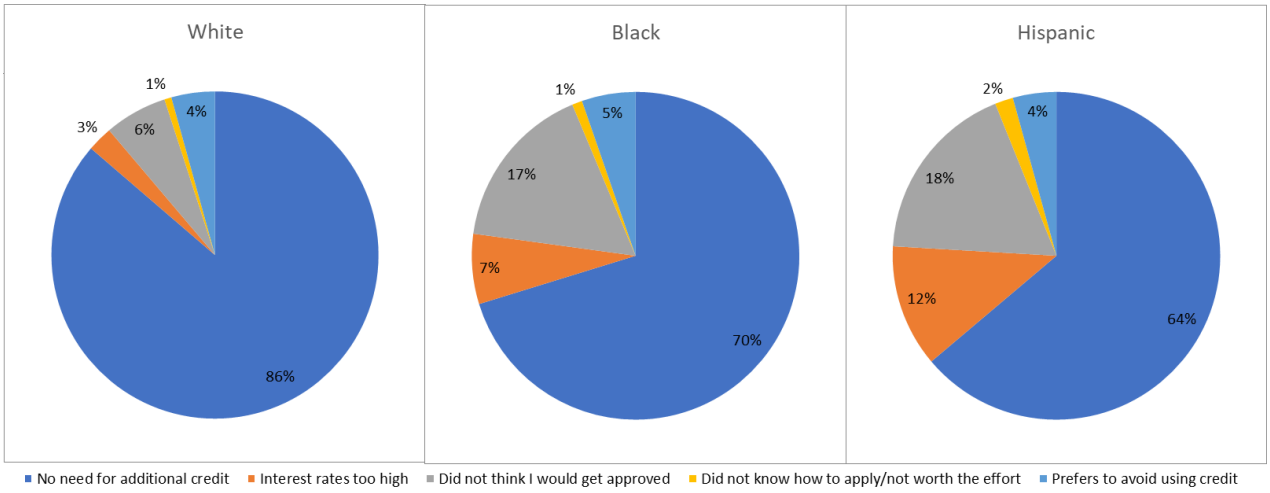
Graph 13 (left): Average values of debt of debt holders. Pooled data 1989-2019.
Graph 14 (right): Median values of debt of debt holders. Pooled data 1989-2019.

The absolute differences in the two graphs are smaller with respect to the same graphs for assets shown earlier, suggesting the gap between ethnic groups in liabilities is lower than in assets. Considering pooled data of all the waves, Blacks (resp. Hispanics) held 23 (resp. 28) cents per dollar of assets of the Whites at mean and 24 (resp. 22) cents at median. The proportions are closer for debt: Blacks (resp. Hispanics) held 54 (resp. 68) cents per dollar of debt of the Whites at mean and 36 (resp. 43) cents at median. Whites and minorities have been closer in debt holdings (in absolute terms) than in assets. This further amplifies the wealth gap.

I begin by investigating the recourse to debt of the different ethnicities.

In the 2016 wave, the time window for questions about the application for credit was restricted to the previous year, which implies analyses are more precise. I analyze the

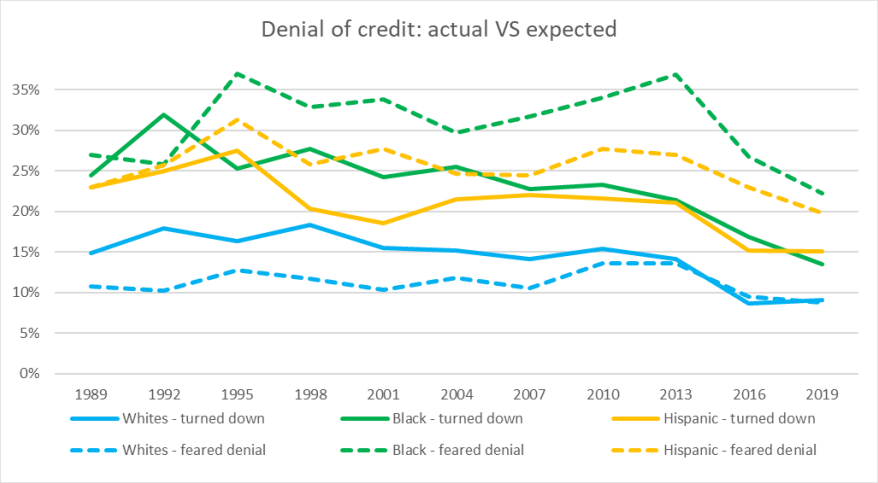
applications for credit of the ethnicities in 2016 and 2019 and find that the share of households who applied for credit in the previous year is almost the same for the three ethnicities, precisely 54,6, 54,1 and 52,6 percent of White, Black and Hispanic households respectively. One question introduced in the 2016 wave of the SCF can help to shed better light on the reasons why some did not apply. The question asks to indicate the reason why the respondent refrained from applying for credit in the previous year. The results are shown in the pie charts of graph 15.



Graph 15: Reason why the household did not apply for credit in the previous year. Pooled data 2016-2019.

The share of respondents who did not know how to apply or prefers to avoid using credit - about 5-6% of non-applicants - is the same for all the ethnicities. Clear differences emerge for the other reasons. First, a higher share of White households did not apply because it was satisfied with the current level of credit: the share is 86% with respect to 70% and 64% of Blacks and Hispanics respectively. Second, a higher share of Black and Hispanic households did not apply because they feared credit denial - around 18% of minorities compared to only 6% of the Whites. Third - even though the share is lower - minorities were more likely to refuse from asking credit because they feared too-high interest rates.

To have a more complete picture of the access to credit through the years, I use data from two questions available from 1989 that have larger timespans. Straight lines in graph 16 indicate households that were denied credit in the previous five years, while dashed lines indicate households that feared being turned down credit in the previous five years. It is straightforward to see that Blacks and Hispanics have had higher credit denials - slightly lower for the latter - but it is interesting to notice that sentiment towards eligibility for credit is much more pronounced than the actual gap. Minority households who feared credit denial were more than those who were actually denied it. The opposite holds for Whites.

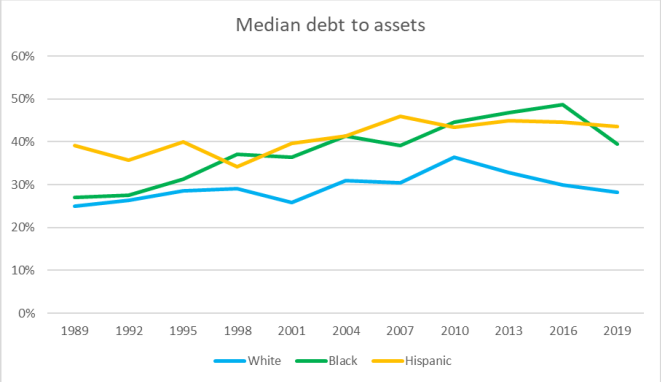


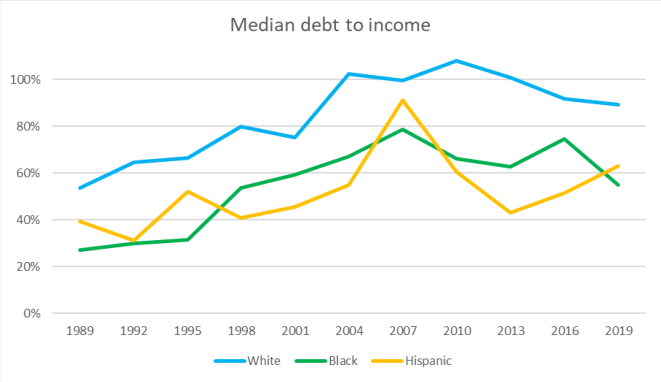
Graph 16: Actual VS expected denial of credit in the previous years. Pooled data 1989-2019.

In a notorious work that laid the foundations for later studies, Jappelli (1990) labeled as “discouraged borrowers” those individuals who choose not to seek loans either because they expect to receive no credit at all - or an amount lower than needed - or to face too high participation costs. The size of the impact was assessed in a later work (Cox and Jappelli (1993)): the actual amount of debt of constrained US households was 75% lower than the predicted amount. The evidence presented in the last two graphs suggests that there might be more discouraged borrowers among Minorities – especially Blacks – than in White households. Thus, Whites and minorities could be – at least in theory – closer in debt that they currently are. It is reasonable to speculate that if they could feel more confident about the outcome of their applications, they could refrain less from credit. Borrowing constraints can also induce individuals to hold less in non-liquid assets and risky assets (Guiso, Jappelli and Terlizzese (1996)). If this holds, the borrowing constraints of Blacks and Hispanics can explain part of the ownership gap in businesses and risky financial assets - particularly stocks - documented in the earlier sections. The mentioned proposition, however, seems not to hold for non-liquid assets.

Graph 16 also suggests that access to the credit market of all households has improved through the years: the denial rate decreased from 15 to 9 percent for Whites, and from about 25 to 15 percent for both minorities. Despite the denial rate apparently decreased, the gap is still present: minorities are more likely to have their credit applications turned down. I control for the level of wealth and find the trend holds regardless of it.

Having documented the recourse to debt, I now analyze how much it weighs on the assets, or gross wealth, of debtholders. I use leverage indicators to outline more accurately the financial position of households. They compare what an individual owes against what he owns and gauge the burden that debt has on one's possessions. Graphs 16 and 17 show the evolution of median values[5] of two of them: debt to assets and debt to income.





Graph 17 (left): Median debt to assets of debtholders. Pooled data 1989-2019.
Graph 18 (right): Median debt to income of debtholders. Pooled data 1989-2019.

The first observation is that the leverage of the median household generally increased in the last thirty years for all ethnic groups. Moreover, the two graphs show different trends: the median Black or Hispanic debtholder historically held more debt on his assets than the White one, and at the same time, owed less debt on his income. Considering that minorities have lower incomes than Whites, the pattern is indeed perplexing. For what concerns debt on assets, the previous observations that the absolute gap in liabilities is smaller does not necessarily result in higher leverage for the minorities. For example, the ratio of debt/assets of a household who has $500,000 in assets and $250,000 in debt is 50%, while it is 40% if it has $250,000 in assets and $100,000 in debt. Also, by aggregating the ratios for each household with median values, the distribution of wealth is factored out from the results. The higher accumulation of wealth of the Whites arguably plays a role in the leverage on assets. Whites own more assets than minorities do, therefore they can offset debt to a greater extent. The clearest example is homeownership: minorities are more likely to owe a rent and pay higher rents conditional on possession. A rent is unsecured debt that, by definition, entails greater leverage than asset-backed debt such as mortgages. Also, if Whites are more likely to receive inheritances, their debt on assets decreases. I explore the topic in one of the next sections. Generalizing, unsecured debt - which is not backed by any asset of the household - increases more the leverage on assets of a household than secured debt does. Table 16 shows the share of unsecured debt

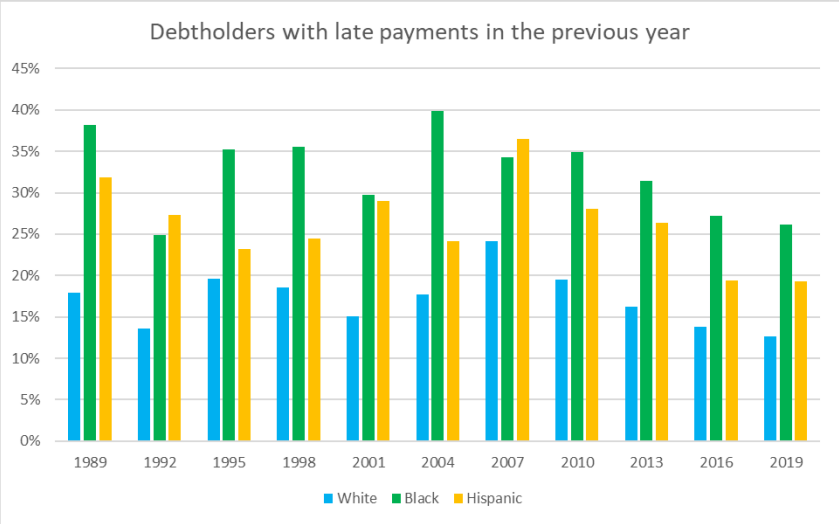
[5] Opposite to most ratios previously shown, the two ratios technically do not have a maximum value. For example, few assets or a low income paired with large debt result in extremely high ratios which inflate aggregate values. For this reason, observations with leverage ratios strictly greater than four were excluded.

over the years. The share of unsecured debt of Black households has always been higher than that of the Whites. It is not the case for the Hispanics.

Share of total debt that is unsecured [%]											
	1989	**1992**	**1995**	**1998**	**2001**	**2004**	**2007**	**2010**	**2013**	**2016**	**2019**
White	11,5	8,9	8,8	10,3	8,6	8,4	8,9	9,9	10,8	12,7	12,0
Black	16,6	12,6	14,9	9,6	12,1	14,2	10,6	19,3	18,0	24,3	25,8
Hispanic	9,4	9,4	8,8	13,7	9,3	6,9	7,3	8,6	9,5	15,9	11,7

Table 16: Share of aggregate debt that was unsecured. Pooled data 1989-2019.

Other reasons can lie in the nature of the two ratios. While debt to assets compares liabilities with the stock of gross wealth, debt to income compares them with the current earnings, intended as the flow of payments received. Therefore, the previous statement can be restated as: minorities owe less debt on their income than Whites, but debt remains more on their balances. The higher the burden of debt with respect to the wealth of a household, the higher the chance that it faces financial constraints. Graph 19 shows the share of debt holders who reported one or more late payments in the previous year. A higher share of minority debtholders has historically failed to meet scheduled payments with respect to Whites. This, in turn, means minorities are more at risk of fees and penalties, deterioration of credit standing and ultimately bankruptcy. Individuals who miss scheduled debt payments can find themselves trapped in a vicious circle that can seriously undermine financial stability.



