Escape from the City? The Role of Race, Income, and Local Public Goods in Post-War Suburbanization

Leah Platt Boustan
UCLA and NBER
August, 2007
This version: March, 2008

Abstract: Suburbs allow for sorting across towns, increasing inequality in resources for education and other local public goods. This paper demonstrates that postwar suburbanization was, in part, a flight from the declining income of city residents. I estimate the marginal willingness to pay for town-level demographics – holding neighborhood composition constant – by comparing prices for housing units on either side of city-suburban borders (1960-1980). A one standard deviation increase in residents' median income was associated with a 3.5 percent housing price increase. Homeowners value the fiscal subsidy associated with a higher tax base, and the fiscal isolation from social problems (for example, spending on police). While housing prices do not respond to a town's racial composition after controlling for income, a willingness to pay to avoid racial diversity emerges in response to court-ordered school desegregation.

* Email: lboustan@econ.ucla.edu. I would like to thank the members of my dissertation committee, Claudia Goldin, Caroline Hoxby, Lawrence Katz and Robert Margo, for their insight and support. This paper has benefited from conversations with David Abrams, Sandra Black, David Clingingsmith, William Collins, Dora Costa, Carola Frydman, Edward Glaeser, Matt Kahn, Nora Gordon, Byron Lutz, Sarah Reber, Steven Rivkin, Raven Saks and Bruce Weinberg, and from the suggestions of participants at many conferences and seminars. Lilia Garcia, Michael Latterner, David Lee, Angelina Morris, Danika Stegeman, Mingjie Sun and Qiong Zhou provided excellent and enthusiastic 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 while visiting the Minnesota Population Center.

I. Introduction

The typical urban area in the United States is anchored by a poor central city surrounded by affluent suburbs. Because local governments are responsible for the provision of public goods, particularly education, the subdivision of urban areas into rich and poor jurisdictions can reduce human capital acquisition with consequences for both efficiency and equity (Benabou, 1993, 1996a, 1996b). The polarization of contemporary urban areas has its roots in the suburban growth of the mid-twentieth century. In 1940, only 38 percent of urban residents lived in a suburb and suburbanites in the mean metropolitan area earned only three percent more than neighboring city residents. By 2000, 61 percent of urban residents lived in a suburb, and the income gap between city and suburban dwellers had expanded to 16 percent.

This paper documents that the growing income gap between city and suburban residents was not only a consequence of suburbanization, but was also an independent cause of mobility to the suburbs. Focusing on 1960 to 1980, a peak period of suburbanization, I find that the premium for suburban housing was larger in metropolitan areas attached to a poorer central city. The interpretation of this result can be confounded by unobservable differences in housing quality between areas with rich and poor residents. I control for these differences by comparing city and suburban housing units on adjacent blocks that fall on the opposite side of a jurisdiction boundary. Such units are exhibit few measurable differences in attributes but, by virtue of the division of urban space, are located in different towns and often different school districts. The median homebuyer is willing to pay 2.5-3.5 percent more to live in a town with a one standard deviation reduction in poverty rate or increase in median income.

Beyond concerns about one's immediate neighborhood, the demand to live in a wealthy suburb could be driven by the spending decisions made by the local electorate, the fiscal subsidy provided by a larger property tax base, or the composition of peers in public schools. Measures of expenditures and property tax rates are available in 1970 and 1980. I find that the demand for rich co-residents can be explained with a limited set of policy measures. Property tax rates are lower in rich towns that enjoy a higher tax base. This fiscal subsidy is capitalized into housing prices. Homeowners also like the fact that suburbs allocate less money per resident toward public safety and sanitation. However, rich and poor towns exhibit no difference in education spending per pupil; the shortfall in locally-raised revenue in poor towns is made up by state and federal transfers. School quality is unobserved during this period, but may play an additional role.

Poverty rates are highly correlated with racial composition at the jurisdiction level. There is some evidence that racially diverse jurisdictions provide fewer public goods (Cutler, Elmendorf and Zeckhauser, 1993; Alesina, Baqir, Easterly, 1998). This political channel could partially explain the tendency of white households to leave diverse cities (“white flight”), which is typically understood as a response to neighborhood-level diversity (Ellen, 1999; Boustan 2007; Card, Mas and Rothstein, 2007). However, after controlling for poverty rates, I find that housing prices are unaffected by a town’s black population share. An important caveat to this result arises with the desegregation of public schools in some central cities. Desegregation breaks the correspondence between the racial composition of one’s neighborhood and one’s school (Reber, 2005; Lutz, 2005). Beyond the effect of town-level poverty, the median household is willing to pay 4.2 percent more for an equivalent housing unit in order to avoid court-ordered busing and student re-assignment.

The existing literature on suburbanization focuses on transportation improvements, including the automobile and new road building, which reduce the time cost of commuting to centrally-located employment (Leroy and Sonstelie, 1983; Mieszkowski and Mills, 1993;

Kopecky and Suen, 2006; Baum-Snow, 2007).[1] The political division of cities from suburbs can act as a multiplier, augmenting the response to transportation improvements. Because the rich are more likely to own car, the urban departures following a transport shock likely increased the income gap between the city and its suburbs (Glaeser, Kahn and Rappaport, 2000). If a larger income gap itself generates suburbanization, cities can enter a vicious cycle of population loss and urban decline (Baumol, 1967).

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

A. Predictions from Jurisdiction Choice Models

The analysis is motivated by models of jurisdiction choice, in which towns (cities and suburbs) offer distinct bundles of local public services and property tax rates. Under a certain set of assumptions, a housing price premium will be evidence of demand for the public bundle offered in a particular jurisdiction. I briefly discuss the predictions of such models here, though the paper does not test them explicitly.

It is useful to divide models of jurisdiction choice into two categories based on the form of local taxation considered. One class of models allows jurisdictions to finance their public expenditure through a lump sum tax (for example: Ellickson, 1971; Epple and Romer, 1991; Fernandez and Rogerson, 1996). Because the rich are more willing to trade off a dollar of private consumption for a dollar of public expenditure, they sort into towns that offer higher goods provision at a higher tax rate. In this framework, a price gap would not emerge at the border of a rich and poor town as long as the housing supply is sufficiently elastic. Instead, housing supply will expand to meet the demand for either town.

[1] An exception is Cullen and Levitt (1998) which studies the relationship between crime rates in the central city and suburbanization.

The suburbs were expanding dramatically during this period, so an assumption of near perfect housing supply elasticity is not unreasonable. However, most of the new suburban construction occurred on the metropolitan periphery. In an urban area with a central business district, we might think of suburban housing as comprised of (at least) two differentiated products: centrally-located and peripheral units. While both types of suburban housing offer access to the same set of public goods, peripheral units will require a longer commute. As long as the supply of inner-ring units is restricted, a price gap could emerge at the border of poor cities and their wealthier suburban neighbors. In essence, there are two "currencies" with which to pay for suburban public goods: commuting time or higher housing prices.

Another set of models requires jurisdictions to raise revenue through property taxation. This framework gives rise to a "poor chasing the rich" equilibrium, in which agents of all income levels prefer living in a town with a larger tax base (Buchanan and Goetz, 1972; Hamilton, 1976). Owners of a small house in a rich jurisdiction will receive a cross-subsidy from larger houses, while owners of the same-sized house in a poor jurisdiction will be cross-subsidizing even smaller units. This fiscal subsidy will be capitalized into housing prices, generating a price gap at the border between a rich and poor town. In a world with property taxation, zoning regulations can be used to prevent the poor from successfully chasing the rich (Wheaton, 1993). The most common zoning laws dictate minimum lot sizes for new housing construction or prohibit multi-family dwellings.[2] Given this use of zoning, it is particularly important to test that there are no sharp differences in unit size or multi-family use across the jurisdiction borders.

