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State Magnets for Different Elderly Migrant Types in the United States

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ABSTRACT

This article identifies a number of elderly 'migrant types' in the United States using census data information on state of birth and state of residence prior to the 1985–90 migration period. This typology is useful because it points out significant socio-demographic profiles associated with each migrant type with distinct impacts on elderly 'magnet' states. States that serve as classic retirement magnets (e.g. Florida, Arizona) and second-tier retirement magnets (e.g. North Carolina, Nevada) benefit the most from elderly inter-state migration. Other states (e.g. California) are becoming 'revolving door' elderly migration states that attract well-off elderly migrants, but also lose large numbers making additional moves.

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INTRODUCTION

As a long-term consequence of the demographic transition to a combination of low fertility and low mortality, population ageing will become an increasingly important demographic phenomenon in the United States and other post-industrialised countries in the first few decades of the twenty-first century (Rogers and Raymer, 1999; Institute of Population Problems, 1996). The physical and mental health and income maintenance of the elderly are important concerns of national governments as well as local agencies and family members. Efficient provision of essential services to the elderly (e.g. nursing homes, geriatric health facilities, home-care services, and care-giving by adult children) depends on the spatial distribution of the elderly (Lin and Rogerson, 1995), which in turn depends on migrations at different stages of the life-course (Warnes, 1992). Thus, an in-depth understanding of the migration process can help inform policies involving elderly populations (Grundy, 1993; Longino, 1995).

A large influx of elderly migrants need not be considered negatively as an increase in burden on the local economy. The elderly in-migrants with transferred income or accumulated wealth can help to boost the vitality of the local economy by paying municipal taxes, buying goods and services from local firms, and increasing employment opportunities for local residents. Since the 1980s it has become

popular for some Sunbelt states in the US, especially poor states like Alabama, South Carolina and Arkansas, to promote the attraction of retirement migrants as a way to boost 'populations, incomes, and employment' (Glasgow and Reeder, 1990: 434; Glasgow, 1995). However, the in-migration of relatively well-off elderly people may also cause the marginalisation of the local elderly and non-elderly poor populations via displacement in the housing market, which can lead to resentment and conflicts, as shown by Warnes and Patterson (1998) in their study of British retirees in Malta.

The increasing importance of research on elderly migration is reflected by the dedication of a special issue of this journal to the topic of international retirement migration from northern European countries (King *et al.*, 1998). Similar research efforts on elderly migration have gained momentum in the US. In the 1970s and 1980s, an interdisciplinary research team studied various aspects of elderly migration in the US, as summarised in Longino (1995). Rogers and his collaborators have played a key role in promoting research on elderly internal migration in different countries, drawing from several international conferences (Rogers and Serow, 1988; Rogers, 1992).

The present article extends this by making use of US census information on the elderly population's places of birth as well as their recent migration choices. This information allows us not only to identify distinct elderly 'migrant types', but also to develop a useful typology of sending and receiving places that reveals new insights into the selectivity in the migration process, its impact on places, and its probable future trends. Since this work highlights the importance of the elderly migrant's birthplace in its findings, it provides a strong argument for the inclusion of place-of-birth information in censuses and migration surveys.

In the life-course, people may develop attachments to one or more places, called 'moorings' by Longino (1995). For many people, the place of birth is an important mooring where they tend to have accumulated a substantial amount of location-specific capital (Da Vanzo, 1981). This is especially true for those with relatively little education who are less likely to venture to a distant place to develop their working careers. The importance of the selective attraction of this mooring in migration behaviour has been well recognised by migration researchers since at least the 1960s (Eldridge, 1965). For elderly foreign immigrants who accompanied or were sponsored by their adult children, their moorings in the host country are likely to be places with a heavy concentration of their co-ethnics or, by default, their children's place of work. Because of the differences in the spatial pattern of moorings, the initial destination choices of new elderly immigrants and the internal migration of the foreign-born elderly can be rather different from those of the US -born elderly.

In the censuses of the US, the question on place of birth is asked at the state level. Thus, research on the attraction of place of birth in the US has been carried out at the state or divisional level (e.g. Eldridge, 1965; Long and Hansen, 1977; Longino, 1979; Long, 1988; Serow and Charity, 1988; Rogers, 1990; Longino and Serow, 1992; Newbold, 1996). Similarly, our study uses states as the basic geographical units.

Following on from Litwak and Longino's (1987) developmental sequence of elderly moves, the earlier studies tended to contrast mostly 'amenity-related' retirement or voluntary moves associated with *primary* elderly migration, with 'assistance-seeking' moves that are associated with *return* elderly migration. Hence, newly retired elderly migrants are more likely to comprise well-off, well-educated and married persons in search of high amenity destinations. In contrast, return migrants are likely to be less select in demographic characteristics, with the assumption that they will be older, less well-off, and widowed. These migrants will be more likely to return to their state of birth where long-standing friendships and family ties exist.

