ELDERLY MIGRATION, STATE TAXES, AND WHAT THEY REVEAL

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Elderly Migration, State Taxes, and What They Reveal*

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Abstract

Empirical results obtained from the 2000 Census elderly migration data using a general gravity model of migration flows confirm earlier findings of the 'same sign problem' in the literature, which means that the elderly both migrate from and to states where taxes are higher. The same sign problem can be attributed to the heterogeneity of in- and out-migrating groups. We propose that it is possible to control for heterogeneity of migrating groups by controlling for some characteristics of either the origin or the destination state. In a gravity equation estimation for elderly migration, when controlled for heterogeneity of migrants, the same sign problem fades away, and the gravity equation shows clearer patterns for elderly migration. In particular, local amenities, tax exemptions, and low inheritance taxes are shown to be significant variables in attracting the elderly into a state.

Keywords: Tiebout Hypothesis, Migration, Taxation, State Taxes, Amenities

JEL Classification Codes: H24 H25 H31 H7

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1 Introduction

In a federal system, jurisdictions will differ in their provision of public goods and in their imposition of taxes. If individuals can move freely from jurisdiction to jurisdiction, then all else equal, each individual will move to a jurisdiction that best suits his or her preferences for public goods and taxes. This idea constitutes the essence of the 'Tiebout Hypothesis'. According to Tiebout (1956):

> "The consumer-voter may be viewed as picking that community which best satisfies his preference pattern for public goods. [...] At the local level various governments have their revenue and expenditure patterns more or less set. Given these revenue and expenditure patterns, the consumer-voter moves to that community whose local government best satisfies his set of preferences." (p.418)

It is thus natural to ask: in exactly what way do local governments' public-good-provision and tax policies affect individuals' migration decisions? This question can perhaps best be answered by investigating the effect of local government policies on the interstate migration of the elderly population in the US.

The primary benefit of focusing on elderly migration is that the elderly population consists primarily of retirees, and as a group retirees are relatively immune to labor market causalities and to other factors that affect the income stream of the working population. Although positive labor market aspects and high levels of expected income may be inviting for younger migrants, elderly migrants do not need to consider labor market aspects in their migration decision. With labor market considerations left aside, one would expect public finance variables and local amenities to manifest themselves more clearly in the migration decisions of elderly migrants than in those of younger migrants. Thus, by focusing on elderly migration, one is left with a relatively clear and undistorted view of the effects of state governments' policy decisions on interstate migration.

There is in addition a second more practical benefit of focusing research on elderly migration: the empirical results obtained can be expected to have significant policy implications. The share of the elderly population is increasing, and according to the Bureau of Census reports, it is expected to increase further. In order to take advantage of the opportunities posed by such increase, and conversely to face the challenges posed by such increase, governments at the state and local level (and indeed also at the federal level) will need to focus more thought and resources on the elderly population.

This paper investigates the effects of state and local government policies on the migration decisions of the elderly. What policies attract the elderly and what policies drive them away? How do the elderly react to different types of taxes? How do amenities and specific tax exemptions affect their migration decisions?

Under the assumption that individuals, on average, behave in a way that maximizes their utility, they eventually reveal their preferences by the choices they make. This revelation principle lies at the core of the Tiebout Hypothesis. When faced with alternative 'fiscal menus,' that is, with various combinations of local public goods and local taxes to finance these local public goods, individuals will sort themselves into jurisdictions on the basis of their preferences for such menus. Using a gravity model for migration, this paper investigates what kinds of 'fiscal menus' are popular among elderly migrants in the U.S., and what kinds are not.

We employ the elderly migration dataset published in a 2003 special report of the 2000 Census, entitled "Internal Migration of the Older Population." We overlay the data of elderly migration flows between states with data about state characteristics, in particular data about state and local government finances, but also data about certain state-specific amenities. That way, we constructed a gravity equation that takes into account pushing effects of the origin state's characteristics as well as pulling effects of destination state's characteristics.

Most of the previous studies that investigate interstate migration using gravity models have shown that when state level data is used for migration analysis, a problem known as the 'same sign problem' occurs. In a gravity model of interstate migration, pushing and pulling effects are expected to have opposite signs: if some characteristic of a state positively affects out-migrants' decisions to move out, the same characteristic should not also positively affect in-migrants' decisions to move in. The 'same sign problem' refers to the phenomenon that pushing and pulling effects often turn out to have the same sign. The same sign problem can generally be attributed either to aggregation, which is an inevitable result of using state level data, or to the heterogeneity of in- and out-migrating populations.

Our main contribution is to demonstrate that the relative attractiveness of states' 'fiscal menus' becomes more apparent when migrations over very short distances and very long distances are left out of the regressions. The same is also true when outmigration solely from higher per-capita income states is considered. The probable reason for this is that these two methods provide some correction for the heterogeneity within the population of elderly migrants. Migrations over either very short distances or very long distances might be noisy because they are more heavily influenced by non-fiscal considerations, such as the cost of moving or the location of children or grandchildren. In the case of restricting the analysis to outmigration from higher income states, the likelihood is that the focus is predominantly on more affluent migrants, and thus not on 'counter-stream' migrants who might be able to successfully free ride on the higher amenity offerings of high tax states.

2 Literature Review and Background

Most empirical research on elderly migration focuses on determining the main factors that attract elderly migrants. Graves (1979) investigates in-migration rates across different age groups for large metropolitan areas and finds that the main attractions for migrants differ significantly by age group: young migrants' decisions are affected by economic opportunities presented by a location, while elderly migrants tend to be attracted by the amenities of a location. Similarly, Clark and Hunter (1992) compare different age groups' migration decisions and find that the existence of amenities affects migration decisions of older migrants more than that of younger migrants.

Elderly migration is necessarily affected by the costs and benefits of migration. The benefits are a location's amenities, including local public goods; the costs are the taxes that must be paid when living in that specific location. Focusing on taxes, Cebula (1990) shows that the mere existence of a state income tax has a significant negative effect on the volume of elderly in-migration. Conway and Houtenville (2001) confirm that the elderly are attracted to states with amenities, including suitable climate conditions and a low cost of living. In addition, they show that an exemption of food from sales tax induces elderly in-migration. Somewhat less intuitively, they also report that lower spending on public welfare induces elderly in-migration.

No matter if one uses two separate equations for in-migration and out-migration, or a single gravity equation, a given explanatory variable would be expected to have opposite signs for the case of in-migration and for the case of out-migration. That is, if a given variable is found to be a significant factor driving the elderly out of a jurisdiction, then one would expect this very same variable to be a significant factor keeping the elderly from migrating into a jurisdiction. Conway and Houtenville (1998) use in-migration and out-migration estimations for testing the effects of several fiscal variables on elderly migration across states. Surprisingly, they find that all tax variables – property tax, sales tax and income tax – have the same sign in both the in-migration and the out-migration estimations:

> "All of the tax share coefficients are positive and statistically significant. ... [Moreover] these results cannot be dismissed; the public sector variables are almost always jointly statistically significant." (pp.678-9)

Conway and Houtenville (2001) employ a gravity model of migration, and this model confirms the results in Conway and Houtenville (1998), including the 'same sign problem.' A descriptive explanation for this phenomenon is offered in Conway and Houtenville (2001), and some insight can be found in Voss et al. (1988) as well. As it turns out, the states that have the highest in-migration rates also happen to be the states that have the highest out-migration rates. Voss et al (1988) refer to the highly positive correlation between in-migration and out-migration as 'counter-stream migration.' It is due to 'counter-stream migration' that the regression results carry the same signs for in-migration and out-migration. While this may well be true as a descriptive matter, it fails to provide a satisfactory explanation for the causes underlying the phenomenon.

Some research has put forward the theory that the availability of amenities in a jurisdiction may be partially (or even completely) compensated for in such jurisdiction's labor and real estate markets. That is, if amenities vary across jurisdictions, then in general equilibrium we would expect some wage and rent compensation to occur, for otherwise everyone would live solely in amenity-rich jurisdictions. See for example, Haurin (1980) and Roback (1982). Graves and Waldman (1991) examine this theory under the plausible assumption that the elderly constitute a small group, whose migration decision cannot affect the wage structure in the jurisdiction to which they are migrating. They provide empirical evidence to show that "in a world in which compensation for amenities occurs in varying degree in land and labor markets at alternative sites and there are no moving costs, retirement migration will be toward areas in which more of the compensation for amenities is in wages." (p.1376). This is not surprising: the elderly generally can free ride to the extent that compensation for amenities occurs in the labor market, but they generally cannot free ride to the extent that compensation occurs in the real estate market.

Conway and Rork (2006) focus on another important factor that could affect elderly migration: estate, inheritance and gift taxes. Using panel data, they surprisingly discover that estate, inheritance and gift tax policies do not affect elderly migration.

In this paper, we use indicator variables for the exemption of social security payments from state income taxation, the exemption of pension income from state income taxation, the exemption of drug sales from state sales taxes, and for the existence of atypical state inheritance or gift taxes. The indicator variable for inheritance or gift taxes turns out to be significant for most of the specifications; moreover, it does not have a same sign problem.

3 Model

There are J states, and N retirees. A retiree, n, derives utility from private consumption x, and from bundle of state specific public good G and amenities A, so that the utility function of retiree n is given by: $U_n(x, G, A)$

Axiom 1 $U_n(x, G, A)$ *is a twice differentiable, and concave function in all of its arguments.*

Axiom 2 $U_n(x, G, A)$ *is strictly increasing in* x*.*

Axiom 3 *There exist* G^* *such that* $\frac{\partial U_n(x,G^*,A)}{\partial G} = 0$ *for given* x *and* A*, and there exists* A^* *such that* $\frac{\partial U_n(x,G,A^*)}{\partial A} = 0$ *for given* x *and* G*. Moreover, for every* $G^0 < G^*$, $\frac{\partial U_n(x,G^0,A)}{\partial G} > 0$, *and for every* $G^1 > G^*$, $\frac{\partial U_n(x,G^1,A)}{\partial G} < 0$*. Similarly, for every* $A^0 < A^*$, $\frac{\partial U_n(x,G,A^0)}{\partial A} > 0$, *and for every* $A^1 > A^*$, $\frac{\partial U_n(x,G,A^1)}{\partial A} < 0$.

If a retiree chooses to reside in state i, she will enjoy state specific public goods and amenities, G_i and A_i, and the utility of retiree n in state i is given by $U_n(x_i, G_i, A_i)$. However she will have to face state specific price level p_i as well as state taxes t_i and t_{I_i}. State taxes are grouped in two broad classes: Taxes related to consumption and living expenses, and taxes related to wealth and income. Sales taxes and property taxes can be examples for taxes related to consumption and living expenses. As far taxes related to wealth and income are concerned, retirees are not wage earners, however they may be receiving pension and/or social security payments, which are subject to income tax as well.

Price level and taxes in a state affect an individual's budget constraint for private consumption. Even though a state's public good provision and amenities may be attractive to a retiree, if price level and menu of taxes restrict her private good consumption considerably, she may not choose to move to that state.

Another variable affecting a retiree's decision to move from state i to j is the moving cost, which is a function of the distance, $d_{ij,}$ between state i and state j, denoted by $c(d_{ij})$.

Axiom 4 *Moving cost function $c(d_{ij})$ from state i to state j is strictly increasing and convex in distance, d_{ij}.*

Suppose that a retiree n is initially residing in state i. The solution of the following optimization problem shows her utility, if she moves from state i to state j.

$$U_n^{ij} = \max_x U_n(x, G_j, A_j) \tag{1}$$

$$s.t.\ \ (p_j + t_j)\, x \leq w_n \left(1 - t_{I_j}\right) - c(d_{ij})$$

where w_n is wealth of retiree n which she has accumulated for her retirement.