---

[2] 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.

B. An Econometric Framework

A series of non-market goods, including school quality and aspects of the local environment, are implicitly traded through the housing market (Rosen, 1974; Black, 1999; Davis, 2004; Chay and Greenstone, 2005). Housing values may respond to the income distribution in the local jurisdiction, particularly if the presence of wealthy residents affects the property tax rate and the provision of public goods. The central empirical challenge to identifying the effect of jurisdiction-level income on housing values is the potential correlation with housing and neighborhood quality. Wealthy areas are often characterized by larger lot size, newer construction, safer neighborhoods, and so on.

To minimize the bias from unobserved housing and neighborhood quality, I compare housing units on opposite sides of jurisdiction borders. Both the tax base and the composition of the local electorate change discretely at these borders. The necessary identifying assumption in the cross-section is that neighborhood and housing quality shift more continuously across borders. This methodology applies the concept of a regression discontinuity to the spatial dimension (Black, 1999; Kane, Staiger and Samms, 2003; Figlio and Lucas, 2004; Bayer, Ferreira and McMillan, 2007). Because housing prices were collected in three Census periods, we can also determine whether an existing housing price gap across borders widens as the income gap grows. This panel analysis is discussed in section IV.D.

The dependent variable is the average owner-occupied housing value or rent measured at the block level. I test whether the price difference across city-suburban borders is associated with differences in characteristics of the two towns. For illustration, I consider the poverty rate here. Pooling data from 1960-1980. I estimate:

$$\ln(\text{price}_{ibjt}) = \beta(\text{poverty rate})_j + \Phi'(\text{block})_{it} + \Psi'(Z_b \cdot Y_t) + \varepsilon_{ibjt} \qquad (1)$$

where i and j index blocks and political jurisdictions, respectively, and b is a subscript common to both sides of a "border area." A border area consists of a pair of jurisdictions, one of which is a city and the other a suburb. The estimating equation contains a separate vector of border area dummy variables (Z_b) in each calendar year (Y_t). ($Z_b \cdot Y_t$) captures unobserved characteristics that are shared by houses on both sides of the border – for example, the presence of a nearby park, a bus line, or a commercial strip. Within a border area, the poverty rate can only vary across the border. β will be negative if houses located in the poorer jurisdiction command systematically lower prices than their cross-border neighbors. Standard errors are clustered at the border area level.

To clarify geographic terms further, Figure 1 presents a schematic illustration of two border areas in the Los Angeles metropolitan area. The first border area divides Los Angeles from Santa Monica, CA, and the second divides Los Angeles and Torrance, CA. In 1970, the poverty rate in Los Angeles was 2.7 percentage points higher than the poverty rate in Santa Monica and 6.6 points higher than the poverty rate in Torrance. Each border consists of a pair of neighborhoods (Census tracts).[3] Nested within each neighborhood is a grid of blocks. All blocks in the city of Los Angeles are coded as being in the same jurisdiction ($j = 1$), whereas blocks in Santa Monica and Torrance are located in distinct jurisdictions ($j = 2$; $j = 3$). Adjacent blocks from a jurisdiction pair are assigned to the same "border area." The Los Angeles/Santa Monica border is coded as $b = 1$, and the Los Angeles/Torrance border is $b = 2$.

While the border dummies should pick up variation in neighborhood quality that is common to both sides of the border, some specifications also add a series of block-level characteristics (block_i). These include the average number of rooms in the block's housing units,

[3] Border areas often consist of more than one such pair.

the share of units that are owner-occupied or single family structures, and the share of residents on the block who are black.[4] Due to confidentiality concerns, published housing prices (rents) are available only for blocks containing five or more owner-occupied (rental) units; estimation is conducted on these sub-samples.[5] Appendix Table 1 presents means and standard deviations of block and jurisdiction level variables in each year.

III. Collecting Housing Prices Along Jurisdictional Borders

The smallest geographic unit assigned by the Census Bureau is the Census block, which is often equivalent to a square city block. The Census of Housing reports information on housing values and rents along with a limited set of housing quality measures at the block level. In 1960, blocks were only assigned to central cities and a few of the largest suburban jurisdictions.[6] By 1970, the Census had filled in most suburban areas as well.

Starting with 1960, I use printed maps to identify a set of Census tracts adjacent to city-suburban borders for which block data is available on both sides. I also consider suburb-suburb borders to increase the sample size in this year. However, I exclude southern cities whose local political dynamics likely differed because African-Americans, who constituted a large share of the poor, did not have the right to vote. Under these criteria, I identify 86 possible borders in 16 metropolitan areas. Using detailed block-level maps, I rule out 29 of these borders that are obstructed by a railroad, four-lane highway, body of water, or large tract of industrial land.[7] The

[4] 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.
[5] Housing values are based on owner 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.
[6] An exception is Pittsburgh, PA, for which the Census Bureau created blocks in the entire urban area in 1960.
[7] Ruling out obstructed borders improves the plausibility of the identifying assumption. However, it also raises the question of endogenous border formation. Municipalities can erect bulwarks against unwanted populations by

remaining 57 borders constitute a balanced panel that can be followed from 1960-1980. This sample includes 15 suburb-suburb borders (e.g., Cambridge-Somerville, MA).

Table 1 lists the metropolitan area in the sample. The first column indicates the number of borders contributed to the balanced panel by each area. The sample is not representative of the urban United States. Large, fragmented cities with populous suburbs are more likely to be included. Borders in the two metropolitan areas – Los Angeles-Orange County and New York-Northern New Jersey – account for nearly 50 percent of the sample.

In 1970, block coverage expands to include many smaller suburbs. In expanding the sample for 1970 and 1980, I only consider city-suburban borders for suburbs with 10,000 or more residents. This size restriction ensures data availability for government expenditures and, in some cases, property tax rates. The expanded sample contains 26 borders from the original 16 metropolitan areas. I also consider 22 metropolitan areas whose suburbs were too small to be covered in 1960. Six areas lack any useable borders.[8] The remaining 16 areas together contribute 25 borders. The geographic distribution of the expanded sample is reported in the second column on Table 1. In 1970 and 1980, the full sample consists of 108 borders.[9]

I code up to eight tiers of blocks in both jurisdictions according to their distance from the political boundary. Because Census blocks have not been added to mapping software for this period, the coding must be done by hand. I then match distance codes to block data, which is

---

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.

[8] These are Cedar Rapids, IA; Fresno, CA; Lansing, MI; New Haven, CT; Omaha, NE; Toledo, OH.

[9] The number of borders in the sample may seem small relative to the total number of divisions in urban areas. Indeed, I identified 925 possible jurisdiction borders in the 16 metropolitan areas that contribute to the panel sample. Only 168 of these divided a city from a neighboring suburb. In other words, the average city bordered on 10.5 suburbs. 101 of these borders included a suburb with 10,000 or more residents and 72 of these were clear of any obvious obstruction. These 72 borders are included in the sample.

entered by hand in 1960 and is available electronically in 1970 & 1980.[10]

IV. Willingness to Pay for Rich Co-Residents

A. Testing for Differences in Observed Housing Attributes Across Borders

Drawing inferences from a comparison of housing prices across jurisdiction borders depends on the assumption that the housing units and immediate neighborhoods are of equal quality. In this section, I show that, while there are clear differences in demographics and housing quality between Census *tracts* on either side of the border, these differences disappear once the sample is narrowed to neighboring Census *blocks*.

