The Spatial Dynamics of Stratification: Metropolitan Context, Population Redistribution, and Black and Hispanic Homeownership

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Abstract: Racial and ethnic inequality in homeownership remains wide, even net of variation in household sociodemographic characteristics. This paper investigates the role of contextual forces in structuring disparate access to homeownership. Specifically, we combine household and metropolitan level census data to assess the impact of metropolitan housing stock, minority composition, and residential segregation on black and Hispanic homeownership. The measure of minority composition combines both the size and growth of the co-ethnic population to assess the impact on homeownership inequality of recent trends in population redistribution, particularly the increase in black migration to the South and dispersal of Hispanics outside of traditional receiving areas. Results indicate remarkable similarity between blacks and Hispanics with respect to the spatial and contextual influences on homeownership. For both groups, homeownership is higher and inequality with whites smaller in metropolitan areas with an established co-ethnic base, and those in which their group is less residentially segregated.

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In spite of increased minority suburbanization and the favorable lending and regulatory environment that bolstered minority homeownership during the 1990s (Freeman 2005; Freeman & Hamilton 2004; Bostic & Surette 2001), racial and ethnic inequality in homeownership remains stubbornly high.[1] This persistent inequality is troublesome because homeownership is a central dimension of well-being and the centerpiece of wealth, representing the single largest asset for the vast majority of households. Owning a home provides important financial and non-financial benefits. It constitutes an important form of forced savings and confers numerous tax benefits, inflation protection, and the opportunity for asset appreciation (Oliver & Shapiro 1995). At the same time, homeownership is positively associated with neighborhood amenities, including school quality, public services, and health and physical safety (Yinger 1995). Thus, understanding the factors limiting minority access to homeownership is central to racial and ethnic stratification since it both reflects and *contributes to* inequality in a wide array of socio-economic arenas (Conley 1999).

Efforts to explain ethno-racial disparities in homeownership and housing wealth based on household- and individual–level factors have proven to be only partially successful (Oliver & Shapiro 1995). Even after accounting for differences across groups in socio-economic, human capital, and family structure characteristics minority members remain less likely to own a home, wait longer to transition into homeownership, and need higher income than whites to do so (Alba & Logan 1992, Bianchi, Farley & Spain 1982; Charles & Hurst 2002; Dawkins 2005; Flippen 2001a; Gyourko & Linneman 1997; Henretta 1979; Horton 1992; Jackman & Jackman 1980; Krivo 1986; Long & Caudill 1992; Megbolugbe & Cho 1996; Myers & Chan 1995; Parcel 1982; Rosenbaum 1996; Sykes 2003). In response, researchers have increasingly turned their attention to the ways in which social context structures minority homeownership attainment. For instance, metropolitan level characteristics such as housing stock, racial segregation, and minority composition have been found to structure access to homeownership above and beyond personal and family level factors (Alba & Logan 1992; Borjas 2002; Deng, Ross & Watcher 2002; Flippen 2001b; Freeman 2005; Krivo 1995; Lee & Myers 2003; Myers et al. 2005; Toussaint-Comeau & Rhine 2000).

However, while a number of studies address the issue, the tendency to focus on different aspects of metropolitan context in research on blacks and Hispanics results in a lack of theoretical integration. Much of the research on blacks focuses on the impact of residential segregation, and our understanding of the effect of segregation on Hispanics is incomplete. At the same time, much of the research on the impact of minority composition on homeownership stemmed from interest in Hispanics and immigrant adaptation. While some of these studies also include black samples, they do not simultaneously consider the impact of segregation and minority composition. As a

result, the comparability of the findings is undermined and the question of whether macro-level processes affect the two groups in the same way remains unclear.

Moreover, separating the net effects of diverse metropolitan characteristics on minority homeownership is growing in importance owing to recent dramatic changes in internal migration patterns and population distributions. Specifically, the 1990s witnessed a major increase in the movement of African Americans to the South, which has been dubbed the "new" great migration (Frey 2004). In fact, during the 1990s the South registered a net gain in black migration from all three other regions in the U.S., a major reversal of a 35 year old trend. In addition, the 1990s witnessed tremendous dispersal of the Hispanic population outside of traditional receiving areas, particularly across the Midwest and South, where numerous metro- and non-metro areas experienced exponential growth in their Hispanic populations (Suro & Singer 2002). Because these changes are relatively recent their implications for minority well-being, including homeownership, remain unclear.

Accordingly, this paper combines household and metropolitan level data from the 2000 Census to analyze the spatial dynamics of racial and ethnic inequality in homeownership. The theoretical framework integrates the diverse mechanisms through which metropolitan context shapes ethno-racial homeownership inequality, namely housing stock, residential segregation, and minority composition, into a single framework to disentangle their unique effects. In addition, we explore what recent population redistribution portends for minority homeownership by incorporating internal migration patterns into the dimension of minority composition. Finally, we explicitly compare the impact of context on black and Hispanic homeownership, addressing an important deficit in the literature on Hispanics, now the largest minority group in the US, and providing an important point of comparison for the more familiar case of black-white inequality.

Theoretical framework

A long history of sociological research has been concerned with the role of context in shaping racial and ethnic inequality. A central tenant of this work is that contextual forces structure socio-economic opportunities for minorities above and beyond individual and family level socioeconomic characteristics and that disadvantaged geographic location can be a powerful impediment to social mobility (Massey & Denton 1993; Wilson 1996). The mechanisms connecting context and racial and ethnic inequality in homeownership, however, are diverse and have yet to be incorporated into an integrated approach. Building on previous research on housing quality, residential segregation, and

tenure, we argue that metropolitan context affects minority homeownership through three distinct mechanisms: housing stock, residential segregation, and minority composition.

Housing stock

There is general consensus that variation in housing stock is an important mechanism through which metropolitan context affects homeownership. Metro areas vary widely in relative housing values, the percentage of housing units that are single family and owner occupied, and the physical age and condition of housing stock. These dimensions capture infrastructural and housing market characteristics that bound the opportunities for homeownership.

Average home prices and their position relative to average rents are directly connected to homeownership (Lee & Myers 2003; Myers et al. 2005). However, the effects are not always consistent across racial and ethnic groups. While higher housing values tend to discourage homeownership, the negative association between housing prices and homeownership has been found to be stronger among minorities (Flippen 2001b), likely due to more limited access to credit relative to whites.

Likewise, the share of all housing that is single family or owner occupied has also been found to affect homeownership. In general, housing markets with a greater share of owner occupied and single-family housing appear to be more conducive to homeownership (Flippen 2001b; Lee & Myers 2003). The same applies to the share of housing stock that is relatively new. As an indicator of the rate of growth in housing supply, new construction can facilitate homeownership by easing market constraints. There is also reason to believe that these effects could vary by race and ethnicity, because discriminatory treatment may be lower in new construction than in more established areas (Farley & Frey 1994; Logan, Stults & Farley 2004).

Residential segregation

The second contextual factor argued to impact minority homeownership is residential segregation. A long and varied body of research documents the deleterious effects of racial segregation on minorities along a wide array of outcomes, including educational attainment, socioeconomic mobility, teen parenting, welfare dependency, and unemployment (Cutler & Glaeser 1997; Krivo et al. 1998; Massey & Denton 1993; Wilson 1996).

In the area of housing, racial segregation can affect homeownership propensities through two separate but interrelated processes. First, the residential segregation of minority groups coincides with the spatial concentration of disadvantage, including poverty, housing deterioration, and inferior public services, particularly education. Segregated minority neighborhoods also exhibit above average rates of crime, unemployment, single parenthood, and dependence on public assistance. The overlap between

minority concentration and social disadvantage reduces the attractiveness of these neighborhoods, undermining housing values (Flippen 2004; Harris 2001) and acting as a disincentive to housing investments. Second, residential segregation restricts the supply of housing available to minority members. Housing discrimination tends to confine minorities to a subset of neighborhoods comprising a relatively small share of the urban environment, reducing housing options and homeownership opportunities (Kain & Quigley 1970).

Measuring the impact of segregation on minority homeownership is complex, however, and recent empirical analyses have found mixed results. In particular, there is disagreement about whether segregation has a direct effect on minority homeownership or whether it is the housing stock conditions associated with highly segregated areas that accounts for the effect. On the side of a direct segregation effect Flippen (2001b) found that black residents of more highly segregated metropolitan areas averaged lower homeownership than their peers in less segregated metro areas across a wide variety of measures of segregation, even after accounting for some elements of housing stock. Freeman (2005) likewise found that black renters in metro areas with medium and high levels of dissimilarity were less likely to transition into homeownership, though those in metro areas with the highest levels of isolation were *more* likely to become owners.

Dawkins (2005), on the other hand, examined the association between neighborhood characteristics and transition into first homeownership. He argued that it is not segregation per se that undermines black homeownership, but rather its association with lower housing values, a smaller share of owner occupied units, central city location, and concentration of older housing units. Likewise, in an analysis of Philadelphia, Deng and colleagues (2002) found that more segregated neighborhoods had higher equity risk and concentrated poverty, which undermined minority homeownership. However, the lower average price of homes in segregated neighborhoods facilitated homeownership, resulting in a weak but positive association between neighborhood segregation and black homeownership.

Research on the impact of segregation on Hispanic well-being is far more limited. The literature on Hispanics tends to focus on enclaves and minority composition rather than on segregation per se. The few studies available that specifically examine the impact of segregation on Hispanic homeownership shows more mixed effects than have been found for blacks. Flippen (2001b), for instance, found that like blacks, segregation in some instances depresses Hispanic homeownership. However, measures of segregation that are more closely related to minority composition and enclave economies, namely, evenness, isolation, and clustering, were actually positively associated with Hispanic homeownership, a pattern not found among blacks.

Minority composition

The final contextual factor argued to impact minority homeownership is the minority composition of the local area, or size of the co-ethnic community. From a theoretical standpoint, one could posit both protective and harmful effects of living in areas of high co-ethnic representation on minority homeownership. On the positive side, higher minority representation could foster the creation of an "institutional ghetto" or enclave economy whereby a parallel real estate industry develops to serve the excluded minority group, potentially facilitating access to homeownership by buffering against discrimination in the wider housing market. A large co-ethnic community could also facilitate homeownership by enhancing the diffusion of information and lowering the fixed costs of targeting services to that group, such as providing services in a foreign language (McConnell & Marcelli 2004). This could be particularly important for immigrant groups, whose limited English fluency and lack of knowledge about U.S. lending and real estate markets could pose a significant barrier to homeownership. And finally, the presence of other co-ethnics with similar preferences and attitudes could act as an amenity that makes homeownership more attractive in areas with larger co-ethnic populations.

At the same time, several factors suggest the deleterious impact of a large co-ethnic community on homeownership. As minority groups become larger, they could generate increased perception of threat by the majority group, stimulating discriminatory treatment. For immigrants, enclaves could hinder assimilation by reducing incentives to learn the local culture and language (Borjas 2002). Indeed, there is intense debate over whether immigrants fare better or worse in ethnic economies (Cutler et al. 2007). High minority representation could also result in saturation effects, if co-ethnics tend to have similar educational and employment credentials and similar demand for housing.

