

Local Land Use Regulation and the Chain of Exclusion

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The study reported in this article tested connections between five land use controls and the racial composition of the communities that use them. A survey of localities in the 25 largest U.S. metropolitan areas showed that low-density-only zoning, which restricts residential densities to fewer than eight dwelling units per acre, consistently reduced rental housing; this, in turn, limited the number of Black and Hispanic residents. Building permit caps were also associated with lowered proportions of Hispanic residents. Other controls tested—urban growth boundaries, adequate public facilities ordinances, and moratoria—had limited effects on either housing types or racial distribution.

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Journal of the American Planning Association, Vol. 66, No. 2, Spring 2000. © American Planning Association, Chicago, IL.

American metropolitan areas are indisputably segregated by race (Farley & Frey, 1994). For decades, racial segregation has characterized city blocks (Farley, 1993), neighborhoods (Massey and Denton, 1993), and even entire jurisdictions (Keating, 1994). Such jurisdiction-level segregation, referred to in this article as *exclusion*, persists despite substantial movement of African Americans to the suburbs since 1970 (Schneider & Phelan, 1993). Some observers (Galster, 1991) contend that racial segregation has grown even worse in many metropolitan areas as White non-Hispanics have moved to ever more distant suburban locations.

Many forces interact to produce racial segregation in neighborhoods, including household preferences and discrimination or institutionalized racism within the private and public sectors (Clark, 1986; Galster, 1988). This article concerns land use controls, the most prominent example of how local institutions may have exclusionary effects. Zoning, for example, was invented in part to keep minorities away from non-Hispanic Whites (Weiss, 1987). Even after racial zoning was found to be unconstitutional by the U.S. Supreme Court, large-lot zoning and other land use controls with the potential to exclude racial minorities remained available to municipalities throughout the United States, often as a very thin cover for racial bias (Danielson, 1976). Not until the 1970s did state legislatures and courts in Massachusetts, New Jersey, and California begin to restrain these exclusionary practices (Anglin, 1994; Calavita & Grimes, 1998; Stockman, 1992). In the same decade, the first of more than a dozen state legislatures began to enact new measures to coordinate and require local planning for growth management (Bollens, 1992). Growth management, recently rechristened “Growing Smart” by a coalition of governmental and nongovernmental organizations, seeks primarily to contain scattered, low-density development (“sprawl”) and to create more certainty in local development approval processes (American Planning Association, 1998). The racial consequences of these evolving state land use policies remain uncertain, however. Under certain circumstances, growth management can make development more “compact,” but this higher density will not always benefit low-income or

minority residents. It may instead promote gentrification. Under other circumstances, growth management may not induce compact development at all, because land use controls do not always work as intended or advertised (Landis, 1992).

The new enthusiasm for “smart growth” thus revives old questions about land use controls and racial segregation. How are they connected? Do Blacks and Hispanics respond differently to different land use controls and to different housing supply conditions? The study reported here used data from over 1,000 jurisdictions in the 25 largest U.S. metropolitan areas to conclude that exclusive low-density zoning reduces rental housing in the municipalities and counties that use it. The resulting shortage of rental housing, in turn, limits the number of Black and Hispanic residents who can move into these municipalities and counties. Building permit caps are also associated with lowered proportions of Hispanic residents. Other land use controls have either very limited or no average effects on either housing types or racial distributions.

Exclusionary Land Use Controls in Context

No single factor can explain exclusion; individual preferences, household choices, and moving decisions play an important role in racial segregation (Clark, 1986). White non-Hispanics have historically had low tolerance for African American neighbors, while African Americans tend to prefer racially mixed neighborhoods (Farley et al., 1997). This gap between Whites’ tolerances and Blacks’ preferences can segregate neighborhoods even in the absence of discriminatory actions or policies by the private sector or government (Schelling, 1971). Real estate agents have exacerbated these underlying preference-related tendencies toward segregation by steering people to neighborhoods where others of their race dominate. Banks and insurance companies have discriminated against minorities seeking mortgages and insurance and erected obstacles to housing transactions in minority neighborhoods. Landlords also discriminate against racial minorities (Massey & Denton, 1993). Congress has responded with such measures as the Fair Housing Act and the Home Mortgage Disclosure Act to exact penalties for discrimination (Kushner, 1995). Even so, private-sector discrimination continues (Cloud & Galster, 1993).

Municipal governments have also fostered racial discrimination and exclusion. Many jurisdictions adopted and implemented racial zoning even after the U.S. Supreme Court ruled it unconstitutional in 1917 (*Buchanan v. Warley*; cited in Kushner, 1995). A large body of evi-

dence from legal cases shows that jurisdictions still use land use controls both to segregate—that is, to ensure that low-income and minority residents may live only in certain neighborhoods—and to exclude low-income and minority households entirely from the municipality (see, for example, Kirp et al., 1995; Keating, 1997).

The courts have not consistently told planners and local decision makers that land use controls with racially exclusionary effects are impermissible. Federal Constitutional case law suggests that even if a land use control system has racially exclusionary effects, it will survive challenges unless plaintiffs can prove that the local government in question explicitly intended to exclude suspect classes when it adopted the regulations (*Arlington Heights v. Metropolitan Housing Development Corp.*, 1977). Title VIII of the 1968 Fair Housing Act, however, provides a statutory basis for challenges to land use controls with exclusionary effects, regardless of any findings of intent (Kushner, 1995). In *U.S. v. City of Black Jack* (1978), for example, the Eighth Circuit Court invalidated a suburban incorporation because its proposed zoning ordinance would have eliminated apartments, thereby excluding many African Americans. The Seventh Circuit Court, on the other hand, included intent among its criteria for finding a violation of Title VIII in the *Arlington Heights* (1977) case. The Supreme Court has yet to decide which of these interpretations of Title VIII should be the law of the land.

State-level challenges to exclusionary zoning have been more successful, but these cases have concentrated on exclusion of lower-income households, not racial minorities. Case law in Pennsylvania (*Fernley v. Board of Supervisors*, 1985), New Jersey (*Southern Burlington NAACP v. Township of Mount Laurel*, 1975, 1983), and New Hampshire (*Britton v. Town of Chester*, 1991), for example, has resulted in more receptive local environments for construction of multifamily housing. Whether this environment will also foster racial inclusion is an open question that is partially answered by the research reported here.

Planners’ ethical codes contrast starkly with the lack of clarity from the federal and state courts about racially exclusionary zoning. The American Institute of Certified Planners (AICP) *Code of Ethics and Professional Conduct* and the American Planning Association (APA) *Ethical Principles in Planning* both include the following language regarding planners’ obligations:

A planner must strive to expand choice and opportunity for all persons, recognizing a special responsibility to plan for the needs of disadvantaged groups and persons, and must urge the alteration of policies, institutions, and decisions which oppose such needs. (AICP, 1991 [1978])

This language suggests that planners have a responsibility to dismantle land use controls that exclude on the basis of class or income, not to mention those that have exclusionary effects on racial or ethnic minorities. However, no systematic national study has yet statistically linked land use controls to racial exclusion. As a result, planners do not necessarily know what to expect from any particular land use control. Can planners use permit caps, very-low-density zoning, or urban growth boundaries, for example, and still expect to “expand choice and opportunity for all persons”? How, indeed, might land use controls lead to exclusion? This chain of events requires specification and systematic testing.

Housing Markets and Inclusion: Hypotheses

Four important housing market conditions promote inclusion of African Americans and Hispanics: new housing supply, multifamily housing supply, rental housing supply, and affordable rental housing. New neighborhoods, especially neighborhoods of new, moderately priced houses, will presumably be more racially mixed than established ones, because younger Whites tend both to move more often and to have higher tolerance for minorities generally (Schuman et al., 1985) and for minority neighbors (Farley et al., 1997).

A healthy supply of multifamily housing is particularly important to minority residents because it tends to be rented, and when owner-occupied it tends to cost less than detached houses. Rental housing allows more Black and Hispanic households to move into communities for two reasons. First, fewer than 45% of Blacks and Hispanics nationally own their dwellings, compared to nearly 70% of White non-Hispanics (U.S. Census Bureau, 1998a). Without built-up equity or good credit ratings, Blacks and Hispanics face high financial burdens when they try to buy houses; consequently, places with less rental housing will attract fewer Blacks and Hispanics. Second, Black and Hispanic households have lower incomes than non-Hispanic White households; the median income for African American or Hispanic households in 1997 was under \$30,000, compared to \$40,577 for White non-Hispanic households (U.S. Census Bureau, 1998b). Lower incomes hinder saving for down payments. Third, Black home buyers may prefer to locate in places with higher proportions of rentals because more Blacks already live there. Survey data indicate that most African Americans prefer integrated neighborhoods but would choose mostly Black over mostly White neighborhoods (Farley et al., 1997). Finally, where rental housing is scarce, some landlords may select White tenants because of racial prejudice. Where rental housing is plentiful,

landlords are less likely to profit from discriminatory behavior, and if one landlord discriminates, other rental options may be available in the same neighborhood.

