Place Characteristics and Residential Location Choice Among the Retirement-Age Population

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Objectives. We investigate the association between an extensive set of location-specific factors and the propensity of retirement-age individuals to remain in, or relocate to, those locations. In particular, we investigate whether state and local fiscal factors influence the migration decisions of retirees, and we study the relative importance of fiscal and other factors in these decisions.

Methods. We place decisions regarding where to move and where to locate in a single discrete-choice framework. We estimate an individual-level location-choice model by using a combination of place-characteristics data and Census county-to-county migration data for the period 1985–1990.

Results. We find that levels of tax burdens and public services can affect location decisions. Of the fiscal variables, income taxes have the largest relative effects. However, other factors, including climate, economic conditions, and population characteristics, appear to play much larger roles in migration and location decisions.

Discussion. Although income tax reductions might influence the location decisions of recent retirees, whether or not the economic benefits associated with these population gains outweigh the accompanying revenue losses is an important area for further research. A more cost-effective strategy may be for states to focus on marketing their amenities rather than using fiscal policy to recruit retirees.

Population aging in the United States has made elderly migration more significant in absolute terms, contributing to heightened interest in the migration and residential location decisions of elderly people. Some areas have become elder “magnets,” attracting large numbers of recent retirees (Frey, Liaw, & Lin, 1999). Competing claims have been made about whether these older migrants drive a need for additional government services (Bryant & El-Attar, 1984; Longino & Biggar, 1981) or enhance a local government’s economy and tax base without imposing heavy demands on local services (Stallman, Deller, & Shields 1999; Longino & Crown, 1989; Woods, Miller, Voth, Song, & Jones, 1997). Some states have developed strategies for attracting retirees (Eckl, 1986; Reeder, 1998; Stallmann & Siegel, 1995) analogous to economic development programs aimed at attracting high-tech or manufacturing firms. Besides marketing their state’s amenities, governments have planned, enacted, or encouraged a variety of tax and fee incentives to lure retirees.

Although the residential location decisions of retirees may have major impacts on the ability of local governments to raise revenue and provide services, there has been relatively little research on whether state and local governments can, in fact, influence older persons’ migration decisions. Do taxes and public services influence retirees’ residential decisions, or do amenity and place characteristics dominate such choices? We investigate whether fiscal factors influence the migration decisions of retirees, and we study the relative importance of fiscal and other factors in these decisions. We incorporate a broad range of amenity and cost factors found in the migration literature, and we examine the determinants of retiree migration by using county-to-county migration data for the period 1985–1990.

This article makes several contributions to research on retirement migration. We use a discrete-choice framework in which individuals choose from a large (3,068) set of potential locations. In our model, an individual’s chances of moving to any particular location depend on the characteristics of all potential locations. We exploit this feature of the model by computing the expected change in each location’s population in response to changes in its characteristics. The framework represents the decisions of nonmovers as well as those of movers. We also estimate differences by racial group and educational level in the effects of state and local attributes on migration and location decisions. Finally, although our model is formulated in terms of individual location choices, our use of grouped data permits us to use a large sample of origin counties, producing very precise estimates of tax, expenditure, and amenity effects.

Analytic Framework

Litwak and Longino (1987) presented a three-stage classification of retiree mobility, consisting of amenity-driven location decisions in early retirement, a subsequent move prompted by actual or pending health problems or the death of a spouse, and, possibly, ultimate relocation to an institution for full-time assistance. In this study we focus on the first stage of this process. States are likely to focus their recruitment campaigns on the “young old” who have higher incomes and lower service demands, and who are more apt to be influenced by state policies because several alternative destinations may provide similar amenities (Haas & Serow, 1993). Local amenities are thought to play a large role in first-stage migration relative to the proximity of family or friends. In fact, the first
move often has the result that elders live farther away from their children (Clark & Wolf, 1992), which is important given that the principal data source for this study, the decennial census migration files, does not include information on the location of kin.

Much of the existing research on elder migration uses state- or county-level data on aggregate migration flows. Models typically include characteristics of the origin, destination, or both places, but they do not consider characteristics of nonselected alternatives including not moving at all (Assadian, 1995; Clark & Hunter, 1992; Conway & Houtenville, 2001; Kallan, 1993). Although these types of migration models provide information on migration patterns and their correlates, they provide an incomplete view of the residential location decisions of retirees. First, decisions of nonmovers are not considered, yet over 80% of 65- to 74-year-olds make no moves. Second, when retirees consider potential retirement destinations, the characteristics of many potential locations are relevant to their decision. Finally, many past studies focus exclusively on state-to-state migration patterns, but this obscures the significant within-state heterogeneity that exists, particularly in large states.

A more general approach is to model residential location decisions rather than migration. During the early stages of retirement, an individual faces decisions regarding whether and where to move. Like Pampel, Levin, Louviere, Meyer, and Rushton (1984), we view both decisions as part of a single process in which the characteristics of the present location are compared with various alternatives over an extended period (Haas & Serow, 1993). Because we observe only the outcomes of this process, we treat residential location as a single-choice problem. We develop a discrete-choice model of where individuals choose to live during the early years of retirement. We consider the decisions of nonmovers as well as movers, and we take account of the characteristics of all possible locations.