Results for the owner-occupied sub-sample are presented in Table 2.[11] Each cell contains a coefficient from a regression of housing quality measures on the jurisdiction-level poverty rate in 1970. The specification corresponds to equation 1. Coefficients and standard errors are adjusted to reflect the response to a one standard deviation (3.1 percentage point) increase in the city-suburban poverty gap. Census tracts located on the poorer side of jurisdiction borders contain smaller housing units that are less likely to be single family or owner occupied. For example, tracts on the poor side of the border have 2.5 percentage points fewer single family units. In contrast, at the block level, this difference falls to 0.4 percent and is no longer significant. This comparison provides *prima facie* evidence against differential zoning regulations in these inner-ring suburbs, as zoning tends to restrict multi-family use and high-density development.

The one observable difference in housing quality at the block level is unit size. A one standard deviation increase in the poverty rate is associated with 0.1 fewer rooms at the tract

[10] Many Ohio counties are unaccountably missing from the 1970 electronic block data. I limit coverage of Ohio to borders in the panel sample or borders for which electronic data is available in 1970 and 1980.
[11] Housing stock differences for the full set of blocks are always smaller than those shown here.

level and 0.05 fewer rooms at the block level. Adding an additional room increases average housing values on a block by 20 percent, implying that even this small difference in unit size would generate a one percent price gap across borders. It will be important to control for the average number of rooms on the block. While the Census of Housing collects other housing attributes, they are not reported at the block level. Table 2 shows how two of these characteristics – number of bedrooms and average age of housing units – vary across borders at the tract level.

The only demographic measure available at the block level in 1970 is the share of units occupied by a black household head. Some jurisdiction choice models predict that the poor sort into towns with a higher poverty rate. In this case, because race and income are correlated, we might expect to observe more black households on the poor side of jurisdiction borders. This pattern could confound the analysis if homeowners are willing to pay to avoid black neighbors. At the tract level, a one standard deviation increase in poverty increases the probability of having a black neighbor by 2.7 percentage points. However, at block level, this relationship shrinks to 0.3 percentage points and is no longer statistically significant. There is no discernable evidence of sorting at this immediate geographic level. Results are also robust to controlling for the block-level black share or to focusing on blocks with no black residents or borders with virtually no black residents on either side (see Table 4).

B. Housing Prices and Jurisdiction-level Demographics

I turn in this section to the analysis of housing prices across borders. I start with a simple graphical exercise conducted for 1970. Each bubble in Figure 2 represents the suburban housing premium across one of the 108 borders in the full sample, weighted by the number of blocks along the border.[12] The horizontal axis indicates the difference between the poverty rate in the city and its neighboring suburb. The relationship exhibits a positive slope, with a larger poverty gap between a city and suburb associated with a larger suburban housing premium. Two of the borders with the largest suburban premium divide Newark, NJ, the poorest city in the sample, from neighboring East Orange and Grosse Point, MI, the wealthiest suburb in the sample, from urban Detroit.[13]

Table 3 contains results from a pooled cross-section regression using data from 1960, 1970 and 1980. The housing market is divided by tenure status, with price measured either as housing values or rents. I consider willingness to pay for two aspects of the income distribution of co-residents: median income and poverty rates. Coefficients are normalized to reflect the response to a one standard deviation increase in the city-suburban income or poverty rate gap.

I discuss the median income results here; the pattern for poverty rates are very similar.[14] All regressions include only blocks directly adjacent to the border. The first column only considers the difference in jurisdiction-level median income. The median owner is willing to pay 5.4 percent more for a housing unit in a suburb whose median income is one standard deviation higher than the neighboring city. Adding block-level racial composition does not affect this result. In contrast, adding housing quality controls (particularly the average number of rooms) reduces the estimated willingness to pay for wealthy co-residents to 3.2 percent. The fourth column looks for changes in the willingness to pay for town-level attributes over time. The price

[12] The qualitative pattern is unchanged when weighting by the number of underlying housing units or when the borders are left unweighted.
[13] In 1970, the poverty rate in Newark, NJ was 18.4 percent. The poverty rate in Grosse Point, MI was 1.1 percent.
[14] The concept of an absolute "poverty line," which takes into account family size and the ages of family members, was developed in the 1960s. Thus, the poverty rate regressions include only 1970 and 1980. A similar pattern is observed when replacing the poverty rate with the share of residents below a certain income threshold.

for a one standard deviation increase in median income increases from around 2.5 percent in 1960 and 1970 to 3.9 percent in 1980; this difference is significant at the 10 percent level.

Cities with a lower median income also tend to have a higher black population share. However, adding jurisdiction-level racial composition has no effect on willingness to pay for wealthy co-residents (column 5). Alone, homeowners appear willing to pay to avoid racial diversity at the town level. Yet, when income and race are included together, the response to a one standard deviation increase in the black population share is actually *positive* (though small) and not statistically significant (coeff. = 0.006; s.e. = 0.010). While there may not be enough independent variation in the sample to deem a town's racial composition unimportant, it is clear that the income results are robust to the inclusion of black population share.

The final column in Table 3 considers the effect of jurisdiction income on the average rent of rental units. The response of housing values and rents to differences in median income is nearly identical. In contrast, the decline in rents with an increase in poverty rates is only half as large as the decline in housing values, but the coefficient in the rental regression is still negative and (marginally) significant. The diminished response could be due to the composition of the rental market, which tends to be younger and less well-off. Housing prices might also incorporate expectations of future income divergence between cities and their suburbs, which would not factor into the rental rate.

C. Robustness Checks

Table 4 conducts a series of robustness checks for the relationship between housing values and jurisdiction-level median income. I present only the 1970 owner-occupied sample here, but the results are similar in other years.

The first row in Table 4 provides the baseline estimate in 1970. The median owner is willing to pay 1.9 percent more for a unit in a suburb whose median income is one standard deviation above the neighboring city. Because the level of observation is a Census block, longer border areas are given more weight in the main specification. In the second row, which weights each border area equally using the inverse of the number of blocks, the coefficient is qualitatively unchanged. A larger concern is that the current specification treats the housing prices on each block as if they were calculated with equal precision despite the fact that each is based on a different number of underlying units. The third row weights each block by the number of owner-occupied housing units for which value information is available, a figure that ranges between 5 and 297 (median = 21.1). This modification puts more weight on blocks that are denser or that have a larger share of owner-occupied units. In this specification, housing prices are 2.6 percent higher in the wealthier jurisdiction.

While Table 3 controls for the presence of black neighbors at the block level, town-level median income may be serving as a proxy for the racial composition or income of residents in the wider neighborhood. I address this concern in two ways. The fourth row excludes border areas deemed to be in racial transition, classified as being greater than ten percent black in 1970. This designation applies to 14 borders in the sample.[15] 39.6 percent of household heads are black in transition areas, compared to 0.7 percent in the remainder of the sample. The fifth row excludes blocks that themselves have any black residents (21.1 percent of the sample). If town-level income is a proxy for neighborhood composition, we would expect smaller coefficients in these predominately white samples. Instead, in both cases, the coefficients are unchanged.[16]

[15] Transition areas include some neighborhoods that later "tipped" to become majority black including Compton-Long Beach, CA; Inglewood-Los Angeles, CA, Irvington-Newark, NJ; and St. Louis-University City, MO.
[16] The same result is found with a looser definition of racial transition (greater than five percent black in 1970).