Empirical examinations of the impact of minority composition on homeownership generally find either positive or benign effects. For instance, Alba and Logan (1992) report that the size of the co-ethnic population at the metropolitan level had no effect on black homeownership. For Mexicans and Cubans, on the other hand, as the proportion of co-ethnics in the metro area became larger, the likelihood of homeownership rose. The effect was negative, however, for Puerto Ricans and Asians. Gabriel and Painter (2003) report that among movers in Los Angeles black homeownership was positively associated with the percent black of the target area. Myers and colleagues (2005) used a quasi-panel longitudinal cohort design to examine trajectories into homeownership from 1980 to 1990. They found that homeownership gains for both blacks and Hispanics were greatest in metro areas where the size of their group was the largest. Likewise, Borjas (2002) reports that in 1980 and 2000 there was a numerically strong and statistically significant positive relationship between probability of Hispanic homeownership

and the relative size of the ethnic enclave in the metro area. There was also a strong positive correlation between the growth of enclaves between 1980 and 2000 and homeownership rates among the immigrant population.

Recent trends in population redistribution within the U.S. present an original opportunity for a more nuanced understanding of the role of minority context on homeownership propensities. The considerable return migration of African-Americans to the South and increased dispersion of the Hispanic population has resulted in considerable variation in minority metropolitan contexts. Specifically, new areas of minority concentration have emerged as well as rapid growth of minorities in already established areas of settlement. As a result, it is possible to take a more dynamic view on the role of the ethnic community on socioeconomic outcomes and elaborate on both the effect of size and change in minority composition on homeownership propensities. While most previous studies have concentrated on the former, it is unclear what rapid minority growth portend for homeownership propensities or how size of the receiving community and growth *combine* in affecting minority outcomes. Understanding this connection is increasingly relevant given the continuing dispersion of minority groups. Moreover, the fact that patterns of settlement and growth differ considerably among blacks and Hispanics suggests that residence in a particular metropolitan area could have vastly different implications across groups.

Data and Methods

We applied this integrated framework to data obtained from combining household level information from the 5% sample of the 2000 Census of Population and Housing[2] with metropolitan level[3] data on housing context, residential segregation, and minority composition. The household level information was restricted to household heads between the ages of 18 and 65, the most pertinent group for homeownership. Metropolitan level information was constructed by aggregating information from the 5% sample of the 2000 Census by metropolitan area as well as obtaining estimates of residential segregation, population size, and minority composition directly from Census Bureau's calculations based on 100% counts.

Given our focus on the role of racial and ethnic composition for understanding homeownership we restrict the sample to metropolitan areas with at least 10,000 black or Hispanic residents in 2000, since smaller populations may not render meaningful segregation scores and contextual indicators. This restriction resulted in a total of 217 and 195 metropolitan areas for the analysis of blacks and Hispanics, respectively.

Model specification

The dependent variable in the analysis is housing tenure in 2000. Predictors include both household and metropolitan characteristics resulting in a two-level model of homeownership in which households are nested within particular metropolitan areas. Individual household characteristics follow those from the classical micro-economic model of consumer choice, which posits that households make decisions regarding consumption, including housing, according to their needs and preferences, subject to their financial resources. Homeownership should therefore be associated with such factors as age, marriage, childbearing, education, occupation, employment status, self-employment, and disability status. We also consider immigrant characteristics especially but not exclusively relevant to the Hispanic population, such as nativity, number of years in the U.S. (for immigrants),[4] and for the Hispanic sample national origin and race.

Our main emphasis is on the three dimensions of metropolitan level factors argued to affect homeownership. As described above, we expect metropolitan housing stock to affect homeownership through three relatively straightforward mechanisms. The role of average home prices is captured by a variable measuring the median housing value in the metropolitan area. The percent of housing that is owner occupied and the proportion of owner-occupied units that are new (i.e., built within the 10 years prior to the census), capture variation in the relative availability of housing for purchase and housing supply across metropolitan areas. We also control for the overall size of the housing market by including a measure of the total population of metropolitan areas.

Segregation, on the other hand, is multi-dimensional concept; while it generally reflects the extent to which groups reside separately from one another, minority members can be segregated in different ways. In their classic review of the literature, Massey and Denton (1989) identified five dimensions of segregation: evenness (the differential distribution of social groups in a metropolitan area), exposure (the degree of potential interaction between majority and minority groups), clustering (the extent to which areas inhabited by a group adjoin one another), centralization (the degree to which a group is located near the center of an urban area), and concentration (the relative amount of physical space available to minority members).

While closely associated and inter-related, the dimensions of segregation reflect conceptually distinct ways through which segregation affects minority life-chances (Wilkes & Iceland 2004). For analyses of homeownership residential concentration is arguably the dimension of most theoretical significance. Other aspects of segregation such as evenness, exposure, and clustering, because they reflect to a certain extent the degree of contact between groups, potentially confound the effect of minority

composition with that of segregation. More importantly, concentration directly affects housing opportunities since higher levels of concentration reflect restrictions on the physical space available to minority members. Centralization also captures physical restrictions associated with residing in urban areas. However, the supply restrictions imposed by centralization are more relevant in older northern cities than in rapidly growing and newly emerging areas of destination.

We therefore focus on concentration as our measure of residential segregation. Massey and Denton (1989) identify three indices of concentration: Delta (DEL), Absolute Concentration (ACO), and Relative Concentration (RCO). DEL is a variation of the dissimilarity index and thus does not capture the separate role of spatial concentration very precisely. ACO is an absolute measure that computes the total area inhabited by a group and compares this with the minimum and maximum areas (the areal sum, respectively, of the fewest number of the geo- graphically smallest and the greatest number of the geographically largest areal units) that could accommodate a group of that size at observed densities. As a relative measure the RCO is computed similarly to ACO, but takes into account the distribution of the majority group as well. This measure varies, in most cases, from -1.0 to 1.0, where a score of 0 means that the minority and majority groups are equally concentrated, +1.0 means that the concentration of the minority exceeds that of the majority to the maximum extent, and an index of -1.0 the reverse.[5] Because RCO computes the area occupied by minority groups in relation to the dominant group it accounts for differences in the amount of physical space available across metropolitan areas, and is thus more appropriate for our purposes.. Estimates of RCO were obtained from the Census Bureau's own calculations computed with data from 100% sample and using Census tracts as the level of the areal unit.[6]

Finally, a central focus of the analysis is the connection between minority composition, population redistribution, and minority homeownership. We capture that connection by constructing a typology of minority context that combines two factors: minority representation in 1990 and the ratio of in- to out-minority migrants between 1995 and 2000. The strategy of comparing across metropolitan areas to identify the effect of population trajectories on socioeconomic outcomes has been extensively applied in analyses of the impact of immigration on native workers' wages (Card 2005; Borjas 2003). As applied to housing tenure, this comparative approach generates clear counterfactuals and adds a geographic dimension to our understanding of variation in black and Hispanic homeownership patterns.

To construct the typology, we first distinguish between metros with and without an established co-ethnic base. Using the median percent co-ethnic as a dividing point, metro areas that are at least 10% black or 5% Hispanic in 1990 were designated as having an established co-ethnic base, and all others as having small initial minority representation. Second, within each group, we distinguish between rapidly

and more slowly growing co-ethnic populations. Using the individual level data on residential location in 1995 and 2000 for individuals aged 25 to 65 (weighted to represent the total population) we computed the ratio of black and Hispanic domestic in- to out-migrants across metropolitan areas. This measure is preferable to simpler measures of change in the proportion minority because the latter is also influenced by changes in the size of other groups in the metro area. Again using the median values as a dividing line, areas with in- to out-migration rates over 1.38 and 1.60 for black and Hispanic populations, respectively, are considered rapid growth areas while others are considered slow growing areas.

These distinctions result in 4 mutually exclusive categories, depicted in Figure 1: areas with an established and rapidly growing co-ethnic population; areas with an established and slow growing co-ethnic population; new destinations, i.e., areas with a small co-ethnic population in 1990 that grew rapidly over the decade; and metros with a small and slow growing co-ethnic population.

FIGURE 1 ABOUT HERE

Analytic strategy

Since the clustering of households within metropolitan areas violates the independence assumption in standard regression, we formulate a Hierarchical Logit model, with predictors working at 2 levels. We conduct two separate but interrelated analyses. First, we model the role of metropolitan characteristics in affecting *within* group differentials in homeownership separately for black and Hispanic households. The objective of this analysis is to determine whether blacks and Hispanics are more likely to own a home in certain contexts than in others. Second, we model the effect of metro characteristics on racial and ethnic homeownership *disparities* with whites. This model allows us to ascertain not only whether minority members are more likely to own in certain contexts than in others, but also whether context is related to the degree of inequality with whites. This also helps assess the role of unmeasured aspects of metropolitan context in structuring observed relationships. For instance, if residential segregation were negatively associated with minority housing tenure it could indicate that segregation undermines minority homeownership or rather that some other unmeasured aspect of highly segregated cities was detrimental to homeownership for all groups. Testing contextual effects on disparities with whites allows us to assess this possibility.

For the first analysis of within group differences in housing tenure the 2-level logit model takes the following form,

$$\text{Level-1:} \quad \log[P/(1-P)]_{ij} = \beta_{0j} + \beta_{qj}X_{qij}$$

$$\text{Level-2:} \quad \beta_{0j} = \gamma_{00} + \gamma_{0s}Y_{sj} + \mu_{0j}$$

where P_{ij} is the probability of homeownership for household *i* in metropolitan area *j*; β_{0j} is an intercept term, X_{qij} are household-level covariate *q* for household *i* in metropolitan area *j* associated with β_{qj} parameters to be estimated. The level-1 intercept (β_{0j}) is modeled at level-2, where γ_{00} is an intercept, Y_{sj} are metropolitan-level covariate *s* for metropolitan area *j* associated with γ_{0s} coefficients, and μ_{0j} is a random effect, normally distributed with mean of 0 and variance τ_{00}. In substantive terms, by estimating the intercept in level 2, this model captures metropolitan variation in homeownership propensities and its covariates (i.e., what contextual factors contribute to differential rates of homeownership across cities). The model is estimated separately for blacks and Hispanics.

The second analysis extends this specification to understand racial and ethnic disparities in homeownership in the following way,

$$\text{Level-1:} \quad \log[P/(1-P)]_{ij} = \beta_{0j} + \beta_{1j}(B/H)_{1ij} + \beta_{qj}X_{qij}$$

$$\text{Level-2:} \quad \beta_{0j} = \gamma_{00} + \gamma_{0s}Y_{sj} + \mu_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{1s}Y_{sj} + \mu_{1j}$$

where B/H is a dummy variable indicating whether the household head is black or Hispanic and β_{1j} is the associated coefficient. In addition to the level-1 intercept (β_{0j}) at level-2 we also model the black/Hispanic coefficient (β_{1j}) where γ_{10} is an intercept, Y_{sj} are metropolitan-level covariate *s* for metropolitan area j associated with γ_{1s} coefficients, and μ_{1j} is a random effect, normally distributed with mean of 0 and variance τ_{11}. Substantively, this specification allows us to assess whether the effect of metropolitan characteristics on homeownership propensities is different for whites and minority groups (for instance, whether the predicted deleterious effect of residential segregation on minority homeownership also applies to whites). The model is estimated separately pooling the data for blacks and whites and Hispanics and whites, respectively.