Their lower incomes also make African Americans and Hispanics more dependent on affordable rental housing than non-Hispanic Whites. Therefore, one would expect to find higher concentrations of Blacks and Hispanics in places with higher proportions of multifamily, rental, and affordable rental units. One would also expect the concentrations of both groups to increase over time in places where these housing types become more common.

There are also hypothetical indirect links among these four important market factors. Most observers agree that an adequate housing supply can stabilize prices and enhance affordability (Dowall, 1984). The relationship between housing supply and the proportion of multifamily and rented dwellings is harder to predict. A constrained supply of housing may encourage owners of rented single-family homes to sell their units to occupants, thereby reducing the proportion of rental housing. On the other hand, constrained supply can also lead owners of single-family houses to convert them to dwellings for more than one household if local zoning and building laws permit such conversions. An adequate supply of attached dwellings can indirectly support inclusion. Attached housing units tend to be rented and to be more affordable when sold. Adequate supplies of rental housing, in turn, should also foster rental housing affordability.

When the housing supply is tight and rentals scarce, a landlord or a real estate agent can turn away African Americans and Hispanics because the landlord or agent may be confident that a White non-Hispanic household will eventually rent or buy the unit. Robust and open housing market conditions can reduce competition among households for dwellings, creating a renter's or buyer's market, and theoretically undercutting discrimination.

Land Use Controls and Housing Markets: Hypotheses

How, then, might municipal land use controls contribute to an exclusionary housing market? This study examined the ways in which five major land use controls and one land use condition (inability to annex) may contribute to exclusion. These controls, shown with their definitions and their effects on housing conditions in Table 1, were selected based on a review of literature on common land use controls in the U.S. (Pendall, 1995) and further specified through interviews with American Planning Association chapter presidents in 1994. Figure 1 summarizes the hypothesized pathway that leads from

TABLE 1. Land use controls and their effect on housing outcomes.

Control	Definition	Direct effect on housing			
		Supply	Multifamily	Rentals	Affordability
Low-density-only zoning	Gross residential density (units/total land area) limited to fewer than eight dwelling units per acre	—	—	—	—
Building permit cap	Annual limit on new residential building permits; in effect at least 2 years	—	—	?	—
Building permit moratorium	Total stoppage of residential building permit issuance in effect at least 2 years	—	—	?	—
Adequate public facilities ordinance (APFO)	“Levels of service” set for more than two urban infrastructure or public service systems	?	?	?	?
Urban growth boundary	Permanent or temporary limits on expansion of the urban edge	?	+	?	?
Boxed-in status	Urban expansion precluded by political boundaries or water bodies	?	+	?	?

+ Hypothesized to have a positive effect
 — Hypothesized to have a negative effect
 ? No hypothesized direction for effect

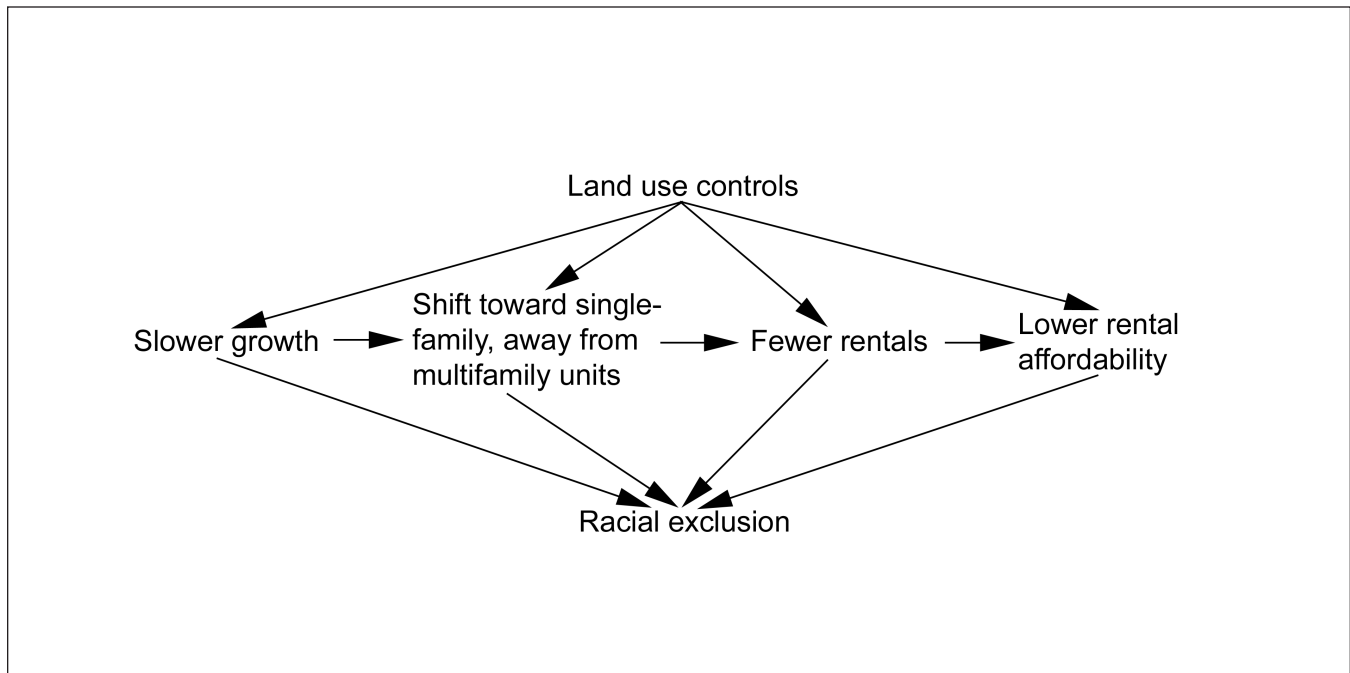


FIGURE 1. The chain of exclusion: hypothesized relationships.

exclusionary land use controls through the housing market to racial exclusion.

Exclusive large-lot zoning, or low-density-only zoning, often precludes any residential development throughout a jurisdiction except as detached, single-family houses.¹ Low-density-only zoning can restrict the housing supply in a community by reducing construction even in areas well suited to development. Low-density-only zoning may even reduce rental affordability because rentals may be in greater demand. Communities composed entirely of single-family homes may have better services and less traffic than mixed-density communities. Thus low-density-only zoning can impose constraints on supply, attached dwellings, rental dwellings, and housing affordability, all four of the conditions that hypothetically promote racial inclusion.

Building permit caps and *building permit moratoria* both reduce the annual supply of housing units. Permit caps allow some construction and tend to be adopted for long periods of time; moratoria (as defined here) allow no construction, but are usually temporary responses to infrastructure shortages. Permit caps and moratoria may also give builders incentives to build a smaller number of larger, more expensive houses (Zorn et al., 1986). Permit caps may reduce the affordability of rental housing because the programs used to implement them often allocate scarce permits to higher-quality housing units (Schwartz et al., 1984). Long-lasting moratoria may disrupt housing production and reorient units built after the moratorium is lifted.

Adequate public facilities ordinances (APFOs) condition approval of development upon availability of public facilities according to locally adopted standards or levels of service (Nelson & Duncan, 1995). There are no clear reasons to expect that APFOs will have consistent effects on housing supply, type, tenure, or affordability. On one hand, APFOs may hinder development because they add costs. On the other, they may facilitate development by making new facilities available (Altshuler & Gómez-Ibáñez, 1993). APFOs can theoretically lead to either lower or higher proportions of detached houses; builders may respond to infrastructure fees by building more densely (Landis, 1995) or by building larger houses that more easily recapture the cost of additional infrastructure (Bay Area Council, 1988).

Urban growth boundaries, *urban limit lines*, or *greenbelts* attempt to contain the extent of urbanization, but may permit or promote higher-density development in urbanized areas (Nelson & Duncan, 1995). A final condition, “*boxed-in*” city, applies to jurisdictions surrounded by other incorporated areas or bodies of water. Boxed-in status differs from the others because local governments “inherit” rather than adopt it, but, like greenbelts, it may

limit urban expansion. Urban growth boundaries and boxed-in status may encourage high-density (multifamily) development by raising land prices (Knaap, 1985). However, the direct effects of growth boundaries and boxed-in status on housing supply, rentals, and rental affordability are more difficult to predict.

