THE DEVALUATION OF ASSETS IN BLACK NEIGHBORHOODS

The case of residential property

Andre Perry
Jonathan Rothwell
David Harshbarger

November 2018

Metropolitan Policy Program
at BROOKINGS

GALLUP®

Using census and real estate market data, a study of property values in U.S. metropolitan areas of owner-occupied homes located in neighborhoods at least 50 percent Black finds that:

In U.S. metropolitan areas, 10 percent of neighborhoods are majority Black, and they are home to 41 percent of the Black population living in metropolitan areas and 37 percent of the U.S. Black population. These neighborhoods hold $609 billion in owner-occupied housing assets and are home to approximately 10,000 public schools and over 3 million businesses. Though most residents are Black (14.4 million non-Hispanic Black) by definition, approximately 5 million non-Black Americans from every other racial and ethnic background live in majority Black neighborhoods.

In the average U.S. metropolitan area, homes in neighborhoods where the share of the population is 50 percent Black are valued at roughly half the price as homes in neighborhoods with no Black residents. There is a strong and powerful statistical relationship between the share of the population that is Black and the market value of owner-occupied homes. Location in a Black neighborhood predicts a large financial penalty for 117 out of the 119 metropolitan areas with majority Black neighborhoods, though the valuation gap varies widely between them.

Differences in home and neighborhood quality do not fully explain the devaluation of homes in Black neighborhoods. Homes of similar quality in neighborhoods with similar amenities are worth 23 percent less in majority Black neighborhoods, compared to those with very few or no Black residents. Majority Black neighborhoods do exhibit features associated with lower property values, including higher crime rates, longer commute times, and less access to high-scoring schools and well-rated restaurants. Yet, these factors only explain roughly half of the undervaluation of homes in Black neighborhoods. Across all majority Black neighborhoods, owner-occupied homes are undervalued by $48,000 per home on average, amounting to $156 billion in cumulative losses.

Metropolitan areas with greater devaluation of Black neighborhoods are more segregated and produce less upward mobility for the Black children who grow up in those communities. Using combined tax and census data from the Equality of Opportunity Project, this analysis finds a positive and statistically significant correlation between the devaluation of homes in Black neighborhoods and upward mobility of Black children in metropolitan areas with majority Black neighborhoods. Segregation is negatively correlated with Black home valuations.

The undervaluation of housing in Black neighborhoods has important social implications. Black homeowners realize lower wealth accumulation, which makes it more difficult to start and invest in businesses and afford college tuition. We believe anti-Black bias is the reason this undervaluation happens, and we hope to better understand the precise beliefs and behaviors that drive this process in future research.

On September 19, 2018 University of Mississippi alumnus, former faculty member and administrator, Ed Meek, posted on Facebook two separate pictures of African American women along with the caption, "Enough, Oxford and Ole Miss leaders, get on top of this before it is too late." For Meek, namesake of the Meek School of Journalism and New Media, the women's presence apparently signaled the decline of the town of Oxford, home of the University of Mississippi. "A 3 percent decline in enrollment is nothing compared to what we will see if this continues...and real estate values will plummet as will tax revenue," Meek wrote.

To be clear, the sheer presence of Black women doesn't devalue homes. However, signaling they do can negatively impact housing markets. Meek served as the university's assistant vice chancellor for public relations and marketing for 37 years.[1] Meeks' Facebook post suggests in word and deed that the values we place on people are strongly associated with proximate assets. Black people according to Meek lowers real estate values.

After community-wide condemnation, Meek halfheartedly backed in to an apology. "I have done as you requested, Chancellor," Meek wrote. "I am sorry I posted those pictures but there was no intent to imply a racial issue. My intent was to highlight we do have a problem in The Grove and on the Oxford Square."

Notwithstanding the underlying assumption of Meek's perceived problem at Oxford, the presence of a negative bias toward Blacks prevents even the most noble of efforts to improve neighborhoods from building upon the strengths of Black residents. That sentiment can be heard in a common refrain in Black communities that "reform is done to us, not with us."[2]

The value of assets is influenced by implicit societal cues. Researchers at the Kirwan Institute for the Study of Race and Ethnicity at Ohio State University define implicit bias as the "attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner."[3] They find that "implicit associations we harbor in our subconscious cause us to have feelings and attitudes about other people based on characteristics such as race, ethnicity, age, and appearance." Through direct and indirect cues, people develop these associations over the course of a lifetime, beginning at a very early age.

Researchers have demonstrated the presence of unconscious bias in education, the criminal justice system and health care.[4] And since the murder of Trayvon Martin by George Zimmerman in 2012, activists have raised public consciousness around the biases involved in the killing of Black men at the hands of police, captured so many times on cell phone video.

Much of the research on implicit bias focuses on individuals' perception of individual members of an oppressed class. However, we should expect some of these biases to carry over into *places* where there are high concentrations of Black people. The value of assets–buildings, schools, leadership, and land itself– are inextricably linked to the perceptions of Black people.

There is strong evidence that bias has tangible effects on real estate markets, both historically and today. During the 20th century, both explicit government institutions and decentralized political actions created and sustained racially segregated housing conditions in the United States.[5] This has created what has been dubbed a "segregation tax," resulting in lower property valuations for Blacks compared to whites per dollar of income.[6]

Contemporary work from social scientists has aimed to sort out whether these lower valuations are caused by differences in socio-economic status, neighborhood qualities, or discrimination.[7] The results tend to show compelling evidence for discrimination.[8] In one study, Valerie Lewis, Michael Emerson, and Stephen Klineberg collected detailed survey data on neighborhood racial preferences in Houston, Texas. They asked people to imagine that they were looking for a new house, found one within their price range and close to their job; they then say to respondents, "checking the neighborhood . . ." and then present difference scenarios based on racial composition, school quality, crime, and property value changes for the hypothetical neighborhood." Consistent with previous research, they find that these neighborhood features strongly predict whether someone says they would buy the house. Racial composition strongly predicted the preferences of whites in neighborhoods that were otherwise identical.

Researchers Jacob Fabera and Ingrid Gould Ellen examined the variation of rising housing prices among people of different racial categories who purchased their homes before the boom from 2000 to 2007 and kept them through the bust of 2008.[9] They found that Blacks and Hispanics gained less equity than whites during that period and were more likely to owe more than their home was worth. The researchers found

that "[b]lack-white gaps were driven in part by racial disparities in income and education and differences in types of homes purchased." They hypothesized that racial segregation and the corollary economic and education stratification between neighborhoods exacerbated existing equity disparities within neighborhoods with high concentrations of poverty. Consequently, the recession hit those neighborhoods disproportionately harder, creating intense volatility in those particular markets. Declining incomes reduced people's ability to purchase homes, thus deflating prices in those neighborhoods. The findings around education and income may result from the disparities in wealth as it is "a powerful predictor of individual educational and economic outcomes, and despite their significantly lower homeownership ... the long-run consequences of these gaps are substantively important and difficult to overcome."[10]

But how does the concentration of Blackness impact demand among all buyers–whether from the community or not? Income and education certainly matter, but how much of the demand that impacts housing price is affected by how people around it are perceived? In other words, what is the cost of racial bias?

Real estate agents have been shown to direct Black and white home buyers differently based on racial stereotypes, reinforcing patterns of racial segregation. Researcher Sun Jung Oh and John Yinger reviewed four different national studies on the topic in a 2015 article and found a common thread: There is "evidence of statistically significant discrimination against home seekers who belong to a historically disadvantaged racial or ethnic group."[11]

Some of this research is not about devaluation, per se, but about steering and price discrimination. It indicates that Blacks actually pay more than whites for equivalent housing. The focus of this paper is on how lower prices in majority-Black neighborhoods convey lower value. Nevertheless, prior research forces us to assume that bias is baked into home prices. This study seeks to understand how much money majority Black communities have to lose from the devaluation of housing assets stemming from racial bias throughout the market.

