Inside the Black Box of 'White Flight': The Role of Suburban Political Autonomy and Public Goods

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April, 2006

Abstract: Why did white households relocate to the suburbs in response to black in-migration, despite the abundance all-white neighborhoods *within* segregated cities? By moving to the suburbs, residents could avoid compromising with black arrivals on property taxes and public expenditures and sending their children to diverse public schools. I reveal the marginal willingness to pay for this suburban autonomy by comparing prices for housing units on either side of city-suburban borders in 1970 and the change in these cross-border price gaps from 1960 to 1970. Identification arises from the fact that the local electorate and/or school system changes discretely at these borders, while housing and neighborhood quality shift more continuously. Preferred estimates suggest that housing prices in diverse jurisdictions are worth 3-5 percent less than their suburban neighbors. This "homogeneity premium" can be attributed to the correlation between race, poverty rates, and property taxes, and to the demand for white classmates in local high schools. Riot activity augmented the aversion to living in diverse jurisdictions.

* Email: platt@fas.harvard.edu. Thanks go to Edward Glaeser, Claudia Goldin, Caroline Hoxby, Lawrence Katz and Robert A. Margo for their comments and insight. This paper benefited from conversations with David Abrams, David Clingingsmith, William J. Collins, Carola Frydman, Eric Hilt, Raven Saks and Bruce Weinberg, and from the suggestions of seminar participants at Harvard University, the Minnesota Population Center, and the NBER. Michael Latterner and Danika Stegeman provided excellent research assistance. Petra Noble, Sarah Reber, Wendy Thomas, and David Van Riper generously assisted with aspects of the data collection. I gratefully acknowledge the financial support of the Center for American Political Studies and the Taubman Center for State and Local Government, both at Harvard University, and dissertation fellowships from the Economic History Association and the Rovensky Fellowship in Business and Economic History.

I. Introduction

In the decades following World War II, American cities underwent a period of rapid suburbanization, driven primarily by the location decisions of white households.[1] White suburbanization was, in part, a response to the growing black presence in central cities (Frey, 1979; Grubb, 1982).[2] Over four million African-Americans left the rural South from 1940 to 1970, settling primarily in central cities. In previous work, I show that, if not for the resulting increase in urban diversity, the growth in white suburbanization over this period would have been 20 percent lower.[3]

Establishing a relationship between black in-migration and white suburbanization leaves open the deeper question of *why* white households chose to leave racially diverse central cities. Various models of the urban location decision propose different answers. Traditional land use theory determines a location's value based on its distance from employment centers, with longer commuting times compensated by lower land prices (Alonso, 1964; Muth, 1969; Mills, 1972). New migrants – irrespective of their race – may have increased housing prices in the central city, where supplies of land were fixed and the elasticity of housing supply was relatively low,

[1] In 1940, 40 percent of white residents in the average metropolitan area (SMSA) lived outside the central city. By 1970, the mean white suburban share had increased to 65 percent. These figures are based on the 104 SMSAs with more than 250,000 residents in 1970. For comparison, I establish common central city and metropolitan area boundaries in both decades, reassigning suburban land annexed by the center city back to the suburban ring (Bogue, 1953; US Census, 1960, 1970). Without accounting for annexation, the mean white suburban share in 1970 was only 55 percent.

[2] Other factors affecting relocations to the urban periphery include rising household incomes (Margo, 1992), the baby boom (Frey, 1984), and the reduction in commuting costs associated with the construction of the interstate highway system (Baum-Snow, 2005).

[3] In the previous chapter, I document a positive correlation between changes in central city racial composition and white suburbanization. Recognizing that black migrants may have been attracted to cities by the same economic factors underlying the demand for suburban residence (for example, rising wages), I develop an instrumental variables procedure that assigns black migrant flows from southern states to northern cities using pre-established settlement patterns. Even after accounting for migrant location choices, I find that 'white flight' was a quantitatively important cause of postwar suburbanization.

thereby encouraging the marginal resident to relocate to the suburbs.[4] This theory predicts that housing prices in the center city will increase with in-migration, at least in the short run.

Models of segregation instead emphasize characteristics of the neighborhood in which a unit is located, particularly its racial composition (Schelling, 1972; Cutler and Glaser, 1997). By expanding the size of existing black enclaves, black migration increased the proximity of the average white resident to black areas. In this framework, white households might relocate to avoid local interactions with black neighbors.[5]

Historians favor this account of white flight (Sugrue, 1996, Meyer, 2000). However, because city neighborhoods were highly segregated, avoiding black neighbors did not require a suburban address. Conservative estimates indicate that more than half of urban Census tracts were entirely white in 1940, and that segregation only increased with black population growth (Cutler, Glaeser and Vigdor, 1999).[6]

This paper suggests a third factor that may have propelled white households to the suburbs: a desire to avoid *civic* interactions with the black community. By remaining in the central city, whites had to vote in municipal elections and send their children to public schools with black residents, regardless of the racial composition of their immediate neighborhood. Black migrants changed the identity of the median city voter, perhaps by enough to affect local

[4] In this model, the marginal resident was likely to be white. Whites were wealthier than blacks. The rich have a higher demand for housing and thus benefit disproportionately from lower prices on the periphery. Furthermore, at the time, the rich were also more likely to commute by car (Leroy and Sonstelie, 1983). Thus, the rich had both a higher demand for housing and a comparative advantage in commuting (Glaeser, Kahn, and Rappaport, 2000).
[5] In a Gallup poll conducted in 1958, 44 percent of white respondents indicated that they would relocate if a black family moved next door (Ellen, 1999, p. 107).
[6] 81 percent of Census tracts in central cities were at least 90 percent white and 60 percent were over 99 percent white in 1940. Following Cutler, Glaeser and Vigdor (1999), I coded tracts with fewer than 25 black residents, for which the true number of black residents is suppressed, as having no black residents. If instead we assume that all such tracts had 24 black residents, it appears that 79 (52) percent of tracts were 90 (99) percent white in 1940.

policy,[7] and preferences on matters from redistribution to public safety may have varied by race.[8] This explanation, while not mutually exclusive with those based on commuting distance or neighborhood characteristics, emphasizes the choice between politically distinct towns, each with a unique bundle of public goods and property tax rates (Tiebout, 1956; Ellickson, 1971; Fernandez and Rogerson, 1996).

The demand for political distance will be reflected in a willingness to pay for housing units in predominately white municipalities and/or school districts. Empirically, such units also tend to have fewer black neighbors, and to be located farther from the city center. In addition, suburbs tend to have a newer housing stock, larger lots, more open space, and safer streets than their urban counterparts. To isolate the role of political autonomy, I exploit the division of urban space into separate jurisdictions, comparing housing prices on either side of municipal borders.[9]

Underlying this approach is the identification assumption that, while local policy changes discretely at these borders, housing and neighborhood quality shift more continuously. However, abrupt differences in housing quality may emerge at jurisdictional borders due to local zoning regulations or population sorting. To control for any such fixed disparities in housing quality, I consider the effect of relative *changes* in jurisdiction-level racial composition across borders on changes in the housing price gap from 1950 through 1970. The research design is described more fully in section II, and the third section outlines the panel sample of 57 jurisdictional borders in northern/western cities underlying the analysis.

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[7] Black migrants were just as likely to vote in northern elections in the 1960s as their white urban counterparts (American National Election Study, various years).

[8] Even if preferences do not differ across racial groups, voters may have placed a lower weight on maintaining "other people's" neighborhoods or educating "other people's" children (Cutler, Elmendorf and Zeckhauser, 1993). Kruse (2005) gives a striking example of this phenomenon in 1960s Atlanta, where white voters opted to starve the public transportation and park systems rather than support services used by black residents.

[9] This methodology applies the common notion of a regression discontinuity to the spatial dimension. In a similar fashion, Black (1999) exploits the boundaries of school attendance areas in Massachusetts to study the market value of elementary education. Using data drawn from Charlotte, NC, Kane, Staiger and Samms (2003) question the assumption of comparable neighborhood quality across school attendance boundaries.

Section IV tests the maintained assumption of continuity in housing quality across municipal borders, and presents the basic relationship between housing prices and town-level racial composition. By crossing the mean border in 1970, one would leave a town that was 4.4 percent black for one that was 17.6 percent black, a difference of 13.2 percentage points. This mean difference is associated with a 1.5-3.0 percent decline in housing values. There is no discernable effect on rents. Adding variation over time only increases the estimated effect of jurisdiction-level diversity.

The remainder of the paper seeks to identify aspects of city governance or the provision of public goods that may explain this homogeneity premium. I begin by asking whether the price gap thus far attributed to differences in a town's racial composition is instead a proxy for residents' socio-economic status – which is highly correlated with race.[10] The first part of Section V demonstrates that the class-race correlation fully accounts for the estimated price gap in 1960, but only explains a quarter to a third of the larger 1970 gap.

