Questions

1. Please summarize key trends in median total wealth over the last 30 years by race and education using plots and in writing.
2. Repeat your analysis for just median housing wealth for black and white households.
3. Many households are not homeowners and so your analysis for the prior question includes many zeros for housing wealth. Let's dig deeper by focusing just on homeowners age 25 or older. Subsetting to homeowners age 25 or older, please summarize trends in median housing and non-housing wealth for black and white households. Which group had the largest loss in housing wealth, where 2007 is defined as the base period? Please answer this question both in dollar terms and in proportional terms.
4. Many potential channels have been identified for explaining the wealth gaps by race documented in question 1. These include differences in access to financial markets, segregation, discrimination, family networks, neighborhood characteristics, and barriers to human capital accumulation. Please pick at least two hypotheses (they do not need to be included in the list above) and explain what evidence you might want to assemble to test the importance of these channels.

1 Question 1: Median Total Wealth

1.1 By race

Once weighted for the corresponding survey weights[1], the observations from the Survey of Consumer Finances (SCF) were summarized in the two line graphs in the next page. Figure 1 shows how both Hispanic and Black people had a median total wealth significantly lower than White people and Other races (Figure 1). Peaking in 2007 with almost \$60,000 difference[2], this spread indicates a clear wealth gap between White and Black people. As a matter of fact, in 2016 the typical White family had almost twenty times the wealth of the typical Black family and thirteen times the wealth of the typical Hispanic family.

Finally, no detailed information is provided related to what is included in the Other category, hence the implicit assumption of this work is that this contains the remaining races such as Asians, American Indians, etc. As the graph shows, their median total wealth is located between the White and Black / Hispanic respondents' wealth, representing an intermediate value for all years in the sample.

1.2 By education

When running a similar analysis by education, we notice how having a college degree consistently guaranteed a median total wealth greater than having lower level of education, and this was true throughout the whole period (Figure 2). Of course, this coincides with the expectation ex-ante, as it is reasonable to assume that the higher the education level, the

[1] **N.B.**: As indicated in the prompt, *wealth = asset - debt* and all values are rescaled in 2016 \$. However, it is important to notice that **wealth has been multiplied by the ratio between the observation's survey weight and the maximum weight, to scale data without losing coherence and take into account the weights**:

$$total\_wealth_i = (asset\_total_i - debt\_total_i) * \frac{weight_i}{weight_{max}} \quad \forall i = 1, ..., N = 47,776$$

$$housing\_wealth_i = (asset\_housing_i - debt\_housing_i) * \frac{weight_i}{weight_{max}} \quad \forall i = 1, ..., N = 47,776$$

[2] Total median wealth equal to \$62,685 and \$2,832 for White and Black respondents, respectively.

greater the chances to accumulate more wealth (in terms of greater assets and reduced debt).

Figure 1: Median Total Wealth by race. 1989-2016, SCF.

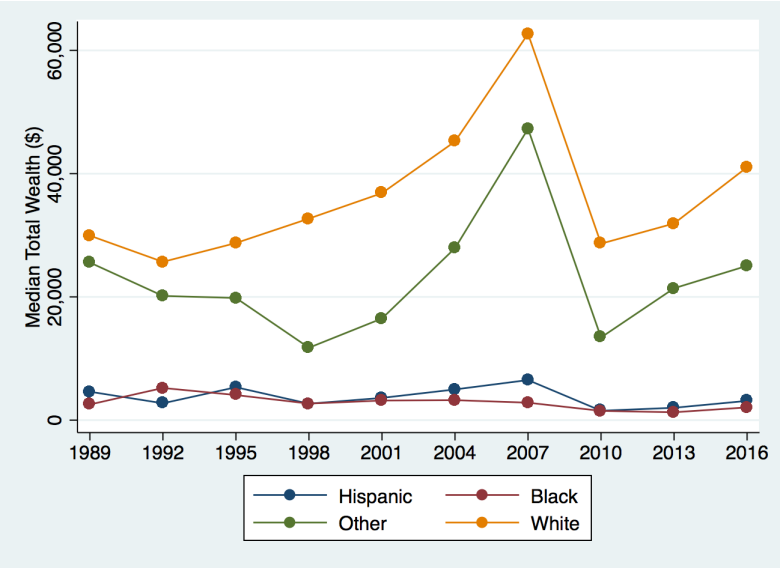
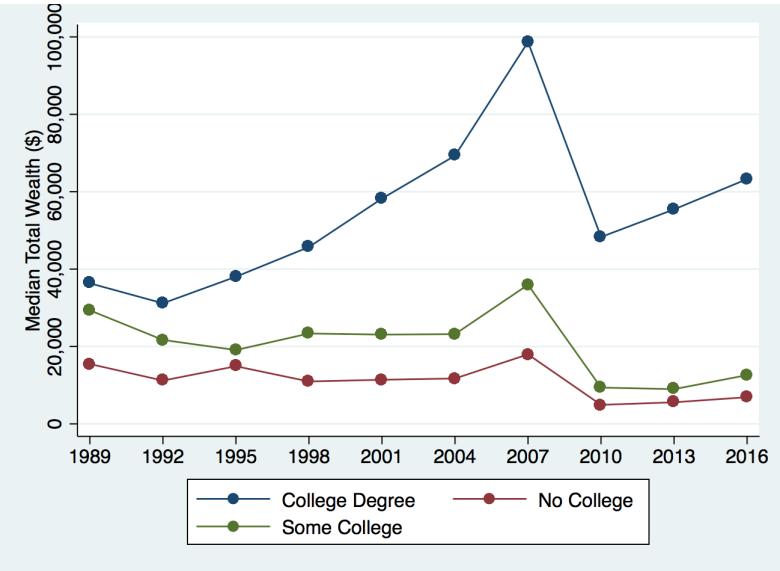


