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Can Wealth Explain Neighborhood Sorting by Race and Income?

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Why do high-income blacks live in neighborhoods with characteristics similar to those of low-income whites? One plausible explanation is wealth, since homeownership requires some wealth, and black households hold less wealth than white households at all levels of income. We present evidence against this hypothesis by showing that wealth does not predict sorting into neighborhood quality once race and income are taken into account. An alternative explanation is that the scarcity of high-quality black neighborhoods increases the cost of living in a high-quality neighborhood for black households with even weak race preferences. We present evidence in favor of this hypothesis by showing that sorting into neighborhood racial composition is similar across wealth levels conditional on race and income.

1   Introduction

Neighborhood effects are thought to drive the large differences in economic mobility by race observed in the United States (Chetty et al. (2018), Aliprantis and Carroll (2018)). One reason is that high-income black households live in neighborhoods of quality similar to those of low-income white households (Pattillo (2005), Reardon et al. (2015)).

Why do blacks with high incomes live in neighborhoods of much lower quality than whites of comparable incomes? Wealth is a natural explanation, since homeownership requires some wealth, and black households at all levels of income hold less wealth than white households (Altonji and Doraszelski (2005), Barsky et al. (2002)). Alternatively, households may have some preference for the racial composition of their neighborhood or for amenities and institutions which are strongly correlated with race. Given the scarcity of high-quality majority black neighborhoods in US cities, even weak race preferences could deter black households from living in a high-quality neighborhood (Bayer and McMillan (2005), Bayer et al. (2014), Bayer et al. (2018)).

This paper shows that differences in wealth predict only minor differences in neighborhood quality once race and income are accounted for. Figure 1a shows that conditional on income, high-wealth whites live in similar neighborhoods as low-wealth whites. And while high-wealth blacks also live in similar neighborhoods as low-wealth blacks, the gap in neighborhood quality between blacks and whites is 22 percentile points.

This paper also shows that a family's race predicts large differences in neighborhood racial composition conditional on income and wealth. This is what we would expect to see if the legacy of racial segregation, rather than wealth, drove racial differences in neighborhood quality. Figure 1b shows that conditional on income and wealth, black families live in neighborhoods that have 42 percentage points more black residents than the neighborhoods of white families.

(a) Neighborhood Quality   (b) Neighborhood Racial Composition

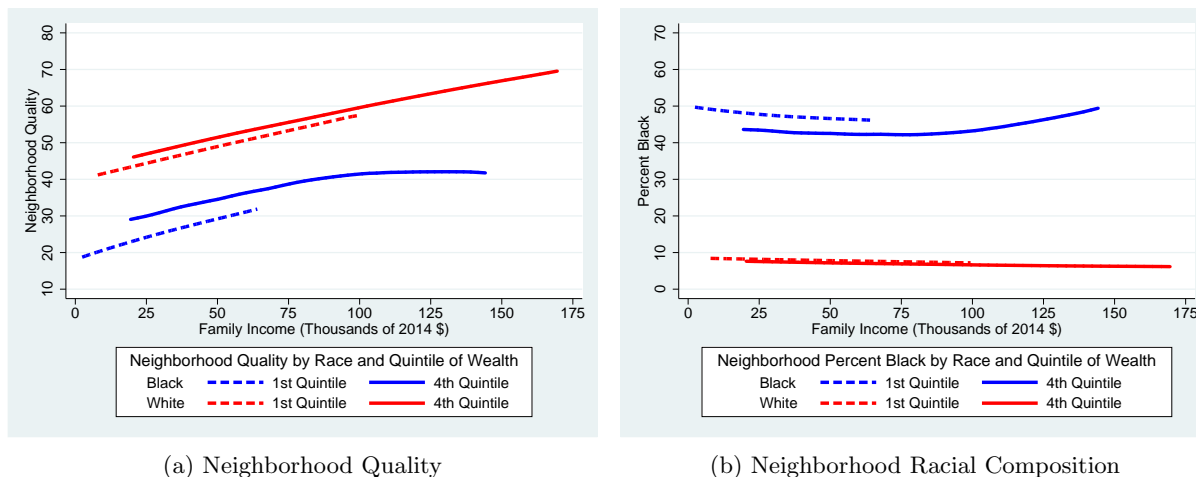Figure 1: Neighborhood Sorting by Race, Income, and Wealth

Note: These figures use data from the 2015 Panel Study of Income Dynamics (PSID) and the 2012-2016 American Community Survey (ACS). Our measure of neighborhood quality is defined in Section 2.1, and Section 3 presents the sample criteria and regression specification generating the predicted neighborhood quality and racial shares shown in the figures.

How robust is our result that black and white families live in neighborhoods of different quality even after controlling for income and wealth? Combining data from the 2015 Panel Study of Income Dynamics (PSID, ISR (2018)) with data from the 2012-2016 American Community Survey (ACS, Manson et al. (2017)), we show that this result is not driven by family composition, alternative approaches to measuring neighborhood quality or wealth, differences in within wealth×race-bin distributions of wealth or home equity, or issues related to common support and functional form assumptions. We also find similar results when combining the 1989 wave of the PSID with the 1990 decennial census.

The remainder of the paper is organized as follows: Section 2.1 defines our measure of neighborhood quality and uses tract-level data from the 2012-2016 ACS to reproduce the stylized fact that high-income blacks live in similar quality neighborhoods as low-income whites. Section 2.2 uses the 2013 Survey of Consumer Finances (SCF) to establish that income predicts different wealth across race. Section 3 presents our result on how race, income, and wealth predict neighborhood quality, with Section 3.1 investigating the robustness of this result. Section 4 and Appendix A show that similar results obtain in the 1989 PSID and 1990 decennial census. Section 5 studies sorting into neighborhood racial composition, and Section 6 concludes.

