INTRA-METROPOLITAN MOBILITY, RESIDENTIAL LOCATION, AND HOMEOWNERSHIP CHOICE AMONG MINORITY AND WHITE HOUSEHOLDS: ESTIMATES OF A NESTED MULTINOMIAL LOGIT MODEL

by

Stuart Gabriel and Gary Painter
Lusk Center for Real Estate
Marshall School of Business and School of Policy, Planning and Development
University of Southern California
331 Lewis Hall
Los Angeles, California 90089
sgabriel@marshall.usc.edu and gpainter@usc.edu

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Abstract

Recent academic and policy analyses have sought to explicate the persistently depressed levels of black and Latino homeownership. While prior research has focused largely on racial disparities in household endowments (see, for example, Bostic and Surette (2001), Gabriel and Painter (2001), Painter, Gabriel, and Myers (2001), Wachter and Megbolugbe (1992), Gyourko and Linneman (1996), and Coulson (1999)), few studies have jointly modeled the structure and determinants of the household mobility, residential location, and homeownership decisions. The intra-metropolitan mobility and residential location choices of minority and white households may vary considerably, owing in part to the different endowments, constraints, and locational preferences of those groups. An improved understanding of the linkages between those decisions and housing tenure choice may yield new insights and better-informed policies to enhance minority homeownership.

This paper estimates a three-level nested multinomial logit model of household intra-metropolitan mobility, residential location, and homeownership choice. In so doing, the study applies individual level 1990 Census data to test relevant economic, demographic, and neighborhood hypotheses. The model is then simulated to assess the effects of changes in household endowments, neighborhood racial composition and other amenities on the intra-metropolitan mobility, residential location, and tenure choices of minority and white households.

Research findings indicate significant variability in intra-metropolitan mobility, residential location, and tenure choice among white and minority households. The inclusive values of the three-level nested logit model are statistically significant, indicating the appropriateness of the tiered specification of household mobility, residential location, and homeownership decisions. Simulated shocks to household endowments and neighborhood characteristics reveal varied effects across the racial groups and locations. For example, attribution of white endowment characteristics to black households serves to appreciably raise black homeownership rates in virtually all Los Angeles area counties—so as to close the white-black gap in homeownership by a full 17 percentage points. In the context of this shock, black rates of homeownership move up to 41 percent in the Los Angeles metropolitan area (compared to 53 percent for whites), reflecting strong homeownership gains in the relatively higher income counties of Los Angeles, Orange, and Ventura. A similar shock to the incomes of Latinos serves to elevate their area-wide homeownership rates to 47%, whereas little homeownership change derives to Asian households via such an income shock, given their already high levels of economic endowment. Other simulated effects of changes in neighborhood characteristics, including shocks to house prices, rents, amenities, and minority population representation, are evidenced with respect to their impacts on residential location and homeownership choice. For example, a simulated increase in minority population shares in the Inland Empire serves to perceptibly enhance the dispersion of black and Latino populations (particularly renters) to suburban areas, but provides less immediate support as regards the minority homeownership goal.

I.   INTRODUCTION

Recent years have witnessed substantial academic research and policy debate regarding access to homeownership, particularly among racial and ethnic minorities (see, for example, Gabriel and Painter (2001), Painter, Gabriel, and Myers (2001), Rosenthal (2001), Coulson (1999), Gyourko and Linneman (1996), and Wachter and Megbolugbe (1992)). In part, the debate arises from sizable and persistent gaps in homeownership attainment among those groups. While the U.S. homeownership rate rose to a record high of almost 68 percent in 2002, the longstanding white-minority homeownership gap of 27 percentage points was little changed. By 2002, about 74 percent of white households had achieved homeownership, compared with only about 48 percent of African-American and Hispanic households.

In 2002, the Bush Administration articulated a policy goal of adding 5.5 million minority households to the ranks of U.S. homeowners by the end of the decade.[1] That goal follows in the wake of similar policy initiatives by the Clinton Administration, whereby the U.S. Department of Housing and Urban Development specified a national homeownership goal of 70 percent by 2006.[2] The HUD goal implied a full 15 percent reduction in the homeownership gap between white and minority households.

Homeownership is expected to confer significant benefits on minority populations and neighborhoods. Homeownership attainment typically is accompanied by increased consumption of housing services and improved housing conditions. Further, homeownership comprises a primary investment vehicle of American households; in that regard, elevated homeownership among minority households undoubtedly would serve to boost their wealth and economic status. Research also indicates that homeownership confers benefits to neighborhoods, in the form of

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[1] President Bush also initiated a Presidential Action titled "America's Homeownership Challenge" whereby he specified a comprehensive agenda to increase the number of minority homeowners.
[2] To that end, HUD sought to add an additional 3.8 million households to the ranks of U.S. homeowners by 2006.

improved property upkeep, neighborhood safety, school quality, and other neighborhood amenities (see, for example, Green and White (1997)).

While recent research provides new insights regarding the determinants of minority homeownership, results fail to fully explicate the persistently damped homeownership rates of black households. Indeed, our earlier analysis (Painter, Gabriel, and Myers (2001)), which assessed the effects of economic status and human capital endowments on homeownership choice, was able to explain only about one-half of the gap in unadjusted homeownership rates between blacks and whites in Los Angeles County. Using that same methodology, we were able to more fully explicate the unadjusted homeownership gaps between whites and other minority groups (notably including Asians and Latinos).[3]

Prior studies, however, fail to structure and to jointly evaluate the mobility and residential location decisions that typically accompany the choice of housing tenure. Among minority households, various factors may work to limit mobility and choice of residential location, so as to constrain the homeownership choice. Indeed, our data show relatively damped rates of minority household movement to outlying suburban counties of Los Angeles. As a consequence, racial segregation remains prevalent in Los Angeles and in other U.S. metropolitan areas. Indeed, our earlier research (Gabriel and Rosenthal (1989)) suggested only limited importance of household socio-economic and demographic characteristics to the determination of residential location choice among whites and blacks.[4] In contradistinction to prior literature, it appears prudent to assess racial variations in homeownership choice in the context of related mobility and residential location decisions.

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[3]Only recently have researchers begun to focus on Hispanic, Asian, and immigrant households (e.g., Coulson, (1999); Painter, Gabriel, and Myers, (2001)).

[4]Findings of Gabriel and Rosenthal (1989) correspond to those in the literature on metropolitan racial segregation, which indicate that observed segregation cannot be explained only on the basis of income differentials (see, for example, Kain (1976), Massey and Denton (1993) and DeRango (1999)). Similarly, Waddell (1992), in analysis of moves in the Dallas-Ft. Worth area, finds that income changes are less important to black suburbanization relative to that of whites.

From a statistical modeling perspective, most prior studies employ individual-level cross-sectional data to estimate the determinants of housing *tenure status.*[5] Those studies either fail to observe tenure choices or do not allow for interactions among the mobility, housing tenure and residential location decisions. Recently, a number of studies have demonstrated the importance of household mobility to models of housing tenure choice (e.g., Kan (2000), Painter, Gabriel, and Myers, (2001)). Kan (2000), however, used panel data that was not well suited to estimating differences in mobility and homeownership choice across racial/ethnic groups and locations. Painter (2000) developed an approach to estimating models of tenure choice with sample selection that is appropriate to cross-sectional data.

Recently, a number of studies have explicitly modeled the homeownership decision in the context of the choice of residential location (See Deng, Ross, and Wachter, (2001); Gabriel and Painter (2001), and Gyourko, Linneman, and Wachter (1999)). These studies evaluate the role of neighborhood effects, notably including the relative costs of owning to renting, in assessing the factors that determine residential location and housing tenure choice. Gyourko, Linneman, and Wachter (1999) show that blacks are more likely to own in the central city. Deng et al (2001) jointly estimate the residential location and homeownership decisions of sampled households; however, their data do not contain information on the prior residential location of those households. Further, that analysis does not endogenize the household move decision. While the above studies highlight the importance of residential location to homeownership choice, none of the analyses fully control for the multiple decisions that affect a household's decision to own.