It is easy to see that the optimization problem (1)-(2) yields the following outcome:

$$U_n^{ij} = U_n \left(\frac{w_n \left(1 - t_{I_j}\right)}{p_j + t_j} - \frac{c(d_{ij})}{p_j + t_j}, G_j, A_j \right) \tag{2}$$

If retiree n chooses to stay in state i, her initial location, then her utility will be:

$$U_n^{i} = U_n \left(\frac{w_n (1 - t_{I_i})}{p_i + t_i}, G_i, A_i \right) \tag{3}$$

Retiree n decides whether to stay or to move to another state as follows: Let U_n^* denote the set of retiree n's best possible alternatives to staying in state i, so that:

$$U_n^* = \max \left(U_n^{i1}, U_n^{i2}, ..., U_n^{ii-1}, U_n^{ii+1}, ... U_n^{iJ} \right) \tag{4}$$

Hence retiree n moves from state i to state j if and only if:

$$U_n^{ij} \in U_n^* \ \ and \ \ U_n^{ij} > U_n^{i}$$

A retiree makes her decision of relocation from state i to state j based on vector of parameters $\left(p_j, t_j, t_{I_j}, G_j, A_j, d_{ij}\right)$ offered by state j. These parameters of state j are price level, consumption tax, income tax, public good provision, amenities, and distance to origin state. Suppose that retiree n is initially residing in state i, and conditions of migration are satisfied for state j, that is: $U_n^{ij} \in U_n^*$ and $U_n^{ij} > U_n^i$.

It is interesting to see how these parameters should interact in order to keep utility derived from migration constant, other things being equal. The following three propositions focus on parameters' pairwise interactions, that are of interest especially in our empirical analysis. Their proofs are in appendix.

Proposition 1 *(Public Goods or Amenities vs. Consumption or Income Tax): An increase in public good provision in a state may be accompanied by either an increase or decrease in taxes to keep constant the attractiveness of state for a given retiree. Since preferences are single peaked in public goods and amenities, whether an increase or decrease is necessary in taxes, depends on how levels of public goods and amenities compare to their most optimal levels.*

The previous proposition states an intuitive relation between taxes and public goods or amenities:

Proposition 2 *(Price Level vs. Consumption Tax): In order to keep constant the attractiveness of a state for any retiree, an increase in price level needs to be matched by a one to one consumption tax decrease.*

Proposition 3 *(Distance vs. Consumption or Income Tax): If two states have the same attractiveness for a retiree, and have different distances from retiree's state of origin, then, other things equal, the further away state has lower consumption and income taxes. Difference in income tax is proportional to marginal cost of moving, and inversely related to retiree's wealth. Difference in consumption tax is proportional to marginal cost of moving as well, but it is inversely related to net wealth, and proportional to price level.*

4 Data and Methodology

Interstate migration data of the elderly population between years 1995 and 2000 are provided by the 2000 Census. Migration flows are determined by the change in residence of the elderly from 1995 to 2000, and the dataset is displayed as state of residency in 2000 is shown sorted by the state of residency in 1995. Elderly population contains those who are 65 years old and older, and this data doesn't contain migration flow from outside the US.

Data about the local and state government finances is obtained from the US Census Bureau's "Local and State Governments' Finances, 1993-94" online dataset. State population and state personal income data are from the Bureau of the Economic Analysis.

Cost of living index is obtained from state level consumer price indexes constructed by Berry et al (2000), and we used these consumer price indexes to obtain state real personal income figures.

We use a gravity equation of the following form:

$$
\begin{aligned}
\ln m_{ij} = \; & \alpha + \beta_1 \ln dist_{ij} + \beta_2 neigh_{ij} + \gamma_1 \ln pop_i + \gamma_2 \ln pop_j + \\
& + \gamma_3 dens_i + \gamma_4 dens_j + \gamma_5 urban_i + \gamma_6 urban_j + \\
& + \gamma_7 \ln crime_i + \gamma_8 \ln crime_j + \gamma_9 temp_i + \gamma_{10} temp_j + \\
& + \gamma_{11} \ln price_i + \gamma_{12} \ln price_j + \\
& + \gamma_{13} A_i + \gamma_{14} A_j + + \gamma_{15} TAX_i + \gamma_{16} TAX_j + \\
& + \gamma_{17} revenue_i + \gamma_{18} revenue_j \\
& + \gamma_{19} exempt_i + \gamma_{20} exempt_j + \gamma_{21} PUBSP_i + \gamma_{22} PUBSP_j + \\
& + \gamma_{23} intact1_i + \gamma_{24} intact1_j + \gamma_{25} intact2_i + \gamma_{26} intact2_j +
\end{aligned}
$$

Dependent variable is the natural logarithm of number of elderly migrants from state i to state j. Description of independent variables: (α is the constant term; independent variables in lower case letters denote natural logarithm)

$dist_{ij}$: Distance of population centers between states i and j.

$neigh_{ij}$: A dummy variable for neighbor states. If states i and j share a common border, it becomes one, otherwise it is zero.

pop : Total population of respective state

$dens$: Population density of respective state, found by dividing state's total population by its area.

$urban$: Ratio of urban population to total population in a state.

$crime$: Crime rate in a state

$temp$: Annual average temperature in major locations in a state.

$price$: Consumer price index in a state

A : An indicator variable for amenities. If a state is an amenity-rich, A=1, and if a state is amenity-poor, A=0, following the indicator developed by Greenwood et al (1991).

TAX : Vector consisting of property tax (state average), general sales tax, individual income tax, corporate income tax, and other tax revenue. All tax rates are calculated using 'State and Local Goverment Finances' data, by taking the ratio of revenue from each type of tax to state personal income. Inheritance tax is included in form of an indicator variable, taking the value 1 if a state imposes inheritance tax, and 0 if not.

$revenue$: This vector includes two revenue items that are not covered by state and local government revenue obtained by taxation. These are revenue from federal transfers (calculated as a ratio to state personal income), and total charges (calculated as a ratio to state population).

$exempt$: This is a vector of three indicator variables that indicate whether social security payments, pensions, and drug sales are exempt from income and sales tax, respectively.

$PUBSP$: Public spending vector- includes expenditures on education, health, hospitals, highways, public transport, police, fire protection, parks and recreation. All variables are calculated by dividing the total expenditure of state and local governments by population of the state, hence expenditure variables are stated in per capita terms.

*intact*1 : (denoted by inter11 in regression results) This is the interaction term for individual income tax rate and pension exemption.

*intact*2 : (denoted by inter14a in regression results) This is the interaction term for logarithm of crime and urbanization ratio.

Before we proceed to estimation results in next section, it is worthwhile to make some comments about the dataset. We look at the migration inflow and outflow of 48 states (that is, excluding Alaska, Hawaii and District of Columbia), and the gravity equation estimation uses a total of $48 \times 47 = 2256$ observations. We don't consider within state migrations, and we drop those migration state-pairs which indicate zero migration for 1995-2000 period.

Table 1 displays the rankings of states according to ratio of their in-migrants and out-migrants to total migration nationwide, to total population in that state, and to total elderly population in that state. The "counter-stream migration" claim put forward bu earlier studies is confirmed by those in- and out-migration ratios displayed in Table 1. Nevada and Florida turn out to have the biggest share in accepting in-migrants, as well as in sending off out-migrants. In the next section, we will investigate how regression results change when we exclude the states that have the most share in elderly in- and out-migration. Graphs 1 through 4 show in- and outmigration shares of major receiving and sending states.

5 Empirical Results

Table 2 displays the regression results for three different specifications of elderly migration data. All three specifications pass Pregibon's link test, so that they do not contain a specification error with 95% confidence.

Column (1) is based on total migration between states. As explained in the theoretical section, differences between origin and destination states' policy variables are likely to become clearer as moves over greater distances are considered, since such differences must be sufficient to overcome the costs of moving. In particular, since the migration cost function is assumed to be convex, regression analysis of shorter distance migrations will be very noisy.

Accordingly, Columns (3) and (4) show regression results that are run under certain restrictions on distance. Distance between two states is measured as the distance between the population centers of the two states. A complete list of pairs of states and the distance between them is given in Table 3.

Column (2) contains only net migration numbers, where net migration is equal to the difference between in-migrants and out-migrants.

Column (5) seeks to reduce the noise in the net migration regression. Thus, we include only those state pairs that have significant net migration, to wit a net migration ratio of at least 0.13. In addition, we include only origin states with relatively affluent per capita income of between \$20,000 and \$30,000. The rationale for this restriction is that it reduces the likelihood that the analysis will be too noisy due to less affluent 'counter-stream' migrants who might seek to free ride on the higher amenity offerings of high tax states.

Finally, the regression displayed in Column (6) is also based on net migration data. It contains all state pairs that have a net migration rate of at least 0.14. This time there is no constraint on distance or on the origin state's per capita income. We show this regression mainly to stress how it can differ from the regression in Column (2), and how noisy the results can get, even when we are dealing with net migration data.

The regressions show that there is more elderly migration to neighboring states than to more distant states. Moreover, if neighboring states are removed from the data set (and even if they are not), the amount of elderly migration between two states decreases as the distance between such states increases. This is hardly surprising – Conway-Houtenville (2001) report the same results – and is likely due to the confluence of a number of factors. For example, the direct costs of moving surely increase with distance. In addition, the degree of familiarity with prospective destinations almost surely decreases with distance, and that in turn should have a depressing effect on long-distance migration. Note however that latter explanation is likely to become less significant over time: as the fraction of the elderly who are proficient users of the internet increases, the costs associated with becoming familiar with prospective distant destinations will decrease. Thus, we would expect the negative effect of distance on elderly migration to moderate somewhat in the future.

Our regressions show that the elderly both migrate to states with larger populations and migrate away from states with larger populations. These results confirm an identical 'same sign problem' reported in Conway-Houtenville (2001). There may be a simple explanation. People are social animals; they like to go where there are other people. (Indeed, they like to go where there are other people like themselves, as Gale-Heath report in the case of the elderly. That study, too, is consistent with our results.) But they also necessarily predominantly come from places where there are other people. Nor does this explanation lose its force when examining net migration. For example, while the gross flow from New York to West Virginia may not be significantly different from the net flow, whereas the gross flow from New York to Florida may be vastly greater than the net flow, nevertheless even on a net basis New Yorkers are much more likely to go to Florida than West Virginia.

This variable presents another same sign problem. In the case of gross migration, the elderly tend to avoid migrating to states with higher population densities, but they also tend to remain in states with higher population densities. One possible explanation is that these results reflect two separate flows: one from cities to suburbs and the other from the country to suburbs.

Our regressions show somewhat mixed results of the effects of temperature on elderly migration. On balance, the elderly prefer to move to warmer climes, and the findings are at least in some of the regressions weakly significant. This is unsurprising, and is not inconsistent with Gale-Heath, who report a statistically significant avoidance by migrants of states with a greater number of heating days, i.e., of colder states. Moreover, in four of our regressions, the elderly also exhibit a reluctance to migrate away from warmer climes, although these results are not significant. However, our two remaining regressions, the elderly behave unexpectedly: they strongly significantly move away from warmer climes. We could perhaps tell a story of the happy middle: the elderly may prefer more temperate climes to both colder and hotter ones. In any event, similarly inconsistent results occur in Conway-Houtenville (1998) and Conway-Houtenville (2001). Both of those studies use three different weather-related variables: sun, heating degrees and cooling degrees. The 1998 study reported as significant findings both that the elderly avoid migrating to the sun, but also that they migrate to states with a larger number of cooling degrees; the latter finding, but not the former, indicates a preference for states that are warmer. In addition, the 1998 study reported that the elderly migrate to states with a larger number of heating degrees; that would seem to indicate a preference for states that are cooler. The 2001 study does not clarify matters: the results abound in same sign issues and uniformly contradict the significant findings from 1998.