MAIN CONCEPTS

We define the devaluation of housing in Black communities as the property value penalty that characterizes an owner-occupied home in a neighborhood that is 50 percent Black.

We provide three estimates for this penalty at the national and metropolitan levels. Our national analysis is restricted to only metropolitan areas, since estimates would likely have large margins of errors in rural counties with few census tracts or small Black populations.

Actual devaluation: We start with a simple description of the mean difference in home value (shown in percentage point terms) between properties in neighborhoods with zero African-Americans and neighborhoods that are 50 percent African-American.

Devaluation adjusted for structural characteristics of the home: This adjusts the predicted effect of Black neighborhood population by the physical characteristics of the home–such as when it was built, the number of bedrooms–and the distance between the home and centers of work and the type of homes in the neighborhood.

Devaluation adjusted for structural characteristics of the home and neighborhood amenities: This adjusts for all the above characteristics, as well as the number of people living in the neighborhood, the family structure of neighbors, their age, and, importantly, the quality of local schools and access to retail establishments.

Structural Characteristics

- Median bedrooms
- Median year built
- Single family detached share of owner-occupied units
- Single family attached share of owner-occupied units
- Mobile homes share of owner-occupied units
- Share of homes with no vehicle availability
- Share of homes with gas or electric heating
- Share of homes with kitchen

Neighborhood Amenities

- Mean commute of working adults
- Percent of working adults who carpool to work
- Percent of working adults who use public transportation
- Percent of units that are owner-occupied
- Population (natural log)
- Share of households with children under 18
- Share of households headed by single moms
- Median age of population
- EPA Walkability Index
- Number of professional service businesses
- Number of libraries
- Number of museums and historical sites
- Number of food and drinking places
- Number of gas stations
- Proficiency rate of 4th-8th grade public school students

WHY STUDY OWNER-OCCUPIED HOUSING

We focus on owner-occupied homes for two reasons. Home appreciation results in higher home values, and this brings wealth to owners. There is a large and well-known wealth gap between Blacks and other racial groups in the United States, much of which can be attributed to differences in homeownership rates and the value of housing. Second, the devaluation of rental properties is advantageous to renters, insofar as it results in a lower rental payment for similar quality housing. The devaluation of owner-occupied housing makes it easier to acquire the home, but once purchased, it is unambiguously disadvantageous to the owner and occupier, who would otherwise benefit from being able to refinance, borrow, or sell at a higher valuation.

DATA SOURCES

Home values

Home values, neighborhood demographics, and structural characteristics are from the 2016 American Community Survey 5-Year Estimates (ACS).

Our dependent variable from the ACS—median home values at the census tract level—comes from an item on the questionnaire that asks homeowners: "About how much do you think this house and lot, apartment, or mobile home (and lot, if owned) would sell for if it were for sale?"

These data are limited by the fact that they are self-reported and not all homes are actually for sale. Our primary measure of housing value overcomes these limitations. It consists of ZIP code data from Zillow, a housing market research company. Zillow provides median price listing overall and per square foot at the ZIP-code level.[12] There is some error in moving between ZIP codes and census tracts, which is needed to characterize ZIP-code racial demographics, but the property-level accuracy of the Zillow data is likely to be superior, since it is based on actual listing prices rather than self-reported valuations. Another advantage of Zillow data is that it includes estimates for price per square foot, a quality-adjusted price. We matched ZIP codes to census tracts using a correspondence engine from the Missouri Census Data Center (MABLE).[13] To make Zillow data as comparable as possible to the 5-year American Community Survey, we averaged Zillow's ZIP code-level data from 2012 to 2016.

In practice, the census and Zillow measures are highly correlated. The correlational coefficient between census tract median owner-occupied home values and the Zillow median listing price is 0.84. The census-based correlation with Zillow's median price per square foot is 0.78.[14]

Access to schools

To measure school quality, we consider that public school attendance areas roughly align with neighborhoods, and housing prices are higher in areas near high-scoring public schools, as previous Brookings research has discussed.[15] To account for school quality in our analysis, we obtained proficiency rates on state exams for all public schools covering grades 4-8 for both mathematics and reading. These data are available from the Department of Education.[16]

We matched schools to census tracts based on the latitude and longitude coordinates, which are available via the Department of Education. Our approach was to take a 5-mile radius around each census tract and consider every school in that radius as a potential school for that neighborhood. The nearest schools to the tract—including all those in the tract—were assigned to the tract until the cumulative school population in grades 4 to 8 equaled the population of 10-to-14-year-olds in the tract.

Our final measure of school quality is the mean proficiency rate of all 4th-8th grade students in the census tract. We take the mean of high and low-end estimates, since data for many schools are reported as ranges.

Access to businesses

To measure access to stores, restaurants, and other goods and service providers, we obtained data on the number of business establishments by industry by ZIP code from the 2016 Census Bureau's County Business Patterns database. We matched ZIP codes to census ZIP code tabulation areas (ZCTAs), using a crosswalk developed by GeoMapper, and then ZCTAs to tracts using a correspondence engine from the Missouri Census Data Center (MABLE).[17]

We examined all two-digit sectors and found professional business establishments best explained variation in home prices. It is unlikely that homeowners give much value to proximity to engineering and law firms. Instead, the significance of this variable likely comes from the fact professional establishments tend to cluster near neighborhoods with professional workers for commuting reasons.

We also examined three-digit industries in retail, restaurants, and other services. We found that the number of food and drinking places (e.g. restaurants and bars), museums, and gas stations were all significant predictors of home value (gas stations have a negative relationship) and reasonably independent of one another. Surprisingly, grocery stores and other retail had no consistent relationship with home value. Finally, we also tested libraries as another possible amenity, and that proved to be robust, so it was included in the final model.

Walkability

Another aspect of access to businesses and a desirable urban lifestyle is the concept of "walkability." For this, we rely on the Environmental Protection Agency's (EPA) National Walkability Index.[18] It gives higher scores to neighborhoods with diverse businesses, a large number of housing units, and intersecting streets. These features predict more walk trips. We convert block measures to tracts.

Crime

Exposure to crime is an important neighborhood characteristic that likely affects home values. Unfortunately, comprehensive data on crime is only available at the county-level, and our analysis did not find that neighborhoods located in counties with higher crime rates had lower property values. We do, however, control for the median age of residents in the neighborhood and the percent of families that are single-mothers with children under 18 living in the home. Both are correlated with crime rates (-.28 and .47 respectively), suggesting that we are likely capturing crime effects in our analysis.

To further investigate this, we obtained data from 10 large cities from U.S. City Open Data Census where crimes were coded using geo-coordinates. The analysis is described in more detail in the Appendix. Adding crime to our model did not affect our estimates of the association between Black population and home values, providing further reassurance that explicitly measuring crime at the neighborhood level would not change the conclusions of this research.

Income mobility and other metrics

Using data from Chetty, Hendren, Jones, and Porter, we measure income mobility of Black children by showing the average income rank by metropolitan area for Black adults aged 31 to 37 who grew up in low-income families, defined as those at the 25th percentile of the national income distribution.[19] Chetty and his coauthors made these data available at the level of commuting zones, which are like metropolitan areas but defined to include non-metropolitan counties and use a slightly different algorithm to assign counties to areas. We assign commuting zones to metropolitan areas by assigning the largest county (by 2010 population) in each commuting zone to its metropolitan area.

We follow Chetty, Hendren, Jones, and Porter in supplementing our analysis with data from Stephens-Davidowitz on the prevalence of anti-Black Google searches in the metropolitan area.[20] In the absence of representative survey data at the metropolitan scale on racist beliefs, this metric is one of the few potential

indicators of racist or anti-Black sentiment available. If racism is a factor in the devaluation of Black homes, and Google searches that use anti-Black slang indicate racism, then this metric may explain some of the variation in devaluation.