The emergence of this "residual race effect" in 1970 must be due to a *change* in the cost of living in a diverse urban environment over the 1960s. The timing is consistent with an anticipation of court-ordered school desegregation, many of which were handed down in the early 1970s.[11] A full assessment of the role of desegregation in white flight awaits the extension of the border sample to 1980. In the meantime, I employ GIS software to match each border area to its closest high school.[12] The increase in the black share of the student body associated with crossing the mean border accounts for an additional 25 percent of the homogeneity premium,

[10] In 1970, the income of the median black family was only 61 percent of its white counterpart.
[11] Collins and Margo (2004) find that the occurrence of a riot depressed urban property values between 1960 and 1970. My sample is heavily weighted toward cities with intense riot activity. 36 of the 57 borders are taken from metropolitan areas with riot severity ranked among the top ten (in order: Los Angeles, Detroit, Newark, Chicago, Cleveland, New York City).
[12] School-level racial composition was recorded in 1970 by the Office of Civil Rights. Reber (2005) uses this data to estimate the effect of desegregation plans on school-level racial segregation and white enrollment. She generously shared her electronic school-level files with me.

and, through household mobility, reduces the school-aged population in an area. The outbreak of race-related riots may have also changed the perceived cost of urban diversity over the 1960s. I demonstrate that the response to diversity varies with the intensity of a city's riot activity.

The overall welfare effects of white suburbanization during this period are ambiguous. On the one hand, relocation might have been the optimal response on the part of white residents to an influx of poor, black migrants to central cities. However, the resulting loss of the middle-class tax base likely imposed costs on those left behind. Baumol (1967) argues that suburbanization heightened the urban fiscal crises of the 1960s and 1970s. Furthermore, suburbanization contributed to increased racial segregation *between* the central city and its suburban ring (Fischer, et. al, 2004). Bayer, McMillan and Rueben (2005) demonstrate in a general equilibrium framework that eliminating residential segregation by race in 2000 would have halved black-white disparities in the consumption of local public goods, including school quality and public safety.[13] Segregation between jurisdiction, and the resulting disparity in public services, may help explain why black graduation rates and labor market outcomes are lower in segregated metropolitan areas today, a relationship that emerged only in the postwar period (Cutler and Glaeser, 1997; Collins and Margo, 2000).

II. Using Housing Prices to Analyze the Demand for Suburban Residence

Unlike simple consumer goods, housing units are composed of a set of characteristics – attributes of the unit itself, of the neighborhood in which the unit is located, and of the jurisdiction – each of which commands a separate price (Kain and Quigley, 1975). In theory, one can isolate each price with the right data and experimental design, and, by so doing, gain insight

[13] More generally, Benabou (1996) has argued that, with decentralized public finance, suburbanization can lead to inequality in educational inputs between jurisdictions which, in some cases, may reduce aggregate efficiency.

into the demand for a variety of non-market goods that are implicitly traded through the housing market. This technique is known as hedonic pricing, and follows from Rosen's (1974) seminal work; recent examples of this approach include Black's (1999) analysis of the value of elementary education and Chay and Greenstone's (2005) examination of the cost of air pollution (see also: Davis, 2004).

A. An Econometric Framework

One challenge to implementing a hedonic model is that housing quality and neighborhood amenities tend to be strongly correlated with the demographic characteristics of a jurisdiction. To minimize this source of bias, I compare housing units on adjacent blocks that fall on opposite sides of a jurisdictional border. For this application, which requires detailed geographic information, I rely on published block-level means of housing values/rents from the Census of Housing.[14] Starting with data from a single time period (1970), I posit that housing values/rents per room are a function of the racial or socio-economic composition of the jurisdiction in which the unit is located, as well as a series of block level controls. In particular, I estimate the following equation:

$$\ln(\text{price}_{ibj}) = \alpha + \beta\ \text{jurisdiction}_j + \Phi'\text{block}_i + \theta' Z_b + \varepsilon_{ibj} \qquad (1)$$

where i and j index blocks and political jurisdictions, respectively, and b is a subscript common to both sides of a "border area." The equation contains a vector of border area dummy variables (Z_b), which equal one for all blocks on either side of a given jurisdictional border. Z_b captures unobserved characteristics that are shared by houses on both sides of the border – for example,

[14] In the Census, housing values and rents are based on self-reports. Kain and Quigley (1972) argue that owner reports are reliable. However, self-reports may vary across jurisdictional borders if some towns assess properties more regularly, thus providing owners with updated information.

the presence of a large street, a bus line, or a commercial strip. With the inclusion of Z_b, the remaining coefficients are estimated only from variation *within* border areas. Conceptually, this approach relates mean difference in housing prices across borders to differences in jurisdiction-level attributes. Some specifications adjust mean prices using a series of block-level characteristics ($block_i$), which includes the average number of rooms in local homes, the share of units that are owner-occupied or single family structures, and the share of residents on the block who are black.[15]

To clarify geographic terms, Figure 1 presents a schematic illustration of two jurisdictional borders in the Chicago metropolitan area. The upper pair is composed of tracts from Chicago and Evanston, IL, and the lower pair from Chicago and Oak Park, IL. Nested within each tract is a grid of blocks. The sample includes only those blocks that are themselves adjacent to the border. All blocks in the city of Chicago are coded as being in the same jurisdiction ($j = 1$), whereas blocks in Evanston and Oak Park are located in distinct jurisdictions ($j = 2$; $j = 3$). In contrast, adjacent blocks are assigned to the same "border area" even if they fall in different jurisdictions. In the figure, the Chicago/Evanston border is coded as $b = 1$, and the Chicago/Oak Park border is $b = 2$.

B. Relaxing the Identification Assumption

Equation 1 rests on the strong assumption that housing units on either side of the border are of identical quality. However, there are a number of reasons why housing quality might change abruptly at the border. First, some suburban towns passed zoning ordinances, including bans on multi-family units or large lot size requirements, that may have increased the average quality of

[15] Other measures include an indicator for the presence of group quarters (for example, college dormitories or retirement homes) and the density of block settlement, measured as the number of residents per unit.

the housing stock.[16] More generally, by 1970, many of these borders had been in place for over a century. Any local policy that raised property values in one municipality may have changed the incentives for home maintenance, renovation, and upkeep, eventually resulting in sharp changes in housing quality.

To eliminate fixed differences in housing quality, I evaluate *changes* in the cross-border housing price gap as jurisdiction-level racial composition evolves over time (for example, due to black migration from the South). I pool data from 1960 and 1970 and estimate:

$$\ln(\text{price}_{ibjt}) = \alpha + \beta\ \text{jurisdiction}_{jt} + \Phi'\text{block}_{it} + \Pi'J_j + \gamma Y_t + \theta' Z_b + \Psi'(Z_b \text{ x } Y_t) + \Omega'(Z_b \text{ x } J_j) + \varepsilon_{ibjt} \quad (2)$$

where Y_t and J_j indicate the Census year and political jurisdiction, respectively. We can think of this specification in a difference-in-differences framework, where J_j absorbs fixed disparities in black community size between jurisdictions, and Y_t adjusts for a general trend of increasing diversity in northern cities over time. β is then estimated from within-jurisdiction changes in the black population share over the 1960s. As before, including the vector of border dummies ensures that these changes are compared only to a jurisdiction's immediate neighbor. The interaction term (Z_b x J_j) allows each side of the border to have its own local effect – beyond the common neighborhood component Z_b – while (Z_b x Y_t) allows any unobserved characteristics common to both sides of the border to change over time.

In this context, we can relax the assumption of identical housing quality across borders. Instead, we must accept the less-restrictive assumption that housing quality does not *differentially* decline in quality over the 1960s in jurisdictions experiencing larger increases in

[16] Zoning rules that apply only to *new* construction should not differentially affect housing quality across the borders in this sample, most of which were already built up by the 1920s, when the first zoning laws were passed. Bans on multi-family use, on the other hand, apply both to new construction and to conversion of existing units.

diversity. Furthermore, this specification absorbs any long-standing aspect of a jurisdiction that might be correlated with its black population share (for example, being a central city, having a larger population, having poorer residents).

III. Collecting Housing Prices Along Jurisdictional Borders

The Census Bureau began dividing urban space into comparable geographic units in 1940, carving cities into tracts and further subdividing tracts into blocks. By 1960, the Bureau had blocked every urban jurisdiction with more than 50,000 residents and a subset of their largest suburbs. By 1970, all urbanized areas were fully overlaid with Census blocks.[17] Because of the stronger data restrictions in 1960, I start with a sampling frame of the 25 largest central cities in that year. Within these metropolitan areas, I identify 55 political boundaries for which block-level data are available on both sides of the border. Using a combination of Census block maps and historical US Geological Survey 1:24,000 maps, I rule out seven borders that were obstructed by a railroad, four-lane highway, body of water, or large tract of industrial land.[18]

The first panel of Table 1 classifies this initial sample by region and metropolitan area. By comparing those metropolitan areas with at least one border in the sample (panel A) to those without (panel B), it is clear that this procedure under-represents the South, whose cities had fewer large, long-established suburbs. Only one of the seven southern SMSAs in the frame is

[17] The one exception is the Pittsburgh urbanized area, which was fully blocked in 1960. For consistency, I do not include borders containing the smallest jurisdictions in the Pittsburgh metropolitan area. I chose an arbitrary cut-off of 10,000 residents, though the results are not sensitive to changes in this value.