Previous Studies Linking Land use Controls and Exclusion

Many of the historic studies and lawsuits discussed earlier have revealed particular cases in which land use controls have had exclusionary outcomes. Some have even provided evidence of intent to use land use controls in a racially discriminatory manner. These cases have not, however, constituted enough evidence to convince judges or planners that certain land use controls almost inevitably exclude racial minorities or that communities using those land use controls should prove that their versions of the controls do not exclude Blacks and Hispanics.

An extensive review of the literature reveals no broad quantitative studies that have tested the entire “chain of exclusion” from land use controls, through housing markets, to discriminatory outcomes. Studies do, however, show that restrictive land use controls are more common in communities with high proportions of wealthy, non-Hispanic Whites than in communities with many minorities (Burnell & Burnell, 1989; Bates & Santerre, 1994). Places where single-family detached dwellings dominate have also been shown to have a larger proportion of White non-Hispanic residents than places with multifamily dwellings (Pogodzinski & Sass, 1994). A study of southern California showed that places with restrictive growth policies have lower proportions of Blacks but found no significant relationship between such controls and the proportion of Hispanics (Donovan & Neiman, 1995). An early national survey that characterized 228 population-growth-managing communities found only one subset of 15 communities with comparatively high proportions of ethnic minority residents (Dowall, 1980).

None of these studies necessarily shows that the land use controls in question led to exclusion; rather, they may simply show that wealthy and White places are more likely to adopt restrictive land use controls. In fact, recent research has raised questions about whether zoning and land use controls “work” at all (Landis, 1992)—that is, whether they produce a different landscape than would be produced in their absence. Sometimes local governments adopt and amend their zoning ordinances in the anticipation that builders would like to satisfy market demand in the very places “permitted” by the

zoning map (Wallace, 1988). Building permit limitations, another much studied “growth control,” may have loopholes that allow business as usual in local housing construction (Warner & Molotch, 1995). If these land use controls do not, in fact, affect the housing market, then they cannot logically be classified as exclusionary.

Testing the Links: New Research on Exclusion by Land Use Controls

In the remainder of this article, I build the case that low-density-only zoning is a potent exclusionary land use control and that building permit caps warrant caution. I find little evidence that other land use controls exacerbate exclusion.

The Model

The following questions were addressed in this study: Do land use controls result in exclusionary housing conditions, and do these conditions lead in turn to racial exclusion? Based on the literature discussed above, I present a formal model for attempting to answer these questions. Let *Y* be the dependent variable, *X* be a set of local-level explanatory variables, *L* be a set of land use control variables, *M* be a set of metropolitan-level explanatory variables, and γ be unobserved characteristics. Let the subscript *t* stand for time, *i* for community, and *a* for metropolitan area. This model takes the form:

$$Y_{i,t} = a + bX_{i,t-1} + c(X_{i,t} - X_{i,t-1}) + dL_{i,t-1} + eM_{a,t-1} + f(M_{a,t} - M_{a,t-1}) + gY_{i,t-1} + h(\gamma_i) + e_{i,t}$$

In the vernacular, and as it applies to this study, the formal model translates as follows. Housing characteristics or racial composition in 1990 is a function of a set of local explanatory variables in 1980; the change between 1980 and 1990 in the value of these variables; a set of land use controls known to be extant in the community between 1980 and 1990; a set of metropolitan characteristics extant in 1980; the change between 1980 and 1990 in the value of these metropolitan characteristics; unobserved fixed local characteristics; and random error.

In practice, I have no way to estimate the unobserved fixed effects (γ_i), which may result in biased estimates of the effects of land use controls and other local characteristics. This might have been resolved with a difference approach that estimated the changes in the dependent variable as a function of changes in community characteristics, metropolitan characteristics, and land use controls. However, my database (described in the next section) does not contain a detailed history of land use control adoption from 1980 to 1990. Thus I cannot rule out the possibility that the changes observed in housing conditions and racial composition result from unob-

served variables. Hence the results reported here must be considered provisional and exploratory.

Data and Analysis

In 1994, I surveyed 1,510 cities, towns, counties, and townships in the largest 25 metropolitan areas in the United States² using the mail-survey method advocated by Dillman (1978). A jurisdiction was included if it had at least 10,000 residents in 1990 and had sole zoning authority³; such jurisdictions had a combined 1990 population of just over 97 million residents, nearly 40% of the U.S. total. In most cases, the survey was mailed to the planning director; for communities without a planning director, the survey was addressed to the municipal executive, engineer, planning board/commission chair, or retained planning consultant. In all, 1,168 jurisdictions (77%) responded, representing 83% of the population of the surveyed communities and 32% of the nation’s residents in 1990. Over three fourths of the respondent jurisdictions had fewer than 50,000 residents in 1990, but the majority of the population lived in jurisdictions with over 100,000 residents. The surveys were short and simple, resulting in a high completion rate for the questions relating to the presence or absence of land use controls.⁴

The surveys asked whether each community employed the land use controls discussed earlier. Over 90% of the respondents had zoning ordinances, but only 15% had low-density-only zoning (see Table 2). Seventeen percent of respondents responded “yes” when asked, “Does your community have an ‘urban limit line’ or other growth boundary, imposed by such policies as decisions to limit extension of urban services or designation of a ‘greenbelt’ of open space around it?” Thirty percent of respondents had APFOs, but an APFO applying to only one subject—schools, transportation, public safety facilities, water and wastewater infrastructure, or parks—may not constitute a strict control. Thus the re-

TABLE 2. Restrictive residential land use controls in place, metropolitan survey, 1994.

Land Use Control	Respondents with control	
	Number	Percent
Low-density-only zoning	171	15.1
Permit cap	43	3.8
Long-lasting moratorium	49	4.3
Adequate public facilities ordinance (APFO)	191	16.6
Urban growth boundary	198	17.3
Boxed-in status	596	52.6

search tests the effects of only those APFOs that apply to more than two of these infrastructure systems (16% of respondents). Only 4% of respondents had used building permit caps for at least 2 years in the 1980s, and 4% had imposed moratoria on residential permits for 2 years or more. Over half of the jurisdictions could not annex (were boxed in).

To analyze links with racial concentration, I extracted data from the 1980 and 1990 Censuses of Population and Housing at the city, township, county, and metropolitan levels.⁵ The data included population by major racial category and Hispanic ethnicity; dwelling units by structure type, occupancy status, tenure, age, and for rental units the number of bedrooms; and the occupational status, educational attainment, and average commute time of the adult population. The affordability of the rental housing stock was calculated consistent with U.S. Department of Housing and Urban Development (HUD) standards: the proportion of local rental units whose monthly gross rent did not exceed 30% of 80% of the monthly median income in the Consolidated Metropolitan Statistical Area (CMSA) or Metropolitan Statistical Area (MSA) in 1989.

The analysis tested the chain of exclusion in three steps. In the first step, I used independent sample t-tests to identify significant differences between the racial composition in 1980 of places with and without each land use control. Here, racial composition is measured compared to a metropolitan average; the local percent Blacks⁶ is divided by the regional percent Blacks, so that places with higher concentrations of Blacks than the regional average have an index over 1. In the second and third steps, I used ordinary least squares (OLS) regression to test the model outlined above. The second step identified the independent association between each land use control and race-related outcomes, and the third in turn showed the effects of land use controls on housing and the effects of housing on racial groups. The regressions considered all the jurisdictions together as well as only jurisdictions that began the decade with relatively low concentrations of Blacks and Hispanics (defined by having fewer than 10% Black or Hispanic residents).

Findings

Did fewer minorities live in controlled communities in 1980? Several land use controls were associated with lower concentrations of minorities in 1980 (see Table 3), a finding consistent with earlier studies. The concentration of Blacks (that is, the index between the local and regional percent Black population) in places with low-density-only zoning (0.20) was less than half that of places allowing higher-density residential development

TABLE 3. Independent samples t-tests, land use controls and race, 1980.

Land Use Control	With control	Without control	Difference
Low-density-only zoning	170	959	
Black index	0.20	0.45	-0.24
Hispanic index	0.45	0.73	-0.28
Building permit cap	43	1,088	
Black index	0.29	0.42	-0.13
Hispanic index	0.82	0.68	n.s.
Long-lasting moratorium	48	1,082	
Black index	0.38	0.42	n.s.
Hispanic index	0.59	0.69	n.s.
APFO, more than 2 subjects	189	958	
Black index	0.45	0.41	n.s.
Hispanic index	0.68	0.69	n.s.
Urban growth boundary	198	939	
Black index	0.35	0.43	-0.08
Hispanic index	0.77	0.66	0.11
Boxed-in cities	594	534	
Black index	0.40	0.43	n.s.
Hispanic index	0.63	0.76	-0.13

Notes:

First line in each group refers to the number of respondents with or without the control.