We further supplement the analysis with a standard measure of segregation, the dissimilarity index, which measures the unevenness of racial group residency across census tracts. We construct this measure using the same 2012-2016 American Community Survey data used in the rest of the analysis.

Household income and educational attainment

We did not include household income or education directly in our model to estimate devaluation. Income and education reflect the buying power of individuals, and naturally, both tend to rise along with home values. Including them in the model would essentially test whether homes in Black neighborhoods are over or under-valued relative to the purchasing power of residents; in other words, it would be estimating the affordability of housing. That is a different question than the one we ask here, which is whether homes are over or under-valued in Black neighborhoods based on the qualities of the home and neighborhood in a given metropolitan housing market. People who live outside of the neighborhood are potential buyers and so should be considered part of the market. Since we control for metropolitan area fixed effects, this is captured in our analysis.

To understand the consequences of omitting income and education in our model, we ran our preferred specification—a regression of the list price per square foot on our full model—while including median household income and the share of residents with a bachelor's degree or higher. Both are significant and positively related to home values, as expected, but their inclusion has no effect on our main variable of interest—the Black population share. Our devaluation estimate excluding income and education in this model is -22.7 percent, whereas it is -21.7 percent if we include them. We infer from this that home affordability patterns are similar for homeowners in majority Black neighborhoods and those outside them, controlling for everything else we see about the home and neighborhood. This result reinforces our finding that homes are devalued in Black neighborhoods in large part because they are in Black neighborhoods, and not only because the homes or neighborhoods have less desirable features or the residents have lowering purchasing power.

1. In U.S. metropolitan areas, 10 percent of neighborhoods are majority Black, and they are home to 41 percent of the Black population living in metropolitan areas and 37 percent of the U.S. Black population.

Black Americans are highly urbanized. 90 percent live in metropolitan areas, compared to 86 percent of all U.S. residents. And decades after the Civil Rights movement, Blacks remain highly segregated. Though Blacks comprise just 12 percent of the U.S. population, 70 percent live in neighborhoods that are over 20 percent Black, and 41 percent live in majority Black neighborhoods.

These majority Black neighborhoods may be overlooked as sites for economic development, but they contain important assets, in terms of people, public infrastructure, and wealth.

Majority Black neighborhoods in metropolitan areas are also home to 14.4 million non-Hispanic Black residents and 5 million residents from other racial and ethnic groups. They also house a large portion of the nation's human capital, in that 2.3 million adults 25 and older call majority Black neighborhoods their home, representing 5 percent of the nation's metropolitan population with a bachelor's degree, and 10 percent of its public schools and 6 percent of its libraries.

There is also wealth in these neighborhoods. In metropolitan America, there are 3.2 million owner-occupied homes in majority Black neighborhoods, 5 percent of the total, and they are collectively worth $609 billion.[21] Likewise, over 3 million business establishments are located in majority Black metropolitan neighborhoods, 7 percent of all metropolitan businesses.

TABLE 1

The distribution of neighborhoods and Black population by exposure to Black neighbors
U.S. metropolitan areas, 2012-2016

	Share of Black metropolitan population	Share of metropolitan neighborhoods
Blacks 0% to less than 1%	1%	22%
Blacks 1% to less than 5%	6%	28%
Blacks 5% to less than 10%	9%	14%
Blacks 10% to less than 20%	15%	13%
Blacks 20% to less than 50%	29%	12%
Blacks 50% or higher	41%	10%

Source: Authors' analysis of 2016 American Community Survey 5-year estimates

2. In the average U.S. metropolitan area, homes in neighborhoods where the share of the population is 50 percent Black are valued at roughly half the price as homes in neighborhoods with no Black residents.

Across metropolitan America, housing prices are systematically lower where neighborhood Black population share is higher. In neighborhoods where less than 1 percent of the population is Black (which we refer to as "non-Black neighborhoods"), median listing prices on Zillow are $341,000 compared to $184,000 in majority Black neighborhoods. Using Census Bureau estimates from homeowners yield similar discrepancies. Comparing only homes within
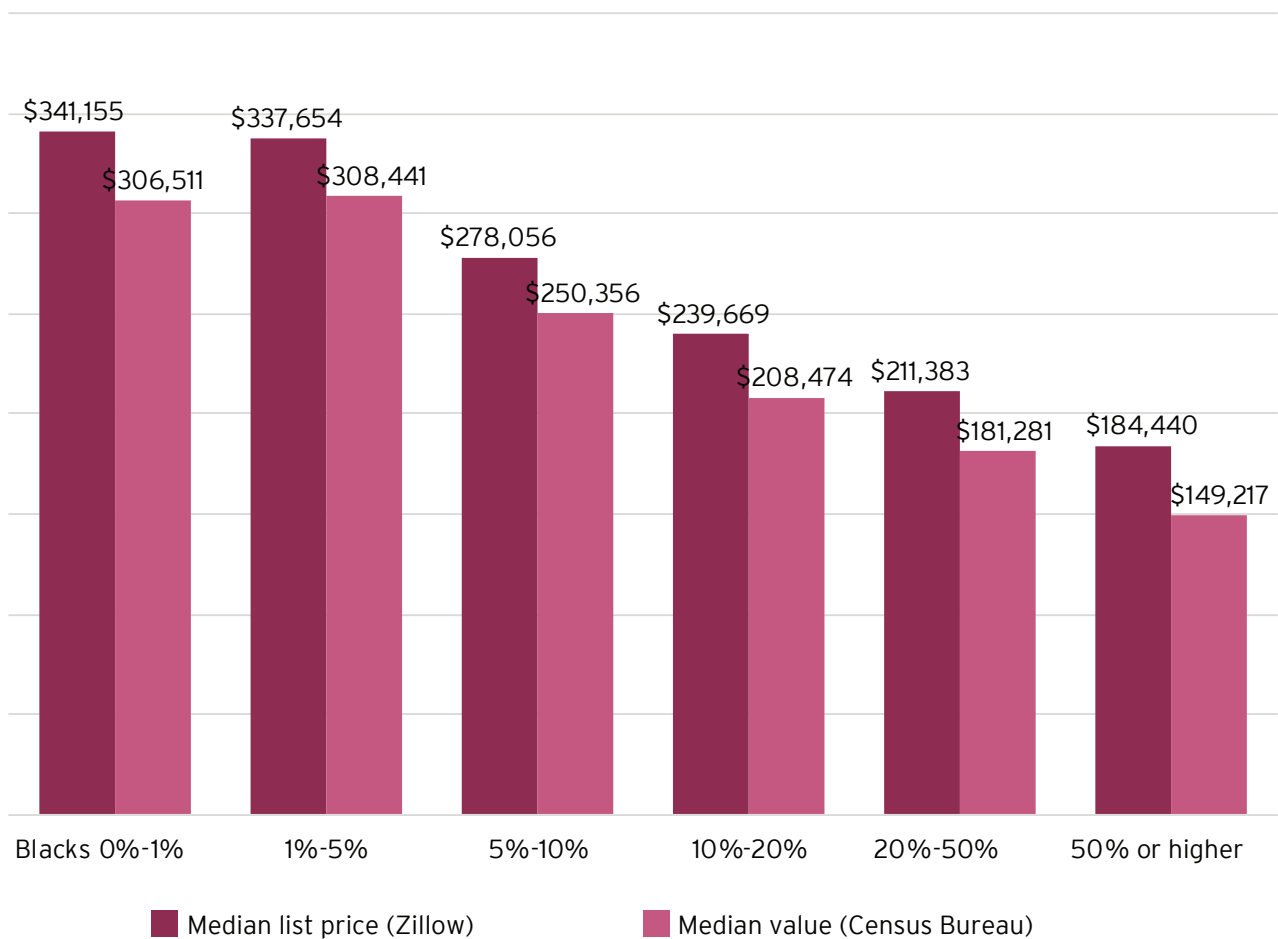
the same metropolitan area, both data sources suggest that home values are just over 50 percent lower in neighborhoods where the Black population is 50 percent compared to neighborhoods with no Black residents.