Past research on elderly migration has identified several correlates of location choices, which can be organized broadly into amenity and cost factors (Walters, 1994, 2002). Amenities include physical amenities, cultural amenities, and access to services. Physical amenities, such as a pleasant climate and proximity to recreational opportunities (e.g., seacoast), are often found to be important determinants of migration (Clark & Hunter, 1992; Graves, 1979). Crime rates have often been included as a negative amenity but have produced inconsistent results. Given the high demand of many elders for health services, studies have often included measures of health services, such as the numbers of physicians, hospital beds, and nursing home beds (Walters, 2002). Only a few migration studies have included measures of public services, typically in the form of category-specific per capita spending. Higher public welfare spending has generally been found to detract from a destination, whereas results for education spending and public safety are inconsistent (Clark & Hunter, 1992; Conway & Houtenville, 2001; Dresher, 1994).

Moving costs include both fixed and variable components. Distance has been included in most migration studies to reflect holding service levels constant, the impact of taxes is complicated by the fact that the elderly population may be more or less affected by various taxes (Mackey & Carter, 1995a, 1995b). Most studies find that higher per capita property, estate, and inheritance taxes make a place less attractive, but results for income taxes and sales taxes are quite varied (Assadian, 1995; Clark & Hunter, 1992; Conway & Houtenville, 2001; Dresher, 1994; Voss, Gunderson, & Manchin, 1996).

**METHODS**

**Discrete-Choice Model of Residential Location**

Our analysis of county-to-county migratory flows uses a discrete-choice model that encompasses both an individual’s decision to move and the selection of a given location given a move. Each individual is a potential migrant and bases her location decision upon the benefits of living in each potential location, including the current one. These benefits, in turn, depend on an evaluation of each location’s array of services, amenities, and other location-specific attributes, as well as the prices faced (in the form of market prices and taxes paid) for these attributes. A comparison of the benefits associated with a distant location to the benefits associated with one’s present location may indicate that well-being can be improved by changing locations. However, a move will occur only if the net benefits attainable through a move, after subtracting the costs—both fixed and variable—of moving, are positive.

Formally, we assume that potential migrant i’s evaluation of the net benefits of living in location j, assessed from the perspective of the current location k, can be represented as

\[ U_{ijk} = Z_i B_i + \delta_0 M_{jk} + \delta_1 D_{jk} + e_{ijk}. \]

In Equation (1), \( Z_i \) is an array of services, amenities, and prices associated with location k, \( B_i \) are the weights attached to respective elements of \( Z_i \) given i’s demographic group, \( M_{jk} \) is a dummy variable indicating that i must move to locate in k (i.e., that \( j \neq k \)), \( D_{jk} \) represents the distance between locations \( j \) and \( k \), assessed from the perspective of \( j \), \( \delta_0 \) and \( \delta_1 \) represent the fixed and the variable costs, respectively, of moving. Following the conventions of discrete-choice theory, we assume that each decision maker chooses the location offering the greatest net benefits. A move to location \( k \) will occur only if \( U_{ijk} > U_{iij} \).

We adopt the conventional assumption that all the elements of \( e_{ijk} \) for persons and location choices are independently extreme-value distributed. This implies, in turn, a standard logistic discrete-choice model for the probability of locating in each of 3,068 counties in the year 1990, given the 1985 county of residence:

\[ P_{ijk} = \frac{e^{Z_i B_i + \delta_0 M_{jk} + \delta_1 D_{jk}}}{\sum_{k=1}^{3068} e^{Z_i B_i + \delta_0 M_{jk} + \delta_1 D_{jk}}}. \]

The choice framework in Equation (1), which leads to the choice probabilities represented in Equation (2), is formulated...
at the individual level. Our data, however, consist of counts: $n_{jk}$ is the number of persons in a given demographic group who lived in county $j$ in 1985 and lived in county $k$ in 1990. We assume that all individuals in each demographic group in each country have identical 1990 location-choice probabilities. Then the likelihood of observing a given frequency of location choices is $P^{jk}_{ijk}$. Thus we are able to estimate an individual-level location-choice model using group-level data by using weighted multinomial logit with the counts (the $n_{jk}$) serving as weights. The discrete-choice estimation software requires a row of data for each choice (i.e., the 3068 counties) facing individuals in each origin county. Physical constraints prevented us from using the full 3068 × 3068 data file. Instead, we defined 767 size strata by sorting counties by total population, grouping them into successive groups of four, and randomly selecting one county from each stratum. This strategy ensures that approximately 25% of the population is used in the estimation. Hypothesis tests demonstrate that the sample is not statistically different (at the .01 level) from the full population of counties for all the variables used in the analysis (a table is available from the authors upon request).

Interpreting coefficients in discrete-choice models is difficult, particularly in the presence of very large choice sets such as ours. Furthermore, the probability that an individual will move from one county to any other individual county over a 5-year period is extremely small. In order to develop a set of summary indices that permit us to determine the relative sizes of responses to changes in different county attributes, we expressed each county’s expected 1990 population in terms of the model parameters, that is,

$$E[pop_{90i}] = \sum_{i=1}^{6} \sum_{j=1}^{3068} pop_{85j}P_{ijk}. \quad (3)$$

where “$pop_{90i}$” is the population of county $k$ in year $t$, $i$ refers to the six combinations of racial and educational groupings distinguished in the model, and $P_{ijk}$ is the probability that a person in group $i$ will move from his or her origin county $j$ to county $k$ by 1990 [defined in Equation (1)]. We then computed the partial derivative of Equation (3) with respect to each explanatory variable, in each destination county, expressing the result in elasticity form. Each county has its own array of partial derivatives because it has its own population, attributes, and fixed location relative to the populations, attributes, and fixed locations of all other counties. A change in one attribute of one county, holding constant every other component of the model, induces changes in all 3068 × 3068 pairs of conditional location probabilities. To summarize these partial derivatives, we report their average as well as selected percentiles in the distribution of population responses.