2 Context

2.1 How Race and Income Predict Neighborhood Quality

The literature has documented that neighborhood quality is lower for blacks than whites at all levels of income, with the gap large enough so that high-income black households live in neighborhoods with characteristics similar to those of low-income white households (Pattillo (2005), Reardon et al. (2015)).[1] We use data from the 2012-2016 American Community Survey (ACS) to replicate this finding.

In order to capture the mechanisms described in Wilson (1987), we define neighborhood quality in terms of a neighborhood's poverty rate, employment to population ratio, unemployment rate, high school graduation rate, BA attainment rate, and the share of households with children under 18 that are single-headed. We measure these variables in terms of the percentiles of their national distributions, and then define neighborhood quality as the percentile of the first principal component of these variables. Figure 2 shows that it is reasonable to focus on the first principal component alone, and Table 1 shows that the coefficients on the variables are relatively similar. Aliprantis (2017) shows that there is considerable variation in a nearly-identical index conditional on a neighborhood's poverty rate.

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[1] In addition, mobility out of poor neighborhoods across generations is lower for African American families (Sharkey (2008)). We leave the analysis of school segregation for future work (Caetano and Maheshri (2018)).
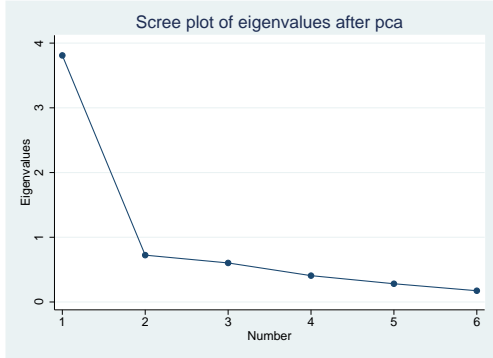
Figure 2: Scree Plot of Eigenvalues

Table 1: Principal Components Analysis

Characteristic	Coefficient for First Principal Component
Poverty	0.45
Employment-to-Pop Ratio	0.35
Unemployment Rate	0.39
HS Grad Rate	0.44
BA Attainment Rate	0.43
Share of Single-Headed HHs	0.39

Note: This table reports the coefficients on the CDF of a given neighborhood characteristic for the first principal component of all variables together, using data from the 2012-2016 ACS. We define neighborhood quality as 100 times the CDF of the first principal component over the US population.

Figure 3 shows that whites in the first (poorest) quintile of household income live in neighborhoods of similar or even slightly higher quality to blacks in the fourth quintile of household income.
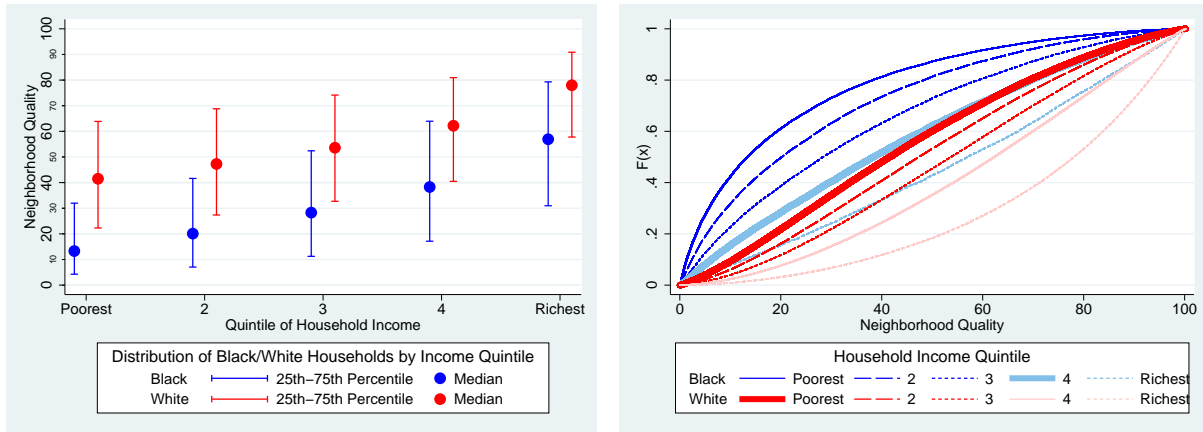
(a) Household Income and Neighborhood Quality

(b) Household Income and Neighborhood Quality

Figure 3: Household Income and Neighborhood Quality in the 2012-2016 ACS, by Race

Note: See the text for a description of how data from the 2012-2016 American Community Survey (ACS) are used to measure neighborhood quality at the tract level. Household income quintile cutoffs are found from the national distribution of household income in the 2013 Survey of Consumer Finances, and are approximated using the household income bins available in the 2012-2016 ACS: $0-15k, $15-40k, $40-60k, $60-125k, $125k+.