The devaluation of Black neighborhoods is widespread across the country. There are 119 metropolitan areas with at least one majority Black census tract and one census tract that is less than 1 percent Black. In 117 of these 119 metro areas, homes in majority Black neighborhoods are valued lower than homes in neighborhoods where Blacks are less than 1 percent of the population. Gainesville, Fla. and Sebring, Fla. are the only exceptions.

FIGURE 1

Neighborhood median home value by Black population share
U.S. metropolitan areas, 2012-2016

	Median list price (Zillow)	Median value (Census Bureau)
Blacks 0%-1%	$341,155	$306,511
1%-5%	$337,654	$308,441
5%-10%	$278,056	$250,356
10%-20%	$239,669	$208,474
20%-50%	$211,383	$181,281
50% or higher	$184,440	$149,217

Source: Authors' analysis of Zillow and 2016 American Community Survey 5-year estimates

The valuation gaps are extreme in a number of areas. The largest gap is in the Bridgeport-Stamford-Norwalk, Conn. metropolitan area. In neighborhoods where Blacks are less than 1 percent of the population, the median home value is $784,000, compared to just $131,000 in majority Black neighborhoods, a six-fold difference. Home values in majority Black neighborhoods are just 17 percent of those in non-Black neighborhoods. Likewise, very large differences are found throughout the South and Midwest—in Charleston, S.C., Cape Coral, Fla., Youngtown, Ohio, and Ann Arbor, Mich.

TABLE 2

The 10 metropolitan areas with the largest and smallest differences in the value of homes

Black neighborhoods in U.S. metropolitan areas, 2012-2016

	Median value of homes in majority Black neighborhoods	Median value of homes in neighborhoods with less than 1% Black population	Relative valuation of Black neighborhoods in percentage points
Areas with the largest difference in home value			
Bridgeport-Stamford-Norwalk, CT	$131,011	$783,887	17%
Charleston-North Charleston, SC	$130,854	$717,711	18%
Savannah, GA	$112,539	$562,500	20%
Hilton Head Island-Bluffton-Beaufort, SC	$93,262	$460,712	20%
Youngstown-Warren-Boardman, OH-PA	$33,045	$131,484	25%
Port St. Lucie, FL	$65,880	$259,926	25%
Palm Bay-Melbourne-Titusville, FL	$61,662	$241,853	25%
Lexington-Fayette, KY	$77,270	$301,526	26%
Cape Coral-Fort Myers, FL	$67,192	$259,118	26%
Ann Arbor, MI	$68,320	$259,985	26%
Mean of group	**$84,104**	**$397,870**	**21%**
Areas with the smallest difference in home value			
Greenville-Anderson-Mauldin, SC	$82,680	$114,743	72%
New York-Newark-Jersey City, NY-NJ-PA	$403,314	$559,706	72%
Baton Rouge, LA	$109,951	$152,543	72%
Boston-Cambridge-Newton, MA-NH	$313,353	$430,997	73%
Naples-Immokalee-Marco Island, FL	$390,200	$459,728	85%
Asheville, NC	$178,200	$195,882	91%
Lakeland-Winter Haven, FL	$82,559	$89,334	92%
Anniston-Oxford-Jacksonville, AL	$59,371	$61,200	97%
Gainesville, FL	$95,591	$95,237	100%
Sebring, FL	$134,600	$69,644	193%
Mean of group	**$184,982**	**$222,901**	**83%**

Note: Sample limited to metropolitan areas with at least one census tract that is majority Black and at least one census tract that is less than one percent Black.
Source: Authors' analysis of 2016 American Community Survey 5-year estimates

There is nonetheless an extremely wide range of estimates across metropolitan areas for the housing market penalty for homes in Black neighborhoods. In the New York City metropolitan area, median home values in majority Black neighborhoods are over $400,000, reflecting the extraordinarily high overall cost of living and value of real estate. That is much less than the value for neighborhoods with fewer than 1 percent Black population shares ($560,000), but the percentage point gap is much lower than other parts of the country. Greenville, S.C., Boston, Mass., and Baton Rouge, La. are other examples of metro areas with relatively narrow gaps in valuations between majority Black neighborhoods and those with few Black residents.

3. Neighborhood quality is only part of the explanation for the devaluation of homes in Black neighborhoods.

During the 20th century, segregation and Jim Crow forcibly lowered the quality of neighborhood conditions for Blacks and impeded their financial ability to move to better opportunities. This occurred through deed restrictions, redlining, and zoning, as well as other mechanisms. As a result of that dynamic and the continuation of housing policies that exclude working-class housing from non-Black neighborhoods, majority Black neighborhoods suffer from lower quality housing and limited access to good schools and neighborhood amenities.

The quality of housing in majority Black neighborhoods differs from less Black neighborhoods in terms of age, size, and structure. The median home in majority Black neighborhoods is 12 years older than homes in neighborhoods where Blacks are less than 1 percent of the population. These older homes are also smaller, by nearly half a room, and are much less likely to be detached single-family homes. Majority Black neighborhoods are much more likely to have denser housing structures, such as attached single-family units, which also reflects the concentration of Blacks in America's cities.

Not only is the housing stock of lower quality, so is the surrounding neighborhood in several important dimensions. School performance is weaker, commute times are longer, and access to business amenities is more limited. There is also evidence that exposure to environmental pollution is greater, through, for example, proximity to a greater number of gas stations.[22]

TABLE 3

Physical characteristics of housing units by Black neighborhood population share
U.S. metropolitan areas, 2012-2016

	Median year structure built	Median number of rooms per unit	Single-family detached, % of units	Single-family attached, % of units
Blacks 0%-1%	1975	6.5	83.1	5.0
Blacks 1%-5%	1974	6.4	79.7	6.7
Blacks 5%-10%	1976	6.4	79.1	7.4
Blacks 10%-20%	1975	6.2	77.4	8.5
Blacks 20%-50%	1973	6.2	75.2	9.5
Blacks 50% or higher	1963	6.1	73.2	12.7

Source: Authors' analysis of 2016 American Community Survey 5-year estimates

The school test score gaps between neighborhoods are particularly extreme. The gap in test scores between majority Black neighborhoods and those that have Black population shares that are 5 percent or lower is approximately 1.1 standard deviations. More concretely, the proficiency rate on state exams in majority Black neighborhoods is only 15 percent, compared to 60 percent in neighborhoods with less than 1 percent Black population shares.

Likewise, residents of majority Black neighborhoods confront longer commute times by several minutes compared to those in other neighborhoods, suggesting constrained access to jobs. Yet this interpretation requires caution because residents of majority Black neighborhoods are far more likely to commute via public transportation, which can be slower, especially via bus.

Still, the apparent weaknesses of Black neighborhoods can also be strengths. With homes more densely situated, residents of Black neighborhoods live in more "walkable" communities, with a greater diversity of business types and more frequent intersections. These qualities are associated with higher home

values.[23] There is a striking difference on this score between majority Black neighborhoods and neighborhoods that are less than 1 percent Black; they differ by over half a standard deviation.

Given the above discussion of housing and neighborhood attributes, the central question of this study remains: Do the differences in housing and neighborhood quality fully account for the differences in housing values?

The analysis here suggests not. We use regression analysis to predict home values as a function of the Black population share, the qualities of homes in the neighborhood, and the qualities of the neighborhoods within each metropolitan area.