Data and Measures

Migration data.—The decennial Census asks those enumerated to indicate their current place of residence as well as that of 5 years ago. These data are attractive because they identify origin and destination of migrants at the county level, include both migrants and nonmigrants, and provide a complete enumeration of survivors at the end of the 5-year period. However, these retrospective data may miss intermediate and return moves within the 5-year period, they fail to record moves made by persons who fail to survive to the data-collection date, and the values of possible correlates of moves are recorded at the end of, rather than at the beginning of, the time interval. Despite these shortcomings, we used the county-to-county (CTC) migration flow data from the 1990 census, because the data cover the entire population in 1990. The county-level data are disaggregated enough to eliminate much of the heterogeneity in place characteristics in a given location, yet most relevant location attributes are available at the county level. We confined our analysis to the 48 contiguous states plus the District of Columbia (treated as the equivalent of a county), but we discarded two counties from Texas (Loving and King Counties) that were found to be substantial outliers with respect to fiscal variables. These restrictions produced a total of 3,068 counties for our analysis.

The CTC data include cross-tabulations of migration with some demographic characteristics, permitting separate analyses of migration for each such group. To capture primarily first-stage migration, we analyze the migratory flows of persons aged 60–69 in 1985 (65–74 in 1990), estimating separate models for the six combinations of two racial categories (White and non-White) and three educational groups (not high school graduates, high school graduates, and college graduates). Education captures differences in tastes and information, and it also serves as a proxy for income level. Because these characteristics are fixed for most elders, postmigration measurement is not an issue. With respect to individual characteristics, Newbold (1996) and Chevan (1995) found that more-educated elders are significantly more likely to move. Kallan (1993) found that income is directly related to the likelihood of moving.

Place characteristics.—Drawing from the growing literature on elderly migration summarized in Walters (2002), we assembled an extensive set of county attributes from sources such as the Census of Retail Trade, Census of Service Industries, Census of Governments, Consumer Expenditure Survey, Significant Features of Fiscal Federalism, and the County and City Data Book. Health system characteristics and population centroids came from the Area Resource File (ARF). Land features such as coastline and recreational areas were coded by hand with a standard road atlas. The names, sources, years, and descriptive statistics of all location-specific variables used in our analysis are presented in Table 1. Variables representing fiscal factors pertain to 1987, because the Census of Governments data source is only available for 1982 and 1987; the data for 1987 are likely to more accurately represent the fiscal environment facing potential migrants during 1985–1990.

We constructed several state- and county-level tax and expenditure variables. Whereas state and local governments utilize a number of revenue sources, our focus has been on the major tax systems relevant to the elderly population—personal income taxes, retail sales taxes, property taxes, and death taxes. Our tax variables are measured as the average tax burden on an elderly household with prescribed characteristics, that is, the taxes paid by a “representative individual.”

There are two basic kinds of death taxes: estate taxes imposed on decedents’ estates prior to disbursement to beneficiaries, and inheritance taxes assessed on beneficiaries in their state of residence. In general, elderly people can most directly control their estate tax burden because it applies to their state of
residence. Each state’s tax structure is different and interacts with the federal estate tax. In order to ensure variability in the death tax measures, we calculated effective estate and inheritance tax burdens by using the national average size of estates on which any tax was paid, $822,000. State and local income tax burdens on the elderly population can vary across states because of different tax rates and adjustments to the tax base, including treatment of pension income, personal exemptions for elderly people, and other special provisions (Mackey & Carter, 1995a). Without detailed information on household characteristics, it is not possible to estimate an effective tax rate for a particular household. Instead, we calculate the combined state and local effective rate (tax divided by income) for elderly filers with taxable incomes of $30,000. The same estate size and income level is used for all counties to calculate the tax variables to facilitate comparisons of comparable households across counties.

Our sales tax variable reflects both state and county sales tax rates. To proxy the average sales tax rate facing the elderly population, we applied these rates to the taxable portion of an average consumption bundle for a household between 65 and 74 years of age. City tax rates were included if they were different than the county rate, in cases in which the county and city share common boundaries. Property tax rates relative to the market value of the property are not available at a national level. Instead, we used data from the Census of Governments on property tax revenues and divided this by the number of households in a county to obtain the average property tax per household. Measures of property tax relief for senior citizens were included in earlier versions of the model, but they were not generally found to be statistically significant.

Ideally, public services should be measured by the quantity and quality of the services provided in a given county. Unfortunately, measures of public service outputs are rarely available. Spending per household provides a rough proxy for the level of public services. For public safety and education, we used data from the Census of Governments program, the Census of Governments, and the Census of Governments. For public welfare, public housing, and recreation, we combined per household county spending with average state spending per household. These variables capture the categories of expenditures most frequently mentioned as being of interest to elderly people.

