Flight from the City: The Role of Suburban Political Autonomy and Public Goods

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April 3, 2007

Abstract: By moving to the suburbs, households can avoid compromising with a diverse urban electorate on property taxes and public expenditures and can send their children to homogenous public schools. I reveal the marginal willingness to pay for this suburban autonomy during the era of post-War suburbanization by comparing prices for housing units on either side of city-suburban borders in three decades (1960, 1970 and 1980) and the changes in these cross-border price gaps over time. Identification arises from the fact that local policy changes discretely at these borders, while housing and neighborhood quality shift more continuously. Preferred estimates suggest that a 20 percent increase in jurisdiction-level median income increases housing prices by around 5 percent, much of which is due to differences in spending priorities. Rich towns spend more on education and less on police and infrastructure maintenance. Houses in racially diverse jurisdictions lose value in the 1960s, while, in the 1970s, much of this value is restored. This timing coincides with the shock of 1960s riots, which attenuates over time. By 1980, desegregation orders are in place in many cities. Housing prices fall by around 1 percent for each required step in the court remedy, with student re-assignment or bussing associated with price declines of 5-6 percent. The results suggest that the growing poverty in central cities was an independent cause of suburbanization. As a result, suburbanization may have been subject to a multiplier effect, which can help explain the dramatic and rather sudden decline of central cities in the mid 20th century.

* Email: lboustan@econ.ucla.edu. Heartfelt thanks go to the members of my dissertation committee, Claudia Goldin, Caroline Hoxby, Lawrence Katz and Robert A. Margo, for their insight and support. This paper has benefited from conversations with David Abrams, David Clingingsmith, William J. Collins, Carola Frydman, Edward Glaeser, Steven Rivkin, Raven Saks and Bruce Weinberg, and from the suggestions of seminar participants at many conferences and universities. Michael Latterner, Danika Stegeman, Mingjie Sun and Qiong Zhou provided excellent research assistance. Wendy Thomas 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, the California Center for Population Research at UCLA, and dissertation fellowships from the Economic History Association and the Rovensky Fellowship in Business and Economic History. Sections of this paper were written during time spent at the Minnesota Population Center.

I. Introduction

In the decades following World War II, American cities underwent a period of rapid suburbanization.[1] The rich were the first to leave central cities, in part because they had a comparative advantage in commuting by car (Leroy and Sonstelie, 1983; Margo, 1992; Glaeser, Kahn and Rappaport, 2000).[2] At the same time, cities were receiving an in-flow of poor migrants from the South. Taken together, these two trends led to an income inversion: while, in 1950, the average city resident was wealthier than the average resident in the surrounding suburban ring, by 1970, the opposite was the case.[3]

The growing poverty in the central city may have been an independent cause of suburbanization. Baumol (1967) describes a process of "cumulative decay," by which the loss of the middle class reduces the urban tax base, increases the crime rate, and threatens the quality of neighborhoods and amenities for those who remain in the city.

Furthermore, many of the new southern arrivals were not only poor, but were poor *and* black. Over 4 million African-Americans left the rural South from 1940 to 1970; as a result, the black population share in the average city increased from 11 to 28 percent.[4] Racial diversity in the central city may been an additional impetus to move to the suburbs if white households disliked interacting with black neighbors, sending their children to schools with black peers, or

[1] Between 1940 and 1970, the share of metropolitan area residents who lived outside the central city increased from 38.2 to 54.2 percent (Heim, 2000, p. 144). Households were attracted to the suburbs by a variety of factors, including falling commuting costs with the construction of the interstate highway system and the lower price of space on the periphery, particularly prized during the years of the baby boom (Baum-Snow, 2007; Frey, 1984; Jackson, 1985).

[2] Only 9.8 percent of families earning under $13,500 ($2000) who lived in a central city in 1965 had moved to a suburb by 1970, compared to 17.7 percent of families earning over $110,000 (US Bureau of Census, 1970).

[3] In 1950, the average city contained residents whose median family income was 2 percent higher than that of the metropolitan area as a whole. By 1970, average city income was 8 percent *lower* than the metropolitan area of which it was a part. This figure is calculated for the 70 largest metropolitan areas in the North and West (*County and City Data Book*, various years).

[4] This figure is calculated for all cities with at least 100,000 residents in 1940.

receiving the bundle of public goods selected by a diverse electorate (Sugrue, 1996; Boustan, 2006).

This paper will focus on one channel through which a shift in the racial and socio-economic character of the urban population might have encouraged suburbanization – changes in local policy.[5] With the loss of the middle class comes a shrinking property tax base. Cities may respond by setting a higher tax *rate* in order to levy a given amount of revenue. Poorer residents may also use more services, from policing to emergency health care, necessitating higher spending per capita. Moreover, with changes to the identity of the median voter, local allocation decisions might be increasingly misaligned with the preferences of white, middle class residents (Cutler, Elmendorf and Zeckhauser, 1993; Alesina, Baqir and Easterly, 1998).

If part of the attraction of the suburbs is their wealthy, homogenous population, then an initial event that prompts the rich to leave the city – say, the construction of a new highway – could generate follow-on mobility, leading to a downward spiral of population loss and urban decay. This process might explain why some cities went through dramatic and rather sudden declines in the post-War period.

The presence of such a "feedback" effect is inherently difficult to test. One cannot simply examine whether suburbanization levels are higher in areas with poorer central cities and from this conclude that suburban residents moved to escape the poor.[6] Such a pattern would also arise if the rich were pulled to the suburbs for others reasons, thereby mechanically lowering the average income of remaining city residents.

[5] A desire to avoid local interactions may have been an additional motive for suburban relocation. A long literature addresses this form of household mobility, with the most recent addition being Card, Mas, and Rothstein (2006). It is important to remember that, given the level of segregation by neighborhood in central cities, avoiding poor or black neighbors did not require a suburban address. Consider the case of racial segregation. In 1960, after 20 years of substantial black in-migration, 55.8 percent of city Census tracts remained 99 percent white or more, declining from only 60.3 percent of tracts two decades prior (Cutler, Glaeser and Vigdor, 1999).

[6] Examples include Bradford and Kelejian, 1973; Frey, 1979; Adams, et al., 1996.