2.2   How Race and Income Predict Wealth

The literature has also documented that income and wealth have different relationships for black and white households (Barsky et al. (2002), Altonji and Doraszelski (2005), Blau and Graham (1990)). We reproduce this result in Figure 4a using the 2013 SCF.
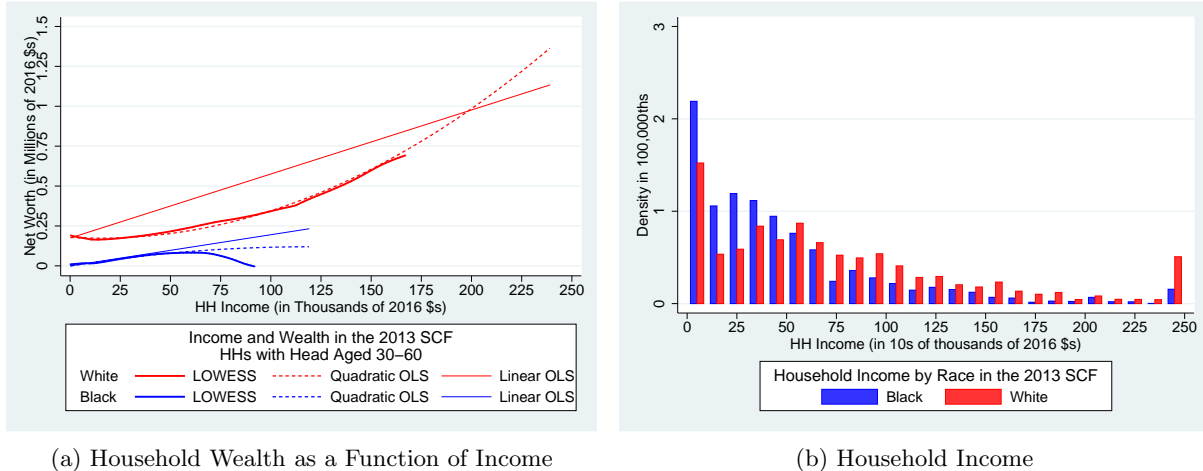
(a) Household Wealth as a Function of Income   (b) Household Income

Figure 4: Household Income and Wealth in the 2013 SCF, by Race
Note: We broadly followi Barsky et al. (2002) and only estimate local linear regressions between the 10th and 90th percentiles of the race-specific income distributions. The linear and quadratic regressions are estimated between the 5th and 95th percentiles of the race-specific income distributions.

Figure 4b helps to illustrate a central issue, highlighted in Barsky et al. (2002), that we will also have to contend with in our analysis: The income distribution has a long right tail, and African Americans are under-represented in that tail. As a result, estimating relationships specific to African Americans in the right tail of the income distribution can be noisy and therefore rely on functional form assumptions.

3   How Race, Income, and Wealth Predict Neighborhood Quality

In our analysis of the joint distribution of race, income, wealth, and neighborhood quality we use units in the 1st and 4th quintiles of the overall wealth distribution to represent, respectively, low and high wealth. We use the 1st and 4th quintiles for three reasons. First, as shown in Figure 5a using the 2013 SCF, there are simply not many African American households in the 5th quintile of the overall distribution of wealth. Second, as shown in Figure 5b, the right tail of the wealth distribution is extremely long. The mean wealth of white households in the 5th quintile of the overall distribution is $1.97 million, compared to $0.18 million for white households in the 4th quintile.

Finally, discrepancies across races within bins are not large enough to drive our results when focusing on the 1st and 4th quintiles.[2] In the 4th quintile of wealth mean white and black wealth are, respectively, $180,000 versus $155,000. In the first quintile of wealth mean white and black wealth are, respectively, –$51,000 and –$36,000.

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[2]See Auerback and Gelman (2016) for an example of how different within-bin distributions can drive inferences.

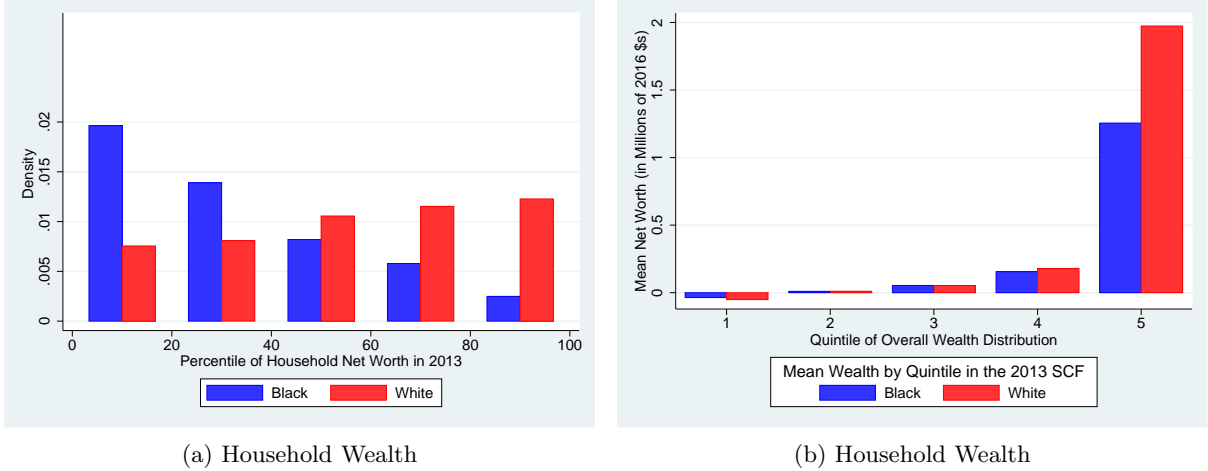(a) Household Wealth   (b) Household Wealth

Figure 5: Household Wealth in the 2013 SCF, by Race

We combine our index of neighborhood quality from the 2012-2016 American Community Survey (ACS), as described in Section 2.1, with data from the 2015 Panel Study of Income Dynamics (PSID). We estimate the regression

$$
\begin{aligned}
Q_i = \quad &\alpha + \alpha^B B_i \quad + \beta_1 I_i + \beta_2 I_i^2 + \beta_1^B I_i \times B_i + \beta_2^B I_i^2 \times B_i \\
&+ \gamma I_i \times W_i \quad + \delta_1 W_i + \delta_2 W_i^2 + \delta_1^B W_i \times B_i + \delta_2^B W_i^2 \times B_i + \varepsilon_i
\end{aligned}
\tag{1}
$$

where the unit i is families, Q_i is neighborhood quality as measured at the tract level, B_i is an indicator for the head of the family being black versus non-hispanic white, I_i is total family income, and W_i is family net worth.[3]

Table 2 displays estimated regression coefficients. The first column shows coefficients estimated on the sample of all families in the 2015 PSID with a black or non-Hispanic white head. The second column shows coefficients estimated on families also restricted to have children 18 or under and a head under age 60 years. In an attempt to impose common support, the sample is restricted to families with incomes between the 10th and 90th percentiles of the income distribution within each wealth quintile×race bin.