We included a range of variables to capture desirable amenities for the elderly population. We used three measures of climate: (a) the average number of clear days, which captures both sunlight and precipitation; (b) the number of heating degree days, which measures how cold a place is; and (c) the relative humidity in July, used as a measure of comfort. These

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Source</th>
<th>Mean</th>
<th>5th</th>
<th>95th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estate tax</td>
<td>Average state tax rate on $822,000 bequest to spouse</td>
<td>CCH</td>
<td>0.009</td>
<td>0.000</td>
<td>0.047</td>
</tr>
<tr>
<td>Inheritance tax</td>
<td>Average state tax rate on $822,000 bequest from spouse</td>
<td>CCH</td>
<td>0.085</td>
<td>0.000</td>
<td>0.305</td>
</tr>
<tr>
<td>Income tax</td>
<td>Effective state + local tax rate on $50,000 taxable income</td>
<td>ACIR</td>
<td>0.045</td>
<td>0.000</td>
<td>0.082</td>
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<td>Property tax</td>
<td>County property tax revenues per household (thousands)</td>
<td>CCDB</td>
<td>1.172</td>
<td>0.254</td>
<td>2.727</td>
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<tr>
<td>Sales tax</td>
<td>Average effective state + local tax rate ($×1000), persons aged 65–74</td>
<td>A</td>
<td>0.860</td>
<td>0.000</td>
<td>1.871</td>
</tr>
<tr>
<td>Expenditures</td>
<td>Public safety</td>
<td>CCDB</td>
<td>0.202</td>
<td>0.060</td>
<td>0.441</td>
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<td></td>
<td>Welfare</td>
<td>CCDB</td>
<td>0.791</td>
<td>0.000</td>
<td>2.617</td>
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<td></td>
<td>Housing</td>
<td>CCDB</td>
<td>0.066</td>
<td>0.001</td>
<td>0.199</td>
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<tr>
<td></td>
<td>Recreation</td>
<td>COG</td>
<td>0.067</td>
<td>0.016</td>
<td>0.168</td>
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<td>Education</td>
<td>CCDB</td>
<td>1.936</td>
<td>1.146</td>
<td>3.097</td>
</tr>
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<td></td>
<td>Clear days</td>
<td>NOAA</td>
<td>0.105</td>
<td>0.033</td>
<td>0.560</td>
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<tr>
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<td>Cold</td>
<td>NOAA</td>
<td>0.494</td>
<td>0.000</td>
<td>1.000</td>
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<td>Housing costs</td>
<td>CCDB</td>
<td>34.954</td>
<td>19.400</td>
<td>61.280</td>
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<td>Vacancy rate</td>
<td>CCDB</td>
<td>0.135</td>
<td>0.051</td>
<td>0.337</td>
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<td></td>
<td>Crime rate</td>
<td>CCDB</td>
<td>2.269</td>
<td>0.233</td>
<td>6.309</td>
</tr>
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<td>Land area</td>
<td>CCDB</td>
<td>6.516</td>
<td>5.442</td>
<td>7.971</td>
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<td>Coast</td>
<td>A</td>
<td>0.097</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Lakes</td>
<td>A</td>
<td>0.423</td>
<td>0.000</td>
<td>1.000</td>
</tr>
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<td>Population density</td>
<td>CCDB</td>
<td>0.173</td>
<td>0.003</td>
<td>0.578</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>CEN</td>
<td>0.365</td>
<td>0.000</td>
<td>0.890</td>
</tr>
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<td></td>
<td>Enrollment</td>
<td>CEN</td>
<td>0.519</td>
<td>0.360</td>
<td>0.714</td>
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<td></td>
<td>Unemployment</td>
<td>BLS</td>
<td>0.077</td>
<td>0.033</td>
<td>0.149</td>
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<td></td>
<td>FH households</td>
<td>CCDB</td>
<td>0.083</td>
<td>0.042</td>
<td>0.144</td>
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<td>Teen pregnancy</td>
<td>CCDB</td>
<td>2.925</td>
<td>1.242</td>
<td>5.228</td>
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<td>Non-White</td>
<td>CCDB</td>
<td>0.060</td>
<td>0.000</td>
<td>0.329</td>
</tr>
<tr>
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<td>Age group</td>
<td>CCDB</td>
<td>0.067</td>
<td>0.001</td>
<td>0.164</td>
</tr>
<tr>
<td></td>
<td>Medical specialists</td>
<td>ARF</td>
<td>0.198</td>
<td>0.000</td>
<td>0.672</td>
</tr>
<tr>
<td></td>
<td>Hospital services</td>
<td>ARF</td>
<td>0.317</td>
<td>0.000</td>
<td>0.833</td>
</tr>
<tr>
<td></td>
<td>Nursing home beds</td>
<td>ARF</td>
<td>9.701</td>
<td>0.000</td>
<td>23.486</td>
</tr>
</tbody>
</table>

Notes: CCH = Commerce Clearing House; ACIR = Advisory Council on Intergovernmental Relations; CCDB = City and County Data Book; COG = Census of Governments; NOAA = National Oceanic and Atmospheric Administration; A = authors; BLS = Bureau of Labor Statistics; ARF = Area Resource File. All data are for 1987 unless otherwise noted.
data come from the National Oceanic and Atmospheric Administration (1987) and pertain to each county’s nearest weather station. To measure physical amenities, we have included dummy variables representing whether the county abuts the coast or has one or more recreational lakes. To capture the possible existence of urban services attractive to elderly people, we have included measures of urbanization (population density and the percentage of the population living in urban areas). The tendency of migrants to seek locations with similar demographic groups is measured by the percentage of the population aged 65 to 74 years old, and the percentage of population that is non-White.

To represent the health care services available in a county, we utilize the extensive data on physicians and care facilities available in the ARF. Specifically, we include measures of the number of medical specialists per household, the number of nursing home beds per capita, and the percentage of a comprehensive list of hospital services that are offered in the county.

As housing represents one of the principal differences in cost of living across counties, we include median house value as a rough proxy for housing prices (McMahon, 1991). Additional factors that might influence an area’s attractiveness include indicators of various social problems such as the housing unit vacancy rate, the unemployment rate, the percentage of female-headed households, teen births per capita, and the crime rate. To capture the most visible and threatening crimes facing potential migrants, we use the violent crime rate; we allow for a possible nonlinear relationship by including the square of this variable. Because housing vacancy rates and unemployment rates might be negatively related to housing prices, the relationship between these variables and the attractiveness of a destination is ambiguous.