This paper takes a different approach. I posit that, if the median homebuyer prefers the public bundle offered in suburban areas, he will pay a premium for a suburban housing unit. To isolate the role of local policy, I compare the prices of houses located on either side of city/suburban borders during a period of peak suburbanization (1960-1980).[7] While local policy changes discretely at these borders, neighborhood and housing quality is likely to shift more continuously. Given the proximity of the houses in question, price difference are unlikely to reflect other benefits of suburban living. For instance, units are similarly distant from area employment centers and equally well served by new road construction. They are also likely to have been built in the same period and thus to be of equivalent size.

Abrupt differences in housing quality may emerge at jurisdictional borders due to local zoning regulations or endogenous sorting in response to local policy variation. To control for any such fixed disparities, I also consider the effect of relative *changes* in jurisdiction-level attributes across borders on changes in the housing price gap from 1960 to 1980.

I find that homeowners are consistently willing to pay for wealthier co-residents. A 20 percent increase in the median resident's income is associated with a 3-4 percent increase in housing values. If anything, this relationship is enhanced when focusing on relative changes in residents' income over time. Rents in wealthy jurisdictions are also higher, but the relationship is not as large. The estimated response to resident income translates into a price increase of around $3,000 for the average housing value in the sample of $110,000 (in 2000 dollars).[8] Around half of the perceived political cost of living in a poor central city can be attributed to differences in

[7] 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 to study the market value of elementary education. Kane, Staiger and Samms (2003) question the comparability of neighborhood quality across school attendance boundaries, an assumption that can be tested with the panel design here.

[8] The magnitude is consistent with similar willingness-to-pay studies that have focused on local education quality, which is correlated with residents' income. For instance, the effect here is twice as large as the willingness to pay for a one standard deviation increase in elementary school test scores (Black, 1999), and around half as large as the observed response to a reassignment of children from their neighborhood school (Bogart and Cromwell, 2000).

spending priorities, which are tilted away from education and towards spending on police and road maintenance.

In contrast, the relationship between racial composition and home values is less stable over this period. This relationship is not robust to adding block-level housing quality and demographic controls or to including a measure of the town's average income level.[9] Furthermore, houses in jurisdictions that gain black population share in the 1960s lost value, while, in the 1970s, much of this lost value was restored. This pattern is consistent with a one-time shock to the cost of racial diversity, which occurs in the 1960s but attenuates over time. Plausible candidates include race-related rioting in the late 1960s and the anticipation of school desegregation. I demonstrate that the housing market response to racial diversity in 1970 is driven entirely by cities that experienced a riot. By 1980, the distinction between riot and non-riot areas disappears. On the other hand, by 1980, court-ordered desegregation plans, particularly those that involved student re-assignment and/or bussing, were associated with lower housing prices. Court intervention appears not to have been anticipated beforehand, at least not relative to the (*ex post* unrealized) fears in jurisdictions that escaped court supervision.

The overall welfare effects of suburbanization of this nature are ambiguous. On the one hand, relocation might have been the optimal response on the part of the rich to an influx of poor, black migrants (Tiebout, 1957). However, the resulting loss of the middle-class likely imposed costs on those left behind. Benabou (1996) argues that, with decentralized public finance, suburbanization can lead to inequality in educational inputs between jurisdictions which, in some cases, may reduce aggregate efficiency.

The rest of the paper is organized as follows. Section II outlines the research design, while section III describes the panel sample of jurisdictional borders. In section IV, I test the

[9] In 1970, the income of the median black family was only 61 percent of its white counterpart.

maintained assumption of continuity in housing quality across municipal borders, and present the basic relationship between housing prices and town-level characteristics. Section V considers local policies that may account for the consistent demand for well-to-do residents, including spending priorities and property tax rates, as well as two possible shocks to the cost of racial diversity – riots and desegregation. Section VI concludes.

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 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

Houses in more homogeneous, wealthier communities also tend to be newer, of higher quality, and located near various commercial and public amenities. To minimize these sources of bias, I compare neighboring housing units 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.[10] Starting with data from a single time period (1960, 1970 or 1980), 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, 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.[11] Due to confidentiality concerns, published housing prices (rents) are available only for blocks containing five or more owner-occupied (rental) units; estimations are conducted for these sub-samples.

[10] 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.

[11] 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. In addition to the share of residents who are black, the 1980 data also includes the share of residents who are Asian or Hispanic.

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 the housing stock.[12] More generally, by 1960, 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. If, for example, families that care more about education gravitate toward the side of the border with higher quality public schools, these streets might have an (unobservably) different character; neighbors may be less noisy, more helpful, or more likely to keep up their homes.

To eliminate fixed differences in housing quality, I evaluate *changes* in the cross-border housing price gap as jurisdiction-level attributes evolves over time. I pool data for two decades in the sample and estimate:

$$\ln(price_{ibjt}) = \alpha + \beta\, jurisdiction_{jt} + \Phi' block_{it} + \Pi' J_j + \gamma Y_t + \theta' Z_b + \Psi'(Z_b \times Y_t) + \Omega'(Z_b \times J_j) + \varepsilon_{ibjt} \quad (2)$$

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, say, 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

[12] 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.

black population share over the 1960s or over the 1970s. 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.

III. Collecting Housing Prices Along Jurisdictional Borders

By 1960, the Census Bureau had divided every city with more than 50,000 residents, as well as a subset of their largest suburbs, into neighborhood-sized units called tracts, and had further subdivided these tracts into blocks.[13] By 1970, all suburbs were fully overlaid with Census blocks. The sample of municipal borders analyzed here comprises the complete universe of borders for which Census block data are available on both sides in 1960. 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.[14] Because southern cities had fewer large, long-established suburbs, only one southern border (Atlanta-East Point, GA) meets this criterion. I drop Atlanta from the sample because the mobility response to jurisdiction attributes, particularly black in-migration, likely differed by region.[15] The final sample contains the 57 northern and western jurisdiction borders

[13] The one exception is Pittsburgh, which was fully blocked in 1960. In order to have access to data on local policy, I restrict the sample to suburbs with at least 10,000 residents.

[14] 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.

[15] 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

that can be consistently identified from 1960 to 1980. I am currently adding 33 borders in 1970 and 1980; when complete, the new sample will be the universe of such borders in all three decades.

