Distinguishing City and Suburban Movers: Evidence from the American Housing Survey

Thomas W. Sanchez
Portland State University

Casey J. Dawkins
Georgia Institute of Technology

Abstract

A significant amount of research has concentrated on the process of urban decentralization. Resulting patterns of urban development have far-reaching effects on land use, transportation, regional fiscal structure, public services and facilities, economic development, and social equity. Because planning policies are being developed to attempt to revitalize the urban core, it is important to know which households may be deciding to relocate to the central cities and why.

A discriminant analysis is used to explore the similarities and differences among movers to central cities and suburban locations drawn from metropolitan samples of the 1989 through 1991 American Housing Survey. The analysis compares the reasons for relocation, demographic differences, and metropolitan characteristics between central-city-to-suburb movers and suburb-to-central-city movers. The results indicate that these two groups are very similar in some respects and that some metropolitan-area characteristics may play a role in urban residential decentralization patterns.

Keywords: Location; Mobility; Suburban

Introduction

The loss of population from the central cities to the suburbs in major U.S. metropolitan areas is seen as a symptom of a variety of urban problems and social issues. The resulting demographic shifts have been characterized as the separation of the "haves" from the "have-nots"—a segregation that by some accounts is approaching crisis levels. White, middle- to high-income households are moving away from central cities and away from nonwhite, lower-income households to the suburbs[1] (Salins 1993). The shift of households out of the city also corresponds to similar outward shifts in employment opportunities (Follain and Malpezzi 1981; Mieszkowski and Mills 1993). The general trend is for jobs and the people who can afford to relocate along with the jobs to move outward from the urban core. The less mobile remain in the city, increasingly separated from new employment opportunities. These

[1] These are aggregate trends. As one referee correctly observes, the rate of black suburbanization exceeds that of whites in many suburban areas.

shifts in population have been discussed in great detail (see, for example, *Housing Policy Debate,* vol. 8, no. 2, 1997). The chief argument presented by researchers is that economically and culturally diverse populations are a vital element of central cities. Many of the studies on this topic characterize *who* is moving from central cities to suburbs, from suburb to suburb, or from suburbs to exurbs, but fewer document *why* these moves are being made, particularly among populations moving from the suburbs to the central city.

Research that analyses the net demographic changes to central cities and suburbs typically reports aggregate relocation activity. Net changes in demographic categories give no indication of the geographic flow of households over time. Characteristics for current residents of central cities and suburbs do not provide evidence of family life cycle forces that may influence relocation activity and location preferences. The objective of this analysis is to compare the demographic characteristics and preferences of households moving from the suburbs to the central cities with households moving in the other direction (from the central city to the suburbs). The literature provides a range of explanations about why households relocate away from the urban core. However, while urban researchers advocate central-city revitalization by enticing middle-income households back to the city, there remains a paucity of evidence explaining why some households are moving from the suburbs to the central cities.

The "back-to-the-city" movement: Myth or reality?

Since the 1960s, many older central-city neighborhoods have experienced an increase in housing investment activity. Although the magnitude of the phenomenon appears minuscule compared with recent levels of suburban housing investment, studies indicate that the back-to-the-city movement[2] is large enough to warrant further investigation. A 1975 survey of U.S. central-city planners and real estate experts estimated that significant private market housing renovation had been occurring in approximately half of America's largest central cities (Black 1980). Other studies released in the 1970s found that substantial central-city investment activity occurred in 75 to 100 percent of the cities sampled (Clay 1979; National Urban Coalition 1978). While real estate experts since the 1970s have continued to observe periodic housing investment booms in a few large U.S. central cities, recent reviews point to a possible resurgence in overall levels of central-city housing investment activity during the late 1990s (Chapin 2000; Nelson 1999). A 1998 survey by

[2] Our use of the term "back to the city" is primarily meant to convey intrametropolitan migration patterns characterized by aggregate in-migration trends from suburban locations. We are not necessarily implying that those moving to the city are "returning" to the city, having lived there before.

the Brookings Institution and the Fannie Mae Foundation found that central cities located in large metropolitan areas are optimistic about future opportunities for population growth. All of the 24 cities surveyed predicted an overall increase in population between 1998 and 2010, and some projected substantial increases of more than 100 percent.

Despite the growing evidence that central-city housing investment may be more than just a passing phase, the sustainability of this trend and the extent to which it has actually resulted in a reversal of population flows from the suburbs into urban areas is the subject of much debate. Bourne (1993) examined data from 1950 to 1986 and argued that overall trends point to a future reduction in the rate and extent of gentrification in Canadian cities. Nelson (1978) examined population movement in 11 metropolitan areas and found no evidence for a substantial back-to-the-city movement from 1955 to 1975. Sumka (1979) contrasted Nelson's findings with other national comparisons of major metropolitan areas during the 1970s and pointed to studies by James (1977) and Lipton (1977) that contradict Nelson's findings. Part of the explanation given for the different conclusions reached by these studies is the uniqueness of the phenomena being investigated in each study. Nelson (1978) focused primarily on intrametropolitan movement among different racial groups, whereas James (1977) and Lipton (1977) employed housing market measures and measures of socioeconomic change, respectively.

One problem with the early back-to-the-city studies is their tendency to focus on the destination of the move (the central city), and not the origin. It may be the case that this phenomenon simply reflects intermetropolitan population shifts resulting from urban households leaving one central city and choosing another central city in another metropolitan area. If this is the case, then recent housing renovation trends in many Sunbelt central cities such as Atlanta may simply reflect zero-sum gains in urban population arising from regional shifts in employment away from older Rustbelt cities. Given that empirical studies found that the overwhelming majority of those moving *to* the city are actually moving *within* the city or from one city to another, this is a likely explanation for much of the observed back-to-the-city movement (Gale 1984; Henig 1980). Available evidence from early Annual Housing Survey (AHS) metropolitan samples suggests that the suburb-to-city mover population comprised only about 15 percent of the total population of intrametropolitan migrants (Gale 1979; Goodman 1979). Case studies of individual cities experiencing gentrification estimated that 48 to 100 percent of central-city in-migrants have moved from another location within the same city (LeGates and Hartman 1986).