Indices are equivalent to location quotients. They divide the percent of Blacks or Hispanics in a local area (city, town, or unincorporated county area) into the percent of Blacks or Hispanics in the local area's metropolitan region. For example, if a local area's population were 10% Hispanic and its metropolitan region's population 20% Hispanic, then the local area would have a Hispanic index of 0.50.

Numbers with controls do not equal Table 2 because of missing 1980 data for some communities.

All differences are significant at $p \leq 0.1$ unless labeled as n.s. (not significant).

(0.45); these places also had much lower concentrations of Hispanics (0.45 with and 0.73 without low-density-only zoning). Places with permit caps and urban growth boundaries (UGBs) had lower concentrations of African Americans but not significantly lower concentrations of Hispanics. In fact, places with UGBs had higher concentrations of Hispanics relative to their metropolitan areas than those without UGBs.

Do communities with land use controls lose minorities?

The next step tested for differences in percent Blacks and Hispanics in 1990 after controlling for the proportion of Black and Hispanic residents in 1980. Differences among the 1990 values will therefore equate to net

change in local racial composition during the 1980s. The analysis also held constant metropolitan characteristics of Blacks and Hispanics (percent of total in 1980, percent change 1980–1990); logically, we would expect jurisdictions to add more minority residents if their metropolitan areas had higher concentrations or faster-growing populations of minorities.

Low-density-only zoning, moratoria, urban growth boundaries, and permit caps were all associated with lower proportions of Blacks and Hispanics in 1990 after controlling for Black and Hispanic concentrations in 1980 at the local and metropolitan levels (see Table 4). In other words, minority representation fell in these jurisdictions while suburbs nationally were gaining minority population (Schneider & Phelan, 1993). The Black and Hispanic percentages of the total population fell by 0.8 and 0.5 percentage points respectively in communities with low-density-only zoning in the 1980s. Since the average responding jurisdiction was about 6.5% Black and 7.2% Hispanic in 1990, even such a small effect may be interpreted as an indicator of racial exclusion. This result pertained not only to the entire tested set of 1,168 jurisdictions but also to 986 jurisdictions with fewer than 10% Black residents.⁷

Building permit caps also had exclusionary effects in the 1980s, but only on Hispanics. The Hispanic share of population in communities with permit caps fell by 1.8 percentage points across all jurisdictions and by 0.6 percentage points in the 975 communities with fewer than 10% Hispanic residents. Permit caps are most common where Hispanics are the dominant minority: San Francisco, Los Angeles, and San Diego. Moratoria reduced the share of Blacks (full set only), and UGBs reduced the share of Hispanics in low-Hispanic jurisdictions. As expected, regional minority shares in 1980 and growth in the 1980s were associated with higher local proportions of the same minorities in 1990. (The high R-square statistics in these equations result from the inclusion of the 1980 minority proportion and thus are not especially remarkable.)

Do land use controls influence housing outcomes? Does housing influence racial composition? This third step identified housing outcomes in jurisdictions with and without land use controls and the effect of these housing outcomes on racial composition, while holding constant a series of other important factors. This step was addressed with two questions. First, how did each land use

TABLE 4. Parameter estimates, land use controls and racial change, 1980–1990.

	% Black, 1990		% Hispanic, 1990	
	All	Low-Black	All	Low-Hispanic
Land use controls in place in the 1980s				
Low-density-only zoning	-0.008*	-0.005*	-0.005 [†]	-0.002
Permit cap	-0.001	-0.002	-0.018**	-0.006 [†]
Long-lasting moratorium	-0.011 [†]	-0.005	-0.001	0.002
APFO, >2 subjects	0.004	0.002	0.000	0.002
Urban growth boundary	-0.004	-0.004	-0.004	-0.004*
Boxed-in status	0.001	-0.001	0.001	0.003*
Race, 1980				
% Black non-Hispanic	1.037**	1.197**		
% Hispanic			1.139**	1.512**
Metro area, 1980 and shifts 1980–1990				
Metro % Black non-Hispanic	0.150**	0.094**		
Metro % growth, Black non-Hispanic	0.025**	0.024**		
Metro % Hispanic			0.148**	0.038**
Metro % growth, Hispanic			0.012**	0.007**
Constant				
R ²	-0.010*	-0.006 [†]	-0.002	-0.005**
N	0.8751	0.4906	0.9369	0.8332
	1,168	986	1,168	975

Notes:

Low-Black and low-Hispanic communities had less than 10% Black or Hispanic residents, respectively, in 1980.

APFO: Adequate public facilities ordinance

[†]p<.10, *p<.05, **p<.01

control affect housing growth, the proportion of single-family and multifamily units, the proportion of units rented, and the proportion of affordable rentals, and how did each of these supply conditions affect the others? Second, how did housing and land use controls influence racial outcomes? (The hypotheses corresponding to these questions and a diagram of the expected relationships appear in Table 1 and Figure 1 and their accompanying text.)

Many additional local housing and population characteristics need to be held constant to test for these independent effects; Table 5 summarizes these variables and their hypothesized effects on housing and race-related outcomes. In addition, regional characteristics must be controlled; for example, regional housing growth rates in the 1980s will logically influence local growth rates. Hence each regression included a metropolitan-scale analog in 1990 as a control variable.

The analysis found that low-density-only zoning contributed significantly to four exclusive housing-market outcomes, after holding all these other conditions constant (see Table 6). First, communities with low-density-only zoning grew about 5% more slowly in the 1980s than other communities surveyed.⁸ Second, the share of multifamily housing dropped by 0.6 percentage points in low-density-only communities, while third, their share of single-family housing increased by 1.1 percentage points. That is, a community with low-density-only zoning that had been 20% multifamily in 1980 would have dropped to 19.4% multifamily in 1990, all else being equal. Fourth, the rental share dropped by 0.7 percentage points in the 1980s. Contrary to expectations, however, the small and shrinking stock of rentals in low-density-only communities became more, not less, affordable in the 1980s. I will return to this result after discussing the intermediate effects of housing supply, unit type, and tenure on rental affordability.

Of the 25 remaining housing outcomes tested—five housing outcomes for each of the five land use controls—only two were significant and exclusionary: Moratoria and boxed-in status reduced the 1990 share of affordable rentals by 3.7 and 2.5 percentage points, respectively. Boxed-in status was also associated with two inclusionary outcomes: faster population growth and a falling proportion of single-family housing. APFOs encouraged a shift toward multifamily housing, although this association was slight and only marginally significant. In all, therefore, these data lend support to recent findings that growth controls do not always work (Landis, 1992); in fact, the most effective growth control is low-density-only zoning, which has often been left out of recent growth-control studies.

How did housing supply, unit type, tenure, and affordability affect one another? Housing growth had inclusionary effects on unit type and tenure (see Table 6). It correlated with significant but small shifts from single-family to multifamily units; the average community added 0.01 percentage point to its multifamily housing share for every 1 percentage point increase in housing units and lost 0.2 percentage point of its single-family housing share.⁹ A 1 percentage point increase in housing growth was also associated with a 0.04 percentage point decrease in the share of units rented; even though the proportion of rented dwellings fell, however, the number of rented dwellings in such growing communities would have risen, an inclusive outcome. As expected, shifts toward single-family housing slightly reduced the rental share, and shifts toward multifamily housing slightly increased it. Rental housing supply, in turn, improved rental affordability. For example, if two cities, “Smith” and “Jones,” both had 30% affordable rentals in 1980, but Smith had 10% more rental housing than Jones, then by 1990, 31.7% of Smith’s rental housing stock would be affordable while Jones’ share of affordable rentals would be stuck at 30%. Rental affordability also grew in communities that shifted toward rentals in the 1980s.

Communities with low-density-only zoning therefore became more exclusive in the 1980s in three ways. They grew more slowly; they shifted further from multifamily to single-family units; and they shifted further away from renter occupancy. Since shifts toward multifamily and rental housing were also associated with shifts toward rental affordability, low-density-only zoning indirectly contributed to lower rental affordability, although its direct effect on rental affordability seemed positive when all other housing factors were held constant.

How do housing outcomes influence racial composition? This next set of regressions suggests that Blacks and Hispanics respond differently to exclusionary housing outcomes (see Table 7). Rental housing made a significant but small difference in local shares of Black residents. For example, in 1980 Smith and Jones cities were (hypothetically) both 7% Black, and 10% of Smith’s and 60% of Jones’s dwellings were rented. During the 1980s, Smith’s rental share remained at 10% while that of Jones grew to 72%. By 1990, Jones’s Black share would have grown by about 1.2 percentage points because it began with 50% more rental housing, and by another 0.3 percentage points because of the shift toward even more rentals.

The share of Hispanics grew in the 1980s primarily in response to housing vacancies and affordability. For example, if Smith and Jones cities both had 25% Hispanic residents in 1980, but Smith had a 12% housing

TABLE 5. Hypothesized effects of control variables on housing and race-related outcomes.