Figure 2: Median Total Wealth by education. 1989-2016, SCF.

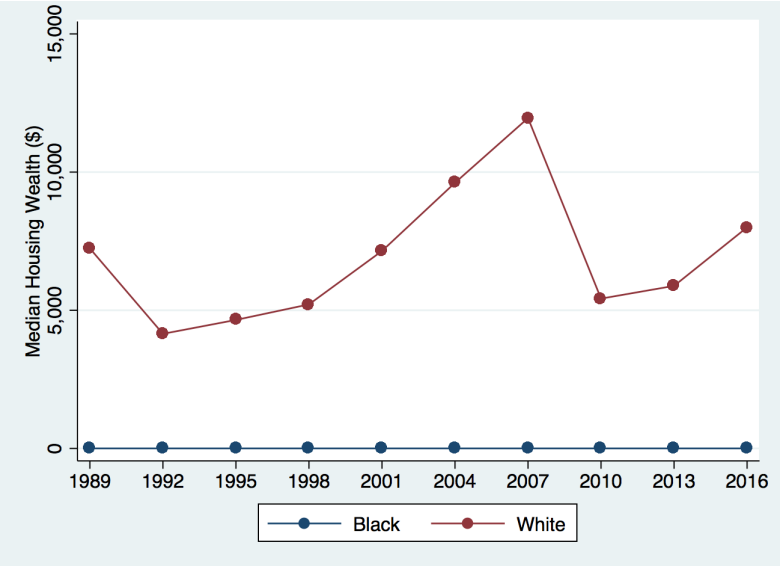


Finally notice how, regardless of whether the analysis is done on race or education, computing the median rather than the mean provided a more robust indicator for both total and housing wealth, because extreme outliers are excluded from the analysis.

2 Question 2: Median Housing Wealth by race

When we focus on Black and White families only and if we analyze the housing wealth rather than the total wealth, the dataset presents several observations of Black families who are not homeowners.[3] This undermines the usage of our metric, properly because the number of these cases is so substantial that the median value is null in all years. As a consequence, a straight line with all zeros is registered for Black people's median housing wealth (Figure 3).

Figure 3: Median Housing Wealth by race. 1989-2016, SCF.



3 Question 3: A deeper focus on the wealth gap

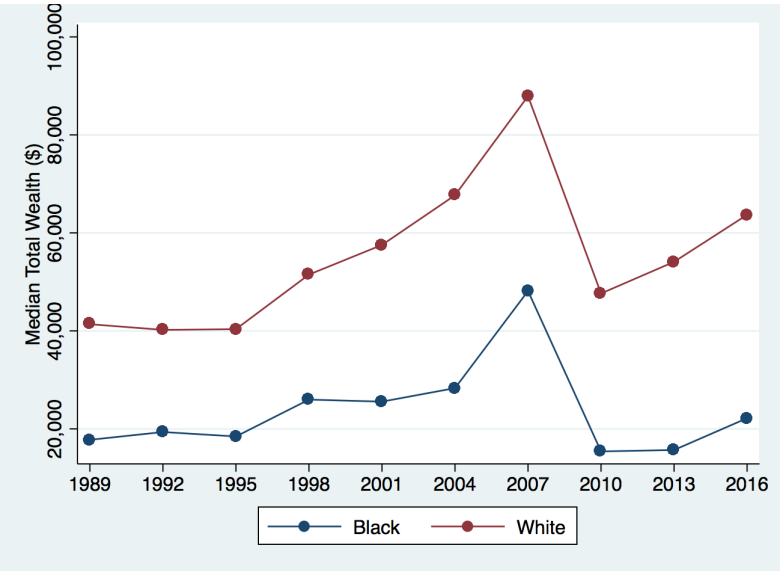
To address the issue encountered in the Question 2, two other conditions were set when computing the median wealth (total and housing). In particular:

- Age equal to 25 or older;
- Housing assets strictly greater than zero (i.e., the respondent of the survey is actually homeowner).