Zaravella (1987) provided a counterargument and suggested that the magnitude of urban in-migration trends may actually be understated by aggregate data, because researchers often ignore a significant class

of in-migrants: once-rural residents who have relocated to the city. If early researchers had examined the total number of central-city in-migrants from adjacent suburbs, rural areas, and the suburbs of other metropolitan areas, Griffith (1996) felt that these early studies would likely have reported substantial increases in net urban in-migration.

One of the most recent studies to comment on the back-to-the-city migration phenomenon is by Kasarda et al. (1997). The authors documented the net out-migration from central cities using data from the 1980 and 1990 U.S. Census Public Use Microdata Samples and Current Population Surveys. They found no support for a significant back-to-the-city trend. The authors pointed to the economics literature, which suggests that higher-income households will search out locations with the lowest tax burden and the greatest bundle of location amenities. They speculated that the small proportion of nonurban residents who have moved to central cities are attracted by amenities such as a rich diversity of lifestyles, significant architectural resources, diverse commercial opportunities, and other entertainment options such as ethnic restaurants and cultural activities. Other factors mentioned as influencing household relocations to the central city are reduced commuting times and distances. Since the purpose of the Kasarda et al. (1997) study was to report aggregate trends and not to explain intrametropolitan mobility, the authors provided no evidence to support these hypothesized reasons for suburb-to-city population flows.

Despite the lack of conclusive evidence to support the claim that back-to-the-city movers are actually moving to the central city from suburban locations, many urban policy makers have sought to encourage suburb-to-city movement, especially among middle-income households. Quercia and Galster (1997) discussed the expected benefits of having middle-income households move back to central cities, among them the fiscal benefits related to increases in property value resulting from neighborhood revitalization. Sales tax revenues are also expected to rise because of the increased per capita consumption levels of higher-income households. Quercia and Galster argue that each of these factors will create a synergistic impact on the city's image, which will then attract more middle-income households to the city.

A related theme that runs through the literature on central-city and urban revitalization is the emphasis placed on increasing the proportion of middle-income residents in inner-city neighborhoods (Frey and Kobrin 1982). This is often referred to as "urban diversity"—a mixing of income class, race, age groups, and lifestyles related to household composition and life cycle. These calls for diversity in central cities run counter to the general trends that are actually taking place in most metropolitan areas. Recent analyses of published 2000 U.S. Bureau of the Census data suggest that the nation's largest central cities contin-

ued to experience net losses in non-Hispanic white residents during the 1990s (Schmitt 2001). The issue then becomes, How are certain household types drawn to the city from the suburbs? As Lang, Hughes, and Danielsen (1997) argued, it may take a marketing approach to accomplish the task. To do this, we first need to know the preferences of households that have recently moved to central cities from suburban areas. These preferences offer insights into the relative attractiveness of the central city over the suburbs as a preferred residential location.

Explaining the direction of intrametropolitan residential mobility

To understand the residential preferences of prospective suburb-to-city movers, it is useful to begin by reviewing studies that have attempted to characterize those who have recently made this type of move. Because the purpose of our study is to identify differences between suburb-to-city movers and those moving in the other direction, we begin by reviewing studies that explained the observed differences. Following this, we examine empirical evidence for these hypothesized differences.

Hypothesized differences between suburb-to-city and city-to-suburb movers

Most researchers attribute the differences between suburb-to-city and city-to-suburb movers to demographic differences related to life cycle factors. According to Rossi (1955), housing decisions are driven largely by the changing demographic characteristics of households. Young couples may be attracted to the city if they are childless or do not perceive inner-city schools to be of lower quality. Likewise, individuals of different ages may express different types of demand for central-city housing. Young families with children may prefer larger suburban homes with large private lots, whereas older empty-nesters may prefer to minimize maintenance expenses by relocating to a smaller house on a smaller lot.

Early characterizations of the typical back-to-the-city mover suggest that life cycle factors may account for some of the observed demographic differences between suburb-to-city and city-to-suburb movers. Gale (1979) reviewed early case studies of the back-to-the-city movement and concluded that urban in-migrants tend to be white, younger, college-educated, upper-income professionals without children. A later review by LeGates and Hartman (1986) reached a similar conclusion about the average urban in-migrant. Because central-city housing tends to be smaller and more expensive than suburban housing, we would expect wealthier households without children to be attracted to the central city.

Although life cycle factors are relevant for explaining some of the characteristics of the average suburb-to-city mover, they do not suffice for two reasons. First, many of these factors simply characterize mobile populations in general and not necessarily those moving from the suburbs to the city. White, upper-income households without children are less likely to be tied to any particular location for employment, neighborhood, or school quality reasons and less likely to face discrimination in the housing market. Second, many empirical studies have found that suburb-to-city movers do not conform to the common stereotype described earlier. Kasarda et al. (1997) found that from 1985 to 1990, there were net increases in young Asians and Hispanics and nonfamily households in central cities. Case study evidence from Laska and Spain (1979) also suggested that childless families are not always the norm. In their examination of recent home buyers in a gentrifying New Orleans neighborhood, the researchers found that 62.5 percent of recent movers had one or more children. Finally, urban in-migrants are not always young professionals. LeGates and Hartman (1986) cited studies that report significant numbers of elderly movers among those who have recently relocated to the central city.