The present sample contains 16 metropolitan areas, four in the Northeast, eight in the Midwest and four in the West. Sample areas include: Boston, New York, Pittsburgh and Providence in the Northeast; Chicago, Cleveland, Dayton, Detroit, Kansas City, Minneapolis-St.Paul, Moline-Davenport, and St. Louis in the Midwest and Denver, Los Angeles, San Francisco and San Jose in the West. These areas do not each contribute the same number of borders. Indeed, New York City and Los Angeles alone account for 27 borders. Their over-representation is not due only to their size.[16] 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.[17] Furthermore, the sample is not representative of all suburban areas, but instead is tilted toward the largest suburbs and contains only those suburbs that share a border with the central city, rather than smaller, newly settled areas on the periphery.

IV. Willingness to Pay for White, Middle-Class Suburbs: Evidence from Housing Prices

A. Testing for Differences in Observed Housing Attributes Across Borders

In order for housing price gaps at jurisdiction borders to be informative about local politics, it must be the case that the housing stock is of equal quality on both sides. To test this

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channel suggested here, the southern response may have been muted because of black disenfranchisement and the presence of racially-segregated school systems.

[16] 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.

[17] 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).

assumption, I look for evidence of either fixed differences in quality in 1970 or changes in quality from 1970-80. In particular, I estimate versions of equations one and two whose dependent variables are measures of housing quality. Results for the owner-occupied sub-sample are presented in Table 1.[18] Each cell represents a coefficient from a different regression for which the dependent variable is a block-level characteristic. (Means and standard deviations are presented in Appendix Table 1.)

When comparing predominately owner-occupied areas, city blocks are actually of *higher* quality than their suburban counterparts, though these differences are economically small and are only significant at the 15 or 20 percent level.[19] The urban housing stock along these borders is composed of a greater number of detached, single-family units, which are slightly more likely to be owner-occupied. City blocks also have fewer residents and fewer units (that is, lower density). That the urban housing stock is no worse along these dimensions is *prima facie* evidence against the reach of zoning, which tends to restrict multi-family use and high-density development. The average number of rooms is an exception to this pattern, with city units being slightly smaller than their suburban counterparts. This difference is small in magnitude, though precisely estimated; increasing a jurisdiction's black population share by 10 points or reducing its median income by 20 percent, changes that are close to the average cross-border gap, is associated with a housing stock with 0.03-0.08 fewer rooms.

The quality differences detectable in the 1970 cross section disappear when considering the change from 1970 to 1980. This is particularly true for the least mutable characteristics like number of units on the block. For most measures, the reduction is due to falling point estimates.

[18] Housing stock differences for the full set of blocks are always far smaller than those shown here.
[19] For the sake of brevity, in this discussion, I refer to blocks in the jurisdiction with a higher black population share or a lower median income as being in the city, even though some of the borders separate two suburbs (for example, Cambridge-Somerville, MA).

While a decade may not be long enough to witness an evolution in the housing stock, it is likely enough time for substantial mobility and re-sorting of the population to occur. The second panel of Table 2 considers the only demographic measure available at the block level: the share of units occupied by a black household head. City blocks are more likely to have black residents, though this relationship diminishes as one approaches the border. Residents of a jurisdiction with a 10 point higher black population share are 3.7 points more likely to have a black neighbor if they live six or fewer blocks from the border, 2.4 points more likely if they live three or fewer blocks from the border, and only 1.1 percent more likely if they live within a block of border. Unlike in the case of the housing stock, a 10 point *increase* in the gap in black population share across borders is also associated with a higher likelihood of having a black neighbor.

If homeowners are willing to pay to avoid black neighbors, this process of population sorting could bias upward both the cross-sectional *and* over-time estimates. I show below that the jurisdiction-level coefficients are robust to controlling for the block-level black share and to limiting the sample to blocks with no black residents at all.

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

With these caveats in mind, I turn to the analysis of housing prices. I begin in Figure 1 with a simple graphical exercise depicted here for 1970. For each border pair, I classify one jurisdiction as being more desirable than its neighbor based on having either a lower black population share (Panel A) or a higher median income (Panel B). The figure plots the mean difference in housing values in log points by distance from the jurisdictional border; all values are *relative* to the first tier of blocks on "desirable" side. Housing prices are regression-adjusted for the full set of block-level characteristics listed in Table 1.

In Panel A, which classifies towns based on racial composition, housing prices fall by 3.0 percent upon crossing into the diverse jurisdiction, and remain at this lower level as one proceeds further into the diverse town. In contrast, housing prices two or three blocks into the homogenous jurisdiction are nearly identical to prices on the first block. The decline at the border is uniquely large, and is the only such comparison that is statistically different from zero. A discontinuity of this nature implies that the cross-border price gap cannot be explained by gradual improvements in unobserved housing quality through space. Panel B conducts the same exercise for a classification based on median income. The picture looks similar; indeed, many of the same towns are likely to be coded as "desirable" under either rubric.

Equation 1 is nearly analogous to the simple exercise in Figure 1, but, rather than condensing jurisdictional differences into a single binary (diverse/not), it uses all of the cross-border variation in racial composition and income. Table 2 contains results from estimating this equation in 1960, 1970 and 1980. I divide the housing market by tenure status, with either housing values or rents measuring the willingness to pay for jurisdiction-level characteristics.

The results for owner occupied housing are presented in columns 1 and 2. The first thing to notice is that while both the mean black population share and the gap at the average border are increasing over this period, the willingness to pay for racial homogeneity is relatively stable. However, as we will see shortly, the relationship between home values and black population share is not particularly robust. If we consider the first row in each panel, coefficients from regressions that include no block-level controls, it appears that homeowners are willing to pay 1.6-2.0 percent more to live in a town with a 10 point lower black population share. Adding the demographics of block residents (row 2) reduces the coefficient by 15-30 percent.[20] Though the

[20] The largest decline occurs in 1980 when a detailed racial and ethnic breakdown exists at the block level (share black, Asian, Hispanic).

coefficient falls, we can conclude that jurisdiction-level diversity is not simply a proxy for having black neighbors. Including all available housing characteristics reduces the coefficient by another 20-30 percent, and the point estimate is no longer significant in 1960 and 1980 (row 3). At most, a 10 percentage point increase in a town's black population share would reduce home values by 1 percent.