This paper estimates a three-level nested multinomial logit model of household mobility, residential location, and homeownership choice. That estimation structure explicitly accounts for

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[5] In assessing racial differentials in homeownership, most recent studies (see, for example, Bostic and Surette (2001), Coulson (1999), Rosenthal (2001), Gyourko and Linneman (1996), and Wachter and Megbolugbe (1992)), employ single-equation models to control for household income and wealth, human capital, demographic, local housing market, and other characteristics on household tenure status. Our prior analyses focus on tenure choice among a sample of recent movers (Painter, Gabriel, and Myers (2001) and

the jointness and tiering of household move, homeownership, and location choice decisions. In our application of the nested MNL, the value of specific residential location options depends on the mobility and tenure choices of the household. A household's tenure choice is made in the context of a move decision while accounting simultaneously for the relative values of the location options. The study applies household level Census data to test relevant economic, demographic, neighborhood, and other hypotheses. Accordingly, the methodology enables us to simulate the impact of changes in household economic, mobility, and locational characteristics on the likelihood that a household will choose a specific housing tenure and neighborhood.

Research findings indicate significant variability in intra-metropolitan mobility, residential location, and tenure choice among white and minority households. Further, the inclusive values of the three-level nested logit specifications are largely significant, indicating the appropriateness of the tiered specification of household mobility, residential location, and homeownership decisions.

Attribution of white endowment characteristics to black households serves to appreciably raise black homeownership rates in virtually all Los Angeles area counties. In the context of that simulation, homeownership rates among black movers rise from 17 to 40 percent in the City of Los Angeles; elsewhere, in Orange and Ventura Counties, homeownership rates among black movers rise to 37 and 61 percent, respectively. Overall, in the racially-stratified nested logit models, the imputation to black households of the endowments of sample whites serves to close the black-white gap in homeownership by a full 17 percentage points—elevating the black homeownership rate to 41 percent (compared to 53 percent for whites). A similar shock to the incomes of Latinos serves to elevate their area-wide homeownership rates to 47% (compared to 53 percent for whites), whereas little homeownership change derives to Asian households via such a income shock, given their already high levels of economic endowment.

Gabriel and Painter (2002) and accordingly include a selection equation to control for the mobility characteristics of sampled households.

The paper similarly evaluates the homeownership and location choice outcomes associated with simulated shocks to various neighborhood characteristics. Included are analyses of simulated shocks to the locational distribution of house prices and rents, crime rates, county racial composition and the like. Results, for example, indicate that a simulated 10 percentage point increase in the representation of the minority population in Inland Empire Counties (San Bernardino and Riverside) has little overall effect on the homeownership attainment of black, Latino, and Asian households. However, that same change in the suburban representation of black population serves to double the proportion of black renters from L.A. County who choose to move and to rent in the Inland Empire, whereas moves by black renters to other Los Angeles area counties fall back markedly. Similar outcomes were evidenced for Latino and Asian populations. While this simulation serves to perceptibly enhance the dispersion of black and Latino populations to suburban areas, it provides less immediate support as regards the minority homeownership goal.

In the following section, we assess trends in household mobility, location choice, and homeownership among black and white households. Section III presents the empirical model and Section IV describes data. Section V presents estimation and simulation results. The final section of the paper discusses conclusions and policy implications of the research.

II.   BACKGROUND AND DATA

The data utilized in this project are drawn from the public use micro-data sample (PUMS) file of the 1990 decennial census. The data file is comprised of a 5% sample of all individuals living in Los Angeles, Orange, Ventura, Riverside, and San Bernardino Counties. These counties of metropolitan Los Angeles comprise close to 11 million residents and are dramatically diverse in both their residential composition and in their array of neighborhood living environments. The data are advantageous because they provide samples that are substantially larger than comparable data available from the American Housing Survey (AHS) or the Current Population Survey (CPS)

for the study area. In addition, the Census data contain information on migration histories that are not available from either the AHS or CPS. The sample is comprised of households that reside in the City of Los Angeles, other parts of Los Angeles County, or the counties of Orange, Ventura, San Bernardino or Riverside during the 1985 – 1990 period.

The data are sufficiently rich and numerous to identify differences between minority and white households in the economic, demographic, and neighborhood characteristics governing mobility, residential location, and tenure choices. The data provide excellent information on demographic factors (race-ethnicity, age, marital status, persons per household, workers per household, migrant origin and history), economic factors (salary income, asset and other income, occupation and education level of the householder). Location characteristics such as house prices, rents, and population racial composition are also drawn from the PUMS, while county-level crime rates are drawn from Department of Justice records.

As evidenced in Table 1, minority population representation varies substantially among the five counties of the Los Angeles metropolitan area. Whereas black households comprised 15 percent of the 1990 population of the City of Los Angeles, that same group accounted for only a marginal 2 percent of the households in Orange and Ventura Counties. Inland Empire areas, notably including San Bernardino County, did experience a marked expansion in the proportionate representation of black households over the decade of the 1980s. Black households represented a full 8 percent of total San Bernardino County households in 1990, well in excess of the 5-1/3 percent recorded in 1980.[6] Table 1 further indicates the regional distribution of Asian and Latino households; whereas Asian households were relatively concentrated in Los Angeles and Orange Counties, Latino households were more uniformly represented (at 12-17 percent of county population) among Los Angeles area counties.

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[6] Over the same period, San Bernardino and other Southern California counties registered marked declines in the share of white households. In San Bernardino County, the white household share declined from 84 to 76 percent during the decade of the 1980s; in L.A. County, the white household share fell from 65 to 60 percent. The table for 1980 is available in Painter, Gabriel and Myers (2000).

As evidenced in Table 2, the 1990 homeownership rate in the City of Los Angeles—at about 43%--was far below the national average of 68%.[7] In part, this was due to the city's high house prices and damped levels of housing affordability.   While CMSA counties recorded homeownership rates well in excess of the City of Los Angeles, only in Ventura County and the Inland Empire (San Bernardino and Riverside Counties) did that rate approach the national average. Table 2 also indicates striking disparities in homeownership attainment between blacks and whites; at 30%, the black homeownership rate in the City of Los Angeles was 22 percentage points below that of the city's white households and a full 37 percentage points below the national average! Significantly damped black homeownership rates were evidenced throughout the Los Angeles metropolitan area in 1990; in Orange and Ventura Counties, the black-white homeownership deficits exceeded 30 percentage points. With few exceptions, the black-white homeownership deficits well exceeded those of other racial or ethnic groups.

Table 3 provides further evidence of the concentration of CMSA black homeowners in the City and County of Los Angeles.   In 1990, some four-fifths of metropolitan black homeowners resided in the City and County of Los Angeles. During that same year, close to 9 percent of metropolitan area black homeowners resided in San Bernardino County, an approximate doubling of the share recorded in 1980. The intra-metropolitan settlement pattern of white homeowners was markedly more dispersed, as close to 23 percent of white homeowners resided in Orange County in 1990.   In marked contrast, only about 1 and 4 percent of metropolitan black homeowners resided in Ventura and Orange Counties, respectively.   Only about one-half of Los Angeles metropolitan area white homeowners resided in the City and County of L. A. in 1990, further underscoring the widespread suburbanization of that group. The intra-metropolitan dispersion of Latino and Asian homeowners was less than that of whites; however, approximately 16-18 percent of Latino and Asian homeowners resided in Orange County, respectively, well in excess of levels recorded for black households.

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[7] CPS (1998) data show remarkably identical homeownership rates for 1998.

Table 4 provides evidence of the mobility characteristics and location choices of minority and white households in the Los Angeles area. With few exceptions, the mobility of black and Latino households--measured by the portion of metropolitan area county population that did not move during the 1985-1990 period--was less than that of whites. Among blacks in Los Angeles County, the vast majority (about 95 percent) either did not move or moved within that county during the 1985-1990 period. About 6 percent of Los Angeles County black households chose to move to areas of the Inland Empire, whereas few black households chose to move to either Orange or Ventura Counties. Among whites residing in Los Angeles County, approximately 10 percent chose to move to other parts of the metropolitan area during the 1985-1990 period; in contrast to the destinations of black households, white movers were almost 5 times more likely to relocate to Orange County. Relative to Los Angeles County, the populations of surrounding counties were significantly more mobile. In Orange County, some 40 percent of all households chose to move within the county, with somewhat higher rates evidenced for Latino and Asian households. The table further indicates sizable movement *to* Los Angeles County among both blacks and Asians of surrounding metropolitan area counties. Among Orange County residents, about 9 percent of black households and about 6 percent of Asian households chose to move to Los Angeles County during the 1985-1990 period, compared to 4 percent of whites.