[18] Ruling out obstructed borders improves the plausibility of the identifying assumption, namely that housing and neighborhood quality shift continuously across jurisdictional borders. However, eliminating borders that are separated by, say, industrial land raises the question of endogenous border formation. Municipalities can erect bulwarks against unwanted populations by zoning for industrial use along their borders or constructing large roadways with limited ability for pedestrian crossing. Cicero, IL is (in)famous for its ethnic and racial exclusivity (Keating, 1988). It may be no coincidence, then, that the Chicago/Cicero border is obstructed by industrial land. As a result, the selection of borders into the sample will favor jurisdictions that are the *least* hostile to new arrivals, thus working against finding a housing price decline at the border.

captured in the sample (Atlanta, GA). Because the white mobility response to black in-migration likely differed by region, I drop Atlanta an conduct the analysis using only northern/western cities.[19] To increase precision, I introduce data along 11 additional borders in metropolitan areas without a large central city. These borders are listed in the second panel of Table 1. The final sample includes 57 jurisdictional borders, the complete universe of unobstructed jurisdictional borders in the North and West for which Census block data are available in 1960. 20 of these borders can be extended back to 1950.

The second column of Table 1 indicates the number of borders found in each of the 18 metropolitan areas in the sample. New York City and Los Angeles alone account for 27 of the sample borders. Their over-representation is not due only to their size.[20] Both the New York City and Los Angeles regions were highly fragmented and contained multiple central cities (e.g., Newark, NJ; Anaheim, CA), thus increasing their probability of inclusion.[21]

IV. The Willingness to Pay for Racial Homogeneity: Evidence from Housing Prices

In this section, I document that houses located in racially diverse jurisdictions commanded lower prices than otherwise identical units in more homogenous areas. In the next section, I will parse the demand for a predominately white electorate into its class-based and racial components. For now, my goal is simply to establish that the empirical willingness to pay for demographic

[19] Contrary to the rest of the country, increases in the black population share of central cities has no effect on the white suburban share of the surrounding metropolitan area in the South in this period. According to the political channel suggested here, the southern response may have been muted because of black disenfranchisement and the presence of racially-segregated school systems.

[20] New York City and Los Angeles contribute nearly 50 percent of the borders in the sample, while, in 1960, they contained only 20 percent of the population living in the top 25 cities.

[21] Indeed, in 1970, the Census Bureau subdivided the New York City SMSA into four parts (New York City, NY; Jersey City, NJ; Newark, NJ; and Clifton-Paterson-Passaic, NJ) and split the Los Angeles SMSA in two (Los Angeles-Long Beach and Anaheim-Santa Ana-Garden Grove).

characteristics of the jurisdiction is not an artifact of unobserved housing quality differences across borders.

A. Testing for Differences in Observed Housing Attributes Across Borders

Before turning to housing prices, I begin by testing the maintained assumption of neighborhood continuity using the available measures of housing quality in the 1970 Census of Housing. Each row in Table 2 represents a different regression, equivalent in structure to equation 1, for which the dependent variable is a block-level characteristic and the variable of interest in the jurisdiction's black population share. (Means and standard deviations are presented in Appendix Table 1.) The first column uses the full set of blocks adjacent to jurisdictional borders. Due to Census reporting restrictions, published information on housing prices is available only for blocks containing five or more owner-occupied units. The second column presents results for this sub-sample, which is used to conduct the housing price regressions.

There is no significant variation across borders in the one true housing quality measure – the share of units that are deemed "unsound" (that is, lacking some aspect of indoor plumbing, such as a flush toilet or running water). Furthermore, in the full sample, there are no differences in owner occupancy or in the share of units that are detached, single family homes. In the sub-sample, blocks in the more diverse jurisdiction have significantly *more* single family units, a characteristic that is positively correlated with owner occupancy and negatively correlated with the number of residents and units on the block (density). That, on these observable metrics, the housing stock is no worse – and in some cases better – on the diverse side of borders is *prima facie* evidence against the reach of zoning, which tends to regulate against multi-family use and high-density development.

The second panel of Table 2 considers the only available measure of block-level demographics: the share of units occupied by a black household head. If, as was proposed above, preferences over public decisions vary by race, we would expect to see a larger concentration of black families in the more diverse jurisdiction. Indeed, blocks in the diverse jurisdiction are more likely to have black residents, though this relationship diminishes as one approaches the border. For a resident living within six blocks of the mean border, crossing this political boundary is associated with a 4.8 percentage point increase in the probability of having a black neighbor (= 0.0037 x 13.2), while, for a resident within the first block, the probability increases by only 1.4 percentage points (= 0.0011 x 13.2). I show below that the jurisdiction-level coefficients are robust to controlling for the block-level black share and to limiting the sample to all-white blocks.

B. Housing Prices and Jurisdiction-level Demographics: Across Borders and Over Time

Turning to the analysis of housing prices, I begin with a simple graphical exercise. I classify one jurisdiction in each pair as having either a "high" or a "low" black population share, and consider blocks adjacent to the border in both directions, as well as those two and three blocks away. Figure 2 plots the mean housing value in a given block tier by distance from the jurisdictional border *relative* to the first tier of blocks on the homogeneous side. Housing prices are in logarithms, and are adjusted for block-level characteristics. Houses two or three blocks further into the homogeneous jurisdiction are no more costly than units on the border. Upon crossing the border, housing prices fall by 3.0 percent, and remain at this lower level as one proceeds further into the diverse jurisdiction. The decline at the border is uniquely large, and the only such comparison that is statistically different from zero.

A more formal analysis of this relationship is contained in Table 3, which presents coefficients from a regression of the cross-border difference in housing prices on the difference in jurisdiction-level black population share (equation 1). I divide the housing market by tenure status, with either housing values or rents measuring the willingness to pay for jurisdiction-level characteristics.

The first column in each panel allows values/rents to respond to the linear difference in the black population share; the second column considers its logarithm. Turning first to owner-occupied housing, the estimated relationship between jurisdiction demographics and housing values is stronger in the log-log specification. Across the mean border, the black population share increases 300 percent (from 4.4 to 17.6 percent), which is associated with a 2.1-3.0 percent decline in housing values in the logarithmic specification and a 1.5-2.0 percent decline in its linear counterpart.[22]

The regression underlying the first row contains only the jurisdiction-level black population share on the right-hand side. In each subsequent row, I progressively add more controls. The second row includes the black share of residents on the block, and the third adds all available housing quality measures. These additions reduce the noise in the estimates, halving the standard errors. In the linear specification, the coefficient of interest also falls – by around 25 percent – but is still statistically significant. The estimates are qualitatively unchanged in the fourth row, which weights each observation by the number of housing units on the block contributing to the mean value.

The distaste for diversity at the jurisdiction level does not appear to be simply a proxy for an aversion to black neighbors. The estimates are not substantially diminished by controlling the

[22] The logarithmic specification puts the most emphasis on borders in which one jurisdiction has a near-zero black population share; these borders have the largest percentage change in cross-border racial composition.

black share of block residents, and actually *increase* when the sample is restricted to blocks with no black residents (row 5). While we know little about how individuals define the subjective boundaries of "their" neighborhood, in terms of geographic proximity these adjacent blocks are part of the same local area. Thus, the racial composition of this wider neighborhood should affect demand on either side of the border equivalently.[23]

Unlike housing values, rents are no lower in jurisdictions with a high black population share. In the log specification, the point estimate are always negative, though none achieve statistical significance. This unresponsiveness might be an artifact of rent control, which was relatively common in the early 1970s. In a market with price controls, a lower demand might be expressed through a higher vacancy rate, which is an indication of a longer lag between a unit being listed for rent and being filled. Consistent with this possibility, diverse jurisdictions have higher rental vacancy rates (coeff. = 0.037, s.e. = 0.020), but are no more likely to have houses for sale. Alternatively, the disparity between rents and values could reflect differences in preferences over local policies between owners and renters. The median renter was more likely than the median homeowner to be black and to have a low income (Collins and Margo, 2001). Home values will also capitalize expectations about future trends, including the continued bifurcation of racial residential patterns between cities and suburbs.