First, there is clear evidence that adjusting for the size of the home lowers the devaluation estimate for Black neighborhoods by a meaningful fraction—from -51 percent to -35 percent when we use the two Zillow-based measures for median list price overall and by square foot. Since Black homes are smaller, they have less market value, but that still leaves a very large gap unexplained.

TABLE 4

Neighborhood characteristics by Black population share

U.S. metropolitan areas, 2012-2016

Black population share	School test scores (Standardized)	EPA Walkability Index	Number of restaurants	Number of gas stations	Percent who use public transportation	Average commute time (minutes)
0%-1%	0.29	-0.31	53.2	6.9	3.6	26.7
1%-5%	0.28	-0.03	69.3	8.1	5.1	26.5
5%-10%	0.17	-0.01	69.7	9.2	4.7	26.6
10%-20%	-0.01	-0.01	67.5	10.0	5.4	26.5
20%-50%	-0.27	0.01	61.9	10.6	7.7	27.1
50% or higher	-0.85	0.23	50.0	10.8	15.0	29.2

Source: Authors' analysis data from 2016 American Community Survey 5-year estimates, Department of Education, Environmental Protection Agency, and County Business Patterns

The value metrics that do not include square footage are sensitive to the structural features of homes in the neighborhood—such as age, number of rooms, percentage detached, but adjusting these things did not greatly reduce the devaluation estimate. The Zillow median list price estimates for devaluation in neighborhoods that are 50 percent Black range from -40 percent to -44 percent, with census-based estimates from owner self-appraisals in the middle at -41 percent.

The next set of regression estimates includes neighborhood control variables, and these variables go further in explaining the devaluation of majority Black neighborhoods. The devaluation estimates are -22 percent for median list price and -23 percent for the list price per square foot and self-appraisals of all owner-occupied properties.

In the model that predicts value per square foot, three variables measured at the neighborhood level stand out as strong predictors: school quality—measured by state test scores (strongly positive); the number of gas stations (strongly negative) and access to public transportation (strongly positive). Majority Black neighborhoods are at a disadvantage on school quality and exposure to gas stations but have greater access to public transportation. Walkability

predicts modestly higher home values, and Black neighborhoods have an advantage on that score as well.

While this analysis explains roughly half of the devaluation effect, we are left with the fact that a square foot of residential real-estate is worth 23 percent less in neighborhoods where half the population is Black compared to neighborhood with few or no Black residents, even after adjusting for housing quality and neighborhood quality.

To put this devaluation value in perspective, we estimate that home values in majority Black neighborhoods should be worth an additional $48,000 per home, which amounts to a cumulative sum of $156 billion in aggregate value.[24]

It is certainly possible that our analysis has omitted variables that are correlated with both the Black-population share and the value of housing and that could go further in explaining the gaps we observe in value. Yet, we believe it is unlikely that any such factors would explain the gap entirely. We have included important variables in both formal property appraisals and variables that consumers can use as search criteria on popular real estate websites. For example, on Zillow, buyers can filter homes by the number of rooms, square footage, and year

TABLE 5

Average devaluation of homes due to location in a neighborhood that is 50% Black compared to 0% Black
Owner-occupied units in U.S. metropolitan areas, 2012-2016

	Actual price comparison	Adjustments for structural characteristics of home	Adjustments for structural characteristics of home and neighborhood amenities
Census median home value	-55%	-42%	-23%
Zillow median list price of houses per square foot	-35%	-40%	-23%
Zillow median list price of houses	-51%	-44%	-22%

Source: Authors' analysis of 2016 American Community Survey 5-year estimates and median values from Zillow averaged from 2012-2016. See text for list of structural characteristics and neighborhood amenities

built. These are included in our model. As explained in the appendix, the main results are also robust when including crime, at least in a subset of large cities where crime data are readily available at the neighborhood scale.

With more effort or with local knowledge, sophisticated shoppers can also find out information about school quality, using the same data included in our models, test proficiency rates. There are no publicly available metrics on school quality available to consumers beyond what we have included in our model. With further effort or by exploring the neighborhood, potential buyers can also get a sense of access to restaurants, libraries, and other business amenities. Our model uses measures for these amenities that best explain variation in housing, without regard to how inclusion of these variables affected the estimate for devaluation associated with Black population shares. We also adjust for the length of commute and the mode of commute and several variables that capture neighborhood household age and family relationships.

4. Metropolitan areas with greater devaluation of Black neighborhoods are more segregated and produce less upward mobility for the Black children who grow up in those communities.

Black males earn lower incomes as adults than white males, even when born to parents with similar incomes. In this sense, Blacks have lower intergenerational mobility than whites—as well as Hispanics and Asians. Intriguingly, this is not true for Black females, who have similar incomes as white females born to parents at the same income scale. These finding comes from recent research by Harvard economists Raj Chetty and Nathaniel Hendren—along with Census Bureau economists—which linked records from the Internal Revenue Service to the Census Bureau to understand intergenerational income mobility for people aged 31 to 37 who were born between 1978 and 1983.[25]

We use these data to investigate whether or not Black children raised in areas with greater devaluation of Black assets experience less mobility. There are several reasons why this might be so. There are large gaps in wealth between races and residential

real estate wealth is a major reason for this gap.[26] If properties in Black neighborhoods were priced equally as those in white neighborhoods, Black children coming of age in the 1990s and 2000s would have had much more wealth to draw upon to pay for things like private schooling, tutoring, travel, and educational experiences, as well as higher education and greater access to higher scoring schools in the suburbs. Greater property wealth may have also facilitated higher rates of entrepreneurship among Black parents, which may have positively affected children.

In fact, there is a positive correlation between the valuation of properties in Black neighborhoods and upward mobility of Black children whose parents had incomes at the 25th percent of the national income distribution. In other words, Black children born to low-income families had higher income as adults if they grew up in a metro area that valued Black property closer to its observable market characteristics. We restrict this analysis to the 113 metropolitan areas with at least one majority Black neighborhood. We also give extra weight in the analysis to metro areas with larger Black populations to reduce the influence of measurement error; as such, the estimates should be thought of as characterizing the experience of the average Black person living in different types of metropolitan areas.[27]