Descriptive Analysis

Geographic distribution of metro typology

To provide a sense for how the metro typology is distributed geographically, Figure 2 maps the different metro types across the country for blacks (Appendix A provides a complete list of the metros in each category). We see very clearly that the vast majority of established black areas are in the South, Midwest, and lower Northeast. The established and fast growing areas are overwhelmingly in the South,

including Houston, TX; Atlanta, GA; Dallas, TX; Baltimore, MD; and Fort Lauderdale, FL, but also include some Midwestern areas such as Indianapolis, IN; Columbus, OH; and Milwaukee, MI. Established and slow growing metros for blacks are somewhat more spread out and Northern, including New York, NY; Chicago, IL; Philadelphia, PA; and Detroit, MI, but also several metros in California such as Los Angeles and Oakland.

FIGURE 2 ABOUT HERE

New destinations for blacks are concentrated in the West, including: Riverside, CA; Phoenix, AZ; Portland, OR; Las Vegas, NV; and Austin, TX, though there are also a number in the Midwest such as Minneapolis, MN and Grand Rapids, MI. And finally, metros with a small base and slow growth for blacks are more widespread, but are somewhat concentrated in the Northeast, in cities such as Boston, MA; Nassau, NY; and Pittsburgh, PA, but also include a number of Western metros such as Seattle, WA; Denver, CO; San Francisco, CA; and San Diego, CA.

The Hispanic typology, mapped in Figure 3 (and listed in Appendix B), is distributed quite differently, and in many ways opposite to the black pattern. First, established areas are, not surprisingly, concentrated in the West, South Florida, and a relatively small part of the Northeast. Established and fast growing Hispanic areas include metros such as Dallas, TX; Riverside, CA; Phoenix, AZ; Denver, CO; Las Vegas, NV; and Fort Lauderdale, FL. Established and slower growing metros include many of the traditional gateway cities, including Los Angeles, CA; New York, NY; Chicago, IL; Houston, TX; San Diego, CA; Oakland, CA; and Miami, FL.

FIGURE 3 ABOUT HERE

New destinations for Hispanics are concentrated in areas that for blacks are established and growing, mostly in the South and Midwest. These include Southern metros such as Atlanta, GA; Charlotte, NC; Raleigh Durham, NC; and Nashville, TN and Midwestern areas like Minneapolis, MN; Indianapolis, IN; Columbus, OH; Milwaukee, WI; and Detroit, MI. And finally, metros with a small and slow growing Hispanic base are scattered through the Northeast and Midwest, and to a lesser extent the South. These include metros such as Philadelphia, PA; Boston, MA; St. Louis, MO; Cleveland, OH; Norfolk, VA; and Baltimore, MD.

Overall, blacks are more widely dispersed and less concentrated that Hispanics. No metro area was more than 52 percent black in 2000, while 10 were over 50 percent Hispanic. A small number of metros exhibited extremely high proportions of Hispanic residents, a prime example being Loredo, TX where 94 percent of the population was Hispanic. At the same time, over 100 metro areas were at least 12 percent black (the national average), while only 70 were 12 percent or more Hispanic, in spite of the

roughly comparable size of the two populations nationally. There is also more overlap in the residential location of blacks and whites than is the case for Hispanics and whites. This is because blacks and whites are both part of the increased migration from rust-belt to sun-belt areas. Hispanics participate in this trend as well, but also continue to move to traditional gateway metros such as New York and Los Angeles that are experiencing declines in their white and black populations.

Homeownership by race and metro typology

Before presenting data from the regression models it is instructive to examine the bivariate relationship between homeownership and our typology of minority population trajectories. Figure 4 shows that homeownership rose from 1990 to 2000 for blacks in all metro types, but the growth was most pronounced in established and growing metros, which also began the period with markedly higher homeownership than other areas. Figure 3 shows that a somewhat different pattern holds for Hispanics. Similar to blacks, the highest rates of homeownership among Hispanics were registered in established and growing metro areas. But rather than seeing rising homeownership across all metro categories, metro areas with a small base and slow growth Hispanic population show stagnant homeownership rates over the period. In new destinations rates actually fell precipitously, most likely owing to the increase in the share of foreign born over the course of the decade.

FIGURE 4 ABOUT HERE

We cannot draw conclusions from these patterns, however, because the metro types vary on a number of dimensions relevant to homeownership. Table 1 presents descriptive statistics for the population and housing characteristics of the different metro types. Variation in racial composition across metro types follows how they were defined. Among African Americans, established areas averaged between 20 and 24 percent black and small base metros 7 to 8 percent black in 2000. For Hispanics, established areas were more diverse, averaging 19 and 29 percent Hispanic, and small base metros averaged 4 to 5 percent Hispanic in 2000. For both the black and Hispanic typologies, established and slow growing areas averaged the largest and new destinations the smallest overall population sizes.

TABLE 1 ABOUT HERE

Housing stock conditions also vary across metro types. In the black typology, median housing values are lowest in established and growing areas, and highest in the places with small and slow growing black populations. For Hispanics, the pattern is somewhat different. Places with an established base, particularly slow growing areas, average higher housing costs, while small base metros are considerably less expensive overall. While the share of all housing units that are owner occupied does not vary tremendously across the black typology, among Hispanics the figure is somewhat lower in established

and slow growing metros. Not surprisingly, for both black and Hispanic metro typologies, there tends to be more new housing in faster growing metro areas than in slower growing areas. And finally, in both typologies, the extent of residential concentration is higher in areas with a small co-ethnic base and in areas where the minority population is growing more slowly.

Multivariate Results

Metropolitan influences on within group variation in homeownership

Table 2 presents results from the random intercept logit model that estimates the impact of metropolitan characteristics on the overall likelihood of homeownership among blacks (top panel) and Hispanics (bottom panel). Household level predictors of homeownership are well established in the literature and not the primary focus of the current analysis, and are thus presented in Appendix C and not described in detail. Not surprisingly, for both blacks and Hispanics factors related to housing demand such as age, marital status, and childbearing all predict homeownership in the expected direction, as do indicators of households' financial position, such as education, household income, occupation, and employment status. Factors relating to immigration, such as nativity and time in the U.S. among immigrants, also behave in accordance with previous studies.

Results from model 1 in the top panel of table 2 show that net of individual and household characteristics, the likelihood of homeownership among blacks does indeed vary considerably across metro types. Compared to their counterparts living in established and slow growing metros, blacks living in established and fast growing metros are 23 percent (exp(.203)) more likely to own a home. At the same time, those living in new destinations or metros with small and slow growing black populations are 20 percent (1-exp(-.220)) and 32 percent (1-exp(-.386)) less likely to own than their counterparts in established and slow growing metros, respectively. These effects remain when we control for metro population size and housing prices in model 2. However, when we include additional controls for housing stock, the positive effect of residence in an established and fast growing metro falls to insignificance (model 3). This suggests that the beneficial effects of residence in established and fast growing metros on black homeownership is in part a reflection of the newer and more owner occupied housing available in these metro contexts relative to established and slow growing areas. The negative effects of residence in metros with a small black base – either new destinations or slow growing areas – remains through the final model, underscoring the importance of minority composition to black homeownership above and beyond its association with housing stock and residential segregation.

TABLE 2 ABOUT HERE

The effect of housing stock characteristics is consistent with findings from previous studies and results do not differ considerably across models. Concentrating on model 4, results show that as expected higher median housing prices decrease the likelihood of homeownership among black households by 31 percent (1-exp(-.373)). At the same time, residence in metro areas with higher percentage of owner occupied and new housing reduces supply constraints and facilitates homeownership. Result show that a one percent increase in the proportion of owner occupied and new housing increases the odds of homeownership by 3 (exp(.031)) and 1 percent (exp(.006)), respectively.

Finally, results for model 4 support our expectation of a unique detrimental effect of residential segregation on minority homeownership beyond its association with housing stock and the size of the co-ethnic community. Estimates show that residence in metropolitan areas with higher relative concentration undermines black homeownership. Specifically, a one-point increase in RCO reduced the odds of homeownership by 25 percent (1-exp(-.290)).

The bottom panel of table 2 presents results from the same models for Hispanics. Overall we see striking similarity with the models for blacks. Results from model 1 show that established and growing Hispanic metros average 26 percent higher rates of homeownership than slower growing established areas (exp(.234)), but, as was the case for blacks, this effect disappears in model 3 when we account for the share of units that are owner occupied and new. This result highlights the importance of housing stock for understanding the advantage that minorities have in established and growing destinations.

Places with a small Hispanic base – both new destinations and slower growing areas – at first do not seem to differ from established slow growing areas. However, as we saw in the descriptive statistics in table 1, small Hispanic places are more affordable and owner occupied, on average, than other metro areas. When we account for these characteristics in subsequent models residing in a small base metro becomes clearly negatively associated with Hispanic homeownership. In model 4 we see that the odds of Hispanic homeownership are 28 percent lower in both new destination and slow base and slow growth relative to established and slow growth cities [(1-exp(-.327)) and (1-exp(-.331))].

It is worth pointing out that even though the effect of minority composition trajectories is similar for both groups, in most cases the metro designations do *not* overlap for blacks and Hispanics. Atlanta, for example, is a new destination for Hispanics but an established and growing metro for blacks. The reverse is true of Phoenix. So the fact that the same negative effect of a small co-ethnic base is evident for both blacks and Hispanics suggests that this is not a place effect, but instead is capturing the effect of the presence or absence of a co-ethnic community on minority homeownership.

The impact of housing stock on Hispanic housing tenure is also remarkably similar to the black case. Estimates from model 4 show that higher median housing values are negatively associated with homeownership propensities (exp(-.558)=.57)) while percent owner occupied (exp(.035)=1.04) and new housing (exp(.006)=1.01) facilitate ownership. As was the case for blacks, Hispanics living in metro areas with high levels of Hispanic concentration relative to whites are significantly less likely to own a home than their counterparts in less concentrated metro areas. Estimates from model 4 show that a 1 point increase in RCO decreases the likelihood of Hispanic homeownership by 19 percent (1-exp(-.211)).

Metropolitan influences on homeownership disparities with whites

The previous analyses examined contextual effects on *within* group differences in homeownership. A conceptually different question is the extent to which these metro characteristics also affect racial and ethnic disparities with whites. Table 3 presents results from models that pool data for whites and blacks and estimate not only the effect of metro characteristics on the intercept but also on the slope for being black. The interpretation for the effect on the slope is similar to that of an interaction term in standard regression. For instance, model 1 estimates the effect of metro characteristics only on the intercept (β_{0j}) and can be interpreted as the effect of these characteristics on the likelihood of homeownership for both blacks and whites. When we add predictors of the black coefficient (β_{1j}) in subsequent models, the effects on the intercept can be interpreted as the effect on whites and the effects on the coefficient as the difference in the effect between whites and blacks. Therefore, the sum of the effect on the intercept plus the effect on the coefficient is the total effect on blacks.

TABLE 3 ABOUT HERE

Beginning with model 1, results show that on average there is no advantage to being in an established and growing black metro relative to being in an established and slow growing metro. At the same time, new destinations and small base slow growth cities average lower rates of homeownership overall [(exp(-.180)= .835 and exp(-.227)= .797, respectively)]. This suggests that our typology captures some general conditions in these cities that are less conducive to homeownership for both blacks *and* whites.