Our regressions show that there is more elderly migration to states with higher property taxes. This result, which is strongly significant, is inconsistent with that reported by Gale-Heath, but is consistent with that reported in Conway-Houtenville (1998) and in Conway-Houtenville (2001). While the result is at first counterintuitive, it may be the result of one of two factors. First, higher property taxes are generally strongly correlated with higher levels of locally provided amenities, and it may simply be the case that the elderly migrate towards such amenities. Second, property taxes are usually an increasing function of the value and hence generally of the size of the property. Since the elderly are predominantly empty-nesters, they may own properties that are on average smaller than those that predominate in a given locale. If this were so, the elderly may to some extent be able to "free ride" off of the property taxes paid by others. Moreover, their ability to successfully engage in such free-riding will be greater the higher the level of property taxes. The likelihood that one of these phenomena (or something very much like one of these phenomena) explains our results is enhanced by a glance at the net migration regressions. These regressions generally report (albeit not significantly) that the elderly migrate away from low property tax states. Assuming a modicum of rationality, the elderly would only flee from low taxation if they are well compensated for such flight. Finally, in the case of gross migration, a same sign problem appears; the elderly weakly significantly move away from high property taxes. This same sign problem also appears in Conway-Houtenville (1998) and in Conway-Houtenville (2001). A possible explanation may be a general preference for retiring in suburbia. Thus, when the elderly are confronted with the very high property taxes of big cities, they move away. But once outside of the big city setting, they may prefer more amenities to fewer.

In the case of general sales tax data, our regression results present a same sign problem. The elderly migrate to states where sales taxes are low. That is surely uncontroversial. But they also migrate away from states where sales taxes are low. Both of these results are significant only for gross migration, but they do retain their sign for net migration. One possibility is that more nuanced data would provide an explanation, but this is pure speculation on our part. For example, the elderly are likely to be disproportionately affected by sales taxes on food and medicine. If so, they could rationally prefer a state that collects a high overall amount of sales tax, but that imposes a low rate of tax on food and medicines, to a state that collects a low overall amount of sales tax, but that does not grant preferential treatment to food and medicine. This is because the elderly could free ride off sales tax revenues in the first posited state, but not the second. Moreover, the existence of states, and even more of localities within states, that differ along these two dimensions means that it is simultaneously possible for some elderly to move to low sales tax states that also offer a generalized respite from high taxation, while others leave low sales tax states that, in spite of their generally low sales taxes, offer no particular benefits to consumers of food and medicine. Our data cannot definitively speak to the foregoing conjecture. However, we do have a dummy variable that measures whether or not a state exempts drug sales from its general sales tax. Thus, we can confirm that the elderly migrate to states that exempt drugs from their general sales tax. However, our data also show that the elderly migrate away from states that exempt drugs from their general sales tax. Both of these results are uniformly significant in the case of gross migrations, but not in the case of net migrations. Moreover, since only five states, and only one state with a significant population (Illinois), do not provide a sales tax exemption for drugs, the results may be suspect.

Comparing our results to other studies, Gale-Heath do not report a result that is statistically significant with respect to the level of sales taxes. However, they do report that a positive change in sales tax rates, i.e., a sales tax increase, significantly reduces the amount of net in-migration. Conway-Houtenville (1998), in turn, report a same sign problem, albeit the opposite one we confront: their elderly statistically significantly migrate to states with high sales taxes; they insignificantly migrate away from states with high sales taxes. Conway-Houtenville (2001) confirm their 1998 result for gross migration flows, but for net migration flows obtain the least intuitively appealing result possible, namely that higher sales taxes tend both to attract elderly migrants to a state and to keep potential elderly migrants from migrating out of a state. However, neither of these last two results is significant.

In our study, we coupled the individual income tax data with the data on meaningful income tax exemptions for pension or retirement income by means of an interaction variable. While the results are not uniform across the various regressions, and mostly not significant, at least some tell an intuitively appealing story. Thus, in the case of net migrations, two of the three regressions show that the elderly do not migrate to high income tax states that do not offer a meaningful pension exemption, but do migrate to high income tax states that offer such an exemption. Moreover, two of the three regressions show that the elderly migrate out of states that couple high income taxes with no meaningful pension exemption, but tend to stay in states that couple high income taxes with a meaningful pension exemption. Thus, the elderly appear to dislike income taxes if and only if they are the ones who are required to pay them! Nirvana is a state with high income taxes that are disproportionately paid by others.

Turning to the gross migration data, the elderly significantly avoid migrating to high income tax states, but their aversion to such states is mitigated somewhat if the state offers a meaningful income tax exemption for some pension income. In addition, the elderly tend to stay in states with high income taxes; a tendency that becomes even more pronounced if the state couples high income taxes with a meaningful pension exemption. We suspect this same sign problem has an explanation along the lines suggested by our analysis of the pension exemption in the prior paragraph. While our data set treats the elderly as a single group, the fact remains that the elderly are not homogenous. Specifically, we can think of two distinct subsets that might react very differently to state income tax rules: the wealthy elderly and the poor elderly. The wealthy elderly continue to earn significant amounts of income, not just from pensions, but also from investments and other sources; the poor elderly have little income beyond that provided by Social Security. All else equal, we would expect the wealthy elderly to avoid states with high income taxes. But we would not expect similar behavior from the poor elderly, as they are not the ones paying the high income taxes and as they presumably get at least some measure of amenity benefit from the state expenditures financed by the high income taxes imposed on others.

Comparing our results with those obtained by others, we note that Conway-Houtenville (1998) report the opposite same sign problem that we confront, albeit the same one they reported for general sales taxes. That is, their elderly significantly migrate away from states with high income taxes, but also strongly significantly migrate to states with high income taxes. They further report that "provisions in the income tax code that exempt pension income have no bearing on either in-migration or out-migration," but do not explain how they arrived at this conclusion. Conway-Houtenville (2001) in turn confirms the same sign problem of their earlier study, but the results are not significant.

Finally, we also looked at the response of the elderly to a complete exemption of Social Security receipts from state income taxation. We found that while the elderly migrate to states that do not tax social security receipts, they also migrate away from states that do not tax such receipts. While these results are significant in the case of gross migration, it is difficult to ascribe much meaning to them. The reason is that while "only" thirty-five states exempt all social security receipts from taxation, those states include all of the biggest states in terms of population as well as every single state that falls into the category of being a traditional retirement haven.

Our regressions based on net migration data show that the elderly significantly migrate to states that collect higher amounts of corporate income tax, but they also albeit not significantly migrate out of states that collect higher amounts of corporate income tax. The former result is intuitively appealing, since corporate income taxes present perhaps the ultimate opportunity for a free ride on the part of the elderly. The latter result, were it significant, might prove difficult to explain; perhaps high corporate income tax collections are correlated with some other undesirable feature of a state, such as having a rust-belt economy. But it is not significant. Finally, our regressions based on gross migration data report the perverse result that the elderly do not migrate to states with high corporate income tax collections and moreover migrate away from states with high corporate income tax collections. Fortunately, neither of these results is significant.

Our regressions show that both in terms of gross migration and in terms of net migration, the elderly strongly significantly migrate to states with high levels of so-called "other taxes"; no similarly significant results were obtained for out-migration. The significant results are intuitively appealing when we consider a tax such as a natural resources severance tax or a documentary or stock transfer tax; such taxes provide a clear opportunity for free-riding on the part of the elderly. The results seem less appealing in the case of a death tax or a gift tax, both of which are also conflated into the "other taxes" category, albeit as a small piece thereof. Thus, we separately tested the response of the elderly to what we call inheritance taxes, which include any taxes above and beyond the common baseline determined by the IRC Section 2011 credit. We find that the elderly strongly significantly migrate to states that do not impose any such incremental tax on bequests or other transfers. This is an intuitively appealing result, for while only a small fraction of the elderly population is subject to such transfer taxes, that fraction of the population is both mobile (they are wealthy) and motivated to avoid such incremental taxes. Our results for migration out of states on the basis of incremental transfer taxes are not similarly significant; in the case of net migration, the sign is the expected sign; in the case of gross migration, it is not. Finally, note that Conway-Houtenville (2001) confirms that the elderly do not move to states with high "death taxes."

Our regressions produce only a handful of significant results for the various government spending variables. First, the elderly do not like to migrate to states with high per capita spending on education. This result is intuitively appealing, as the elderly no longer have children who are likely to be beneficiaries of such education spending. Moreover, the same result appears in Conway-Houtenville (1998) and Conway-Houtenville (2001). However, those studies both report that the elderly are also reluctant to leave states with high levels of education spending. While some of our regressions confirm this same-sign problem, the results are not significant.

Second, the elderly prefer to migrate to states with high per capita government spending on health care and hospitals. This is intuitively appealing, as the elderly make disproportionate use of health care and hospitals. Surprisingly, Conway-Houtenville (1998) and Conway-Houtenville (2001) obtain the opposite result. Nonetheless, their results indicated that the elderly migrated away from states with low spending on hospitals.

Third, the elderly prefer to migrate to states with high per capita government spending on police. This too is appealing: the elderly are surely disproportionately vulnerable and thus would be expected to place additional value on police protection. Note, however, that in the case of gross migration, there is also a significant tendency for the elderly to move away from states with high per capita spending on police. A possible explanation is that high expenditures for police may be correlated with some other undesirable characteristic of a state, such as being highly urban and therefore having high crime rates.

Finally, the elderly prefer to migrate to states that have higher per capita government spending on parks and recreation. This is again an appealing result, since the elderly as a class have more leisure time to enjoy such amenities. Nonetheless, the news here is not unambiguous, as in the case of gross migration, the elderly also significantly move away from states with high per capita spending on parks and recreation. As with most same sign problems, these results may be masking some heterogeneity either in the elderly or in the variable itself. That is, while some of the elderly may benefit from spending on parks and recreation, others may be unwilling or unable to use public recreation facilities. Moreover, in some states, the funded facilities may be of the sort that are attractive to the elderly, while in others they might be of the sort that are more attractive to the young (e.g., rugged hiking paths or playgrounds).

A significant and surprising finding is that the elderly do not appear to be attracted to states that derive a larger share of their revenues from the Federal government. One would expect the reverse to be true: from the vantage of a state's residents, funds received from the Federal government allow the state to provide amenities without any need for the state to impose any directly corresponding taxes or fees. Why would the elderly eschew such a free ride? A possible explanation is that the mere fact of greater Federal revenues may be masking some other undesirable feature of a state. For example, a state may receive greater Federal revenues because it is poor and therefore has a greater need for such revenues. Or a state may receive greater Federal revenues because it has a more powerful and perhaps concomitantly more corrupt political establishment (in which case the funds may not be spent in a manner that benefits the residents at large). In either of these cases, a rational retiree might well choose to avoid the Federal handout.

Our regressions show that he elderly are less likely to migrate to states that impose higher fees and other charges. It is somewhat unclear whether this is an expected result. One can imagine three possibilities with respect to a service that a state could provide and that is targeted to the elderly. First, the state could choose not to provide the service, and thus force the cost of the service onto the elderly. Second, the state could provide the service, but could charge the elderly an appropriate fee. Third, the state could provide the service, but could pay for it out of general revenues. The first and the third possibility involve low government fees, but only the third actually benefits the elderly. Similarly, one can imagine three possibilities with respect to a service that a state could provide and that is not targeted to the elderly. First, the state could choose not to provide the service, and thus force the cost of the service onto those who make use of the service. Second, the state could provide the service, but could charge the users an appropriate fee. Third, the state could provide the service, but could pay for it out of general revenues. The first and the third possibility involve low government fees, but now the third actually operates against the interests of the elderly. Finally, note that, at least in the case of gross migration, our regressions also show that the elderly tend to stay in states that impose higher fees and other charges. As suggested by the foregoing discussion, and particularly given the wide variety of fees and charges, an explanation based on the heterogeneity of the elderly is the likely cause of this same sign problem.