The estimated price gap may reflect the fact that unobserved housing quality improves gradually as one moves further into the suburbs. While the discontinuity in prices at the border (Figure 2) renders this possibility unlikely, I further examine this hypothesis by comparing the coefficient obtained at the true border to a set of similar comparisons across "placebo" borders wholly within the city or the suburb. For the placebo exercise, I imagine the border shifted one

[23] One exception is the fact that the racial composition on one's side of the border influences the student body of local elementary schools.

block towards or away from the city center, and compare housing prices and rents on blocks adjacent to this imaginary line. The tier that is closest to the central city in any given comparison is assigned the city's demographic profile. If the estimate at the actual border merely reflected neighborhood decline, we would expect negative coefficients of a similar magnitude for each of the placebo experiments. Instead, as the first rows of Table 4 indicates, the true value estimate stands out as being the only coefficient that is negative and significantly different from zero. The true rent estimate is also substantially larger than estimates at either the suburban or city placebo borders (rows 3 and 4, respectively), but is not statistically significant.

While these placebo exercises help rule out the hypothesis that cross-border price gaps reflect gradual declines in housing quality, they cannot account for abrupt changes in the housing stock at political boundaries. To address this possibility, I examine how these price gaps *change* as disparities in jurisdiction-level racial composition narrow or widen over time. The first two rows of Table 5 estimate equation 2 with a balanced panel of borders from 1960 and 1970, while the last two rows add available data from 1950. In each case, I present results for both weighted and unweighted regressions.

Far from being eliminated, the estimated relationship between home values and the black population share *increases* in this context. The direction of change suggests that the housing stock on the diverse side of borders is of higher quality, which is consistent with the larger share of single family, owner-occupied homes found there (Table 2). Depending on the specification, the 13 percentage point (300 percent) difference in black population share at the mean border in 1970 is associated with a 3.5-5.0 percent decline in housing values. Over the 1960s, the racial composition gap at the average border diverged by 5 percentage points. These estimates suggest

that housing prices on the diverse side of the border would have fallen by around 1.5-2.0 percent as a result.

V. Explaining the Homogeneity Premium

The previous section demonstrates that the median homebuyer in 1970 was willing to pay more for an identical home that is located in a racially homogeneous jurisdiction. This pattern would arise if blacks and whites disagreed on matters of local policy *simply by virtue of their race*.[24] Alternatively, what might appear to be a racial division may reflect different preferences for public goods by income.[25] Furthermore, even if the rich and the poor desired identical public services, funding this package would have different implications for property tax rates in rich and poor towns. This section will attempt to distinguish empirically between the two channels, which I call the "class-race correlation" and the "residual race effect."

A. Separating Race from Class

Jurisdictions with larger black communities also tended to be central cities with poorer residents and lower levels of human capital. Do these relationships explain the estimated homogeneity premium? Table 6 adds other jurisdiction-level socio-economic indicators to the basic

[24] The best historical evidence on attitudes toward public services by race come from a 1968 survey, *Racial Attitudes in 15 Cities* (Campbell and Schuman, 1997). Even after controlling for education, income and occupation, blacks were more likely than whites to express dissatisfaction with public schools, parks and recreation facilities, and police response. However, many of these race-specific differences disappear when comparing blacks and whites who live in racially mixed neighborhoods (the one exception is perceived police brutality). Residents of mixed-race neighborhoods, regardless of their own race, were more likely than residents of all-white neighborhoods to report that city services were inadequate.

[25] Variation in the provision of public goods need not generate a gap in the price for identical houses at jurisdictional borders. If new units can be added to the desirable community, the equilibrium outcome will be perfect segregation (by race or income) with equal prices for equivalent units in both jurisdictions. However, this simple model ignores the fact that, while new units could be added to empty land at the suburban periphery, the inner section of the suburban ring was already built up. Thus, gaining access to a suburban bundle of public goods often entailed paying higher commuting costs. Suburban residents just adjacent to the border received their preferred public bundle without paying this cost, a windfall that must be compensated with a higher housing price.

specification in both 1960 and 1970 (Table 3, row 4).[26] In 1960, including median family income, the share of residents holding a college degree, or total city size drives the coefficient on the black population share to zero.[27] In other words, after accounting for the correlation between race and income, homeowners were not willing to pay to live in a predominately white jurisdiction. In contrast, in 1970, 25-30 percent of the homogeneity premium can be attributed to socio-economic factors, but a detectable race effect still remains. Interpreting the point estimates suggests that the lower median income or higher poverty rate associated with an increase in the black population share at the mean border reduces housing prices by around 1 percent, while the difference in racial composition itself reduces prices by another 2 percent.

In theory, the redistributive nature of property taxation is sufficient to generate a housing price gap at the border of a rich and a poor jurisdiction (Hamilton, 1975). Imagine that public services are funded locally, revenue is generated through property taxation, and towns must maintain a balanced budget.[28] Consider two jurisdictions – one rich and one poor. Because its residents purchase smaller housing units, the poor jurisdiction has a lower tax base, and thus must set a higher tax *rate* to generate any given amount of revenue. In spatial equilibrium, equivalent houses command the same price at all locations. Because housing in the poor jurisdiction is taxed at a higher rate, it will fetch a lower market price in return. In effect, owners of a mid-sized house in the poor jurisdiction will be cross-subsidizing their smaller neighbors, but those in the rich jurisdiction will benefit from their larger neighbors.

[26] The concept of an absolute "poverty line," which takes into account income, family size, and the ages of family members, was only developed in the 1960s, and thus cannot be added to the 1960 regressions.
[27] Note that population size has a negative effect on housing prices. Housing prices decline by 1 percent for every one million residents. These estimates imply that the benefit of economies of scale in public services are outweighed in this sample of large cities and inner-ring suburbs by the loss of citizen voice and oversight (Alesina, Baqir, and Hoxby, 2004).
[28] Beyond taxing residential property, towns generate revenue through commercial property taxes and state transfers. Both of these sources tend to favor poor central cities over their suburbs.

In reality, higher property tax rates observed in poorer jurisdictions reflect some combination of this redistribution effect, as well as the fact that poor and rich towns select different public bundles and face different costs of public provision. Empirically, the positive relationship between property taxes and poverty across borders is large enough to explain the "class-race correlation." Assume that property taxes are fully capitalized into housing values. The higher poverty rate associated with the change in racial composition at the mean border (3.0 percentage points) leads to a 3.6 percent increase in the real property tax rate.[29] To compare this annual increase in property tax burden to the one-time break on the housing price, let's consider a numerical example. The average property tax rate in the sample in 1970 is $21.8 per $1000, and the mean housing value is $113,000. A 3.6 percent increase in the property tax rate would translate into $86 in additional taxes each year (= $21.8 x $113 x .036). The net present value of this negative annuity is $1800. The one-time housing price decline of 1.0 percent through the "class-race" channel is worth $1130. These two values are similar in magnitude, suggesting that the higher property taxes levied in poor jurisdictions are large enough to account for the entire income channel.

B. Explaining the Residual Race Effect

(i) Public Expenditures

In 1960, the median homebuyer does not value a town's racial composition beyond the correlation between race and class. By 1970, race itself appears to matter. Any explanation for the emergence of this residual race effect must entail a change in the cost of urban diversity

[29] The real property tax rate facing a homeowner is a product of the nominal rate – or, dollars due to the public coffer per $1,000 in assessed value – and the assessment-to-market value ratio. I regress property taxes (in logs) on jurisdiction-level poverty rates and a series of border area dummy variables. The resulting coefficient is 1.205 (s.e. = 0.732), which implies the 3.6 percent decline in property taxes (= .0012 x 3.0). Details on the collection of historical property tax rates are in Appendix Table 2.

between 1960 and 1970. In addition, a candidate must be both: (1) positively correlated with the racial composition of a jurisdiction, net of associated income differences, and (2) negatively correlated with home values.[30] Given these requirements, it is not surprising that the provision of public services, measured in expenditures per capita, cannot explain the sudden aversion to racially diverse municipalities.

The regressions in Table 7 add successive measures of public goods to a specification that includes both the black population share and the poverty rate (Table 6, row 4).[31] I begin in the second row with total educational spending per pupil, which is entirely uncorrelated with home values. The third row divides educational spending into its instructional and administrative components. Home values increase with instructional spending, and decrease with spending on administrative overhead, however neither component is correlated with a jurisdiction's racial composition.[32] Homeowners dislike non-educational spending, which includes expenditures on roads and parks, sanitation, and public safety (row 4 *in toto*, and then row 5 by separate category). Perhaps because homeowners on the border can free ride on the roads and parks of a neighboring jurisdiction, spending on these categories reduce home values in this sample, while sanitation expenditures increase home values. Non-educational spending is positively correlated a jurisdiction's poverty rate, but cannot explain the residual race effect.