The willingness to pay for a location in town with a richer electorate is more robust to the inclusion of block characteristics. While the relationship between home values and the median income of a town's residents falls after adding available housing quality measures, the coefficient is still large and significant. A 20 percent increase in median income translates into a 2.2-4.6 increase in home values.[21] Because black residents also tend to be poorer, it is possible that both black population share and median income are measuring the same underlying feature of an electorate. When both measures are included together (row 4), the coefficient on black population share falls to zero in 1970 and is positive in 1960 and 1980. In contrast, the coefficient on median income remains unchanged or even increases by a small amount.[22] While there is not enough variation in the sample to deem the racial composition of an electorate unimportant, it is clear that the relationship between housing values and black population share is less firm than that between housing values and residents' income.

The rent regressions show a qualitatively similar pattern, particularly for median income, though the coefficients are always smaller and are only marginally significant. However, by 1980, rents appear, if anything, to be *higher* in towns with a larger black population share. The disparity between rents and values by 1980 could reflect differences in preferences over local

[21] The estimates are qualitatively unchanged in specifications that either weight each observation by the number of housing units on the block or that limit the sample to blocks with at least 10 units (not shown).
[22] A similar pattern is observed when replacing median income with the share of residents below the poverty line in 1970 or 1980. The concept of an absolute "poverty line," which takes into account income, family size, and the ages of family members, was had not been developed by 1960.

policy between owners and renters. The median renter was more likely than the median homeowner to be black (Collins and Margo, 2001).[23]

Thus far, I have interpreted the price gap at the border as the true willingness to pay for features of a town's electorate, particularly after controlling for observable characteristics of the housing stock. The discontinuity of this gap (Figure 1) rules out the possibility that this estimate reflects the slow evolution of housing quality with distance from the city center. However, housing stock or neighborhood quality could change abruptly at a political boundary due either to local zoning requirements or to endogenous sorting of households according to their preferences for local public goods.

If zoning laws and the quality of public goods are relatively time invariant aspects of a jurisdiction, we can control for these – and any other – fixed differences in housing quality across borders by examining how price gaps *change* as disparities in jurisdiction-level characteristics narrow or widen over time. Table 3 presents estimates of equation 2 for single decade differences from 1960-70 and 1970-80, and for the whole period (1960-80). The relationship between home values and median income is, if anything, a little stronger in this specification, suggesting that the housing stock in these border regions tends to be of higher quality on the city side.[24] Moreover, the estimates are remarkably consistent in each time period, implying that a gap equivalent to 20 percent of median income would reduce home values by 6.6-8.2 percent through political channels alone.

In contrast, the relationship between racial composition and home values reverses over time. In the 1960s, home values in towns that experienced a 10 percentage point gain in black

[23] Another standard explanation for observed differences between values and rents is that values capitalize expectations about future trends. If home owners correctly projected the continued growth in urban black population, we would expect the value-rent disparity to be largest in 1960, before this growth occurred, not in 1980, after it had been realized.

[24] This finding is consistent with the fact that blocks on the urban side of the border had a marginally higher proportion of single family, owner-occupied homes (Table 2).

population share fell by 4.0 percent, while in the 1970s the same increase in black population share was accompanied by a 2.1 percent *increase* in value. Over the whole period, black in-migration is associated with a small (and insignificant) decline in home values, the magnitude of which accords with the cross-sectional estimates. The reversal could be evidence of a negative shock to the perceived value of living in a racially diverse jurisdiction over the 1960s that moderated – but did not completely dissipate – in the next decade.

A review of urban history suggests two events that may have changed the median residents' views on racial diversity: the outbreak of race-related rioting and the anticipation of school desegregation. I will explore each of these alternatives in the next section. Before doing so, I investigate a series of local policies that may account for the more consistent desire to live in a jurisdiction with wealthier residents.

V. Escaping the City: The Role of Public Goods and Policy Change

A. The willingness to pay for a richer electorate

In the previous section, I document that demand for urban living declined as the income level of the average city resident fell. The estimate, which is derived from a comparison of housing prices across city/suburban boundaries, reflects only the political costs of remaining in the city. By construction, the quality of the neighborhood and local amenities are the same on either side of the border. It is important to keep in mind that public goods are not the only feature of a town that changes along with its residents' income. Indeed, in the cross-section, the

relationship between jurisdiction-level median income and housing prices is over five times as large as the cross-border estimates above.[25]

Nevertheless, it is still of interest to determine which public goods or fiscal decisions can account for the estimated willingness to pay for richer residents. Lacking convincing indicators of either the quantity or quality of public goods, I instead focus on the composition of the public budget, measured as expenditures per capita on various categories (education, police, parks, and so on).[26] Wealthier towns spend more than their immediate neighbor on education, but spend less on other budget items. A regression of expenditures on median income and a full set of border dummies produce coefficients of 2.421 (s.e. = 2.140) for per-pupil education spending and -1.501 (s.e. = 0.336) for per-capita spending on other budget items. These point estimates imply that a 20 percent increase in median income leads to $480 of additional educational spending per student, alongside a reduction of $300 per resident on other items.

Table 4 adds measures of public expenditures to the basic regression of home values on median income for a representative cross section (1970). The first row reproduces the base specification for a subset of the sample, the 51 borders that do not share a school system. Total educational expenditure per pupil, added in the second row, has no effect on home values. Row 3 divides educational expenditure into its subcomponents. While home values increase with instructional spending, and decrease with spending on administrative overhead, these factors explain very little of the willingness to pay for rich residents. Without historical data on student

[25] The coefficient from a cross-sectional regression of housing prices on jurisdiction-level median income in 1970 is 0.863 (s.e. = 0.153). This unrestricted estimate is not simply a combination of neighborhood and political costs of living in a central city, but is undoubtedly also picking up differences in housing quality as well,

[26] 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.

performance (for example, test scores), one cannot rule out that unmeasured differences in school quality contribute to the demand for wealthy suburbs.

In contrast to spending on schools, homeowners dislike non-educational spending, particularly outlays for road maintenance, parks, and public safety. These patterns may be specific to residents in border areas who can free ride on the roads and parks of a neighboring jurisdiction, and who may perceive police spending as being primarily directed toward "other people's" neighborhoods.[27] Adding non-educational spending (row 4 *in toto*, and row 5 by separate category) reduces the estimated demand for jurisdiction-level income by 25 and 50 percent, respectively.