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[3]Net worth in the PSID is defined as the sum of total assets net of debt value plus the value of home equity. Total assets are the sum of the values of farm/businesses, checkings and savings accounts, real estate holdings other than one's main home, stocks, vehicles, other assets like life insurance policies or rights in a trust, and annuities/IRAs. Debt value is the sum of debt towards farm/businesses, real estate debt for holdings other than one's main home, credit card debt, student loan debt, medical debt, legal debt, loans from relatives, and other debts. We explore alternative measures of wealth in Section 3.1.

Table 2: Neighborhood Quality Regressions

	All Households	Restricted Sample
Black Head of Household	−21.8	−15.4
	(2.0)	(3.2)
Family Income	2.0e-4	4.0e-4
	(2.4e-5)	(4.1e-5)
Family Income^2	−1.6e-10	−7.7e-10
	(1.2e-10)	(2.2e-10)
Family Wealth	1.2e-5	1.1e-5
	(1.4e-6)	(4.0e-6)
Family Wealth^2	−8.1e-13	−1.3e-12
	(1.2e-13)	(1.2e-12)
Black×Family Income	9.2e-5	8.7e-5
	(7.5e-5)	(1.1e-4)
Black×Family Income^2	-8.7e-10	-7.3e-10
	(5.9e-10)	(8.2e-10)
Black×Family Wealth	1.6e-6	4.0e-6
	(9.1e-6)	(2.5e-5)
Black×Family Wealth^2	−1.4e-12	−3.2e-12
	(2.6e-12)	(2.7e-11)
Family Income×Family Wealth	−4.6e-11	−4.4e-11
	(8.8e-12)	(3.2e-11)
Number of Kids ≤18		−0.4
		(0.6)
Age of Head of Household		−6.8e-4
		(6.0e-2)
Constant	39.9	27.6
	(0.9)	(3.1)
r^2	0.22	0.28
N	6,600-6,700	2,400-2,500

Note: Restricted Sample is the set of families with children 18 or under and headed by someone less than 60 years old.

The coefficient on having a black head of household is 22, indicating that black families live in neighborhoods that are 22 percentile points worse than white families conditional on income and wealth. Income matters more than wealth, with the coefficient on family income more than an order of magnitude higher than the coefficient on family wealth. And finally, neighborhood quality is more strongly related to family income and wealth for blacks than for whites, although the difference for wealth is minor.

It might come as a surprise to find that wealth only weakly predicts neighborhood quality after conditioning on race and income. There are several reasons we might see such a result that are not related to the explanation that neighborhood sorting is driven by race and income.

One possibility is that black households in the 4th quintile of wealth are older and less likely to have children than their white counterparts. The second column of Table 2 shows results from estimating Equation 1 on the previously restricted sample that is further restricted to families with children 18 or under and whose head is less than 60 years old. Results on the sample of families with young heads and children are qualitatively similar to those from the full sample. Neighborhood quality becomes more closely related to family income, but there is almost no change in the relationship to wealth. While the magnitude of the coefficient on the black dummy decreases, it remains very large at –15 percentage points.[4]

Figure 6 shows these results graphically, plotting the predicted neighborhood quality for families in the 1st and 4th quintiles of wealth by race and income. If income and wealth were driving neighborhood sorting, then the dashed lines representing low-wealth families would be on top of each other. Similarly, the solid lines representing high-wealth families would be on top of each other. Instead, the lines we see on top of each other are the red lines representing white families and the blue lines representing black families.

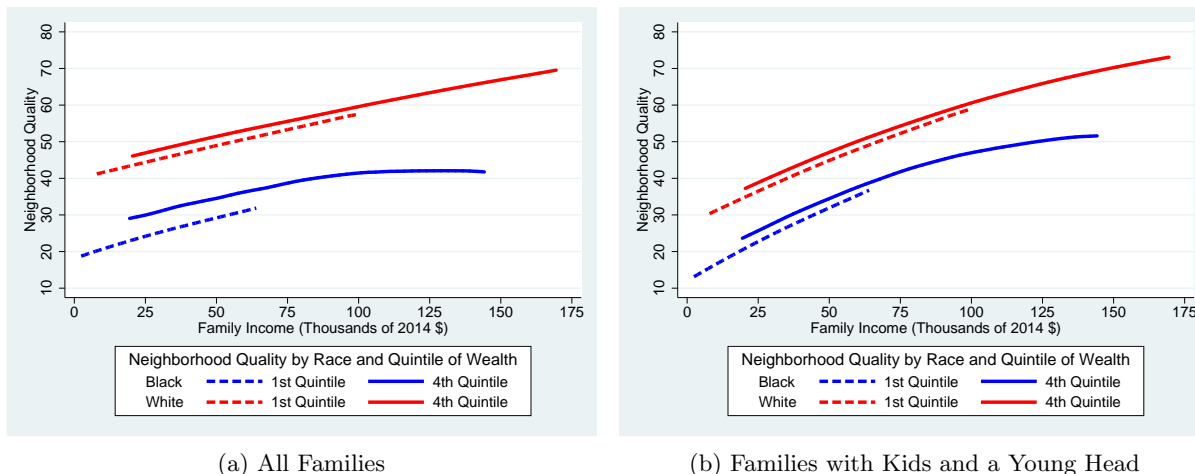(a) All Families   (b) Families with Kids and a Young Head