To capture the fixed costs of moving, we have included a dummy variable \([M_{jk}]\) in Equation (1) indicating that the origin and potential destination counties are different. The variable costs of moving are reflected in the distance between origin and potential destination counties. We computed the distance, in miles, between the population centroids of all pairs of counties. To allow for a nonlinear relationship between distance and cost, we used the natural log of distance in the model (Newbold, 1996). All models also include dummy variables indicating 8 (of 9) census regions, although we do not report the coefficients of those variables.

Table 2. Multinomial Logit Estimates of Location Choice Model by Educational Group: Whites 65–74 Years of Age in 1990

<table>
<thead>
<tr>
<th>Variables</th>
<th>Less than High School</th>
<th>High School</th>
<th>College</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Taxes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estate</td>
<td>0.401***</td>
<td>0.320*</td>
<td>1.075***</td>
</tr>
<tr>
<td>Inheritance</td>
<td>-0.277***</td>
<td>-0.500***</td>
<td>-0.945***</td>
</tr>
<tr>
<td>Income</td>
<td>-5.133***</td>
<td>-4.501***</td>
<td>-2.232***</td>
</tr>
<tr>
<td>Property</td>
<td>-0.101***</td>
<td>0.005</td>
<td>-0.041***</td>
</tr>
<tr>
<td>Sales</td>
<td>-0.076***</td>
<td>-0.103*</td>
<td>-0.067***</td>
</tr>
<tr>
<td><strong>Expenditures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public safety</td>
<td>0.209***</td>
<td>0.240***</td>
<td>0.356*</td>
</tr>
<tr>
<td>Welfare</td>
<td>-0.011***</td>
<td>-0.005***</td>
<td>-0.004***</td>
</tr>
<tr>
<td>Housing</td>
<td>-0.072***</td>
<td>0.057***</td>
<td>0.147*</td>
</tr>
<tr>
<td>Recreation</td>
<td>-0.350***</td>
<td>-0.457***</td>
<td>-0.553***</td>
</tr>
<tr>
<td>Education</td>
<td>-0.035*</td>
<td>-0.052***</td>
<td>-0.041*</td>
</tr>
<tr>
<td><strong>Cost factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>House value</td>
<td>-0.013***</td>
<td>-0.011***</td>
<td>0.006***</td>
</tr>
<tr>
<td>Violent crime rate</td>
<td>0.130***</td>
<td>0.137***</td>
<td>0.109***</td>
</tr>
<tr>
<td>Violent crime rate squared</td>
<td>-0.004***</td>
<td>-0.004***</td>
<td>-0.002***</td>
</tr>
<tr>
<td>Fixed cost of moving</td>
<td>-0.368***</td>
<td>-1.011***</td>
<td>-1.461***</td>
</tr>
<tr>
<td>Variable cost: distance</td>
<td>-1.723***</td>
<td>-1.524***</td>
<td>-1.355***</td>
</tr>
<tr>
<td><strong>Location characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land area</td>
<td>0.460***</td>
<td>0.488***</td>
<td>0.458***</td>
</tr>
<tr>
<td>Coast</td>
<td>-0.129*</td>
<td>-0.130***</td>
<td>0.029***</td>
</tr>
<tr>
<td>Lakes</td>
<td>0.094***</td>
<td>0.165***</td>
<td>0.158*</td>
</tr>
<tr>
<td><strong>Population characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population density</td>
<td>0.028***</td>
<td>0.015***</td>
<td>-0.013***</td>
</tr>
<tr>
<td>Urban area</td>
<td>0.247***</td>
<td>0.232*</td>
<td>0.148***</td>
</tr>
<tr>
<td>School enrollment</td>
<td>0.180***</td>
<td>-0.392***</td>
<td>-0.745***</td>
</tr>
<tr>
<td>Housing vacancy rates</td>
<td>0.446***</td>
<td>1.223***</td>
<td>1.695***</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>0.845***</td>
<td>-0.716***</td>
<td>-3.003***</td>
</tr>
<tr>
<td>Households headed by women</td>
<td>-5.696***</td>
<td>-7.443***</td>
<td>-7.120***</td>
</tr>
<tr>
<td>Teenage pregnancy rate</td>
<td>-0.116***</td>
<td>-0.098*</td>
<td>-0.031***</td>
</tr>
<tr>
<td>Non-White population</td>
<td>-1.810***</td>
<td>-1.571***</td>
<td>-1.217***</td>
</tr>
<tr>
<td>Population aged 65–74</td>
<td>5.024***</td>
<td>6.188***</td>
<td>5.597***</td>
</tr>
<tr>
<td><strong>Health services</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical specialist</td>
<td>0.025***</td>
<td>0.027***</td>
<td>0.067***</td>
</tr>
<tr>
<td>Hospital services</td>
<td>0.984***</td>
<td>1.272***</td>
<td>1.473***</td>
</tr>
<tr>
<td>Nursing home beds</td>
<td>-0.012***</td>
<td>-0.014***</td>
<td>-0.019***</td>
</tr>
<tr>
<td><strong>No. of persons</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(% of total)</td>
<td>3,310,512 (37.0)</td>
<td>4,480,359 (54.0)</td>
<td>809,056 (9.0)</td>
</tr>
<tr>
<td>(\chi^2(df)) for (H_0: B = 0)</td>
<td>21,732,903 (41)</td>
<td>27,521,115 (41)</td>
<td>6,444,340 (41)</td>
</tr>
</tbody>
</table>

*p level <.01 for test of \(H_0: b = 0\).