It appears that a large portion of the political cost of living in a poor central city can be attributed to the spending priorities, which are tilted away from education and towards public safety and infrastructure maintenance. These expenditure gaps may also imply differences in tax rates between rich and poor towns. While the higher non-educational spending and lower school spending in poor towns nearly offset, poorer jurisdictions have a lower tax base, and thus must set a higher tax *rate* to generate a given amount of revenue.[28] If housing in the poor jurisdiction is taxed at a higher rate, it should fetch a lower market price (Hamilton, 1976). In effect, owners of a mid-sized house in the poor jurisdiction will be cross-subsidizing their smaller neighbors, while owners of the same sized unit in a rich jurisdiction will benefit from their larger neighbors.

While differences in property tax rates could, in theory, explain the demand for higher-income jurisdictions, I find no differences in tax rates across borders in the sample. I collect data on the nominal property tax rates for all applicable levels of local government (municipality, county, independent school district, special district) from *Moody's Municipal and Government*

[27] It is unlikely that the victimization rate is substantially different on these adjacent blocks, even if the police response time varies by jurisdiction.
[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.

Manual. Nominal tax rates apply to a home's assessed value. I convert these nominal rates to real rates using assessment-to-market ratios drawn from the *Census of Government*. These ratios are only reported for central cities and the "balance of the metropolitan area," collapsing some variation between towns in the suburban ring. While in the cross-section, wealthier towns impose lower tax rates, this difference disappears when comparing across borders.[29]

B. The willingness to pay for a homogeneous electorate

(i) Riot Activity

Unlike the demand for living in a wealthy suburb, the desire to live in a racially homogeneous town has varied over the post-War period. During the 1960s, houses located in towns with a growing black population lost value, while, over the 1970s, much of this loss was regained. One factor that could explain this temporal pattern is the outbreak of race-related rioting in the late 1960s. The riots may have been a negative shock to the cost of living in a diverse city, which then moderated over time.

Collins and Margo (2004) find 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 where the worst property damage occurred, riots may also have affected the *civic* cost of living in a diverse jurisdiction by heralding the emergence of a black voting bloc.[30] Many American cities elected their first black mayors soon after the occurrence of riots. Carl Stokes of

[29] A regression of real property tax rates on jurisdiction-level median income produces a coefficient of -12.758 (s.e. = 7.323), which falls to -1.126 (s.e. = 6.953) when a vector of border area dummies are included.

[30] 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 – are near black enclaves. 27.2 percent of residents in these areas were black in 1970. In contrast, only 1.0 percent of residents in the rest of the sample were black. To confirm that the results are not driven by lower prices near black enclaves, I add an interaction between the jurisdiction-level black share and a black enclave dummy to cross-sectional regressions in 1970 and 1980 (not shown). The estimated homogeneity premium is primarily driven by the all-white borders.

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., had followed suit.

I adopt Collins and Margo's index of riot severity. The measure considers five components of riot damage (X) – deaths, injuries, arrests, arsons and days of rioting, indexed by i.[31] The index 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 for all cities that contained at least 10 (at least 5) percent of total riot activity. While this paper uses the 10 percent indicator, the results do not change qualitatively when using the looser definition. 11 of the metropolitan areas in the sample are deemed low-riot areas by this measure, but only three cities in the sample were completely riot-free (Moline, IL; San Jose, CA; St. Louis, MO). The seven high-riot areas are Chicago, Cleveland, Detroit, Jersey City, Los Angeles, Newark and New York City, which together contribute 36 borders.

Is the willingness to pay to avoid a diverse electorate higher in cities that experienced a riot in the 1960s? If so, does this gap emerge only in 1970, after the riots occurred, or were the riots symptomatic of other, longer-run differences between cities? And, if the riots really acted as a shock to the cost of racial diversity, does the price response persist or does it dissipate by 1980? Table 5 addresses these questions by adding an interaction between the 10 percent riot indicator and the jurisdiction's black population share to the basic specification in each year. The main riot effect is absorbed in the set of border area dummies. In 1970, the average response to a jurisdiction's black population share (shown in Table 2) is driven almost entirely by the borders that experienced intense riot activity. A 10 point increase in black population share translates

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

into a 1.6 percent decline in housing values in these cities. The results do not qualitatively change when the 5 percent definition is used (not shown).

The 1970 Census was conducted two years after the most intense period of riot activity. By 1980, the difference between high and low riot intensity areas disappears, suggesting that the initial shock wore off over time. The fears of follow-on violence or of large changes in the political equilibrium did not come to pass and the housing market may reflect these revised assessments.[32] The disparate reaction to black population share between high/low riot areas was not present in 1960, so is unlikely to be a vestige of unmeasured differences across cities. Tellingly, riot intensity does not mediate the housing market response to residents' median income in 1970 or any year. The main effect of median income is statistically identical to those in specifications without a riot intensity interaction (Table 2), and the interaction term is never different from zero.

(ii) Desegregation

The late 1960s was not only a period of active unrest but was also a time of substantial uncertainty, as parents watched the courts for news on impending school desegregation. While southern schools were already dismantling their systems of *de jure* segregation, the stance that would be taken toward *de facto* segregation in northern cities was yet undecided (Cascio, et al., 2007).[33] Courts turned their attention to northern cities only after the *Swann v. Charlotte-Mecklenburg Board of Education* decision (1971), which found that school districts could be

[32] In contrast, Collins and Margo (2004) find that the value of black-owned property does not bounce back after a riot in the 1970s. However, the value of the average unit does experience some mean-reversion, which is consistent with these border estimates.

[33] One measure of school segregation is the dissimilarity index, which indicates 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. Elementary schools in the mean sample district in 1970 had a dissimilarity value of 0.51, while high schools had a lower value of 0.31. These values are calculated from the Office for Civil Rights' school-level files, which were generously provided by Sarah Reber.

subject to remedial action even if the segregation in their borders resulted from residential patterns rather than deliberate race-based school assignments.

Court-ordered desegregation may have increased the cost of living in a diverse jurisdiction in a number of ways. First, parents may have had no preference over the race of their child's classmates, but may have simply preferred for their child to attend a neighborhood school (Bogart and Cromwell, 2002). Of course, parents may have also cared about their race of their child's peers, either directly or indirectly because of a correlation between race and student preparedness (Hoxby and Weingarth, 2005).

I collect detailed information on the date of relevant court decisions, the findings in the case, and the required remedies, if any, from the *State of Public School Integration* website, which is maintained by the American Communities Project at Brown University. I code any cases pertaining to the municipalities in the sample that occurred between 1965-1980. I quantify the presence of a court-order in two ways: a continuous variable counting the number of remediation steps required, without regard to their intensity, and a set of dummy variables indicating the most severe steps (bussing and student reassignment). 34 borders in the sample contain at least one jurisdiction with a desegregation-related court case; 23 do not. Of the 34 borders with at least some court activity, 10 of these experienced court supervision on both sides.