The characterisation of *secondary* migrants among the elderly is less clear-cut. On the one hand, they may represent more discriminating retirement migrants. That is, they may have first moved to an amenity-rich destination that they found not to their liking, and decided to make an additional move to another state that caters to amenity-seeking elderly migrants. On the other hand, they may be in the same

assistance-seeking circumstances as many *return* elderly migrants, and instead relocate to an area to which their children may have moved or where they themselves have found conducive to good social or medical services. Hence, the socio-demographic attributes of secondary elderly migrants may be a mix involving those of stereotypical primary or retirement migrants, and those of returning or assistance-seeking migrants.

Although much research has identified attributes and determinants of these different kinds of elderly migrants (Speare and Meyer, 1988), less work has shown how they impact upon different destinations. For example, areas that attract large numbers of primary migrants should continue to see an infusion of younger, more educated and healthy elderly. Those that attract secondary elderly migrants may also find this to be the case (Hass and Serow, 1993). Yet, other areas that continue to lose primary migrants soon after their retirement years, may eventually get them back as a kind of boomerang effect -and increase the numbers of their less well-off, assistance-seeking populations. While smaller in number than in the pre-elderly ages, foreign-born elderly migrants may also have significant impacts on the demographic profiles of selected destinations (Frey, 1995, 1996).

With an eye towards identifying how these different migrant types affect the elderly populations of *specific areas*, this paper uses US inter-state elderly migration data from the 1990 Census to address the following questions;

(1) *How do the origins and destinations of elderly migration differ by migrant type?*
(2) *How do social and demographic attributes of elderly migrants differ by migrant type?*
(3) *How can states be classified according to their dominant elderly migration types?*

After answering these questions, we introduce a typology of states in terms of their gains and losses of different types of elderly migrants. In addition, we also present results from a multivariate analysis of personal and area-specific determinants of primary elderly migration. This type of migration has the greatest impact on both the size and socio-demographic compositions of key elderly destination states. Our analysis will identify determinants of their departure from origin state, and those associated with the selection of their destination state. All parts of this study will employ data prepared from an 8% sample of the 1990 US Public Use Micro files (PUMS) (by combining the 5% state PUMS with the 3% PUMS-O files).

Using the 1990 census questions on current residence, residence five years ago, and for state of birth, the elderly migration types are defined as follows for persons aged over 60 in 1990:

Primary migrants: same state of birth and residence in 1985; moved to a different state during 1985–90.
Secondary migrants: different state of birth from residence in 1985; moved to another state during 1985–90.
Return migrants: different state of birth from residence in 1985; returned to birth state during 1985–90.
Foreign-born migrants: born abroad and resided in the US in 1985; moved to a different state during 1985–90.
Immigrants: born abroad and resided abroad in 1985; moved to the US during 1985–90.

Other personal attributes used in this analysis include age categories within the over-60 population, race (non-Hispanic whites, non-Hispanic blacks, other), educational attainment, poverty status and marital status. The multivariate analysis will incorporate a number of state-specific attributes known to influence elderly migration. These will be discussed later.

HOW DO THE ORIGINS AND DESTINATIONS OF ELDERLY MIGRATION DIFFER BY MIGRANT TYPE?

To answer this question, we turn to Table 1, which shows the most popular destinations and the most common origin states for elderly migrants of each type for the 1985–90 period. (Excepted from the latter group are the recent immigrants who resided abroad in 1985.) Shown here are the absolute numbers of migrants by their origin or destination. Overall, during this period, secondary migrants comprised 37% of the combined pool, primary

Table 1. Greatest states of destination and origin for different categories of US-born and foreign-born elderly (aged 60+) inter-state migrants, 1985–90.

	US-born primary migrants[a]		US-born secondary migrants[b]		US-born return migrants[c]		Foreign-born migrants[d]		Immigrants[e]		Total	
Rank	State	Size	State	Size	State	Size	State	Size	State	Size	State	Size
1.	Florida	217,089	Florida	175,309	Pennsylvania	23,649	Florida	60,579	California	75,710	Florida	490,196
2.	California	35,500	California	64,715	New York	17,787	California	21,824	New York	31,392	California	206,948
3.	Arizona	32,621	Arizona	58,135	Texas	16,818	New Jersey	11,113	Florida	31,160	Arizona	102,655
4.	Texas	21,973	Texas	33,963	Ohio	16,359	New York	8811	Texas	12,989	Texas	92,107
5.	New Jersey	20,779	Nevada	28,733	Illinois	15,603	Arizona	6757	New Jersey	10,113	New York	73,979
6.	North Carolina	17,238	Oregon	28,298	North Carolina	15,538	Texas	6364	Illinois	10,072	North Carolina	65,598
7.	Pennsylvania	13,503	North Carolina	27,682	Missouri	11,677	Pennsylvania	5323	Massachusetts	6158	Pennsylvania	61,552
8.	Virginia	12,539	Washington	27,679	Tennessee	11,281	Washington	4917	Maryland	4431	New Jersey	59,720
9.	Georgia	11,791	Virginia	20,039	Georgia	10,915	Virginia	4522	Virginia	4348	Washington	50,842
10.	South Carolina	10,875	Georgia	18,126	Michigan	10,579	Massachusetts	3931	Pennsylvania	4313	Virginia	50,689