	Housing growth	Percent multi-family	Percent rental units	Percent rentals affordable	Percent Black or Hispanic	Rationale
Housing stock, 1980						
# housing units	–	+	+	?	+	Larger jurisdictions grow more slowly than small ones, accommodate more high-density housing, minorities.
% units rented				+	+	Higher proportions of rentals lead to affordability, higher proportions of minorities.
% of rentals affordable					+	Jurisdictions with high rental affordability will attract more minority residents.
>75% on septic systems	?	–	–	?		High reliance on septic systems reduces multifamily and rental housing opportunities.
Vacancy rate	?	?	?	+	+	High vacancy rates may either dampen new production or signify large amounts of recent construction; should increase affordability, create opportunities for minorities.
% rentals built before 1960				+		Old rentals should be less expensive, according to filtering theory (Weicher & Thibodeau, 1988).
% rentals in structures of >5 units				–		Larger complexes should become less affordable over time because their managers tend to be professionals who know when they can raise rents (Appelbaum & Gilderbloom, 1986).
% rentals less than 2 bedrooms (1990)				+	–	Smaller units should cost less, all else being equal; however, minority renter households are larger than average and may require more bedrooms.

(continued on facing page)

vacancy rate and Jones a 4% rate, then Smith would have 26.6% Hispanics in 1990 while Jones would remain at 25%. Even though vacancies strengthened Hispanic representation, housing growth slightly but significantly reduced the Hispanic share in the analysis of all jurisdictions. (The low-Hispanic subset showed no significant effect.) It may be that in fast-growing jurisdictions, new non-Hispanic residents so outnumber new Hispanic residents that the overall share of Hispanics declines. Rental housing affordability also slightly but significantly boosted the share of Hispanics in the 1980s.

Land use controls became almost entirely insignificant once the housing and other variables were held constant. The sole exception was that building permit caps

were associated with significant reductions in the share of Hispanic residents. (This result is not significant for the low-Hispanic subset). It is unlikely that Hispanics moved out or failed to move in because of building permit caps. Local vacancy rates had significant and strong effects on the share of Hispanic residents, but additional analysis (results not reported here) revealed that permit caps had no significant effects on the vacancy rate. Hispanics may therefore have responded to yet another set of untested housing conditions, or to other conditions (e.g., discrimination or steering) that happened to be at work more intensely in places with permit caps in the 1980s. In such case, permit caps would correlate, but have no causal relationship, with the reduction in Hispanics.

TABLE 5 (continued). Hypothesized effects of control variables on housing and race-related outcomes.

	Housing growth	Percent multi-family	Percent rental units	Percent rentals affordable	Percent Black or Hispanic	Rationale
Race, 1980						
% minority (Black non-Hisp./Hispanic)	?/+	+	+	+	+/?*	Increased immigration in the 1980s; high percentages of both Blacks and Hispanics in 1980 should lead to more inclusive housing outcomes. Black neighborhoods may attract more Hispanics.
Socioeconomic status (SES) and community location, 1980						
% college graduates	–	–	–	–	–	Places with high SES in 1980 should become more exclusive in the 1980s as incomes bifurcate (Karoly, 1992).
% sales/admin. support	+	+	+	+	+	Places with high proportions of residents in sales and administrative support occupations should have become less exclusive in the 1980s; they provide low-cost labor to expanding suburban employment centers (U.S. Congress Office of Technology Assessment, 1995).
Local/metro commute	+	–	–	–	–	Places with long commutes should attract more rapid—but also more exclusive—growth, in part because while Blacks have moved to the suburbs Whites have moved even farther (Galster, 1991).
Old housing, dense population	–					Congested central cities with old housing should grow more slowly.

+ Hypothesized to have a positive effect

– Hypothesized to have a negative effect

? No hypothesized direction for effect

*Hypothesized effect on growth in the other minority group

Chains of Exclusion: Land Use Controls, Race, and Housing

This research confirms the long-known connection between low-density-only zoning and racial exclusion. In 1980, jurisdictions with low-density-only zoning housed about half as many Blacks, and two thirds as many Hispanics, as other jurisdictions within their regions. Jurisdictions with low-density-only zoning also failed to gain as many Black and Hispanic residents between 1980 and 1990 as did similar communities that permitted higher-density residential development. In 1990, these 171 jurisdictions had 153,316 Black and 156,943 Hispanic residents. Had the dynamics of racial

transition in these places been similar to those in places without exclusionary zoning, they would have housed approximately 31,300 more Blacks and 21,600 more Hispanics: 20% and 14%, respectively, of the Black and Hispanic residents who actually lived there.

The study also found connections between building permit caps and racial exclusion. The Hispanic share in places with building permit caps fell by an average of 1.8 percentage points in the 1980s. Together, the 43 jurisdictions with permit caps had 564,118 Hispanic residents in 1990; that number would have been approximately 60,150 higher if caps had no statistically significant association with exclusion. Permit caps did not have significant effects on the Black population.

TABLE 6. Parameter estimates, land use controls and housing, 1980–1990.

	Housing growth 1980–90 (LN)	% multi- family 1990	% single- family 1990	% rental 1990	% of rentals affordable 1990
Land use controls in place in the 1980s					
Low-density-only zoning	-0.047**	-0.006†	0.011**	-0.007†	0.023*
Permit cap	0.003	0.000	0.008	0.003	-0.008
Long-lasting moratorium	0.023	0.000	0.002	-0.005	-0.037**
APFO, >2 subjects	0.018	0.005†	-0.003	-0.004	-0.011
Urban growth boundary	0.002	-0.037	0.002	0.000	-0.002
Boxed-in status	0.022†	0.006	-0.009**	0.004	-0.025**
Housing stock, 1980					
# housing units (LN)	-0.052**	0.006**	-0.006**	0.003**	0.001
% multifamily units		0.922**			
% single-family units			0.951**		
% units rented				0.808**	0.173**
% of rental units affordable				0.039**	0.740**
>75% on septic systems	-0.018	-0.007†	0.000	-0.015**	0.011
Vacancy rate (LN)	0.035**	-0.003	0.004	0.011**	0.013**
% rentals built <1960					-0.069**
% rentals in structures of >4 units					-0.060**
% rentals <2BR (1990)					0.178**
Change in housing, 1980–1990					
Change in housing units (LN)		0.005**	-0.082**	-0.017**	-0.032**
Change in % single-family units (LN)				-0.171**	0.049
Change in % multifamily units (LN)				0.047**	-0.012
Change in % rental units (LN)					0.072**
Race, 1980					
% non-Hispanic Black (LN)	-0.028	0.006	0.015	0.069**	-0.032
% Hispanic (LN)	0.281**	-0.032*	-0.005	0.092**	-0.222**
Socioeconomic status and community location, 1980					
% college graduates	0.011	-0.002	0.002	-0.002	-0.056**
% sales/admin. support	0.717**	0.094*	-0.028	0.223**	-0.169*
Local/metro commute	-0.121**	-0.028**	0.025**	-0.033**	0.003
Old housing, dense pop.	-0.140**				
Metro area, 1980 and shifts 1980–1990					
Metro housing growth, 1980s (LN)	0.049**				
Metro % multifamily		0.008			
Metro multifamily shift, 1980s (LN)		0.162**			
Metro % single-family			0.018		
Metro single-family shift, 1980s (LN)			0.111**		
Metro % rentals				0.047*	
Metro rental shift, 1980s (LN)				0.224**	
Metro % affordable rentals					0.205**
Metro affordable rental shift, 1980s (LN)					0.534**
Constant					
R ²	0.726**	-0.212**	-0.038	-0.245**	-0.568**
F	94.86**	793.13**	982.72**	729.33**	229.43**
N	1102	1102	1102	1102	1102

APFO: Adequate public facilities ordinance

LN: Natural logarithm

†p<.10, *p<.05, **p<.01

TABLE 7. Parameter estimates, land use controls, housing characteristics, and racial change, 1980–1990.