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[30] More formally, we can think of these mediating public goods as omitted variables from the regression of housing prices on jurisdiction-level racial composition. That is, we can define an omitted public good Z as being a component of the residual race effect if: (1) the coefficient from a regression of Z on the black population share X ($\Sigma x_t z_t / \Sigma x^2_t$) is positive, and (2) the coefficient from a regression of housing values Y on the public good Z ($\Sigma z_t y_t / \Sigma z^2_t$) is negative.

[31] A full list of historical expenditure sources are presented in Appendix Table 2. Expenditures are noisy measures of the quantity of public goods if the cost of provision varies by municipality, perhaps because of differences in the level of corruption or unionization in the public sector. Furthermore, the level of expenditure may reflect the intransigence of the underlying problem that the public sector is trying to solve; for example, school districts with ill-prepared students may hire more teachers to produce the same quantity of education.

[32] Only having access to expenditure-based measures, we cannot rule out that unmeasured differences in education quality contribute to the demand for racial homogeneity To the best of my knowledge, there are no systematic historical data on test scores.

(ii) Riot Activity

The outbreak of race-related rioting might have changed the perceived costs of living in a diverse city. Collins and Margo (2004) demonstrate that the value of black-owned property fell in cities in which riots took place. While the border areas in my sample are, on the whole, far from black enclaves, which experienced the worst property damage, the onset of a riot may have changed the racial balance of political power and heralded the emergence of a black voting bloc.[33] Many American cities elected their first black mayors not long after the occurrence of riots. Carl Stokes of Cleveland and Richard Hatcher of Gary, Indiana, were elected in 1967. By the early 1970s, other major cities, including Detroit, Los Angeles, and Washington, D.C., followed suit.

To measure rioting activity, I rely on Collins and Margo's (2004) index of riot severity. The measure considers five components of riot damage (X) – deaths, injuries, arrests, arsons and days of rioting, indexed by i.[34] The index then calculates the share of each activity occurring in riot j, or $S_j = \Sigma_i (X_{ij} / X_{iT})$ where X_{iT} is the sum of component i across all riots. The index value for city c is the sum over all local riot activity. Using this index, I define two indicators of high riot intensity equal to one for all cities containing at least 5 (at least 10) percent of total riot activity. Appendix Table 3 shows classification of metropolitan areas according to the 10 percent indicator. While 11 metropolitan areas are deemed low-riot areas by this measure, only three cities in the sample completely escaped the 1960s riots (Moline, IL; San Jose, CA; St. Louis, MO).

[33] The mean block in my sample is over 90 percent white. However, this average masks two types of borders. Ten borders, including Compton-Long Beach, CA; Inglewood-Los Angeles, CA, and St. Louis-University City, MO were near black enclaves; 27.2 percent of residents in these areas were black. In contrast, only 1.0 percent of residents of other border areas were black. To confirm that the results are not driven by lower prices in these black enclaves, I interact the jurisdiction-level black share with a black enclave indicator. The estimated homogeneity premium is driven entirely by the all-white borders.

[34] Data on the location of 1960s riots and related damage was generously provided by Gregg L. Carter.

Table 8 adds interactions between the riot indicators and the jurisdiction-level black population share (or its logarithm) to the basic regression. For both indicators and specifications, racial diversity has no effect on housing prices in low-riot cities. In contrast, the higher black population share associated with crossing the mean border reduces housing prices by 2.2-3.9 percent in cities with high riot intensity. This finding confirm evidence in the previous chapter that there was no white flight in low-riot cities in the 1960s.

(iii) Public Schools Before Desegregation

Beyond its influence on local politics, the black share of the population has a direct effect on the racial composition of local public schools. Before court-ordered desegregation plans went into effect, residential segregation created *de facto* racial segregation in local elementary schools. Large public high schools, which drew students from many neighborhoods, were more diverse.[35] Desegregation plans were not implemented in sample cities until the early 1970s, but may have been fully anticipated by the 1970 Census. While, in 1960, families could have reasonably expected to live in a diverse city and continue to send their children to all-white public schools, by 1970 the prospect of this option had been all but eliminated.

While a full investigation of the impact of school desegregation on white flight awaits an extension of the sample borders to 1980, I explore the role of public schools on the demand for predominately white municipalities here by matching each census tract to its nearest district high school.[36] Racial composition was collected at the school level by the Office of Civil Rights

[35] I calculated an index of dissimilarity between all elementary schools and all high schools in the sample districts. The dissimilarity index measures the share of black students that would need to switch schools in order for each school's racial composition to mirror that of the district as a whole. For the mean school district, elementary schools have a dissimilarity value of 0.51, while high schools have the lower value of 0.31.

[36] All municipal borders in the sample overlap with school districts, with the exceptions of Long Beach-Lakewood, CA; Richmond-El Cerrito, CA; Berwyn-Cicero, IL; Skokie-Evanston, IL; and McKeesrock and Stowe, PA. These borders have been excluded from the school results (Table 9).

(OCR).[37] School addresses for 1970 are taken from the Elementary and Secondary General Information System (ELSEGIS). Without access to historical attendance area boundaries, I assume that students would have been assigned to their nearest public school (as the crow flies).[38] If school boards gerrymandered districts in order to prevent racially-mixed classrooms, my assignments will be mis-measured.

The first panel of Table 9 supplements the basic regression of housing values with the black share of the student body at the nearest high school. At the mean border, the difference in the high school black share is 20.5 percentage points. The point estimates imply that this difference translates into a 1.0 percent decline in housing prices. Adding school level demographics reduces the coefficient on jurisdiction level black population share by 25-50 percent (in the logarithmic and linear specifications, respectively). The third column includes the jurisdiction's poverty rate as well. As before, socio-economic factors accounts for a quarter of the homogeneity premium, while the racial composition of public school explains another quarter. After adding these two factors, we cannot reject the null hypothesis that the jurisdiction-level homogeneity premium is zero.

The second panel (columns 4-7) explores the effect of high school diversity on the residential locations of families with children. I use block-level age distributions to calculate the share of residents that are of pre/elementary school age (0-9 years old) or of middle/high school

[37] I also explore matching tracts to local elementary schools or using the racial composition of the Census tract as a proxy for elementary schools. Neither measure can be identified separately from the black share of block residents.
[38] Matching border areas to their nearest school requires: (1) locating each school on a city map, (2) calculating the distance between a border area and each school in the district, and (3) designating the school with the minimum distance to be the assigned school. Using their 1970 street addresses, I located schools on the 2000 Census electronic road maps with GIS software. Road files are available at http://www.esri.com/data/download/census2000_tigerline/. This process left fewer than 10 percent of schools unmatched. I checked the addresses of all unmatched schools on-line. In some cases, road names had changed from 1970 to 2000; in others, schools appears to have closed in the intervening three decades. GIS software enables the measurement of distance in miles between the centroid of sample Census tracts and each high school in the tract's school district. Border areas with multiple tracts could match to more than one high school. In these cases, I took the average racial composition of the two closest high schools.

age (10-17 years old).[39] Coefficients are from seemingly unrelated regressions, the dependent variables of which are the two age shares.

The racial composition of the nearest high school reduces the share of the block that is of middle/high school age, but has no discernable effect on younger children.[40] This disparity suggests that the estimates are not merely picking up life cycle effects common to families with children. To gauge the magnitude of these effects, consider a block with 200 residents, 26 of whom would be of middle/high school ages. Increasing the black share of the nearest high school by 20.5 percentage points (across the mean border) translates into the loss of one such child.

VI. Conclusion

In the previous chapter, I demonstrate that white households relocated to the suburban ring in response to increases in urban racial diversity after World War II. This paper explores the motivation for such white flight, focusing on amenities available *only* to suburban residents – namely, the ability to make collective decisions with a homogeneous electorate and/or send one's children to homogenous schools, even as the racial and class identity of the median city resident changed with black in-migration.

With the rise of the civil rights movement in the 1950s, political constraints prevented northern cities from following a "southern strategy" of disenfranchising black voters or establishing separate school systems and public facilities by race. For northerners keen to avoid civic interactions with black newcomers, moving to a jurisdiction outside the central city was the

[39] While all school districts provide separate schools for their youngest and oldest children , there are many types of "intermediate" schools. The most common formats are to group sixth through eighth grade into a middle school, or to combine seventh through ninth grade into a junior high.

[40] Because many families have more than one child, we should not expect school-related mobility to occur at the precise moment when a single child "ages into" the public schools. Yet, it is still instructive to compare the relative strength of school composition variables on children of different ages.

individual alternative to such collective legal action.[41] By choosing a suburban location, white households could "vote with their feet," effectively selecting their desired bundle of public services even as metropolitan-level racial diversity increased.