	US-born primary migrants[a]		US-born secondary migrants[b]		US-born return migrants[c]		Foreign-born migrants[d]		Total	
Rank	State	Size	State	Size	State	Size	State	Size	State	Size
1.	New York	121,400	California	113,355	Florida	48,879	New York	47,571	New York	228,101
2.	Illinois	46,199	Florida	63,808	California	35,501	California	20,874	California	188,527
3.	Pennsylvania	45,994	New York	42,480	Texas	17,705	New Jersey	17,927	Florida	129,071
4.	New Jersey	32,622	New Jersey	40,610	New York	16,650	Florida	12,622	Illinois	106,220
5.	Ohio	31,239	Illinois	34,095	Illinois	14,561	Illinois	11,365	New Jersey	104,812
6.	Michigan	29,778	Texas	31,872	New Jersey	13,653	Massachusetts	6886	Pennsylvania	79,903
7.	Massachusetts	29,535	Ohio	29,337	Ohio	11,512	Michigan	6557	Ohio	75,744
8.	California	18,797	Michigan	27,702	Arizona	10,839	Pennsylvania	5920	Michigan	74,106
9.	Indiana	16,277	Arizona	25,534	Michigan	10,069	Texas	5885	Texas	69,943
10.	Wisconsin	14,606	Maryland	22,101	Virginia	9063	Connecticut	5069	Massachusetts	56,104

[a] Same state of birth and residence in 1985 – moved to different state during 1985–90.
[b] Different state of birth from residence in 1985 – moved to another state during 1985–90.
[c] Different state of birth from residence in 1985 – returned to birth state during 1985–90.
[d] Born abroad and resided in US in 1985 – moved to different state during 1985–90.
[e] Born abroad and resided abroad in 1985 – moved to US during 1985–90.

migrants 28%, and return migrants only 16%. Foreign-born migration, however, is not insignificant. The earlier foreign-born migrants comprised 9% of the pool and recent immigrants 11%.

Perhaps the most striking feature of Table 1 is the close correspondence in the destinations of primary migrants, secondary migrants and foreign-born migrants (zero-order correlation between each of these three measures across states exceeds 0.9). It seems that secondary migrants are attracted to the same 'retirement magnet' states as primary migrants: Florida, California, Arizona and Texas. Other states on the list are suggestive that a new second tier of retirement magnets (including Nevada, Oregon, North Carolina and Washington) may be emerging, as they are attracting significant numbers of the secondary elderly migrants – persons moving at least once again within their elderly age-range. Although Florida dominates among both primary and secondary elderly migrant destinations, its dominance is much more impressive for the former group, mainly because the elderly migration channels from major northern industrial states to Florida are 'deeper' for primary migrants than for secondary migrants. For example, our more detailed tabulations show that Florida received 54.4% of the primary elderly migrants and 40.0% of the secondary elderly migrants from New York.

It may seem surprising that Snow-belt states like New Jersey and Pennsylvania appear among the top ten destinations for primary migrants. This reflects the attraction of nearby suburban or amenity-related communities (such as the Poconos in northeast Pennsylvania) for the elderly out-migrants from the northeast region who do not wish to move very far from friends and family. None the less, Pennsylvania leads all other states as a magnet for return migrants. The prevalence of friends and family, as well as good elderly support services, increases its allure. Other northern states, such as New York, Ohio, Illinois and Michigan, are among the top receivers for this migrant type. It is noteworthy that Texas and North Carolina attract large numbers of elderly migrants among primary, secondary and return types.

The longer-term foreign-born migrants (who could have arrived in the US anytime since birth) move to some of the same destinations as primary and secondary domestic migrants. But, in addition, New Jersey and New York seem to be strong magnets for this group, whose original 'port-of-entry' communities have been mainly in these two states. Recent immigrants, on the other hand, are much more prone to move to the current immigration magnet states led by California, New York and Florida, where their adult children may have sponsored their arrival.

Our examination of destination states showed a strong correspondence between primary and secondary migrants, but a different pattern for return migrants. This similarity and difference has also been found in studies of inter-state and inter-divisional migrations of the total population (Long and Hansen, 1977; Long, 1988; Rogers and Belanger, 1990). Foreign-born migrants located in destinations similar to the first two types. However, these patterns differ sharply when we look at the greatest states of origin. Here, one finds a stronger correspondence between secondary and return migrants than among other types, because the major senders of these two types of migrants tend to be the states with a large stock of elderly non-natives (i.e. previous in-migrants from other states).