Graph 19: Percentage of debt holders with one or more late payments in the previous year. Pooled data 1989-2019.

At aggregate level, Blacks and Hispanics are closer to Whites in debt than they are in assets. Recent evidence suggests they might need more debt than Whites, arguably as a consequence of the limited assets they have at disposal. They also interiorize the possibility of credit denial and fear denial much more than Whites do. The debt balances weigh less on their incomes than on those of the Whites, but they end up composing a higher fraction of their assets, a further suggestion that they fail to accumulate wealth as Whites do. Blacks, in particular, have the highest share of

unsecured debt. Finally, Hispanics, and particularly Blacks, have historically failed to meet debt payments than Whites.

The table below breaks down the debt of the three ethnic group into specific subcategories. The classes are described in detail in the section “Definitions of assets and liabilities” of the Appendix.

Share of total debt [%]	White						Black						Hispanic					
Net wealth percentile	0-19,9	20-39,9	40-59,9	60-79,9	80-100	Top 5%	0-19,9	20-39,9	40-59,9	60-79,9	80-100	Top 5%	0-19,9	20-39,9	40-59,9	60-79,9	80-100	Top 5%
Debt secured by primary residence	45,3	77,1	80,3	79,6	67,5	64,1	41,8	74,8	75,4	73,9	67,7	52,2	52,3	79,1	80,5	72,6	64,2	59,1
Debt secured by other residential property	2,4	2,3	4,0	8,3	20,0	22,2	1,8	1,9	7,2	11,0	21,0	34,1	0,8	1,9	6,1	17,0	20,1	21,5
Other lines of credit	0,4	0,2	0,3	0,6	2,0	2,8	0,2	0,0	0,1	0,3	0,9	1,7	0,6	0,3	0,3	0,2	2,6	4,2
Credit card balances after last payment	6,6	4,6	3,5	2,5	1,0	0,7	4,5	3,8	3,5	4,1	2,4	1,8	7,6	3,3	3,0	1,9	1,5	1,4
Education loans	25,0	4,6	2,9	2,0	0,5	0,3	33,6	7,5	4,8	3,6	1,9	1,7	18,5	3,3	1,7	1,4	1,5	1,0
Vehicle loans	10,2	8,8	7,0	5,0	2,5	1,9	11,0	9,9	7,4	5,3	3,7	4,4	14,1	9,3	6,4	4,9	8,3	10,6
Other installment loans	7,3	1,8	1,4	1,0	2,6	3,2	5,6	1,3	1,0	0,6	0,8	1,3	4,4	1,9	1,1	0,9	0,4	0,6
Other debt	2,7	0,7	0,7	0,9	3,8	4,8	1,5	0,8	0,6	1,2	1,6	2,6	1,8	0,9	0,8	1,2	1,4	1,7

Table 17: Share of household total debt by net wealth quintile and 5%. Pooled data 1989-2019.

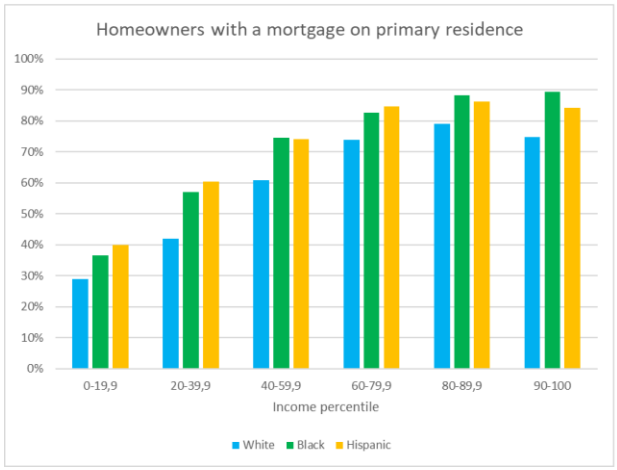
Housing debt is clearly the largest liability on the portfolios of households. Besides the top quintile, it is almost entirely secured by primary residence. It is less relevant in the first quintile, where education loans, another important component, compose from one fifth (Hispanic) to one third (Black) of total debt. One reason could be that such level comprehends younger households who graduated recently, still need to pay off education debt and are less likely to own a house than older people.

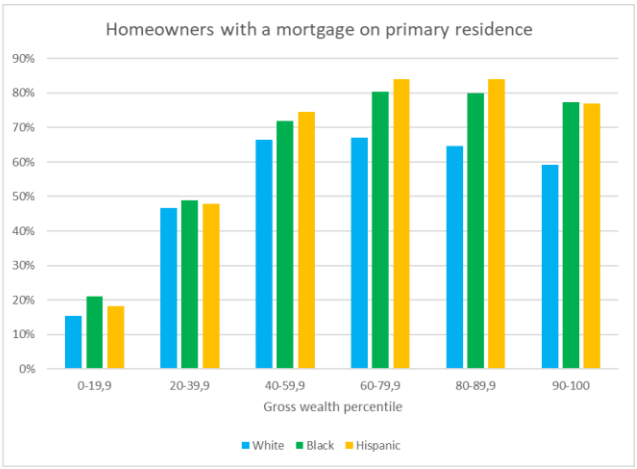
An interesting trend that emerges is that education loans compose a higher share of debt of Black households. The difference with the Whites is highest in the first quintile – 8,6% – and gradually decreases to 1,4% in the top 5%. The opposite holds for Hispanics: education loans to total debt are 15% lower than the Whites in the lowest quintile, and the gap decreases to 0,7% in the top 5%.

In the next sections I analyze in a more detailed way three of the presented classes. I analyze housing debt as it is interconnected with homeownership, whose importance in building wealth was extensively discussed in one of the previous sections. I also analyze education loans as they are linked to education, whose impact on wealth is discussed in a later section. Finally, I observe an interesting trend about the use of credit cards by analyzing outstanding balances.

Housing debt

Housing debt is the largest class of debt on the portfolios of the median household. It often represents the largest amount of debt taken in the entire life of many individuals (Guiso and Sodini (2013)). It is of vital importance for low to medium-wealth households because it can represent the access to homeownership altogether, particularly for those who did receive any inheritances or bequests. The first mortgage refers to the amount borrowed to finance the purchase of the primary residence. The two graphs below show the share of homeowners with a mortgage on their first house controlling for levels of income (Graph 20, left) and gross wealth (Graph 21, right).





Graph 20 (left): Share of homeowners with a mortgage on primary residence by level of income. Pooled data 1989-2019.
Graph 21 (right): Share of homeowners with a mortgage on primary residence by level of assets. Pooled data 1989-2019.

It is straightforward to notice homeowners of both minorities were more likely than Whites to have mortgages on primary residence no matter the level of assets or income. I find the same trends controlling for other factors such as education. Looking at graph 21, it leaps at the eye that the gaps between percentages are wider at a high level of assets. The share of White mortgage holders declines in the top 40% of gross wealth, while that of both minorities remains high. 59% of white homeowners in the top 10% of assets hold a mortgage versus 77% of minorities.

It must be noticed that the figures represent the interviewee's outstanding debt at the moment of the survey. Generally speaking, such amounts are determined by the borrowed amount - principal plus capitalized interest on it - and the velocity at which such debt is repaid. Thus, the fact that minorities have more debt on their portfolios does not necessarily imply they make greater use of it. One possibility is that mortgage debt remains on the balances of minorities for a longer time with respect to the Whites. Chiteji (2010) discusses the issue and focuses on the role of interest rate. He calculates the interest rate "premium" paid by Black households on results in outlays of $2,700, $5,500 and $8,700 for a 5, 10 and 15-year mortgage loan, respectively. These amounts reduce the net worth of black households from 2 to 8 percent. The

author also examines other types of debt and concludes the cost of debt can explain part of the ethnic wealth gap.

Table 18 below shows the average interest rates on first mortgages paid by different ethnicities in recent years. While it is true that a single control cannot properly separate households on the basis of the criteria for lending, the graph suggests - as documented by other works - that the debt for minorities might be more expensive than for the Whites.

Average interest rate on first mortgages									
	2013			2016			2019		
Income percentile group	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
0-19,9	5,99	6,53	5,87	5,20	5,60	4,88	4,71	4,69	5,35
20-39,9	5,18	5,51	5,25	4,74	5,52	4,96	4,72	4,71	5,38
40-59,9	4,94	5,64	6,03	4,55	5,02	5,06	4,51	4,86	4,61
60-79,9	4,65	5,55	4,93	4,28	4,41	4,57	4,27	4,63	4,00
80-89,9	4,42	5,07	4,41	4,04	4,34	4,83	3,95	4,47	4,27
90-100	3,98	4,43	4,45	3,74	4,41	4,07	3,74	4,75	3,70

Table 18: Average interest rate on first mortgage for income percentile group. Data for the stated years.

Outright denials of credit are not the only practices where ethnic discriminations (so-called direct redlining or redlining[6]) have been documented (Schafer and Ladd (1981), Schill and Wachter (1993), Munnell et. al. (1996), Ross et. al. (2008)). Reverse-redlining refers to racially targeted predatory lending practices on the basis of ethnicities. Higher interest rates charged to minority-ethnic households without apparent reasons were documented by a number of studies (Boehm, Thistle and Schlottmann (2006), Bocian, Ernst and Li (2008)). To cite a recent example from the press, in July 2012, the renowned bank Wells Fargo was sanctioned for more than $175 million as it admitted giving subprime mortgages to minority households with credit standings close to Whites who received prime loans[7]. The reason was apparently the mere ethnicity of the borrower. These practices increase the weight of debt on the minorities.

To gauge the weight of mortgage payments at different levels of wealth, I group some figures in table 19 below. Hispanics are the group that on average has the highest mortgage payments, while Black mortgage holders pay slightly less than Whites. Considering the differences in value of the houses I outlined in an earlier section, it is interesting to notice payments in absolute terms are not so different. Moreover, if payments are similar and minorities, as I will detail in one of the next sections, have lower incomes than Whites, it is reasonable to expect they can find themselves more constrained. As the ratio of mortgage payments to income shows, mortgage payments weigh more on the earnings of the Minorities than on those of the Whites at every level

[6] The term “redlining” refers to the red lines real estate lenders drew on their maps around minority neighborhoods to know which areas to avoid.

[7] Office of Public Affairs | Justice Department Reaches Settlement with Wells Fargo Resulting in More Than $175 Million in Relief for Homeowners to Resolve Fair Lending Claims | United States Department of Justice

of wealth. Excluding the bottom 20% of wealth, minorities have to spend around 3 to 10 percent more. Considering mean income of mortgage holders, Blacks (resp. Hispanics) could save from $760 to $9,300 (resp. $2,400 to $9,500) per year - depending on their wealth - if they could allocate the same fraction of income to mortgage payments of Whites.

	Monthly mortgage payment			Monthly mortgage payment to income			Yearly income - households with mortgage			Mean outlay differential of minorities	
	Mean, US dollars			Average ratio			Mean, US thousands of dollars			US dollars	
Net worth percentile group	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic	Black	Hispanic
0-19,9	1176,0	1112,5	1417,5	30%	32%	36%	67,9	56,1	55,3	765,8	3026,3
20-39,9	945,9	854,4	1031,1	23%	28%	27%	61,6	51,7	53,8	2716,2	2339,3
40-59,9	1131,4	1055,0	1237,1	23%	29%	31%	79,3	71,1	69,8	3817,3	5350,4
60-79,9	1367,3	1390,5	1613,5	21%	24%	32%	106,9	96,7	86,6	3421,8	9529,5
80-100	2367,7	2106,9	2394,4	29%	34%	31%	264,6	189,9	195,7	9368,3	5402,9

Table 19: Descriptive statistics for mortgage payments and income. Pooled data 1989-2019.

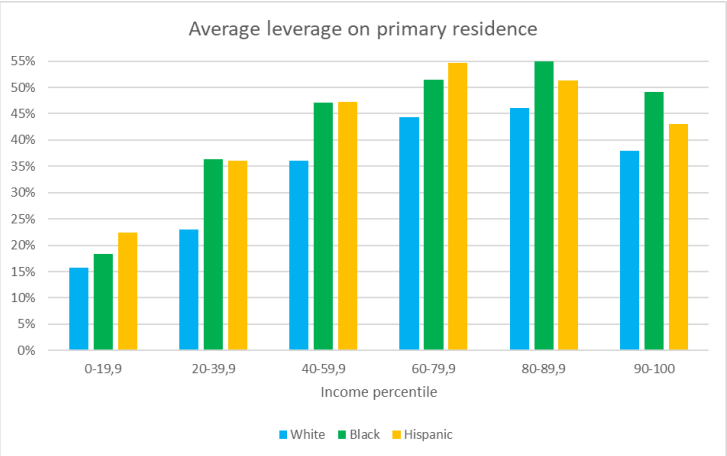
Mortgage debt is not the only debt that can be secured by residence. Households who possess equity in real estate can borrow against its dollar value also in case a mortgage is ongoing. Two main instruments allow it. With home equity loans, the borrower receives a lump sum upfront, generally to be reimbursed at fixed dates with fixed interest rates. With home equity lines of credit (shortened HELOCs), the borrower does not receive any lump sum, but he can tap into his home equity when needed up to an agreed amount. Repayments are usually not fixed, and the interest rate is variable. HELOCs and home equity loans have more favorable terms than other debt such as credit cards and unsecured debt, and are used to pay for college, home improvements and other.