Table 5 indicates substantial variation in the typical characteristics of sampled households by race and by county of residence. For instance, significantly higher portions of suburban households were married, relative to households living in the City and County of Los Angeles; also, marital rates among white households substantially exceeded those of black households at each location.[8] The educational attainment of white households residing in Los Angeles, Orange, and Ventura Counties (as measured by the portion of households having completed a college education) was substantially higher than that of white households in the Inland Empire; similarly, educational attainment among blacks residing in Orange and Ventura

Counties was elevated relative to blacks in other parts of the metropolitan area. While the educational attainment levels of white households in general well exceeded that of blacks, remarkably similar educational profiles were evidenced among black and white residents of the Inland Empire. Latino households evidenced relatively depressed levels of educational attainment throughout, whereas the opposite was indicated for Asian households. White households similarly displayed substantially higher levels of permanent income than their minority counterparts in all locations; the highest levels of white and black permanent income were recorded in Orange and Ventura Counties.[9] The occupational status indicator was computed according to Duncan's index whereby professional status workers achieve the highest score. As evidenced in Table 5, the occupational status of whites and Asians was relatively elevated and in all locations dominated that of blacks and Latinos. In the City of Los Angeles, the racial gap in occupational status was relatively large; in marked contrast, little minority gap in occupational status was evidenced in San Bernardino County.

III.   METHOD

Our methodological approach is to model the tiering of the household mobility, homeownership, and residential location decisions. This is done by way of a three-level nested multinomial logit model (Green, 1997). In the nested multinomial logit (NMNL), a hierarchy of choices is established, but at each level the household has full information on opportunities that are available at the lower decision levels. In our framework, a household first chooses whether or not to move. Having decided to move, the household is faced with two remaining dimensions of choice (i.e., housing tenure and household residential location). Each combination of move, tenure choice, and residential location is taken to represent a mutually exclusive alternative to the household. Together, these options comprise a finite set of alternatives from which the household

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[8] In marked contrast, the marital rates of Latinos and Asians typically exceeded those of white households.
[9] Permanent and transitory income are each calculated based on the method of Goodman and Kawai (1982).

must choose.[10] In this paper, the decision to move is specified as the upper level of the hierarchy. Given the choice to move, tenure choice is specified as the middle level of the hierarchy and residential location is the lower level of the hierarchy.

Graphically, we can represent the choice matrix in the following way:[11]
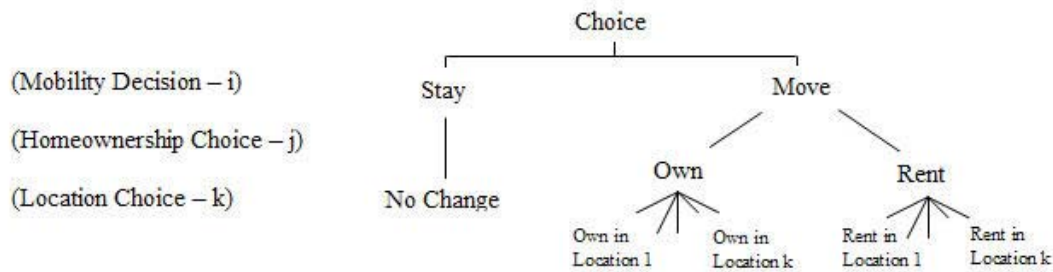
Formally, we maximize the following log likelihood function using full information maximum likelihood techniques,

$$L = \sum_{n} \log P(i \mid j,k) + \log P(j \mid k) + \log P(k)$$

where the conditional probability of choosing a particular branch i in limb j, trunk k is $P(i|j,k) = (e^{\theta' y_{i|j,k}})/e^{I_{j|k}}$, where $I_{j|k}$ is the inclusive value for limb j in trunk k and $I_{j|k} = \log G_{n|j,k} e^{\theta' y_{n|j,k}}$. The inclusive value parameter associated with each nest provides a summary measure of the degree of similarity of the alternatives within the corresponding nest. The closer the inclusive value estimate is to zero, the more similar are the alternatives in the associated nest to the preference structure of the decision-makers.[12] The conditional probability of choosing limb j in trunk k is

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[10] The Nested Logit Model is attributed to McFadden (1978). The model is sometimes misinterpreted as a sequential logit, however, whereby the decision-maker makes a sequence of choices, each described by a logit equation. Instead, however, as described by McFadden, the decision-maker is assumed to make one choice from all of the outcome combinations described by the nesting tree.

[11] Alternatively, the Nested Logit model could have been specified by assume households make the decision to locate prior to making the decision to own. Results were invariant to choice of model specification.

[12] As discussed in McFadden (1978), the inclusive values from the lower level choices summarize the expected utility of residential location choice for each household in the sample. The inclusive values are included in the estimation of household tenure choice as additional explanatory variables; in that way, the expected utility offered by the residential location options is accounted for in the intermediate level of the decision tree. In a similar fashion, the inclusive value generated at the intermediate level summarizes the

$P(j|k) = (e^{(\beta'z_{j|k} + F_{j|k} I_{j|k})})/ e^{J}_{k}$, where $J_k = \log G_{n|k}(e^{(\beta'z_{n|k} + F_{n|k} I_{n|k})})$. Finally, the probability of choosing trunk k is $P(k) = (e^{\phi'x_{k} + N_{k} J_{k}})/ G_n\, e^{\phi'x_{n} + N_{n} J_{n}}$. In the model, X represents the set of locational characteristics (house prices, rents, and neighborhood characteristics including racial composition, amenities, and access) that may influence a household's decision to locate in a particular county; Z represents the set of household characteristics that influence the tenure choice decision (income, wealth, education, age, marital status, family structure, etc.); and Y represents the set of household characteristics that influence a household's decision to move. The Y variables largely include the characteristics in Z plus an occupational identifier that may influence the decision to move, while not changing the preference a household may have to own a home.[13,14]

This framework allows for location characteristics to influence the decision to own and the decision to move, while controlling explicitly for the role of mobility in homeownership choice. The integrated structure of the model also allows for homeownership choice to affect location choice. Finally, this methodology allows us to simulate the impact of changes in household demographic, economic, and other characteristics on the likelihood that a household will choose to own a home and will choose to locate in a particular area. In that context, we evaluate the extent to which differentials between whites and minorities in household and locational characteristics affect the racial gap in homeownership.

IV.   ESTIMATION RESULTS

Results of the estimation of the nested multinomial logit models are contained in Table 6.

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expected utility of housing tenure status among households in the sample; that inclusive value similarly is included in the move equation as an additional explanatory variable, so that the expected utility offered by the tenure options is included in the upper level mobility choice function.

[13] This helps to identify the model specified above. The model is identified based on the functional form assumptions in the nested logit, but these variables aid in identification of separate effects for the mobility and homeownership choice equations.

[14] Restricting the estimated parameters of the inclusive value terms to 1 yields the non-nested multinomial logit model. The closer the correlation of any two alternatives in the same nest to zero, the closer is the inclusive value parameter to 1. If the correlation is precisely zero, then we have the special case of the MNL model in which the alternatives share no common utility component. The nested logit model arises if the estimated parameters of the inclusive values differ significantly from 1.

Unrestricted models were separately estimated for black, white, Latino, and Asian households. Sample sizes for the racially stratified models include 94,449 white households, 12,764 black households, 22,439 Latino households, and 12,158 Asian households. All variables are included in each racial grouping except that immigrant status is added for the Latino and Asian models for both the decision to own and the decision to move. For each of the sampled households, the research assesses household move and homeownership propensities as well as the choice of residence among those areas.