It should not be surprising that the origins of primary migrants overlap quite a bit with the destinations of return migrants. After all, these reflect different ends of the continuum in the life cycle of elderly migration. Retiree migrants are likely to leave places like New York, Illinois and Pennsylvania for the Sunbelt, only to return to more familiar territories later. In fact, the list for major origins of return migrants includes premier Sunbelt retirement magnets such as Florida, Texas and Arizona, as well as California. The latter state has attracted many eastern-born natives during their working years and has, in the past, also served as a retirement magnet. It may seem unusual that the states of Illinois, New York and New Jersey are notable origins for return migrants. This may be explained by the fact that many Southerners, especially blacks who came north to work, may be returning south after retirement.

What is surprising is the very high ranking

of Florida and California as major origins for secondary migrants. In both instances, this suggests that retirees who have initially located there may have changed their minds and relocated to another retirement state such as Nevada or North Carolina. More probably, there are many non-natives who developed their working careers in these two states and decided to move to other high-amenity areas where the cost of living and the degree of congestion are lower. Alternatively, the elderly non-natives in these states may have moved for social support, but not to their state of birth, assuming that their children and close friends may reside in a third state.

The elderly foreign-born migrants show origins that overlap somewhat with US-born primary migrants and US-born return migrants. This may simply reflect the fact that for many of the foreign-born migrants, it may be their first move outside of their initial port-of-entry state, and for others, it may be a 'correction' move.

One way to assess the impact that these different types of migrants hold for individual states is to rank states by their net migration gains or net migration losses with respect to each migrant type (this is done in Table 2 and Fig. 1). We see that, among primary migrants, there is a substantial redistribution away from large Northeast and Mid-West states to the Sunbelt, especially Florida. Arizona and California are ranked next as primary destinations, but they and the other gaining states attract far fewer numbers of primary migrants than Florida.

As is depicted in Fig. 1, the states gaining the most return migrants overlap very little with those gaining the most primary migrants. Of the former, Florida shows the greatest net loss, followed by two other retiree magnet states, California and Arizona (Table 2). The destinations, which are more diffuse, are located away from Florida, Texas, and most of the west. Pennsylvania is the largest gainer of elderly return migrants, but most of the remaining large gainers are located in the south, reflecting some of the return movement of southern-origin blacks.

It is the secondary migration redistribution shifts that stimulate most interest. The speculation earlier was that many secondary elderly migrants had left their state of birth and developed their working careers in states with good job opportunities and then moved to a high-amenity state with a lower cost of living and less congestion. If that is the case, then some of the main gainers of secondary migrants (Nevada, North Carolina, Oregon, Washington, and South Carolina) lie close on the heels of Arizona as alternative retirement magnets. Aside from Arkansas, all of the greatest gainers of secondary migrants lie in the south Atlantic or western states.

Among the foreign-born migrants, Florida dominates all other states as the greatest gainer, and New York dominates all others as the greatest loser. This no doubt reflects the long-standing pre-eminence of New York as a port-of-entry for immigrants, and the traditional attraction of Florida for New York retirees. However, foreign-born migrants also contribute to gains in many of the other western and south Atlantic states that have attracted domestic secondary migrants.

The above analysis suggests that if the common stereotypes hold up, the states of Florida, Arizona and new 'second tier' retirement magnets such as Nevada, North Carolina and other southeast and western states would gain elderly retirees with 'positive' socio-demographic characteristics (good education and high disposable income) and those moving as married couples. Other parts of the country in the north and west, as well as some other states, will receive an infusion of return migrants with 'negative' characteristics – less education and lower income, and less likely to be married. The next section of this paper will shed more light on this characterisation.

HOW DO SOCIAL AND DEMOGRAPHIC ATTRIBUTES OF ELDERLY MIGRANTS DIFFER BY MIGRANT TYPE?

Some perspective on this question can be gained by examining the lower panel of Table 3. Here, we have characterised each migrant type by its race, age, educational attainment, poverty and marital attributes. To recapitulate the conventional wisdom: primary migrants are expected to be largely 'younger' elderly, better educated, married, and with higher incomes. Return migrants are supposed to

Table 2. States with greatest net migration gains and losses for different categories of US-born and foreign-born elderly inter-state migrants, 1985–90.