Together, borders in the Los Angeles and greater New York metropolitan areas account for one third of the full sample. In the last rows of Table 4, I re-run the regressions while dropping first the Los Angeles and then the New York borders. The results are not sensitive to this omission, nor are they sensitive to dropping both large metropolitan areas simultaneously (not shown).

D. Panel Estimation, 1960-1980

Higher property values on the wealthy side of jurisdiction borders may provide incentives for home maintenance and renovation, thus creating a difference in unobserved housing quality. While Section IV.A. tested for differences in available measures of housing quality, the set of housing attributes in the Census is very limited.

An alternative to using observed measures of housing quality is to exploit the panel nature of the dataset. We can control for any time invariant differences in housing quality across borders by examining how price gaps *evolve* as the city-suburban income gap narrows or widens over time. I pool data for 1960-1980 and estimate:

$$\ln(\text{price}_{ijbt}) = \beta(\text{poverty rate})_{jt} + \Phi'\text{block}_{it} + \Psi'(Z_b \cdot Y_t) + \Omega'(Z_b \cdot J_j) + \varepsilon_{ijbt} \qquad (2)$$

As before, equation 2 allows the common border area effect (Z_b) to vary by Census year (Y_t). The added interaction ($Z_b \cdot J_j$) allows each jurisdiction (J_j) within a border area to have its own fixed effect. β is then estimated from differential changes in city poverty relative to a suburban neighbor.

Table 5 presents results from panel regressions of housing values on jurisdiction-level median income and poverty. The coefficients are adjusted to reflect the response to a standard deviation in the city-suburban income gap in the cross-section. Estimates should be compared with the third column of Table 3, which includes block-level demographics and housing quality controls. If anything, the willingness to pay for richer co-residents appears to be larger in the panel than in the cross-section, particularly for median income (6 percent versus 3.2 percent).There is little change in the response to poverty rates (2.8 percent versus 2.2 percent). This finding holds in both the balanced panel and in the full sample and is robust to adding racial composition at the jurisdiction level (not shown). If the cross-section results merely reflected unobserved differences in housing quality, we would expect the panel coefficients to be smaller. Finding the opposite casts doubt on fixed differences in housing quality as an alternative explanation. However, this framework cannot rule out a differential decline in housing quality in jurisdictions experiencing increasing poverty relative to their cross-border neighbors.

V. The Role of Public Goods in the Demand for Rich Co-Residents (Under Revision)

The median homeowner is consistently willing to pay to live in a town with wealthier co-residents. In this section, I investigate a series of local policies that may account for this desire. The *Census of Governments* reports effective property tax rates by jurisdiction.[17] Effective rates adjust the nominal rate for the discrepancy between assessed and market values. To the best of my knowledge, proxy measures for the quality of public goods provision – for example, test scores for education quality – do not exist during this period. In their stead, I use the admittedly problematic measure of expenditures by category.[18] Higher spending cannot be interpreted as an indication of a higher quality or quantity of provision. Costs may vary with, say, the rate of unionization or the degree of patronage and corruption. The production function may also differ

[17] In some metropolitan areas, rates are only collected for central cities and the "balance of county," collapsing any potential variation between towns in the suburban ring.
[18] A full list of historical expenditure sources are presented in Appendix Table 2.

by place. For example, school districts with ill-prepared students may need to hire more teachers to produce the same quality of education.

To explain the willingness to pay for richer co-residents, a given policy measure must be correlated with median income. In this sample, wealthier towns set lower property tax rates than their cross-border neighbors.[19] A one standard deviation increase in median income is associated with a lower annual property tax bill of $55 for the sample's average home value of $110,000 (in $2000). While rich and poor towns raise the same amount of revenue per resident, expenditure patterns differ by income. Rich towns spend more (locally-raised) revenue on education and less on non-educational purposes.[20] A series of state and federal transfers make up the difference in educational spending for poor towns. Rich and poor towns also spend equally on infrastructure (roads, parks or sewers). But, poor towns spend more per resident on sanitation and public safety. We can reasonably assume that, even with these higher spending levels, poor towns are not safer and cleaner than their rich neighbors. As a result, we cannot interpret the housing price estimates as "willingness to pay for crime reduction" (which, as we will soon see, would be negative!) but rather as a desire not to pay to police or clean someone else's neighborhood.

Table 6 adds each of these local policy measures in turn to the 1970 cross sectional regression of home values on median income.[21] Lower property tax rates in wealthy towns explain half of the willingness to pay for rich co-residents (column 2). Houses on the border are likely to be smaller than the median suburban unit and thus receive a fiscal subsidy from their wealthier co-residents. According to the coefficient estimate, the lower property tax rate associated with a one standard deviation increase in median income leads to a $387 housing

[19] The findings in this paragraph are based on a series of unreported regressions that are available from the author.
[20] A one standard deviation increase in median income is associated with $230 more local revenue spent per student and $130 less spent per resident on other goods and services.
[21] Because some jurisdictions are missing one or another policy measure, I re-estimate the basic regression for different samples in the odd columns.

price premium.[22] Given the $55 per year tax break, one would need to remain in the house for less than five years to break even in net present value terms (assuming a 5 percent interest rate).

Education spending per pupil does not vary by median income, and thus has no effect on willingness to pay for co-residents. I include measures of education spending in the fourth column to demonstrate that homeowners are willing to pay for instructional expenditure.[23] Column 6 adds the two expenditure categories that do vary with income: sanitation and police.[24] Homeowners appear to dislike spending on police, but this conclusion cannot be generalized beyond border area neighbors who presumably share a similar local victimization rate but pay very different amounts for police services. The higher spending on public safety and sanitation in poor towns explains around one third of the premium for rich co-residents. The last column includes measures of both property taxes and expenditure, which together wipe out the willingness to pay for rich co-residents altogether. The coefficient on median income falls by 75 percent from baseline, while the coefficients on the local policy measures, though less precisely estimated, remain unchanged.

VI. Willingness to Pay to Avoid School Desegregation

A large body of scholarship suggests that postwar suburbanization was, in part, a "white flight" from increasingly diverse central cities. Northern cities that received larger flows of black migrants from the rural South after the Second World War experienced more suburbanization (Boustan, 2007). While this pattern could primarily reflect a distaste for local interactions with

[22] A one dollar increase in the property tax rate (per $1000) reduces home values by 0.7 percent. A one standard deviation increase in median income is associated with a $0.503 lower rate. For the sample's average home value of $110,000, this translates into a premium of $387.30 (= $0.503 x 0.007 x $110,000).

[23] Increasing instructional expenditure per pupil by one standard deviation (0.65 in $1000) would lead to a 1.4 percent higher home value. For the average home value, this translates into a $1540 one-time increase in price in exchange for an increase in $650 in per pupil expenditure per year.

[24] A large "other" category, which accounts for around half of total non-educational expenditure, is also negatively correlated with income.

black neighbors, increasing racial diversity also led to changes in the central city's electorate and tax base (Ellen, 1999; Crowder, 2004; Card, Rothstein and Mas, 2007). I show above that homeowners do not respond to a town's black population share above and beyond its correlation with income and poverty rates. However, the implementation of school desegregation plans in the 1970s may change the perceived costs associated with *town-level* racial composition.