Estimation findings indicate the importance of household socio-economic and educational characteristics to intra-metropolitan mobility decisions. However, those results do suggest numerous important variations in mobility determinants across minority and white households. Among demographic characteristics, age exerts a negative and significant effect on household mobility among white households, but no effect among other groups. As would be expected, status as a married household exerts a depressive effect on mobility among all racial and ethnic groups; in this case, the estimated reduction in mobility among married white households is significantly in excess of that of black, Latino and Asian households. The effect of number of children in the household is positive for whites and blacks, but negative for Asians. In an assessment of inter-metropolitan mobility, number of dependents is typically shown to exert a negative influence on household mobility (Gabriel, Mattey, and Wascher (1995)). Those results, however, typically derive from aggregated models estimated over higher levels of geography; further, those studies have not jointly considered the location, tenure choice, and mobility decisions.

Consistent with the mobility literature, all households without a high school diploma are characterized by significantly elevated levels of intra-metropolitan mobility. College graduates are significantly less likely to move than are high school graduates. Finally, among income controls, higher levels of dividend income have a significant depressive effect on intra-metropolitan household mobility among all households, but among black households, this wealth

control is much larger. This implies that wealth is a much more important predictor of mobility for blacks than for other groups. The occupational status indicator is based on Duncan's occupation index with professional jobs achieving the highest score. As evidenced in the table, the estimated coefficient on occupational status is positive and significant in the determination of intra-metropolitan moves among Latinos, but is negative and significant for Asians. Finally, as expected, immigrants are much more mobile than are non-immigrants.

The household mobility analyses further include among regressors an inclusive value generated in the tenure choice nest. Those values are generated for each household in each of the racially stratified analyses and summarize the expected utility of housing tenure status. That term is included to control for the expected utility offered by the tenure options in the determination of mobility choice. As is evidenced in Table 6, the estimated coefficients of the inclusive values are highly significant in the black, Latino and white model specifications.

Table 6 also displays the estimated coefficients for the tenure choice equation. As expected, controls for household socio-economic and demographic characteristics are largely significant in the determination of tenure choice. However, the estimated effects often vary significantly across racially stratified samples. As evidenced in the table, among all households, higher levels of permanent and transitory income serve to significantly boost homeownership choice. Notably, the estimated income effects are substantially stronger for black households. Household age is shown to exert a significant positive effect on homeownership choice among all households, but is insignificant among Asians. As would be expected, status as a married household is shown to significantly boost the likelihood of homeownership choice among all racial and ethnic groups.

Educational attainment and family characteristics have similar effects for all groups. The exception is that the size of the family does not exert a significant influence on the homeownership decision for Asians and Latinos. Finally, Latino immigrants are much less likely to own a home than are Latino native-born households. This effect is insignificant for Asians and

is consistent with recent studies of immigrant populations (see Painter et al (2001) and Painter et al (forthcoming)).

The tenure choice analyses further include among regressors inclusive values generated in the location choice portion of the nest. Those values are generated for each household in each of the racially stratified analyses and summarize the expected utility of residential location choice. Those terms are included in the estimation so as to control for the expected utility offered by the residential locations in the determination of tenure choice. As is evidenced in the table, the estimated inclusive values on own and rent are statistically significant. Among Latinos and blacks, the estimated own and rent inclusive values are substantially larger than among the other racial groups.

Results of the discrete choice analysis of residential location choice are also displayed in Table 6. Here, mover households derive from and choose among the City of Los Angeles, the remaining areas of the County of Los Angeles, and the Counties of San Bernardino, Riverside, Ventura, and Orange. Included among regressors are the differences in house prices, rents, minority population representation, crime rates, and distance between the household's location in 1985 and their potential location in each of the six locations in 1990. The regression conforms to the limited literature on intra-metropolitan household moves in specifying the house price and amenity determinants thereof.[15] Specifically, that literature underscores the importance of housing affordability and neighborhood amenity effects in the determination of intra-metropolitan residential location choice (see, for example, Gabriel and Mattey (1997)).

As expected, the estimated coefficients on the house prices difference terms are negative and significant throughout. Again, relative to other racial and ethnic groups, black households are found to be most sensitive to differences in house prices and rents. Among other results, the distance term, as a proxy for both information flows and transactions costs associated with a

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[15] Whereas locational differences in labor market conditions are shown to bear importantly on *inter*-metropolitan moves, this factor is less important to *intra*-metropolitan moves.

particular residential choice, is negative and highly significant throughout.[16] Increased presence

of county minority population exerts a positive and significant effect on location choice in the

racially stratified sub-samples; among black households, the estimated coefficient was much

larger than for any other group. Accordingly, a more sizable destination region minority presence

operates as a significant attractor in the determination of minority household moves. Finally, the

difference in county crime rates term is estimated with a negative coefficient in all, but is not

statistically significant in the Latino and Asian sub-samples.

V.   MODEL SIMULATION

Tables 7, 8, and 9 contain results of the simulation of the black, Latino, and Asian nested

logit models, respectively. The simulations indicate changes to minority homeownership and

residential location status as derive from shocks to the minority endowment and amenity vectors.

In so doing, the simulations are suggestive of particular policies that might result in revitalization

of central city areas, suburbanization of minority households, or to advancement of minority

homeownership goals. In the top panel of Tables 7, 8, and 9, we report on the simulated effects

of shocks to the vector of minority economic and socio-demographic endowments. The analysis

speaks to the extent to which homeownership gaps between minority and whites owe to

systematic variations across the groups in economic and socio-demographic status.   In

undertaking this exercise, the typical characteristics of sample white households were applied to

the estimated minority coefficient vectors. Unlike prior research, this model structure enables

assessment of the intra-metropolitan geographic distribution of homeownership gains as specific

to the estimated behaviors of black, Latino, and Asian households. Accordingly, we obtain an

indication of the racial geography of population distribution and tenure status as derived from the

endowment shocks.

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[16]This result is highly consistent with evidence from the migration literature that suggests the important role
of distance between origin and destination in the determination of migration flows. As suggested above,
distance is there interpreted as a proxy for transactions costs associated with the move as well as non-

As is evidenced in the top panel of the Table 7, the intra-metropolitan residential location choices of black households are highly sensitive to this shock to black endowments. For example, homeownership rates among black movers to Ventura County jump from 27 to 61 percent. Homeownership rates approximately double in other counties, except in Riverside where they rise by only 3 percentage points.

Appreciable dispersed homeownership gains to Latino households similarly derive from this simulation (top panel of Table 8). Homeownership rates jump appreciably among Latino movers to the more affluent Orange and Ventura Counties; attribution of white household endowments to Latinos serves to elevate homeownership choice among movers to 50 percent (from 34 percent) in Orange County and to 73 percent (from 43 percent) in Ventura County. Given the similarity of Asian and white endowments, this simulation has only limited effects on the residential location and homeownership outcomes of Asian households (Table 9).

The top panels of Tables 7, 8, and 9 provide further indication of the mobility and tenure choices that derive from the shock of minority endowments. As indicated in Table 7, a full one-half of black and Latino households in the sample did not move over the 1985-1990 period.[17] Among black households, for example, attribution of white endowment characteristics has two effects. First, households that live in each area switch from renter to owner status. At the same time, more black households move to the City of Los Angeles and to Orange County, while there was a net loss of black households in San Bernardino and Riverside counties. As such, the simulated gains in black homeownership occur largely in the more affluent and closer in portions of the metropolitan area.

The simulated closure in the observed black-white homeownership gap is substantial. As indicated in the top portion of Table 7, that gap stood at a full 29 percentage points among sampled Los Angeles households in 1990, given homeownership rates of 53 and 24 percent

pecuniary migrant costs associated with information flows as well as family and other attachments. See, for example, Gabriel, Mattey, and Wascher (1995).

among whites and blacks, respectively. The attribution to blacks of the economic and socio-demographic endowments of sample whites serves to raise black homeownership rates to 41 percent, thereby reducing the gap by a full 17 percentage points.[18]

The 2nd and 3rd panels of Tables 7, 8, and 9 simulate changes in housing affordability and amenities in the City of Los Angeles, the central core of the metropolitan area. These simulations are of two sorts, the first of which makes the central area significantly less affordable by virtue of a 20 percent upward shock to house prices and rents. The latter simulation serves to enhance the attractiveness of the City of Los Angeles by way of a 20 percent decrease in local crime rates. Not surprisingly, renters are most sensitive to the upward adjustment to house prices and rents. Among Latinos and blacks, there is a reduction of approximately 20-30 percent, respectively, in the number of renters who move and choose to remain in the City of Los Angeles. Most of the black and Latino households move to other parts of Los Angeles County or to elsewhere in the metropolitan area. While the simulations do not account for changes in the supply of housing by tenure status, it is instructive to note that renters react more quickly than do owners to the upward shock to house prices and rents in the City of Los Angeles. As a consequence, the homeownership rate among Latino movers to other parts of Los Angeles County declines, whereas the homeownership rate among black and Latino movers to the City of Los Angeles rises.