As shown in Figure 2, metropolitan areas in the lowest quintile of valuation for majority Black neighborhoods compared to white neighborhoods generate very low upward mobility for Black children born near 1980. The average Black child born in these areas to families at the 25th percentile of the national income distribution advances only to the 31st percentile. In areas with greater valuation for Black neighborhoods, in the fourth quintile in particular, children end up in the 35th percentile. The positive relationship is more muted for the areas with the highest valuations of Black neighborhoods.
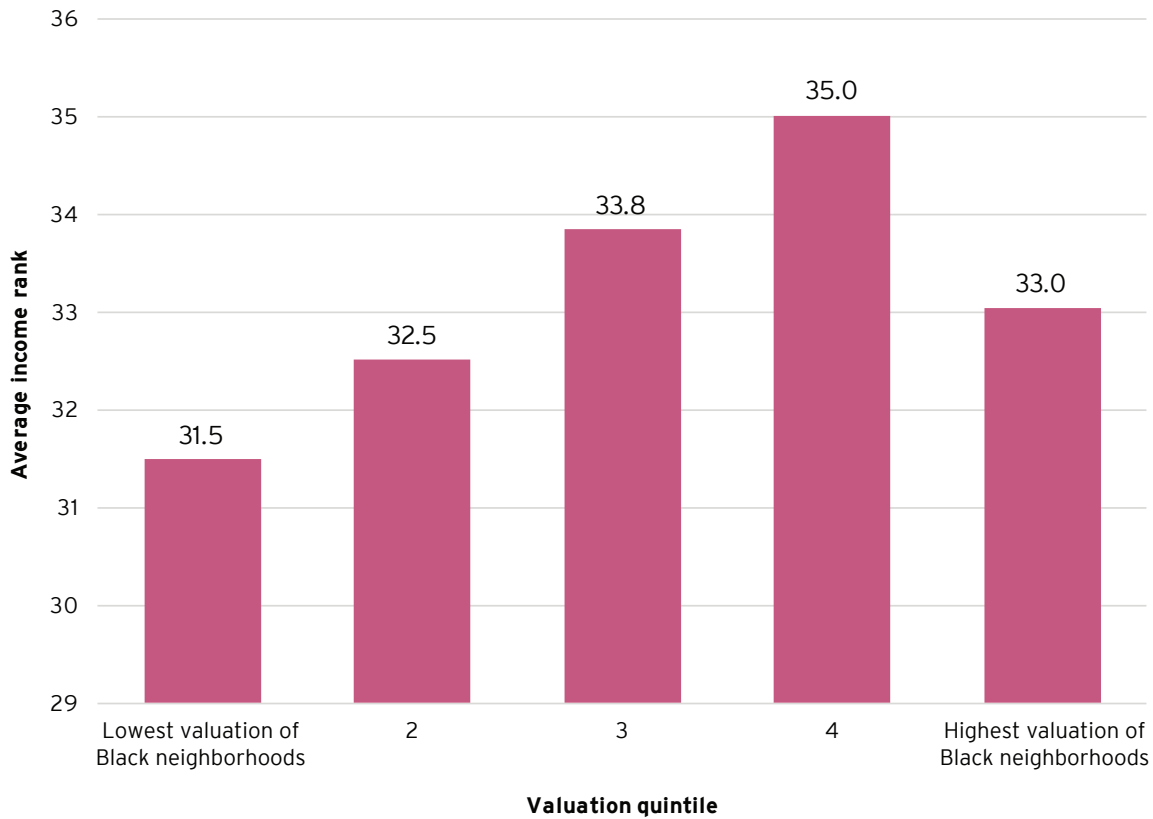
We also find that segregation is correlated with devaluation. Areas that undervalue homes in Black neighborhoods are much more likely to be highly segregated, using a standard Black-white segregation index.

FIGURE 2

Effect of housing valuation on upward income mobility of Black children

Majority-Black neighborhoods in U.S. metro areas, 2012-2016

Note: Income rank calculated for Black children born to parents at 25th percentile of national income. Devaluation measure is based on median list price per square foot after adjusting for home and neighborhood quality. Analysis is of 113 metropolitan areas with at least one majority Black census tract and one tract with Black population shares under 1 percent. Means are weighted by the number of Black residents in metro area.

Source: Authors' analysis of data from Zillow, the 5-year 2016 American Community Survey and Equality of Opportunity Project. Devaluation measure is based on median list price per square foot after adjusting for home and neighborhood quality. Analysis is of 113 metropolitan areas with at least one majority Black census tract and one tract with Black population shares under 1 percent. Means are weighted by the number of Black residents in metro area

A regression analysis that predicts the quality-adjusted valuation of Black neighborhoods based on Black economic mobility, segregation, and racist internet searches finds all three are significant and help explain variation in the valuation of Black properties. The anti-Black internet search term variable, however, is less robust and only significant when controlling for the other variables.

Turning to specific metro areas, Rochester, N.Y. gives the lowest relative value to homes in neighborhoods that are 50 percent Black, after adjusting for housing

and neighborhood quality. These properties are listed with 65 percent less value per square foot. Rochester also exhibits high levels of Black-white segregation and anti-Black internet searches are common. Black children growing up in Rochester, New York in low-income families (at the 25th percentile) do relatively poorly as adults (the 31st percentile).

Tulsa, Okla., Omaha, Neb., and Jacksonville, Fla. are also among the 10 areas with the lowest valuations for Black neighborhoods, at -40 percent or lower. Economic mobility is low there as well, though better

FIGURE 3

Segregation and the value of housing in Black neighborhoods

Majority-Black neighborhoods in U.S. metro areas, 2012-2016
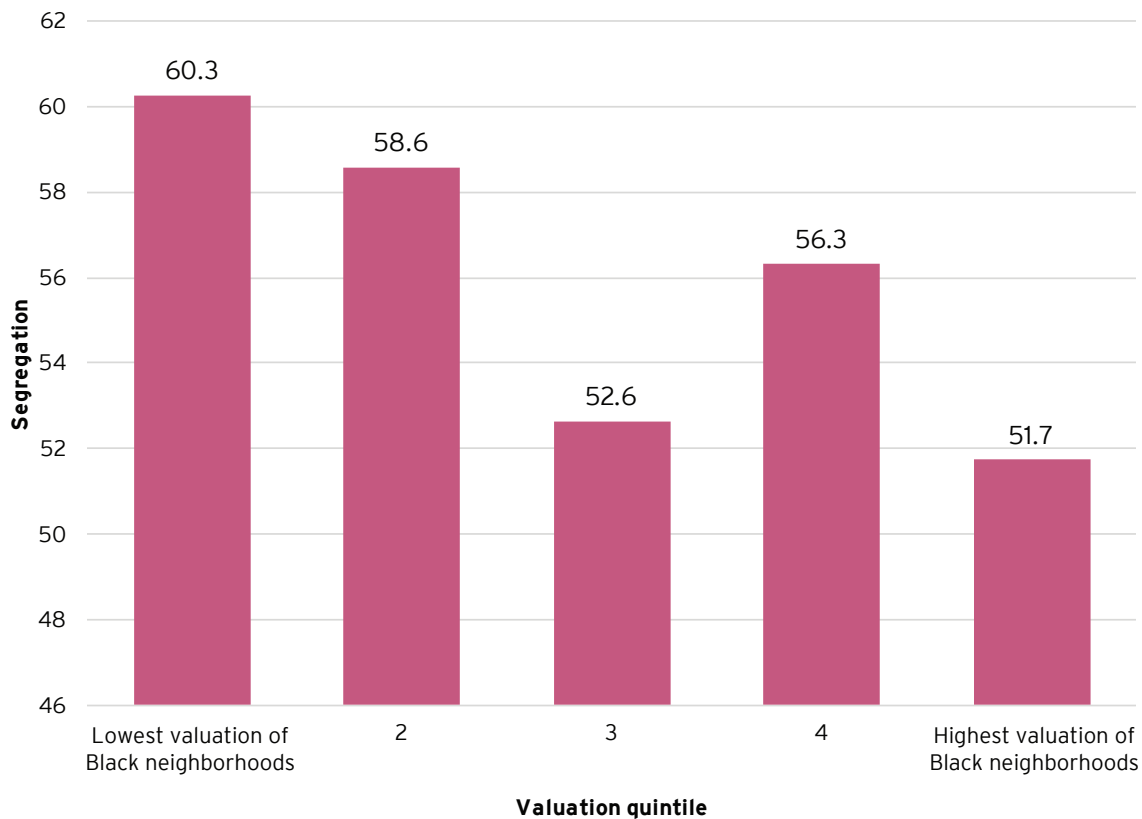
Note: Segregation is measured by the dissimilarity index at the census tract level. Devaluation measure is based on median list price per square foot after adjusting for home and neighborhood quality. Analysis is of 113 metropolitan areas with at least one majority Black census tract and one tract with Black population shares under 1 percent. Means are weighted by the number of Black residents in metro area.
Source: Authors' Analysis of 2012-2016 ACS estimates

in Tulsa, where segregation is relatively low and Google searches with anti-Black slurs are relatively rare.

Upward mobility tends to be somewhat higher where homes are more highly valued in Black neighborhoods. In Boston, Mass., for example, Black children reach the 39th percentile, on average, when growing up at the 25th percentile. Boston is also characterized by infrequent anti-Black internet searches but high levels of segregation. Black children born in the Hartford metropolitan area and Oklahoma City also did relatively well.