However, when we add the metro typology as a predictor of the black coefficient in model 2, we see that these effects differ for blacks and whites. The most important difference is that the negative effect of residing in metros with a small black base – either new destinations or small base and slow growing areas - is significantly stronger among blacks. Results show that for whites the likelihood of owning a home is 11 (1-exp(-.122)) and 13 percent (1-exp(-.145)) lower in new destinations and small base slow growth metros, respectively, relative to established and slow growing cities. The negative effect

is significantly stronger among blacks for whom the odds are 25 (1-exp(-.122-.168)) and 33 percent (1-exp(-.145-.249)) lower, respectively. So not only is black homeownership lower in small base metros relative to blacks in other areas, inequality with whites is also larger in those cities. These effects remain across models, even after we account for metro variation in housing stock and segregation.

When we look at the overall effect of metro housing stock characteristics, we see the same pattern as in the previous models: homeownership is negatively associated with median housing values and positively associated with the share of units that are owner occupied and new. Once again, though, there are significant differences by race (model 5). Starting with the differential effect of housing stock characteristics, results show that while a one-unit increase in housing values decreases the likelihood of homeownership among whites by 22 percent (1-exp(-.218)), the reduction is 30 percent (1-exp(-.218-.144)) among blacks. A plausible explanation for this disparity is that differential treatment in lending markets results in additional constraints on black families' access to credit in high value cities relative to whites.

In a similar vein, the positive association between percent owner occupied and housing tenure is significantly weaker for blacks than for whites. Results show that while among whites a one-unit change in the percent homeowners increases the likelihood of homeownership by 4 percent (exp(0.039)), the effect is positive but significantly lower, 3 percent (exp(0.039-0.010)), among blacks. Results from model 4 show that blacks receive a significantly greater benefit from the share of all owner occupied housing that is new relative to whites, but only because metros with more new housing tend to be less segregated. When we control for segregation in the final model, whites and blacks receive the same net benefit from new housing construction.

Finally, results for the effect of residential segregation differ across groups. In the general model (model 1) black residential concentration has no overall effect on homeownership. However, once we separate the effect on blacks and whites the effect works in opposite directions. Model 5 shows that while a one-unit increase in the relative concentration of blacks raises the likelihood of homeownership among whites by 14 percent (exp(.134)), it decreases it by 24 percent (1-exp(.134-.410)) among blacks.[7]

Table 4 presents results from the same set of analyses for Hispanics. As before, model 1 estimates the overall effect of metropolitan characteristics on white and Hispanic homeownership. Contrary to the black case though, the typology does not reflect overall differences in homeownership propensities applicable to both whites and Hispanics. It is only when we model the Hispanic coefficient (model 2) that we see significant differences across groups. For Hispanics, as was the case for blacks, areas with a small Hispanic base, both new destinations and small base slow growth metros, average

significantly lower homeownership than established slow growing areas, and this effect remains even after adding housing stock and segregation measures in subsequent models. Specifically, Hispanics residing in new destinations or small base slow growth areas are 30 ((1-exp(-.353)) and 31 percent (1-exp(-.368)) less likely to own a home than their counterparts residing in established and slow growing areas.

TABLE 4 ABOUT HERE

For whites, on the other hand, homeownership does not vary significantly across the typology until we account for housing stock characteristics in model 3. Once we do, places with a small Hispanic base average higher homeownership for whites than established and slow growing areas (exp(0.055) and exp(0.060) in model 3). This result is different from the white-black case and reflects the disparate geographic distribution of blacks and Hispanics. In the black case, new destinations and small base slow growth areas are disproportionately located in the West, in housing markets that negatively affect all groups, including whites. For Hispanics, though, new destinations and small base slow growth areas tend to be located in the South, in housing markets that are beneficial for homeownership for whites and blacks.

The effects of metro housing stock characteristics are once again in line with expectations. Overall, model 1 shoes that homeownership is positively associated with metro size and the share of all housing that is owner occupied and new, and negatively associated with average housing values. Once again, though, the effects differ significantly for whites and Hispanics. As was the case for blacks, the negative effect of housing values on homeownership is significantly stronger for Hispanics than for whites. Model 5 shows that while a one-unit increase in median housing values decreases the likelihood of homeownership among whites by 23 percent (1-(exp(-.261)), it decreases it by 43 percent (1-(exp(-.261-.296)), among Hispanics. Again, disparate treatment in high value housing markets is potentially responsible for this difference.

Also, the positive association between percent new and homeownership is significantly stronger for Hispanics than for whites – in fact it is only significant for Hispanics and not for whites overall. However, this is in part due to the lower residential segregation in those areas, and the effect is reduced to non-significance when we account for concentration in model 5.

And finally, while Hispanic residential segregation appears to have no overall effect on homeownership (model 1), as in the black case segregation affects whites and Hispanics in opposite directions. A one-unit increase in the value of Hispanic RCO increase whites' likelihood of

homeownership by 10 percent (exp(.091)-1=.3) but decreases Hispanics' by 18 percent (1-(exp(.091-.294)=.18).[8]

Simulated minority homeownership rates by different metro characteristics

In order to integrate these results and provide a better intuitive sense for the differential impact of these patterns across metro areas, we next simulate how the average black or Hispanic household's homeownership probability would change under different contextual circumstances.[9] We begin with Chicago, a city that represents a fairly unfavorable housing stock (in that it is expensive and has a relatively smaller share of new and owner occupied housing), a high level of segregation, and an established slow growth base for blacks and Hispanics. We next simulate how homeownership probabilities would change if Chicago had the same housing stock, segregation, and minority composition as Atlanta and Phoenix. Atlanta represents a more affordable housing market than Chicago, an intermediate level of segregation for both blacks and Hispanics, and is an established growing metro for blacks and a new destination for Hispanics. Phoenix also has a relatively affordable housing market, but is characterized by a low level of segregation for both blacks and Hispanics, and is a new destination for blacks and an established and growing area for Hispanics.

Figure 5 shows that for the average black household, the probability of homeownership in Chicago is 41 percent. Applying to Chicago the same housing stock characteristics as Atlanta would raise predicted homeownership probability by nearly 5 percentage points to just over 45 percent. Holding housing prices and all else constant, if Chicago had a more moderate level of segregation like Atlanta, the predicted homeownership probability of the average black household would rise further still to about 46 percent. If Chicago were also experiencing more rapid growth in its black population, like Atlanta, the homeownership probability would not change appreciably because established growing and established slow growing areas do not differ significantly.

FIGURE 5 ABOUT HERE

Comparing Chicago to Phoenix shows that if the average black household in Chicago faced the same housing stock characteristics as in Phoenix, their predicted homeownership would rise considerably, as in the simulation for Atlanta, to 45 percent. If Chicago had the same low level of black concentration as Phoenix, predicted black homeownership would rise an additional nearly 4 percentage points, to 49 percent – nearly as big an increase as resulted from imposing a more affordable housing market. However, if Chicago had the same housing stock and low level of segregation as Phoenix *and* the small black base of Phoenix, predicted homeownership would fall dramatically to 42 percent. Thus overall, the

average black household would have almost identical homeownership probabilities in Chicago and Phoenix, in spite of the fact that Phoenix is much more affordable and has less than half the level of residential segregation as Chicago.

For Hispanics we see a remarkably similar pattern of effects, however due to their different composition the cities themselves work in opposite directions. The average Hispanic household would have a predicted homeownership propensity that was 7 percentage points higher, 51 relative to 44 percent, if they lived in a housing market similar to that of Atlanta compared to Chicago. If Chicago also had intermediate segregation like Atlanta, they would enjoy a small additional gain in predicted homeownership. However, if Chicago were a new destination for Hispanics, and had a small Hispanic base, the predicted homeownership would drop precipitously to 43 percent. Similar to blacks in Phoenix, the average Hispanic household living in Atlanta has *lower* odds of homeownership than in Chicago, in spite of the more affordable housing market and lower level of segregation.

The Hispanic pattern in Phoenix follows that of blacks in Atlanta. If Chicago had Phoenix's affordable housing, Hispanic predicted homeownership would be over 6 percentage points higher (50 percent). If Chicago had Phoenix's low level of Hispanic concentration, the predicted homeownership would rise another 6 percentage points to 56 percent. Finally, if Chicago were established and growing instead of established and slow growing, it would not appreciably change predicted homeownership.

Conclusions

This paper contributes to the literature on the impact of context on minority well-being by formulating and testing a theoretical model of minority homeownership that integrates three metropolitan level characteristics that have received disparate treatment in prior studies: housing stock, residential segregation, and minority composition. In addition, we investigate the implications of recent trends in minority population redistribution within the U.S. by formulating a measure of minority composition that takes into account the size and growth of minority groups and assess its impact on homeownership. Finally, we explicitly compare blacks and Hispanics to investigate the extent to which metropolitan contextual forces similarly affect the two groups.

Overall, results show that the three mechanisms exert independent effects on minority homeownership that are remarkably similar for blacks and Hispanics. Metropolitan housing stock characteristics such as higher property values and lower share of owner occupied and new housing inhibit access to homeownership among blacks and Hispanics. Moreover, models assessing racial and ethnic disparities with whites show that these detrimental effects are significantly stronger among minorities.

Both blacks and Hispanics suffer greater constraints on homeownership in more expensive markets and reap fewer benefits from a greater availability of owner occupied units than their white counterparts. Thus, while the overrepresentation of minorities in less favorable housing markets is an important contributor to homeownership disparities by race and Hispanic origin, the fact that these adverse effects are stronger among minorities supports a racial stratification perspective on homeownership inequality and is at least suggestive of differential treatment in such markets.

The previous literature was ambiguous as to whether residential segregation exerts a direct influence on minority homeownership over and above its association with housing stock and minority composition, especially among Hispanics. Our results show that when the different contextual forces expected to affect homeownership are considered in an integrated framework residential segregation has a clearly negative impact on minority well-being. Moreover, the detrimental effects are remarkably similar across groups. For both backs and Hispanics, the degree of relative residential concentration is inversely related to homeownership propensities. At the same time, models investigating the role of relative concentration on racial and ethnic inequality in homeownership show positive effects on white homeownership. This difference highlights that lower homeownership propensities are not a general characteristic of highly segregated cities but rather that segregation affects minority groups in particular. The extent to which there are economic benefits to the dominant group from constrained residential opportunities among minorities requires further examination. Similarly, the finding that residential segregation influences homeownership independent of its association with minority composition and housing conditions highlights the need to more clearly separate the three in subsequent research.

Finally, a central aim of this study was to investigate the relationship between minority composition and homeownership, especially in light of recent minority population redistribution within the U.S. Positive spill-over effects of a large co-ethnic community on socio-economic outcomes has long been hypothesized among Hispanics, especially immigrants, but has received considerably less attention in the literature on blacks. As before, results are remarkably similar for both blacks and Hispanics. For members of both groups residents of cities that lack a sizable co-ethnic base are substantially less likely than their counterparts in other areas to be homeowners. Interestingly, while initial models showed that cities with an established and growing minority base also averaged higher minority homeownership than slower growing established areas, the effect was a function of the lower housing values, higher share of new housing, and lower segregation in those cities. Thus the key contributor to minority homeownership is the presence of a sizeable co-ethnic base, and not how fast the base is expanding.

The fact that there is little overlap between the black and Hispanic typologies suggests that the association between co-ethnic population and homeownership is not driven by unobserved metro characteristics. New destinations for Hispanics tend to be established areas for blacks and vice versa. As a result, the effect of residing in cities like Phoenix or Atlanta on minority homeownership is dramatically different for Blacks and Hispanics. Thus, answering the question of what recent population redistribution portends for minority homeownership demands paying close attention to the context of receiving communities. While favorable housing conditions (particularly lower prices and a greater share of owner occupied units) common in growing areas of the country bode well for homeownership overall, among minorities the effects will be mediated by the size of the co-ethnic community. For blacks the "new" great migration to the South, which overwhelmingly involves residence in metros with an established co-ethnic base, is likely to improve prospects for homeownership. For Hispanics, on the other hand, much of the growth is in new destinations where the lack of an established Hispanic community is likely to undermine homeownership. Thus in the near term population trends hold more promise for raising the homeownership of blacks than Hispanics.