Table 6 adds each of these desegregation variables in turn to the basic cross-sectional specification. Results are reported for 1980, by which time we can expect the impact of desegregation to be felt on the housing market, as well as for 1960 and 1970. The earlier regressions, which examine the relationship between housing prices and desegregation plans that *will be implemented* in the near future, can be thought of as "placebo" experiments. Coefficients will be negative and significant in these years if desegregation orders are more likely to be handed down in cities whose houses command lower prices relative to their suburban neighbors

for other unmeasured reasons. Also included in the equations but not reported are the jurisdiction-level black population share and the full set of block-level control variables.

In 1980, the presence of a court-ordered desegregation plan was associated with lower housing prices; the same was not true along these borders in either 1960 or 1970. For each remedial step required, housing prices were 1.2 percent lower in 1980 (row 1). The average case resulted in 2.3 steps. The most serious steps, bussing and student re-assignment, were associated with a 6.4-7.1 percent decline in housing values (rows 2 and 3). The large price response to these policies relative to the average suggests that most steps were less onerous. The establishment of a magnet schools, a program that is usually valued by city parents, also had a negative effect on prices, perhaps because magnet schools were bundled with other requirements. The placebo regressions suggest that homes in cities forced to re-assign and bus their students to different schools were already worth around 2 percent less than their suburban neighbors in 1960 and 1970, but that this gap more than doubled after the implementation of desegregation plans. Homes in cities that initiated magnet programs were, if anything, worth more than their suburban neighbors before desegregation, though this gap was diminishing before desegregation orders were handed down.

Desegregation can explain around 30 percent of the observed relationship between housing prices and a jurisdiction's black population share in 1980. Consider the composite measure for the number of steps in the court order. By adding this variable to the cross-sectional regression in 1980, the coefficient on the black population share falls from -0.135 (s.e. = 0.080) to -0.095 (s.e. = 0.075).[34] The price response to black population share is relatively stable between 1970 and 1980 (Table 2). This stability could be the combination of two offsetting

[34] The difference between the coefficient on the black population share here (-0.135) and in Table 3 is due to the number of control variables included. For the sake of comparability, Table 7 includes only those block-level controls that are available in 1960, 1970 and 1980.

effects: the short-lived shock of the 1960s riots, which reduced urban housing prices in 1970, and the implementation of new desegregation plans, which reduced urban housing prices in 1980.

VI. Conclusion

Road building projects and the diffusion of the car made it economically feasible for many to settle in bedroom communities in the post-War period. Unlike cities, which are large, diverse political units, the suburbs offered an array of choices between distinct towns, each with a unique bundle of public goods and property tax rates (Tiebout, 1956; Ellickson, 1971). This paper demonstrates that the changing composition of the urban population, driven by the departure of rich households for the suburbs as well as the arrival of poor migrants from the South, was an independent cause of suburbanization. By moving to the suburbs, households paid for the privilege of making collective decisions with a homogeneous electorate, even as the racial and class identity of the median city resident changed.

To establish the demand for wealthy, racially homogenous suburbs, I compare prices for housing units on adjacent Census blocks across municipal boundaries in the central decades of post-War suburbanization (1960, 1970 and 1980). 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. Even after using variation over time to control for fixed differences in housing quality, I find a sizeable relationship between housing prices and the median income of a jurisdiction's residents. A 20 percent increase in median income (roughly the gap at the sample's mean border) is associated with an increase in home values of 2.4-8.2 percent, depending on the year and the source of identifying variation. Half of the perceived political cost of living in a poor jurisdiction can be attributed to

the composition of the public budget, which is tilted away from education and towards spending on police and road maintenance.

The relationship between home values and jurisdiction-level racial composition is less stable over the period. Houses in jurisdictions that gain black population share in the 1960s lose value; in the 1970s, much of this lost value is restored. The timing coincides with a shock to the perceived cost of urban diversity following the 1960s riots. By 1980, court-ordered desegregation plans were in place in some northern cities. Housing prices fall by around 1 percent for each required step in the court remedy, with student re-assignment or bussing reducing prices by 5-6 percent.

These findings suggest that the political costs of living in a poor jurisdiction were alone enough to generate a "feedback" process, by which the initial suburban relocations of the well-to-do could generate follow-on mobility. Declining neighborhood quality accompanying the loss of the middle class may have played an additional role, though such a claim is beyond the scope of this paper to evaluate. A process of "cumulative decay," first highlighted by Baumol (1967), may be an important factor in understanding the divergent histories of initially similar American cities over the 20th century.