The standard monocentric model of intraurban residential location provides a common explanation for income differences between suburb-to-city and city-to-suburb movers. This model predicts that housing prices decline with distance from the central city because of the higher commuting costs incurred by central-city workers. As incomes increase, households move outward from the central city to satisfy their increased demand for housing (Muth 1969). Although empirical evidence supports this prediction, the model is highly sensitive to the assumption that the income elasticity of housing demand exceeds the income elasticity of demand for leisure time. If following an increase in income, households are more likely to forgo housing expenditures for more leisure time, then higher-income households may move inward rather than outward. Leroy and Sonstelie (1983) demonstrated that gentrification of urban areas by high-income households is also possible if households can choose between a slow and inexpensive mode of transportation and a fast but expensive one. If the price of the fast mode of transportation falls enough so that low-income households can afford it, then high-income households will lose their comparative advantage in the suburban housing market and may move inward to reduce commuting costs.

Despite the ambiguous predictions about average income differences between suburb-to-city and city-to-suburb movers, the monocentric model does provide a consistent prediction about the hypothesized reasons for moving. Given that the same quantity of housing is relatively cheaper in the suburbs, an increase in the quantity of housing demanded by the household will induce outward movement from the central city to the suburbs. Similarly, given that lost leisure time due to increased commuting time is lower in the central city relative to the sub-

urbs, an increase in the quantity of leisure time demanded by the household will induce inward movement from the suburbs to the central city. Thus, we should expect to see that reasons for moving differ between city-to-suburb and suburb-to-city movers, with the former moving to consume larger homes and the latter moving to economize on commuting costs and times.

Given studies that found evidence for housing discrimination in white suburban areas (Yinger 1986), we might also expect race to be an important characteristic that distinguishes suburb-to-city from city-to-suburb movers. The presence of barriers to entry into white suburban neighborhoods suggests that nonwhite households should be less likely, on average, to move from the central city to the suburbs. Nonwhites may also be more likely to move from the suburbs to the central city if those living in predominantly white neighborhoods are treated with hostility or if nonwhites and whites prefer to live among others of their own race.

Other explanations for suburb-to-city movement focus not on the socioeconomic or demographic characteristics of movers, but on the differences between the city and the suburbs that serve to push or pull households in either direction. Differences in housing-related amenities across a metropolitan area act to direct residents toward the central city or toward the suburbs, depending on the value the household places on that particular amenity. The most important push-and-pull factors identified by existing studies include differential intrametropolitan crime rates, property tax burdens, school quality, dwelling unit characteristics, neighborhood racial composition and amenities, and accessibility to employment locations. Although these factors are normally conceived in terms of the push from the central city and the pull to the suburbs, push-and-pull factors may also be working in the other direction. For example, as the population of an urban area increases and land area expands, increased travel times incurred by suburb-to-city commuters may act to push suburban residents toward more central urban locations (Chapin 2000). Similarly, the unique architectural features of the central-city building stock and the diverse and lively cultural life common to many urban areas may act to pull suburban residents toward urban locations (Laska and Spain 1979).

Empirical evidence

Although no existing study has directly compared the relative importance of all hypothesized differences between suburb-to-city and city-to-suburb movers, several have relied on individual-level data to identify the determinants of suburban or central-city location decisions. These studies offer suggestions on how we might differentiate between suburb-to-city and city-to-suburb movers in terms of their socioeconomic characteristics and reasons for moving. Since moves within a particular loca-

tion are likely to be made for reasons distinct from moves across the central city/suburb border, we review only those studies that attempt to control for the resident's previous location. We also focus only on studies that rely on individual-level data, because aggregate relocation trends reveal little about individual reasons for moving.

In an examination of inner-city neighborhoods in Washington, DC, Gale (1979) drew on Clay's (1979) stage theory of neighborhood change to account for the impact of life cycle factors on the timing of moves to gentrifying urban neighborhoods. He found that the earliest new settlers in a declining inner-city neighborhood are likely to be single males searching for their first home. The lack of children tends to make this initial pioneer class of in-migrants oblivious to the risks associated with the deteriorated buildings and higher crime rates common to many depressed inner-city neighborhoods. As more and more migrants move into and invest in the neighborhood, it becomes more stable, and new classes of "risk-prone" and, eventually, "risk-averse" residents begin to occupy renovated dwellings. These later-stage migrants are more likely to have children and more likely to be concerned with the quality of neighborhood services, especially police and schools (Gale 1979, 1980). Of course, because Gale's study focuses only on Washington, DC, we cannot generalize from these findings to other metropolitan areas. Also, Gale interviewed only individual home buyers and excluded renters from his analysis. Since renters represent a significant portion of households in most central cities as well as in the inner suburbs, excluding them limits our complete understanding of the determinants of urban in-migration.

Goodman (1979) relied on data from the AHS from 1973 through 1975 to compare aggregate differences between suburb-to-city and city-to-suburb moves across 27 metropolitan areas. He constructed a "preferability index" for the suburbs and the central city that is measured as the percentage of movers within a particular location who cite a particular reason for moving minus the percentage of movers from one location to another who cite a particular reason for moving. Assuming that those who have moved to a particular location satisfy their stated reason for moving, negative correlations between suburban and central-city preferability indexes provide insights into the relative differences between central-city and suburban housing locations. The negative correlations reported by Goodman (1979) suggest that suburban locations are more likely to satisfy homeownership and neighborhood quality preferences, whereas central cities are more desirable as places to form new households. It is interesting to note that commuting and housing size needs are satisfied equally by suburban and central-city locations, suggesting that the trade-off between housing and commuting costs at greater distances from the central city may not be as complete as the theory suggests. Further evidence is provided by the fact that only a small proportion of all intrametropolitan moves appear to be driven by

neighborhood amenities and commuting-related factors. A seemingly contradictory finding provided by Goodman (1979) is that school quality accounts for only a small portion of moves and that suburban areas offer no clear advantage in providing higher-quality schools. While interesting, these results should be interpreted with caution, because Goodman's comparisons of stated reasons for moving among different categories of movers do not control for other relevant factors that may distinguish mover groups from each other.