Endnotes

1. While the share of all black (and Hispanic) households who owned their homes rose from roughly 44 (42) to 47 (46) percent between 1990 and 2000, the increase was even greater for whites, whose rate of homeownership rose from 68 to over 74 percent over the period. There is also ample reason to expect that inequality has widened as a result of the recent housing crisis, as minorities were disproportionately represented among subprime mortgages.

2. See Ruggles et al. 2008 for data source. The sample size for whites was reduced to 1% to facilitate estimation.

3. Metropolitan areas include both free-standing Metropolitan Statistical Areas (MSAs), which are generally surrounded by non-metropolitan territory and therefore are not integrated with other metropolitan areas, and Primary Metropolitan Statistical Areas (PMSAs), which are the same as MSAs except that they are near, and economically linked to, other PMSAs, to form larger Consolidated Metropolitan Statistical Areas (CMSAs). For further information, see variable description at the IPUMS-Project at http://usa.ipums.org/.

4. Because a dummy variable for nativity is included simultaneously with years in the U.S., coefficients for length of US residence indicate the effect for the foreign born population (Krivo 1995).

5. For a discussion of the limitation of the index see Egan et al. 1998 and Massey and Denton 1998.

6. The data can be found at http://www.census.gov:80/hhes/www/housing/housing_patterns/housing_patterns.html.

7. Additional calculations (not reported) reveal that if we use the degree of absolute concentration of the black population, the positive effect on whites is not statistically significant. The negative effect of segregation on black homeownership, however, remains significant.

8. Additional tabulations (not reported) reveal that this pattern holds true whether relative or absolute measures of residential concentration are used.

9. So as not to confound metro variation in individual and household-level characteristics with metro variation in housing context, I use the national median to obtain values for the “average” black and Hispanic households.

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Table 1. Descriptive Statistics for Black and Hispanic Minority Composition Typology

	Established and growing	Established and slow/not growing	New destinations (small base, fast growing)	Small and slow/not growing
% Black/Hispanic 2000				
Black typology	24.0	20.7	7.6	6.9
Hispanic typology	18.6	29.1	5.1	4.2
Total population				
Black typology	789,340	1,387,061	782,442	836,742
Hispanic typology	924,419	1,255,195	878,103	995,765
Median housing values				
Black typology	99,795	115,576	117,062	136,289
Hispanic typology	130,902	157,336	110,738	113,243
Percent owner-occupied				
Black typology	65.8	63.0	66.4	65.4
Hispanic typology	64.1	59.6	67.3	65.9
Percent new construction				
Black typology	27.9	21.3	23.1	18.7
Hispanic typology	22.7	20.5	24.2	19.5
Relative concentration				
Black typology	0.48	0.62	0.64	0.65
Hispanic typology	0.37	0.42	0.45	0.46
N				
Black typology	61	52	40	64
Hispanic typology	36	61	61	37

Table 2. Hierarchical Logit Analysis of Metropolitan Effects on Black and Hispanic Homeownership
(Standard errors in parenthesis)

	1	2	3	4
BLACKS*				
Minority composition typology (ref=established & slow growing)				
Estab. & growing	0.203 ** (0.082)	0.150 ** (0.070)	0.018 (0.038)	0.005 (0.036)
New destinations	-0.220 ** (0.094)	-0.168 ** (0.080)	-0.288 ** (0.045)	-0.275 ** (0.043)
Small base slow grow	-0.386 ** (0.083)	-0.301 ** (0.071)	-0.359 ** (0.039)	-0.361 ** (0.037)
Housing stock				
Population size (log)		-0.001 (0.029)	-0.001 (0.015)	0.017 (0.015)
Med. housing val. (log)		-0.581 ** (0.083)	-0.348 ** (0.047)	-0.373 ** (0.045)
% owner occupied			0.030 ** (0.002)	0.031 ** (0.002)
% new			0.010 ** (0.002)	0.006 ** (0.002)
Residential Segregation				
Relative concentration				-0.290 ** (0.052)
Variance between cities	0.183	0.128	0.02902	0.025
HISPANICS*				
Minority composition typology (ref=established & slow growing)				
Estab. & growing	0.234 ** (0.111)	0.202 ** (0.087)	-0.016 (0.073)	-0.008 (0.071)
New destinations	0.085 (0.097)	-0.071 (0.079)	-0.343 ** (0.069)	-0.327 ** (0.067)
Small base slow grow	-0.011 (0.113)	-0.156 (0.091)	-0.337 ** (0.077)	-0.331 ** (0.074)
Housing Stock				
Population size (log)		-0.003 (0.033)	0.008 (0.026)	0.016 (0.025)
Med. housing val. (log)		-0.730 ** (0.081)	-0.558 ** (0.068)	-0.558 ** (0.065)
% owner occupied			0.035 ** (0.004)	0.035 ** (0.004)
% new			0.008 ** (0.003)	0.006 (0.003)
Residential Segregation				
Relative concentration				-0.211 ** (0.082)
Variance between cities	0.266	0.160	0.096	0.088

*Individual and household level coefficients from model 1 presented in 1st column of Appendix C for blacks and 2nd column of Appendix C for Hispanics.
** p<.05

Table 3. Hierarchical Logit Analysis of Metropolitan Effects on Black-White Homeownership Disparities (Standard errors in parenthesis)

	1		2		3		4		5	
INTERCEPT MODEL*										
Minority composition/typology (ref=established & slow growing)										
Estab. & growing	-0.004	(0.023)	-0.039	(0.029)	-0.035	(0.029)	-0.019	(0.027)	-0.019	(0.024)
New destinations	-0.180 **	(0.026)	-0.122 **	(0.031)	-0.122 **	(0.031)	-0.122 **	(0.029)	-0.127 **	(0.026)
Small base slow grow	-0.227 **	(0.022)	-0.145 **	(0.027)	-0.147 **	(0.027)	-0.160 **	(0.025)	-0.157 **	(0.022)
Demographic and economic characteristics										
Population size (log)	-0.002	(0.009)	0.001	(0.009)	0.003	(0.011)	0.001	(0.010)	-0.006	(0.009)
Med. housing val. (log)	-0.270 **	(0.027)	-0.269 **	(0.026)	-0.244 **	(0.032)	-0.233 **	(0.030)	-0.218 **	(0.027)
Housing market characteristics										
% owner occupied	0.036 **	(0.001)	0.036 **	(0.001)	0.036 **	(0.001)	0.039 **	(0.001)	0.039 **	(0.001)
% new	0.003 **	(0.001)	0.003 **	(0.001)	0.003 **	(0.001)	0.001	(0.001)	0.002 **	(0.001)
Segregation										
Relative concentration	-0.018	(0.032)	-0.009	(0.031)	-0.009	(0.031)	0.009	(0.030)	0.134 **	(0.032)
Variance between cities	0.014		0.012		0.013		0.009		0.006	
BLACK SLOPE MODEL										
Minority composition/typology (ref=established & slow growing)										
Estab. & growing			0.090	(0.048)	-0.004	(0.020)	0.037	(0.047)	0.024	(0.043)
New destinations			-0.168 **	(0.056)	-0.078	(0.058)	-0.164 **	(0.053)	-0.149 **	(0.049)
Small base slow grow			-0.249 **	(0.049)	0.080	(0.049)	-0.195 **	(0.046)	-0.203 **	(0.043)
Demographic and economic characteristics										
Population size (log)					-0.165 **	(0.057)	0.002	(0.019)	0.027	(0.017)
Med. housing val. (log)					-0.238 **	(0.050)	-0.101	(0.056)	-0.144 **	(0.052)
Housing market characteristics										
% owner occupied							-0.010 **	(0.002)	-0.008 **	(0.002)
% new							0.009 **	(0.002)	0.003	(0.002)
Segregation										
Relative concentration									-0.410 **	(0.060)
Variance between cities	0.053		0.048		0.050		0.038		0.030	

*Individual and household level coefficients from model 1 presented in 3rd column of Appendix C

** p<.05

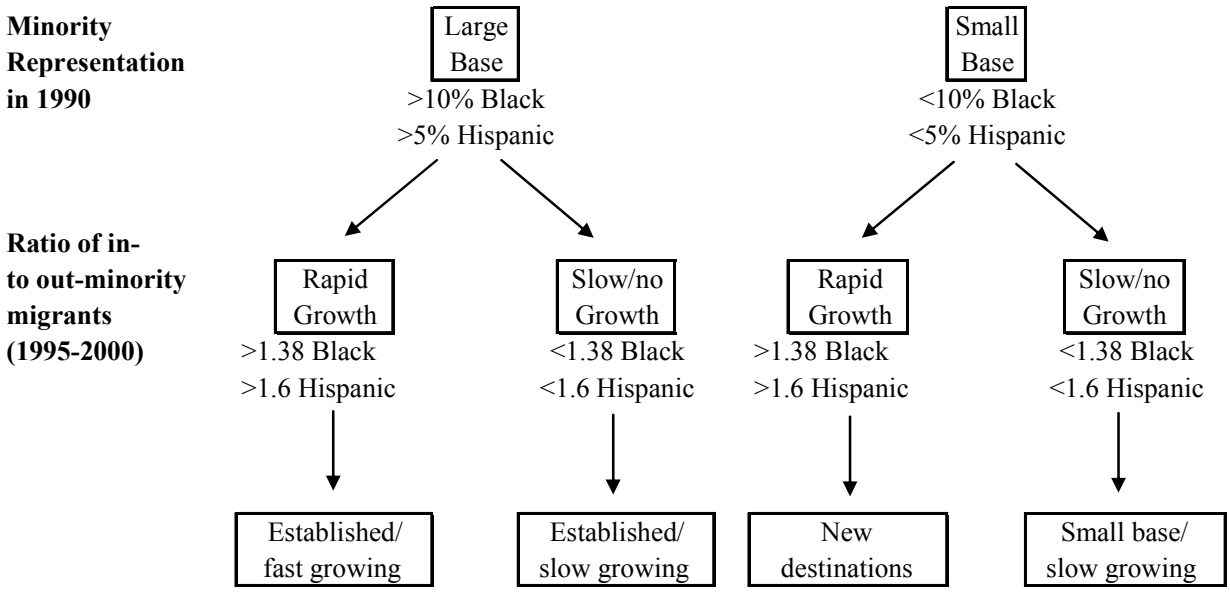
Table 4. Hierarchical Logit Analysis of Metropolitan Effects on Hispanic-White Homeownership Disparities (Standard errors in parentheses)