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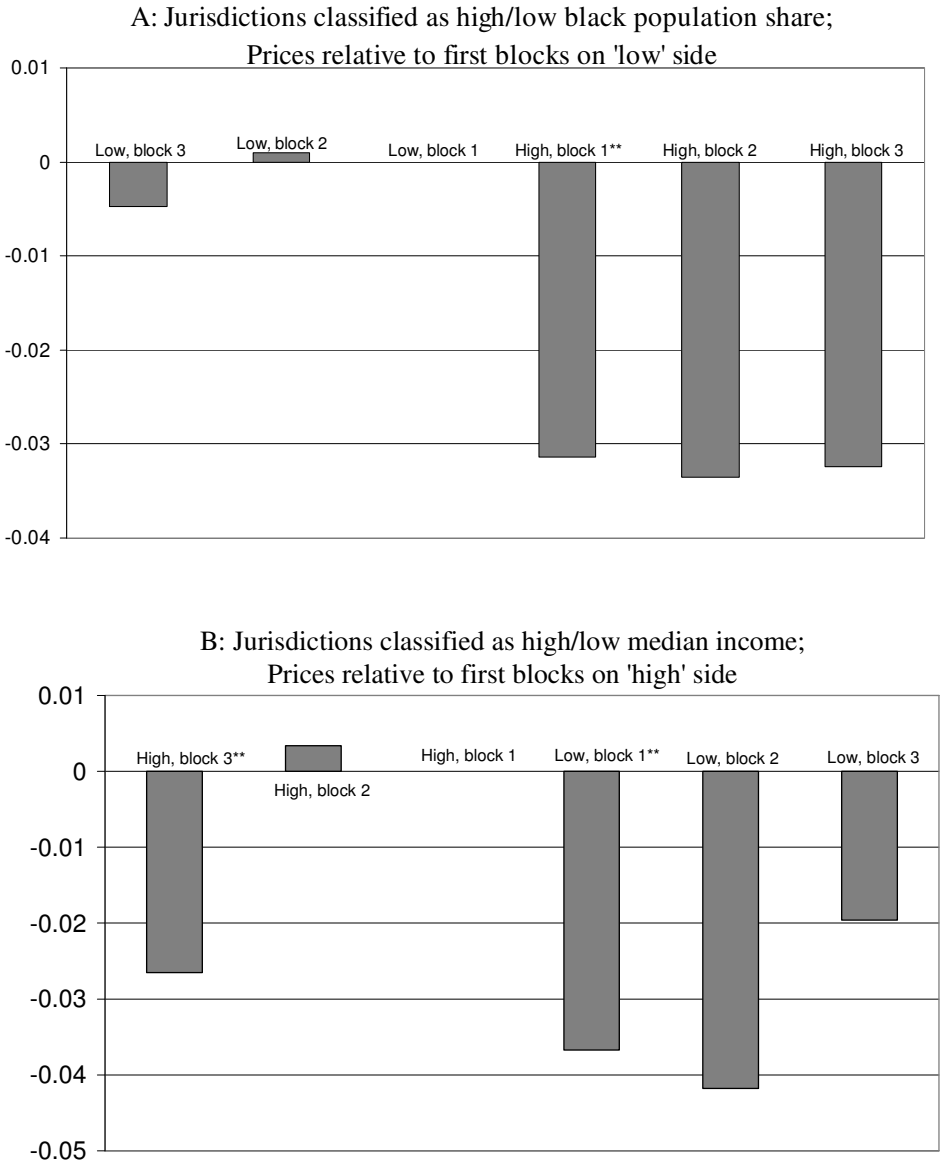
Figure 1: Mean housing prices by distance from the jurisdictional border, 1970



Notes: Each bar represents a coefficient from a regression of the logarithm of housing value on a series of indicator variables for distance from the border. Distance from the border is measured in "block tiers," with the first tier including all blocks adjacent to the border, and so on. Each jurisdiction in the pair is classified as having either a high or low black population share (or median income) relative to its neighbor. The first block tier in the low black share/high median income jurisdiction is the omitted category. A tier whose housing prices are significantly different at the 5 percent level from its immediate neighbor is starred. The regression also includes the block-level controls listed in the notes to Table 2. The sample only includes borders for which each jurisdiction has at least three block tiers with available data on either side.

Table 1: Testing the neighborhood continuity assumption: The cross-border (1970) and over-time (1970-80) relationship between housing quality and jurisdiction-level characteristics

	Share black		ln(median income)	
Dependent variable	1970	1970-80	1970	1970-80
A: Housing quality				
Share single family	0.123	0.041	-0.078	-0.076
N =	(0.070)	(0.033)	(0.073)	(0.134)
Share owner occupied	0.134	0.047	-0.072	-0.036
	(0.045)	(0.039)	(0.042)	(0.077)
Share no plumbing	0.007	-0.002	-0.004	-0.007
	(0.005)	(0.004)	(0.004)	(0.011)
=1 if any group quart	-0.071	---	0.099	---
N1 = 2094	(0.041)		(0.059)	
Mean # rooms, own	-0.290	-0.122	0.416	0.605
N1 = 1713	(0.190)	(0.177)	(0.182)	(0.545)
Number of residents	-91.829	-15.453	67.678	-51.976
	(58.405)	(22.651)	(38.459)	(82.866)
Number of units	-61.336	-3.232	45.045	-22.713
	(39.253)	(9.771)	(23.034)	(32.864)
Residents/unit	0.134	0.013	-0.275	-0.168
	(0.125)	(0.059)	(0.111)	(0.220)
B: Demographics				
Share black, 6 tiers	0.374	0.369	-0.172	-0.371
N1=4568; N2=3627	(0.067)	(0.028)	(0.064)	(0.162)
Share black, 3 tiers	0.244	0.232	-0.102	-0.291
N1=3235; N2=2516	(0.045)	(0.027)	(0.037)	(0.104)
Share black, 1 tier	0.109	0.164	-0.035	-0.214
	(0.028)	(0.037)	(0.020)	(0.087)

Notes: Each cell represents the coefficient from 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. In Panel A, the sample is restricted to blocks adjacent to the jurisdiction border with at least 5 owner occupied units; this is the sample used for the housing value regressions in Tables 3-7. Panel B compares the racial composition of residents living six blocks, three blocks, and one block from the border.

Table 2: The relationship between housing prices and jurisdiction-level characteristics

Dependent variable:	ln(mean value)		ln(mean rent)	
RHS variable:	Share black	ln(med inc)	Share black	ln(med inc)
1960				
Alone	-0.167	0.337	-0.118	0.212
	(0.097)	(0.083)	(0.090)	(0.071)
Add share black, block	-0.136	0.332	-0.105	0.213
	(0.100)	(0.084)	(0.090)	(0.071)
Add housing controls	-0.090	0.157	-0.066	0.136
	(0.060)	(0.062)	(0.098)	(0.071)
Together	0.171	0.248	0.158	0.223
	(0.106)	(0.100)	(0.129)	(0.086)
1970				
Alone	-0.169	0.227	-0.056	0.104
	(0.074)	(0.062)	(0.066)	(0.045)
Add share black, block	-0.141	0.218	-0.013	0.092
	(0.077)	(0.062)	(0.071)	(0.047)
Add housing controls	-0.100	0.115	0.025	0.051
	(0.045)	(0.034)	(0.071)	(0.052)
Together	-0.016	0.104	0.142	0.143
	(0.065)	(0.053)	(0.075)	(0.053)
1980				
Alone	-0.203	0.396	-0.028	0.191
	(0.107)	(0.061)	(0.071)	(0.043)
Add share black, block	-0.135	0.323	0.001	0.129
	(0.098)	(0.065)	(0.069)	(0.046)
Add housing controls	-0.095	0.229	0.091	0.071
	(0.079)	(0.051)	(0.069)	(0.050)
Together	0.152	0.306	0.192	0.170
	(0.085)	(0.068)	(0.043)	(0.067)

Notes: Standard errors are reported in parentheses and clustered by jurisdiction. The sample is restricted to blocks adjacent to the jurisdiction 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 3: The relationship between changes in housing prices and in jurisdiction-level characteristics over time

Dependent variable = ln(housing values)

	Share black	ln(median income)
1960-70 (N = 2966)	-0.406	0.379
	(0.111)	(0.197)
1970-80 (N = 3384)	0.213	0.339
	(0.061)	(0.201)
1960-80 (N = 2985)	-0.083	0.419
	(0.067)	(0.099)

Notes: Standard errors are reported in parentheses and clustered by jurisdiction. All regressions include a set of main effects for jurisdictions, Census years, and border areas, as well as interactions between border areas and both jurisdiction and Census year. The sample is restricted to blocks adjacent to the jurisdiction border. All regressions control for the share of block residents who are black, the average number of rooms in owner-occupied units, and the share of units that are owner occupied.