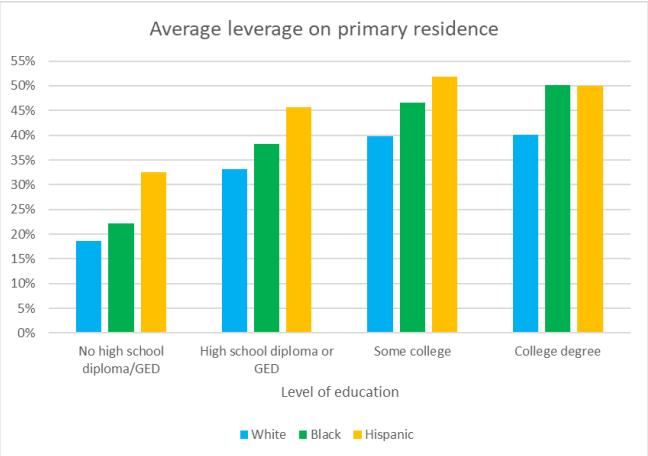
The equity position of a homeowner is the value of the house net of all the debt against it. Seen another way, the value of a house is composed of the sum of the equity position of the owner and all the debt secured against the house. It follows that the greater the balance of mortgages, home equity loans or HELOCs against the house, the lower the equity position. The closer the equity position of the owner is to the whole value of the house, the more control he has over it. Other than all the risks of traditional forms of unsecured credit such as interest rate risk, borrowing against the house increases the exposure to housing price risk. If the value of the house decreases, borrowers could owe more than the value of their house. Additionally, borrowers who fail to honor the agreed debt obligations are at risk of foreclosure.

I analyze the leverage on primary residence using the following formula:

$$Leverage = \frac{Mortgage\ loans + home\ equity\ loans + HELOCs}{Total\ house\ value}$$

Graphs 22 and 23 show the average leverage on primary residence for homeowners controlling for level of income level (left) and education (right).





Graph 22 (left): Average leverage on primary residence by level of income. Pooled data 1989-2019.
Graph 23 (right): Average leverage on primary residence by level of education. Pooled data 1989-2019.

The graphs show a clear trend: minority homeowners have, on average, a higher leverage or, conversely, a lower equity position on their houses with respect to Whites. I analyze pooled data for different years and find that the gap has ranged from 2 to 10 percentage points through the years. In 2007, during the development of the market of subprime mortgages, the gap of the Blacks and Hispanics with the Whites was respectively 11 and 9 percentage points. In 2019, it was respectively 4 and 6 percent.

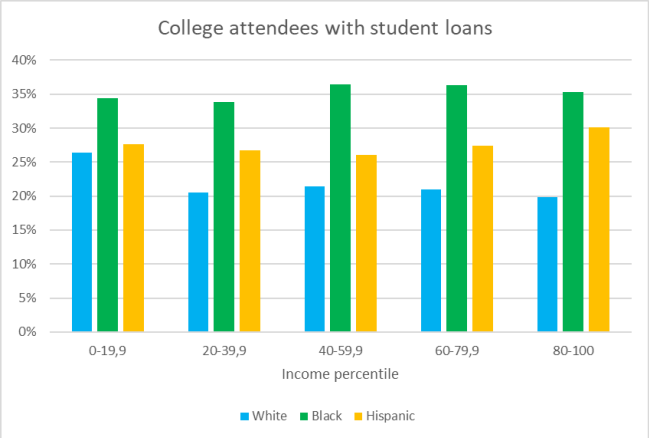
These findings further complicate homeownership for the minorities. Not only – as documented earlier – Blacks and Hispanics are less likely to own a house than Whites, but they also have lower equity position when they own one. Payments for first mortgages represent a higher share of income for the minorities and considering the latter – as I analyze in one of the next sections – have lower incomes than Whites, the latter might have lower chances to accumulate earnings. I also present some evidence that interest rates are higher for the minorities. The burden of debt associated with housing – the most important balance sheet – is higher for Blacks and Hispanics.

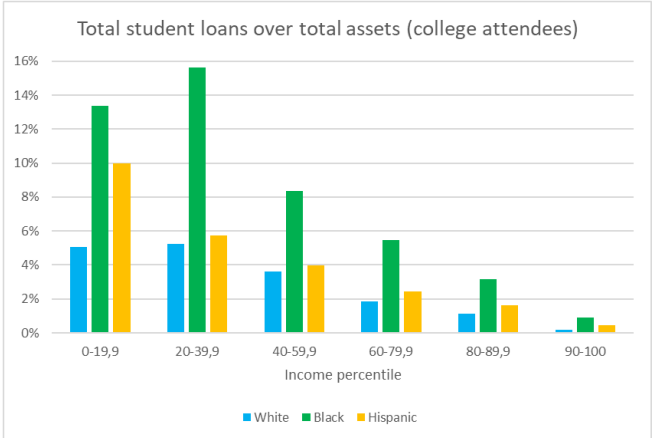
Education loans

Education loans are an arguably delicate liability for many college attendees in the United States. The American government has long helped students finance their higher education to strengthen the country's competitiveness and enhance living standards. Education – as I discuss more extensively in one of the next sections – is pivotal in the financial well-being of individuals. Avery and Turner (2012) discuss the importance of the choice to take on student loans and lay down the most important factors a student should look at. Although the benefits of a college education outweigh the costs borne in the vast majority of cases, student loans can weigh on the balances of those who are more constrained in the short to medium term. Elliot and Nam (2013) run median regressions using data from the 2007 and 2010 waves of the SCF. After

controlling for various factors, they estimate that a college graduate with a 2007 median income and outstanding student debt loses 54 percent in 2009 net worth compared to an equally wealthy peer without debt. Other works (Bozick and Estacion (2014), Gicheva (2016)) find student debt delays marriage or determines decline in wage growth after college graduation (Minicozzi (2005)).

To observe the recourse to student loans, I plot on graph 24 the share of college attendees that hold them.



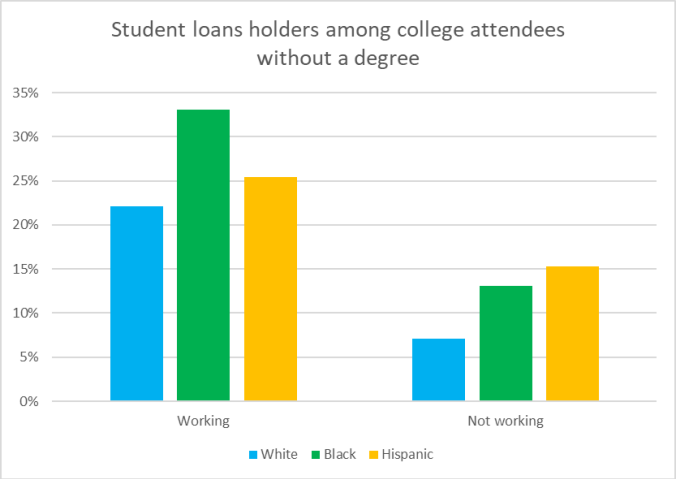


Graph 24 (left): Share of college attendees with student loans. Pooled data 1989-2019.
Graph 25 (right): Aggregate student loans over aggregate assets for college attendees. Pooled data 1989-2019.

It is immediate to see that the two minorities are more likely to have student loans than Whites. Blacks have the highest ownership rates: more than one third at every level of income has a student loan. Grinstein-Weiss et al (2016) find similar evidence about the Blacks analyzing data of low- and medium-income students from a study of the Refund to Savings project. They document that low and medium-income Black students are twice as likely as the Whites to have student debt. Espinosa et. al. (2019) include similar findings in a recent report of the American Council of Education. Hispanics have lower rates than Blacks, but the gap with the Whites increases in the income percentile. More than one in four Hispanic college attendees holds student debt.

Graph 25 (on the right) gauges the weight these loans have on the assets of the households: it shows the ratio between the aggregate amount of student loans over total assets. The figures of the Blacks are striking: education debt weighs on their assets more than twice as much as for the Whites at each level of income. Apart from the lowest level of income, the burden on assets is similar for Whites and Hispanics.

It is also interesting to focus on individuals who take student debt but do not finish their studies. Graph 26 plots college attendees with no degree who took out a student loan.



Graph 26: Student loans holders among college attendees without a degree. Pooled data 1989-2019.

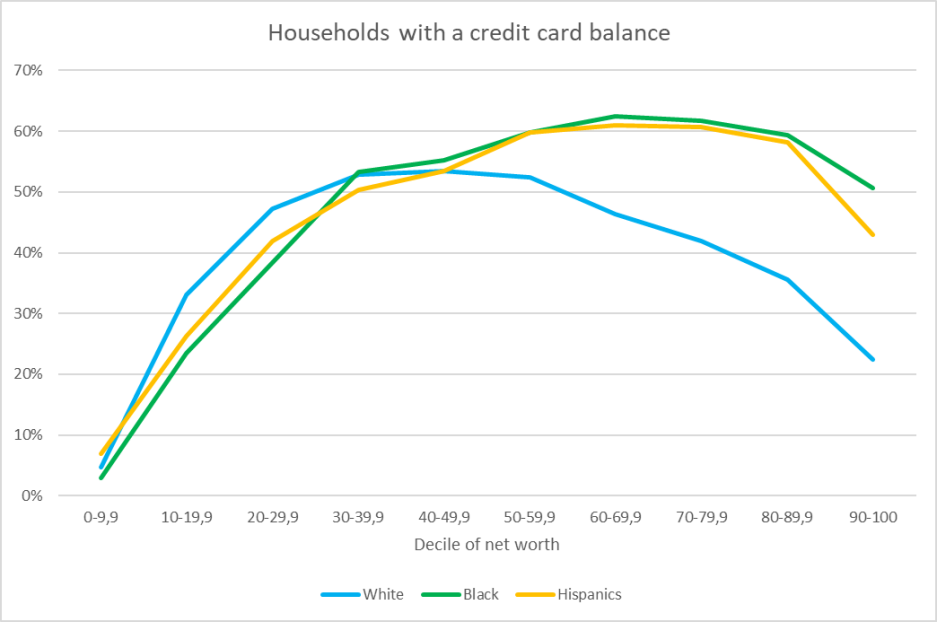
The trend is clear: among those who attended college but did not graduate - often referred as the “college dropouts” - both minorities are more likely than Whites to have student debt. Although the rates are lower, relative differences are much wider among those who do not work. Pooling the two samples together (and recalling that the SCF contains more data about workers than unemployed individuals in the labor force), the percentage shown in the graphs amounts to 18,4% for the Whites vs 29,3% of the Blacks and 24,2% of the Hispanics. Not only minorities take more student debt, but they are also more likely than Whites to drop out from colleges after they take it.

The presented evidence points that student debt is a heavier burden for the minorities: they make greater recourse to it, and they borrow higher amounts on their assets than Whites. Also, they are more likely than Whites to not finish college once they take student loans. The differences are much more pronounced for Black households than for Hispanics. Thus, minority individuals - especially Blacks - who choose to attend higher degrees of schooling can end up more constrained once they approach the labor market. These facts have been documented in recent works. “*Black students are less successful in repaying their loans and more likely to default*” (Espinosa et. al. (2019)). Atkinson (2010) analyzes data from the 2007 Consumer Bankruptcy Project and documents that while the chances of filing for bankruptcy are lower for White graduates than for non-graduates, Black college graduates are equally likely to file than non-graduates.

The findings from the Survey of Consumer Finance, paired with the evidence of the literature, highlight that the cost of college education is far from equal across ethnicities. As I discuss in one of the next sections, higher levels of education are associated with higher earnings. It is reasonable to assume these findings can explain (at least a part of) ethnic differences in earnings.

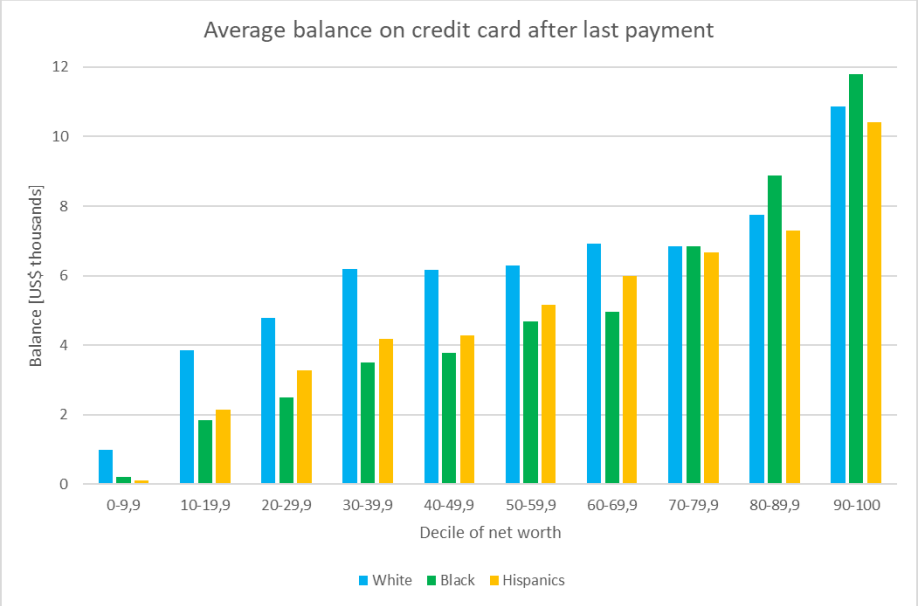
Credit card balances

Credit card balances are the amount of money the owner owes to their credit card company to use their credit. They must be managed properly to ensure the cost of credit increases too much. As the balances are not paid off, the interests on the unpaid amount are accrued, therefore the amount due increases. Delay in repayments do not only increase the interests owed (which are already high compared to other forms of debt), but often entail additional fees. Credit cards are therefore considered one of the less healthy classes of debt. Graph 27 shows the share of households that have a credit card balance at different levels of wealth.