	% Black, 1990		% Hispanic, 1990	
	All	Low-Black	All	Low-Hispanic
Land use controls in place in the 1980s				
Low-density-only zoning	-0.001	-0.001	0.002	0.000
Permit cap	0.000	-0.002	-0.015**	-0.005
Long-lasting moratorium	-0.009	-0.004	-0.003	0.001
APFO, >2 subjects	0.003	0.002	-0.001	0.001
Urban growth boundary	-0.001	-0.002	0.000	-0.002
Boxed-in status	0.002	-0.001	0.002	0.003*
Housing stock, 1980				
% of units rented	0.035**	0.024*	0.020*	0.006
% of rentals affordable	0.007	0.006	0.015†	0.004
Vacancy rate	-0.001	-0.069	0.200**	0.090**
% rentals <2BR, 1990	-0.047**	-0.023*	0.023*	0.011*
<10,000 dwellings	0.020*	0.012	0.003	-0.002
10,000–25,000 dwellings	0.018*	0.010	0.003	-0.001
25,000–50,000 dwellings	0.015†	0.012	0.011†	0.003
50,000–150,000 dwellings	0.019†	0.007	0.007	-0.003
1990:1980 Housing ratios (change in housing)				
Change in number of dwellings	-0.003	0.000	-0.009**	0.001
Change in % single family	-0.003	-0.002	0.000	0.000
Change in % multifamily	0.015	-0.001	-0.021	0.004
Change in % of units rented	0.028**	0.017**	0.006	0.001
Change in % of rentals affordable	0.000	0.000	0.003	0.001
Race, 1980				
% Black non-Hispanic	1.050**	1.219**	0.017†	-0.013*
% Hispanic	-0.006	0.007	1.091**	1.432**
Socioeconomic status and community location, 1980				
% college graduates	-0.025†	-0.024*	-0.032**	-0.023**
% sales/administrative support	0.264**	0.176**	-0.001	0.030*
Local/metro commute	0.007	0.005	0.000	-0.010**
Metro area, 1980 and shifts 1980–1990				
% Black non-Hispanic	0.109**	0.070**		
% growth, Black non-Hispanic	0.016†	0.016*		
% Hispanic			0.189**	0.057**
% growth, Hispanic			0.012**	0.008**
Constant				
R ²	-0.138**	-0.084**	-0.011	-0.015
N	0.884	0.523	0.944	0.845
	1,168	986	1,168	975

Notes:

Low-Black and low-Hispanic communities have less than 10% Black or Hispanic residents.

APFO: Adequate public facilities ordinance

†p<.10, *p<.05, **p<.01

It may be no coincidence that the land use control with the most exclusionary effects on Blacks predominates in the northeastern and midwestern U.S., while the control with the most exclusionary effects on Hispanics is most common in California. Jurisdictions with low-density-only-zoning are disproportionately located in a few areas: Boston, New York, Philadelphia, Pittsburgh, and Cleveland, whose Black-White dissimilarity indices ranged from 0.73 to 0.88 in 1980, among the highest in the nation (Massey & Denton, 1988).¹⁰ In Boston, low-density-only zoning applied to over half the land area in responding jurisdictions. Almost half of the responding jurisdictions in Boston and more than a quarter of those in New York restricted residential densities to fewer than eight units per acre. In both metropolitan areas, jurisdictions with populations between 10,000 and 25,000 were more likely than others to have low-density-only zoning. Therefore, even more low-density-only zoning would have been reported if small jurisdictions had responded at the same rate as large ones and if jurisdictions with fewer than 10,000 residents had been surveyed.

Permit caps, by contrast, are rare outside California. Only 42 of the 1,168 responding jurisdictions had permit caps, and 35 of these were in metropolitan San Francisco, Los Angeles, and San Diego. The Hispanic population in these regions grew nearly 70% between 1980 and 1990, from 3.6 million to 6.1 million residents. California's courts have been very permissive about permit caps, and some cities using permit caps—such as Livermore, California—have been held up as growth management models for the rest of the country (Landis, 1992; Nelson & Duncan, 1995). This qualified support by planning researchers for permit caps contrasts with the links reported here between caps and exclusion of Hispanics, and suggests a need for additional research and action, especially considering Census Bureau projections that the U.S. Hispanic population will grow from 30.5 million in July 1999 to 96.5 million in 2050 (U.S. Census Bureau, 1996).

Although land use controls have evident connections with the exclusion of Blacks and Hispanics, the mechanisms through which these effects occur are not straightforward. Land use controls are not signs that advertise “Whites only.” If land use controls exclude Blacks and Hispanics, they do so over time by building residential environments that attract or accommodate large numbers of non-Hispanic White residents while failing to accommodate Blacks and Hispanics. I refer to this indirect connection between land use controls and racial exclusion as the “chain of exclusion.” Figure 2 depicts this chain of exclusion.

In the first link of the chain, low-density-only zoning reduced housing growth in the 1980s. Second, low-

density-only zoning combined with slower growth to reduce the share of multifamily units and boost the single-family share. Third, low-density-only zoning, slow growth, and reductions in multifamily housing correlated with a falling proportion of rental units. Fourth, slow growth, reductions in multifamily housing, and falling rentals all correlated with reductions in the affordability of the rental stock. Among the other land use controls, only boxed-in status and permit moratoria were associated with exclusionary effects, and in these cases, the effect was limited to one characteristic only: reduced rental housing affordability. In the fifth link of the chain, a restricted multifamily and rental housing stock dampened growth in the minority population.

These findings on land use controls and housing are consistent with other recent research. According to this study, permit caps and growth boundaries, often modeled as supply constraints that will inexorably elevate house prices (Elliott, 1981; Frech & Lafferty, 1984; Schwartz & Zorn, 1988), did not consistently reduce housing growth in the 1980s. Neither did they have any consistent average effect on housing unit types, tenure, or affordability (or on vacancy rates, which were tested in an unreported analysis). Since local governments or voters often impose permit caps after growth spurts, the “limits” often exceed a normal year's construction (Landis, 1992). Many jurisdictions also allow “borrowing” from later years' allocations and make exceptions for small developments, so that even a high cap can be exceeded (City of Livermore, 1992). Growth boundaries often encircle areas that are much larger than needed to accommodate future housing construction. Growth boundaries can also be moved, and large numbers of houses are sometimes permitted outside a permanent boundary (Nelson & Moore, 1996). In short, permit caps and growth boundaries sometimes have exclusionary effects, but often they are little more than symbols of concern about the pace and shape of new growth.

Low-density-only zoning imposes a strong, long-lasting, and uniform ceiling on housing density. This study classified as “low density only” any jurisdiction that prohibits housing construction at a gross density of higher than eight dwelling units per acre. This limit leaves ample room for variation; it would apply to both a jurisdiction permitting a 60-unit apartment complex on a minimum 10-acre lot and a jurisdiction whose most permissive residential zoning allows single-family homes on 6,000-square-foot lots. Even so, such a density ceiling would reduce housing growth and the share of multifamily and rental housing.

Housing conditions affected Blacks and Hispanics differently. Rental housing promoted growth in the share of Blacks consistently and strongly, while rental

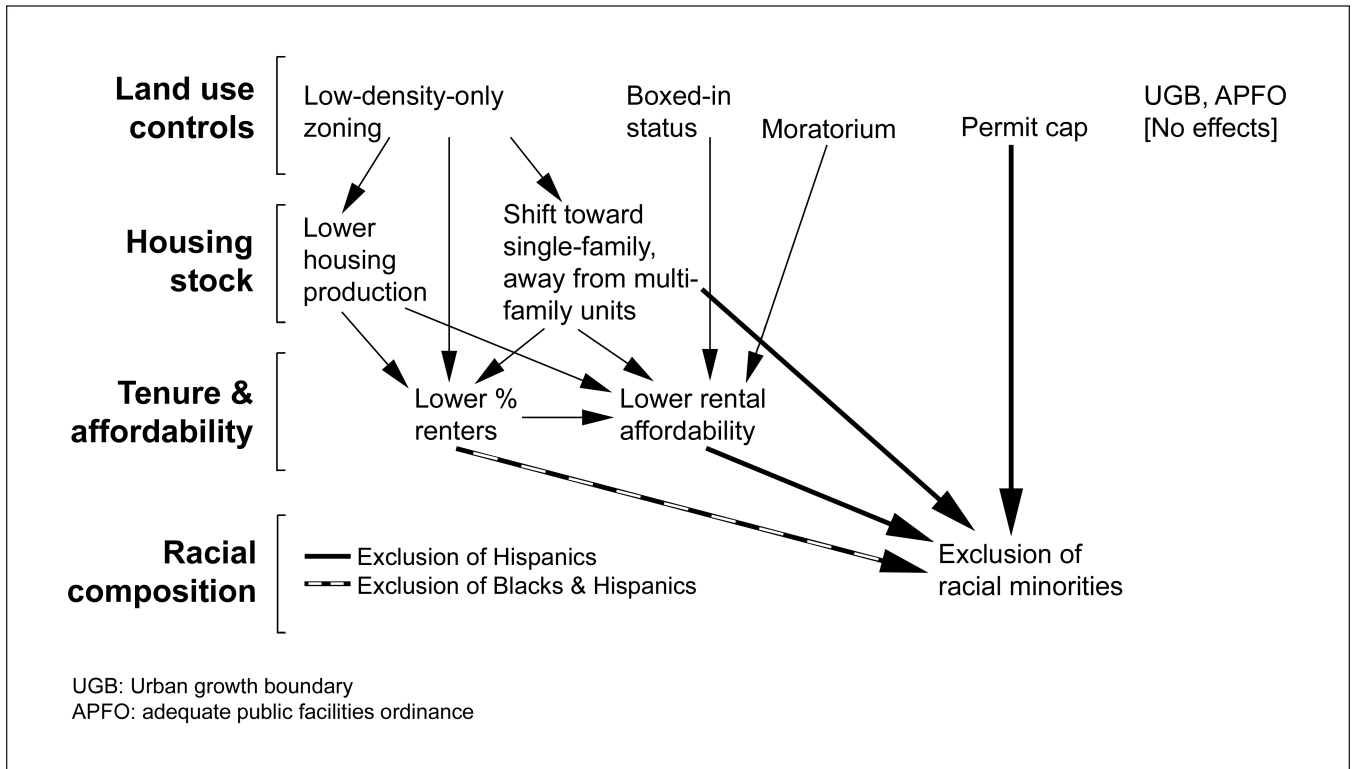


FIGURE 2. The chain of exclusion: significant relationships.