	1		2		3		4		5	
INTERCEPT MODEL*										
Minority composition/typology (ref=established & slow growing)										
Estab. & growing	0.004	(0.029)	-0.006	(0.030)	0.009	(0.028)	0.022	(0.030)	0.019	(0.029)
New destinations	-0.021	(0.026)	0.033	(0.027)	0.055 **	(0.025)	0.062 **	(0.028)	0.058 **	(0.027)
Small base slow grow	-0.017	(0.028)	0.042	(0.029)	0.060 **	(0.027)	0.060 **	(0.029)	0.059 **	(0.028)
Demographic and economic characteristics										
Population size (log)	0.028 **	(0.010)	0.030 **	(0.009)	0.035 **	(0.009)	0.034 **	(0.010)	0.032 **	(0.010)
Med. housing val. (log)	-0.330 **	(0.026)	-0.319 **	(0.025)	-0.256 **	(0.025)	-0.261 **	(0.027)	-0.261 **	(0.027)
Housing market characteristics										
% owner occupied	0.036 **	(0.001)	0.036 **	(0.001)	0.037 **	(0.001)	0.037 **	(0.001)	0.037 **	(0.001)
% new	0.002	(0.001)	0.002	(0.001)	0.002	(0.001)	0.000	(0.001)	0.001	(0.001)
Segregation										
Relative concentration	0.032	(0.032)	0.041	(0.031)	0.046	(0.029)	0.042	(0.030)	0.091 **	(0.033)
Variance between cities	0.011		0.009		0.007		0.009		0.008	
HISPANIC SLOPE MODEL										
Minority composition/typology (ref=established & slow growing)										
Estab. & growing			0.065	(0.067)	0.035	(0.072)	-0.022	(0.083)	-0.010	(0.080)
New destinations			-0.281 **	(0.060)	-0.360 **	(0.066)	-0.377 **	(0.078)	-0.353 **	(0.075)
Small base slow grow			-0.329 **	(0.071)	-0.400 **	(0.077)	-0.377 **	(0.086)	-0.368 **	(0.083)
Demographic and economic characteristics										
Population size (log)					-0.030	(0.027)	-0.025	(0.029)	-0.013	(0.028)
Med. housing val. (log)					-0.342 **	(0.068)	-0.295 **	(0.076)	-0.296 **	(0.074)
Housing market characteristics										
% owner occupied							-0.001	(0.004)	-0.002	(0.004)
% new							0.009 **	(0.003)	0.005	(0.003)
Segregation										
Relative concentration									-0.294 **	(0.093)
Variance between cities	0.087		0.085		0.100		0.117		0.108	

*Individual and household level coefficients from model 1 presented in 4th column of Appendix C

** p<.05

Figure 1: Definition of Metropolitan Areas Minority Composition Typology



Cutoff points set at the median values for percent Black and Hispanic in 1990 and migration ratio

Figure 2. Geographic Distribution of Black Composition Typology

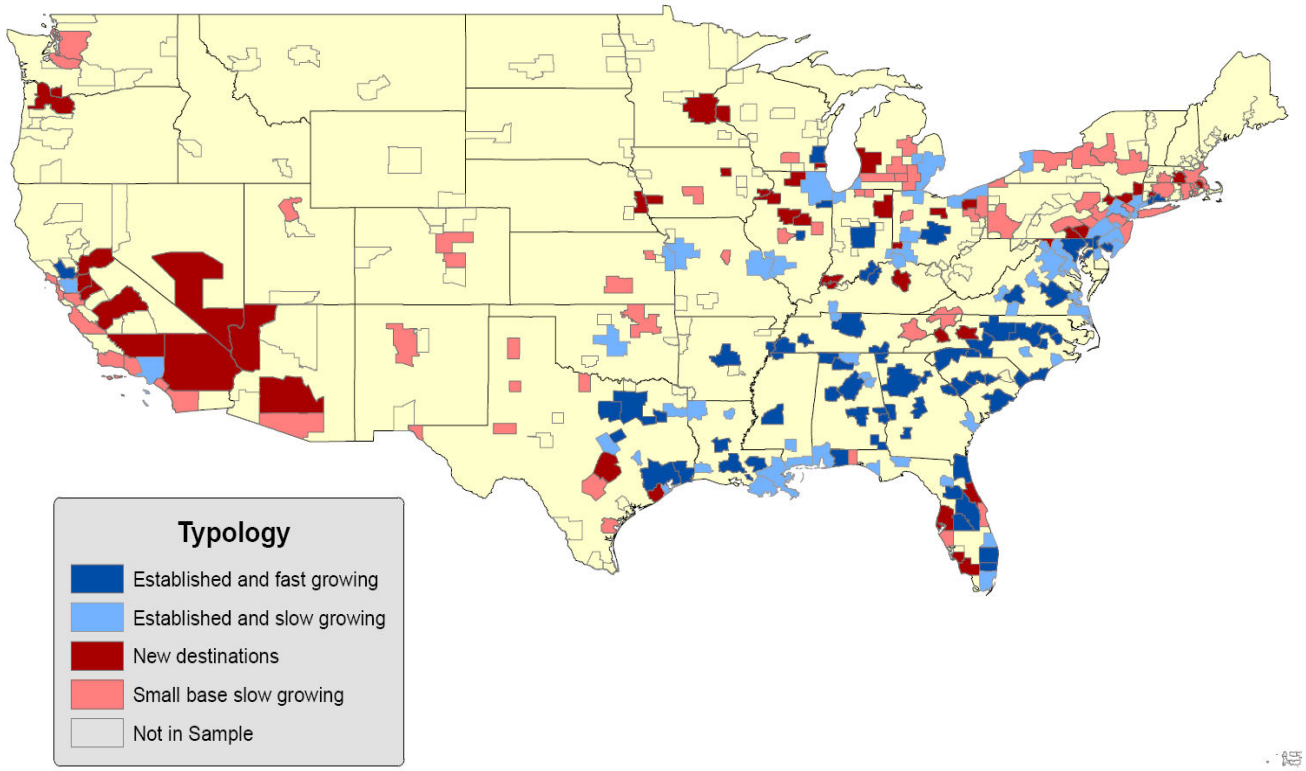


Figure 3. Geographic Distribution of Hispanic Composition Typology

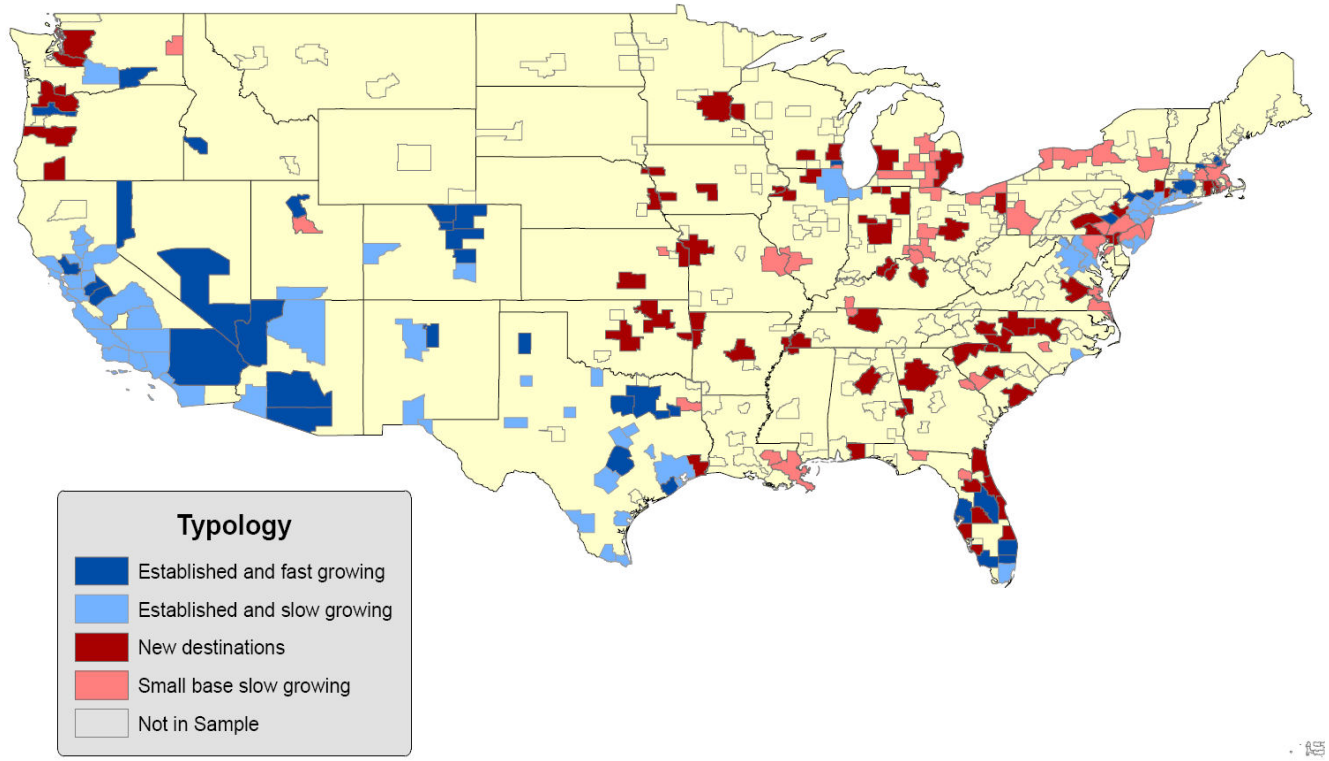


Figure 4. Homeownership Rates by Minority Composition Typology for Blacks (B) and Hispanics (H), 1990-2000