Graph 27: Share of debt holders with credit card balances. Pooled data 1989-2019.

It is interesting to notice the reliance on credit cards is similar in the lowest half of wealth and very different afterwards. Up until the 5th decile, Whites, Blacks and Hispanics have similar rates. While the ownership of Whites peaks at the fifth decile and decreases steadily afterwards, that of the two minorities (which is very similar) peaks much later and remains way higher at each level of income. Among the wealthiest, minorities are much more likely than Whites to have credit card balances outstanding.



Graph 28: Average balance on credit card after last payment. Pooled data 1989-2019.

Moreover, the average balances of credit cards of the minorities, which are plotted in graph 28, are much closer to the Whites at high levels of wealth. Black credit card owners among the wealthiest 20% (i.e., last two wealth deciles) have balances even higher than those of the Whites. As the previous statement - Whites own more debt than the minorities - is valid also for credit card debt (for example, in 2019 it was 23 million of dollars for Whites vs 2,6 and 2,5 million for Blacks and Hispanics respectively), the similarities in amounts owed cannot be overlooked.

These findings are indeed puzzling: as stated above, credit card debt tends to be expensive and entail high costs if not managed properly. Minorities at high levels of wealth, who are more likely to have better credit standings and therefore access to various types of credit, could choose other - perhaps more advantageous - forms of debt to finance their needs.

Determinants of wealth accumulation

Differences in assets and debts give a measure of the wealth gap, but do not fully explain the causes behind it. As anticipated in the introduction, a stream of literature – whose studies I cite in the next sections – focused on cultural and social characteristics of the different ethnic groups and evaluated the extent to which they can explain differences in wealth. Factors such as education, income, attitudes on saving and consumption, demographics and many others can explain the wealth of households. Individuals who are positioned more favorably can accumulate wealth better, and those who are worse off can fail to do it to the same extent. The higher the impact of one determinant on wealth, the wider the differences in wealth resulting from different positions of the ethnicities.

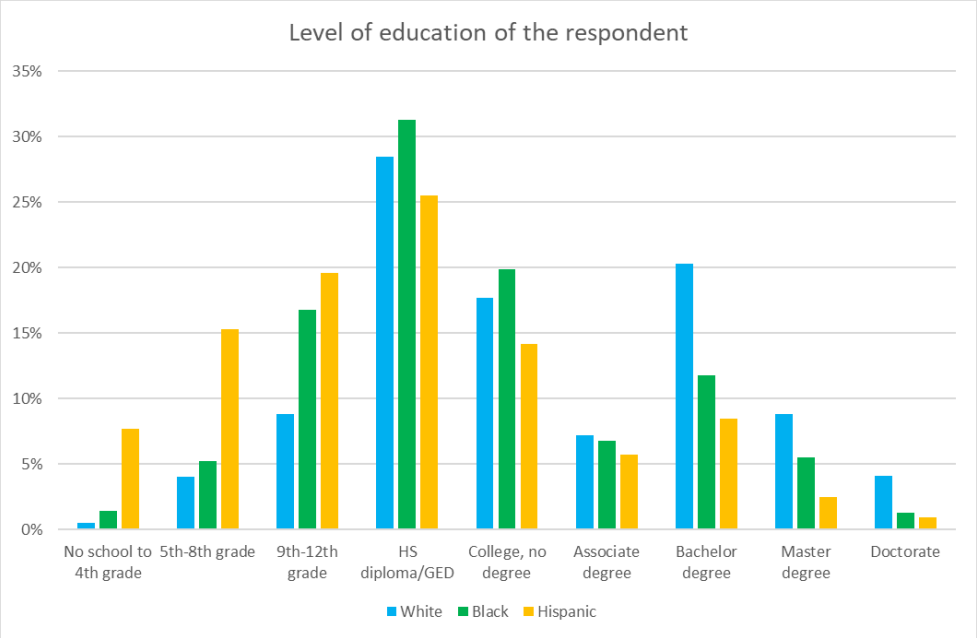
Descriptive statistics

I analyze some of the cultural and social characteristics of households that can determine differences in wealth accumulation. I focus on the determinants that have received sufficient attention from the literature and, using data from the Survey of Consumer Finances, I discuss if there are differences between ethnicities, and - if there are some - I quantify them.

Education

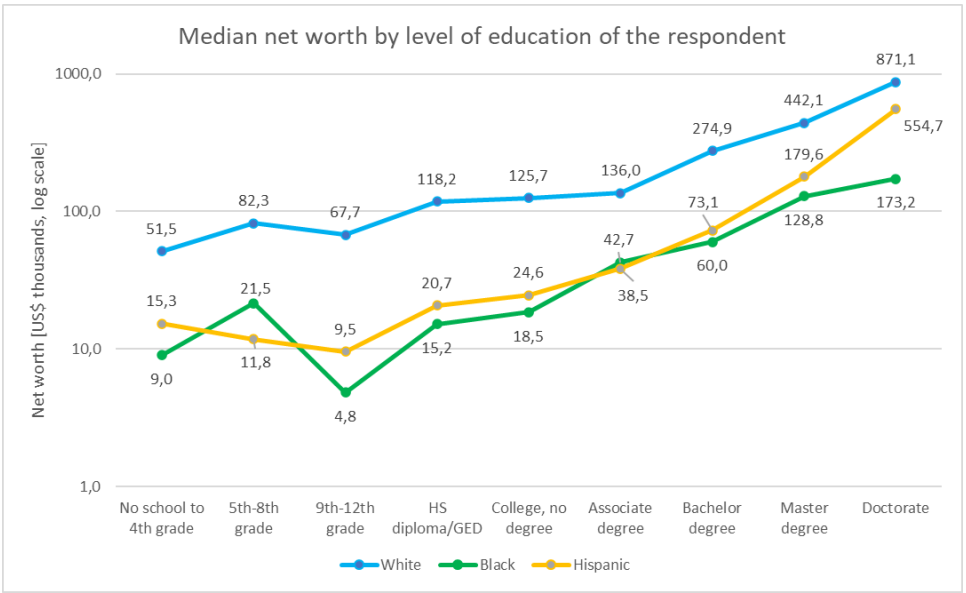
Education can have a significant impact on the wealth accumulation of an individual (Pfeffer (2018)). It correlates with many aspects that play a role in building wealth. For example, those who attend higher schooling are more likely to access better qualified jobs, earn higher salaries and suffer less from employment. Disparities increase in college: the "*college premium*" - the income premium associated with a college degree - is where returns on education peak (Goldin and Katz (2007), Hout (2012), Bartscher et. al. (2020)). The chances of having a good knowledge of financial literacy, which is important to manage one's own resources properly, increases significantly in the level of education (Kaiser and Menkhoff (2017)).

Graph 29 shows the distribution of schooling of the three ethnic groups in a detailed way. Whites have greater levels of schooling than both Blacks and Hispanics. 40% of white respondents are college graduates versus 23% of Blacks and 18% of Hispanics. Conversely, only 13% of Whites do not have a high school diploma versus 23% of Blacks and 43% of Hispanics. Hispanics are overall the group with the lowest level of education.



Graph 29: Percentage of households by level of education of the respondent. Pooled data 1989-2019.

Graph 30 plots the median wealth (on log scale) of the three ethnicities controlling for education level. While there is no clear trend before the high school diploma, median wealth of all the three groups steadily increases in education level from high school diploma onwards. The same holds for mean values. At median, the higher the level of education, the higher the gap of wealth between contiguous classes of education. For example, Whites, Blacks and Hispanics with a Master of Science degree have respectively 1,6, 2,2 and 2,5 times the wealth of those with a Bachelor of Science degree.



Graph 30: Median net worth on log scale for level of education of the respondent. Pooled data 1989-2019.

Moreover, the advantage of education in asset holdings clearly emerged during the analysis of the portfolios of household: the ownership of houses, businesses and income-generating financial securities increases in the education level.

These findings, paired with the previous evidence that Black and Hispanic individuals have less schooling than Whites, suggest that differences in education can contribute to the ethnic wealth gap. Some studies point out that differences can persist in the labor income despite the same level of education: minority ethnicities have lower returns on schooling than White peers. Ishikawa and Ryan (2000) analyze data from the 1992 wave of National Adult Literacy Survey and observe a significant difference in the way income changes in response to fundamental skills acquired through education between White and Black individuals. Sullivan et. al. (2015) analyze data from the 2011 wave of the SIPP and find the median white college graduate accrues more than 11 dollars for each dollar accrued by a Black or a Hispanic accrues. Thus, the marginal impact of education on income and wealth could be lower than expected. That being said, equal levels of schooling could undoubtedly help in decreasing the gap.

Income

The income of a household is composed of inflows from the different sources of earnings he has at disposal. Income can come from wage and salary, business and proprietorship, interest and dividends, pension and government support. Income is one of the main indicators of a household's well-being: households who earn higher incomes are able to save more, acquire assets of higher value, have better access to investment opportunities and, in general, achieve higher living standards.

Differences in income between ethnicities explain a great part of the wealth gap and play a pivotal role in perpetuating it (Smith (1995), Scholz and Levine (2004), Altonji and Doraszelski (2005), Thompson and Suarez (2015)). Wage disparities across ethnicities are substantial and are not primarily a consequence of differences in education. Minority households have higher unemployment rates than Whites, and the gap peaks in economic downturns (Darity and Hamilton (2012)). Discrepancies are not limited to the access to the labor market: minorities also have lower returns on their human capital (Charles et. al. (2009), Sullivan et al. (2015)). For example, they are employed in jobs that pay less than those from which they are excluded (Hamilton et. al. (2011)).

Distribution of education groups in the labor force [% of education group]

	White				Black				Hispanic			
	A	**B**	**C**	**D**	**A**	**B**	**C**	**D**	**A**	**B**	**C**	**D**
No high school diploma/GED	30,3	8,0	56,9	4,8	31,3	3,3	51,5	13,9	63,6	7,2	19,6	9,6
High school diploma or GED	54,9	10,0	30,6	4,5	59,0	5,6	22,7	12,7	71,9	8,9	11,4	7,8
Some college	61,1	11,5	22,3	5,1	70,2	5,0	16,3	8,5	75,8	8,5	9,5	6,1
College degree	62,7	16,0	18,4	2,8	72,2	8,3	14,5	5,0	73,4	10,6	11,0	5,1

Occupation group	**Description**
A	Work for someone else
B	Self-employed/partnership
C	Retired/disabled + (student/homemaker/misc. not working and age 65 or older)
D	Other groups not working (mainly those < 65 and out of the labor force)

Table 20: Distribution of education groups in the labor force. Pooled data 1989-2019.

Table 20 clusters households by occupation groups that allow to operate high-level distinctions in the labor market. The figures allow us to make some observations. First, minorities - Hispanics in particular - are more likely to work as employees than Whites at each level of education. This is consistent with their lower ownership rates of businesses presented in the section “Real assets”. Second, coherently with the evidence of the gap in unemployment rate, the share of individuals under 65 years of age that are eligible for labor but are not working (group D in table 20) is higher among the minorities at each education level. Between the Blacks and the Hispanics, the former are more likely to be out of the labor force.

I analyze figures of income controlling for education, which is arguably its most important contributor among the demographics. The two income streams related to labor force participation of employees and self-employed workers are respectively wage income and income from business. Table 21 shows median values of total income (leftmost section), wage and salary income for employees (central section) and business income for self-employed individuals (rightmost section).

Median income of labor force participants [US$ thousands]									
	Total income (all sources)			Wage and salary			Business, sole proprietorship and farm		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
No high school diploma/GED	44,2	26,5	34,3	40,7	24,0	33,2	21,5	25,1	36,6
High school diploma or GED	61,4	39,0	44,3	55,1	36,6	42,1	42,2	12,0	31,7
Some college	68,2	47,5	53,9	61,1	44,6	50,8	41,8	25,4	58,6
College degree	111,6	71,8	78,7	96,1	67,8	74,3	69,6	41,9	45,5

Table 21: Median yearly income of labor force participants. Pooled data 1989-2019.

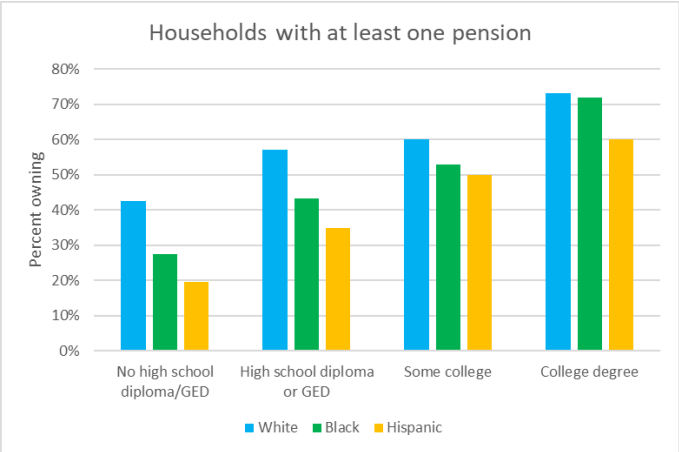
A persistent fact is that the absolute gap increases in education. For example, the total income gap of the Blacks is $17,700 in case of no high school diploma, it rises to between $21,000 and $22,400 with a school diploma and to $40,000 for college graduates. Hispanics earn more than Blacks no matter the education, but the gap with the Whites is still significant. It amounts to $9,900 without a high school diploma, between $14,300 and $17,100 with a school diploma and to $33,000 for college graduates. The same holds for wage and salary income: Black employees earn from 59 to 73 cents per dollar of the Whites, depending on education. Hispanics earn slightly more - from 76 to 83 cents - but a clear gap remains. Business income is higher for the minorities with barely any schooling, but still amounts to around $26,000 for college graduates. As it is reasonable to expect that the latter have higher chances of managing businesses of high value, they are the ones for which the differential impact is more relevant.