**p level <.01 for test of \(H_0: \text{educational group} = \text{high school}\).

***p level <.01 for test of \(H_0: b_{\text{White}} = b_{\text{non-White}}\) (same educ. group).

RESULTS

The logistic regression results are reported in Tables 2 and 3, for Whites and non-Whites between 65 and 74 years of age in 1990, respectively. Besides testing the statistical significance of the coefficients from zero, we also tested for within-racial group differences in coefficients between high school graduates and the other two education groups, and between-racial group differences in education-specific coefficients. Given the very large numbers of individuals used in each equation, the great majority of null hypotheses are rejected at the .01 level, and p values for goodness-of-fit statistics are extremely low.

Because fiscal variables are a principal focus of our analysis, we begin by examining the relationship between tax burdens and migration. Of the fiscal variables under control of
### Table 3. Multinomial Logit Estimates of Location Choice Model by Educational Group: Non-Whites 65–74 Years of Age in 1990

<table>
<thead>
<tr>
<th>Variables</th>
<th>Less than High School</th>
<th>High School</th>
<th>College</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Taxes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estate</td>
<td>−0.331***</td>
<td>0.333</td>
<td>−1.364***</td>
</tr>
<tr>
<td>Inheritance</td>
<td>−0.762***</td>
<td>−0.809***</td>
<td>−1.641***</td>
</tr>
<tr>
<td>Income</td>
<td>−0.428***</td>
<td>0.516***</td>
<td>−2.300</td>
</tr>
<tr>
<td>Property</td>
<td>0.119***</td>
<td>0.071*</td>
<td>0.270***</td>
</tr>
<tr>
<td>Sales</td>
<td>−0.080*</td>
<td>−0.051</td>
<td>−0.368***</td>
</tr>
<tr>
<td><strong>Expenditures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public safety</td>
<td>0.454***</td>
<td>0.976***</td>
<td>0.784*</td>
</tr>
<tr>
<td>Welfare</td>
<td>−0.023*</td>
<td>−0.053***</td>
<td>−0.071***</td>
</tr>
<tr>
<td>Housing</td>
<td>0.036*</td>
<td>0.566***</td>
<td>−0.349**</td>
</tr>
<tr>
<td>Recreation</td>
<td>−2.158***</td>
<td>−1.670***</td>
<td>−3.212***</td>
</tr>
<tr>
<td>Education</td>
<td>−0.057*</td>
<td>0.049***</td>
<td>−0.123**</td>
</tr>
<tr>
<td><strong>Climate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear days</td>
<td>0.006***</td>
<td>−0.004*</td>
<td>0.004***</td>
</tr>
<tr>
<td>Cold days</td>
<td>−0.022**</td>
<td>−0.023***</td>
<td>−0.017***</td>
</tr>
<tr>
<td>Humidity</td>
<td>−0.361***</td>
<td>−0.623***</td>
<td>0.103**</td>
</tr>
<tr>
<td><strong>Cost factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>House value</td>
<td>0.002***</td>
<td>−0.004***</td>
<td>0.009***</td>
</tr>
<tr>
<td>Violent crime rate</td>
<td>0.151***</td>
<td>0.171***</td>
<td>0.228***</td>
</tr>
<tr>
<td>Violent crime rate squared</td>
<td>−0.007***</td>
<td>−0.008***</td>
<td>−0.013***</td>
</tr>
<tr>
<td>Fixed cost of moving</td>
<td>−1.526***</td>
<td>−1.624***</td>
<td>−2.431***</td>
</tr>
<tr>
<td>Variable cost: distance</td>
<td>−1.482***</td>
<td>−1.374***</td>
<td>−1.220***</td>
</tr>
<tr>
<td><strong>Location characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land area</td>
<td>0.485***</td>
<td>0.572***</td>
<td>0.672***</td>
</tr>
<tr>
<td>Coast</td>
<td>−0.182*</td>
<td>−0.015***</td>
<td>−0.184***</td>
</tr>
<tr>
<td>Lakes</td>
<td>0.089*</td>
<td>0.108***</td>
<td>0.217**</td>
</tr>
<tr>
<td><strong>Population characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population density</td>
<td>0.115***</td>
<td>0.039***</td>
<td>0.177***</td>
</tr>
<tr>
<td>Urban area</td>
<td>0.193***</td>
<td>0.179*</td>
<td>0.107</td>
</tr>
<tr>
<td>School enrollment</td>
<td>−0.108***</td>
<td>−1.132***</td>
<td>−0.519</td>
</tr>
<tr>
<td>Housing vacancy rates</td>
<td>−0.244***</td>
<td>−0.857***</td>
<td>0.409***</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>−0.271***</td>
<td>−2.502***</td>
<td>0.621***</td>
</tr>
<tr>
<td>Households headed by women</td>
<td>10.363***</td>
<td>6.779***</td>
<td>16.133***</td>
</tr>
<tr>
<td>Teenage pregnancy rate</td>
<td>−0.115*</td>
<td>−0.080*</td>
<td>−0.158***</td>
</tr>
<tr>
<td>Non-White population</td>
<td>0.019***</td>
<td>0.232***</td>
<td>−1.360**</td>
</tr>
<tr>
<td>Population aged 65–74</td>
<td>0.520***</td>
<td>1.000***</td>
<td>4.103***</td>
</tr>
<tr>
<td>Health services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical specialist</td>
<td>0.289***</td>
<td>0.295***</td>
<td>0.350***</td>
</tr>
<tr>
<td>Hospital services</td>
<td>0.751***</td>
<td>0.965***</td>
<td>1.178**</td>
</tr>
<tr>
<td>Nursing home beds</td>
<td>−0.014*</td>
<td>−0.024***</td>
<td>−0.014*</td>
</tr>
<tr>
<td><strong>Number of persons (%) of total</strong></td>
<td>772,076 (66.8)</td>
<td>314,503 (27.2)</td>
<td>68,906 (6.0)</td>
</tr>
</tbody>
</table>

*p level <.01 for test of $H_0$: $b = 0$.  
**p level <.05 for test of $H_0$: $b_{educational\ group} = b_{high\ school}$.