While not all of our results are significant, our regressions show that the elderly tend to migrate to states with a lower cost of living and away from states with a higher cost of living. Since many of the elderly live on a fixed income – i.e., an income that does not change in response to changes in price levels – this is exactly the behavior we would expect: retirees move to states where their incomes go farther. Our results are consistent with those reported in Gale-Heath, Conway-Houtenville (1998) and Conway-Houtenville (2001).

6 Conclusion

The 'same sign problem' arises when using the 2000 Census migration data, as it has when using earlier Census migration data. Our main contribution is to demonstrate that the same sign problem tends to diminish when migrations over very short distances are excluded from the regressions, or when only outmigration from higher per-capita income states is considered. These two methods apparently provide some correction for the heterogeneity of elderly migrants. Once corrected, the relative attractiveness of a state's bundle of public goods and taxes becomes more apparent.

Previous studies have shown that prices of location specific amenities are to some extent implicit in labor market and/or land market prices. A state or local government's tendency to additionally impose higher taxes on residents to capture those residents' willingness to pay for amenities will inevitably lead to a sort of 'double taxation' of the tax base, as is noted in 'vertical tax competition' studies. The investigation of the effects of such a 'double taxation' is necessarily our next stop.

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7 Appendix

Proof of Proposition 1:

We obtain from (2) by total differentiation:

$$dU_n^{ij} = \frac{1}{p_j + t_j}\frac{\partial U_n}{\partial x}\left(-w_n dt_{I_j} - c' dd_{ij} + \frac{c\left(d_{ij}\right) - w_n\left(1 - t_{I_j}\right)}{p_j + t_j}\left(dt_j + dp_j\right)\right) + \tag{5}$$

$$+\frac{\partial U_n}{\partial G_j}dG_j + \frac{\partial U_n}{\partial A_j}dA_j$$

Holding other variables constant, we compare a change in public good provision and a change in income tax, which is necessary to keep U_n^{ij} constant:

$$dt_{I_j} = \frac{p_j + t_j}{w_n}\frac{\frac{\partial U_n}{\partial G_j}}{\frac{\partial U_n}{\partial x}}dG_j$$

From axiom 3, we know that any retiree's preferences over public good provision are single peaked, that is "there exist G^* such that $\frac{\partial U_n(x,G^*,A)}{\partial G} = 0$ for given x and A, and there exists A^* such that $\frac{\partial U_n(x,G,A^*)}{\partial A} = 0$ for given x and G. Moreover, for every $G^0 < G^*$, $\frac{\partial U_n\left(x,G^0,A\right)}{\partial G} > 0$, and for every $G^1 > G^*$, $\frac{\partial U_n\left(x,G^1,A\right)}{\partial G} < 0$." Then, $dt_{I_j} > 0$ if $\frac{\partial U_n}{\partial G_j} > 0$, and $dt_{I_j} < 0$ if $\frac{\partial U_n}{\partial G_j} < 0$.

Similarly, comparing change in level of amenities and change in income tax:

$$dt_{I_j} = \frac{p_j + t_j}{w_n}\frac{\frac{\partial U_n}{\partial A_j}}{\frac{\partial U_n}{\partial x}}dA_j$$

Since any retiree's preferences over level of amenities are single peaked, it follows that $dt_{I_j} > 0$ if $\frac{\partial U_n}{\partial A_j} > 0$, and $dt_{I_j} < 0$ if $\frac{\partial U_n}{\partial A_j} < 0$.

Using the same methodology, one can easily establish the relation between consumption tax and level of amenities or public goods, and the sign of this relation mainly depends on whether $A_j < A^*$ or $G_j < G^*$.

Proof of Proposition 2:

From total differential, we obtain $(dt_j + dp_j) = 0$, hence $dt_j = -dp_j$.

Proof of Proposition 3:

Using the total differential of U_n^{ij} we obtain the following result for changes in distance and income tax:

$$dt_{I_j} = \frac{-c'}{w_n} dd_{ij}$$

Using the total differential of U_n^{ij} we obtain the following result for changes in distance and consumption tax:

$$dt_j = \frac{-c'\left(p_j + t_j\right)}{w_n\left(1 - t_{I_j}\right) - c\left(d_{ij}\right)} dd_{ij}$$

Table 1: Ratio of In-Migration and Out-Migration to Total Migration**, State's Total Population and State's Elderly Population for Top Five States in each Category

	in-migration share in total elderly migration (%)
FL	19.60
AZ	6.49
CA	6.29
TX	4.86
NC	3.44

	out-migration share in total elderly migration (%)
NY	10.24
FL	9.40
CA	8.64
IL	5.02
NJ	4.51

	ratio of in-migration to state's population (%)
NV	2.55
AZ	2.14
FL	1.96
DE	1.13
NH	0.99

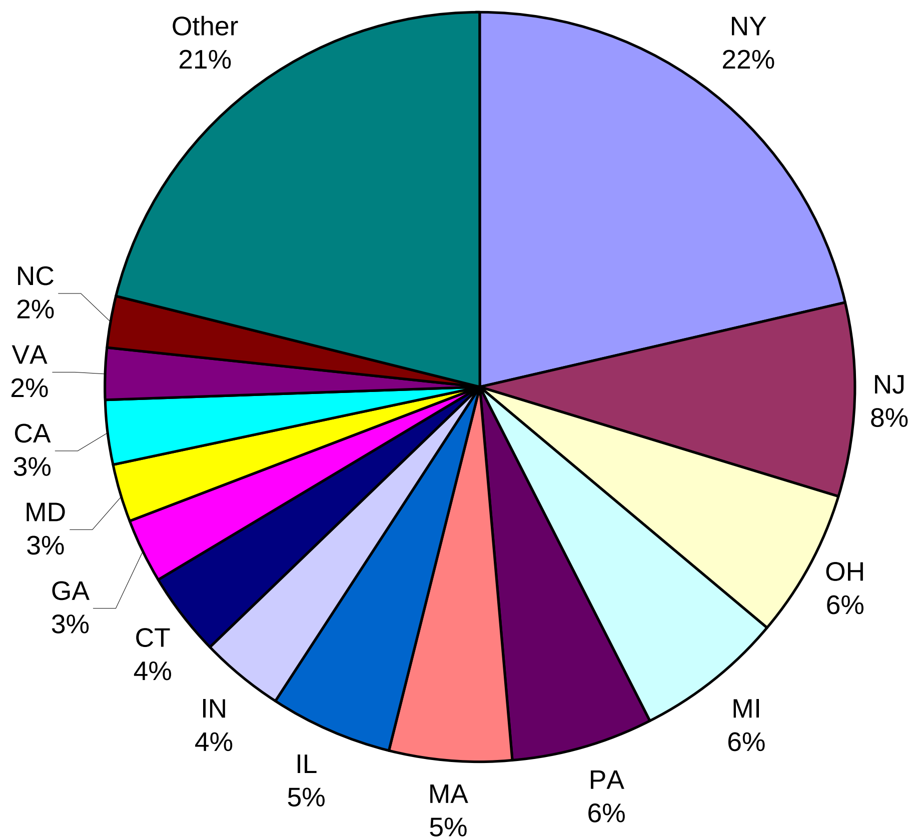
	ratio of out-migration to state's population (%)
NV	1.21
AZ	0.95
FL	0.94
NH	0.93
OR	0.84

	ratio of in-migration to state's elderly population (%)
NV	18.88
AZ	14.28
FL	10.29
DE	8.13
NH	7.83

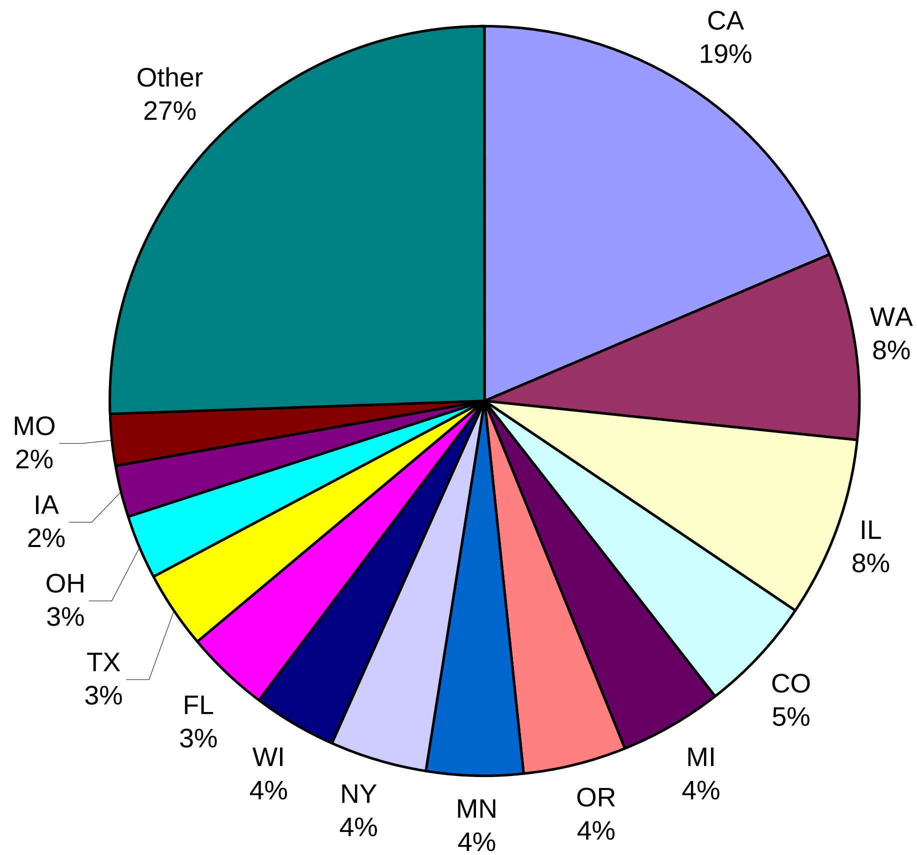
	ratio of out-migration to state's elderly population (%)
NV	8.97
NH	7.35
WY	6.79
NM	6.54
AZ	6.33

***) Total number of elderly migrants for 1995-2000: 1,456,760*

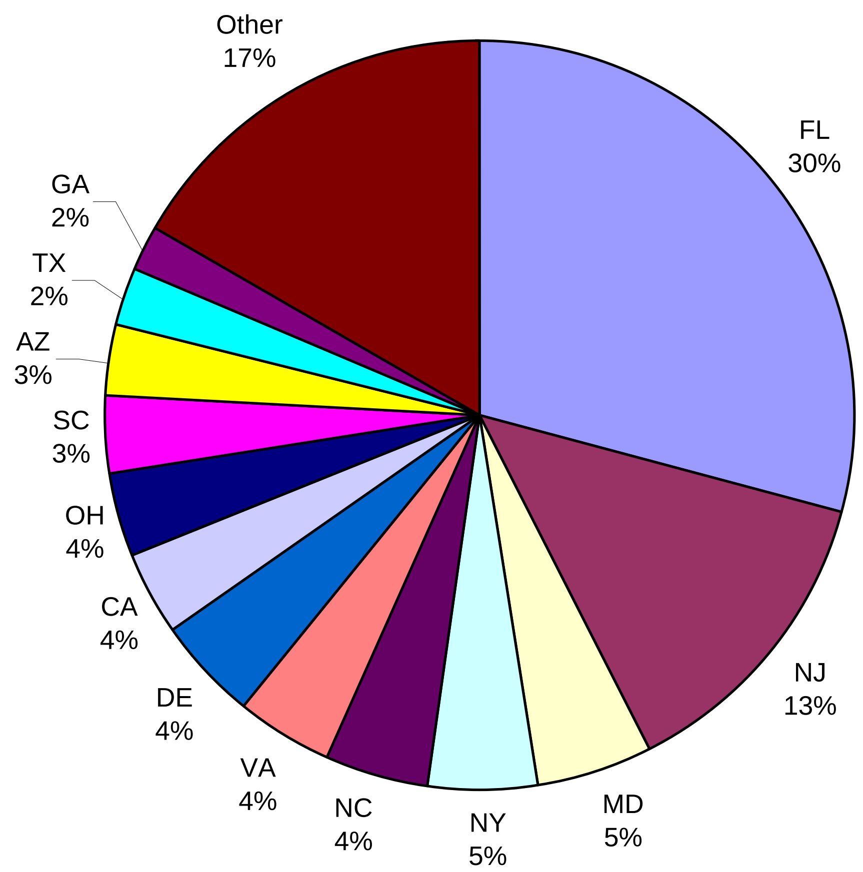
Graph 1: From Where did they Migrate to FL?