Figure 6: Neighborhood Quality by Race, Income, and Wealth, 2015 PSID

It is worth noting that even within race, there is little difference between the importance of wealth at low levels of income and high levels of income. If credit constraints were a barrier to accessing high quality neighborhoods, then one would expect a larger gap between high- and low-wealth groups at low levels of income.

3.1 Robustness

We now consider the robustness of our result that sorting into neighborhood quality is not driven by wealth once race and income are taken into account. We first present evidence on whether our result is driven by assumptions about how to measure neighborhood quality, and we then check

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[4]Since results are qualitatively similar and the child and young head restrictions get rid of nearly two thirds of the original sample, the robustness analysis is conducted on the larger sample used to generate the estimates in the first column of Table 2 and Figure 6a.

the functional form assumptions about the relationship between quality and family characteristics. We also look at issues related to measuring wealth.

We begin by investigating whether one variable in our neighborhood quality index is by itself driving our results. Table 3 shows the coefficient on the black indicator when Equation 1 is estimated with Q_i measured as each individual component of our index.

No single variable drives our results on the relationship between neighborhood quality, race, income, and wealth. Most of the neighborhood characteristics yield results similar to the penalty of 22 percentile points in neighborhood quality for having a black family head. The coefficient on the black indicator is –20 percentile points or more for the poverty rate, unemployment, and the share of single-headed household; –16 percentile points for the employment-to-population ratio and the share of high school graduates; and smallest in magnitude for the BA attainment rate at –12 percentile points. These results are not surprising given the relatively even coefficients across characteristics under our definition of quality (Table 1).

Table 3: Neighborhood Characteristic Regressions

Coefficient on Black Household Head for Percentile of	All Households
Poverty Rate	–19.5
	(2.1)
Share of Single-Headed HHs	–25.6
	(2.1)
Unemployment Rate	–23.0
	(2.2)
Employment-to-Population Ratio	–15.8
	(2.3)
HS Attainment Rate	–16.0
	(2.1)
BA Attainment Rate	–11.9
	(2.2)

Note: Each neighborhood characteristic is measured in terms of the percentile of the national distribution of characteristic in the 2012-2016 ACS.

Another possibility is that black families with high wealth actually do sort into higher quality neighborhoods than those without wealth, but that this relationship is blurred by the limited number of high income and high wealth black families we observe in the data. As discussed in Section 2.2 and highlighted in Barsky et al. (2002), this could mean that our results are being driven by functional form assumptions over the parts of the income and wealth distribution where there is not common support between black and white households.

Figure 7 presents evidence on this issue by showing means within $10,000 income bins by race and wealth quintile. Figure 7b shows the area of concern for having a limited sample size, high

income and high wealth black families. Each $10,000 income bin with a dot shown has at least 15 families to prevent indirect data disclosure. When the cell size is decreased to 10 families, which is not shown here, we see that the variance of neighborhood quality for high income, high wealth black families is higher than it is for their white counterparts. However, the relationship characterized by the curve in Figure 7b accurately characterizes the mean relationship. Most importantly, there remains a clear gap between means across black- and white-headed families that are high income and high wealth.

(a) 1st Quintile of Wealth   (b) 4th Quintile of Wealth

Figure 7: Neighborhood Quality by Race and Income, 2015 PSID

Turning to the issue of measuring wealth, net worth might be less informative for a family's credit constraints than either total assets or liquid wealth. Two households with identical net worth but different levels of total assets, and therefore debt, might have different access to credit, just based on past access. Similarly, two households with identical net worth but different levels of liquid wealth have different needs for credit. We measure total assets as net worth plus total debt, and we measure liquid wealth as the sum of two asset classes, checkings/savings accounts and stocks. We do not show the results here, but the qualitative results are almost identical regardless of measuring wealth as net worth, total assets, or liquid wealth.

It could also be the case that families within quintiles of wealth are too heterogeneous to be compared, especially across race. Figure 8a shows the distribution of wealth across race in the 4th quintile of wealth, which we use as our high-wealth category. The means for black and white families are, respectively, $155,000 and $180,000.

One might also suspect that high wealth households of different races make different investments into home equity, and that this is somehow driving neighborhood sorting patterns. Figure 8 shows that the distribution of home equity is very similar for black- and white-headed families in the 4th wealth quintile. Homeownership rates are very high among the 4th wealth quintile, and the rates are (statistically) identical by race.
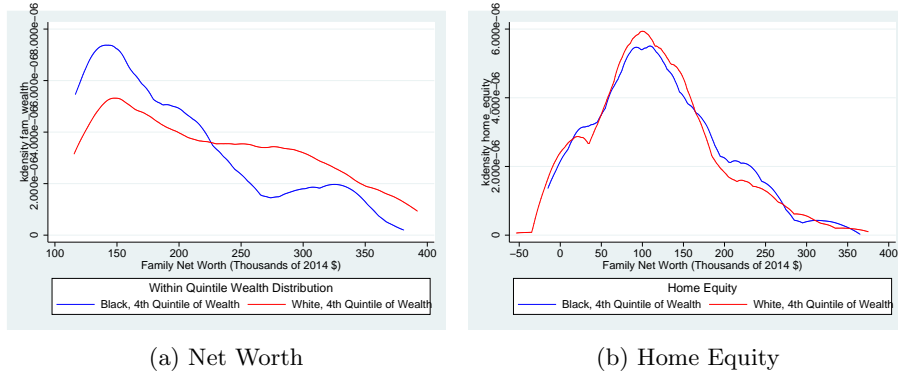
(a) Net Worth   (b) Home Equity