Using mover data from the 1982 AHS, Spain (1989) identified the determinants of central-city versus suburban residential location choice among high-income households and found that differences between high-income central-city and suburban moves are largely explained by demographic differences and the desire for homeownership. Consistent with earlier studies, Spain (1989) found that single, childless householders are more likely to choose the city over the suburbs. Movers to suburban locations are more likely to be white and to own their homes following relocation. Spain (1989) found no significant difference between reasons for moving among high-income central-city and suburban movers. Although these findings offer useful insights into the residential location decisions of high-income residents, the study does not consider the factors driving residential choice among low-income persons, who may relocate because they have been displaced by public or private gentrification of low-income neighborhoods.

In 1990, Varady used a mail questionnaire of home buyers in Cincinnati to determine the location criteria for households moving either to the city or to the suburbs. He found support for a variety of push-and-pull forces that affect residential choice: Larger families desiring larger homes were pulled to the suburbs while being pushed from the central city by the condition of public schools. He also found that college-educated, childless households desiring employment accessibility and cosmopolitan amenities would tend to locate in the city and that race and income were important determinants of a household's location decision, whereas the desire for increased efficiency in government services played an insignificant role in determining intraurban household location. Unfortunately, because he surveyed only home buyers, the study tells only part of the story.

In addition to the shortcomings just mentioned, a major drawback of the Gale (1979), Goodman (1979), Spain (1989), and Varady (1990) studies is the failure to control for metropolitan-level determinants of suburb-to-city and city-to-suburb mobility. It is well known that levels of population decentralization vary dramatically across metropolitan areas, with some experiencing much greater levels of outward movement and others experiencing substantial inward movement. Although the data examined by Goodman (1979) and Spain (1989) allowed them to exploit variation across metropolitan areas and directly control for metropolitan-level effects, neither researcher made use of this feature of the data.

To date, South and Crowder's (1997) study is the only one to directly control for individual- and metropolitan-level determinants of the city/suburb location choice. Here, the researchers relied on 1979–85 Panel Study of Income Dynamics data merged with U.S. census data to examine the probability of choosing central-city versus suburban residential locations. Several findings from this study are relevant to our present discussion. First, although South and Crowder (1997) found that life cycle factors affect mobility in predictable ways, they found no evidence that the presence of children encourages movement from the city to the suburbs. Income and race are found to be important demographic predictors of intrametropolitan movement. For both blacks and whites, higher incomes increase the probability of remaining in the suburbs following a move from a previous suburban location. As for moves across the central city/suburban border, blacks are less likely than whites to move from the central city to the suburbs and more likely than whites to move from the suburbs to the central city. South and Crowder (1997) also found that metropolitan- and regional-level variables have a strong impact on intrametropolitan population movement. In particular, central-city-to-suburb ratios for violent crime rates, unemployment rates, population levels, and population density all affect the direction of population movement between the city and the suburbs.

The South and Crowder (1997) study provided some of the most comprehensive evidence to date on the demographic differences between suburb-to-city and city-to-suburb movers. A major weakness of the study, however, is its inability to identify why households move. Although we can infer reasons from the individual-level characteristics of movers, we are still left to wonder whether suburb-to-city moves are driven by preferences for unique architectural amenities, proximity to employment locations, or an affinity for "urbanism." In particular, South and Crowder (1997) failed to include measures of employment access, neighborhood amenities apart from racial and income composition, or other neighborhood-level factors that may push or pull residents to and from the central city.

To summarize, our understanding of the unique characteristics that distinguish city-to-suburb movers from suburb-to-city movers has progressed since the initial recognition of the back-to-the-city migration trend. Most studies found that suburb-to-city movers and city-to-suburb movers are leaving because of changes in life cycle, with young, educated, childless professionals among those most likely to move from the suburbs to the city. From the few studies reviewed here, along with the larger literature on suburban migration trends, increases in income tend to push households from the city to the suburbs but not in the other direction. Race also continues to affect a household's residential choice. As South and Crowder (1997) suggest, blacks are more likely to move to the suburbs from the city and less likely to move to the city from the suburbs.

The evidence on the relative importance of various hypothesized reasons for moving among suburb-to-city and city-to-suburb movers is mixed. Among the studies reviewed here, only the case studies by Gale (1979) and Varady (1990) found support for the claim that households moving to the city do so to improve access to employment centers. Neighborhood and public service characteristics are found to be important in some studies and not in others. Evidence suggests that the most important housing-related reason for moving is the desire for homeownership among city-to-suburban movers. Little evidence exists to support the claim that central cities attract movers who seek unique architectural features.

Despite these advances, our understanding of the important factors driving suburb-to-city moves remains limited. Early studies described the aggregate characteristics of the suburb-to-city mover, but few pinpoint the mover's previous location or identify individual-level reasons for moving. Later studies that rely on individual-level data provide useful evidence but often tell only part of the story. Gale (1979), Spain (1989), and Varady (1990) restricted their analyses to home buyers and high-income residents, thereby omitting important classes of movers. Goodman (1979), Spain (1989), and Varady (1990) failed to include metropolitan-level determinants of residential location choice in their estimations. To date, South and Crowder (1997) had the most comprehensive set of variables in their analyses but still failed to include measures of important push-and-pull factors that may affect location choice.

Hypotheses

In our analysis, we attempt to fill a gap in the literature by identifying the important factors that distinguish suburb-to-city from city-to-suburb movers. We focus on these two groups because they are the only ones that are presumably expressing a preference for some feature of a new location that is not satisfied by their previous one. By focusing on these two groups, we can identify the factors that push and pull households from one location to another.