In the late 1960s, many southern school districts were already under court order to dismantle systems of *de jure* segregation (Cascio, et al., 2007). The Supreme Court ruled against *de facto* segregation in northern districts in *Keyes v. School District No. 1, Denver* (1973), which concluded that remedial action may be required even if segregation resulted from residential patterns rather than deliberate race-based school assignments.[25]

The resulting spate of desegregation plans might have increased the cost of living in a diverse jurisdiction in the non-southern cities studied here. Desegregation increases the probability that urban children share a classroom with an opposite-race peer. Parents may directly care about the race of their children's peers or indirectly through the correlation between race and student preparedness (Hoxby and Weingarth, 2005). In addition, some desegregation remedies reassign children to schools across town, and there is evidence that parents prefer neighborhood schools (Bogart and Cromwell, 2002).

I collect detailed information on court decisions involving sample jurisdictions, the findings in the case, and the required remedies, if any, from the *State of Public School Integration* website (Logan, 2004). I code any cases that occurred between 1965 and 1980. The presence of a court order is quantified in two ways: a continuous variable enumerating any

[25] The school districts in my sample faced high rates of *de facto* segregation. The mean dissimilarity index at the elementary school level is 0.51 in 1970. Because high schools are larger and thus serve a broader set of neighborhoods, dissimilarity at the high school level is lower (0.31). These values are calculated from the Office for Civil Rights' school-level files, which were generously provided by Sarah Reber.

remedial steps, without regard to their intensity and a dummy variable indicating the presence of student reassignment or busing in the court order. 34 borders in the panel 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, ten of these experienced court supervision on both sides.

The desegregation measures are not time varying. I interact the desegregation variables with decade fixed effects and estimate:

$$\ln(\text{price}_{ijbt}) = \Gamma_1[\text{Deseg}_j \cdot \text{Y}_t] + \gamma(\%\ \text{black})_{jt} + \Phi'(\text{block})_{it} + \Psi'(\text{Z}_b \cdot \text{Y}_t) + \varepsilon_{ibjt} \qquad (3)$$

Seven of the cases under consideration occurred between 1965-1970 and 14 occurred between 1970 and 1980. Thus, we can think of the1960 desegregation interaction as a "placebo" experiment examining the relationship between housing prices and desegregation plans that *would be implemented* in the future. A negative coefficient implies that desegregation plans were implemented in cities whose housing values were already lower than their suburban neighbors. The difference between the 1960 and 1980 interactions indicates the price response to desegregation. The 1970 interaction is an intermediate case.

Table 7 contains estimates of the desegregation equation. The first panel controls for the black population share of the jurisdiction. The second panel adds additional controls for median income and poverty. In 1980, the presence of a court-ordered desegregation plan was associated with lower housing prices. The average order required 2.3 remedial steps. For each step, housing prices fell by 1.6 percent. Student busing was the most active form of court intervention; this step led to an 8.4 percent decline in housing values.[26] The placebo regressions indicate that housing units in cities that initiated busing programs in the 1970s were already worth 2 percent less than

[26] Bogart and Cromwell's (2002) estimate a 9.9 percent decline in housing values following a student re-assignment and the loss of neighborhood schools in Shaker Heights, OH.

their suburban neighbors in 1960; however, this gap grew four-fold after the implementation of a desegregation plan. Adding income controls reduces the effect of busing on housing values to a 4.7 percent decline, which remains statistically significant.

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. This paper demonstrates that the changing racial and socio-economic composition of the urban population was an independent cause of suburbanization. The median homeowner was willing to pay 3.5 percent more for an otherwise equal unit located in a suburb whose median income was one standard deviation higher than the neighboring city. By moving to the suburbs, households paid for the fiscal subsidy they received through the property tax system from their better-off co-residents. Suburban residents also avoided the responsibility for addressing urban problems through local expenditures on public safety. The implementation of school desegregation plans in the 1970s provided another reason to leave racially diverse central cities. Homeowners were willing to pay an additional 4.7 percent more for a housing unit to avoid desegregation plans that included student reassignment and busing.

If a larger income gap itself generates suburbanization, cities can enter a vicious cycle of population loss and urban decline. A suburbanization multiplier of this nature could help to explain the sharp declines in city fortunes at mid-century. Cities were bleeding both population and tax base in the 1960s, leading in some cases to acute fiscal crisis. Federal and state governments stepped in to aid ailing cities – most notably to prevent New York City from defaulting in 1974.[27] More speculatively, we might expect that this multiplier could work in the opposite direction as well. It remains to be seen whether rising incomes in some downtown areas, spurred by educated young workers and wealthy empty-nesters, could form the basis of an urban revival.

[27] This system of intergovernmental transfers has persisted until the present, with the share of city revenue deriving from federal spending increasing from XX percent in 1960 to XX percent in 2000.

Works Cited

Alonso, William. *Location and Land Use*. Cambridge: Harvard University Press, 1964.

Alesina, Alberto, Resa Baqir and William Easterly. "Public Goods and Ethnic Divisions," *Quarterly Journal of Economics*, 114(4), p. 1243-1284.

Baum-Snow, Nathaniel. "The Effects of Changes in the Transportation Infrastructure on Suburbanization: Evidence from the Construction of the Interstate Highway System." *Quarterly Journal of Economics*, Forthcoming, 2007.

Baumol, William. "The Macroeconomics of Unbalanced Growth: The Anatomy of Urban Crisis." *American Economic Review*, 57(3), June 1967, p. 415-426.

Bayer, Patrick, Hanming Fang, and Robert McMillan. "Separate When Equal? Racial Inequality and Residential Segregation." NBER Working Paper No. 11507, August 2005.

Benabou, Roland. "Equity and Efficiency in Human Capital Investments: The Local Connection." *Review of Economic Studies*, 63(2), April 1996, p. 237-264.

Black, Sandra. "Do Better Schools Matter? Parental Valuation of Elementary Education." *Quarterly Journal of Economics*. 114(2), 1999, p. 577-599.

Bogart, William T. and Brian A. Cromwell, "How Much is a Neighborhood School Worth?" *Journal of Urban Economics*, 47, 2000, p. 280-305.

Boustan, Leah Platt. "Was Postwar Suburbanization 'White Flight"? Evidence from the Black Migration." Manuscript. April, 2006.

Bradford, David F. and Harry H. Kelejian. "An Econometric Model of the Flight to the Suburbs." *Journal of Political Economy*. 81(3), 1973, p. 566-589.

Buchanan, James and Charles Goetz. "Efficiency Limits of Fiscal Mobility: An Assessment of the Tiebout Model." *Journal of Public Economics*, 1(.), 1972, p. 25-44.

Card, David, Alexandre Mas, and Jesse Rothstein. "Tipping and the Dynamics of Segregation." NBER Working Paper 13052, April 2007.

Chay, Kenneth and Michael Greenstone. "Does Air Quality Matter? Evidence from the Housing Market." *Journal of Political Economy*, 113(2), April 2005.

Collins, William J. and Robert A. Margo. "The Economic Aftermath of the 1960s Riots: Evidence from Property Values." *Journal of Economic History*. Forthcoming, 2007.

Clotfelter, Chares T. "The Effect of School Desegregation on Housing Prices," *Review of Economics and Statistics*, 57(4), 1975, p. 446-451.

Cutler, David, Douglas Elmendorf, and Richard Zeckhauser. "Demographic Characteristics and the Public Bundle." *Public Finance*, 48, 1993, p. 178–198.