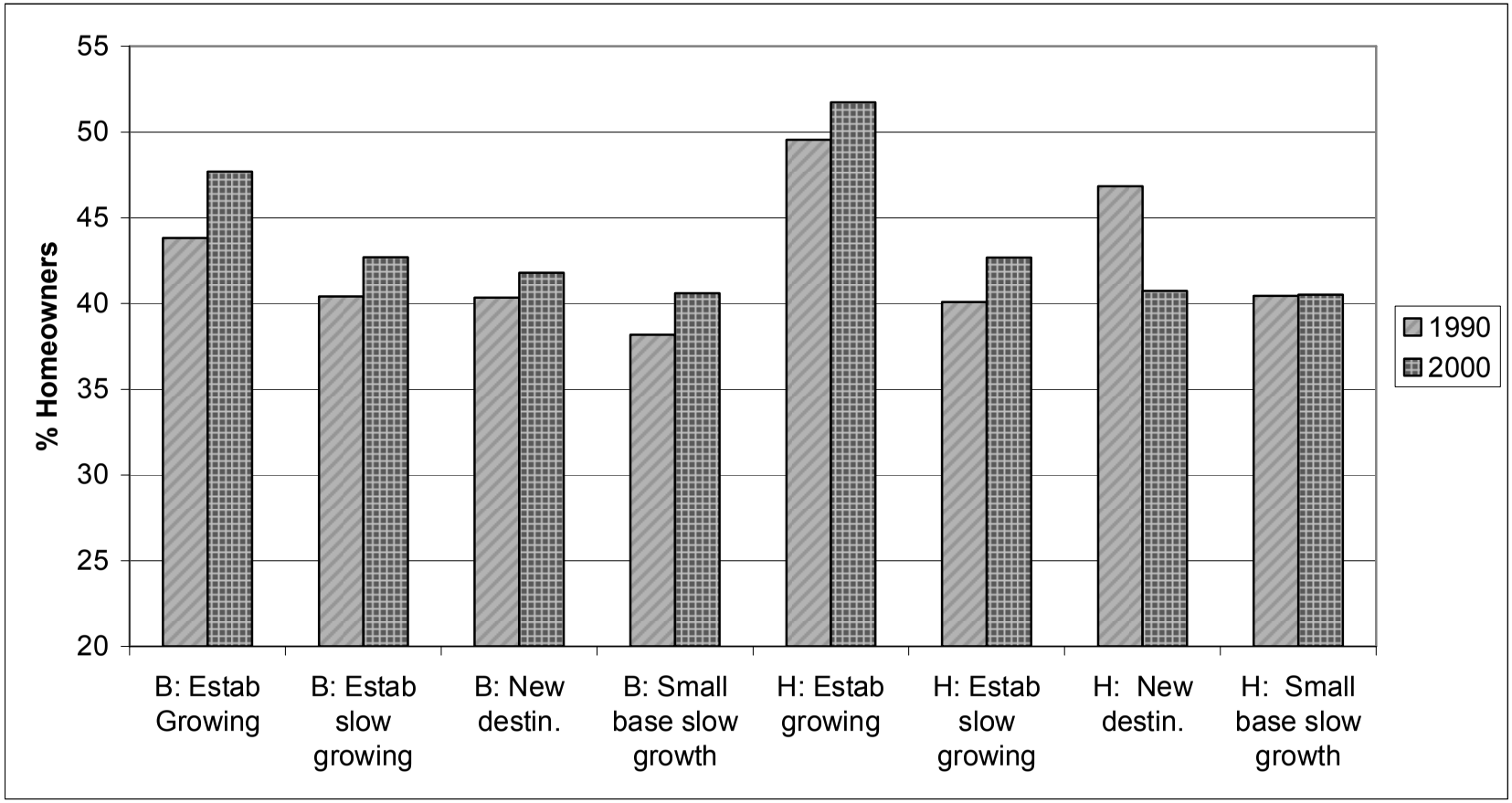
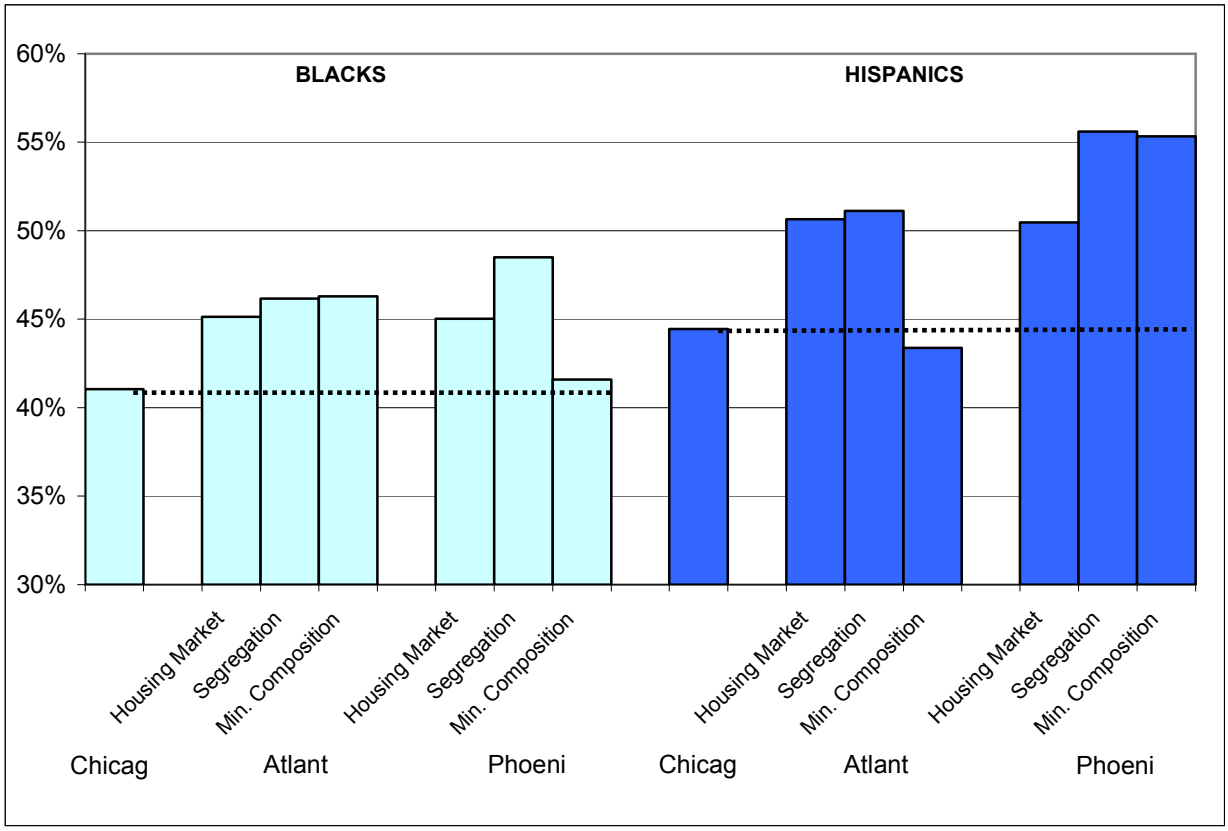


Figure 5. Simulation of Predicted Homeownership Probabilities across Metro Areas



Appendix A. List of Metro areas in Black Composition Typology

Established and slow growing

1 Los Angeles-Long Beach, CA
2 New York, NY
3 Chicago, IL
4 Philadelphia, PA-NJ
5 Washington, DC-MD-VA-WV
6 Detroit, MI
7 St. Louis, MO-IL
8 Oakland, CA
9 Miami, FL
10 Cleveland-Lorain-Elyria, OH
11 Newark, NJ
12 Kansas City, MO-KS
13 Cincinnati, OH-KY-IN
14 Norfolk-Va Beach-Newport News, VA-NC
15 New Orleans, LA
16 Buffalo-Niagara Falls, NY
17 Oklahoma City, OK
18 Dayton-Springfield, OH
19 Gary, IN
20 Toledo, OH
21 Jersey City, NJ
22 Mobile, AL
23 Flint, MI
24 Shreveport-Bossier City, LA
25 Biloxi-Gulfport-Pascagoula, MS
26 Atlantic-Cape May, NJ
27 Stamford-Norwalk, CT
28 Trenton, NJ
29 Huntsville, AL
30 Fort Pierce-Port St. Lucie, FL
31 Killeen-Temple, TX
32 Fayetteville, NC
33 Savannah, GA
34 Tallahassee, FL
35 Galveston-Texas City, TX
36 Roanoke, VA
37 Gainesville, FL
38 Longview-Marshall, TX
39 Clarksv'l-Hopkinsv'l, TN-KY
40 Houma, LA
41 Lake Charles, LA
42 Benton Harbor, MI
43 Charlottesville, VA
44 Bryan-College Station, TX
45 Jacksonville, NC
46 Panama City, FL
47 Monroe, LA
48 Dover, DE
49 Anniston, AL
50 Hattiesburg, MS
51 Danville, VA
52 Gadsden, AL

Established and growing

1 Houston, TX
2 Atlanta, GA
3 Dallas, TX
4 Baltimore, MD
5 Fort Worth-Arlington, TX
6 Orlando, FL
7 Fort Lauderdale, FL
8 Indianapolis, IN
9 Columbus, OH
10 Milwaukee-Waukesha, WI
11 Charlotte-Gastonia-Rock Hill, NC-SC

Established and growing (cont.)

12 Greensboro-Winston-Salem -High Point, NC
13 Nashville, TN
14 Raleigh-Durham-Chap'l Hill, NC
15 Memphis, TN-AR-MS
16 W Palm Beach-Boca Raton, FL
17 Jacksonville, FL
18 Louisville, KY-IN
19 Richmond-Petersburg, VA
20 Greenville-Spartanburg -Anderson, SC
21 Birmingham, AL
22 Baton Rouge, LA
23 Wilmington-Newark, DE-MD
24 Little Rock-N Little Rock, AR
25 Charleston-N Charleston, SC
26 New Haven-Meriden, CT
27 Columbia, SC
28 Vallejo-Fairfield-Napa, CA
29 Lakeland-Winter Haven, FL
30 Augusta-Aiken, GA-SC
31 Chattanooga, TN-GA
32 Bridgeport, CT
33 Jackson, MS
34 Pensacola, FL
35 Lafayette, LA
36 Beaumont-Port Arthur, TX
37 Montgomery, AL
38 Macon, GA
39 Columbus, GA-AL
40 Ocala, FL
41 Wilmington, NC
42 Lynchburg, VA
43 Waco, TX
44 Myrtle Beach, SC
45 Tyler, TX
46 Tuscaloosa, AL
47 Athens, GA
48 Vineland-Milly'l-Bridgeton, NJ
49 Decatur, AL
50 Rocky Mount, NC
51 Florence, AL
52 Dothan, AL
53 Greenville, NC
54 Alexandria, LA
55 Albany, GA
56 Auburn-Opelika, AL
57 Decatur, IL
58 Goldsboro, NC
59 Jackson, TN
60 Sumter, SC
61 Kankakee, IL

New destinations

1 Riverside-San Bernardino, CA
2 Phoenix-Mesa, AZ
3 Minneapolis-St. Paul, MN-WI
4 Tampa-St. Petersburg-Clearwater, FL
5 Portland-Vancouver, OR-WA
6 Sacramento, CA
7 Las Vegas, NV-AZ
8 Austin-San Marcos, TX
9 Grand Rapids-Muskegon-Holland, MI
10 Fresno, CA
11 Omaha, NE-IA

New destinations (cont.)

12 Akron, OH
13 Bakersfield, CA
14 Stockton-Lodi, CA
15 Worcester, MA-CT
16 Fort Wayne, IN
17 Daytona Beach, FL
18 Lexington, KY
19 Lancaster, PA
20 Modesto, CA
21 Fort Myers-Cape Coral, FL
22 Newburgh, NY-PA
23 York, PA
24 Rockford, IL
25 Davenport-Moline-Rock Island, IA-IL
26 Peoria-Pekin, IL
27 Hickory-Morganton-Lenoir, NC
28 Hamilton-Middletown, OH
29 Evansville-Henderson, IN-KY
30 Dutchess County, NY
31 Brockton, MA
32 Naples, FL
33 Brazoria, TX
34 Waterbury, CT
35 Asheville, NC
36 Racine, WI
37 Mansfield, OH
38 Bloomington-Normal, IL
39 Hagerstown, MD
40 Waterloo-Cedar Falls, IA

Small base slow growth

1 Boston, MA-NH
2 Orange County, CA
3 San Diego, CA
4 Nassau-Suffolk, NY
5 Seattle-Bellevue-Everett, WA
6 Pittsburgh, PA
7 Denver, CO
8 San Francisco, CA
9 San Jose, CA
10 San Antonio, TX
11 Bergen-Passaic, NJ
12 Salt Lake City-Ogden, UT
13 Providence-Fall River-Warwick, RI-MA
14 Hartford, CT
15 Middlesex-Somerset-Hunterdon, NJ
16 Monmouth-Ocean, NJ
17 Rochester, NY
18 Honolulu, HI
19 Albany-Schenectady-Troy, NY
20 Tucson, AZ
21 Tulsa, OK
22 Ventura, CA
23 Syracuse, NY
24 Albuquerque, NM
25 Tacoma, WA
26 Knoxville, TN
27 El Paso, TX
28 Allentown-Bethlehem-Easton, PA
29 Harrisburg-Lebanon-Carlisle, PA
30 Scranton--Wilkes-Barre--Hazleton, PA

Small base slow growth (cont.)