[3] Housing assets equal to zero.

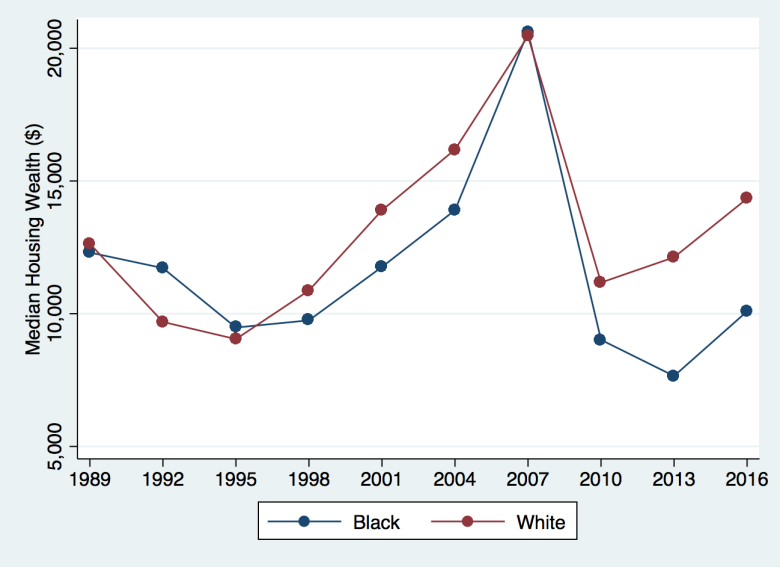
Indeed, the total wealth is greater for White families in Figure 4, but with strictly positive values for the wealth of Black survey respondents that confirm what found in Question 1.[4]

Figure 4: Median Total Wealth by race, only 25 years or older homeowners. 1989-2016, SCF.



On the other hand, surprising results come up from Figure 5 and Table 1. First of all, Black families had a greater median housing wealth than White families from 1989 to 1995. More in general, the overall spread between these races is extremely reduced in this particular subset, and this reduction is so significant that the two values almost coincided in 2007.

Figure 5: Median Housing Wealth by race, only 25 years or older homeowners. 1989-2016, SCF.



[4]In absolute terms, the housing wealth of the Black families is greater in Figure 4 than in Figure 1.

Table 1: Median Housing Wealth by race, only 25 years or older homeowners (corresponding values for Figure 5). 1989-2016, SCF.

Year	Black Median Housing Wealth (A)	White Median Housing Wealth (B)	(B) - (A)
1989	12,304	12,635	330
1992	11,718	9,690	-2,028
1995	9,477	9,042	-435
1998	9,750	10,874	1,124
2001	11,761	13,895	2,134
2004	13,899	16,184	2,285
2007	20,615	20,456	-159
2010	9,015	11,173	2,158
2013	7,652	12,126	4,473
2016	10,088	14,336	4,248

However, the financial collapse of 2008 hit the Black families more than the White families. Table 2 summarizes the dollar and percentage loss in median housing wealth by race, with respect to 2007. Both in absolute and relative terms, the housing wealth of Black families was damaged in a more dramatic way after the subprime mortgage turmoils (red values).

Table 2: Median Housing Wealth by race, dollar and percentage loss with respect to 2007. SCF.

Year	Black Median Housing Wealth	Dollar Δ with respect to 2007	Percentage Δ with respect to 2007
2007	20,615		
2010	9,015	**-11,600**	**-56.27%**
2013	7,652	**-12,963**	**-62.88%**
2016	10,088	**-10,527**	**-51.06%**
Year	White Median Housing Wealth	Dollar Δ with respect to 2007	Percentage Δ with respect to 2007
2007	20,456		
2010	11,173	-9,283	-45.38%
2013	12,126	-8,330	-40.72%
2016	14,336	-6,120	-29.92%

4 Question 4: Potential wealth gap drivers

Among the different possible drivers that could be influencing and (sadly) widening the wealth gap by race, I believe these two could be the most influential:

- **Inheritance and wealth transmission between generations**. This metric was not suggested in the prompt, but I believe it could be of fundamental importance in the analysis. Both in the present and in the future, White people are usually more likely to inherit some sort of wealth[5], which is not generally the case for Black families. In addition, investing in a child's education is an expense that implicitly represents a possible source of wealth, as we have shown that young adults going to college are more likely to earn more money.[6] Gathering evidence related to this metric (percentage of inheritance by race, amounts, etc.) could provide for an "inheritance proxy" to be included in the model; the analysis run in questions 1, 2 and 3 could then be re-run to take this factor into account and study this channel as well.