Cutler, David, Edward L. Glaeser and Jacob Vigdor. "The Rise and Decline of the American Ghetto." *Journal of Political Economy*. 107(3), 1999, p. 455-506.

Davis, Lucas. "The Effect of Health Risk on Housing Values: Evidence from a Cancer Cluster," *American Economic Review,* 2004, 94(5), 1693-1704.

Ellickson, Bryan. "Jurisdictional Fragmentation and Residential Choice." *American Economic Review, Papers and Proceedings,* 61, 1971, p. 334-339.

Epple, Dennis and Thomas Romer. "Mobility and Redistribution." *Journal of Political Economy*, 99(4), August 1991, p. 828-858.

Fernandez, Raquel and Richard Rogerson. "Income Distribution, Communities, and the Quality of Public Education." *Quarterly Journal of Economics*, 111(1), 135-64.

Figlio, David and Maurice Lucas. "What's in a Grade? School Report Cards and the Housing Market." *American Economic Review*, 94(3), p. 591-604.

Frey, William H. "Central City White Flight: Racial and Nonracial Causes." *American Sociological Review*. 44(3), 1979, p. 425-448.

Glaeser, Edward L. Matthew E. Kahn, and Jordan Rappaport. "Why Do the Poor Live in Cities?" NBER Working Paper No. 7636, April, 2000.

Hamilton, Bruce W. "Capitalization of Intrajurisdictional Differences in Local Tax Prices." *American Economic Review*, 66(5), 1976, p. 743-753.

Heim, Carol. "Structural Changes: Regional and Urban." In *Cambridge Economic History of the United States* edited by S. Engerman and R. Gallman, 93-190. Cambridge: Cambridge University Press, 2000.

Hoxby, Caroline and Gretchen Weingarth. "Taking Race Out of the Equation: School Reassignment and the Structure of Peer Effects," Manuscript, 2005.

Jackson, Kenneth T. *Crabgrass Frontier: The Suburbanization of the United States*. New York: Oxford University Press, 1985.

Kain, John F. and John M. Quigley. "Housing Market Discrimination, Home Ownership, and Savings Behavior." *American Economic Review*, 62, 1972, p. 263-277.

Kain, John F. and John M. Quigley. *Housing Markets and Racial Discrimination: A Microeconomic Analysis.* New York: National Bureau of Economic Research, 1975.

Kane, Thomas J. Douglas O. Staiger and Gavin Samms. "School Accountability Ratings and Housing Values." In William Gale and Janet Rothenberg Pack (eds.) *Brookings-Wharton Papers on Urban Affairs*, 2003 pp. 83-138.

Keating, Ann Durkin. *Building Chicago: Suburban Developers and the Creation of a Divided Metropolis.* Columbus: Ohio State University Press, 1988.

Logan, John. “Desegregation Court Cases and School Demographic Data.” *The State of Public School Integration*. American Communities Project, Brown University, 2004. August 1, 2007. <http://www.s4.brown.edu/schoolsegregation/desegregationdata.htm>

Lutz, Byron. “Post Brown v. the Board of Education: The Effects of the End of Court-Ordered Desegregation.” Finances and Economics Discussion Series, Federal Reserve Board, 2005-64.

Margo, Robert A. “Explaining the Postwar Suburbanization of Population in the United States: The Role of Income.” *Journal of Urban Economics*, 31, 1992, p. 301-310.

Meyer, Stephen Grant. *As Long As They Don’t Move Next Door: Segregation and Racial Conflict in American Neighborhoods*. New York: Rowman and Littlefield, Inc, 2000.

Mills, Edwin and Bruce Hamilton, *Urban Economics*, New York: Prentice Hall, 1995.

Muth, Richard. *Cities and Housing*. Chicago: University of Chicago Press, 1968.

Reber, Sarah. “Court-Ordered Desegregation: Successes and Failures in Integration Since *Brown v. Board of Education*.” *Journal of Human Resources*, 40(3), 2005, p. 559-590.

Rosen, Sherwin. “Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition.” *Journal of Political Economy,* 82, 1974, p. 34-55.

Ruggles, Steven and Matthew Sobek et al. *Integrated Public Use Microdata Series: Version 3.0* Minneapolis: Historical Census Projects, University of Minnesota, 2003. http://www.ipums.org.

Sonenshein, Raphael J. *Politics in Black and White: Race and Power in Los Angeles*. Princeton University Press, 1993.

Sugrue, Thomas A. *The Origins of the Urban Crisis: Race and Inequality in Postwar Detroit.* Princeton: Princeton University Press, 1996.

Tiebout, Charles M. “A Pure Theory of Local Expenditures.” *Journal of Political Economy*. 64(5), 1956, p. 416-424.

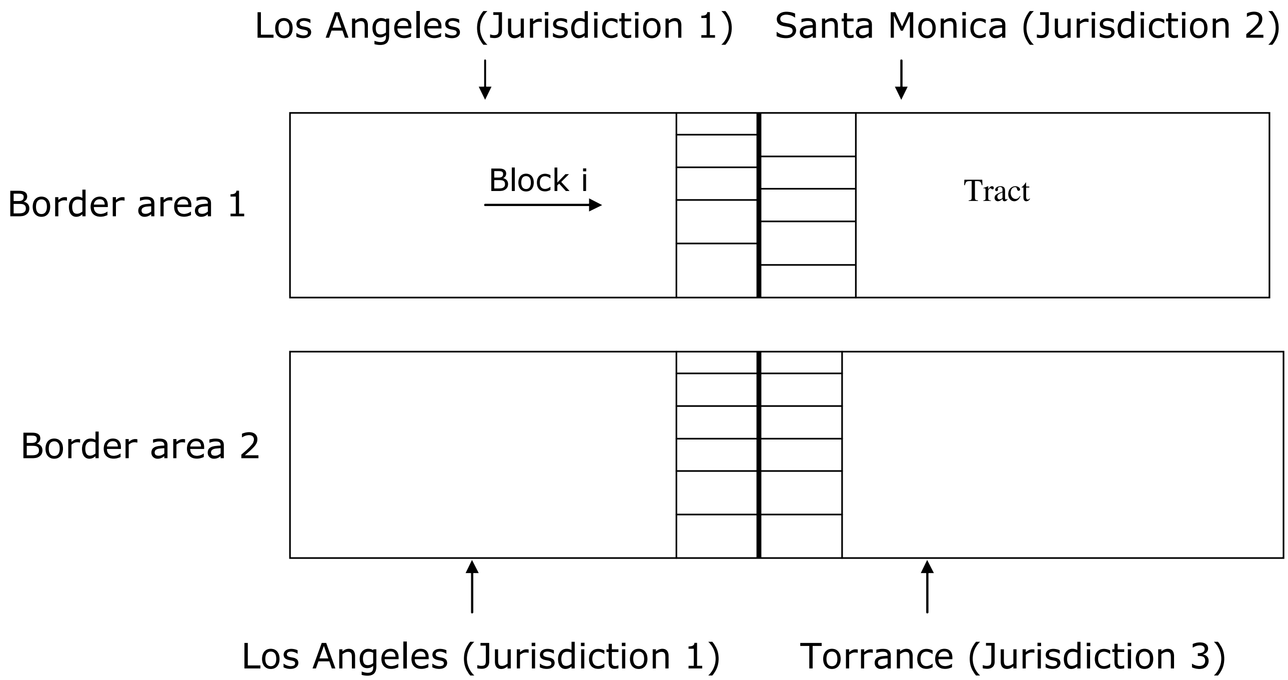
U.S. Bureau of Census. *18th and 19th Census of Housing: 1960, 1970.* Various cities by census tracts and blocks, Washington: Government Printing Office.