The literature we have reviewed suggests several ways that suburb-to-city movers might be distinguished from city-to-suburb movers. First, they are likely to differ in terms of socioeconomic characteristics related to race, income, and life cycle. Although the two groups could theoretically be similar in terms of income, most empirical studies of suburbanization suggest that higher-income households will move to the suburbs to consume larger homes. This suggests a second hypothesis: that households moving to the city may move for different reasons than households moving to the suburbs, with the former relocating to reduce commuting costs and the latter moving to reduce housing costs or consume larger homes. Among the reasons for moving not related to trade-offs between

housing cost and employment accessibility, differences between suburb-to-city and city-to-suburb movers are likely to be affected by the extent to which the city and the suburb offer distinctly different housing, neighborhood, and public service amenities. This suggests that the relative importance of neighborhood quality or public service characteristics is more likely to vary across metropolitan areas according to the degree of differentiation between suburb and central-city housing markets. Thus, metropolitan-level characteristics may distinguish suburb-to-city from city-to-suburb movers, even when these two groups cannot be distinguished from one another in terms of their preferences for neighborhood quality or public service characteristics.

To summarize, we seek to test the following three hypotheses:

1. Suburb-to-city movers and city-to-suburb movers differ in life cycle, racial, and income characteristics.

2. Reasons for moving differ between suburb-to-city and city-to-suburb movers, with the former relocating to reduce commuting costs and the latter moving to increase levels of housing consumption.

3. Differences in stated preferences for neighborhood amenities, housing types, and public services between suburb-to-city and city-to-suburb movers are due to differences in the level of these characteristics between the city and the suburbs and not necessarily due to differences in preferences between these two groups.

If suburb-to-city and city-to-suburb movers are distinct from one another, a discriminant analysis should be able to effectively predict group membership based on differences in household socioeconomic characteristics, household reasons for moving, and metropolitan-level factors.

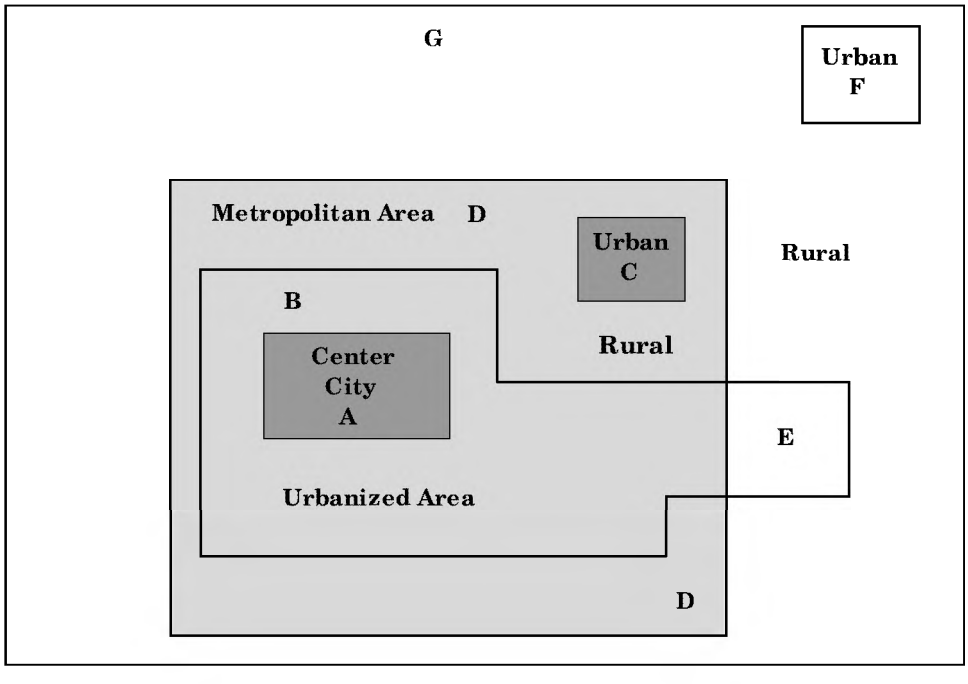
Data and methods of analysis

The data used in this analysis come from the 1989 through 1991 AHS metropolitan samples. These years were selected so that metropolitan-level census data from 1990 could be matched with individual household responses. The AHS samples approximately 5,000 homes in 10 to 12 U.S. metropolitan areas every year and collects a broad range of information, including household composition, housing unit characteristics, and geographic mobility. Specific geographic identifiers such as census tract and ZIP code have been removed from the AHS sample data that are made public, with the AHS classifying respondent household locations by three different urban classifications: central city, additional central city and urbanized area, and suburb. The suburban classification is assigned to households that are within a metropolitan area, but

outside of census-defined central cities.[3] Other studies have segmented AHS data in similar ways to examine the characteristics of metropolitan subpopulations (Dueker et al. 1983; Nelson and Sanchez 1997).

Each of the survey (household) responses was coded for current residential location (urban or suburban) and previous residential location (urban or suburban), based on the classification scheme used by the AHS (figure 1). AHS geocode A was used to identify central-city locations and geocodes B, C, and D were used to identify suburban locations (Abt Associates 1990). Responses from 33 cities sampled for this analysis provided a total of 24,193 cases of movers with valid information about previous and current residential location (table 1). Each household was classified by the direction of the move: from the central city to the central city (7,031 cases), from the central city to the suburbs (2,828 cases), from the suburbs to other suburbs (11,583 cases), and from the suburbs to the central city (2,751 cases). For this analysis, only the central-city-to-suburbs and suburbs-to-central-city moves were retained.

Figure 1. **AHS Geocoding for Urban Classification**



This analysis relied on 11 questions from the AHS relating to reasons for the relocation, selection of current neighborhood, household characteristics, and move type (direction). (See table 2 for a list of the survey

[3] In the case of the AHS, central-city and suburban boundaries are based on political boundaries and not on consistent criteria such as population density. Therefore, the definition of central-city or suburban zones varies by region and metropolitan area.