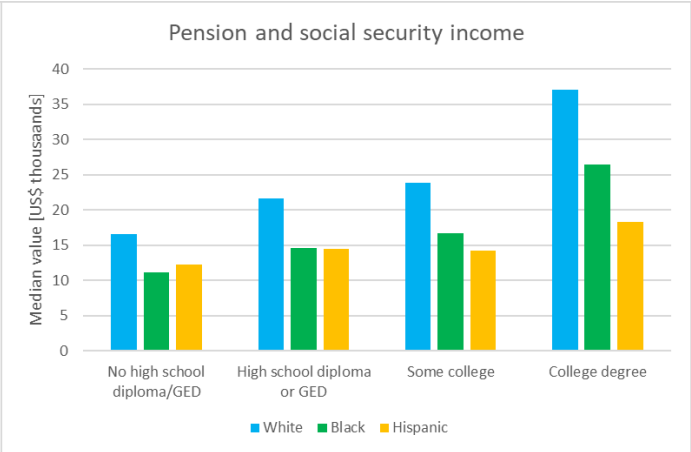
Median wage and salary income of labor force participants [US$ thousands]						
	Males			Females		
	White	Black	Hispanic	White	Black	Hispanic
No high school diploma/GED	41,5	29,3	34,7	18,8	14,9	16,8
High school diploma or GED	59,8	47,8	45,7	29,2	22,2	20,8
Some college	70,6	59,4	56,4	34,3	32,3	32,7
College degree	107,8	86,2	81,4	54,2	54,0	51,5

Table 22: Median yearly income of labor force participants by gender of household head. Pooled data 1989-2019.

Gender is another factor that drives income disparities in the workplace. Table 22 separates the central section of table 21 for gender of the household head. Female employees earn significantly lower than males no matter their ethnicity, but the relative income gap is lower among females, particularly among the better educated. Black females earn from 80 to 97 cents for each dollar on the Whites, and Hispanics about 90 to 95 cents. Black males, instead, earn from 70 to 85 cents for each dollar on the Whites, and Hispanics about 75 to 85 cents.

Pension income is the most important financial support of the median individual during his non-working years: it allows him to cover expenses and maintain the quality of his life once he has retired from the job market. Graph 31 shows the percent of households where either the reference person or the spouse has a pension plan. Although the ownership gap shrinks in education, White households are more likely to hold a pension at every education level. Graph 32 shows median values of pension and social security income. White households enjoy higher pension incomes after retirement. Blacks earn about 70 cents for each dollar of the Whites. The pension income of Hispanics does not change significantly with education, so the relative gap with the Whites increases in education. Hispanics without a diploma earn 70 cents per dollar of white peers, and the fraction decreases to 50 cents for college graduates. These figures are likely the consequences of the disparities in income presented early in the chapter: Whites, who earn more while working, can enjoy higher pensions after retirement.





Graph 31 (left): Percent of households where either the reference person or the spouse has a pension plan. Pooled data 1989-2019.
Graph 32 (right): Median pension and social security income conditional on ownership. Pooled data 1989-2019.

The findings confirm the disadvantages of income of minorities reported by the literature, either in the labor market and after retirement. Minorities are less employed than Whites and earn lower labor income regardless of if they are employees or self-employed. They are less likely than Whites to have a pension income and, conditional on ownership, earn lower pension incomes. The trends are persistent even after controlling for the education of a household. As discussed in the introduction of the section, these facts inevitably have consequences on wealth disparities across ethnicities.

Inheritances

Intergenerational wealth transfers inevitably play a large role in perpetuating wealth inequalities. Individuals who inherit tangible assets or liquidity have an advantage over those who do not. I surfaced the topic earlier in the section “Private businesses”, where I discussed the advantages of inheriting a business instead of starting one. Of course, inheritances and bequests are not restricted to business interests: any asset can potentially be handed over. The weight the inheritance will have on the wealth of the household depends on the size of the inheritance and on the relative importance of the asset. The role of homeownership as a building block of household wealth has been discussed earlier. Those who inherit a house inevitably have a considerable advantage over those who had to buy it, who can face financial barriers. Speaking about the size, wealthiest households pass down assets of higher value, and this increases concentration of wealth among the richest.

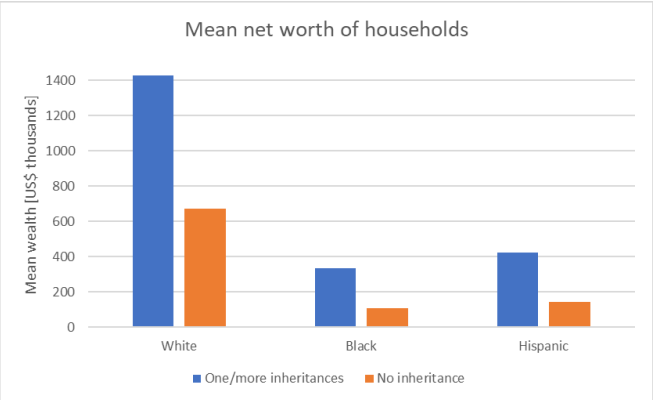
Many works find that inheritances explain part of the wealth gap (Scholz and Levine (2004), Shapiro (2006), Shapiro, Meschede and Osoro (2013)) and increase discrepancies if perpetuated through time Szydlik (2004). Smith (1995) argues that it is not only a matter of economic conditions: personal preferences also play a role. He observes data from the Health and Retirement Study and documents that those who believe that inheritances are important accumulate around $86,000 more in assets than those who overlook them. The lower interest for bequests of Blacks and Hispanics translates in a wealth gap of $53,000 and $35,000 respectively.

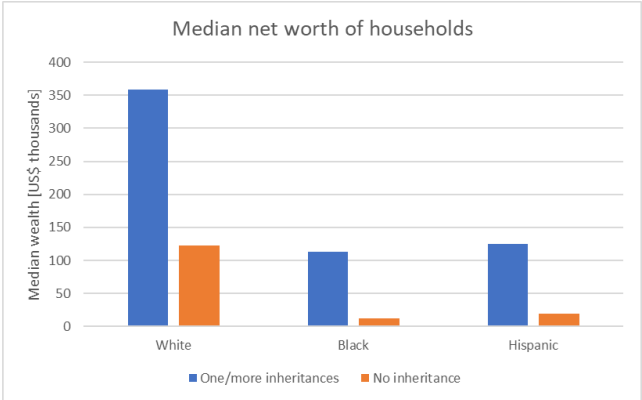
Table 23 shows the percentage of households who received one or more inheritances and the expectations of the three ethnic groups. 30% of white households received an inheritance with respect to 10% of Blacks and 7% of Hispanics. The percentage of those who received more than one is highest among the Whites, who also expect more than minorities to receive one in the future. 17% of Whites expect to receive a median inheritance of $196,000, while 6% or less of Blacks and Hispanics expect a median inheritance of $100,000 and $150,000 respectively.

Descriptive statistics for inheritances				
	Received an inheritance [%]	Received more than one inheritance [%]	Expects to receive an inheritance [%]	Median expected value [US$ thousands]
White	29,9	9,1	17,0	196,0
Black	10,4	2,1	6,0	100,0
Hispanic	7,2	1,8	4,2	150,0

Table 23: Descriptive statistics for inheritances. Data from the 2019 wave.

Aggregate dollar values of the inheritances are disproportionate as well. Considering the total value of inheritances received in 2019, Black households inherited only 4 cents for each dollar of the Whites, and Hispanics only 2 cents. These findings are in line with earlier evidence of Shapiro (2006). Mean and median net worth of households who received one or more inheritances (Graph 33 and 34 respectively) are unsurprisingly higher than those who did not receive any.





Graph 33 (left): Mean net worth of households by inheritance. Pooled data 1989-2019.
Graph 34 (right): Median net worth of households by inheritance. Pooled data 1989-2019.

At first sight, and without considering other factors, the relative wealth gap looks much wider for the minorities. The true impact of inheritances is a function of many factors and is not easy to evaluate in a straightforward way. However, if the marginal impact on wealth is relevant, the evidence suggest that White households are much more advantaged over Black and Hispanic ones.

Savings and consumption

Savings are funds that a household sets aside to use in a future moment. They are indeed an important component of wealth: they represent a reserve for unexpected expenses and are the primary resource to consider investments of different nature. Three broad factors determining the level of savings are: the size and number of streams of income a household can rely on, the financial outlays it has and the propensity to save of family members.

Income, which has been treated in the previous chapter, is perhaps the most fundamental determinant of a household's savings. Differences in incomes drive disparities in savings: minorities, who have substantially lower wage incomes, are not able to save as Whites in absolute terms. In the section "Financial assets" I discussed

how the lack of fixed income securities and other financial instruments that provide returns uncorrelated from labor income can make it harder for households to save. Households who do not own these instruments cannot rely on interest/dividends income, nor on capital gains.

Scheduled debt repayments are systematic outlays that can hinder the possibilities to save. In the section “Liabilities” I showed how minority households have more debt on their assets than Whites. This implies they are more constrained on the medium-long run and can fail to accumulate resources.

Talking about the propensity to save, households that are more inclined towards savings accumulate higher wealth and are able to improve their living standards. Differences in savings attitudes across ethnicities are a relevant factor to explain the ethnic wealth gap (Altonji and Doraszelski (2005)). Keister (2004) performs sequence analyses on savings in assets of different risks and shows savings attitudes vary by ethnicity. A higher percentage - around 8 to 10 percent - of minorities remains with little or no savings. Also, a significant fraction of Whites transitions early in life to financial asset ownership: 21% White compared to 2% Black and 8% Hispanic.

Consumption is the other side of the coin of savings: individuals who spend more on goods, especially non-essential ones, can be more constrained. In their book “*Black Wealth, White Wealth*”, Oliver and Shapiro (1995) observe that Black households tend to spend more than Whites on housing and transportation rather than income producing assets. Charles, Hurst, and Roussanov (2009) analyze data between 1986 and 2002 CEX by the United States Department of Labor and find evidence of different consumption patterns between ethnicities. They control for differences in income and find robust evidence that minorities spend around 30 percent more on visible and conspicuous items like personal care, clothing vehicles, and jewelry than Whites do. Considering the average expenditure on visible items, minorities spend around $2,300 more per year. They speculate the reason could be status-signaling. These excessive spending results in reduction in other outlays, such as those financing education and health, and reduce savings. Kaus (2013) reaches the same conclusions analyzing different ethnic groups of South Africa.

As savings are typically planned on income, I analyze data about savings controlling for income. The leftmost section of table 24 below shows the percentage of households who reported they saved last year. A clear trend emerges: the percentage of savers is higher for the Whites at each level of income. At aggregate level, almost 60 percent of white households saved through the years versus 43 percent of the minorities. The rightmost section groups households based on spending relative to income. It emerges that expenses exceed income more for minorities than for Whites: minorities are more likely to spend more than their earnings regardless of their income.

	Saved last year [%]			Spending VS Income in the past year [%]								
				Spending < Income			Spending = Income			Spending > Income		
Income percentile group	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
0-20	34,2	29,3	28,9	34,2	29,3	28,9	45,0	44,1	49,6	20,9	26,6	21,5
20-39,9	49,0	36,7	40,2	49,0	36,7	40,2	34,5	36,6	41,1	16,5	26,6	18,7
40-59,9	58,4	48,3	46,2	58,4	48,3	46,2	27,7	33,3	35,9	13,9	18,3	17,9
60-79,9	68,5	63,7	57,5	68,5	63,7	57,5	20,8	22,3	29,1	10,7	14,0	13,4
80-89,9	73,7	65,7	69,9	73,7	65,7	69,9	17,3	20,4	22,9	9,0	13,9	7,2
90-100	83,2	79,6	76,4	83,2	79,6	76,4	10,5	13,4	13,3	6,3	7,0	10,2
ALL HOUSEHOLDS	59,7	43,1	43,5	59,7	43,1	43,5	26,9	34,9	38,8	13,3	22,0	17,7

Table 24: Percent of households who saved in the last year and total spending with respect to income. Pooled data 1992-2019.

The figures presented in table 24 provide the actual outcomes of savings. Those figures, however, do not really help in evaluating the household propensity to save or, conversely, to spend. Some questions in the SCF can help gauge the two. The one I choose asks if the respondent would spend more or not if his assets appreciated in value.

Graph 35: Percentage of households by answer to the stated question at aggregate level. Pooled data 1992-2019.

Answers to the question *"Would you spend more if your assets appreciated in value?"* [% of income percentile]									
	Agree			Indifferent			Disagree		
Income percentile group	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
0-19,9	18,7	35,2	28,7	16,7	17,6	20,2	64,7	47,1	51,1
20-39,9	18,1	33,9	31,5	16,1	14,9	18,7	65,8	51,2	49,8
40-59,9	21,3	32,3	33,0	15,6	15,1	17,3	63,1	52,7	49,7
60-79,9	22,2	28,7	28,3	15,4	13,0	15,3	62,4	58,2	56,4
80-89,9	23,7	34,3	29,3	14,8	14,4	9,8	61,5	51,3	60,8
90-100	28,8	26,5	29,3	14,5	17,8	20,8	56,7	55,7	49,9
ALL HOUSEHOLDS	21,7	33,1	30,4	15,6	15,6	17,9	62,7	51,3	51,7

Table 25: Percentage of households by answer to the stated question by income percentile. Pooled data 1992-2019.