Graph 2: From Where did they Migrate to AZ?



Graph 3: Leaving PA, Where did they Migrate to?



Graph 4: Leaving NY, Where did they Migrate to?

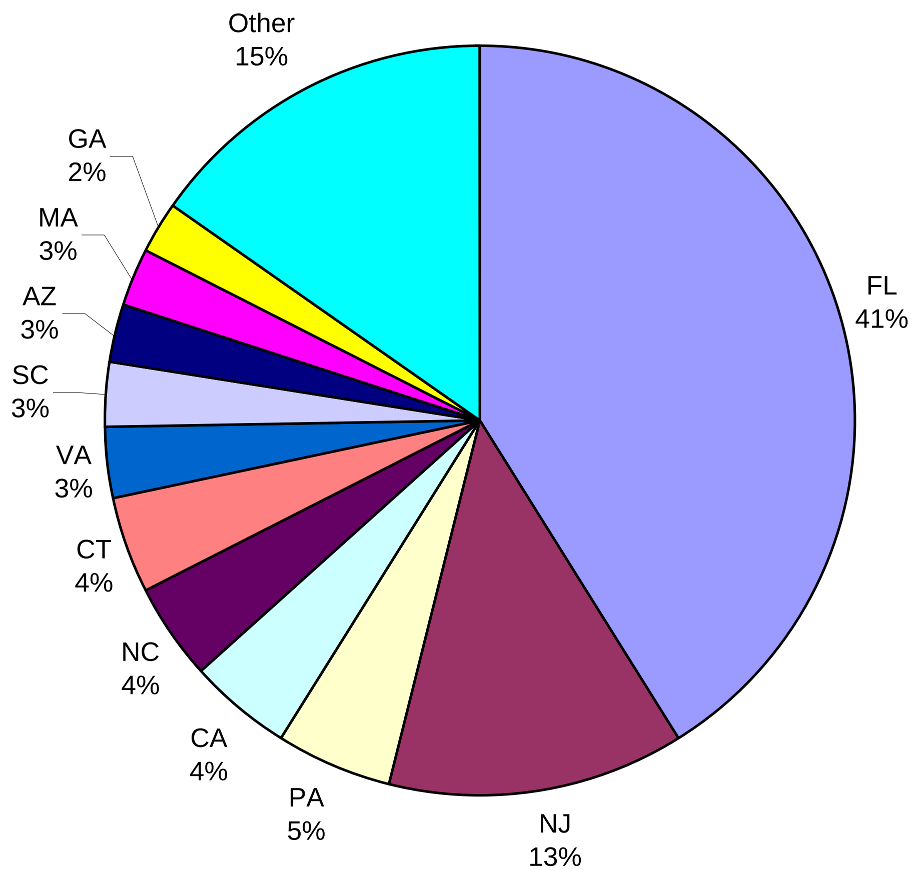


Table 2: Interstate Elderly Migration Regressions

	(1) lnmig	(2) lnnetmig	(3) lnmig	(4) lnnetmig	(5) lnnetmig	(6) lnnetmig
neighbor	0.8162	0.3547			0.5339	0.5221
	(12.97)**	(2.22)*			(3.77)**	(3.49)**
lndistance	-1.0804	-0.9967	-1.1483	-1.0708	-1.0115	-1.0281
	(40.76)**	(15.14)**	(36.17)**	(11.60)**	(17.38)**	(17.45)**
lnpopulationto	0.8393	0.6054	0.8064	0.6199	0.7225	0.7083
	(18.83)**	(5.11)**	(16.80)**	(4.24)**	(5.59)**	(5.47)**
lnpopulationfrom	0.9363	0.7782	0.9232	1.0009	0.7107	0.6952
	(20.51)**	(6.81)**	(18.64)**	(9.35)**	(3.98)**	(3.78)**
urbanto	-27.8890	-55.8080	-32.8224	-43.4324	-43.6510	-45.8763
	(4.82)**	(4.48)**	(5.30)**	(3.37)**	(3.62)**	(3.76)**
urbanfrom	-12.7542	-22.7924	-15.8463	-21.8048	-66.2385	-40.5425
	(2.12)*	(1.68)	(2.44)*	(1.67)	(1.97)*	(1.24)
lncrimeto	-1.3810	-3.1073	-1.8560	-2.5924	-2.4450	-2.6095
	(2.89)**	(3.07)**	(3.65)**	(2.62)**	(2.52)*	(2.66)**
lncrimefrom	-0.5408	-1.7943	-0.7788	-0.9153	-6.1071	-3.5565
	(1.05)	(1.46)	(1.42)	(0.79)	(1.90)	(1.13)
temperatureto	0.0012	0.0023	0.0013	0.0030	0.0021	0.0017
	(2.06)*	(1.62)	(2.19)*	(2.07)*	(1.53)	(1.23)
temperaturefrom	0.0020	-0.0016	0.0020	-0.0026	-0.0025	-0.0005
	(3.31)**	(1.05)	(3.22)**	(1.75)	(1.12)	(0.24)
propertytaxincomeratioto	17.2457	40.6023	20.0104	36.7213	36.8904	36.5853
	(3.86)**	(4.59)**	(4.18)**	(3.85)**	(4.20)**	(4.09)**
propertytaxincomeratiofrom	11.6799	27.6537	10.6682	-4.8943	-22.1791	-16.7198
	(2.55)*	(2.57)*	(2.15)*	(0.39)	(1.61)	(1.20)
generalsalestaxincomeratioto	-11.3800	-0.4516	-10.1263	-7.8597	-4.5853	-4.0630
	(3.27)**	(0.06)	(2.64)**	(0.89)	(0.60)	(0.53)
generalsalestaxincomeratiofrom	-11.6041	3.6990	-12.7523	-15.9390	-14.2825	-19.7178
	(3.11)**	(0.42)	(3.06)**	(1.67)	(1.32)	(1.77)
indincometaxincomeratioto	-19.0123	-3.9341	-19.2020	-1.2265	-1.5871	-4.4437
	(4.37)**	(0.47)	(4.09)**	(0.14)	(0.20)	(0.55)
indincometaxincomeratiofrom	-8.9443	3.3779	-9.9360	-38.6151	1.2875	13.9309
	(1.99)*	(0.25)	(2.02)*	(2.57)*	(0.07)	(0.76)
corpincometaxincomeratioto	-10.5176	22.3682	-3.2890	76.3012	70.9971	67.4549
	(0.90)	(0.71)	(0.26)	(1.98)*	(2.04)*	(1.91)
corpincometaxincomeratiofrom	8.6123	-0.3056	10.0896	38.7401	61.6090	35.5446
	(0.74)	(0.01)	(0.78)	(1.65)	(1.13)	(0.65)
othertaxincomeratioto	38.2787	81.6333	42.1656	55.1710	63.4705	60.5194
	(5.13)**	(4.89)**	(5.15)**	(3.15)**	(4.23)**	(3.90)**
othertaxincomeratiofrom	12.6657	30.7428	12.9909	0.6182	-0.2264	-0.5568
	(1.63)	(1.94)	(1.51)	(0.04)	(0.01)	(0.02)
socialsecto	0.1976	-0.0998	0.1935	-0.0095	0.0087	0.0278
	(3.70)**	(0.90)	(3.42)**	(0.08)	(0.08)	(0.26)
socialsecfrom	0.1776	0.0753	0.1773	0.3275	0.0891	0.1071
	(3.35)**	(0.61)	(3.14)**	(2.33)*	(0.50)	(0.59)
pensionto	-0.5200	-0.8063	-0.6212	-0.4021	-0.3768	-0.4532
	(4.02)**	(3.46)**	(4.56)**	(1.86)	(1.74)	(2.05)*