As evidenced in the 3rd panel to Tables 7, 8, and 9, the simulated 20 percent reduction in overall crime rates in the City of Los Angeles also has important implications for household moves. Among blacks, Latinos, and Asians, the sizable reduction in the City's crime rate results

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[17] Somewhat higher portions of mover households are evidenced among Asians.

[18] Among Latino households, this simulation similarly results in appreciable gains in homeownership. As indicated in the top portion of Table 8, that gap stood at 18 percentage points in 1990, given homeownership rates of 53 and 35 percent among whites and Latinos, respectively. The attribution to Latinos of the economic and socio-demographic endowments of sample whites serves to raise Latino homeownership rates to 47 percent, thereby reducing the gap by 12 percentage points. As suggested above, given the relative comparability of white and Asian endowments, this simulation had little overall effect on the homeownership gap between these groups.

in an approximate doubling in that locality's share of movers choosing to own, while the share of movers choosing to rent increases for blacks as well. Households are drawn from all areas, largely including Orange, Ventura, and other parts of Los Angeles County. Among other things, this simulation points to the substantive local economic and development externalities of city policies to enhance public safety.

The final simulation seeks to quantitatively assess the effects of elevated minority population representation on the propensities of those groups to locate and to choose homeownership in relatively affordable and high-growth suburban areas (San Bernardino and Riverside Counties). Similar to the reaction observed in the case of the Los Angeles house price simulation, the largest change is evidenced among renters moving from the City and County of Los Angeles to San Bernardino and Riverside County. Among blacks and Latinos, the fraction of mover households who choose to rent in those counties moves up appreciably (doubling in the case of blacks), while the fraction of homeowners in those counties moves up only marginally. While this simulation serves to perceptibly enhance the dispersion of black and Latino populations to suburban areas, it provides less immediate support as regards the minority homeownership goal.

VI.   SUMMARY AND CONCLUSIONS

This paper is the first to jointly model the household mobility, residential location, and homeownership decisions. In so doing, the study applies individual level Census data to estimate a three-level nested multinomial logit model of household mobility, homeownership tenure, and residential location choice. The approach recognizes that the tenure choices of minority and white households may vary importantly owing to the different preferences and constraints of those groups as regards intra-metropolitan mobility and residential location choice. The model is then simulated so as to assess the effects of changes in household endowments, neighborhood racial composition and other amenities on the intra-metropolitan mobility, residential location, and tenure choices of minority and white households.

Research findings indicate significant variability in intra-metropolitan mobility, residential location, and tenure choice among white and minority households. The inclusive values of the three-level nested logit model are largely significant, indicating the appropriateness of the tiered specification of household mobility, residential location, and homeownership decisions. Simulated shocks to household endowments and neighborhood characteristics reveal varied effects across the racial groups and locations. For example, attribution of white endowment characteristics to black households serves to appreciably raise black homeownership rates in virtually all Los Angeles area counties—so as to close the white-black gap in homeownership by a full 17 percentage points. In the context of this shock, black rates of homeownership move up to 41 percent in the Los Angeles area (compared to 53 percent for whites), reflecting strong gains in the relatively higher income counties of Los Angeles, Orange, and Ventura. A similar shock to the incomes of Latinos serves to elevate their area-wide homeownership rates to 47% (compared to 53 percent for whites), whereas little homeownership change derives to Asian households via such a income shock, given their already high levels of economic endowment.

Other simulations quantitatively assess the effects of elevated minority population representation on the propensities of those groups to locate and to choose homeownership in relatively affordable suburban areas (San Bernardino and Riverside Counties). The largest change is evidenced among renters moving from the City and County of Los Angeles to San Bernardino and Riverside County. Among blacks and Latinos, the fraction of mover households who choose to rent in Inland Empire counties moves up appreciably (doubling in the case of blacks), while the fraction of homeowners in those counties moves up only marginally. While this simulation serves to perceptibly enhance the dispersion of black and Latino populations to suburban areas, it provides less immediate support as regards the minority homeownership goal.

In sum, research findings underscore the fundamental importance of gains to minority economic status in the advancement of the homeownership goal. Perhaps more than any existent

policy, upward economic mobility on the part of minorities would aid in their attainment of homeownership. As evidenced in model simulations, gains in minority homeownership also imply significant dispersion of those households, serving to increase their representation in the strata of suburban counties. Yet even in the wake of such gains, minority urban settlement patterns remain more concentrated than those of whites. As demonstrated by the analysis, choice of suburban location by minority households may be enhanced by increased minority representation in those areas. On the other hand, all population groups respond strongly to improvements in public safety in central areas, as indicated by a simulated drop in crime rates in the City of Los Angeles. The implementation of such a policy by local government would have far-reaching revitalization implications, as evidenced in significantly bolstered moves to and homeownership choice in central city areas.

Table 1
Percentage of Households
by Racial Category

	Los Angeles City	**Los Angeles County**
	All Households	All Households
Year	1990 N = 37349	1990 N = 59199
White	56.95%	60.53%
Black	14.74%	10.10%
Latino	17.40%	17.08%
Asian	10.91%	12.29%
All Households	100.00%	100.00%

	Orange County	**San Bernardino County**
	All Households	All Households
Year	1990 N = 32351	1990 N = 14784
White	76.57%	76.35%
Black	1.75%	8.04%
Latino	12.57%	11.84%
Asian	9.11%	3.77%
All Households	100.00%	100.00%

	Riverside County	**Ventura County**
	All Households	All Households
Year	1990 N = 11998	1990 N = 7976
White	78.02%	81.22%
Black	5.14%	2.18%
Latino	13.45%	11.97%
Asian	3.38%	4.63%
All Households	100.00%	100.00%

Table 2
Percentage of Homeowners
by Racial Category

Los Angeles City

	All Households	Sample of Movers Only
Year	1990	1990
	N = 37349	N = 20611
White	58.08%	44.36%
Black	32.58%	16.75%
Latino	29.12%	19.29%
Asian	52.12%	44.30%
All Households	48.63%	35.92%

Los Angeles County

	All Households	Sample of Movers Only
Year	1990	1990
	N = 59199	N = 32045
White	64.87%	50.16%
Black	44.73%	24.81%
Latino	51.74%	36.64%
Asian	70.76%	62.72%
All Households	61.32%	46.83%

Orange County

	All Households	Sample of Movers Only
Year	1990	1990
	N = 32351	N = 19092
White	68.30%	52.53%
Black	39.06%	22.86%
Latino	48.47%	33.91%
Asian	70.96%	63.89%
All Households	65.54%	50.71%

San Bernardino County

	All Households	Sample of Movers Only
Year	1990	1990
	N = 14784	N = 9523
White	70.93%	58.90%
Black	45.70%	35.62%
Latino	65.52%	55.27%
Asian	73.77%	69.97%
All Households	68.37%	57.01%

Riverside County

	All Households	Sample of Movers Only
Year	1990	1990
	N = 11998	N = 8099
White	74.14%	65.54%
Black	52.53%	41.94%
Latino	58.55%	51.08%
Asian	71.02%	67.76%
All Households	70.82%	62.45%

Ventura County

	All Households	Sample of Movers Only
Year	1990	1990
	N = 7976	N = 4530
White	74.66%	62.61%
Black	44.59%	27.16%
Latino	56.81%	42.96%
Asian	83.93%	78.29%
All Households	72.30%	60.21%

Table 3
Location of Homeowners in the Greater
Los Angeles Area by Racial Category