This evidence presented here is not meant to prove that devaluation causes lower mobility or vice versa. That cannot be answered with these data, but the evidence does suggest there may be underlying links between the two phenomena that warrant further exploration. Likewise, we intend to collect more relevant and targeted data on anti-Black sentiment in the future. The results linking anti-Black internet searches to the devaluation of Black neighborhoods are intriguing, but we believe the question requires new data sources.

The devaluation of majority-Black neighborhoods is penalizing homeowners in Black neighborhoods by an average of $48,000 per home, amounting to $156 billion in cumulative losses. Over the years, segregation has negatively affected neighborhood conditions—fewer quality schools, in particular—and reduced the quality of homes by limiting access to finance. However, differences in home and neighborhood quality do not fully explain the lower prices. In addition, there are positive but overlooked assets in Black communities like walkability of Black neighborhoods and access to public transportation.

The finding that Black children born into low-income families achieve higher incomes as adults if they grew up in metro areas where homes were less devalued is noteworthy and could be strengthened with further work that more directly links discrimination to barriers to mobility and explores the potential for neighborhood devaluation to serve as an active agent that worsens outcomes for Blacks and their children.

The undervaluation of Black assets in housing markets has other important social implications. Black homeowners realize lower wealth accumulation, which, among other effects, makes it more difficult to start and invest in business enterprises and afford college tuition for their children.

We hope to better identify some of the causes for this devaluation—including potential psychological mechanisms—in subsequent research. Some of the most enduring and pernicious effects of the more than 350 years of slavery, Jim Crow racism, as well as de jure and de facto segregation in the U.S., have been the internalization of stereotypes, insults, and dehumanizing innuendos about Black people, stemming from the malevolent use of such tropes by the (white) people in power to justify discrimination— what researchers describe as unconscious bias. Our findings are generally consistent with the widespread presence of anti-Black bias—whether unconscious or not, ingrained stereotypes and automatic associations of a particular group, and even outright discrimination and racism.

By controlling for commonly held causes of price differences including education, lower home quality, and crime, this paper suggests that bias is likely to be a large part of the unexplained devaluation of Black neighborhoods and some perspective on how anti-Black beliefs distort the value of assets. In the absence of representative survey data on racist beliefs at the metropolitan scale, we can't see the degree and nature of devaluation in the context of cities. Our future work will aim to collect and analyze subjective survey data to see how people from different races view each other and their neighborhoods.

TABLE 6

The 10 metropolitan areas with the most and least devaluation of homes

Black neighborhoods in U.S. metropolitan areas, 2012-2016

	Valuation of homes by sq foot in Black neighbor-hoods (full model)	Income rank for Black children born to parents at 25th percentile of national income	Anti-Black sentiment index from Google searches	Segregation index
Areas with the most devaluation of homes in Black neighborhoods				
Rochester, NY	-65%	31.2	71.1	60.9
Jacksonville, FL	-47%	31.3	59.1	51.1
Omaha-Council Bluffs, NE-IA	-44%	31.9	48.4	58.4
Tulsa, OK	-40%	32.7	40.6	50.7
Birmingham-Hoover, AL	-39%	32.0	65.3	63.1
Cape Coral-Fort Myers, FL	-38%	32.9	59.3	55.8
Detroit-Warren-Dearborn, MI	-37%	31.2	68.4	72.2
Milwaukee-Waukesha-West Allis, WI	-34%	30.8	70.5	76.7
Chattanooga, TN-GA	-33%	30.8	70.6	61.4
Buffalo-Cheektowaga-Niagara Falls, NY	-32%	31.2	76.0	68.3
Mean of group (weighted by Black population)	**-40%**	**31.4**	**66.0**	**66.1**
Areas with the least devaluation of homes in Black neighborhoods				
Winston-Salem, NC	-4%	30.9	67.9	52.1
Albany-Schenectady-Troy, NY	-4%	33.2	78.6	58.0
Hartford-West Hartford-East Hartford, CT	-3%	35.2	63.8	57.4
Oklahoma City, OK	0%	33.6	58.9	50.1
Tampa-St. Petersburg-Clearwater, FL	1%	30.4	68.7	50.1
Syracuse, NY	1%	30.8	69.6	63.8
Greenville-Anderson-Mauldin, SC	1%	32.0	71.7	40.1
Wichita, KS	4%	31.8	38.3	56.1
Nashville-Davidson-Murfreesboro-Franklin, TN	10%	31.9	63.4	50.8
Boston-Cambridge-Newton, MA-NH	23%	39.1	51.0	59.9
Mean of group (weighted by Black population)	**7%**	**33.5**	**62.5**	**53.2**

Notes: Devaluation measure estimates median list price per sq foot after adjusting for home and neighborhood quality. The number shown in the first column is the average price difference in percentage point terms for homes in neighborhoods that are 50% Black compared to those that in neighborhoods with no Black residents after making these adjustments. Metropolitan area sample is limited to those with at least one majority Black neighborhood and one neighborhood with a less than 1% Black population share. Segregation is measured by the dissimilarity index at the census tract level. Anti-Black sentiment is measured using Google search terms from data created and analyzed Stephens-Davidowitz.

Source: Authors' analysis of data from Zillow, 2016 American Community Survey 5-year estimates, and the Equality of Opportunity Project

We did not include census tract measures of crime in our analysis because we are not aware of any comprehensive publicly available data source at the ZIP code or census tract level for crime incidence. Using data from U.S. City Open Data Census, we collected crime data reported by city police departments for 10 large cities covering each region of the country: Washington D.C., Baton Rouge, New Orleans, Boston, Chicago, Durham, Philadelphia, San Francisco, Las Vegas, and Los Angeles. We classified assault, rape, murder, and robbery as violent crimes and thefts, burglaries, and carjacking as property crimes. The data from these cities were organized at the incident level and included longitude and latitude coordinates, which we assigned to Census tracts. This gave us 3,917 tracts with crime data.

The first step was to analyze the correlation between property values and crime measures. We find that violent crime predicts significantly lower property values and is highly correlated with the Black share of the population. This makes violent crime a potentially confounding variable for our analysis, but it is noteworthy that the correlation with property values is rather low. Property crimes, by contrast, occur in census tracts with relatively high home prices, though the correlation is weak and has almost no correlation with Black population shares.

To more formally test how including crime would affect our estimates of devaluation, we include violent crime in our main models and re-estimate the effect of Black population shares. Again, the estimates are calculated within metropolitan areas—that is controlling for metropolitan fixed effects. Though the results use a much smaller number of census tracts than the national estimates, we again find evidence for significant devaluation. The magnitude of the results is very similar to what we find in the main models. With the full set of controls, we find that Black homes are devalued by 19 percent to 22 percent, depending on whether we use the Zillow square foot adjusted price or the census home value estimate. Moreover, in the census models, violent crime is never significantly predictive of property values, and even in the Zillow models, the relationship is relatively weak. An increase in 100 violent crimes predicts a decrease of only 4.9% in property values per square foot, while controlling for the other factors in our model.