housing affordability and vacancy rates had no appreciable effect. Rising rental affordability and ample housing vacancies, by contrast, were consistently significant and important for Hispanics; rental housing also had a positive influence on the Hispanic share, but not in the subset of low-Hispanic communities.

The precise effects of exclusionary low-density-only zoning must still, however, be considered exploratory for at least two reasons. First, because of data limitations I was unable to control statistically for any unobserved fixed community characteristics that may have been hidden causes for housing or racial change. Second, land use controls are themselves sometimes an outcome of patterns of community change, including housing and racial change. Further research and analysis would be helpful to gain greater certainty about dynamics of the relationship between community change and land use controls.

Despite these caveats, this research is entirely consistent with previous case-study findings and research about both zoning and other land use controls. In this context, the study should be sufficient to suggest that planners should, in the terms of the AICP code of ethics, urge the alteration of low-density-only zoning as an in-

stitution that “opposes the needs of disadvantaged groups and persons” (AICP, 1991). Planners can consider at least two existing policies to alter exclusionary zoning. The “fair share” model, most actively applied in California and New Jersey, requires local governments to zone land and develop programs to help meet housing needs for all income levels. The “anti-snob zoning” approach, used in southern New England, permits subsidized housing developers to appeal local governments’ decisions to deny their projects when fewer than 10% of the town’s or city’s dwellings are subsidized.¹¹ The results of this study suggest that variants of the fair share approach will more likely promote economic and racial integration than anti-snob zoning, which is reactive and places the burden on developers to appeal local decisions, thereby subjecting them to possible retribution on subsequent projects. Anti-snob zoning laws also fail to remove obstacles to market-rate multifamily rental housing in communities that have already provided their share of subsidized units. Since the share of rental housing is consistently more important for Blacks than the share of affordable rental housing, the anti-snob zoning approach constitutes only a partial solution to the problem of racial exclusion.

In summary, this research shows that low-density-only zoning has historic and current connections with racial exclusion. When local governments adopt zoning ordinances or building permit caps, they directly influence the use of land and the pace of development. They also indirectly control who may live within their boundaries. Because land use controls have only an indirect effect on a place's eventual residents, however, legal challenges to exclusionary land use controls seldom succeed. Even the most successful lawsuits usually result in court orders to allow construction of particular affordable housing projects, not in comprehensive programs to rewrite communities' zoning ordinances.

Although local legal challenges offer little hope for comprehensive solutions to exclusionary zoning, other approaches may gain legitimacy in the future. Myron Orfield's (1997) *Metropolitica* relates that in Minneapolis, inner cities and inner suburbs have begun to forge a consensus for a state fair-housing policy. Similar coalitions may be possible in other metropolitan areas. Beyond ethnic and economic exclusion, low-density-only zoning exacerbates "sprawl" (Pendall, 1999), which in turn can require huge investments in new infrastructure, produce more nonpoint source air and water pollution, and further fragment wildlife habitat. All these effects present opportunities for coalition building to promote inclusive housing.

ACKNOWLEDGEMENTS

Thanks to Elizabeth Deakin, Matthew Drennan, Ann-Margaret Esnard, Marshall Feldman, William Goldsmith, John Landis, Dowell Myers, Sidney Saltzman, and the anonymous reviewers for substantive comments on various drafts. Joanne Pendall and Trudie Calvert provided editorial assistance; Leda Black created Figure 2. Any errors or misinterpretation remain my responsibility. This research was funded in part by the University of California at Berkeley's Center for Real Estate and Urban Economics.

NOTES

1. The study uses eight units per gross acre as a measure of single-family densities. Some low-density-only jurisdictions allow apartment construction but constrain development by mandating large lots and substantial parking and landscaping.
2. The metropolitan areas were the Atlanta MSA, Baltimore MSA, Boston-Lawrence-Salem-Lowell-Brockton NECMA, Chicago-Gary-Lake County CMSA, Cincinnati-Hamilton CMSA, Cleveland-Akron-Loraine CMSA, Dallas-Ft. Worth CMSA, Denver-Boulder CMSA, Detroit-Ann Arbor CMSA, Houston-Galveston-Brazoria CMSA, Kansas City MSA, Los Angeles-Anaheim-Riverside CMSA, Miami-Fort Lauderdale CMSA, Milwaukee-Racine CMSA, Minneapolis-St. Paul MSA, New York-Northern New Jersey-Long Island CMSA, Philadelphia-Wilmington-Trenton CMSA, Phoenix MSA, Pittsburgh-Beaver County CMSA, San Diego MSA, San Francisco-Oakland-San Jose CMSA, Seattle-Tacoma CMSA, St. Louis MSA, Tampa-St. Petersburg-Clearwater MSA, and Washington MSA, all as defined in June 1990 by the U.S. Office of Management and Budget.
3. That is, if the jurisdiction had authority to adopt a zoning ordinance and exercised primary control over local zoning within its territory. This excluded Texas counties, which do not zone, and counties in most northeastern and midwestern states, which play at most an advisory role in town- or township-controlled zoning decisions.
4. The survey also included questions about the availability of vacant land for multifamily housing and about affordable housing policies. The completion rate on these questions was lower. Blank survey forms are available from the author on request.
5. Data for 1990 came from CD-ROMs containing summary results from the 100% census (STF1A) and the long-form 16% census sample (STF3A); 1980 data were extracted from the tape version of STF3. The 1980 and 1990 data sometimes apply to different geographic areas; between 1980 and 1990, 31 places incorporated as cities. Twenty-five of these were listed as census-designated places (CDPs) in 1980; the data from these CDPs were used alongside the incorporated-area data in the analysis. Of the 756 places that were incorporated in 1980, 118 (16%) increased in land area by more than one third between 1980 and 1990, presumably as a result of annexation. No methods were used to hold the land area of cities and villages constant at their 1980 or 1990 limits. As a result, some changes between 1980 and 1990 resulted from annexation of housing in previously unincorporated areas. A complete listing of the precise tables and variables used is available from the author on request.
6. The term *Black* is used throughout this analysis instead of *African American* to provide consistency with terminology in the 1980 and 1990 U.S. Census of Population; Blacks as measured in this research may be African American, Caribbean, Afro-European, or African.
7. Data were missing for about 65 jurisdictions in this test. Descriptive statistics are available from the author on request.
8. This regression measures housing growth as the natural logarithm of the ratio of 1990 housing units to 1980 housing units; the natural log was used to correct for positive skew and outliers.
9. These numbers are obtainable by taking the antilog of the parameters in Table 6.
10. The dissimilarity index (D) ranges from 0 to 1 and is conventionally interpreted to represent the proportion of Blacks or Whites who would have to move to achieve racial evenness across a region.
11. Connecticut General Statutes § 8-30g; Massachusetts General Laws Chapter 40B §§20-23; R.I. Gen. Laws § 45-53.