Table 1. **Sampled Metropolitan Areas**

City	Cases	City	Cases
Anaheim, CA	206	New Orleans	91
Atlanta	153	New York	48
Baltimore	86	Newark, NJ	83
Birmingham, AL	158	Norfolk, VA	228
Buffalo, NY	83	Oklahoma City	252
Chicago	90	Pittsburgh, PA	90
Cincinnati	170	Portland, OR	212
Cleveland	98	Providence, RI	130
Columbus, OH	265	Rochester, NY	178
Denver	271	St. Louis	108
Hartford, CT	80	Salt Lake City	164
Houston	175	San Antonio	252
Indianapolis	176	San Bernardino, CA	287
Kansas City, MO	204	San Diego	220
Memphis, TN	216	San Jose, CA	240
Miami	227	Seattle	208
Milwaukee	130		

questions analyzed.) Race, gender, marital status, and census region were converted to dichotomous variables for use in the discriminant analysis. In addition, the nominal responses for primary reason for moving and primary reason for neighborhood selection were converted to individual dichotomous variables for purposes of analysis. The other continuous variables—income, educational attainment, age, and household size—were used as originally coded by the AHS. Six metropolitan-level characteristics were also appended to the individual household responses: metropolitan statistical area (MSA) population size, MSA geographic size, percentage of MSA residents working in the central city, and central-city-to-suburb ratios for percent black residents, total population, and population density. This resulted in 44 total variables in the initial specification.

Discriminant analysis was used to distinguish the two household movement types based on the 38 variables from the AHS shown in table 2 and the additional 6 metropolitan characteristics. This type of statistical analysis produces linear combinations of the independent variables to predict group (mover type) membership (SPSS 1994). A step-wise method was used for variable selection purposes, and high tolerance levels for variable acceptance were used because the number of observations was quite large.

Results

Table 3 shows the descriptive statistics for the 44 variables and two classes of movers (including the total for all classes). As might be expected, rates of homeownership for respondents moving to the suburbs

Table 2. **AHS Questions Analyzed**

Variable/Code	Description
AGE	Age of household head
GRADE	Highest grade attended by household head
MAR	Marital status of household head
OWN	Ownership status
PER	Persons in household
RACE	Race of household head
SEX	Gender of household head
ZINC	Household income
WEST	Western census region
SOUTH	Southern census region
NORTHEAST	Northeastern census region
MIDWEST	Midwestern census region
WHYMOVE	Primary reason moved from previous residence
0	All reasons
1	Displaced by private
2	Displaced by government
3	Disaster loss
4	New job
5	Commuting reasons
6	Other financial
7	Establish own household
8	Needed larger unit
9	Change in marital status
10	Family/personal reasons
11	Wanted better-quality house
12	Change to owner
13	Wanted lower rent
14	Other housing-related reason
15	Other reasons
WHYTON	Main reason for choosing current neighborhood
0	All reasons important
1	Convenient to job
2	Convenient to friends
3	Convenient to leisure
4	Convenient to public transport
5	Good schools
6	Other public services
7	Looks/design of neighborhood
8	House was most important
9	Other

(either from suburban or central-city locations) are higher than for central-city households. Compared with households moving to central-city locations, suburban movers are also more likely to be married, have higher incomes, and have slightly larger household sizes. These results are supported by the analyses of census data previously discussed (see Kasarda et al. 1997). It is interesting to note that the racial composition of suburb-to-city movers is virtually identical to the racial composition of city-to-suburb movers. These two groups also have approximately the same average level of educational attainment (some college).

Table 3. **Descriptive Statistics for the 44 Variables and Two Classes of Movers**

Variables	Mean		
	Total	S to CC	CC to S
WHYMOVE—Primary reason moved			
All reasons	0.048	0.039	0.057
Displaced by private	0.011	0.012	0.012
Displaced by government	0.003	0.001	0.004
Disaster loss	0.002	0.002	0.003
New job	0.173	0.143	0.203
Commuting reasons	0.102	0.126	0.079
Other financial	0.034	0.035	0.032
Establish own household	0.119	0.147	0.093
Needed larger unit	0.065	0.063	0.068
Change in marital status	0.063	0.070	0.057
Family/personal reasons	0.067	0.067	0.067
Wanted better-quality house	0.060	0.059	0.062
Change to owner	0.051	0.047	0.054
Wanted lower rent	0.043	0.051	0.036
Other housing-related reason	0.042	0.042	0.043
Other reasons	0.101	0.082	0.119
WHYTON—Main reason for choosing neighborhood			
All reasons important	0.106	0.094	0.117
Convenient to job	0.178	0.184	0.172
Convenient to friends	0.098	0.100	0.097
Convenient to leisure	0.012	0.015	0.009
Convenient to public transport	0.007	0.008	0.005
Good schools	0.045	0.040	0.051
Other public services	0.006	0.006	0.006
Looks/design of neighborhood	0.107	0.100	0.114
House was most important	0.158	0.173	0.144
Other	0.240	0.237	0.242
RACE—Race of respondent			
White	0.807	0.806	0.809
MAR—Marital status of respondent			
Married	0.402	0.348	0.455
SEX—Sex of respondent			
Male	0.611	0.591	0.631
TENURE—Tenure status			
Own	0.213	0.174	0.251
REGION—Census region			
West	0.324	0.314	0.333
South	0.314	0.336	0.292
Northeast	0.140	0.105	0.173
Midwest	0.222	0.244	0.201
AVERAGES			
Number of persons in household	2.368	2.281	2.453
Educational attainment of household head (years)	18.080	13.451	13.712
Age of household head	34.293	33.224	35.333
Household income	28,223	25,439	30,931
MSA population (millions)	1.857	1.795	1.917
Land area (thousand acres)	4.544	4.362	4.721
Percent MSA residents working in central city	0.533	0.553	0.513

Table 3. **Descriptive Statistics for the 44 Variables and Two Classes of Movers** *(continued)*

Variables	Mean		
	Total	S to CC	CC to S
AVERAGES, continued			
Central city/suburb percent black ratio	5.467	5.422	5.511
Central city/suburb total population ratio	0.646	0.703	0.592
Central city/suburb population density ratio	12.807	12.363	13.240
N	5,579	2,751	2,828

CC = central city; S = suburbs.