Figure 8: Net Worth and Home Equity by Race and Income, 2015 PSID

4 A New Phenomenon?

In order to test whether our result reflects a new trend in sorting due to the Great Recession, we replicate the previous analysis using the 1990 decennial census together with the 1989 wave of the PSID. We find almost identical results to those using the 2012-2016 ACS and 2015 wave of the PSID: In the 1989 wave of the PSID wealth had little role on sorting into neighborhood quality once accounting for race and income.

Figure 11 and Table 4 show the results of estimating the regression specified in Equation 1 using the 1989 PSID. Conditional on race, income, and wealth, black families lived in neighborhoods that were 25 percentile points lower than white families. Appendix A presents the full replication with the earlier data.
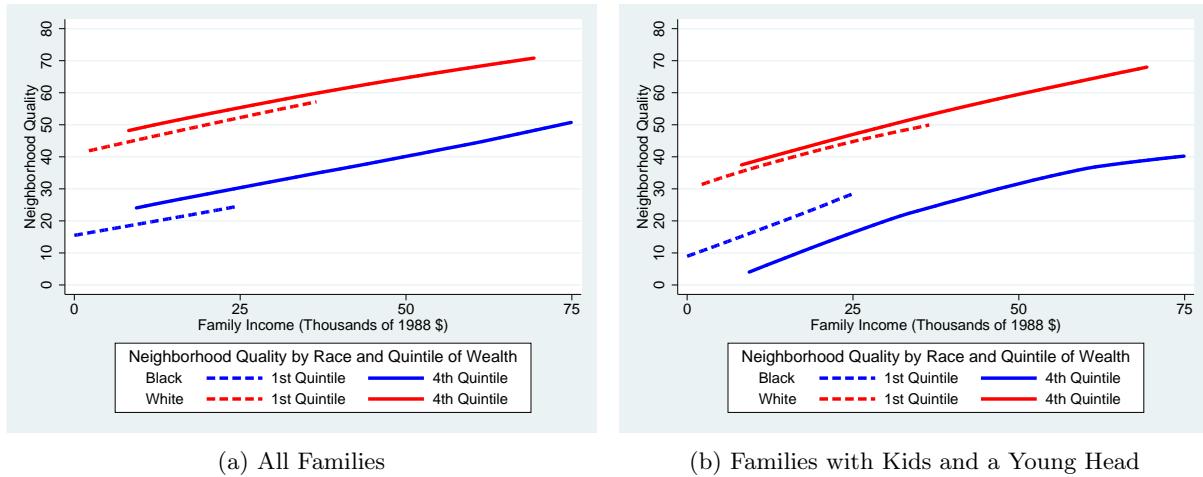

(a) All Families   (b) Families with Kids and a Young Head

Figure 9: Neighborhood Quality by Race and Income, 1989 PSID

Table 4: Neighborhood Quality Regressions

	All Households	Restricted Sample
Black Head of Household	−25.1	−23.6
	(2.1)	(2.9)
Family Income	5.1e-4	5.0e-4
	(6.1e-5)	(9.8e-5)
Family Income^2	−1.5e-9	−2.0e-10
	(6.8e-10)	(1.1e-9)
Family Wealth	3.7e-5	5.6e-5
	(5.2e-6)	(9.1e-6)
Family Wealth^2	−5.8e-12	−8.1e-12
	(9.8e-13)	(2.2e-12)
Black×Family Income	−1.6e-4	2.8e-4
	(1.5e-4)	(2.1e-4)
Black×Family Income^2	2.2e-9	−4.1e-09
	(2.4e-9)	(2.8e-09)
Black×Family Wealth	3.3e-5	9.2e-5
	(1.9e-5)	(6.7e-5)
Black×Family Wealth^2	−5.3e-12	−3.2e-12
	(4.0e-12)	(2.7e-11)
Family Income×Family Wealth	−2.7e-10	−3.2e-10
	(6.9e-11)	(1.2e-10)
Number of Kids ≤18		1.2
		(0.7)
Age of Head of Household		−0.2
		(6.1e-2)
Constant	40.7	36.9
	(1.2)	(3.1)
r^2	0.29	0.37
N	4,400-4,500	2,000-2,100

Note: Results using 1990 decennial census data and the 1989 wave of the PSID. Restricted Sample is the set of households with kids 18 or under in the household and headed by someone less than 60.

5 Sorting on Race

We might approach the main result in this paper from another angle: If wealth really does have little impact on neighborhood quality conditional on race and income, what else would we expect to observe? The alternative explanation for why black and white households of similar incomes live in different quality neighborhoods has to do with racial segregation and the scarcity of high-quality majority black neighborhoods in American cities (Bayer and McMillan (2005), Bayer et al. (2014), Bayer et al. (2018)).