Table 4: Can variation in public expenditure explain the demand for a well-to-do electorate, 1970?

	Dependent variable = ln(housing values)	
Added variables	ln(median income)	Other RHS variables
1. Base specification	0.123	---
	(0.036)	
Educational spending		
2. Total spending per pupil	0.122	0.0003
(*in 1,000s*)	(0.037)	(0.0032)
3. Spending categories		
Instructional spending per pupil	0.114	0.016
	(0.041)	(0.009)
Administrative spending per pupil		-0.229
		(0.130)
Non-educational spending		
4. Non-educational spending	0.091	-0.022
per capita (*in 1,000s*)	(0.054)	(0.022)
5. Spending categories		
Road spending per capita	0.066	-0.535
	(0.087)	(0.310)
Sanitation spending per capita		0.073
		(0.513)
Park spending per capita		-0.336
		(0.279)
Police spending per capita		-0.325
		(0.262)
Other spending per capita		0.030
		(0.029)

Notes: Standard errors are reported in parentheses and clustered by jurisdiction. The sample is restricted to blocks adjacent to the jurisdictional border. The border between Swissvale and Pittsburgh, PA is excluded due to missing expenditure data. The borders between McKeesrock and Stowe, PA, Berwyn and Cicero, IL, Berwyn and Oak Park, IL, Kearny and North Arlington, NJ and Pittsburgh and Wilkinsburg, PA are excluded because of a shared school district. After these restrictions, the sample contains 1253 blocks. All regressions include the full set of block-level controls, which are listed in the notes to Table 2. Notes on and sources for the public goods measures are in Appendix Table 2.

Table 5: Does riot activity explain the aversion to black population share in the 1960s?

Dependent variable = ln(housing values)

	Share black	ln(median income)
1960		
Main effect	-0.086	0.178
	(0.300)	(0.079)
Main x (=1 if high riot)	0.025	-0.026
	(0.304)	(0.098)
1970		
Main effect	-0.012	0.123
	(0.076)	(0.048)
Main x (=1 if high riot)	-0.161	0.057
	(0.083)	(0.061)
1980		
Main effect	-0.099	0.214
	(0.105)	(0.050)
Main x (=1 if high riot)	-0.005	0.005
	(0.139)	(0.001)

Notes: Standard errors are reported in parentheses and clustered by jurisdiction. The sample is restricted to blocks adjacent to the jurisdictional border. Regressions include the full set of block-level controls, which are listed in the notes to Table 2. The riot indicator is defined in the text.

Table 6: Housing price response to desegregation court-orders before and after implementation

	Dependent variable = ln(mean value)		
	1960	1970	1980
Number steps	-0.000	-0.003	-0.012
	(0.005)	(0.003)	(0.004)
=1 if bussing	-0.020	-0.013	-0.064
	(0.017)	(0.014)	(0.023)
=1 if assignment	-0.037	-0.023	-0.071
	(0.017)	(0.016)	(0.024)
=1 if magnet schools	0.055	0.025	-0.030
	(0.033)	(0.033)	(0.024)
N	1487	1390	1454

Notes: Standard errors are reported in parentheses and clustered by jurisdiction. The sample is restricted to blocks adjacent to the jurisdictional border. The desegregation variables include any court-order handed down between 1965-1980. The coding is based on the *State of Public School Integration* website at Brown University.

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

	1970		1960-70/1970-80
Mean (S.D.)	All jurisdictions	Difference across borders	Difference across borders
Panel 1: Jurisdiction level			
Share black	0.109 (0.146)	0.132 (0.142)	0.036/0.024 (0.063)/(0.092)
Median family income, $ 2000	$49,117 ($8.696)	$8,088 ($6,254)	$2018/$2406 ($2497)/($2456)
In $1,000 ($2000): Total $ per pupil	4.653 (1.968)	1.501 (1.976)	
Non-educ $ per capita	0.646 (0.447)	0.274 (0.301)	
$ on roads, per capita	0.042 (0.024)	0.020 (0.022)	
$ on parks, per capita	0.048 (0.037)	0.037 (0.028)	
$ on sanitation, pc	0.032 (0.019)	0.017 (0.016)	
$ on police, per capita	0.093 (0.039)	0.048 (0.036)	

(table continued…)

Appendix Table 1, continued			
	1960	1970	1980
Panel 2:			
Block level			
Average value, owned	$101,077	$110,103	$179,063
	(54,347)	(41,638)	(96,838)
Average contract rent	$457.14	$524.11	$596.27
	(144.41)	(175.86)	(196.87)
Share single family	---	0.613	0.653
		(0.349)	(0.348)
Share owner occupied	0.595	0.588	0.605
	(0.322)	(0.309)	(0.313)
Mean # rooms, owned	5.757	5.685	5.435
	(0.991)	(1.060)	(0.846)
Mean # rooms, rented	4.142	4.047	---
	(0.788)	(1.046)	
Mean # rooms, all units	---	---	5.111
			(1.126)
Share lacking plumbing	0.142	0.015	0.011
	(0.272)	(0.053)	(0.032)
Residents/unit	3.063	2.983	2.774
	(1.116)	(0.979)	(0.315)
=1 if group quarters	0.046	0.027	---
	(0.210)	(0.162)	
Share black	0.038	0.087	0.161
	(0.145)	(0.225)	(0.314)

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

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

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. Details of the index's construction are in the text. Cities that experienced *no* rioting during the 1960s are marked with an asterisk.