pensionfrom	-0.0363	-0.1412	-0.0561	-0.6939	0.3294	0.8376
	(0.27)	(0.32)	(0.38)	(1.49)	(0.52)	(1.47)
drugsaleto	1.0240	0.3771	1.1445	0.4156	0.5210	0.5661
	(11.01)**	(1.61)	(11.37)**	(1.58)	(2.18)*	(2.31)*
drugsalefrom	0.6028	0.2104	0.6905	0.7427	0.2227	0.3112
	(6.86)**	(0.94)	(7.47)**	(3.21)**	(0.52)	(0.71)
inheritanceto	0.2492	0.6628	0.2601	0.5231	0.4785	0.4738
	(5.59)**	(6.01)**	(5.41)**	(4.27)**	(4.24)**	(4.07)**
inheritancefrom	0.0167	-0.1315	0.0135	-0.0004	-0.1169	-0.2142
	(0.38)	(1.18)	(0.28)	(0.00)	(0.78)	(1.51)
reducationpercapto	-12.5675	-80.8115	-13.3170	-34.9749	-75.8829	-69.7281
	(0.59)	(2.08)*	(0.58)	(0.88)	(2.19)*	(1.99)*
reducationpercapfrom	15.7676	-130.1967	21.7125	13.4151	-26.2435	-12.1770
	(0.72)	(2.45)*	(0.89)	(0.22)	(0.53)	(0.24)
rhighwayspercapto	12.8896	-96.9277	-19.0536	-74.8913	-63.4880	-57.4101
	(0.35)	(1.20)	(0.47)	(0.89)	(0.84)	(0.75)
rhighwayspercapfrom	63.7847	-7.7981	36.0499	155.8296	-0.9777	-29.3559
	(1.82)	(0.10)	(0.93)	(1.94)	(0.01)	(0.25)
rhealthhosppercapto	77.6395	166.2222	110.5020	109.2750	114.7539	124.9705
	(2.66)**	(2.67)**	(3.56)**	(1.64)	(1.83)	(1.96)
rhealthhosppercapfrom	-15.0345	-11.6543	5.8780	56.8884	145.9241	146.2037
	(0.51)	(0.16)	(0.19)	(0.81)	(1.17)	(1.15)
rpoliceexppercapto	270.3850	-173.3851	374.3915	172.3744	198.6687	254.8959
	(2.51)*	(0.60)	(3.19)**	(0.53)	(0.72)	(0.90)
rpoliceexppercapfrom	246.4005	462.1275	302.6635	160.3986	-249.1431	17.6119
	(2.26)*	(1.82)	(2.61)**	(0.70)	(0.47)	(0.03)
rfireexppercapto	-83.7932	-89.2778	-161.8793	277.8796	-243.7243	-238.8596
	(0.57)	(0.22)	(0.99)	(0.67)	(0.72)	(0.68)
rfireexppercapfrom	-54.3782	-576.8002	-97.0167	-287.7345	503.5377	181.3242
	(0.38)	(1.70)	(0.62)	(0.89)	(0.63)	(0.22)
rparkrecexppercapto	508.2776	1525.0330	642.9306	1307.5490	1286.4180	1247.2560
	(4.01)**	(4.84)**	(4.75)**	(4.30)**	(4.08)**	(3.92)**
rparkrecexppercapfrom	557.2105	298.9487	659.7679	432.9613	141.4861	245.4086
	(4.65)**	(1.10)	(5.22)**	(1.73)	(0.40)	(0.68)
rtransitexppercapto	3.3696	139.5161	-11.0652	-26.0580	53.8068	62.5001
	(0.07)	(1.00)	(0.22)	(0.14)	(0.30)	(0.34)
rtransitexppercapfrom	45.9260	-71.2508	34.8402	74.6250	64.9723	-13.8936
	(0.94)	(0.68)	(0.63)	(0.65)	(0.52)	(0.12)
revenuefedincomeratioto	-11.1047	-42.6839	-12.5046	-29.5959	-26.5199	-27.4769
	(3.45)**	(5.61)**	(3.70)**	(3.53)**	(3.79)**	(3.90)**
revenuefedincomeratiofrom	3.2928	14.5643	3.2271	8.7377	4.7364	4.7703
	(0.98)	(1.84)	(0.88)	(1.13)	(0.34)	(0.34)
totchargesrevpercapto	-1.5594	-2.0974	-1.9311	-1.7999	-1.9278	-2.0174
	(4.82)**	(3.07)**	(5.76)**	(2.38)*	(2.88)**	(3.00)**
totchargesrevpercapfrom	-0.7225	0.3054	-0.9965	-1.6659	-1.0951	-1.4228
	(2.34)*	(0.39)	(3.11)**	(1.90)	(0.82)	(1.03)
densityto	-0.0011	0.0002	-0.0012	-0.0005	-0.0006	-0.0005
	(5.90)**	(0.31)	(5.45)**	(0.72)	(1.10)	(0.95)
densityfrom	-0.0011	-0.0005	-0.0012	-0.0001	-0.0016	-0.0024
	(5.54)**	(0.99)	(5.65)**	(0.30)	(1.75)	(2.83)**
amenityto	0.4912	0.6016	0.4986	0.6953	0.6819	0.6455

	(9.04)**	(4.47)**	(8.51)**	(5.02)**	(5.43)**	(5.10)**
amenityfrom	0.2898	-0.0152	0.3131	0.3769	0.3226	0.2696
	(5.54)**	(0.12)	(5.60)**	(2.80)**	(2.19)*	(1.83)
inter11to	8.5227	14.6924	13.3333	-0.7702	2.5695	6.1896
	(1.61)	(1.44)	(2.34)*	(0.08)	(0.27)	(0.64)
inter11from	-5.6674	10.5292	-4.5556	21.5400	-5.5066	-22.3519
	(1.03)	(0.64)	(0.75)	(1.29)	(0.26)	(1.16)
inter14ato	3.4304	6.4977	4.0471	5.2396	5.2444	5.5126
	(4.87)**	(4.26)**	(5.38)**	(3.33)**	(3.55)**	(3.69)**
inter14afrom	1.6330	2.9338	2.0355	2.7151	8.2698	5.1173
	(2.23)*	(1.75)	(2.59)**	(1.70)	(2.01)*	(1.27)
lncpito	0.0034	-3.8953	-0.2821	-4.5439	-2.8818	-3.0020
	(0.00)	(2.64)**	(0.39)	(2.94)**	(2.20)*	(2.31)*
lncpifrom	2.6063	1.4157	2.8488	2.0229	0.2591	4.5048
	(3.53)**	(0.86)	(3.46)**	(1.11)	(0.07)	(1.27)
Constant	-19.9365	37.0178	-13.6440	19.7569	66.4032	27.9667
	(2.26)*	(1.84)	(1.42)	(0.98)	(1.50)	(0.67)
Observations	2168	1104	1820	508	608	593
Adjusted R-squared	0.83	0.68	0.82	0.86	0.85	0.85

Robust t-statistics in parentheses
* significant at 5% level; ** significant at 1% level

(1) Total Migration regression without adjustment (complete data)
(2) Net Migration regression without adjustment (complete data)
(3) Total Migration regression with distance 4-43, and not including neighbor states
(4) Net Migration regression with distance 8-35, net migration ratio > 0.1855, and not including neighbors
(5) Net Migration regression with origin state's per capita income 20-30, and net migration ratio > 0.13
(6) Net Migration regression with net migration ratio > 0.14

Table 3: Distance Between Population Centers of States

Origin	*Destination*	*Distance*
RI	MA	0.525
MA	NH	0.887
NY	NJ	1.091
DE	MD	1.261
PA	MD	1.347
NH	RI	1.400
CT	RI	1.449
DE	NJ	1.539
NH	VT	1.639
MA	CT	1.699
VA	MD	1.739
CT	NY	1.771
PA	DE	1.852
CT	NJ	1.879
SC	NC	2.042
NH	ME	2.094
NH	CT	2.177
NY	DE	2.301
VT	MA	2.319
TN	KY	2.321
IN	IL	2.394
WI	IL	2.528
KY	IN	2.567
OH	WV	2.580
CT	VT	2.587
MA	ME	2.621
LA	MS	2.638
PA	NY	2.645
NJ	PA	2.648
RI	VT	2.699
MD	NJ	2.699
MI	OH	2.777
OR	WA	2.779
VA	DE	2.808
PA	VA	2.818
AL	TN	2.819
AL	MS	2.860
VA	NC	2.860
NE	KS	2.864
OK	KS	2.872
GA	AL	2.916
SC	GA	2.922
RI	ME	3.089
ME	VT	3.103
VA	WV	3.153
VT	NY	3.158
MD	NY	3.195
NY	RI	3.206
RI	NJ	3.256
MN	IA	3.294
NE	SD	3.300
ND	SD	3.340
NY	MA	3.369
AR	MO	3.384
DE	CT	3.409
WV	NC	3.414
IN	MI	3.417
CA	NV	3.496
OH	IN	3.526
TN	GA	3.531
NJ	MA	3.571
NH	NY	3.582
IA	MO	3.635
CO	WY	3.652
KY	OH	3.655
AR	MS	3.901
VT	NJ	3.984
NH	NJ	4.020
WV	MD	4.041
PA	WV	4.111
CT	ME	4.230
OK	AR	4.289
PA	CT	4.326
NJ	VA	4.340
TN	IN	4.370
KS	MO	4.382
IA	WI	4.417
IA	NE	4.423
WI	IN	4.496
MI	IL	4.499
LA	AR	4.522
KY	WV	4.524
TN	MS	4.543
MD	CT	4.573
NC	MD	4.598
KY	IL	4.679
GA	KY	4.682
OK	TX	4.688
ID	MT	4.691
IA	IL	4.718
IL	MO	4.723
WV	SC	4.737
DE	RI	4.740
GA	NC	4.752
WI	MN	4.816
SC	VA	4.902
WI	MI	4.907
VA	NY	4.929
IA	KS	4.945
UT	ID	4.992
CO	NM	5.009
KY	AL	5.043
MA	DE	5.088
KY	MI	5.170
AR	KS	5.202
AL	LA	5.225
MI	WV	5.294
WV	DE	5.296
WY	UT	5.378
DE	VT	5.430
MO	OK	5.475
UT	NV	5.487
NE	MN	5.551
PA	NC	5.552
NH	DE	5.559
SD	MN	5.583
VT	PA	5.590
NE	OK	5.615
WV	IN	5.618
VA	OH	5.621
NC	DE	5.624
AZ	NM	5.627
TN	SC	5.647
SC	KY	5.653
NY	ME	5.669
PA	OH	5.673
IL	OH	5.687
PA	RI	5.773
MS	GA	5.775
NC	OH	5.812
SC	AL	5.826
TN	IL	5.830
NV	AZ	5.867
MT	WY	5.896
NE	MO	5.925
LA	TX	5.937
TN	OH	5.938
RI	MD	5.950
FL	GA	5.970
PA	MA	5.992
KY	NC	6.013
ME	NJ	6.098
OH	MD	6.100
KS	SD	6.130
MO	IN	6.140
ND	MN	6.145
MO	WI	6.159
AR	AL	6.171
VA	CT	6.216
TN	AR	6.220

Table 3: Distance Between Population Centers of States (cont'd)

Origin	*Destination*	*Distance*	*Origin*	*Destination*	*Distance*	*Origin*	*Destination*	*Distance*
NH	PA	6.224	DE	ME	7.635	AR	GA	8.882
GA	WV	6.232	AL	MO	7.654	SD	MO	8.885
SC	FL	6.268	CO	SD	7.656	MN	IN	8.892
MA	MD	6.269	SC	DE	7.661	IA	MI	8.925
TN	WV	6.320	MO	LA	7.770	UT	CA	8.966
MO	TN	6.333	AR	NE	7.782	WY	ND	8.999
VT	MD	6.342	NY	NC	7.790	CO	AZ	9.024
TX	AR	6.346	AZ	CA	7.810	IL	NE	9.024
SD	IA	6.348	KY	AR	7.826	NC	CT	9.025
MS	MO	6.405	MS	OK	7.850	IA	TN	9.069
UT	MT	6.412	VA	MA	7.895	KS	MS	9.103
ND	NE	6.486	MS	TX	7.963	MO	MI	9.129
IL	MN	6.522	WV	IL	7.966	GA	IL	9.137
NJ	WV	6.607	CO	NE	7.979	MO	TX	9.142
MD	SC	6.638	NC	FL	8.003	GA	MD	9.154
SC	OH	6.671	LA	GA	8.032	IN	PA	9.190
MD	NH	6.672	NM	UT	8.045	KS	WI	9.198
NC	TN	6.734	IN	NC	8.046	NJ	SC	9.199
NY	WV	6.756	IN	SC	8.057	OK	CO	9.234
UT	CO	6.762	NM	WY	8.080	LA	KS	9.270
MS	KY	6.812	VT	VA	8.081	MS	FL	9.279
AR	IA	6.896	WY	SD	8.082	DE	MI	9.282
MN	MO	6.922	AR	IN	8.107	FL	TN	9.311
MO	KY	6.941	VA	MI	8.143	ND	KS	9.350
KY	WI	7.013	OH	NY	8.169	WI	AR	9.358
IA	IN	7.021	MI	MD	8.259	MI	SC	9.373
OH	WI	7.045	ID	WY	8.274	LA	KY	9.443
UT	AZ	7.066	WV	AL	8.282	CO	MT	9.463
NC	NJ	7.164	MS	IN	8.296	MD	IN	9.519
ID	NV	7.173	IA	ND	8.296	GA	MI	9.539
AL	IN	7.180	PA	ME	8.303	NM	OK	9.557
TN	LA	7.181	OH	NJ	8.321	WI	WV	9.568
WA	ID	7.193	WI	TN	8.349	WV	VT	9.609
OH	GA	7.236	NH	VA	8.355	MI	NY	9.622
IN	GA	7.239	CT	WV	8.401	OH	MO	9.624
OH	DE	7.269	IL	AL	8.433	NM	TX	9.680
LA	OK	7.274	OH	AL	8.490	MI	MN	9.700
AL	FL	7.310	MD	KY	8.550	WY	NE	9.720
MN	KS	7.374	PA	KY	8.587	GA	MO	9.732
IA	OK	7.403	MI	NC	8.588	ID	CA	9.746
VA	KY	7.406	IL	KS	8.631	DE	KY	9.809
MI	TN	7.413	SC	MS	8.686	OR	CA	9.818
ID	OR	7.462	KS	CO	8.731	ND	CO	9.821
GA	VA	7.478	OK	SD	8.734	NV	OR	9.830
AR	IL	7.485	ME	MD	8.763	NY	SC	9.831
PA	MI	7.491	IN	VA	8.765	WV	RI	9.836
RI	VA	7.538	NE	WI	8.780	GA	PA	9.849
AL	NC	7.543	TN	VA	8.782	OH	CT	9.927
SC	PA	7.549	IL	MS	8.796	MS	IA	10.010
KS	TX	7.559	KY	IA	8.843	NJ	MI	10.041