Finally, the coefficients on public education expenditures and school enrollment provide evidence that White elders generally avoid locations with large school-age populations and high education spending. There are no significant differences in the negative education spending coefficients between education groups, and the coefficient on school enrollment actually becomes more negative with higher education. For non-Whites the impact of education on location appears to be less important, as four out of the six coefficients are not statistically
significant from zero. The two significant coefficients are negative. The results for Whites, in particular, are consistent with recent publicity about elders voting against school budget increases in Florida and Arizona (Keller, 2000).

Older individuals are uniformly attracted to warmer climates. Non-Whites are attracted generally to sunnier climates with lower humidity, whereas the opposite appears to be the case for college-educated White seniors. Recreational lakes are viewed as a positive amenity in all groups, but, surprisingly, only White college-educated elders appear to be attracted to counties on the seacoast. Non-Whites in general, and Whites without college degrees, are attracted to urban counties. Less densely populated urban areas, such as suburban counties, appear attractive to college-educated Whites. Consistent with findings from previous research, retirees are generally attracted to locations with a higher percentage of older households, whereas Whites appear to avoid areas with relatively large non-White populations.

Among the health service variables, elders appear to be attracted to destinations with a broader range of hospital services, and the importance of these services generally goes up with education. Greater per capita availability of nursing home beds is negatively related to location decisions. It is likely that recent retirees are not considering nursing home facilities in making their migration decisions, but it is not clear why such facilities would be a negative amenity.

The uncertainty associated with moving to a new location imposes psychological costs on the potential movers. To minimize this uncertainty, people may look for cues about locations with negative amenities factors, such as rates crime, unemployment, teenage pregnancy, housing vacancy, and single-parent households. A complex story emerges with regard to these variables, whose effects vary by race and educational attainment. Places with a high unemployment rate are less attractive to those in most racial and education groups, but another indicator of economic vitality, the housing vacancy rate, is positively related to in-migration for Whites (when housing prices are held constant). A larger share of female-headed households is a strong deterrent to Whites, but for non-Whites this is positively associated with location in a county.

To capture a potential nonlinearity in the relationship between crime and migration to a location, we include the violent crime rate and its square in the equation. For all groups, the crime has an inverted U shape with a high inflexion point, indicating crime becomes a deterrent only for the highest crime rates. It is

rise with education. Higher income elders may have stronger roots in a community, and thus have more difficulty, all else equal, making the decision to move.

Relative Importance of Fiscal Factors in Location Decisions

The findings from our model of retiree location decisions indicate that taxes and expenditures have statistically significant effects on the county locations chosen by persons of retirement age for most education and race groups. The signs on these variables generally fit our expectations—taxes discourage migration, and expenditures have a mixed effect depending on the service. Of more relevance for policy is the practical significance of our results. How large a decrease in taxes is required to attract more retirees to a county? To assess this we have calculated elasticities indicating the percent change in total retirement-age population in a county that are due to 1% changes in selected independent variables. Table 4 reports both the average elasticity over all counties and selected points in the distribution of responses.