In terms of the reasons reported for relocating, two AHS questions were analyzed. The first asked the primary reason for the household move and the second asked for the primary reason the current neighborhood was selected. The most frequent primary reasons for household relocation were related to employment, establishing a household, housing characteristics, and "other" reasons. No indication is given as to whether "other" means that there was no single primary reason for the move or rather that there was a combination of reasons. However, "other" could be referring to factors not listed as adequate responses. City-to-suburb movers most frequently reported that a change in job was the primary reason for their move. This coincides with the reported trends in the suburbanization of jobs in many U.S. cities. The next most frequent response for this group was "other reasons," followed by a desire to establish their own households. Establishing own household generally means that younger persons are moving out of the house for the first time and selecting central-city locations.

Like the city-to-suburb movers, the suburb-to-city movers frequently reported that establishing their own household or finding new jobs were the primary reasons for relocating. However, nearly 13 percent of the suburb-to-city movers ranked commuting reasons as the primary factor in their relocation decision. Possible explanations for this pattern of responses are financial necessity and an aversion to time-consuming work trips. A common explanation for the exodus from central cities is a household's pursuit of improved housing quality, but this was not supported by the survey results: Of the suburb-to-city movers, 6 percent reported that a better-quality dwelling unit was the primary reason for their move, while a similar proportion of the city-to-suburb movers cited this same reason. For both types of movers, on average, the type and quality of the house was the primary reason for selecting a particular neighborhood (17 percent and 14 percent). It is also interesting to note that while there are significant differences in responses related to commuting as a primary reason to move between the city-to-suburb movers and the suburb-to-city movers (8 percent versus 13 percent), their reported reasons for selecting a neighborhood because of convenience to their job is only slightly different (17 percent versus 18 percent).

Survey responses suggest that there is a two-part relocation decision-making process; first, the decision for urban status (urban or suburb) and second, the neighborhood location. While reporting that "convenience to job" is a primary criterion for both the reason to move and to select a neighborhood, very few households responded that having good access to public transportation was the main reason for selecting a neighborhood. Overall, the reasons for choosing a neighborhood are fairly similar for the different types of movers. The critical reasons that distinguished each group of movers were the convenience to public transport, convenience to friends, convenience to leisure, and house selection criteria.

One indicator that the AHS may suffer from poor survey design is the high proportion of households reporting that there were "other" primary reasons for selecting a neighborhood. The possible responses to this question are very general and do not include important household preference indicators. Providing potential responses such as "retirement," "neighborhood overcrowding," and "racial/ethnic composition" give more insightful information on household relocation behavior.[4] If social and household preference issues are to be adequately accounted for in urban policy making, better information about household location decision making is needed. Of particular interest to urban policy makers is information on the importance of regional differences in city versus suburb locational amenities in shaping residential location decisions. Unfortunately, as Spain (1989) points out, the national AHS data set fails to provide information on the regional determinants of intrametropolitan mobility. We address this deficiency in AHS data by supplementing the metropolitan AHS sample with regional descriptors of central versus suburban housing market characteristics.

Discriminant analysis

The step-wise discriminant analysis started with 44 initial variables (26 related to choices/reasons for move, 8 related to household characteristics, 4 related to regional location, and 6 related to metropolitan characteristics). The objective was to determine which variables were the most effective at predicting the type of residential relocation made by a household. Of the 44 variables, 17 remained in the analysis (see table 4). Because there are many observations, the maximum significance of F to enter the analysis was set to 0.001 and the minimum significance of F to be removed was set at 0.005.

In the discriminant function, the variables contributing the most were income, percentage of MSA residents working in the central city, and

[4] These three responses were included on the survey from 1973 through 1983 and discontinued in 1985. See Abt Associates, Inc. (1990).

Table 4. **Structure Matrix from Discriminant Analysis**

Variable	Function
Household income	0.415
Percent MSA residents working in the central city	–0.411
Married	0.398
Northeast region	0.359
Owner	0.344
Establish own household	–0.304
Age of household head	0.302
New job	0.289
Commuting reasons	–0.284
Central city/suburb population ratio	–0.276
Other reasons	0.227
Central city/suburb population-density ratio	0.225
MSA population (millions)	0.196
Midwest region	–0.189
All reasons	0.154
House was most important	–0.146
Land area (thousand acres)	0.119

Note: Pooled within-groups correlations between discriminating variables and canonical discriminant functions. Variables ordered by size of correlation within function.

marital status. With the exception of establishing own household, new job, commuting reasons, and "other" reasons, all of the variables explaining reasons for moving have relatively low correlation values (all less than 0.15). Two regional indicators (NORTHEAST and MIDWEST) had relatively high correlation values in the discriminant function. Households in the Northeast were more likely to be central-city-to-suburb movers while households in the Midwest region were more likely to be suburb-to-central-city movers, after controlling for other household and metropolitan-level characteristics. Overall, the resulting discriminant functions correctly classified approximately 60 percent of the cases (see table 5), while the odds of randomly classifying the mover type for this sample correctly were 50 percent.

Table 5. **Classification Results**

Actual Group	Number of Cases	Predicted Group Membership	
		S to CC	CC to S
S to CC	2,751	1,643 59.7%	1,108 40.3%
CC to S	2,828	1,147 40.6%	1,681 59.4%

Note: Percentage of original grouped cases correctly classified: 59.6%.
CC = central city; S = suburbs.

Interpretation

The results provide support for the hypothesized importance of life cycle and income in distinguishing between suburb-to-city and city-to-suburb movers, but we find little evidence that these groups are distinguishable in terms of racial characteristics. Consistent with the standard monocentric model of urban location, we find that those with higher incomes are more likely to choose suburban locations. We also find that younger, single individuals are more likely to move to the central city to establish their own households. Although this finding is generally consistent with most studies reviewed here, our characterization of the suburb-to-city mover differs from the early conception of the back-to-the-city mover described by Gale (1979) in terms of education level, income, and race. We find no evidence that suburb-to-city movers have higher incomes, have higher levels of education, or tend to be white. The most likely explanation for these findings is that early studies rarely focused on the previous location of recent central-city in-migrants. Viewed in light of these early studies, our findings suggest that many of the white, educated, upper-income back-to-the-city movers were most likely moving *within* the city, abandoning the suburbs as a possible location alternative.