Under this alternative hypothesis, we would expect to see the racial composition of a family's neighborhood appear to be independent of wealth conditional on race and income. This is

in fact precisely what we observe. Figure 10 shows that high-wealth black households sort into neighborhoods with the same high share of black households as low-wealth black households. Similarly, low-wealth white households sort into neighborhoods with the same (lower) share of black households as high-wealth white households. The gap between black and white households is 42 percentage points as measured from a regression like the one in Equation 1.
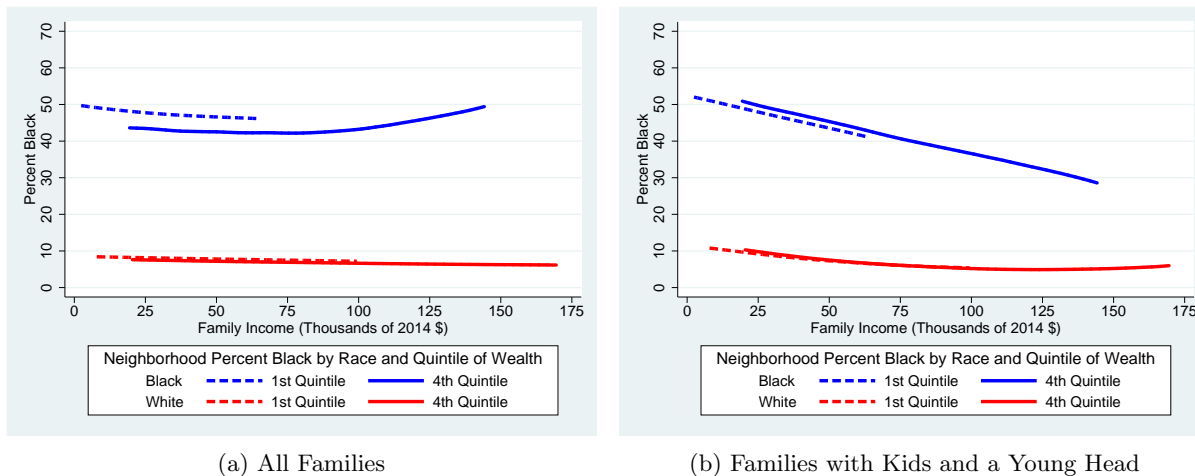

(a) All Families

(b) Families with Kids and a Young Head

Figure 10: Neighborhood Racial Composition by Race, Income, and Wealth, 2015 PSID

6   Conclusion

We have documented that household wealth, whether measured as total assets or as net worth, does not predict neighborhood quality after controlling for race and income. To our knowledge, this is a new result, or at the least an under-appreciated result.[5] Taken in combination with the pronounced racial concentrations of white and black neighborhoods, which is also independent of wealth, our results provide evidence that households have some preference for the racial composition of the neighborhood or for amenities and institutions which are strongly correlated with race. These neighborhood characteristics could be familial ties and social networks or the absence of psychic costs induced by being a minority within one's neighborhood.

The lack of geographic mobility for high-wealth African-American households has a clear policy implication if neighborhood effects impact income (Aliprantis and Carroll (2018)), which in turn drives the racial wealth gap (Aliprantis et al. (2018)). In this case, a welfare maximizing policy should be targeted at improving neighborhoods and not just toward reducing the price of moving out of a given neighborhood.

More broadly, we interpret our results as providing an argument in favor of place-based policies. Differences in economic performance across regions of the United States have renewed interest in region-specific policies (Schweitzer (2017), Austin et al. (2018)). While there is much to learn about what makes a specific policy effective in creating long-run gains (Neumark and Simpson (2015)),

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[5]There are related results in Woldoff and Ovadia (2009), Crowder et al. (2006), and Freeman (2000).

our results give urgency to this line of research. The existence of racial frictions to mobility within cities suggest there could be similar frictions to mobility across regions.

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A   1989 Wave of the PSID

In this Appendix we replicate our analysis on the 2012-2016 American Community Survey (ACS) and 2015 wave of the Panel Study of Income Dynamics (PSID) using decennial census data from 1990 and the 1989 wave of the PSID. We again estimate the equation

$$
\begin{aligned}
Q_i = \quad & \alpha + \alpha^B B_i \quad + \beta_1 I_i + \beta_2 I_i^2 + \beta_1^B I_i \times B_i + \beta_2^B I_i^2 \times B_i \\
& + \gamma I_i \times W_i \quad + \delta_1 W_i + \delta_2 W_i^2 + \delta_1^B W_i \times B_i + \delta_2^B W_i^2 \times B_i + \varepsilon_i
\end{aligned}
\tag{2}
$$

where the unit i is families, Q_i is neighborhood quality as measured at the tract level, B_i is an indicator for the head of the family being black versus non-hispanic white, I_i is total family income, and W_i is family net wealth.

Table 4 in the main text reports estimated regression coefficients and Figure 11b displays their predictions. The first column shows coefficients estimated on the sample of all families in the 1989 PSID with a black or non-Hispanic white head. To "impose" common support, the sample is restricted to families with incomes between the 10th and 90th percentiles of the within-wealth-quintile black income distribution. The coefficient on black head of household is 25, which indicates that black families live in neighborhoods that are, on average, 25 percentile points worse than white families.

The second column of Table 4 and Figure 11 show results from estimating Equation 1 on the previously restricted sample that is further restricted to families with children under 18 and whose head is less than 60 years old. In the 1989 PSID the coefficient changes even less due to the sample restriction, declining in magnitude only to –24.