The aggregate analysis (graph 35) shows that a higher share of minorities - about 10% - would spend more than Whites if their assets appreciated in value. The propensity to spend of these households is likely higher than their propensity to save. Consequently, the share who would not intensify spending in case of asset appreciation - arguably those with higher propensity to save - is higher for the Whites. Table 25 shows that the trend holds irrespective of the level of income. The answers,

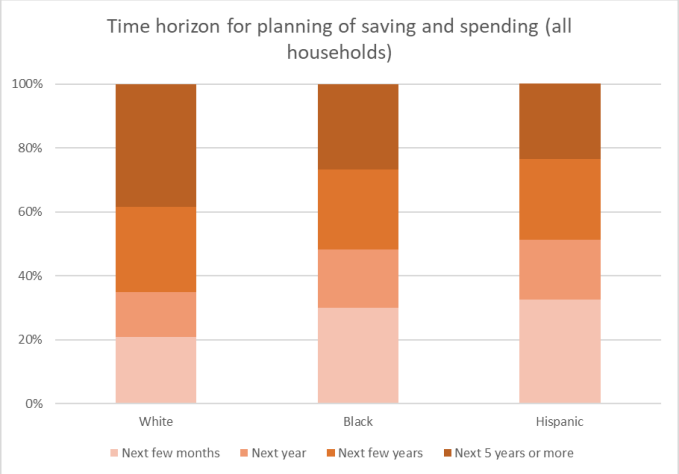
however, are more polarized among those who earn less. While almost two thirds of white households in the lowest 60% of the income distribution would not intensify spending in case of asset appreciation, the share is close to 50% for both minorities.

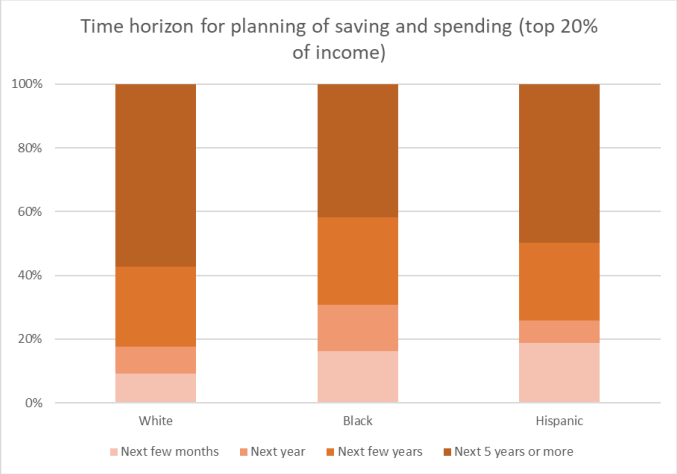
These differences in attitudes towards savings likely explain why minorities fail to accumulate as Whites. Minority households, especially those with low earnings, seem more geared towards spending than Whites. One must keep in mind that a higher willingness to spend is not negative per se. It arguably becomes a problem when the expenses are for non-essential or non-productive items. However, the evidence, paired with the presented research on consumption patterns, suggest minorities who save less might spend in excess for those items.

Savings are extremely important for low wealth households. Not only do they allow for social mobility and improvement of living standards in the medium to long run, they also represent a buffer for short-term unexpected expenses, which tend to weigh more on those who hold less. For example, even though the share is relatively low, minority debt holders resorted more to payday loans than Whites did. In the period 2007-2019, 2,3% of White households had a payday loan vs 7,4% (resp. 4,5%) of Blacks (resp. Hispanics) ones. Payday loans are short-term unsecured loans of small amounts, often at high interest rates, to be reimbursed when the next wage is received. Lenders are typically not institutional banks, but rather storefront payday loan companies and online payday lenders which charge very high interest rates and fees, at the limit of predatory lending practices.

The horizon of the saving plan, intended as the length of time in the future over which a household organizes his savings, is another important aspect. Households who are more forward looking are more likely to save than others (Lee, Park and Montalto (2000)). Smith (1995) analyzes data from the Health and Retirement Study and, after controlling for various factors, finds that minority households are 10 percent more likely than minorities to plan over a few months. He also observes that mean net worth increases in planning horizon: it is $142,000 for households that plan only for the next few months compared to $374,000 for those who plan for the next decade.

One question in the SCF asks the respondent the time horizon over which the household savings and spending are planned. Using answers of recent waves for households under 75 years of age, I find the mentioned trend did not evolve through time. Graph 36 shows the results: the darker the tone of the color, the longer the planning/spending horizon. White households clearly plan over longer horizons than both minority groups. In graph 37 I restrict the analysis to the top 20% earners, and find that differences reduce, but do not disappear. For example, 18% of Whites plan not further than the next year compared to 31% of Black and 26% of Hispanics.





Graph 36 (left): Time horizon for planning of saving and spending (all households). Pooled data 2010-2019.
Graph 37 (right): Time horizon for planning of saving and spending (top 20% of income). Pooled data 2010-2019.

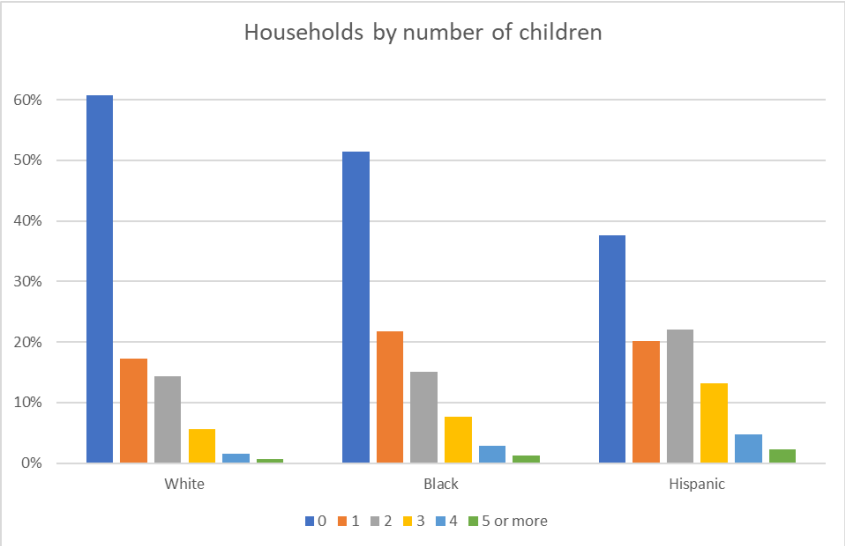
I repeat the analysis at lower level of incomes and find the difference widen. Moreover, Blacks do emerge as the group with the shortest planning horizons at each level of income.

Family structure

The way a family is shaped can play an important role in many financial aspects that govern its day-to-day life. The resources of the single members of a family can be pooled together or held separately depending on many factors, including marital status. Marital status, together with the size of the family, can also impact the allocation of resources between members and determine decisions about expenses, which are arguably important if they impact one or more children. In this section I focus on three characteristics of a family that can impact household wealth: the size of the family, the marital status of the household head and the gender of the household head.

The size of a household, intended as the number of members that compose it, can affect the distribution of resources among family members. The “dilution model” states that as the size of the siblings increases, the resources at disposal of the parents - finite by definition - are spread among more children, thus the quality of each child decreases. Downey (1995) supports the view with an analysis of the 1988 National Education Longitudinal Study. He finds that not only do the resources of the parents decrease in the number of children, but as sibling size increases, the educational

outcomes of the children get worse. Similarly, Wilson and Allen (1987) analyze data from three datasets representative of young black households and observe that youths from larger families complete significantly fewer years of schooling, perform worse at school and in later life. Keister (2004) uses the National Longitudinal Survey of Youth of 1979 and runs Generalized Least Squares estimates to model wealth by race, controlling for various factors such as education, gender and relationship status. She finds that family size decreases ownership rates of houses and stocks and ultimately total wealth for the adults.



Graph 38: Households of ethnic groups by number of children. Pooled data 1989-2019.

Graph 38 shows the distribution of households of the various ethnic groups by number of children. White households have less children than the two minorities. Hispanics, by contrast, are the ethnicity with the largest families: more than 60 percent have at least one kid compared to less than 50 percent of the other groups. If the argument of the dilution of financial resources is true, minority households, who are more numerous, should have less wealth than white ones (everything else equal). I analyze the median net worth per capita of family members and find that it indeed decreases in the size of the household. The impact on the total wealth of the family, however, is not evident. Table 26 contains the median wealth of households in the number of children.

Median net worth by size of household [US$ thousands]						
Number of children	0	1	2	3	4	5 or more
White	174,1	140,3	154,5	146,1	125,0	146,1
Black	26,4	19,9	17,1	10,9	6,8	2,5
Hispanic	13,9	21,1	23,4	23,2	23,8	14,0

Table 26: Median net worth by number of children in the household. Pooled data 1989-2019.

If no controls are introduced, there is no clear trend for the Whites. The only insight is that White and Black households with no children have higher wealth at median than those with kids. Interestingly enough, the median net worth of Black households

decreases steadily in the number of children. Conversely, the median wealth of Hispanics generally increases in the family size up to four children.

Marital status of the household head is another trait that can influence the net worth of a family. Marriage is typically associated with increase in wealth, but the extent depends on the net worth of the elements of the couple (Keister (2004)). Marriage can elevate wealth when the spouses have average to high wealth, while likely won't result in significant changes when the two have limited wealth, which is more likely the case for minority households than for Whites. Shapiro, Meschede and Osoro (2013) observe the same set of families between 1984 and 2009 using data from the PSID and note that marriage is associated with an increase in wealth of around $75,000 for white households, but it is not statistically significant for African-Americans. Pooled data from 1989 to 2019 tell that 64% of Hispanics have been married. The Whites follow at 61%, while the Blacks are far below: only 36% have been married.

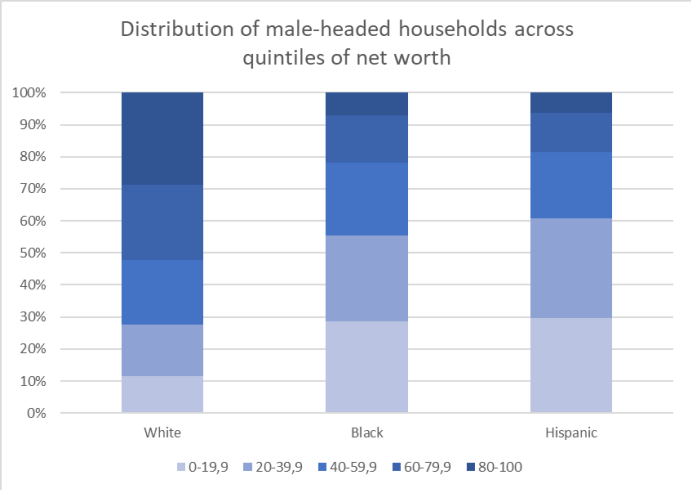
Median net worth per capita [US$ thousands]								
Age group	**18-34**		**35-54**		**55-74**		**75+**	
Married / LWP	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**
White	13,4	8,7	68,9	48,8	194,4	133,6	176,2	170,6
Black	4,6	0,5	19,2	6,9	44,9	21,9	76,7	45,7
Hispanic	3,2	1,6	12,6	5,4	37,8	11,1	33,7	9,9
Level of education	**No high school**		**HS diploma / Ged**		**Some college**		**College degree**	
Married / LWP	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**
White	39,4	32,5	53,3	52,9	65,6	49,6	170,8	138,6
Black	10,6	1,4	13,6	4,1	21,7	5,6	45,0	37,0
Hispanic	5,2	1,2	8,3	3,8	14,9	7,0	42,6	38,3

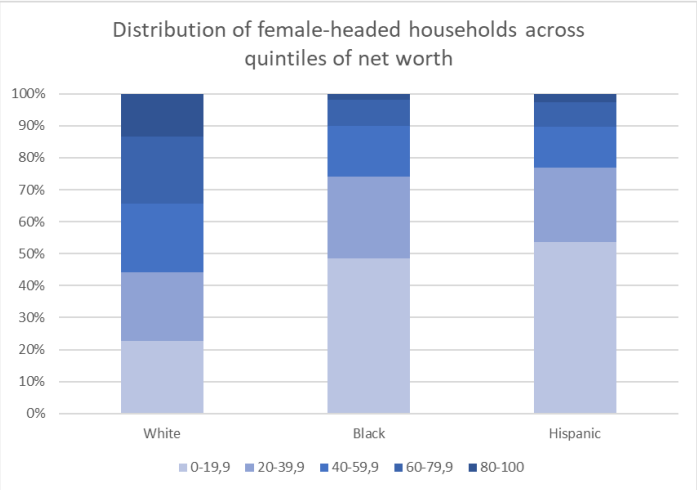
Table 27: Median net worth per capita for households by marital status ("Yes": married or living with partner, "No" otherwise). Pooled data 1989-2019.

To investigate if marriage is associated with higher wealth independent of the fact that the resources of the (possible) partners are shared together, I calculate the net worth per capita of households. Table 27 shows that household components where the head is married have higher median wealth independent of education and age, two demographic factors typically associated with marriage. Considering that Hispanics are more likely to be married and have more children than Whites and Hispanics, their lower values of wealth per household capita is not a surprise.