U.S. Bureau of Census. *Census of Governments, 1967, 1972.* Washington: Government Printing Office.

U.S. Bureau of the Census. *County and City Data Book, Consolidated File: City/County Data, 1947-1977* [computer file], ICPSR Study 7735-7736. Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 2000.

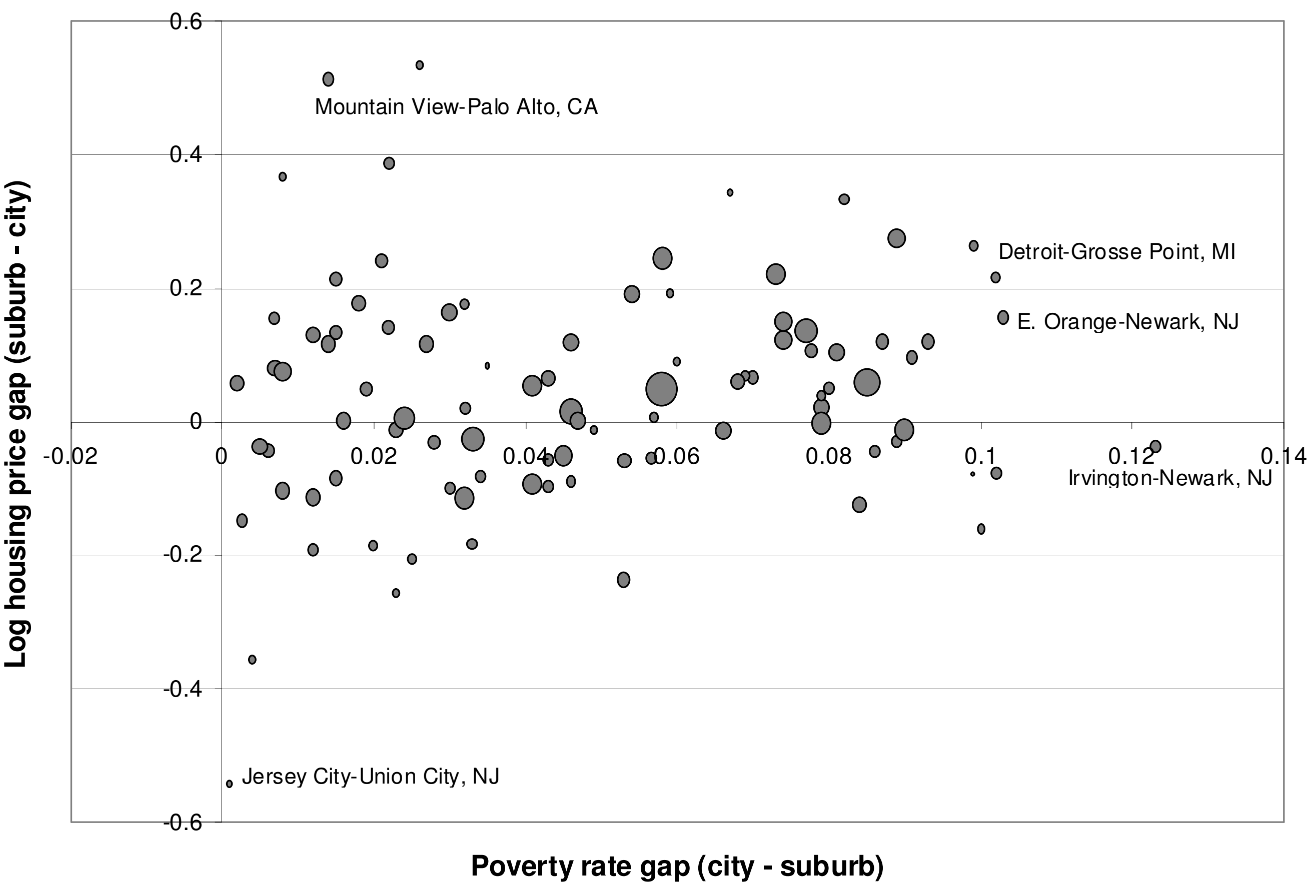
U.S. Department of Education. *Elementary and Secondary General Information System (ELSEGIS): Public Elementary-Secondary School Systems—Finances, various years* [computer file]. Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 2003.

Figure 1: Schematic diagram of geographic terms



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

Figure 2: The suburban housing premium and the poverty rate gap, 1970



Notes: Each bubble represents one of the 108 jurisdiction borders in the full sample weighted by the number of blocks with five or more owner-occupied units. Denver-Lakewood, CO contributes the most blocks to the analysis (464) and Cleveland-Cleveland Heights the fewest (3).

Table 1: Jurisdiction borders with available block-level data by metropolitan area, 1960-80

Region	Metropolitan area	Number of borders Panel sample	 Full sample	 Excluded
Northeast	Allentown-Bethlehem, PA		2	
	Boston, MA	2	1	4
	Hartford, CT		2	2
	New York, NY-NJ†	10		3
	Pittsburgh, PA	3		
	Providence, RI	3	1	
	Scranton, PA		1	
	Springfield-Chicopee, MA		2	1
Midwest	Akron, OH		4	2
	Canton, OH		3	
	Chicago, IL†	6	2	6
	Cleveland, OH	2		
	Dayton, OH	1		
	Des Moines, IA		1	
	Detroit, MI	1	5	
	Grand Rapids, MI		1	
	Indianapolis, IN		1	3
	Kansas City, KS-MO	2	2	3
	Madison, WI		1	
	Minneapolis/St. Paul, MN	1	1	3
	Moline-Davenport, IL-IA	1	1	
	South Bend, IN		2	
	St. Louis, MO	1	**4**	4
West	Denver, CO	1	3	
	Las Vegas, NV		1	
	Los Angeles, CA†	17	5	7
	Oxnard-Thous. Oaks, CA		1	1
	Phoenix, AZ		1	1
	Portland, OR		1	1
	San Bernardino-Riverside, CA		1	3
	San Francisco, CA†	2	1	
	San Jose, CA	4		
	TOTAL:	**57**	**51**	**44**

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).

Table 2: Testing housing quality and neighborhood demographics across jurisdiction borders at the Census tract and block level, 1970

Effect of a one standard deviation increase in the jurisdiction-level poverty rate gap

	Mean/SD	Tract	Block
Share single family	0.592	-0.025	0.004
	(0.284)	(0.007)	(0.007)
Share owner occupied	0.591	-0.024	-0.000
	(0.236)	(0.006)	(0.009)
Residents/unit	3.080	0.027	0.011
	(0.840)	(0.015)	(0.015)
Rooms/unit	5.047	-0.101	-0.047
	(0.784)	(0.025)	(0.016)
Share >=3 bedrooms	0.444	-0.017	---
	(0.215)	(0.006)	
Share built after 1960	0.205	-0.011	---
	(0.203)	(0.005)	
Share black	0.108	0.027	0.003
	(0.249)	(0.010)	(0.003)

Notes:
Column 1 lists a series of housing quality and neighborhood demographic measures.
Column 2 contains the mean and standard deviation of each variable for the 607 tracts in the border area sample.
Each cell in columns 3 and 4 contains coefficients from a regression of housing quality measures on jurisdiction-level poverty rates and a vector of border area dummy variables. Regressions are conducted at the tract and block level, respectively. Standard errors are clustered by jurisdiction. Both coefficients and standard errors are normalized to reflect the response to a one standard deviation increase in the city-suburban poverty rate gap.
All tract regressions contain 607 observations along 108 border areas. The block level are restricted to blocks with at least five owner-occupied units (the sample underlying the value regressions in Table 3) and contain X observations.
Number of bedrooms and age of unit are not available at the block level.