Table 4. Percentage Change in 1990 Population for a 1% Change in Selected Independent Variable (All population groups combined)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Distribution of Effects Across Counties (Percentile)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average 5th 50th 95th</td>
</tr>
<tr>
<td>Taxes</td>
<td></td>
</tr>
<tr>
<td>Estate</td>
<td>0.0083 0.0000 0.0000 0.0677</td>
</tr>
<tr>
<td>Inheritance</td>
<td>−0.1189 −0.5372 0.0000 0.0000</td>
</tr>
<tr>
<td>Income</td>
<td>−0.4889 −1.0982 −0.4793 0.0000</td>
</tr>
<tr>
<td>Property</td>
<td>−0.0905 −0.2468 −0.0667 −0.0068</td>
</tr>
<tr>
<td>Sales</td>
<td>−0.2219 −0.5241 −0.1981 0.0000</td>
</tr>
<tr>
<td>Expenditures</td>
<td></td>
</tr>
<tr>
<td>Public safety</td>
<td>0.1440 0.0455 0.1144 0.3027</td>
</tr>
<tr>
<td>Welfare</td>
<td>−0.0185 −0.0606 −0.0086 0.0000</td>
</tr>
<tr>
<td>Housing</td>
<td>0.0055 0.0000 0.0027 0.0168</td>
</tr>
<tr>
<td>Recreation</td>
<td>−0.0919 −0.2185 −0.0695 −0.0241</td>
</tr>
<tr>
<td>Education</td>
<td>−0.2447 −0.4945 −0.2193 −0.0781</td>
</tr>
<tr>
<td>Climate</td>
<td></td>
</tr>
<tr>
<td>Clear days</td>
<td>−0.6491 −1.2663 −0.6003 −0.1816</td>
</tr>
<tr>
<td>Cold days</td>
<td>−3.4877 −7.0359 −3.2315 −0.6589</td>
</tr>
<tr>
<td>Humidity</td>
<td>0.0055 −0.1112 0.0182 0.0595</td>
</tr>
<tr>
<td>Location characteristics</td>
<td></td>
</tr>
<tr>
<td>House value</td>
<td>−0.9274 −1.7341 −0.8394 −0.3651</td>
</tr>
<tr>
<td>Population characteristics</td>
<td></td>
</tr>
<tr>
<td>Population density</td>
<td>0.0074 0.0001 0.0025 0.0179</td>
</tr>
<tr>
<td>Urban area</td>
<td>0.1854 0.0000 0.1836 0.4382</td>
</tr>
<tr>
<td>School enrollment</td>
<td>−0.3561 −0.6755 −0.3247 −0.1303</td>
</tr>
<tr>
<td>Housing vacancy rates</td>
<td>0.3933 0.0695 0.2644 1.1574</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>−0.0953 −0.2069 −0.0836 −0.0244</td>
</tr>
<tr>
<td>Households headed by women</td>
<td>−1.2425 −2.3272 −1.1601 −0.4701</td>
</tr>
<tr>
<td>Teenage pregnancy rate</td>
<td>−0.8250 −1.8713 −0.7173 −0.1752</td>
</tr>
<tr>
<td>Non-White population</td>
<td>−0.1805 −1.0081 −0.0205 0.0000</td>
</tr>
<tr>
<td>Population aged 65–74</td>
<td>0.8444 0.0147 0.5156 2.5675</td>
</tr>
<tr>
<td>Health services</td>
<td></td>
</tr>
<tr>
<td>Medical specialist</td>
<td>0.0217 0.0000 0.0114 0.0664</td>
</tr>
<tr>
<td>Hospital services</td>
<td>0.8429 0.0000 0.8086 1.9425</td>
</tr>
<tr>
<td>Nursing home beds</td>
<td>−0.4074 −1.1385 −0.3021 0.0000</td>
</tr>
</tbody>
</table>

Note: All population groups are combined.
Examining the estimates for the tax and expenditure variables, we find it clear that there is wide variation in the impact of these variables on a population. The largest elasticity among the tax variables is for the income tax. A 1% increase in average income tax rates is associated with a 0.49% decline in population, and for a small subset of counties the elasticity exceeds −1. Sales taxes are second in importance, with an average elasticity of −0.22. The only public service variables with coefficients of any size are education spending and enrollment (negative), and public safety spending (positive). In contrast to fiscal variables, the elasticity on cold weather is generally over 1, and it exceeds 3 for the majority of districts. Elasticities on clear weather, house values, female-headed households, teen pregnancy, the elder share variable, and hospital services are also higher than the income tax elasticity.

**Discussion**

Recruiting potentially mobile households to spend their retirement years in one’s state has become an acknowledged economic development strategy. Retirees are seen as a fiscal windfall, because they have above average income and property wealth, thus expanding the local economy and tax base yet place relatively few demands on public services. Although the potential benefits and costs of elderly in-migrants to a community are still not resolved, a more fundamental question is whether state and local governments can in fact effectively recruit elderly people with the fiscal tools at their disposal. Beyond simply marketing the natural amenities that the state already possesses, can state governments induce increased migration (or reduce out-migration) by lowering taxes or tailoring public services to match the preferences of potential migrants?

The objective of this article has been to add to the growing research on elderly migration by focusing directly on the influence of state and local fiscal policies. We have made several contributions to the existing literature. Our model places the choices of whether and where to move into an integrated framework that allows estimates of the impact of policy changes in one location on the elderly migration flows to all other locations. We estimated this model by using data on a broad array of amenity, cost, and fiscal variables that may affect the location decisions of people of retirement age. Instead of focusing solely on interstate migration, we provide a more disaggregated view of migration decisions by examining county-to-county migration flows. Migration was further decomposed by race and educational attainment.

Our findings regarding fiscal variables generally conform to expectations. Higher tax rates, particularly for income tax, are associated with less in-migration. Public safety spending is generally viewed positively, and welfare and education spending are viewed negatively by people in this age group. White retirees are also generally deterred from locations with a high relative public school enrollment.

Although state and local fiscal policies do appear to influence location decisions, except for income taxes they are secondary in the migration decisions of most households. A 1% increase in income tax rates may reduce a population by up to 1% in some locations. Significant changes in other taxes and public service spending are associated with relatively small changes in population. In contrast, location characteristics well outside the realm of government intervention (such as climate) or only slightly subject to policy influence (such as housing costs and population characteristics) are much more influential in migration and location decisions.

What are the implications of our findings for state policymakers contemplating strategies for attracting elder migrants? Changes in tax burdens and service levels will generally have small effects on migration, except for possibly income tax. Thus, if a fiscal tool is to be used to recruit footloose elders, income tax appears to be best choice. However, very large income tax reductions would be required to generate significant increases in elder populations within most states, even if they were targeted to only the elderly population. A key area for future research is to examine the fiscal benefits and costs of large age-based income tax reductions. A lower cost alternative might be for states to focus on marketing their amenities to potential migrants, rather than using fiscal policy to recruit retirees.

**Acknowledgments**

We acknowledge the helpful comments of Andrew Houtenville, Jan Ondrich, and the reviewers on earlier drafts of the article. This research was supported by Grants P20-AG12837 and R03-AG15696 from the National Institute on Aging.

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**References**