	US-born primary migrants		US-born secondary migrants		US-born return migrants		Foreign-born migrants		Total	
Rank	State	Size	State	Size	State	Size	State	Size	State	Size
1.	Florida	213,327	Florida	111,501	Pennsylvania	16,342	Florida	47,957	Florida	361,125
2.	Arizona	31,828	Arizona	32,601	North Carolina	9650	Arizona	4421	Arizona	63,153
3.	California	16,703	Nevada	17,914	Alabama	6835	Washington	2371	North Carolina	38,661
4.	Nevada	10,361	North Carolina	15,427	Kentucky	6473	Nevada	2348	Nevada	28,301
5.	North Carolina	9734	Oregon	14,236	Oklahoma	4983	North Carolina	2340	Oregon	23,315
6.	Texas	7492	Washington	10,482	Missouri	4958	Oregon	1837	Texas	22,164
7.	South Carolina	7043	South Carolina	8647	Ohio	4847	Virginia	1798	Washington	21,869
8.	Oregon	5848	Arkansas	5232	Tennessee	4697	Georgia	1253	South Carolina	19,983
9.	Washington	4486	Georgia	4744	Georgia	4452	South Carolina	1188	California	18,421
10.	Colorado	4401	Tennessee	3341	West Virginia	4428	California	950	Georgia	16,274

	US-born primary migrants		US-born secondary migrants		US-born return migrants		Foreign-born migrants		Total	
Rank	State	Size	State	Size	State	Size	State	Size	State	Size
1.	New York	−114,790	California	−48,640	Florida	−42,820	New York	−38,760	New York	−154,122
2.	Illinois	−38,574	New York	−33,101	California	−26,302	Illinois	−8220	Illinois	−57,491
3.	Pennsylvania	−32,491	New Jersey	−29,828	Arizona	−9309	New Jersey	−6814	New Jersey	−45,092
4.	Massachusetts	−24,832	Illinois	−21,811	New Jersey	−6720	Michigan	−4037	Michigan	−39,038
5.	Michigan	−22,476	Michigan	−15,886	Maryland	−4103	Massachusetts	−2955	Ohio	−29,148
6.	Ohio	−20,569	Ohio	−14,535	Nevada	−3700	Connecticut	−1855	Massachusetts	−26,111
7.	New Jersey	−11,843	Connecticut	−13,737	Colorado	−2433	Dist. of Columbia	−979	Connecticut	−21,159
8.	Iowa	−8565	Massachusetts	−8458	Connecticut	−2197	Ohio	−824	Pennsylvania	−18,351
9.	Indiana	−8068	Maryland	−7033	New Mexico	−2023	Wisconsin	−792	Indiana	−8442
10.	Wisconsin	−7518	Pennsylvania	−5918	Dist. of Columbia	−1482	Indiana	−759	Wisconsin	−8165