We find that neither the race of the mover nor the racial composition of the central city relative to the suburbs serves to distinguish suburb-to-city from city-to-suburb movers. Although the insignificance of metropolitan-level racial composition is generally consistent with early studies that find little recent support for a significant "white-flight" phenomenon (see South and Crowder 1997 for a review), the insignificance of the mover's race contradicts South and Crowder (1997), who find that blacks are less likely to move to the suburbs from the city and more likely to move to the city from the suburbs. We find that both blacks and whites are equally mobile in both directions. This finding is consistent with Farley and Frey (1994), who found that between the 1980s and the 1990s, most metropolitan areas saw modest declines in segregation, perhaps due to increases in black suburbanization during that decade.

The results support the hypothesis that households are attracted to the central city from the suburbs for commuting reasons; however, the trade-off between accessibility to employment and housing costs is not as straightforward as the monocentric model suggests. Although high-income households and those seeking to own their homes are attracted to the suburbs, a small but significant number of suburb-to-city movers cite the characteristics of the housing unit as the most important reason for choosing a central-city location. There are several explanations for this finding. First, it may be the case that these movers represent those expressing a desire for unique historical architectural characteristics that may be found only in central-city locations. Although this ex-

planation is possible, it is generally not supported by earlier studies and calls for further verification from future studies. A more likely possibility is that the lack of rental housing in the suburbs, due to exclusionary zoning or market factors, actually makes suburban housing more expensive for those who do not seek single-family detached homes. For these consumers, the central city may offer a larger stock of affordable housing either in the rental market or in blighted low-income urban neighborhoods with depressed property values.

Finally, as hypothesized, metropolitan-level ratios of central-city-to-suburb characteristics are more important in explaining intrametropolitan residential location choices than differences in individual preferences for public services or neighborhood characteristics. None of the individual-level reasons for moving or reasons for choosing a particular location related to public service or neighborhood preferences were significant in discriminating between suburb-to-city movers and city-to-suburb movers. Movers are pushed or pulled to and from the central city only when it offers a location that is distinctly different from a suburban one. As more metropolitan-area residents work in the central city, movers are much more likely to move from the suburbs to the central city rather than in the other direction. The fact that this variable is large and significant even after controlling for commuting-related moves suggests that residents prefer to live in areas with economically vital downtown areas. The presence of larger numbers of downtown workers may serve to generate significant positive spillover benefits. As more workers work downtown, the increased presence of daily street traffic may serve to attract additional downtown retail and service amenities. An increased street presence may also serve to reduce levels of criminal activity by placing more "eyes" on the street (Jacobs 1961).

As the size of the metropolitan area grows, households are more likely to move outward; however, differences between the central city and the suburbs may counteract outward movement because of absolute population and land area gains. It is interesting to note that as the central city becomes more populated relative to the suburbs, households are more likely to move inward, whereas increases in central-city population *density* relative to the suburbs tends to push populations outward. It may be the case that increases in central-city population lead to increases in downtown vitality as described above, but as population density increases, congestion externalities set in and serve to push households outward to the suburbs. Another explanation is that increases in central-city population may actually lower the average costs of providing public services characterized by significant economies of scale.

A final explanation is offered by David Rusk (1993). Our measure of population ratios roughly equates with Rusk's measure of central-city "elasticity," which he defines as the central city's ability to annex land to accommodate population growth. Given that higher-income residents,

on average, prefer larger homes on larger lots, these preferences can be satisfied only by moving outward, where land for large homes with large lots is more readily available. Unless the central city can easily annex these areas to capture the tax revenues from these residents, suburbanization by high-income residents may result in an outflow of property tax revenues and an increased inability to provide high-quality urban services. If the central city has "elastic" borders, it can easily annex land in response to suburbanization and continue to provide higher-quality public services than central cities with "inelastic" borders. Higher quality public services may then serve to pull some residents of suburban areas back to the city. Our unusual finding calls for additional research to verify the reasons why increases in relative central-city population size may serve to attract residents from the suburbs.

Other related issues that are important to mention are that the structure of survey questions and available responses are unreliable at times. More specific reasons for relocation and neighborhood selection (retirement, neighborhood appearance, racial/ethnic tension, safety, etc.) may more adequately explain household location preferences.[5] This would be especially useful for policy makers who are trying to revitalize central cities through housing programs and incentives to households to choose central-city locations. It is questionable, however, whether survey responses to sensitive questions such as those related to racial prejudice would yield reliable data, and whether respondents will consistently reveal attitudes that may be judged as socially unacceptable.

Conclusion

For urban policy makers interested in attracting residents from suburban locations to the central city, our findings suggest strategies that build on the comparative advantage of central-city residential locations. Although the suburbs will likely continue to attract households seeking to consume larger homes, central-city locations may continue to have a comparative advantage in offering accessibility to employment. When access to jobs is important to workers and central cities have attracted enough workers to create an economically vital downtown, spillover benefits may continue to draw more residents inward. Although demographic characteristics related to life cycle factors will continue to be an important determinant of intrametropolitan mobility patterns, our analysis suggests that suburb-to-city and city-to-suburb movers are actually quite similar and that successful urban revitalization efforts may serve to attract a diverse residential population to central-city locations.

[5] Future research efforts on this topic should consider including psychographic measures used for consumer segmentation analysis. An example is the Stanford Research Institute's GeoVALS data, which distinguish consumer preferences among households with similar demographic profiles and similar geographic typologies.

Authors

Thomas W. Sanchez is Associate Professor in the School of Urban Studies and Planning at Portland State University. Casey J. Dawkins is a Ph.D. candidate in the City and Regional Planning Program at the Georgia Institute of Technology.

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