REFERENCES

- Altshuler, A. A., & Gómez-Ibáñez, J. A. (1993). *Regulation for revenue: The political economy of land use exactions*. Washington, DC, and Cambridge, MA: Brookings Institution Press/Lincoln Institute of Land Policy.
- American Institute of Certified Planners. (1991). *AICP code of ethics and professional conduct* [On-line]. Available: <<http://www.planning.org/abtaicp/conduct.html>> (Adopted 1978, amended 1991).
- American Planning Association. (1998). *Growing SmartSM* [On-line]. Available: <<http://www.planning.org/plnginfo/GROWSMAR/gsinde.html>>.
- Anglin, R. (1994). Searching for justice: Court-inspired housing policy as a mechanism for social and economic mobility. *Urban Affairs Quarterly*, 29, 432–453.
- Appelbaum, R. P., & Gilderbloom, J. I. (1986). Supply-side economics and rents: Are rental housing markets truly competitive? In R. G. Bratt, C. Hartman, & A. Meyerson (Eds.), *Critical perspectives on housing* (pp. 165–179). Philadelphia: Temple University Press.
- Arlington Heights v. Metropolitan Housing Development Corp., 429 U.S. 252 (1977).
- Bates, L. J., & Santerre, R. E. (1994). The determinants of restrictive residential zoning: Some empirical findings. *Journal of Regional Science*, 34, 253–263.
- Bay Area Council. (1988). *Taxing the American dream: Development fees and housing affordability*. San Francisco: Author.
- Bollens, S. A. (1992). State growth management: Intergovernmental frameworks and policy objectives. *Journal of the American Planning Association*, 58, 454–466.
- Britton v. Town of Chester, 595 A2d 492 (NH 1991).
- Buchanan v. Warley, 245 U.S. 60 (1917).
- Burnell, B. S., & Burnell, J. D. (1989). Community interaction and suburban zoning policies. *Urban Affairs Quarterly*, 24, 470–482.
- Calavita, N., & Grimes, K. (1998). Inclusionary housing in California: The experience of two decades. *Journal of the American Planning Association*, 64, 150–169.
- City of Livermore Planning Department. (1992). *1992–1993 Housing implementation program* [Brochure]. Livermore, CA: Author.
- Clark, W. A. V. (1986). Residential segregation in American cities: A review and interpretation. *Population Research and Policy Review*, 5, 95–127.
- Cloud, C., & Galster, G. (1993). What do we know about racial discrimination in mortgage markets? *The Review of Black Political Economy*, 22, 101–120.
- Danielson, M. N. (1976). *The politics of exclusion*. New York: Columbia University Press.
- Dillman, D. A. (1978). *Mail and telephone surveys: The total design method*. New York: Wiley.
- Donovan, T., & Neiman, M. (1995). Local growth control policy and changes in community characteristics. *Social Science Quarterly*, 76, 780–793.
- Dowall, D. E. (1980). An examination of population-growth-managing communities. *Policy Studies Journal*, 9, 414–427.
- Dowall, D. E. (1984). *The suburban squeeze*. Berkeley: University of California Press.
- Elliott, M. (1981). The impact of growth control regulations on housing prices in California. *AREUEA Journal*, 9, 115–133.
- Fair Housing Act of 1968, 42 U.S.C. §§2000d-1, -2.
- Farley, J. E. (1993). Racial housing segregation in St. Louis, 1980–1990: Comparing block and census tract levels. *Journal of Urban Affairs*, 15, 515–527.
- Farley, R., & Frey, W. H. (1994). Changes in the segregation of Whites from Blacks during the 1980s: Small steps toward a more integrated society. *American Sociological Review*, 59, 23–45.
- Farley, R., Fielding, E. L., & Krysan, M. (1997). The residential preferences of Blacks and Whites: A four-metropolis analysis. *Housing Policy Debate*, 8, 763–800.
- Fernley v. Board of Supervisors, 502 A2d 585 (Pa 1985).
- Frech, H. E., III, & Lafferty, R. N. (1984). The effect of the California Coastal Commission on housing prices. *Journal of Urban Economics*, 16, 105–123.
- Galster, G. (1988). Residential segregation in American cities: A contrary review. *Population Research and Policy Review*, 7, 93–112.
- Galster, G. (1991). Black suburbanization: Has it changed the relative location of races? *Urban Affairs Quarterly*, 26, 621–628.
- Karoly, L. A. (1992). *The trend in inequality among families, individuals, and workers in the United States: A twenty-five year perspective*. Santa Monica, CA: RAND.
- Keating, W. D. (1994). *The suburban racial dilemma*. Philadelphia: Temple University Press.
- Keating, W. D. (1997). The Parma housing racial discrimination remedy revisited. *Cleveland State University Law Review*, 45, 235–250.
- Kirp, D. L., Dwyer, J. P., & Rosenthal, L. A. (1995). *Our town: Race, housing, and the soul of suburbia*. New Brunswick, NJ: Rutgers University Press.
- Knaap, G. (1985). The price effects of urban growth boundaries in metropolitan Portland, Oregon. *Land Economics*, 61, 26–35.
- Kushner, J. A. (1995). *Fair housing: Discrimination in real estate, community development, and revitalization* (2nd ed.). Deerfield, IL: Clark Boardman Callaghan.
- Landis, J. D. (1992). Do growth controls work? A new assessment. *Journal of the American Planning Association*, 58, 489–508.
- Landis, J. D. (1995). Imagining land use futures: Applying the California Urban Futures model. *Journal of the American Planning Association*, 61, 438–457.
- Massey, D. S., & Denton, N. A. (1988). Suburbanization and segregation in U.S. metropolitan areas. *American Journal of Sociology*, 94, 592–626.
- Massey, D. S., & Denton, N. A. (1993). *American apartheid: Segregation and the making of the underclass*. Cambridge, MA: Harvard University Press.
- Nelson, A. C., & Duncan, J. B. (1995). *Growth management principles & practices*. Chicago: Planners Press.
- Nelson, A. C., & Moore, T. (1996). Assessing growth man-

- agement policy implementation. *Land Use Policy*, 13, 241–259.
- Orfield, M. (1997). *Metropolitics: A regional agenda for community and stability*. Washington, DC, and Cambridge, MA: Brookings Institution Press/Lincoln Institute of Land Policy.
- Pendall, R. (1995). *Residential growth controls and racial and ethnic diversity: Making and breaking the chain of exclusion*. Unpublished doctoral dissertation, University of California, Berkeley.
- Pendall, R. (1999). Do land use controls cause sprawl? *Environment and Planning B: Planning and Design*, 26, 555–571.
- Pogodzinski, J. M., & Sass, T. R. (1994). The theory and estimation of endogenous zoning. *Regional Science and Urban Economics*, 24, 601–630.
- Schelling, T. (1971). Dynamic models of segregation. *Journal of Mathematical Sociology*, 1, 143–86.
- Schneider, M., & Phelan, T. (1993). Black suburbanization in the 1980s. *Demography*, 30, 269–279.
- Schuman, H., Steeh, C., & Bobo, L. (1985). *Racial attitudes in America: Trends and interpretation*. Cambridge, MA: Harvard University Press.
- Schwartz, S. I., & Zorn, P. M. (1988). A critique of quasiexperimental and statistical controls for measuring program effects: Application to urban growth control. *Journal of Policy Analysis and Management*, 7, 491–505.
- Schwartz, S. I., Hansen, D. E., & Green, R. (1984). The effect of growth control on the production of moderate priced housing. *Land Economics*, 60, 110–14.
- Southern Burlington NAACP v. Township of Mount Laurel (Mount Laurel I), 336 A2d 713 (NJ 1975).
- Southern Burlington NAACP v. Township of Mount Laurel (Mount Laurel II), 456 A2d 390 (NJ 1983).
- Stockman, P. K. (1992). Anti-snob zoning in Massachusetts: Assessing one attempt at opening the suburbs to affordable housing. *Virginia Law Review*, 78, 535–580.
- U.S. Census Bureau. (1996). *Resident population of the United States: Middle series projections, 2035–2050, by sex, race, and Hispanic origin, with median age* [On-line]. Available: <<http://www.census.gov/population/projections/nation/nsrh/nprh3550.txt>>.
- U.S. Census Bureau. (1998a). *Moving to America: Moving to homeownership* [On-line]. Available: <<http://www.census.gov/hhes/www/homeown.html>>.
- U.S. Census Bureau. (1998b). *Historical income tables: Households* [On-line]. Available: <<http://www.census.gov/hhes/income/histinc/h05.html>>.
- U.S. Congress Office of Technology Assessment. (1995). *The technological reshaping of metropolitan America* (OTA-ETI-643). Washington, DC: U.S. Government Printing Office.
- U.S. v. City of Black Jack, 508 F2d 1179 (8th Cir 1974), cert denied, 434 U.S. 1025 (1978).
- Wallace, N. E. (1988). The market effects of zoning undeveloped land: Does zoning follow the market? *Journal of Urban Economics*, 23, 307–326.
- Warner, K., & Molotch, H. (1995). Power to build: How development persists despite local controls. *Urban Affairs Review*, 30, 378–406.
- Weicher, J. C., & Thibodeau, T. G. (1988). Filtering and housing markets: An empirical analysis. *Journal of Urban Economics*, 23, 21–40.
- Weiss, M. A. (1987). *The rise of the community builders*. New York: Columbia University Press.
- Zorn, P. M., Hansen, D. E., & Schwartz, S. (1986). Mitigating the price effects of growth control: A case study of Davis, California. *Land Economics*, 62, 47–57.