Table 3: Distance Between Population Centers of States (cont'd)

Origin	*Destination*	*Distance*
WI	SD	10.048
WV	MA	10.085
AL	VA	10.115
OK	MN	10.148
MD	TN	10.168
MN	AR	10.180
IL	OK	10.185
AL	MI	10.201
TX	NE	10.241
FL	LA	10.243
NV	NM	10.282
GA	DE	10.285
RI	NC	10.295
IL	SC	10.318
NH	WV	10.334
NC	MS	10.365
AL	OK	10.398
OH	IA	10.406
IN	KS	10.416
IL	NC	10.425
TN	PA	10.425
MT	WA	10.428
ME	VA	10.438
TN	OK	10.439
MS	OH	10.463
AZ	WY	10.477
KS	TN	10.481
NM	KS	10.528
OH	VT	10.567
KY	FL	10.642
VA	FL	10.655
MA	NC	10.682
IN	DE	10.727
WV	MS	10.743
IN	LA	10.797
NV	WY	10.806
AL	TX	10.820
NV	MT	10.910
VT	NC	10.940
AL	IA	10.942
SC	LA	10.945
WI	AL	10.957
WI	ND	10.958
FL	WV	11.002
ID	CO	11.004
IL	SD	11.017
IL	LA	11.017
SC	CT	11.055
AR	SD	11.056
NE	NM	11.088
VA	IL	11.119
NJ	KY	11.129
KY	MN	11.152
WI	MS	11.178
NH	NC	11.183
AL	KS	11.189
IN	NE	11.189
AR	OH	11.214
NY	KY	11.224
WI	OK	11.290
KS	WY	11.292
KS	KY	11.313
IL	PA	11.334
WV	MO	11.338
CO	NV	11.344
AZ	ID	11.360
OH	RI	11.372
LA	IA	11.373
CT	MI	11.379
TN	DE	11.419
MI	VT	11.421
MI	AR	11.458
ND	MO	11.465
WA	NV	11.482
UT	OR	11.510
IN	OK	11.517
MA	OH	11.526
OR	MT	11.559
TX	CO	11.589
SC	AR	11.592
GA	WI	11.594
OH	NH	11.598
MS	NE	11.630
MS	MI	11.640
NY	IN	11.694
MD	AL	11.710
IL	MD	11.778
KY	OK	11.802
NJ	GA	11.816
OH	MN	11.821
IN	NJ	11.837
TX	IA	11.841
MN	TN	11.843
ND	MT	11.888
NM	SD	11.920
WA	UT	11.925
SC	MO	11.961
TN	TX	12.014
OK	ND	12.040
LA	NE	12.054
CA	WA	12.098
AL	PA	12.230
TN	NE	12.254
SC	RI	12.305
AR	WV	12.321
NY	GA	12.325
FL	MD	12.338
WI	PA	12.364
WY	OK	12.394
IA	CO	12.401
NC	WI	12.407
WV	ME	12.409
SD	MT	12.476
IL	ND	12.537
WI	SC	12.549
GA	IA	12.599
NE	KY	12.622
WV	IA	12.639
VA	WI	12.665
SC	MA	12.702
MI	NH	12.711
OH	FL	12.734
NC	LA	12.750
MI	RI	12.770
NC	MO	12.815
MA	MI	12.821
TN	NJ	12.839
MS	VA	12.849
DE	AL	12.901
KY	CT	12.905
NC	AR	12.918
CO	MN	12.948
DE	IL	12.956
SC	VT	12.980
NM	ID	13.032
WI	MD	13.036
CA	NM	13.040
TN	NY	13.067
CO	MO	13.093
FL	DE	13.095
OH	LA	13.096
MT	NM	13.126
KS	MI	13.129
AR	FL	13.145
GA	OK	13.162
IN	FL	13.205
SD	TX	13.208
NH	SC	13.218
ME	NC	13.255
LA	WI	13.259

Table 3: Distance Between Population Centers of States (cont'd)

Origin	*Destination*	*Distance*
MN	MS	13.259
NE	MI	13.340
LA	WV	13.350
SD	UT	13.353
SD	IN	13.359
CO	AR	13.378
AL	NE	13.420
IN	CT	13.453
AZ	MT	13.454
FL	PA	13.463
ME	OH	13.581
MN	WY	13.663
GA	KS	13.664
GA	CT	13.693
IL	TX	13.710
GA	TX	13.729
NY	IL	13.737
NM	AR	13.773
KY	VT	13.921
OH	KS	13.935
TX	KY	13.953
MT	CA	13.974
NJ	IL	13.977
WY	IA	13.978
AL	MN	13.983
VT	IN	14.006
ND	AR	14.030
DE	WI	14.120
LA	MI	14.182
WV	MN	14.297
WY	CA	14.301
VA	MO	14.334
KY	RI	14.346
UT	ND	14.353
MS	MD	14.388
IA	SC	14.395
AL	NJ	14.406
TX	IN	14.451
UT	NE	14.515
MI	ME	14.523
WI	NY	14.527
ND	NM	14.551
FL	NJ	14.552
MA	KY	14.578
MI	OK	14.602
AZ	TX	14.643
LA	MN	14.666
OH	NE	14.671
TN	CT	14.675
NM	MO	14.692

Origin	*Destination*	*Distance*
CO	CA	14.717
MN	TX	14.766
KY	NH	14.779
MS	PA	14.800
NY	AL	14.808
NC	IA	14.836
MS	SD	14.870
RI	IN	14.898
OH	OK	14.908
NE	MT	14.909
SD	MI	14.920
ND	IN	14.930
WI	NJ	14.940
FL	MO	14.963
AR	VA	14.981
GA	RI	15.006
IN	MA	15.046
FL	IL	15.076
NH	IN	15.097
SD	TN	15.100
SD	KY	15.147
OK	AZ	15.158
WY	TX	15.172
IA	NM	15.184
MO	PA	15.213
MI	FL	15.282
ME	SC	15.285
TX	WI	15.291
LA	VA	15.338
WY	WA	15.342
GA	MN	15.345
SD	LA	15.354
MA	GA	15.372
MO	MD	15.373
FL	NY	15.390
NM	LA	15.393
GA	VT	15.419
WY	MO	15.448
KS	UT	15.492
CT	IL	15.507
DE	MS	15.606
AZ	OR	15.640
GA	NE	15.647
OR	WY	15.706
KS	WV	15.719
VA	IA	15.785
IL	VT	15.816
ND	MI	15.820
NH	GA	15.822
UT	OK	15.824

Origin	*Destination*	*Distance*
OK	SC	15.879
VT	TN	15.911
PA	IA	16.043
FL	TX	16.065
ID	SD	16.091
TN	RI	16.092
ND	ID	16.106
KS	AZ	16.115
KS	SC	16.121
WI	VT	16.191
FL	CT	16.261
CT	WI	16.281
AL	CT	16.283
AR	MD	16.295
WY	AR	16.309
CO	LA	16.323
OK	WV	16.325
TN	MA	16.370
NE	AZ	16.404
PA	AR	16.409
MD	IA	16.494
SD	AL	16.515
TX	ND	16.547
MN	NM	16.580
MO	DE	16.620
TX	SC	16.646
NH	TN	16.648
AZ	SD	16.655
OH	SD	16.680
WI	CO	16.745
WV	NE	16.759
SC	MN	16.806
ME	KY	16.830
NM	MS	16.875
MT	KS	16.888
IL	CO	16.917
LA	MD	16.919
RI	IL	16.938
MN	NC	16.938
IL	NH	17.020
KY	ND	17.033
IL	MA	17.046
ME	IN	17.054
AZ	WA	17.061
CO	MS	17.081
FL	OK	17.085
NJ	MS	17.087
NC	KS	17.116
OK	NC	17.167
MN	PA	17.176

Table 3: Distance Between Population Centers of States (cont'd)

Origin	*Destination*	*Distance*
RI	FL	17.279
TX	UT	17.342
ND	TN	17.362
LA	PA	17.383
NY	MS	17.418
VA	MN	17.425
TX	OH	17.472
WI	NH	17.547
FL	WI	17.553
DE	AR	17.554
AL	RI	17.641
WI	RI	17.663
DE	IA	17.674
MA	WI	17.697
MN	MT	17.699
MS	ND	17.726
MA	FL	17.750
NY	MO	17.776
MI	TX	17.801
VT	AL	17.816
NJ	MO	17.838
MD	MN	17.848
SC	NE	17.864
GA	ME	17.910
ND	OH	17.961
MA	AL	17.977
ID	NE	17.991
WY	WI	18.039
DE	LA	18.119
CO	OR	18.146
FL	IA	18.191
WA	CO	18.197
MT	OK	18.233
NC	TX	18.311
KS	FL	18.321
WV	TX	18.323
NH	AL	18.364
NY	IA	18.410
NH	FL	18.420
LA	ND	18.443
FL	VT	18.520
SD	GA	18.577
SD	NV	18.582
NC	NE	18.608
IL	WY	18.681
NJ	IA	18.683
VA	KS	18.713
TN	ME	18.727
AZ	ND	18.766
IA	MT	18.798
IL	ME	18.906
UT	IA	18.912
NJ	AR	18.923
MN	UT	18.929
MN	DE	18.936
CT	MS	18.954
CO	IN	18.954
SD	WV	18.973
NY	AR	19.049
ND	AL	19.094
VA	OK	19.120
OR	NM	19.127
NM	IL	19.155
TN	CO	19.167
ME	WI	19.290
MN	NY	19.296
NE	NV	19.323
AZ	AR	19.327
ID	KS	19.477
MO	CT	19.520
NV	OK	19.533
CO	AL	19.549
KS	PA	19.564
NM	WI	19.586
LA	NJ	19.617
LA	WY	19.629
AL	NM	19.643
NJ	MN	19.740
KS	MD	19.751
ND	NV	19.804
KS	NV	19.811
UT	MO	19.848
VA	NE	19.867
NM	WA	19.883
NV	TX	19.913
TN	NM	19.979
NY	LA	19.986
KY	CO	20.033
AR	UT	20.053
WY	MS	20.137
VT	MO	20.146
CT	IA	20.180
OK	ID	20.238
MO	AZ	20.316
RI	MS	20.337
PA	NE	20.341
VT	IA	20.346
OK	MD	20.349
PA	OK	20.349
MS	VT	20.350
FL	ME	20.367
ND	WV	20.418
AL	ME	20.458
LA	AZ	20.546
SD	SC	20.608
AZ	IA	20.650
MS	MA	20.652
NE	FL	20.686
TX	VA	20.704
MD	NE	20.707
AR	CT	20.720
VT	MN	20.799
MT	MO	20.815
IN	NM	20.831
GA	ND	20.890
WY	IN	20.899
MO	RI	20.969
NH	MS	20.994
DE	KS	20.995
MN	CT	21.039
TX	MT	21.045
FL	MN	21.120
MA	MO	21.141
SD	NC	21.156
MO	NH	21.221
CO	MI	21.300
NM	KY	21.339
LA	CT	21.491
MN	ID	21.572
IA	RI	21.601
OK	DE	21.609
IA	NH	21.619
MA	IA	21.688
AR	VT	21.716
WY	TN	21.729
MN	AZ	21.749
NE	DE	21.915
AR	MT	22.019
CA	SD	22.053
NY	KS	22.103
VA	SD	22.123
RI	AR	22.157
MD	TX	22.165
TX	ID	22.175
KS	NJ	22.197
ID	IA	22.202
CO	GA	22.209
MN	NH	22.215
AZ	MS	22.250
SD	PA	22.258