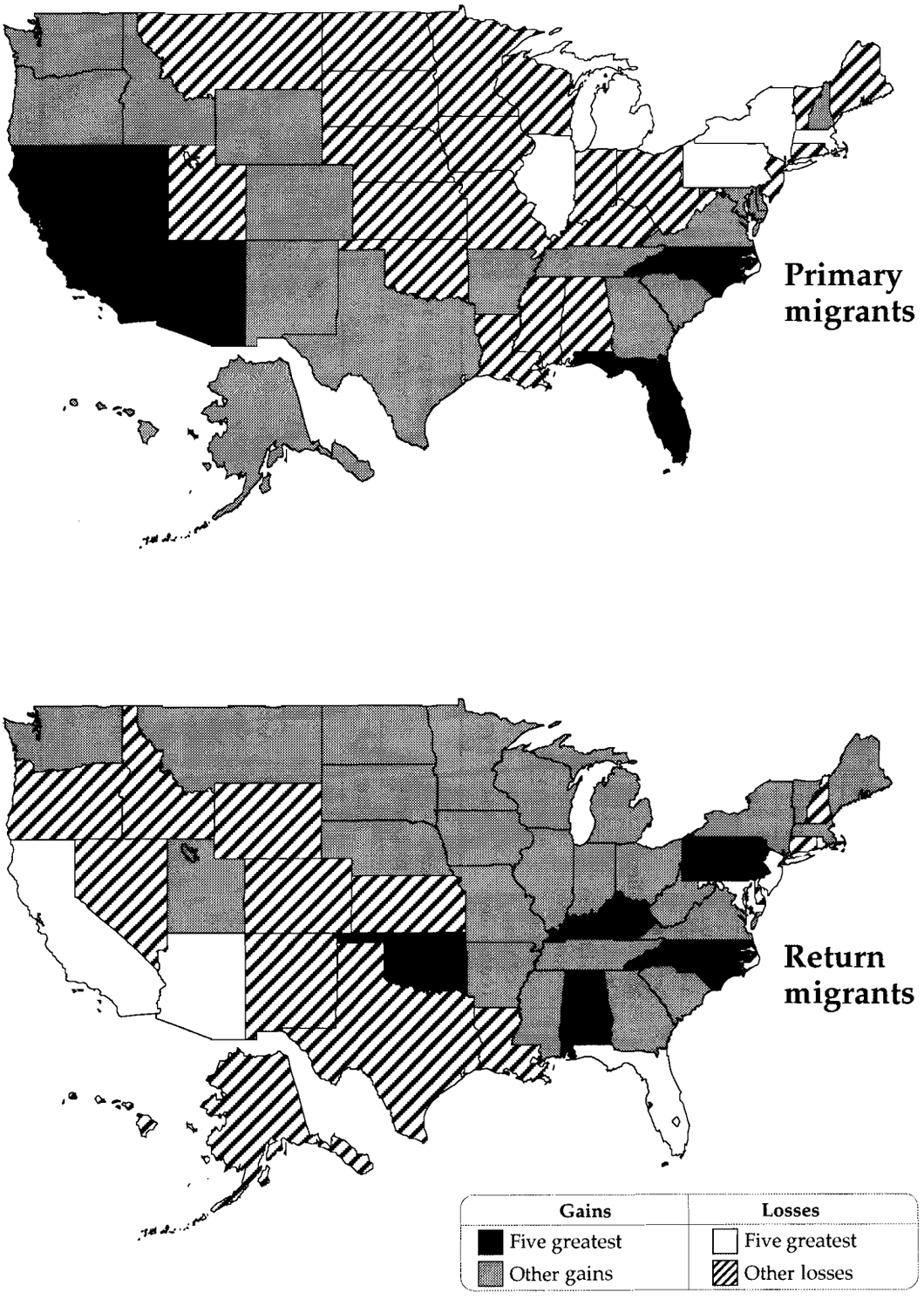

Figure 1. The spatial patterns of the 1985–90 elderly net migration by migrant type.

Table 3. Demographic profiles for different categories of elderly inter-state migrants, 1985–90.

Demographic attributes	US-born migrants			Foreign-born migrants	Immigrants	Total
	Primary	Secondary	Return			
Distribution of migrants by type						
Total	28	37	16	9	11	100
Whites	31	41	16	7	4	100
Blacks	20	34	27	8	11	100
Other	4	5	3	26	62	100
Age 60–64	28	36	15	7	13	100
Age 65–74	28	38	15	8	11	100
Age 75+	27	36	17	11	8	100
Less than High School	25	29	18	11	17	100
High School	33	37	16	7	7	100
Some College	26	45	14	7	8	100
Poverty	20	28	19	10	24	100
Non-poverty	29	38	15	9	10	100
Married	29	38	13	8	11	100
Widowed	27	34	18	10	11	100
Group shares of each migrant type						
Total	100	100	100	100	100	100
Whites	95	94	88	63	34	84
Blacks	4	5	10	5	6	6
Other	1	1	2	32	61	11
Age 60–64	29	29	29	25	37	30
Age 65–74	45	46	43	41	45	45
Age 75+	25	25	28	33	18	26
Less than High School	33	28	41	46	55	36
High School	33	28	28	23	17	28
Some College	34	44	31	31	28	36
Poverty	7	8	12	11	22	10
Non-poverty	87	87	80	83	77	85
Married	61	60	50	56	58	58
Widowed	23	21	26	26	24	23

rank somewhat inversely on each of these attributes. What is left open is how secondary migrants might fare.

The characteristics shown here for 1985–90 US inter-state migrants confirm *most* of the above stereotypes. In comparison to return migrants, primary migrants are more likely to have graduated from college and less likely not to have graduated from high school. They are less likely to be in poverty and more likely to be married. With respect to age, however, our results show that there is not a substantial difference in age distribution between primary and return migrants, although the latter are indeed somewhat older than the former. This suggests that 'assistance-seeking' migration can occur at a relatively young age, and 'amenity-seeking' migration can continue beyond retirement age. The racial comparisons also show a difference between primary and return migrants: the latter are more likely to be African-Americans.

Regarding the question of how to characterise secondary migrants, these data suggest that

they are not much different from primary migrants in their socioeconomic attributes. On measures of age distribution, poverty status, marital status and racial composition, they are almost exactly the same. They are better educated than primary migrants. Hence, areas that receive large numbers of secondary migrants should also have their elderly populations infused with more 'select' demographic attributes. This finding suggests that most of the secondary migrants were those who migrated from their state of birth to a more dynamic labour market during their working life (or when entering a college) and then made a retirement migration to a state with attractive amenities.

With the exception of racial composition, the socio-demographic profiles of foreign-born elderly migrants resemble those of return migrants more than primary or secondary migrants. Like the return elderly migrants, foreign-born migrants have older age distributions, large numbers of non-high-school graduates, and comparable levels of poverty. Foreign-born migrants, however, are more likely to be Hispanic or Asian (other races) than any of the domestic migrant types, and show levels of marital status that lie between those of primary migrants and return migrants.