To establish the demand for locations in predominately white jurisdictions, I compare prices for housing units on adjacent Census blocks across municipal boundaries in 1960 and 1970. We know that the composition of the local electorate – and thus the bundle of public goods – changes discretely at these borders, but identification requires that housing and neighborhood quality change more continuously. I demonstrate that observable measures of the housing stock, such as the share of units that are in single family units, do not vary across these borders. Furthermore, even after using variation over time (1950-70) to control for fixed differences in housing quality, I still find a sizeable relationship between housing prices and jurisdiction-wide racial diversity. For jurisdictions separated by a 13.2 percentage point gap in the black population share (the sample mean in 1970), homes on the diverse side of the border are worth, on average, 1.5 to 5.0 percent less, depending on the source of identifying variation.

Black migrants to northern cities were marked not only for their race; they were also noticeably poorer than existing urban residents, having recently arrived from the rural South. The white suburbanization response can be described, in part, as a flight of the middle class. One quarter of the estimated "homogeneity premium" can be attributed to a demand for living in a jurisdiction with rich residents, with the associated reduction in property taxes and redistributive spending. Another 25 percent is due to the demand for white classmates in local high schools. The timing coincides with a higher perceived cost to urban diversity following the 1960s riots,

[41] Absent legal barriers, increasing racial diversity may have also prompted white neighborhoods to secede from the central city. In a similar vein, Alesina, Baqir and Hoxby (2004) demonstrated that school districts in counties receiving large black in-migrations during the decades of World Wars I and II were less likely to consolidate with neighboring districts.

and residents in metropolitan areas with intense riot activity exhibit a stronger aversion to living in jurisdictions with a large black presence.

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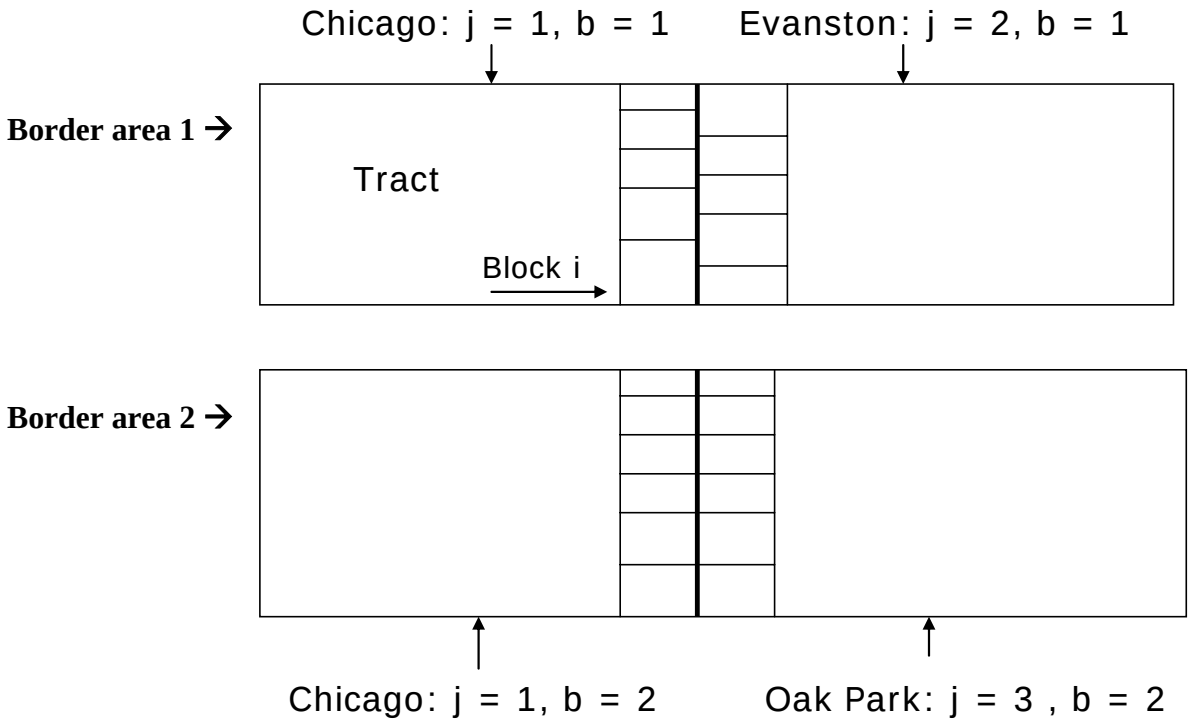
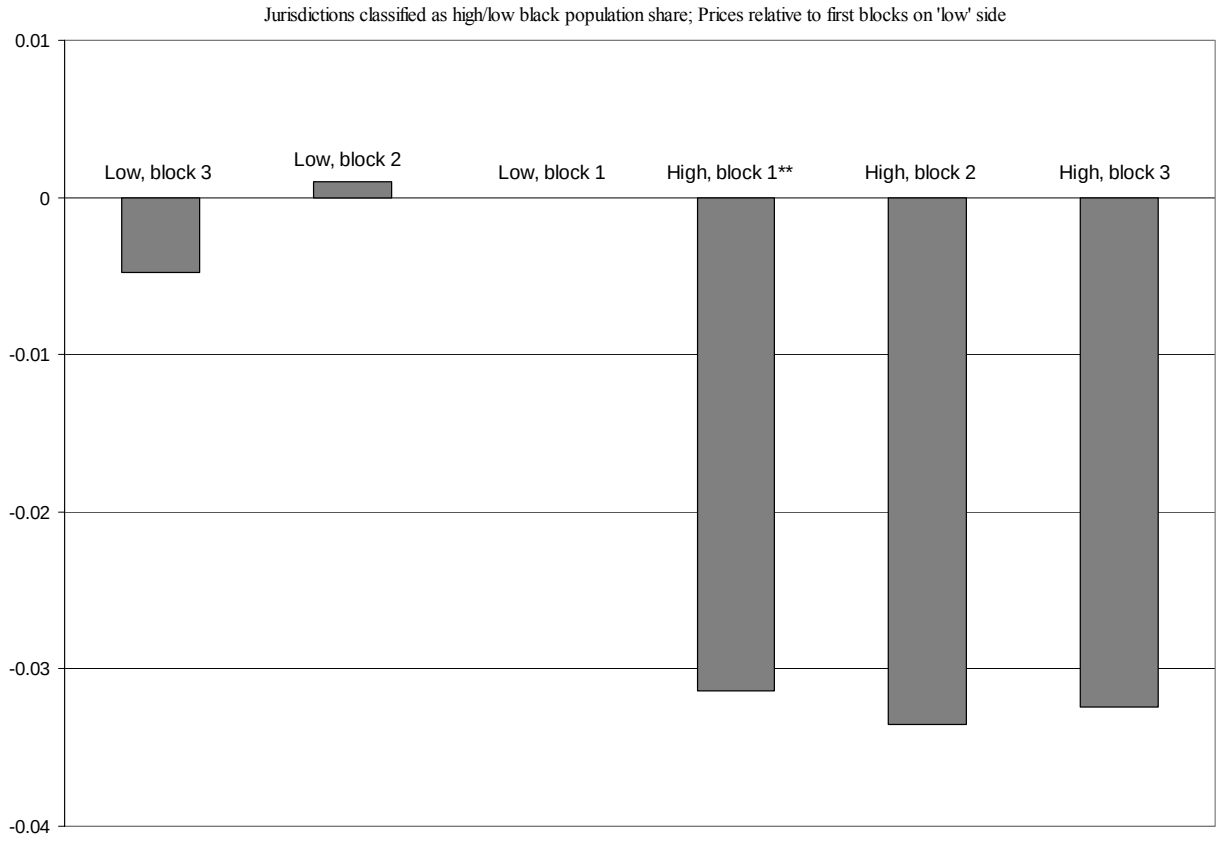
Figure 1: Schematic diagram of geographic terms



where i = block; b = border; j = jurisdiction

Figure 2: Mean housing prices by distance from the jurisdictional border, 1970



Notes: Each bar represents a coefficient estimate from a regression of the logarithm of housing values on a series of indicator variables for distance from the border interacted with jurisdiction. The two jurisdictions touching each border are classified as having a "high" or "low" black population share. Distance from the border is measured in block tiers, with the first tier including all blocks adjacent to the border, the second tier including all blocks adjacent to the first, and so on. The first block tier in the low black share jurisdiction is the omitted category. Tiers with housing prices that are significantly different from its neighbor (at the 5 percent level) are starred. The regression also includes the following block-level variables: the share of the block's residents that are black; the share of housing units that are in single-family units, are owner-occupied, or lack indoor plumbing; the block density; and an indicator for the presence of group quarters.