Finally, wealth differences have been attributed to the gender of the reference person. Thus, differences in the gender of the household head can explain part of disparities across families. Conley and Ryvicker (2004) study data from the PSID and document that female-headed US households, net of life-cycle effects, have lower wealth than male-headed counterparts. They discuss that one contributor to such disparity is the lower savings rates compared to males. Single-mother households might be in weaker positions because women tend to have lower wages and receive low economic support from men (Sorensen (1994)). Also, they can find it more difficult to accumulate resources to acquire income-generating assets (Keister (2004)). Wilson (1987) discusses that female-headed families are more inclined to poverty.

The share of interviewed households headed by females (1989 to 2019) is 27,7 percent. I separate the three ethnic groups and find that White and Hispanics have historically had around the same share of female-headed households, respectively 24,5 and 23,8 percent. The story is indeed different for Black families, where the share is 48,4 percent. To observe differences in wealth for the gender of the household head, I plot the distribution of male and female-headed households in the scale of wealth (graph 39 and 40 respectively). It is immediate to see that female-headed households tend to be more concentrated at low levels of wealth with respect to male-headed ones. Furthermore, differences between male and female households tend to be much more pronounced for the Minorities. For example, while around 30% of male-headed households of minorities are in the lowest 20% of wealth, the share is close to 50% for female-headed ones.





Graph 39 (left): Level of wealth of male-headed households (quintiles of net worth). Pooled data 1989-2019.
Graph 40 (right): Level of wealth of female-headed households (quintiles of net worth). Pooled data 1989-2019.

The effect of gender of household head on wealth is expected to be more pronounced for the Blacks, who are much more likely than Whites and Hispanics - almost twice as much - to be female-headed.

Considering the evidence and the findings of the literature, Black households can be impacted more negatively by the structure of their families. They have more numerous families, are significantly less likely to be married and more likely to be female-headed. All these traits are associated with higher constraints and, in turn, lower wealth. Hispanic households are more numerous than Whites, but equal in rates of marriage and gender of household health, thus the role of family structure can possibly be more marginal.

Financial literacy

Financial knowledge is important when the management of assets (e.g., pensions and savings) and decisions about investments are taken by household members themselves and not delegated to specialized agents such as financial advisors. As capital markets have become more and more complex in recent years, the importance

of financial knowledge has increased. It is particularly the case for the United States, whose financial markets are among the most developed worldwide. US households can choose between a wide range of products and financial services, and these choices inevitably drive differences in wealth accumulation and financial well-being. Those who have greater financial literacy are more aware of financial risk and opportunities, know where to turn for help and, ultimately, can make more informed choices. Many studies highlight the importance of financial literacy for well-being. Lusardi, Michaud and Mitchell (2017) develop a model in which individuals can choose to acquire financial knowledge through their life and observe that financial literacy plays an important role in the explanation of wealth inequality. Financial education better equip an individual towards financial decisions (Carpena, Fenella et. al. (2011)), can stimulate savings in general and for retirement (Bernheim and Garret (2003), Lusardi and Michaud and Mitchell (2017)) and lead to differences in income (Kacperczyk, Nosal, and Stevens (2019)).

Although it does not equate to financial literacy, a good knowledge of personal finances is a good starting point towards it. From 2016 onward, the SCF included a question where the respondent could rate his one. The question was: *"Some people are very knowledgeable about personal finances, while others are less knowledgeable about personal finances. On a scale from zero to ten, where zero is not at all knowledgeable about personal finance and ten is very knowledgeable about personal finance, what number would you (and your {husband/wife/partner}) be on the scale?"*

Since the question is a self-assessment, the answers should be taken with a grain of salt: they could be influenced by cognitive biases such as the Dunning-Krueger effect, where the respondent believes he is more knowledgeable than he actually is. Nonetheless, they offer an insight on the perception households have of personal finances. Table 28 shows the percentage of various ethnicities for various score groups.

Self-reported knowledge of personal finances [% of respondents]					
	0	1 - 4	5 - 7	8 - 10	Average
White	0,7	6,5	41,5	51,2	7,4
Black	1,4	9,4	44,1	45,2	7,1
Hispanic	3,8	13,6	43,1	39,6	6,5

Table 28: Self-reported knowledge of personal finances. Pooled data 2016-2019.

It is straightforward to notice that Whites self-report a higher knowledge of their finances than other ethnicities. The percentage of "not knowledgeable at all" (with score 0) and between 1 and 4 are considerably lower than other ethnicities. Also, the percentage of respondents with a high knowledge (score 8 to 10) is the highest. Blacks are not so distant from Whites, while Hispanics are the worse of the three. The aggregate average score is 7,4 for the Whites, 7,1 for the Blacks and 6,5 for Hispanics. Keeping in mind the previous consideration, these figures suggest that Whites might have better control over their personal finances. This can result in better management

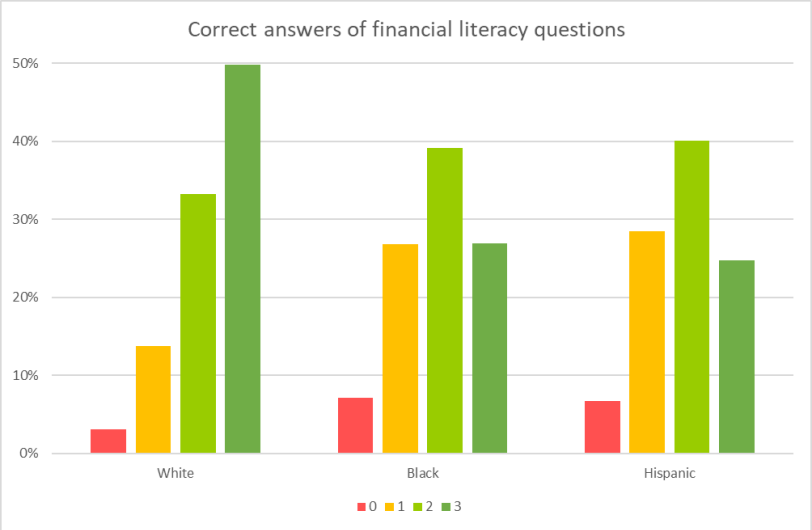
of resources, higher efforts in budgeting, spending and saving decisions, and other factors that contribute to the financial stability of a household and can promote wealth accumulation.

The level of financial literacy is often assessed with questions about economic concepts like time value of money, inflation and risk diversification. The SCF included three closed-answer questions on financial literacy for the first time in 2016. The questions of the wave of 2019 were:

1. *"Do you think that the following statement is true or false: buying a single company's stock usually provides a safer return than a stock mutual fund?"*
2. *"Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow: more than $102, exactly $102, or less than $102?"*
3. *"Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy more than today, exactly the same as today, or less than today with the money in this account?"*

The three questions aim at measuring riskiness of different securities, compound interest and time value of money, respectively.

Graph 41 shows the number of correct answers of respondents by ethnicity. Whites emerge as the group with the highest level of financial knowledge: about half of them responded correctly to all the three answers, and only 3% had them all wrong.



Graph 41: Distribution of households for correct answers of financial literacy questions by ethnicity. Pooled data 2016-2019.

The results of Black and Hispanic households are similar and worse than those of the Whites. Around 7% of both had all answers wrong and around one quarter had all of them right. Assigning one point to each question, the two ethnicities scored a weighted average of 1,86 and 1,82 out of 3 points, respectively. For comparison, the Whites

scored 2,30 (see also Table 29 below). The results are in line with the evidence of the 2018 wave of the National Financial Capability Study (NFCS)[8]. The NFCS is a survey conducted by the FINRA Investor Education Foundation and the U.S. Department of the Treasury that collects data on financial capability. Six questions about elementary finance topics - mortgages, interest rates, inflation, risk and bond pricing - were submitted to the interviewees. While Whites and Asians could both answer, on average, 3,2 out of 6 questions correctly, Hispanics and Blacks scored only 2,6 and 2,3 respectively, both below the national average.

Of course, the differences in financial literacy are not only attributable to ethnicity. Table 29 shows the average number of correct answers controlling for various demographic factors typically associated with financial literacy. The figures suggest that gender, education, and age can play a role: male households scored better than females, and the score increases linearly with schooling. These facts are true for every ethnic group. Age impacts ethnic groups slightly differently, but the general trend is that very young households and very old ones score lower than middle-aged ones.

Average number of correct answers of three financial literacy questions											
	All households	Gender		Age				Education level			
	All	Male	Female	18-34	35-54	55-74	75+	No high school	HS diploma / Ged	Some college	College degree
White	2,30	2,37	2,05	2,14	2,33	2,38	2,20	1,79	2,05	2,25	2,58
Black	1,86	1,98	1,72	1,69	1,94	1,96	1,57	1,69	1,71	1,89	2,10
Hispanic	1,83	1,88	1,68	1,88	1,79	1,89	1,58	1,59	1,85	1,90	2,21

Table 29: Average number of correct answers of three financial literacy questions. Pooled data 2016-2019.

Even after controlling for these demographic factors, a clear trend emerges: Whites score higher in financial literacy than all the minorities. A possible objection is that the presented figures are based on three questions only, therefore one erroneous question significantly decreases the score. It must be noted that the presented trends are remarkably similar to the ones in the NFCS of 2018, where the questions were six. The results of the NFCS of 2018 and SCF of 2016 and 2019 suggest that Black and Hispanic households have – at least in recent times – poorer financial literacy than the Whites. This could mean that, everything else equal, they have lower control over their personal finances.

Multivariate analyses

I conclude the second part of the work by performing multivariate analyses to evaluate the extent to which the observable determinants analyzed impact the wealth accumulation of households of different ethnicities. To provide a representation of the current status of wealth accumulation – and at the same time do not restrict the analysis too much – I use data from the three most recent waves available as of September 2023.

[8] The interested reader can read the full report at the following link: NFCS-2018-Report-Natl-Findings.pdf (finrafoundation.org)

Methodology

The complexity of the design of the Survey implies the correct calculation of standard errors is not so straightforward when performing multivariate analyses. The variability introduced through the five implicates has been addressed in the previous analyses with the use of replicate weights. In addition to it, it is necessary to also consider the sample variance. The estimates of the variances from the SCF must be adjusted to account for the dual-frame sample design, which leads to unequal probability of selection (Nielsen and Seay (2014), Shin and Hanna (2017)). For this purpose, the Federal Reserve provides a file containing 999 replicate weights that can be used in a bootstrapping procedure. The technique behind the bootstrapping technique is explained in detail in Efron and Tibshirani (1994).

I use Stata to perform regression analyses and apply the provided bootstrap weights using the Stata module “scfcombo”.

Variables

I set the net worth of the household as the dependent variable, and I select a number of independent variables on the basis of the results of the descriptive statistics. The signs of the statistically significant coefficients tell the direction of the impact the variable has on net worth: a positive (resp. negative) coefficient is associated with a higher (resp. lower) net worth holding everything else equal. I choose not to include ownership of assets such as houses, businesses and stocks as independent variables to avoid the risk of endogeneity and “mechanic relations”. It is true that houses, businesses and financial securities can contribute to wealth accumulation through appreciation, but it cannot be ruled out that they are the actual outcome of wealth.

I include two variables for the age of the respondent to model it in a quadratic form. I use three dummies for the level of schooling: no diploma or GED, some college and college degree, leaving high school diploma or GED as the reference level. I control with other two dummies if the household spent more than its income in the previous year, and if the members have a horizon for planning savings and expenses horizon equal or longer to the next year. I also include one dummy that equals one if the household feared being turned down for credit in the previous years. I also control for family structure: I include one variable for the number of kids and dummies for the marital status (1 if the household head is married or lives with the partner, 0 otherwise) and the female gender of household heads. I also include a dummy equal to 1 if the household received an inheritance and another one if it could get $3,000 from family or friends. Finally, I include the normalized number of financial literacy questions answered correctly and the log-transformed total household income.

Results

I run three separate regressions on White, Black, and Hispanic households. The coefficients of the regressors are shown in table 30. Due to the applied transformation

of the dependent variable, which has been log-transformed[9], the coefficients can be interpreted as percentage changes in the mean net worth of the group holding keeping every other aspect controlled by the other regressors equal. I apply the log-transformation on wealth to account for its high skewness and reduce the sensitivity of the OLS analyses to outliers that could distort the results.

The impact of each category of education is significant for White households. Those who do not finish their high school have around 30% lower wealth at mean compared to those who finish it, while those who attend college but do not graduate have 11,2% higher wealth. The difference for these two levels varies in the minority groups. Black college attendees have a mean net worth 33,6% higher than individuals with high-school diploma or GED, while Hispanics who did not finish high school have around 30% lower wealth than those with the diploma or GED (both statistically significant). Interestingly enough, the coefficients for the college degree are statistically significant and large for all the ethnic groups: a college degree increases net worth at mean of 74,7% for the Whites, 78,8% for the Blacks and 51,6% for Hispanics compared to high school graduates holding everything else equal. Moreover, it is interesting to notice the large gap between college attendance and degree of White households, which stands at around 60%.

Spending patterns also correlate significantly with net worth: mean wealth of those who spent more than their income is 19,4% lower for the Hispanics, 30,3% for Blacks and 15% for the Whites. By contrast, longer periods for planning expenses and savings are associated with an increase much larger for the Whites – 46,4% – than for Blacks and Hispanics – 21,5% and 14,8% respectively. Expectations about denial of credit are also correlated: mean net worth of those who feared being denied for credit decreases of 64,8% for White households compared to 25,3% for Black ones and 44,3% for Hispanic ones. At first sight, the impact appears more relevant for the Whites.