Finally, recent immigrants tend to differ from all other groups and show somewhat extreme values on the different measures. They are predominantly Hispanic or Asian, much more likely to be under age 65, show low levels of education, and have relatively high rates of poverty. They do show a similar marital status distribution to foreign-born migrants. Hence, areas that receive large numbers of longer-term foreign-born or recent immigrants will be infused with 'less select' demographic characteristics than those that receive large numbers of primary and secondary domestic migrants. These migrant groups will contribute to gains in racial and ethnic diversity among the elderly population in their destination areas.

Another perspective on how demographic characteristics relate to migrant types is presented in the upper panel of Table 3. Here, it is possible to characterise the dominant migrant type associated with each of the demographic subgroups. It is noteworthy that the white elderly are much more likely to be primary or secondary migrants than almost any other group, whereas the black elderly are more likely to be return migrants. The fact that secondary migrants represent a 'select' group is underscored by the fact that 45% of elderly inter-state migrants who have at least some college education make secondary migrations.

Table 4 reproduces our earlier analysis of state gains and losses by migrant type, specific to whites and blacks. It is especially noteworthy to look at the patterns for blacks, since they are quite distinct from those of whites or the overall trends we have reviewed. Black primary migrants make their greatest contributions to non-southern states and show greatest losses in the Deep South (see Fig. 2). This undoubtedly reflects the tendency for black elderly primary migrants to relocate to their children who reside in states outside the south. In contrast, black secondary and return migrants tend to redistribute themselves in the reverse direction. Strong black secondary and return migrant gains are shown for most of the south Atlantic and Deep South states, while major losses can be seen for New York, Illinois, New Jersey, Michigan and California. The separate patterns for blacks and whites suggest that elderly migration streams follow distinct race-specific processes.

HOW CAN STATES BE CLASSIFIED ACCORDING TO THEIR DOMINANT ELDERLY MIGRATION TYPES?

The analysis above is intended as background to our attempt to characterise states by their dominant mix of elderly migration types. This can help to infer how these states will be affected in terms of the growth and future sociodemographic make-up of their elderly populations. We have shown that states gaining large numbers of primary and secondary migrants are located in the southeastern and western parts of the country, and that these migrants can be characterised by relatively 'positive' socioeconomic factors. We have also seen that many northern states and some southern states received significant numbers

Table 4. States with greatest net migration gains and losses for different categories of US-born elderly inter-state migrants, 1985–90: whites and blacks.

	White primary migrants		White secondary migrants		White return migrants		Black primary migrants		Black secondary migrants		Black return migrants	
Rank	State	Size	State	Size	State	Size	State	Size	State	Size	State	Size
1.	Florida	211,097	Florida	108,366	Pennsylvania	17,204	California	2361	Florida	2286	North Carolina	4063
2.	Arizona	31,175	Arizona	31,695	New York	7266	Maryland	1414	Maryland	1498	Georgia	2690
3.	California	14,518	Nevada	16,234	Kentucky	6162	Florida	1102	North Carolina	1162	South Carolina	2632
4.	North Carolina	10,388	North Carolina	14,103	Ohio	5842	Michigan	817	Nevada	1006	Mississippi	2578
5.	Nevada	9560	Oregon	13,973	North Carolina	5528	New Jersey	593	Virginia	939	Alabama	2530
6.	Texas	8990	Washington	10,127	Missouri	5142	Indiana	564	Georgia	876	Virginia	2332
7.	South Carolina	8273	South Carolina	8503	Minnesota	4451	Ohio	538	Arizona	508	Louisiana	939
8.	Oregon	5507	Arkansas	5129	West Virginia	4433	Illinois	492	Michigan	440	Arkansas	681
9.	Georgia	4411	Georgia	3919	Alabama	4305	Wisconsin	423	Texas	301	Texas	567
10.	Arkansas	4331	Tennessee	3116	Massachusetts	4235	Nevada	289	Tennessee	211	Tennessee	486
	White primary migrants		White secondary migrants		White return migrants		Black primary migrants		Black secondary migrants		Black return migrants	
Rank	State	Size	State	Size	State	Size	State	Size	State	Size	State	Size
1.	New York	−113,181	California	−47,069	Florida	−42,615	Mississippi	−2039	New York	−4705	New York	−6162
2.	Illinois	−38,891	New Jersey	−28,985	California	−21,753	Alabama	−1606	Illinois	−1833	California	−2915
3.	Pennsylvania	−32,388	New York	−28,111	Arizona	−9469	South Carolina	−1284	Dist. of Columbia	−919	Illinois	−2006
4.	Massachusetts	−24,818	Illinois	−19,652	New Jersey	−4749	Louisiana	−1230	New Jersey	−565	New Jersey	−1940
5.	Michigan	−23,286	Michigan	−16,327	Nevada	−3541	Arkansas	−696	California	−471	Michigan	−1554
6.	Ohio	−21,118	Ohio	−14,415	Maryland	−3480	North Carolina	−680	Connecticut	−384	Ohio	−963
7.	New Jersey	−12,385	Connecticut	−13,177	Texas	−2588	New York	−494	Massachusetts	−275	Pennsylvania	−849
8.	Indiana	−8704	Maryland	−8421	New Mexico	−2489	Kentucky	−392	Missouri	−171	Connecticut	−752
9.	Iowa	−8555	Massachusetts	−8120	Colorado	−2351	Texas	−351	Louisiana	−159	Maryland	−604
10.	Wisconsin	−8021	Pennsylvania	−6043	Virginia	−2016	Virginia	−311	Ohio	−146	Dist. of Columbia	−555