Table 1: Jurisdictional Borders Included in Panel Sample

Region	City	Number of Borders
I. Largest 25 cities in 1960		
A. In sample		
Northeast	Boston	2
	New York†	10
	Pittsburgh	3
Midwest	Chicago†	6
	Cleveland	2
	Detroit	1
	Minneapolis/St.Paul	1
	St. Louis	1
South	Atlanta	1
West	Denver	1
	Los Angeles†	17
	San Francisco†	2
B. Not in sample		
Northeast	Baltimore	
	Buffalo	
	Philadelphia	
Midwest	Milwaukee	
	Cincinnati	
South	Dallas	
	Houston	
	Memphis	
	New Orleans	
	San Antonio	
	Washington, DC	
West	San Diego	
	Seattle	
II. Out of Top 25		
Northeast	Providence	3
Midwest	Dayton	1
	Moline-Davenport, IL-IA	1
	Kansas City, KS-MO	2
West	San Jose	4

Notes: Metropolitan areas marked with † contained secondary central cities in 1960 that are now considered by the Census Bureau to anchor their own, independent metropolitan areas. These are: Newark, NJ; Jersey City, NJ; and Clifton, NJ (New York); Gary, IN (Chicago); Anaheim, CA (Los Angeles); and Oakland, CA (San Francisco). Political borders separate two jurisdictions in the same metropolitan area, and are included in the sample if both jurisdictions have available block-level data in 1960, and if the border was unobstructed by a natural or man-made obstacle.

Table 2: Testing the neighborhood continuity assumption: The cross-border relationship between housing characteristics and jurisdiction-level racial composition, 1970

	Coefficient on share black at jurisdiction level	
Dependent variable	Whole sample	>5 owner occupied units
Panel 1: Housing quality		
Share single family	0.047	**0.123**
	(0.075)	**(0.070)**
Share owner occupied	0.011	**0.134**
	(0.051)	**(0.045)**
Share no plumbing	0.003	0.007
	(0.007)	(0.005)
=1 if any group quarters	**-0.043**	**-0.071**
N1 = 2094	**(0.025)**	**(0.041)**
Mean # rooms, owner occ	-0.133	-0.290
N1 = 1713	(0.242)	(0.190)
Mean # rooms, rental	-0.638	-0.537
N1= 1319, N2 = 906	(0.403)	(0.512)
Number of residents	-15.610	-91.829
	(37.367)	(58.405)
Number of units	-21.717	-61.336
	(22.582)	(39.253)
Residents/unit	-0.151	0.134
	(0.255)	(0.125)
Panel 2: Demographics		
Share black, 6 tiers	**0.392**	**0.374**
N1=4568; N2=3627	**(0.068)**	**(0.067)**
Share black, 3 tiers	**0.278**	**0.244**
N1=3235; N2=2516	**(0.051)**	**(0.045)**
Share black, 1 tier	**0.205**	**0.109**
	(0.061)	**(0.028)**
N	1908	1433

Notes: Each cell represents the coefficient on the jurisdiction-level black population share in a separate regression, the dependent variable of which is listed in the first column. All regressions include a vector of border area dummy variables. Standard errors are reported in parentheses and clustered by jurisdiction. Coefficients that are significant at the 10 percent level are in boldface. In panel 1, the sample is restricted to blocks adjacent to the jurisdictional border. Panel 2 compares estimates at six blocks, three blocks, and one block from the border.

Table 3: The relationship between housing values/rents and jurisdiction-level black population share, 1970

Dependent variable:	ln(mean value)		ln(mean rent)	
RHS variable:	Share black	ln(sh black)	Share black	ln(sh black)
Base specification	-0.169	-0.007	-0.056	-0.006
	(0.074)	(0.005)	(0.066)	(0.004)
Add share black, block	-0.141	-0.006	-0.013	-0.004
	(0.077)	(0.005)	(0.071)	(0.004)
Add housing controls	-0.100	-0.010	0.025	-0.001
	(0.045)	(0.002)	(0.071)	(0.005)
Weight by num. units	-0.137	-0.010	0.015	-0.005
	(0.034)	(0.002)	(0.093)	(0.004)
If all-white block	-0.187	-0.013	-0.105	-0.006
N1=1118; N2=846	(0.048)	(0.002)	(0.112)	(0.006)
N	1433	1433	1250	1250

Notes: Each cell represents a coefficient on the jurisdiction-level black population share (or its log) from a separate regression. Standard errors are reported in parentheses and clustered by jurisdiction. The sample is restricted to blocks adjacent to the jurisdictional border. All regressions include a vector of border area dummy variables. Housing quality controls include: the share of housing units that are in single-family units, are owner-occupied, or lack some indoor plumbing; the average number of rooms by tenure status; the number of residents per unit (density); and an indicator for the presence of group quarters.

Table 4: Comparing the property value gap at the actual jurisdictional border to a series of "placebo" borders, 1970

	Coefficient on ln(share black) at jurisdiction level	
	ln(mean value)	ln(mean rent)
Actual, suburban sample	-0.010	-0.007
n = 1344; 1076	(0.003)	(0.008)
Actual, city sample	-0.010	-0.005
n = 1384; 1153	(0.003)	(0.006)
Suburban placebo	0.007	0.000
n = 896; 739	(0.007)	(0.007)
City placebo	0.002	0.001
n = 1033; 763	(0.006)	(0.011)

Notes: The first two rows reproduce the actual experiment across the true jurisdictional border. For comparability, row 1 (2) uses only those border areas that have observations on at least two block tiers on the suburban (city) side of the border. The placebo experiment compares blocks adjacent to an imaginary border between the first and second block tiers on either the city or suburban side. In each case, the tier that is closest to the central city is assigned the city's demographic profile. Standard errors are reported in parentheses and clustered by jurisdiction. Regressions are weighted by the number of owner-occupied or rental units on the block. All regressions include a vector of border area dummy variables and the full set of block-level controls. Block controls include: the share of the block's residents that are black; the share of housing units that are in single-family units, owner-occupied, or lack indoor plumbing; the block density; and an indicator for the presence of group quarters.

Table 5: The relationship between changes in jurisdiction-level black population share and changes in housing prices over time, 1950-70

Dependent variable = ln(housing values)

	Share black	ln(share black)
1960-70 (N = 2966)		
Without weights	-0.376	-0.012
	(0.115)	(0.006)
With weights	-0.415	-0.006
	(0.099)	(0.006)
1950-70 (N = 3384)		
Without weights	-0.211	-0.012
	(0.129)	(0.006)
With weights	-0.291	-0.007
	(0.114)	(0.006)

Notes: Each cell represents the coefficient on the jurisdiction-level black population share (or its log) in a separate regression, for which the dependent variable is the log of housing values. The sample is restricted to blocks adjacent to the jurisdictional border. All regression include a set of main effects for jurisdictions, Census years, and border areas, as well as interactions between border areas and jurisdictions/Census years. The first two rows present results from a balanced panel of 57 border areas in 1960 and 1970. Regressions underlying the third and fourth rows adds data from the 20 jurisdictional borders available in 1950. Standard errors are reported in parentheses and clustered by jurisdiction. Observations in the weighted regressions are weighted by the number of owner-occupied housing units on the block. All regressions control for the share of block residents who are black and the average number of rooms in owner-occupied units. The 1960-70 regressions also include the share of units that are owner occupied or lack internal plumbing, and a flag for the presence of group quarters.

Table 6: Is the relationship between housing values and racial composition driven by other jurisdiction-level socio-economic factors?

Dependent variable = ln(housing values)

	1960		1970	
RHS variables	Share black	Other RHS variable	ln(share black)	Other RHS variable
Alone	-0.104 (0.057)	---	-0.011 (0.002)	---
ln(median income)	0.049 (0.094)	0.157 (0.095)	-0.008 (0.004)	0.094 (0.067)
Share with college degree	-0.022 (0.070)	0.368 (0.147)	-0.011 (0.002)	0.141 (0.122)
Share below poverty line	---		-0.008 (0.004)	-0.332 (0.268)
Population/100,000	-0.030 (0.063)	-0.001 (0.0004)	-0.009 (0.003)	-0.001 (0.0003)
N	2120		1975	

Notes: Each cell represents a coefficient on a jurisdiction-level characteristic from a separate regression, for which the dependent variable is the log of housing values. The sample includes blocks adjacent to the jurisdictional border and those one tier away in either direction. In the first row, the only jurisdiction-level variable included is the black population share. Each subsequent row adds an additional jurisdiction-level socio-economic variable (with replacement). Standard errors are reported in parentheses and clustered by jurisdiction. Regressions are weighted by the number of owner-occupied housing units on the block. All regressions include the limited set of controls available in 1960, which are: the average number of rooms in owner-occupied units; the share of the block's residents that are black; the share of housing units that are owner-occupied or lack internal plumbing; and an indicator for the presence of group quarters.

Table 7: Can variation in public goods explain the residual "race" effect in 1970?