Year   **1990**

	White	Black	Latino	Asian	All Households
LOS ANGELES CITY	19.51%	39.23%	26.01%	26.07%	22.82%
LOS ANGELES COUNTY	32.88%	42.63%	40.44%	46.54%	36.17%
ORANGE	22.73%	4.03%	16.27%	18.86%	19.77%
SAN BERNARDINO	10.35%	8.47%	7.01%	3.56%	9.03%
RIVERSIDE	8.59%	4.40%	6.46%	2.60%	7.33%
VENTURA	5.94%	1.24%	3.82%	2.36%	4.87%
TOTAL	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Table 4
Intrametropoitan Mobility by Location and Race
in the Greater Los Angeles Area by Racial Category

White Households

Location in 1990

Location in 1985	Chose not to move	Los Angeles City	Los Angeles County	San Bernardino County	Riverside County	Orange County	Ventura County	Total
Los Angeles City	48.81%	31.29%	13.81%	0.91%	0.87%	1.88%	2.44%	100%
Los Angeles County	50.57%	5.98%	31.61%	3.71%	2.17%	4.91%	1.05%	100%
San Bernardino County	50.13%	0.49%	3.29%	39.76%	3.91%	2.13%	0.29%	100%
Riverside County	49.88%	0.56%	2.21%	5.38%	37.97%	3.72%	0.27%	100%
Orange County	48.81%	1.19%	3.84%	2.39%	4.63%	38.72%	0.43%	100%
Ventura County	54.71%	2.75%	4.03%	0.84%	0.77%	1.02%	35.88%	100%

Black Households

	Chose not to move	Los Angeles City	Los Angeles County	San Bernardino County	Riverside County	Orange County	Ventura County	Total
Los Angeles City	48.43%	30.80%	16.94%	2.23%	1.00%	0.37%	0.22%	100%
Los Angeles County	53.79%	7.13%	31.85%	4.24%	1.52%	1.23%	0.23%	100%
San Bernardino County	44.21%	1.19%	4.60%	46.88%	1.93%	1.19%	0.00%	100%
Riverside County	48.61%	0.76%	2.28%	6.33%	40.25%	1.77%	0.00%	100%
Orange County	36.76%	4.16%	9.41%	3.72%	6.35%	39.17%	0.44%	100%
Ventura County	47.18%	4.93%	6.34%	2.11%	1.41%	0.00%	38.03%	100%

Latino Households

	Chose not to move	Los Angeles City	Los Angeles County	San Bernardino County	Riverside County	Orange County	Ventura County	Total
Los Angeles City	45.26%	36.62%	14.80%	1.04%	0.79%	0.97%	0.52%	100%
Los Angeles County	51.50%	6.10%	35.24%	2.87%	1.39%	2.49%	0.40%	100%
San Bernardino County	52.03%	0.55%	3.76%	37.25%	3.52%	2.66%	0.23%	100%
Riverside County	46.42%	1.12%	1.21%	2.70%	46.42%	2.05%	0.09%	100%
Orange County	42.83%	1.25%	3.45%	1.56%	4.23%	46.59%	0.08%	100%
Ventura County	51.83%	2.12%	3.30%	0.47%	0.47%	0.71%	41.11%	100%

Asian Households

	Chose not to move	Los Angeles City	Los Angeles County	San Bernardino County	Riverside County	Orange County	Ventura County	Total
Los Angeles City	43.42%	32.84%	19.06%	0.76%	0.67%	2.47%	0.79%	100%
Los Angeles County	45.47%	6.18%	40.00%	2.13%	1.07%	4.78%	0.37%	100%
San Bernardino County	45.42%	1.36%	7.46%	36.61%	3.73%	4.75%	0.68%	100%
Riverside County	51.55%	1.55%	3.61%	3.09%	30.93%	9.28%	0.00%	100%
Orange County	41.26%	1.41%	6.28%	1.31%	2.63%	46.84%	0.28%	100%
Ventura County	54.45%	4.27%	4.98%	1.07%	0.71%	0.71%	33.81%	100%

Table 5
Average Household Characteristics of Households
in the Los Angeles Metropolitan Area

Region of Residence in 1990

Los Angeles City / Los Angeles County

Ethnicity	Los Angeles City White	Black	Latino	Asian	Los Angeles County White	Black	Latino	Asian
Number of Households	21270	5504	6500	4075	35835	5982	10109	7273
Ownership Rate	0.520	0.306	0.262	0.432	0.603	0.424	0.490	0.627
Age	41.825	41.861	38.892	41.530	42.567	41.116	40.581	41.346
Married	0.467	0.298	0.535	0.640	0.562	0.416	0.632	0.723
No High School Diploma	0.078	0.230	0.538	0.157	0.092	0.163	0.443	0.118
High School Diploma	0.407	0.509	0.300	0.322	0.453	0.535	0.385	0.303
College Degree or Better	0.516	0.261	0.162	0.521	0.456	0.302	0.171	0.579
Number of People in the Household	2.348	2.761	3.847	3.268	2.629	3.073	3.987	3.646
Permanent Income (1000s)	46.866	27.741	30.995	39.905	47.868	33.156	33.680	42.959
Transitory Income (1000s)	1.778	-0.906	-2.775	-3.201	1.173	1.480	1.244	1.221
Dividend Income (1000s)	3.792	0.491	0.776	1.731	3.012	0.530	0.870	2.191
Has some Dividend Income	0.472	0.122	0.143	0.354	0.455	0.145	0.185	0.414
Occupational Status	49.536	35.918	29.939	43.431	46.731	39.126	32.120	46.136
Violent and Property Crimes per 100			5.508				4.59	
% Minority Households in Area			0.3294154				0.2773138	
Median Rent in Area			587.21				623.66	
Median Housing Price in Area			305540.52				261903.95	

Orange County / San Bernardino County

Ethnicity	Orange County White	Black	Latino	Asian	San Bernardino County White	Black	Latino	Asian
Number of Households	24772	565	4066	2948	11287	1189	1751	557
Ownership Rate	0.641	0.327	0.441	0.621	0.663	0.415	0.612	0.664
Age	42.037	37.025	38.921	40.743	40.871	38.671	39.672	39.713
Married	0.601	0.519	0.638	0.737	0.648	0.505	0.664	0.763
No High School Diploma	0.062	0.085	0.423	0.123	0.131	0.154	0.378	0.120
High School Diploma	0.446	0.520	0.373	0.306	0.552	0.570	0.455	0.329
College Degree or Better	0.493	0.395	0.204	0.571	0.318	0.276	0.167	0.551
Number of People in the Household	2.714	2.961	4.258	3.849	2.943	3.323	3.720	3.700
Permanent Income (1000s)	51.412	39.367	37.296	44.150	43.972	32.582	32.661	40.273
Transitory Income (1000s)	2.109	1.486	2.145	1.156	-5.788	-2.718	-0.411	-2.782
Dividend Income (1000s)	2.891	0.722	1.095	2.277	1.571	0.389	0.594	1.144
Has some Dividend Income	0.471	0.191	0.208	0.397	0.339	0.126	0.188	0.311
Occupational Status	48.987	44.534	34.313	45.433	39.676	37.622	31.588	42.753
Violent and Property Crimes per 100			2.61				3.99	
% Minority Households in Area			0.1447326				0.2007973	
Median Rent in Area			741.97				494.34	
Median Housing Price in Area			269012.47				124171.30	

Riverside County / Ventura County

Ethnicity	Riverside County White	Black	Latino	Asian	Ventura County White	Black	Latino	Asian
Number of Households	9361	617	1614	406	6478	174	955	369
Ownership Rate	0.695	0.485	0.541	0.653	0.701	0.397	0.538	0.786
Age	41.715	40.596	39.270	38.837	42.318	40.856	40.864	42.721
Married	0.653	0.494	0.674	0.717	0.669	0.580	0.685	0.780
No High School Diploma	0.132	0.154	0.471	0.138	0.064	0.126	0.390	0.079
High School Diploma	0.564	0.564	0.388	0.389	0.491	0.563	0.412	0.358
College Degree or Better	0.303	0.282	0.141	0.473	0.445	0.310	0.199	0.564
Number of People in the Household	2.882	3.162	3.928	3.658	2.925	2.989	4.053	3.878
Permanent Income (1000s)	43.933	32.995	32.452	38.901	52.036	38.350	36.964	47.398
Transitory Income (1000s)	-5.797	-2.334	-2.439	-3.352	-1.930	-0.201	1.460	9.928
Dividend Income (1000s)	2.122	0.259	0.720	0.808	2.662	0.834	1.271	2.645
Has some Dividend Income	0.351	0.156	0.149	0.300	0.481	0.264	0.246	0.499
Occupational Status	39.856	35.516	30.911	40.851	46.707	38.539	33.136	44.933
Violent and Property Crimes per 100			4.38				1.76	
% Minority Households in Area			0.1856502				0.140198	
Median Rent in Area			487.80				695.70	
Median Housing Price in Area			123853.56				256971.36	