Table 3: Distance Between Population Centers of States (cont'd)

Origin	*Destination*	*Distance*	*Origin*	*Destination*	*Distance*	*Origin*	*Destination*	*Distance*
ND	WA	22.290	ND	MD	23.993	FL	CO	26.315
WY	KY	22.305	NV	MN	24.104	MA	OK	26.331
MA	AR	22.399	MO	NV	24.184	ND	FL	26.394
MN	RI	22.403	OH	NM	24.309	AZ	IN	26.454
MA	MN	22.413	AR	ID	24.346	NH	OK	26.472
MT	WI	22.422	WY	OH	24.359	WY	WV	26.479
TX	CA	22.426	KS	VT	24.380	KS	WA	26.616
TX	PA	22.433	CO	WV	24.394	CT	TX	26.689
WY	AL	22.436	SD	NY	24.530	NM	NC	26.691
OH	CO	22.476	NE	CT	24.531	VT	ND	26.724
GA	NM	22.510	ME	AR	24.651	AR	CA	26.781
CA	OK	22.521	OK	CT	24.675	KY	UT	26.788
AR	NH	22.604	IL	AZ	24.745	OR	KS	26.789
LA	UT	22.645	NE	VT	24.760	ID	IL	26.917
ND	SC	22.648	SC	CO	24.782	AZ	KY	26.954
NE	CA	22.686	NJ	TX	24.847	IA	CA	27.098
NY	NE	22.761	SD	NJ	24.879	MS	NV	27.105
MD	SD	22.780	WY	GA	24.955	ND	CT	27.106
WA	SD	22.820	NE	WA	24.991	MT	TN	27.148
MI	WY	22.839	AL	AZ	25.065	LA	ID	27.276
RI	LA	22.859	AZ	WI	25.067	OR	OK	27.317
OK	NJ	22.923	ND	DE	25.076	MI	MT	27.326
NC	ND	22.947	TX	NY	25.077	MO	CA	27.364
LA	VT	22.948	RI	KS	25.303	WY	SC	27.376
OK	NY	22.963	SC	NM	25.317	VA	CO	27.424
NJ	NE	22.988	ND	NY	25.377	WA	OK	27.431
CA	KS	23.015	NE	OR	25.425	ME	KS	27.449
MS	ME	23.086	MA	KS	25.460	KY	MT	27.485
WI	UT	23.134	VT	OK	25.474	CA	MN	27.556
MA	LA	23.188	LA	MT	25.492	SD	NH	27.595
MO	ME	23.191	KS	NH	25.509	SD	RI	27.690
ND	CA	23.299	TN	AZ	25.546	SD	MA	27.737
ND	PA	23.307	NM	FL	25.633	UT	MI	27.835
OR	ND	23.395	UT	IN	25.640	ME	NE	27.860
TX	DE	23.407	LA	ME	25.649	TX	VT	27.866
IA	ME	23.448	LA	NV	25.675	AZ	GA	27.960
IL	MT	23.491	IN	MT	25.819	AL	MT	28.076
UT	IL	23.535	CO	NC	25.839	WI	NV	28.081
OR	SD	23.546	NJ	ND	25.855	MS	ID	28.083
ND	VA	23.555	NM	WV	25.856	RI	TX	28.102
LA	NH	23.555	MS	MT	25.889	WA	MN	28.122
NM	MI	23.654	TN	UT	25.922	CO	PA	28.144
UT	MS	23.655	NE	RI	25.961	ND	NH	28.189
ID	MO	23.701	NH	NE	26.015	NV	IL	28.226
IA	NV	23.745	MA	NE	26.063	WY	NC	28.254
FL	SD	23.816	OK	RI	26.121	CA	LA	28.301
AR	NV	23.819	ID	WI	26.137	MA	TX	28.384
KS	CT	23.856	UT	AL	26.211	CO	MD	28.408
MN	ME	23.880	VT	SD	26.230	MA	ND	28.433
SD	DE	23.938	SD	CT	26.294	ND	RI	28.447

Table 3: Distance Between Population Centers of States (cont'd)

Origin	*Destination*	*Distance*
ME	OK	28.481
NH	TX	28.657
VA	NM	28.677
OR	TX	28.718
GA	UT	28.918
MN	OR	29.000
IA	WA	29.078
OH	UT	29.151
MT	OH	29.156
IN	ID	29.158
AZ	MI	29.242
TX	WA	29.262
SD	ME	29.325
WY	FL	29.415
VA	WY	29.586
DE	CO	29.642
IA	OR	29.660
ND	ME	29.773
NV	AL	29.831
PA	NM	29.843
NM	MD	29.889
MS	CA	29.902
AZ	OH	29.935
NV	TN	29.938
TN	ID	29.951
PA	WY	30.015
IN	NV	30.192
MD	WY	30.417
MT	GA	30.484
AL	ID	30.513
ID	KY	30.576
CO	NY	30.624
AZ	FL	30.705
ME	TX	30.730
WA	MO	30.786
NJ	CO	30.790
AZ	SC	30.803
MI	ID	30.993
NV	KY	31.069
OR	MO	31.070
UT	WV	31.125
DE	NM	31.148
WV	MT	31.437
CA	WI	31.461
WV	AZ	31.474
CA	IL	31.517
OR	AR	31.517
UT	SC	31.525
AR	WA	31.530
DE	WY	31.617

Origin	*Destination*	*Distance*
AZ	NC	32.235
NY	WY	32.385
CT	CO	32.391
NM	NY	32.436
NM	NJ	32.440
UT	NC	32.601
OH	ID	32.602
NV	MI	32.636
NJ	WY	32.658
GA	NV	32.662
AL	CA	32.681
CO	VT	32.712
SC	MT	32.771
FL	UT	32.800
WI	WA	32.823
TN	CA	32.959
GA	ID	33.113
CA	IN	33.426
MT	NC	33.492
WI	OR	33.594
NV	OH	33.719
WA	IL	33.793
CO	RI	33.830
NH	CO	33.937
CO	MA	33.953
LA	OR	34.140
WY	CT	34.155
CT	NM	34.166
UT	VA	34.170
CA	KY	34.194
WY	VT	34.223
AZ	VA	34.273
OR	IL	34.373
LA	WA	34.453
MT	VA	34.583
MT	PA	34.719
WV	ID	34.747
UT	PA	34.824
VT	NM	34.836
MD	UT	35.127
MS	OR	35.158
FL	MT	35.162
MD	MT	35.256
MS	WA	35.275
SC	NV	35.411
PA	AZ	35.469
MD	AZ	35.504
WV	NV	35.521
WY	NH	35.549
CA	GA	35.550

Origin	*Destination*	*Distance*
RI	WY	35.572
SC	ID	35.596
RI	NM	35.614
WY	MA	35.648
NM	MA	35.805
ME	CO	35.809
NM	NH	35.907
NV	FL	35.914
CA	MI	35.956
WA	IN	36.084
DE	UT	36.353
MT	DE	36.411
ID	NC	36.515
OR	IN	36.604
NC	NV	36.672
AZ	DE	36.764
NY	MT	36.947
OH	CA	36.949
TN	WA	37.071
TN	OR	37.269
NY	UT	37.270
FL	ID	37.318
ME	WY	37.325
NJ	MT	37.330
NJ	UT	37.472
KY	WA	37.611
AL	OR	37.686
AL	WA	37.693
WA	MI	37.720
ID	VA	37.858
ME	NM	37.883
OR	KY	37.974
NJ	AZ	38.062
AZ	NY	38.063
PA	ID	38.244
CA	SC	38.349
OR	MI	38.454
VA	NV	38.473
FL	CA	38.491
MT	VT	38.492
ID	MD	38.673
CA	WV	38.677
MT	CT	38.703
UT	CT	39.040
UT	VT	39.255
PA	NV	39.367
WA	OH	39.476
NV	MD	39.557
CA	NC	39.688
AZ	CT	39.792

Table 3: Distance Between Population Centers of States (cont'd)

Origin	*Destination*	*Distance*
DE	ID	39.867
MT	NH	39.915
OH	OR	40.056
RI	MT	40.081
MT	MA	40.104
WA	GA	40.271
GA	OR	40.354
AZ	VT	40.457
RI	UT	40.473
NH	UT	40.528
UT	MA	40.578
ID	NY	40.580
NV	DE	40.804
ID	NJ	40.883
RI	AZ	41.240
MA	AZ	41.432
NH	AZ	41.533
ME	MT	41.565
CA	VA	41.583
WV	WA	41.695
NV	NY	41.885
NV	NJ	42.004
OR	WV	42.183
ID	VT	42.319
ID	CT	42.348
UT	ME	42.358
PA	CA	42.574
CA	MD	42.717
WA	SC	42.718
SC	OR	42.902
ME	AZ	43.507
NC	WA	43.581
CT	NV	43.645
NH	ID	43.683
RI	ID	43.755
MA	ID	43.814
NC	OR	43.883
DE	CA	43.970
VT	NV	44.037
OR	FL	44.309
WA	FL	44.511
VA	WA	44.827
PA	WA	45.076
RI	NV	45.090
CA	NY	45.117
NJ	CA	45.202
NV	MA	45.230
NV	NH	45.239
VA	OR	45.285
ID	ME	45.413

Origin	*Destination*	*Distance*
MD	WA	45.570
PA	OR	45.703
OR	MD	46.122
WA	DE	46.743
CA	CT	46.871
ME	NV	47.130
OR	DE	47.319
CA	VT	47.333
NY	WA	47.340
WA	NJ	47.699
NY	OR	48.043
RI	CA	48.318
OR	NJ	48.343
CA	MA	48.473
NH	CA	48.506
WA	VT	48.919
WA	CT	49.100
VT	OR	49.769
CT	OR	49.810
NH	WA	50.336
CA	ME	50.419
RI	WA	50.486
WA	MA	50.516
NH	OR	51.141
RI	OR	51.217
OR	MA	51.275
WA	ME	51.993
ME	OR	52.861

Table 4: State Personal Real Income
(per capita figures, in 2003 US Dollars)

State	*Real Income*
CT	32,282
NJ	30,053
MA	28,621
NY	28,049
MD	27,326
IL	25,780
NH	25,698
NV	25,558
CA	25,429
CO	25,373
DE	25,357
MN	25,060
WA	25,015
VA	24,902
PA	23,938
RI	23,730
MI	23,721
FL	23,342
OH	22,933
WI	22,816
OR	22,656
KS	22,391
NE	22,383
GA	22,356
WY	22,138
TX	22,079
MO	22,061
IN	21,874
NC	21,854
VT	21,783
IA	21,547
TN	21,307
ME	20,825
AZ	20,766
SD	20,532
ND	19,863
ID	19,715
SC	19,645
AL	19,601
OK	19,556
KY	19,472
LA	19,144
UT	19,091
MT	18,919
NM	18,531
AR	18,272
WV	17,979
MS	17,053