Table 3: Willingness to pay for wealthier co-residents at the jurisdiction level
Pooled cross section for 1960-80

Effect of a one standard deviation increase in jurisdiction-level measure

	Value of owner occupied units					Rent
	(1)	(2)	(3)	(4)	(5)	
Panel A						
ln(median income)	0.054	0.053	0.032		0.036	0.033
	(0.009)	(0.009)	(0.007)		(0.009)	(0.008)
ln(med. income), 1960				0.027		
				(0.014)		
ln(med. income), 1970				0.025		
				(0.005)		
ln(med. income), 1980				0.039		
				(0.009)		
Share black on block	N	Y	Y	Y	Y	Y
Housing controls	N	N	Y	Y	Y	Y
Share black in town	N	N	N	N	Y	N
Panel B						
Share poverty	-0.031	-0.028	-0.022		-0.025	-0.010
	(0.008)	(0.008)	(0.006)		(0.009)	(0.006)
Share poverty, 1970				-0.016		
				(0.005)		
Share poverty, 1980				-0.026		
				(0.008)		
Share black on block	N	Y	Y	Y	Y	Y
Housing controls	N	N	Y	Y	Y	Y
Share black in town	N	N	N	N	Y	N

Notes:
Each column represents a separate regression, the dependent variable of which is the logarithm of either housing values or rents. Regressions include border area dummy variables interacted with calendar year. Standard errors are clustered by jurisdiction. Reported coefficients and standard errors are normalized to reflect the response to a one standard deviation increase in the city-suburban income or poverty rate gap.
In all regressions, the sample is restricted to blocks adjacent to the jurisdiction border. The value regressions contain blocks with at least five owner occupied units (N = 6068 in panel A and 4378 in panel B). The rent regressions contain blocks with at least five rental units (N= 4033 and 2946).
The 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: Robustness: Housing values and jurisdiction level median income, 1970

Dependent variable = ln(housing values)

	Ln(median income)
1. Baseline	0.019
N = 2573	(0.004)
2. Weight by inverse of # blocks	0.017
	(0.005)
3. Weight by # houses	0.026
	(0.005)
4. Non-transition borders	0.018
N = 2045	(0.005)
5. Blocks with no black residents	0.020
N = 2045	(0.005)
6. Blocks with at least one black resident	0.013
N = 528	(0.010)
7. Without Los Angeles	0.020
N = 1878	(0.005)
8. Without Greater New York area	0.017
N = 2360	(0.005)

Notes: Standard errors are clustered by border area and reported in parentheses. Regressions only include blocks adjacent to the jurisdiction border. Sample sizes associated with the various restrictions in rows 4-8 are reported. Specification details are described in the notes to Table 3.

Table 5: The effect of changes in city-suburban income gaps on changes in the suburban price premium, 1960-80

Dependent variable = ln(housing values)

	ln(median income)	Share poverty
Panel sample	0.060	-0.028
N = 4441	(0.024)	(0.015)
Full sample	0.055	-0.031
N = 6063	(0.022)	(0.014)

Notes: Standard errors are reported in parentheses and clustered by border area. 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. Regressions include the set of block-level controls that are available in all three decades: share of block residents who are black, density on the block, the average number of rooms in owner-occupied units, and the share of units that are owner occupied.

Table 6: Can variation in property tax rates and public expenditure explain the demand for rich co-residents, 1970? **(UNDER REVISION)**

Dependent variable = ln(housing values)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Ln(med income)	0.095	0.055	0.104	0.096	0.109	0.069	0.024
	(0.035)	(0.043)	(0.027)	(0.029)	(0.022)	(0.032)	(0.061)
(per $1000)							
Property tax rate, median		-0.007					-0.007
		(0.003)					(0.004)
(in $1000)							
$ per pupil, instruction				0.023			
				(0.013)			
$ per pupil, administration				-0.222			
				(0.113)			
$ on police, per resident						-0.269	-0.243
						(0.141)	(0.193)
$ sanitation, per resident						0.214	0.240
						(0.230)	(0.292)
N (blocks)	1175	1175	1679	1679	1858	1858	1175
N (borders)	49	49	73	73	80	80	49

Notes: Standard errors are reported in parentheses and clustered by jurisdiction. The sample is restricted to blocks adjacent to the jurisdictional border. All regressions include the full set of block-level controls, which are listed in the notes to Table 3. Notes on and sources for the public goods measures are in Appendix Table 2. The following borders are missing information on public expenditure (rows 6-7): Oxnard-Port Huerte, CA; Pittsburgh-Swissvale, PA. The following additional borders are missing information on educational expenditure: Canton-North Canton, OH; Grand Rapids-East Grand Rapids and Grand Rapids-Walker, MI; Kearney-North Arlington, NJ; Pittsburgh-McKeesrock, Pittsburgh-Stowe and Pittsburgh-Wilkinsburg, PA; and Scranton-Dunmore, PA.

Table 7: Does court-ordered desegregation create an aversion to jurisdiction-level racial diversity?

	Desegregation measure	
	Number of steps in court-order	=1 if includes busing
Panel A: Control for % black		
1960	-0.000	-0.020
	(0.005)	(0.017)
1970	-0.005	-0.016
	(0.003)	(0.019)
1980	-0.016	-0.084
	(0.004)	(0.025)
Panel B: Additional controls for median income and poverty		
1960	0.008	-0.007
	(0.005)	(0.017)
1970	0.001	-0.007
	(0.003)	(0.016)
1980	-0.006	-0.047
	(0.004)	(0.022)

Notes: Standard errors are reported in parentheses and clustered by border area. The sample is restricted to blocks in the panel sample that are adjacent to the jurisdictional border (N =4357). The desegregation variables are based on court-orders that were handed down between 1965-1980. Coding is based on the *State of Public School Integration* website at Brown University. Regressions include the four block-level controls that are available in all decades; see the notes to Table 5.

Appendix Table 1: Summary Statistics of Jurisdiction- and Block-level Variables in the Panel Sample, 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)
Property tax rate, median single family, per $1000	11.676 (3.774)	1.106 (1.347)	
In $1,000 ($2000):			
Instruction $ per pupil	3.001 (0.652)	0.512 (0.473)	
Administration $ per pupil	0.133 (0.055)	0.044 (0.046)	
Non-educ $ per capita	0.511 (0.297)	0.269 (0.298)	
$ on sanitation, per capita	0.033 (0.019)	0.017 (0.016)	
$ on police, per capita	0.097 (0.041)	0.047 (0.035)	

(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 “unsound”	0.142	---	---
	(0.272)		
Share lacking plumbing	---	0.015	0.011
		(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] - on roads, parks, sanitation, sewers, police fire, other	*Census of Governments*, 1967
Educational expenditure, per pupil[1] - instructional - administrative	*Elementary and Secondary General Information System* (ELSEGIS), 1968-69
Effective property tax rates: [2] - nominal rate - assessment-to-market ratio	*Census of Governments, 1972*

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 only. In some states, counties provide some public services. Most jurisdiction pairs in the sample fall within the same county, and thus county spending will not produce cross-border variation.
2: 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."