31 Youngstown-Warren, OH
32 Sarasota-Bradenton, FL
33 Springfield, MA
34 Ann Arbor, MI
35 Wichita, KS
36 Colorado Springs, CO
37 Johnson City-Kingsport-Bristol, TN-VA
38 Melbourne-Titusville-Palm Bay, FL
39 Des Moines, IA
40 Kalamazoo-Battle Creek, MI
41 Lansing-East Lansing, MI
42 Madison, WI
43 Canton-Massillon, OH
44 Saginaw-Bay City-Midland, MI
45 Salinas, CA
46 Santa Barbara-Santa Maria-Lompoc, CA
47 Corpus Christi, TX
48 Reading, PA
49 Utica-Rome, NY
50 Erie, PA
51 South Bend, IN
52 Anchorage, AK
53 Lubbock, TX
54 Odessa-Midland, TX
55 Amarillo, TX
56 Springfield, IL
57 Elkhart-Goshen, IN
58 Champaign-Urbana, IL
59 Fort Walton Beach, FL
60 Topeka, KS
61 Jackson, MI
62 Lima, OH
63 Wichita Falls, TX
64 Columbia, MO

Appendix B. List of Metro areas in Hispanic Composition Typology

Established and slow growing

1 Los Angeles-Long Beach, CA
2 New York, NY
3 Chicago, IL
4 Washington, DC-MD-VA-WV
5 Houston, TX
6 Orange County, CA
7 San Diego, CA
8 Nassau-Suffolk, NY
9 Oakland, CA
10 Miami, FL
11 Newark, NJ
12 San Francisco, CA
13 San Jose, CA
14 Sacramento, CA
15 San Antonio, TX
16 Bergen-Passaic, NJ
17 Middlesex-Somerset-Hunterdon, NJ
18 Fresno, CA
19 Honolulu, HI
20 Ventura, CA
21 Albuquerque, NM
22 El Paso, TX
23 Bakersfield, CA
24 Gary, IN
25 Jersey City, NJ
26 Springfield, MA
27 McAllen-Edinburg-Mission, TX
28 Stockton-Lodi, CA
29 New Haven-Meriden, CT
30 Bridgeport, CT
31 Santa Rosa, CA
32 Salinas, CA
33 Santa Barbara-Santa Maria-Lompoc, CA
34 Corpus Christi, TX
35 Visalia-Tulare-Porterville, CA
36 Atlantic-Cape May, NJ
37 Stamford-Norwalk, CT
38 Trenton, NJ
39 Brownsville-Harlingen-San Benito, TX
40 Killeen-Temple, TX
41 Santa Cruz-Watsonville, CA
42 Galveston-Texas City, TX
43 San Luis Obispo-Atascadero-Paso Robles, CA
44 Lubbock, TX
45 Odessa-Midland, TX
46 Yakima, WA
47 Waco, TX
48 Chico-Paradise, CA
49 Laredo, TX
50 Las Cruces, NM
51 Yolo, CA
52 Yuma, AZ
53 Bryan-College Station, TX
54 Jacksonville, NC
55 Vineland-Millville-Bridgeton, NJ
56 Pueblo, CO
57 Wichita Falls, TX
58 Yuba City, CA
59 Abilene, TX
60 Flagstaff, AZ-UT
61 Grand Junction, CO

Established and growing

1 Dallas, TX
2 Riverside-San Bernardino, CA
3 Phoenix-Mesa, AZ
4 Tampa-St. Petersburg-Clearwater, FL
5 Denver, CO
6 Fort Worth-Arlington, TX
7 Orlando, FL
8 Fort Lauderdale, FL
9 Las Vegas, NV-AZ
10 Salt Lake City-Ogden, UT
11 Austin-San Marcos, TX
12 Hartford, CT
13 W Palm Beach-Boca Raton, FL
14 Tucson, AZ
15 Vallejo-Fairfield-Napa, CA
16 Colorado Springs, CO
17 Modesto, CA
18 Boise City, ID
19 Lawrence, MA-NH
20 Newburgh, NY-PA
21 Reading, PA
22 Salem, OR
23 Reno, NV
24 Boulder-Longmont, CO
25 Fort Collins-Loveland, CO
26 Naples, FL
27 Brazoria, TX
28 Waterbury, CT
29 Amarillo, TX
30 Merced, CA
31 Richland-Kennewick-Pasco, WA
32 Racine, WI
33 Greeley, CO
34 Tyler, TX
35 Santa Fe, NM
36 Fitchburg-Leominster, MA

New destinations

1 Detroit, MI
2 Atlanta, GA
3 Minneapolis-St. Paul, MN-WI
4 Seattle-Bellevue-Everett, WA
5 Portland-Vancouver, OR-WA
6 Kansas City, MO-KS
7 Indianapolis, IN
8 Columbus, OH
9 Milwaukee-Waukesha, WI
10 Charlotte-Gastonia-Rock Hill, NC-SC
11 Greensboro--Winston-Salem--High Point, NC
12 Nashville, TN
13 Providence-Fall River-Warwick, RI-MA
14 Raleigh-Durham-Chapel H'l, NC
15 Memphis, TN-AR-MS
16 Jacksonville, FL
17 Grand Rapids-Muskegon-Holland, MI
18 Oklahoma City, OK
19 Louisville, KY-IN
20 Richmond-Petersburg, VA
21 Greenville-Spartanburg-Anderson, SC
22 Birmingham, AL

New destinations (cont.)

23 Tulsa, OK
24 Omaha, NE-IA
25 Tacoma, WA
26 Allentown-Bethlehem-Easton, PA
27 Harrisburg-Lebanon-Carlisle, PA
28 Youngstown-Warren, OH
29 Sarasota-Bradenton, FL
30 Wilmington-Newark, DE-MD
31 Little Rock-N Little Rock, AR
32 Charleston-N Charleston, SC
33 Wichita, KS
34 Columbia, SC
35 Fort Wayne, IN
36 Daytona Beach, FL
37 Lakeland-Winter Haven, FL
38 Lexington, KY
39 Melbourne-Titusville-Palm Bay, FL
40 Des Moines, IA
41 Fort Myers-Cape Coral, FL
42 Madison, WI
43 Pensacola, FL
44 Beaumont-Port Arthur, TX
45 York, PA
46 Rockford, IL
47 Davenport-Moline-Rock Island, IA-IL
48 Hickory-Morganton-Lenoir, NC
49 Eugene-Springfield, OR
50 Fort Pierce-Port St. Lucie, FL
51 Fayetteville-Springdale-Rogers, AR
52 Dutchess County, NY
53 Columbus, GA-AL
54 South Bend, IN
55 Ocala, FL
56 Danbury, CT
57 Fort Smith, AR-OK
58 Lafayette, IN
59 Elkhart-Goshen, IN
60 Medford-Ashland, OR
61 Sioux City, IA-NE

Small base slow growth

1 Philadelphia, PA-NJ
2 Boston, MA-NH
3 St. Louis, MO-IL
4 Baltimore, MD
5 Pittsburgh, PA
6 Cleveland-Lorain-Elyria, OH
7 Cincinnati, OH-KY-IN
8 Norfolk-Va Beach-Newport News, VA-NC
9 New Orleans, LA
10 Buffalo-Niagara Falls, NY
11 Monmouth-Ocean, NJ
12 Rochester, NY
13 Dayton-Springfield, OH
14 Albany-Schenectady-Troy, NY
15 Syracuse, NY
16 Toledo, OH
17 Baton Rouge, LA
18 Ann Arbor, MI
19 Worcester, MA-CT
20 Augusta-Aiken, GA-SC
21 Lancaster, PA

Small base slow growth (cont.)

22 Kalamazoo-Battle Creek, MI
23 Lansing-East Lansing, MI
24 Flint, MI
25 Spokane, WA
26 Saginaw-Bay City-Midland, MI
27 Provo-Orem, UT
28 Fayetteville, NC
29 Lowell, MA-NH
30 Tallahassee, FL
31 Anchorage, AK
32 Gainesville, FL
33 Longview-Marshall, TX
34 Clarksville-Hopkinsville, TN-KY
35 New Bedford, MA
36 Topeka, KS
37 Kenosha, WI

Appendix C: Estimates of Efffects of Individual and Household Level Characteristics
(Standard errors in parenthesis)

	For Table 2 - Model 1				For Tables 3 & 4 - Model 1			
	Blacks		Hispanics		Blacks		Hispanics	
Intercept	-4.990	(0.076)	-5.204	(0.089)	-3.719	(0.319)	-3.843	(0.331)
Demographic/Family Structure Characteristics								
Black/Hispanic	---		---		-0.789	(0.018)	-0.376	(0.026)
Age	0.063	(0.000)	0.045	(0.001)	0.065	(0.000)	0.057	(0.000)
Male	0.235	(0.010)	0.257	(0.012)	0.178	(0.007)	0.179	(0.008)
Marital status (ref=married)								
Widowed	-0.476	(0.020)	-0.204	(0.029)	-0.556	(0.016)	-0.371	(0.020)
Divorced	-0.906	(0.011)	-0.765	(0.014)	-1.047	(0.008)	-0.981	(0.009)
Single	-1.054	(0.012)	-0.836	(0.014)	-1.155	(0.009)	-1.043	(0.010)
Children under 18	0.256	(0.009)	0.401	(0.011)	0.358	(0.007)	0.442	(0.007)
Human capital and socio-economic status characteristics								
Education (ref= 9th grade or less)								
10th-12th	0.382	(0.019)	0.221	(0.012)	0.418	(0.016)	0.306	(0.011)
12th+	0.796	(0.020)	0.557	(0.014)	0.755	(0.016)	0.589	(0.011)
Household income (log)	0.223	(0.003)	0.321	(0.005)	0.247	(0.003)	0.307	(0.003)
Occupation (ref=Professional)								
Sales	-0.259	(0.022)	-0.207	(0.025)	-0.142	(0.014)	-0.112	(0.015)
Clerical	-0.366	(0.013)	-0.289	(0.017)	-0.327	(0.010)	-0.273	(0.011)
Operatives	-0.259	(0.015)	-0.260	(0.016)	-0.249	(0.011)	-0.250	(0.011)
Craft	-0.215	(0.017)	-0.200	(0.016)	-0.166	(0.011)	-0.163	(0.011)
Services	-0.506	(0.013)	-0.508	(0.016)	-0.474	(0.010)	-0.476	(0.011)
Labor	-0.648	(0.103)	-0.694	(0.035)	-0.558	(0.072)	-0.640	(0.031)
Not working	-0.611	(0.015)	-0.498	(0.017)	-0.513	(0.011)	-0.437	(0.012)
Selfemp	0.259	(0.020)	0.319	(0.017)	0.320	(0.012)	0.347	(0.012)
Work disability	-0.118	(0.010)	-0.083	(0.011)	-0.184	(0.008)	-0.158	(0.009)
Immigration								
Foreign born	-0.859	(0.030)	-1.047	(0.016)	-1.019	(0.022)	-1.070	(0.014)
Years in US	0.045	(0.001)	0.042	(0.001)	0.041	(0.001)	0.038	(0.001)
National Origin (ref= Mexican)								
Puerto Rican	---		-0.247	(0.019)			-0.278	(0.019)
Cuban	---		0.141	(0.027)			0.127	(0.026)
Other	---		-0.062	(0.012)			-0.077	(0.012)
Non-white	---		-0.093	(0.009)			-0.078	(0.009)

All coefficients are statistically significant at p<.05