Race/Ethnicity	White Households		Black Households		Latino Households		Asian Households	
VARIABLE	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error
Location Choice								
Distance required for move	**-0.076**	**0.000**	**-0.075**	**0.002**	**-0.091**	**0.001**	**-0.084**	**0.002**
Difference in House Prices (100,000s)	**-1.124**	**0.056**	**-2.361**	**0.183**	**-0.887**	**0.132**	**-1.630**	**0.225**
Difference in Rents	**0.005**	**0.000**	**0.009**	**0.001**	**0.003**	**0.001**	**0.011**	**0.001**
Difference in percentage minority status	**6.961**	**0.594**	**23.095**	**2.010**	**4.352**	**1.456**	**13.127**	**2.528**
Difference in crime rates	**-0.257**	**0.026**	**-0.596**	**0.092**	0.001	0.068	**-0.187**	0.113
Tenure Choice								
Permanent Income (1000s)	**0.004**	**0.000**	**0.015**	**0.002**	**0.003**	**0.001**	**0.008**	**0.001**
Transitory Income (1000s)	**0.001**	**0.000**	**0.027**	**0.004**	**0.003**	**0.000**	**0.001**	**0.000**
Age	**0.007**	**0.001**	**0.006**	**0.002**	**0.014**	**0.002**	0.004	0.002
Married	**1.220**	**0.024**	**0.945**	**0.072**	**0.945**	**0.051**	**0.816**	**0.059**
No High School Diploma	**-0.355**	**0.032**	**-0.390**	**0.094**	**-0.678**	**0.055**	**-0.474**	**0.084**
(Ommitted: High School Diploma, but no college degree)								
College Degree or Better	**0.372**	**0.023**	**0.269**	**0.072**	**0.298**	**0.061**	**0.392**	**0.054**
Number of Kids in the Household	**-0.079**	**0.006**	**-0.170**	**0.018**	**-0.025**	**0.010**	0.008	0.012
Immigrant status					**-0.250**	**0.048**	-0.103	0.058
Mobility Choice								
Has some Dividend Income	**-0.070**	**0.010**	**-0.968**	**0.217**	**-0.305**	**0.079**	**-0.190**	**0.043**
Age	**-0.062**	**0.018**	0.056	0.062	0.221	0.116	-0.102	0.060
Married	**-27.440**	**1.504**	**-10.767**	**1.866**	**-12.633**	**2.806**	**-25.067**	**3.899**
No High School Diploma	**7.528**	**0.879**	**2.438**	**1.149**	**8.580**	**1.673**	**15.415**	**3.261**
(Ommitted: High School Diploma, but no college degree)								
College Degree or Better	**-7.529**	**0.685**	**-6.213**	**1.826**	**-4.616**	**1.831**	**-11.748**	**2.343**
Number of Kids in the Household	**1.357**	**0.140**	**0.796**	**0.156**	0.173	0.129	**-0.815**	**0.444**
Occupational Status	0.011	0.008	-0.005	0.021	**0.050**	**0.019**	**-0.052**	**0.022**
Immigrant status					**5.091**	**1.361**	**5.368**	**2.083**
Inclusive Values								
Own	**-1.355**	**0.032**	**-2.294**	**0.120**	**-2.181**	**0.083**	**-1.366**	**0.092**
Rent	**-0.195**	**0.012**	**-0.069**	**0.016**	**-0.244**	**0.033**	**-0.178**	**0.027**
Move	**60.298**	**2.708**	**136.904**	**16.636**	**80.976**	**13.832**	**79.666**	**10.510**
Sample Size	94449		12764		22439		12158	

Note: Coefficients which are statistically significant at 5% level or greater are in bold.

Table 7
Actual and Predicted Racial Differentials
In Homeownership Rates

White Homeownership rate   **53%**

African-American Households with the endowments of white Households

	Actual owner	Renter	Simulated owner	Renter	Homeownership rates among movers Actual	Simulated
Los Angeles City	0.029	0.145	0.071	0.107	16.75%	39.73%
Los Angeles County	0.053	0.162	0.084	0.127	24.81%	39.73%
San Bernardino County	0.020	0.036	0.026	0.024	35.62%	52.45%
Riverside County	0.011	0.016	0.012	0.015	41.94%	45.08%
Orange County	0.005	0.017	0.010	0.017	22.86%	36.79%
Ventura County	0.002	0.005	0.005	0.003	27.16%	60.91%
Total for movers	0.120	0.380	0.208	0.293	24.06%	41.48%
Did not move	0.500		0.494			

     Gap between White and Black Homeownership Rates   **29%**   **12%**

Increase House prices and Rents in the City of Los Angeles by 20%

	Actual owner	Renter	Simulated owner	Renter	Homeownership rates among movers Actual	Simulated
Los Angeles City	0.029	0.145	0.032	0.106	16.75%	23.38%
Los Angeles County	0.053	0.162	0.054	0.178	24.81%	23.38%
San Bernardino County	0.020	0.036	0.020	0.032	35.62%	37.87%
Riverside County	0.011	0.016	0.009	0.019	41.94%	30.93%
Orange County	0.005	0.017	0.007	0.023	22.86%	23.18%
Ventura County	0.002	0.005	0.004	0.005	27.16%	44.90%
Total for movers	0.120	0.380	0.126	0.363	24.06%	25.73%
Did not move	0.500		0.511			

     Gap between White and Black Homeownership Rates   **29%**   **27%**

Decrease Crime Rates in the City of Los Angeles by 20%

	Actual owner	Renter	Simulated owner	Renter	Homeownership rates among movers Actual	Simulated
Los Angeles City	0.029	0.145	0.067	0.175	16.75%	27.75%
Los Angeles County	0.053	0.162	0.045	0.118	24.81%	27.75%
San Bernardino County	0.020	0.036	0.016	0.022	35.62%	41.63%
Riverside County	0.011	0.016	0.007	0.013	41.94%	34.19%
Orange County	0.005	0.017	0.002	0.006	22.86%	23.16%
Ventura County	0.002	0.005	0.000	0.002	27.16%	18.70%
Total for movers	0.120	0.380	0.138	0.337	24.06%	29.01%
Did not move	0.500		0.526			

     Gap between White and Black Homeownership Rates   **29%**   **24%**

Increase Minority Concentration in San Bernardino and Riverside count by 10 percentage points

	Actual owner	Renter	Simulated owner	Renter	Homeownership rates among movers Actual	Simulated
Los Angeles City	0.029	0.145	0.010	0.062	16.75%	14.16%
Los Angeles County	0.053	0.162	0.012	0.073	24.81%	14.16%
San Bernardino County	0.020	0.036	0.026	0.074	35.62%	25.73%
Riverside County	0.011	0.016	0.012	0.044	41.94%	21.31%
Orange County	0.005	0.017	0.001	0.007	22.86%	14.51%
Ventura County	0.002	0.005	0.003	0.003	27.16%	45.96%
Total for movers	0.120	0.380	0.064	0.264	24.06%	19.51%
Did not move	0.500		0.672			

     Gap between White and Black Homeownership Rates   **29%**   **33%**

Table 8
Actual and Predicted Racial Differentials
In Homeownership Rates

White Homeownership rate — **53%**

Latino Households with the endowments of white Households

	Actual owner	Renter	Simulated owner	Renter	Homeownership rates among movers Actual	Simulated
Los Angeles City	0.025	0.105	0.060	0.085	19.29%	41.34%
Los Angeles County	0.073	0.126	0.080	0.113	36.64%	41.34%
San Bernardino County	0.022	0.018	0.023	0.016	55.27%	59.43%
Riverside County	0.020	0.019	0.024	0.018	51.08%	57.25%
Orange County	0.031	0.060	0.040	0.040	33.91%	50.27%
Ventura County	0.008	0.011	0.014	0.005	42.96%	72.63%
Total for movers	0.179	0.339	0.241	0.277	34.58%	46.55%
Did not move	0.482		0.482			