TABLE 1A

Correlation between the number of violent and property crimes in a census tract and home value and Black population shares

Selected U.S. cities, 2016-2017

	Median list price per sq foot	Median list price	Median home value	Percent Black in neighborhood
Violent	-0.10	-0.19	-0.21	0.38
Property	0.15	0.10	0.08	0.09
Number of tracts	3,201	3,106	3,740	3,883

Source: Authors' analysis of data from Zillow, 2016 American Community Survey 5-year estimates, and 2017 US City Open Data Census records

Estimates for the devaluation of owner-occupied homes in Black neighborhoods, controlling for violent crime

Selected U.S. cities, 2016-2017

	Absolute price comparison	Adjustments for structural characteristics of home	Adjustments for structural characteristics of home and neighborhood amenities
Estimated penalty of location in a neighborhood that is 50% Black compared to 0% Black			
Census median home value, 2012-2016	-42%	-40%	-22%
Zillow median list price of houses per square foot, 2012-2016	-43%	-37%	-19%
Estimated penalty for every 100 violent crimes per year (values in red are not statistically signifcant)			
Census median home value, 2012-2016	-10.6%	-4.8%	-0.8%
Zillow median list price of houses per square foot, 2012-2016	-2.9%	-7.3%	-4.9%

Source: Authors' analysis of data from Zillow, 2016 American Community Survey 5-year estimates, and 2017 US City Open Data Census records

1 "UPDATE: Chancellor, Campus Leaders Condemn Post Made by Ole Miss Alumnus, Donor Ed Meek - The Daily Mississippian | The Daily Mississippian," accessed September 28, 2018, http://thedmonline.com/update-chancellor-campus-leaders-condemn-post-made-by-ole-miss-alumnus-donor-ed-meek/.

2 "Perceptions: Done to Us, Not With Us: African American Parent Perceptions of K-12 Education|UNCF," United Negro College Fund, accessed September 20, 2018, https://www.uncf.org/pages/perceptions-done-to-us-not-with-us-african-american-parent-perceptions-of-k.

3 "Understanding Implicit Bias," accessed April 5, 2018, http://kirwaninstitute.osu.edu/research/understanding-implicit-bias/.

4 "Science-of-Equality-111214_web. Pdf," accessed September 20, 2018, http://perception.org/wp-content/uploads/2014/11/Science-of-Equality-111214_web.pdf.

5 Richard Rothstein, *The color of law: A forgotten history of how our government segregated America*. Live right Publishing, 2017; Douglas S. Massey, and Nancy A. Denton, *American apartheid: Segregation and the making of the underclass*. Harvard University Press, 1993.

6 David Rusk, "The "Segregation Tax": The Cost of Racial Segregation to Black Homeowners (2001).

7 David R. Harris, "'Property values drop when Blacks move in because...': Racial and socioeconomic determinants of neighborhood desirability." *American Sociological Review* 64(3)(1999): 461-79.

8 Caitlin Knowles Myers, "Discrimination and neighborhood effects: Understanding racial differentials in US housing prices." J*ournal of Urban Economics* 56.2 (2004): 279-302.

9 "Faber_Ellen_2016_Race_and_the_Housing_Cycle. Pdf," accessed October 3, 2018, https://wagner.nyu.edu/files/faculty/publications/Faber_Ellen_2016_Race_and_the_Housing_Cycle.pdf.

10 "Faber_Ellen_2016_Race_and_the_Housing_Cycle. Pdf," accessed October 3, 2018, https://wagner.nyu.edu/files/faculty/publications/Faber_Ellen_2016_Race_and_the_Housing_Cycle.pdf.

11 Sun Jung Oh and John Yinger, "What Have We Learned From Paired Testing in Housing Markets?," *Cityscape* 17, no. 3 (2015): 15–60.

12 "Zillow Research Data." *Zillow*. Available at https://www.zillow.com/research/data/.

13 https://www.udsmapper.org/zcta-crosswalk.cfm; Missouri Census Data Center, MABLE/Geocorr14, Version 1.0: Geographic Correspondence Engine. Web application accessed July 2018 at http://mcdc.missouri.edu/websas/geocorr14.html.

14 This is based on 22,020 census tracts in U.S. metropolitan areas.

15 Jonathan Rothwell. "Housing Costs, Zoning, and Access to High-Scoring Schools." Brookings Institution (Washington D.C.: 2012).

16 "EDFacts Data Files." U.S. Department of Education. Available at https://www2.ed.gov/about/inits/ed/edfacts/data-files/index.html.

17 https://www.udsmapper.org/zcta-crosswalk.cfm; Missouri Census Data Center, MABLE/Geocorr14, Version 1.0: Geographic Correspondence Engine. Web application accessed July 2018 at: http://mcdc.missouri.edu/websas/geocorr14.html.

18 "Smart Location Mapping." EPA. Available at https://www.epa.gov/smartgrowth/smart-location-mapping.

19 Raj Chetty, Nathaniel Hendren, Maggie R. Jones, and Sonya R. Porter. *Race and economic opportunity in the United States: An intergenerational perspective*.

No. w24441. National Bureau of Economic Research, 2018. Data are available at http://www.equality-of-opportunity.org/data/index.html#race.

20 Seth Stephens-Davidowitz, "The cost of racial animus on a Black candidate: Evidence using Google search data." *Journal of Public Economics* 118 (2014): 26-40.

21 This figure multiplies the median value of homes listed in Black neighborhoods by the number of units. It likely understates the true aggregated value since the median excludes outliers.

22 Jean D. Brender, Juliana A. Maantay, and Jayajit Chakraborty, "Residential proximity to environmental hazards and adverse health outcomes." A*merican Journal of Public Health* 101.S1 (2011): S37-S52.

23 Joe Cortright, "How Walkability Raises Home Values in U.S. Cities," CEOs for Cities (2009).

24 These figures rely on the Zillow listing price estimates. For Census-based estimates, we calculate a loss of $39,000 per home and $126 billion in aggregate. The calculation is done as follows: We take the log of median list price in majority Black neighborhoods (the ln of $184,000 is .123) and add .23 (the devaluation estimate) and apply the exponential function, making make the value $232,000. The difference is our estimate of loss per home. We then multiply that by the number of homes in majority Black metropolitan neighborhoods.

25 Raj Chetty, Nathaniel Hendren, Maggie R. Jones, and Sonya R. Porter. *Race and economic opportunity in the United States: An intergenerational perspective*. No. w24441. National Bureau of Economic Research, 2018.

26 Thomas Shapiro Tatjana Meschede Sam Osoro, "The Roots of the Widening Racial Wealth Gap: Explaining the Black-White Economic Divide" (Institute on Assets and Social Policy, 2013), available at http://iasp.brandeis.edu/pdfs/2013/Roots_of_Widening_RWG.pdf.

27 A regression of our home and neighborhood quality adjusted devaluation measure (using Zillow list price per square foot) on upward mobility shows a coefficient of 0.02 and a t-statistic of 3.9, explaining .12 percent of the variation in a sample of the 113 metro areas with at least one majority Black census tract and at least one non-Black census tract (<1% Black population). Limiting the analysis further to the 65 metro areas that are also among the 100 largest metropolitan areas by 2012–2016 ACS population, results in a t-stat of 4.1 and a r-squared of .20. Results are similar using the Census-based devaluation metric—again adjusted by quality.

Acknowledgements

The Brookings Institution is a nonprofit organization devoted to independent research and policy solutions. Its mission is to conduct high-quality independent research and, based on that research, to provide innovative practical recommendations for policymakers and the public. The conclusions and recommendations of any Brookings publication are solely those of its author(s), and do not reflect the views of the Institution, its management, or its other scholars. Brookings is committed to quality, independence, and impact in all of its work. Activities supported by its donors reflect this commitment.

Image credits

Photos via Shutterstock. Icons via Flaticon.com.

About the Metropolitan Policy at Brookings

The Metropolitan Policy Program at Brookings delivers research and solutions to help metropolitan leaders build an advanced economy that works for all. To learn more, visit brookings.edu/metro.

About Gallup

Gallup delivers analytics and advice to help leaders and organizations solve their most pressing problems. Combining more than 80 years of experience with its global reach, Gallup knows more about the attitudes and behaviors of employees, customers, students and citizens than any other organization in the world.

For more information

Andre Perry
David M. Rubenstein Fellow
Metropolitan Policy Program at Brookings
aperry@brookings.edu

Jonathan Rothwell
Senior Economist
Gallup
jonathan_rothwell@gallup.com