- **Retirement plans and post-work benefits**. Unless traditional pensions were included in the total assets variable (it should not be the case), we must consider the effect of retirement plans. As taxpayers and job workers, the survey respondents definitely accumulated wealth to be received back when retired. Historically, Black families have less access to these plans, maybe because they are not eligible (e.g., usually you have to work for a company a specific number of years to be considered) or because simply lacking. Evidence to be assembled could be related to the participation rates in these plans for different races, so that also this channel can be factored in the model.

Finally, an extra idea could be to run OLS regressions (wealth (Y) on income (X_1), race(X_2), education(X_3), etc.) to check what is the relationship between them.[7]

[5]Two straightforward instances could be either the inheritance of an apartment or the one of significant sums of money from older relatives passing away.

[6]As shown in Question 1; this actually activates a chain effect, by which the wealthier become even richer.

[7]**N.B.**: However, this must be carefully interpreted, as it would tell us what is the change in wealth if one of the independent variable changes, without providing direct information on which are the gap drivers!

5 STATA Code

ID1953DoFile copy

Find Not found command

```
clear all

import delimited "/Users/giacomoricciardi/Desktop/Research/University of Chicago/Research Professional/Data Task/RA_21_22.csv"

*** N.B.: "///" indicates that those represent one line command (but did not fit in the screenshot)

****************************************** QUESTION 1 ******************************************

** I scaled both total and housing wealth to the maximum weight. By doing this,
** we did not lose in terms of interpretation of results but the values were scaled
** so to take into account the survey weights

egen max_weight = max(weight)
gen total_wealth = (asset_total - debt_total) * (weight / max_weight)
gen housing_wealth = ( asset_housing- debt_housing) * ( weight /  max_weight)
drop max_weight

** By race
sort year race
egen median_total_wealth_race = median(total_wealth), by(year race)

** To have 4 separate graphs by(race):
** connected median_total_wealth_race year, by(race)

separate  median_total_wealth_race, by(race)

twoway (connected median_total_wealth_race1 year) (connected median_total_wealth_race2 year) (connected median_total_wealth_race3 year) ///
(connected median_total_wealth_race4 year), ytitle("Median Total Wealth ($)") legend(order(1 "Hispanic" 2 "Black" 3 "Other" 4 "White")) ///
xlabel(1989(3)2016) ylabel(, format(%-12.0fc)) xtitle("") ///

drop  median_total_wealth_race1-median_total_wealth_race4

** By education
sort year education
egen median_total_wealth_edu = median(total_wealth), by(year education)

** To have 4 separate graphs by(education):
** line median_total_wealth_edu year, by(education)

separate  median_total_wealth_edu, by(education)
twoway (connected median_total_wealth_edu1 year) (connected median_total_wealth_edu2 year) (connected median_total_wealth_edu3 year), ytitle("Median Total Wealth ($)") ///
legend(order(1 "College Degree" 2 "No College" 3 "Some College")) xlabel(1989(3)2016) ylabel(, format(%-12.0fc)) xtitle("") ///
drop  median_total_wealth_edu1-median_total_wealth_edu3

****************************************** QUESTION 2 ******************************************

sort year race
egen median_housing_wealth_race = median(housing_wealth), by(year race)

separate  median_housing_wealth_race, by(race)
twoway (connected median_housing_wealth_race2 year) (connected median_housing_wealth_race4 year), ytitle("Median Housing Wealth ($)") legend(order(1 "Black" 2 "White")) ///
xlabel(1989(3)2016) ylabel(, format(%-12.0fc)) xtitle("") ///
drop  median_housing_wealth_race1-median_housing_wealth_race4

****************************************** QUESTION 3 ******************************************

** Housing Wealth Analysis
sort year race
egen median_housing_wealth_race_25 = median(housing_wealth) if age >= 25 & (asset_housing > 0), by(year race)

separate  median_housing_wealth_race_25, by(race)
twoway (connected median_housing_wealth_race_252 year) (connected median_housing_wealth_race_254 year), ytitle("Median Housing Wealth ($)") ///
legend(order(1 "Black" 2 "White")) xlabel(1989(3)2016) ylabel(, format(%-12.0fc)) xtitle("") ///
drop  median_housing_wealth_race_251-median_housing_wealth_race_254

table year race, c(m  median_housing_wealth_race_25)

** Total Wealth Analysis
sort year race
egen median_total_wealth_race_25 = median(total_wealth) if age >= 25 & (asset_housing > 0), by(year race)

separate  median_total_wealth_race_25, by(race)
twoway (connected median_total_wealth_race_252 year) (connected median_total_wealth_race_254 year), ytitle("Median Housing Wealth ($)") legend(order(1 "Black" 2 "White")) ///
xlabel(1989(3)2016) ylabel(, format(%-12.0fc)) xtitle("") ///
drop  median_total_wealth_race_251-median_total_wealth_race_254

table year race, c(m  median_total_wealth_race_25)
```