Gap between White and Latino Homeownership Rates — **18%** — **6%**

Increase House prices and Rents in the City of Los Angeles by 20%

	Actual owner	Renter	Simulated owner	Renter	Homeownership rates among movers Actual	Simulated
Los Angeles City	0.025	0.105	0.042	0.088	19.29%	31.98%
Los Angeles County	0.073	0.126	0.063	0.135	36.64%	31.98%
San Bernardino County	0.022	0.018	0.019	0.020	55.27%	49.12%
Riverside County	0.020	0.019	0.019	0.022	51.08%	46.24%
Orange County	0.031	0.060	0.032	0.049	33.91%	39.67%
Ventura County	0.008	0.011	0.012	0.008	42.96%	61.61%
Total for movers	0.179	0.339	0.188	0.322	34.58%	36.85%
Did not move	0.482		0.489			

Gap between White and Latino Homeownership Rates — **18%** — **16%**

Decrease Crime Rates in the City of Los Angeles by 20%

	Actual owner	Renter	Simulated owner	Renter	Homeownership rates among movers Actual	Simulated
Los Angeles City	0.025	0.105	0.046	0.099	19.29%	31.58%
Los Angeles County	0.073	0.126	0.061	0.132	36.64%	31.59%
San Bernardino County	0.022	0.018	0.019	0.020	55.27%	49.03%
Riverside County	0.020	0.019	0.019	0.022	51.08%	46.09%
Orange County	0.031	0.060	0.032	0.049	33.91%	39.23%
Ventura County	0.008	0.011	0.012	0.008	42.96%	61.57%
Total for movers	0.179	0.339	0.188	0.329	34.58%	36.39%
Did not move	0.482		0.482			

Gap between White and Latino Homeownership Rates — **18%** — **17%**

Increase Minority Concentration in San Bernardino and Riverside count by 10 percentage points

	Actual owner	Renter	Simulated owner	Renter	Homeownership rates among movers Actual	Simulated
Los Angeles City	0.025	0.105	0.043	0.098	19.29%	30.62%
Los Angeles County	0.073	0.126	0.057	0.130	36.64%	30.62%
San Bernardino County	0.022	0.018	0.021	0.024	55.27%	46.96%
Riverside County	0.020	0.019	0.022	0.028	51.08%	43.85%
Orange County	0.031	0.060	0.027	0.047	33.91%	36.05%
Ventura County	0.008	0.011	0.012	0.008	42.96%	61.51%
Total for movers	0.179	0.339	0.182	0.335	34.58%	35.27%
Did not move	0.482		0.483			

Gap between White and Latino Homeownership Rates — **18%** — **18%**

Table 9
Actual and Predicted Racial Differentials
In Homeownership Rates

White Homeownership rate 53%

Asian Households with the endowments of white Households

	Actual owner	Renter	Simulated owner	Renter	Homeownership rates among movers Actual	Simulated
Los Angeles City	0.057	0.072	0.087	0.066	44.30%	56.77%
Los Angeles County	0.162	0.096	0.136	0.104	62.72%	56.77%
San Bernardino County	0.017	0.007	0.015	0.008	69.97%	64.38%
Riverside County	0.012	0.006	0.011	0.007	67.76%	63.14%
Orange County	0.073	0.041	0.069	0.039	63.89%	63.47%
Ventura County	0.010	0.003	0.010	0.004	78.38%	71.56%
Total for movers	0.331	0.225	0.328	0.228	59.50%	58.96%
Did not move	0.444		0.444			
Gap between White and Asian Homeownership Rates					**-7%**	**-6%**

Increase House prices and Rents in the City of Los Angeles by 20%

	Actual owner	Renter	Simulated owner	Renter	Homeownership rates among movers Actual	Simulated
Los Angeles City	0.057	0.072	0.111	0.080	44.30%	58.10%
Los Angeles County	0.162	0.096	0.123	0.089	62.72%	58.10%
San Bernardino County	0.017	0.007	0.014	0.008	69.97%	65.18%
Riverside County	0.012	0.006	0.011	0.006	67.76%	62.77%
Orange County	0.073	0.041	0.064	0.037	63.89%	63.16%
Ventura County	0.010	0.003	0.010	0.004	78.29%	72.03%
Total for movers	0.331	0.225	0.332	0.224	59.50%	59.76%
Did not move	0.444		0.444			
Gap between White and Asian Homeownership Rates					**-7%**	**-7%**

Decrease Crime Rates in the City of Los Angeles by 20%

	Actual owner	Renter	Simulated owner	Renter	Homeownership rates among movers Actual	Simulated
Los Angeles City	0.057	0.072	0.110	0.077	44.30%	58.72%
Los Angeles County	0.162	0.096	0.134	0.096	62.72%	58.33%
San Bernardino County	0.017	0.007	0.014	0.007	69.97%	64.84%
Riverside County	0.012	0.006	0.010	0.006	67.76%	61.90%
Orange County	0.073	0.041	0.055	0.034	63.89%	62.19%
Ventura County	0.010	0.003	0.009	0.003	78.29%	72.37%
Total for movers	0.331	0.225	0.332	0.224	59.50%	59.74%
Did not move	0.444		0.444			
Gap between White and Asian Homeownership Rates					**-7%**	**-7%**

Increase Minority Concentration in San Bernardino and Riverside count by 10 percentage points

	Actual owner	Renter	Simulated owner	Renter	Homeownership rates among movers Actual	Simulated
Los Angeles City	0.057	0.072	0.078	0.061	44.30%	55.95%
Los Angeles County	0.162	0.096	0.122	0.096	62.72%	55.95%
San Bernardino County	0.017	0.007	0.029	0.019	69.97%	61.00%
Riverside County	0.012	0.006	0.026	0.018	67.76%	59.47%
Orange County	0.073	0.041	0.051	0.037	63.89%	58.46%
Ventura County	0.010	0.003	0.010	0.004	78.29%	71.40%
Total for movers	0.331	0.225	0.316	0.234	59.50%	57.45%
Did not move	0.444		0.449			
Gap between White and Asian Homeownership Rates					**-7%**	**-4%**

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Throughout, the unit of observation is the head of household. Those aged less than 18 years, or greater than 65 years, have been excluded. In all the regressions, only those people who lived in Los Angeles County in 1985, and then lived in either Los Angeles or San Bernardino in 1990 are included.

AGE	Continuous Variable 18-64.
MARRIED	Head of household is married, and is not separated
OMITTED CATEGORY: Single	Head of household is not married, or is separated.
NO HIGH SCHOOL DIPLOMA	High school not completed, or not yet.
OMITTED CATEGORY: HS DIP/NO COL DEGREE	High school completed, but not four years of post-high school education.
COLLEGE DEGREE OR BETTER	Minimum of four years of post-high school education is completed.
NUMBER OF PEOPLE IN HOUSEHOLD	This number includes people of all ages, including those aged less than 18 years and 65 or older.
PERMANENT INCOME	Predicted Household Income according to the method of Goodman and Kawai (1982).
TRANISTORY INCOME	Residual Household Income according to the method of Goodman and Kawai (1982).
DIVIDEND INCOME	Dividend and Interest Income
HAS SOME DIVIDEND INCOME	Categorical variable for whether the household has positive dividend income.
OCCUPATIONAL STATUS	This is based on Duncan's occupation index with Professional jobs achieving the highest scores
ETHNICITY: AFRICAN-AMERICAN	African-American, non-Hispanic.
ETHNICITY: WHITE	White, non-Hispanic.

MEDIAN HOUSE PRICE IN THE AREA   Self explanatory

MEDIAN RENT IN THE AREA   Self-explanatory

TOTAL VIOLENT AND PROPERTY BY COUNTY   As compiled by the Department of
                                        Justice.

DISTANCE   Distance from the population center in
                                        each area to the population center in the
                                        potential destination area.