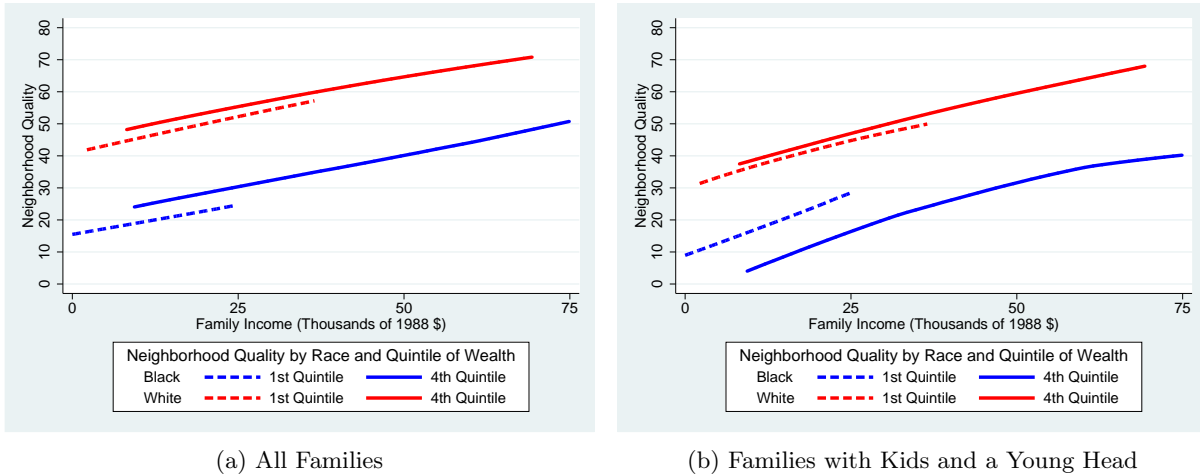(a) All Families   (b) Families with Kids and a Young Head

Figure 11: Neighborhood Quality by Race, Income, and Wealth, 1989 PSID

Table 5 shows the coefficient on the black indicator when Equation 1 is estimated with Q_i measured as each individual component of our index. Again for the 1989 wave, just as we saw in the 2015 wave of the PSID, no single variable drives our results on the relationship between neighborhood quality, race, income, and wealth. Most of the neighborhood characteristics yield

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results similar to the penalty of 25 percentile points in neighborhood quality for having a black family head.

Table 5: Neighborhood Characteristic Regressions

Coefficient on Black Household Head for Percentile of	All Households
Poverty Rate	−24.4
	(2.1)
Share of Single-Headed HHs	−25.4
	(2.1)
Unemployment Rate	−27.8
	(2.1)
Employment-to-Population Ratio	−22.7
	(2.2)
HS Attainment Rate	−22.5
	(2.1)
BA Attainment Rate	−16.4
	(2.2)

Note: Percentile is of national distribution of neighborhood characteristic in the 1990 decennial census.

Turning to the possibility that the relationship between race, income, wealth, and neighborhood quality is blurred by the limited number of high income and high wealth black families we observe in the data, Figure 12 shows means within $10,000 income bins by race and wealth quintile. Figure 12b shows the area of concern for having a limited sample size, high income and high wealth black families. Each $10,000 income bin with a dot shown has at least 15 families to prevent indirect data disclosure. When the cell size is decreased to 10 families, which is not shown here, we see that the variance of neighborhood quality for high income, high wealth black families is higher than it is for their white counterparts. However, the relationship characterized by the curve in Figure 12b accurately characterizes the mean relationship.

(a) 1st Quintile of Wealth

(b) 4th Quintile of Wealth

Figure 12: Neighborhood Quality by Race, Income, and Wealth, 1989 PSID

Figure 13a shows again that within wealth quintile differences in wealth across race are unlikely to drive our results. Homeownership rates are very high among the 4th wealth quintile and (statistically) identical across race. Figure 13b shows that in the 1989 wave of the PSID, just as in the 2015 wave, home equity was very similar across race in the 4th quintile of wealth.
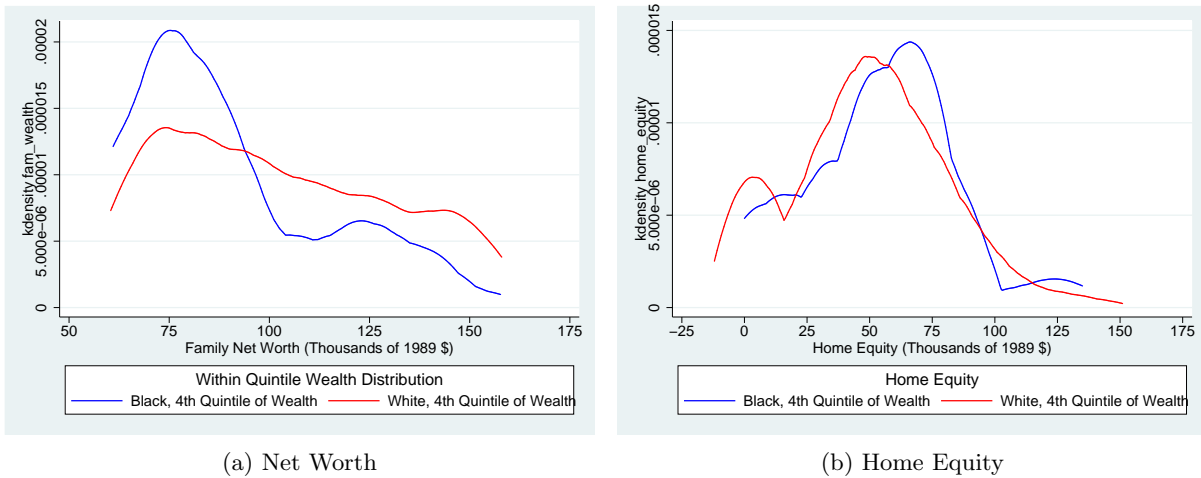

(a) Net Worth

(b) Home Equity

Figure 13: Net Worth and Home Equity by Race, Income, and Wealth, 1989 PSID