Dependent variable = ln(housing values)

Added variables	ln(share black) x 10	Share in poverty	Other RHS variables
Panel 1			
1. Base specification	-0.071	-0.324	---
n = 1293	(0.029)	(0.180)	
2. Total $ per pupil	-0.074	-0.323	0.0001
(*in 1,000s*)	(0.038)	(0.181)	(0.003)
3. Spending categories			
Instructional $ per pupil	-0.074	-0.291	0.018
(*in 1,000s*)	(0.038)	(0.217)	(0.007)
Admin. $ per pupil			-0.273
(*in 1,000s*)			(0.106)
4. Non-educational $	-0.068	-0.191	-0.029
per capita (*in 1,000s*)	(0.028)	(0.191)	(0.017)
5. Spending categories			
Road $ per capita	-0.101	-0.163	-0.692
	(0.003)	(0.285)	(0.168)
Sanitation $ per capita			0.461
			(0.361)
Park $ per capita			-0.324
			(0.215)
Police $ per capita			-0.073
			(0.249)
Other $ per capita			0.002
			(0.026)

Notes: Each cell represents a coefficient on a jurisdiction-level characteristic from a separate regression, for which the dependent variable is the log of housing values. The sample is restricted to blocks adjacent to the jurisdictional border. Standard errors are reported in parentheses and clustered by jurisdiction. Regressions contain 1386 block-level observations, and are weighted by the number of owner-occupied housing units on the block. The border between McKeesrock and Stowe, PA in the Pittsburgh metropolitan area is excluded due to missing expenditure data. All regressions include the full set of block-level controls, which are: the average number of rooms in owner-occupied units; the share of the block's residents that are black; the share of housing units that are in single-family units, are owner-occupied, or lack internal plumbing; the block density; and an indicator for the presence of group quarters. Notes on and sources for the public goods measures are in Appendix Table 2.2.

Table 8: Does riot activity mediate the response to jurisdiction-level black population share?

Dependent variable = ln(housing values)

	ln(share black)	Share black
1. Main effect	0.001	-0.012
	(0.006)	(0.076)
Main x (=1 if riots >= .10)	-0.013	-0.161
	(0.006)	(0.083)
2. Main effect	-0.002	0.003
	(0.007)	(0.107)
Main x (=1 if riots >= .05)	-0.009	-0.155
	(0.007)	(0.109)

Notes: Each cell represents a coefficient on the jurisdiction-level black population share – or its interaction with a riot indicator – from a separate regression, for which the dependent variable is the log of housing values. The sample is restricted to blocks adjacent to the jurisdictional border. Standard errors are reported in parentheses and clustered by jurisdiction. Regressions contain 1433 block-level observations, and are weighted by the number of owner-occupied housing units on the block. All regressions include the full set of block-level controls, which are: the average number of rooms in owner-occupied units; the share of the block's residents that are black; the share of housing units that are in single-family units, are owner-occupied, or lack internal plumbing; the block density; and an indicator for the presence of group quarters. The riot severity index measures the share of all riot-related deaths, injuries, arrests, arsons, and riot-days occurring in each city. The indicator variables equal one if at least 5 (at least 10) percent of total riot activity in the 1960s was concentrated in a given city. Further details are in the text.

Table 9: Can a preferences for same-race classmates explain the residual "race" effect in 1970? Evidence from housing prices and block-level age distributions

	Panel 1			**Panel 2**			
Dep. variable	ln(home values)			Share 0-9 years		Share 10-17 years	
Main alone:	-0.010	-0.124	-0.007				
	(0.012)	(0.037)	(0.003)				
Jurisdiction							
ln(share black)	-0.008		-0.005	-0.0005		-0.002	
	(0.003)		(0.003)	(0.001)		(0.0007)	
Share black		-0.059			0.043		-0.006
		(0.042)			(0.019)		(0.016)
Share poverty			-0.294				
			(0.303)				
High school							
Share black	-0.043	-0.053	-0.025	0.005	-0.016	-0.022	-0.026
	(0.016)	(0.017)	(0.029)	(0.010)	(0.012)	(0.006)	(0.010)
N	1245	1245	1245	1443	1443	1443	1443

Notes: Cells in the first panel represents coefficients from separate regressions, the dependent variables of which are the log of housing values. For comparison, the first row displays the main jurisdiction-level effect of interest from an identical specification that omits the high school racial composition. Coefficients in the second panel are from a set of seemingly unrelated regressions, for which the dependent variables are the share of block residents that are 0-9 or 10-17 years old. The sample is restricted to blocks adjacent to the jurisdictional border. Standard errors are reported in parentheses and, in the first panel, are clustered by jurisdiction. Regressions are weighted by the number of housing units (panel 1) or the number of residents (panel 2) on the block. The regressions include the full set of block-level controls, which are: the share of the block's residents that are black; the average number of rooms in owner-occupied housing units; the share of housing units that are single family, owner-occupied, or lack internal plumbing; the block density; and an indicator for the presence of group quarters. Five borders in the sample are excluded because the jurisdiction pair shares a high school district. These are: Long Beach-Lakewood, CA; Richmond-El Cerrito, CA; Berwyn-Cicero, IL; Skokie-Evanston, IL; and McKeesrock and Stowe, PA.

Appendix Table 1: Summary Statistics of Jurisdiction- and Block-level Variables, Across Borders and Over Time

	1970		1960-70
Mean (S.D.)	All jurisdictions	Difference across borders	Difference across borders
Panel 1: Jurisdiction level			
Share black	0.109	0.132	0.052
	(0.146)	(0.142)	(0.054)
Share college degree	0.128	0.071	0.079
	(0.087)	(0.074)	(0.112)
Median family income, $ 2000	$49,117	$8,433	$11,582
	($8.696)	($6,387)	($11,417)
Share below poverty	0.073	0.043	---
	(0.036)	(0.032)	
In $1,000 ($2000):			
Total $ per pupil	4.653	1.501	
	(1.968)	(1.976)	
Non-educ $ per capita	0.646	0.274	
	(0.447)	(0.301)	
$ on roads, per capita	0.042	0.020	
	(0.024)	(0.022)	
$ on parks, per capita	0.048	0.037	
	(0.037)	(0.028)	
$ on sanitation, pc	0.032	0.017	
	(0.019)	(0.016)	
$ on police, per capita	0.093	0.048	
	(0.039)	(0.036)	
High school level			
Share black	0.157	0.205	
	(0.269)	(0.267)	

(table continued…)

Appendix Table 1, continued		
	1960	1970
Panel 2:		
Block level		
Housing variables		
Share single family	---	0.613
		(0.349)
Share owner occupied	0.595	0.588
	(0.322)	(0.309)
Mean # rooms, owned	5.757	5.685
	(0.991)	(1.060)
Mean # rooms, rented	4.142	4.047
	(0.788)	(1.046)
Share lacking plumbing	0.142	0.015
	(0.272)	(0.053)
Residents/unit	3.063	2.983
	(1.116)	(0.979)
=1 if group quarters	0.046	0.027
	(0.210)	(0.162)
Population variables		
Share black	0.038	0.087
	(0.145)	(0.225)
Share age 0-9	---	0.127
		(0.069)
Share age 10-17	---	0.140
		(0.072)

Appendix Table 2: Sources for Jurisdiction-level Public Goods Data

Variable	Source
Current (non-educational) expenditure[1] - on roads - on parks - on sanitation - on police	*Census of Governments*, 1967
Educational expenditure, per pupil[1] - instructional - administrative	*Elementary and Secondary General Information System* (ELSEGIS), 1968-69
Real property tax rates: [2] - nominal rate - assessment-to-market ratio	 *Moody's Municipal and Gov't Manual, 1971* *Census of Governments, 1967*

Notes:
1: Educational spending per pupil is collected both from independent school districts and municipal school systems. Non-educational expenditures are measured at the municipal level. In some states, counties provide some public services as well. Most jurisdiction pairs in the sample fall within the same county, and thus county spending will not produce cross-border variation.
2: The nominal property tax rates are collected from all levels of local government (municipality, county, independent school districts, special districts), if applicable. The real property tax rate facing a homeowner is a product of the nominal rate – or, dollars due to the public coffer per $1,000 in assessed value – and the assessment-to-market value ratio. The *Census of Government* estimates assessment-to-market ratios by jurisdiction from a sample of recent home sales. Ratios are often reported only for the central city and for the "balance of the metropolitan area," thus eliding some variation between towns in the suburban ring.

Appendix Table 3: Metropolitan Areas Classified by High/Low Riot Intensity

High Riot Intensity (Riot activity >= 0.1)	Low Riot Intensity (Riot activity >= 0.1)
Chicago	Boston
Cleveland	Dayton
Detroit	Denver
Jersey City	Kansas City
Los Angeles-Long Beach	Minneapolis-St. Paul
Newark	Moline-Rock Island*
New York City	Pittsburgh
	Providence
	San Francisco-Oakland
	San Jose*
	St. Louis*

Notes: The riot severity index measures the share of all riot-related deaths, injuries, arrests, arsons, and riot-days occurring in each city. The indicator variables equal one if at least 10 percent of total riot activity in the 1960s was concentrated in a given city. Details of the index's construction are in the text. Cities that experienced *no* rioting during the 1960s are marked with an asterisk.