[9] I follow previous works as Bajtelsmit, Bernasek, and Jianakoplos (1999) and Badu, Daniels, and Salandro (1999) and apply a two-step Heckman selection to address the possible sample selection bias due to the non-SRS nature of the SCF.

	White	Black	Hispanic
Age	0.0991***	0.0509***	0.0902***
	(0.00606)	(0.0142)	(0.0175)
Age squared	-0.000495***	-0.000152	-0.000521***
	(4.87e-05)	(0.000116)	(0.000175)
No high school diploma/GED	-0.285***	-0.108	-0.299***
	(0.0549)	(0.0896)	(0.0974)
Some college	0.112***	0.336***	0.0206
	(0.0307)	(0.0684)	(0.0943)
College degree	0.747***	0.788***	0.516***
	(0.0374)	(0.0859)	(0.142)
Spending exceeded income	-0.150***	-0.303***	-0.194*
	(0.0406)	(0.112)	(0.107)
Long planning/spending horizon	0.464***	0.215***	0.148*
	(0.0310)	(0.0541)	(0.0765)
Feared denial of credit	-0.648***	-0.253***	-0.443***
	(0.0388)	(0.0777)	(0.165)
Number of children	0.0622***	-0.0235	0.0475*
	(0.0104)	(0.0247)	(0.0249)
Married/Lives with partner	0.224***	0.400***	0.196*
	(0.0371)	(0.0912)	(0.116)
Female-headed	-0.264***	0.0839	-0.0252
	(0.0391)	(0.0904)	(0.126)
Financial literacy	0.179***	0.0636	0.145*
	(0.0262)	(0.0597)	(0.0812)
Received inheritance	0.498***	0.929***	0.800***
	(0.0253)	(0.104)	(0.140)
Could get $3000 from family and friends	0.475***	0.454***	0.449***
	(0.0393)	(0.0700)	(0.0864)
log-Household income	0.593***	0.556***	0.671***
	(0.0404)	(0.0904)	(0.105)
Adjusted R^2	0,5133	0,3988	0,3837
N	12,547	2,119	1,540
Standard errors in parentheses	*** p<0.01, ** p<0.05, * p<0.1		

Table 30: Coefficients and standard errors of the multivariate analyses.

Contrary to the expectations, the coefficients for children are positively correlated with wealth: every child increases mean net worth of Whites by 6,2% and 4,8% for Hispanics, while there is no statistically significant impact for Black ones. Marriage increases mean net worth for Black households of 40% compared to around 20% for Whites and Hispanics. Female headed-households are associated with 26% lower mean net worth for Whites, while there is no significant difference for Black and Hispanics. Literacy increases mean wealth of White households of around 17,9% and 14,5% for Hispanics (albeit with lower statistical significance) but is not relevant for Black households.

The impact of inheritances is statistically significant for all the three groups, but much larger for Blacks and Hispanics households. An inheritance increases mean wealth of about 93% for Blacks and 80% for Hispanics compared to 50% for White households. Those who can get $3,000 from friends and family have around 45% higher wealth at mean than those who do not. Finally, a 10% increase in income increases mean net worth of White, Black, and Hispanic households of 59,3%, 55,6% and 67,1% respectively. Overall, the included regressors explain wealth accumulation better for the Whites than for the minorities. Not only the adjusted r-squared of the White sample

is the highest of the three, but the coefficients are all statistically significant. Nonetheless, some factors remain significant for the minorities even after controlling for several variables: it is the case of income, planning and spending patterns, marriage, expectations about credit, college attendance, access to resources from families and friends and inheritances. The impact of the latter is perhaps the most interesting one: even keeping other factors equal, it is the highest in magnitude for both minorities.

The performed analyses indicate some high-level dimensions that can guide wealth accumulation for the groups. Given the differences observed in the previous sections, it is reasonable to speculate that the gap could reduce if those factors were equal across all households. Two further multivariate regressions that I run, one without the controls and the other with them, highlight that the (statistically significant) percentage gap of wealth at mean for Black and Hispanic respectively decreases from 294% and 207% to about 111% and 30%. Although such difference – assessed with two dummies for the minorities in a unique pooled sample – is still statistically significant, the controls decrease both the ethnicities' coefficients of more than 170%. It must be stated that these findings clearly do not represent a proof that the indicated factors play a role in the wealth gap. To evaluate the difference, one should conduct further analyses, such as decompositions analyses, that are beyond the scope of this work.

Limitations

This work has some limitations. To begin with, the Survey of Consumer Finances contains cross-sectional data: every wave, a new sample of families is interviewed. While it is possible to document the evolution of ethnic wealth disparities as a phenomenon, it is not possible to establish direct cause-effect relationships, nor to observe the evolution of the respondents' behaviors through time.

Moreover, the analyses were restricted to household characteristics that are observable and not complicate to evaluate. For example, the only dimension through which human capital has been quantified – educational attainment – is likely approximative of it: the models that estimate human capital are non-trivial and consider many factors other than education. Likewise, the income that I considered in both parts of the work (and also in the regression analyses) was the one households reported for the previous year. Some studies estimate expected income and use it to conduct further analyses to provide a more precise picture of the life cycle.

Some behavioral and attitudinal traits that received interest by the literature have not been treated. For example, the level of risk aversion of individuals, which can impact the way they structure their portfolio, was not considered in the first part of the work. The same holds about personal beliefs about financial markets, use of debt, and other, in the second part. I did not control for or analyze any potential discrimination in the credit or labor markets. Finally, the regressions I run control only for high-level determinants and do not include interaction terms between variables although some factors could be interconnected. As stated, the findings on the analyses, even paired with descriptive statistics, do not imply any causality.

Conclusions

I use data from the Survey of Consumer Finances, a nationally-representative detailed survey of households in the United States, to examine how the wealth of White households compares to that of Blacks and Hispanics from different perspectives. I begin by observing the evolution of the phenomenon in the last thirty years (1989 to 2019). The differences at median are striking: the median minority household never held more than 20 cents for every dollar of a White one, and in most years much less than that. The differences in absolute terms persist even among more schooled households and those that earn higher incomes.

I then examine portfolios of the ethnic groups to document their compositions. Black and Hispanic households are much more likely than Whites to be asset-poor: they have strikingly lower ownership rates of core assets such as houses, businesses, and more importantly, financial securities. As the importance of a house in the portfolio of a household is undisputed - homeownership is associated with a significantly higher net worth - the 20 to 25% gap in ownership rates steady across the years is maybe

the most impressive figure. The differences in homeownership are accentuated in younger individuals, especially around age 30 to 50. Blacks and Hispanics are less likely to own private businesses, and conversely more likely to be employees than Whites. Differences are even more evident for financial securities like stocks, bonds and mutual funds: Whites are much more exposed to financial markets than minorities. For example, a gap of ownership of financial securities of around 20% remains in highest earners who attended college. These findings are interesting especially considering that, contrary to houses and business, the cost of access to financial securities is generally much lower. In absolute terms, Blacks and Hispanics are closer to Whites in liabilities than in assets. The fact that their debt balances historically weighed less on their incomes but more on their assets supports in principle the view that the former fail to accumulate wealth as the latter do. I provide some evidence that there might be more discouraged borrowers among minorities, which suggest that they could be even closer to Whites in liabilities. The recourse to credit card debt is an example of how minorities with less constraints could rely more on debt. Despite this fact, minorities are slightly more likely to resort to mortgage debt for their primary residence – 5 to 10% depending on the level of income – or to take student loans to finance their education. The leverage on primary residence highlights that owning a home might decrease disparities in net wealth less than expected: minorities tend to have lower home equity than Whites.

In the second part of the work, I analyze some determinants of wealth accumulation and notice some differences among ethnic groups. Whites are more schooled than Blacks and especially Hispanics. Their incomes – either as employees or from private businesses – are higher. For example, the gap at median is around $20,000 to $30,000 for college graduates. The relative disparities decrease among female employees, where the median wage is almost equal through groups. Whites are also much more likely to receive inheritances and receive dollars on the cents of Blacks and Hispanics. Unsurprisingly, they are also more likely to expect to receive one. The two minorities also differ from the Whites for attitudes towards saving and spending: White households tend to save more than Black and Hispanic at every income percentile, and those at low levels of income are less likely to increase spending in case of asset appreciation. Family structure of Black households differ from White and Hispanic ones: they are less likely to be married and more likely to be headed by females, two traits that some works associate with lower wealth. Finally, Whites outperform Black and Hispanic households in questions about financial literacy. When I include these factors in some high-level multivariate analyses, I observe that some of them are correlated to net worth at mean for all the three groups. It is the case of college graduation, spending and saving patterns, expectations about credit denial, marriage, the ability to borrow from family or friends, income, and inheritances. The magnitude of the latter is the most different between the groups: it is higher of about 40 to 50% at mean for minorities. When I include these controls in a pooled sample, the differences at mean, quantified with two dummy variables for Black and Hispanic households, reduce significantly after the controls are added. Although this analysis does not prove

that these dimensions, if equalized, can actually reduce the gap, they suggest that they might play a role in affecting it.

The scale of ethnic disparities in the United States is undoubtedly alarming. The divide between White households and minorities poses serious threats to social cohesion in the community. Albeit the numerous causes of the disadvantages of minorities can be distinguished by typology, they are not straightforward to disentangle as they are the result of many interconnected aspects of different nature. The long history of discrimination, particularly in the credit market, imply that the possibilities of Black and Hispanic households to access essential resources are seriously hampered. A house is the first step for many individuals to affirm themselves in the society. Private businesses can open doors to further investment opportunities and create networks. Financial securities allow owners to diversify their earnings and decrease their exposure to human capital risk. A higher level of transparency and unbiased treatments are the necessary starting points to reduce the reported ownership discrepancies and increase the chances of social mobility of Blacks and Hispanics. Equal opportunities to accumulate wealth could trigger a virtuous circle where minorities are able to improve their positions in contexts such as education and labor market that, in turn, can further improve the quality of their lives. If these issues are not addressed properly, minorities are likely to remain much more constrained and vulnerable to economic downturns than Whites. Inheritances are perhaps the most straightforward dimension to explain how the gap has remained relevant. Past discriminations can compound through the years so that, while the wealthier families can get better through generations, those who are more disadvantaged are more likely to remain behind.

Appendix: definitions of assets and liabilities

The classes of assets and liabilities analyzed are defined according to the most recent designs of the Survey of Consumer Finances. I include here the descriptions provided:

REAL ASSETS

Vehicles: all types of vehicles (cars, trucks, SUVs, motorcycles, boats, airplanes, etc.).

Primary residence: value of primary residence. Excludes the part of a farm or ranch used in a farming or ranching business.

Other real estate: land contracts/notes owed to the household and properties other than the principal residence, including 1-4 family residences, timeshares, and vacation homes, real estate other than the principal residence, properties coded as 1-4 family residences, timeshares, and vacation homes net of mortgages and other loans taken out for investment real estate.

Businesses: both actively and actively managed business(es). Value of active business(es) calculated as net equity if business(es) were sold today, plus loans from the household to the business(es), minus loans from the business(es) to the household not previously reported, plus value of personal assets used as collateral for business(es) loans that were reported earlier. Value of inactive business(es) is calculated as the market value of the business(es).

Other real assets: gold, silver (incl. silverware), other metals or metals NA type, jewelry, gemstones (incl. antique), cars (antique or classic), antiques, furniture, art objects, paintings, sculpture, textile art, ceramic art, photographs, (rare) books, coin collections, stamp collections, guns, misc. real estate (exc. cemetery), cemetery plots, china, figurines, crystal/glassware, musical instruments, livestock, horses, crops, oriental rugs, furs, other collections, incl. baseball cards, records, wine, oil/gas/mineral leases or investments, computers, equipment/tools, association or exchange membership, and other miscellaneous assets.

FINANCIAL ASSETS

Cash and cash equivalents: money market accounts, checking accounts, savings accounts, call accounts and prepaid cards, all types of certificates of deposits, government bond mutual funds and all types of saving bonds.

Directly held equity: all stocks held directly.

Indirectly held equity: stock mutual funds and trust plus half of combination mutual funds and other mutual funds (assumed to be split evenly in equity and bonds).

Fixed income securities: nontaxable bonds, mortgage bonds, government bonds, and “other” bonds, such as corporate or foreign bonds, half of combination mutual funds and other mutual funds, annuities.

Cash life value insurance: total cash value of whole life insurance.

Pension equity: individual retirement accounts/Keoghs and account-type pensions on current job.

Pension fixed income: future and current account-type pensions.

Other financial assets: includes loans from the household to someone else, future proceeds from lawsuits, royalties, futures, non-public stock, deferred compensation, oil, gas, and mineral investments., cash N.E.C.

LIABILITIES

Debt secured by primary residence: mortgages, home equity loans and home equity lines of credit secured by the primary residence.

Debt secured by other residential property: land contracts, loans for residential property other than the principal residence, misc. vacation, and installment debt reported for cottage or vacation home. Debt for nonresidential real estate is netted out of the corresponding assets.

Other lines of credit: all the lines of credit not secured by residential real estate.

Credit card balances after last payment: amount outstanding on all credit cards and revolving store accounts after the last payment. Balances do not include purchases made since the last account statement.

Education loans: education loans that are currently in deferment and loans in scheduled repayment period.

Vehicle loans: installment loans for all types of vehicles (cars, trucks, SUVs, motorcycles, boats, airplanes, etc.).

Installment loans: miscellaneous installment loans, such as those for durables or medical bills. Vehicles and education loans are not included.

Other debt: loans against pensions, loans against life insurance, margin loans, and miscellaneous loans.

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