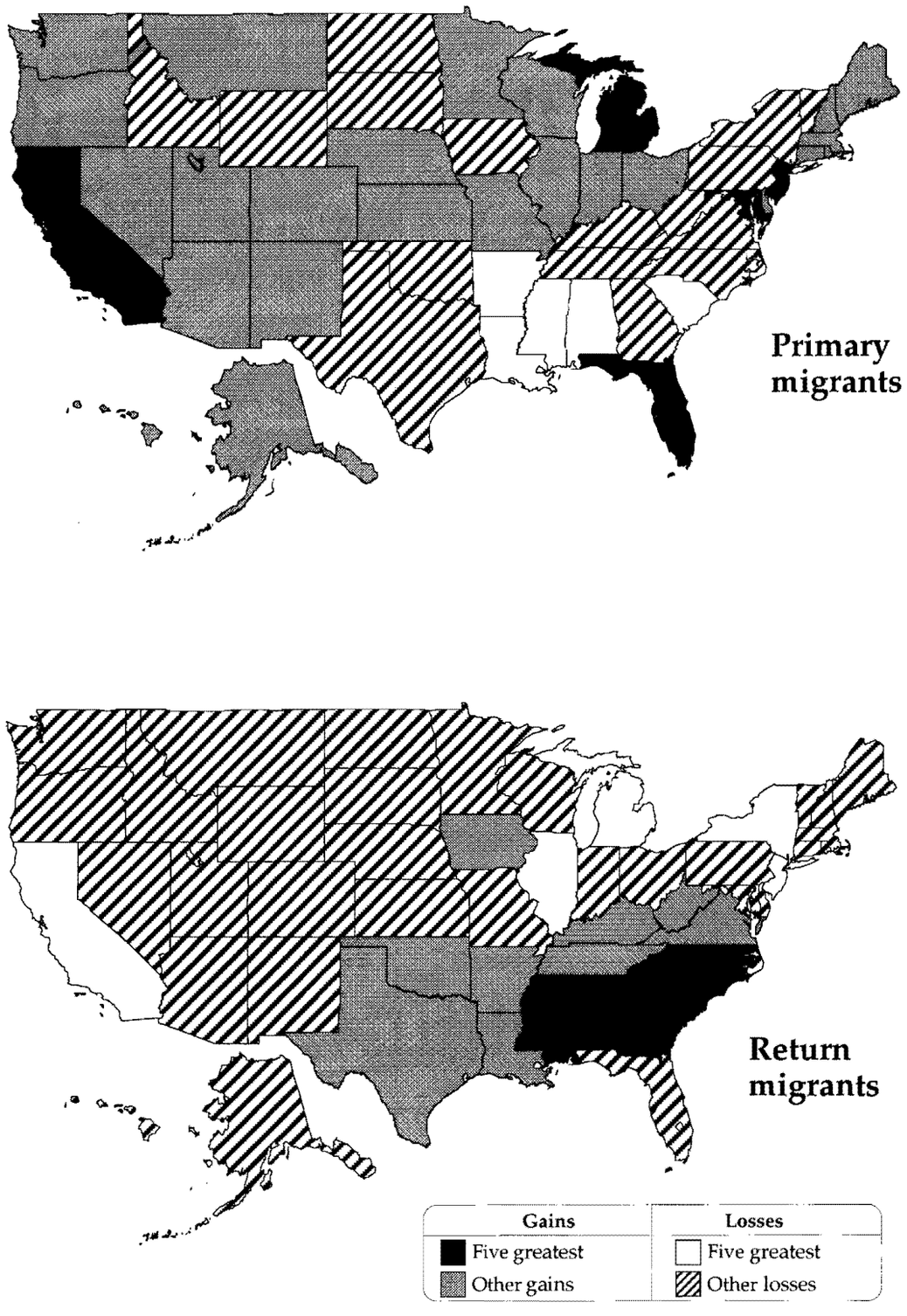

Figure 2. The spatial patterns of the 1985–90 black elderly migration by migrant type.

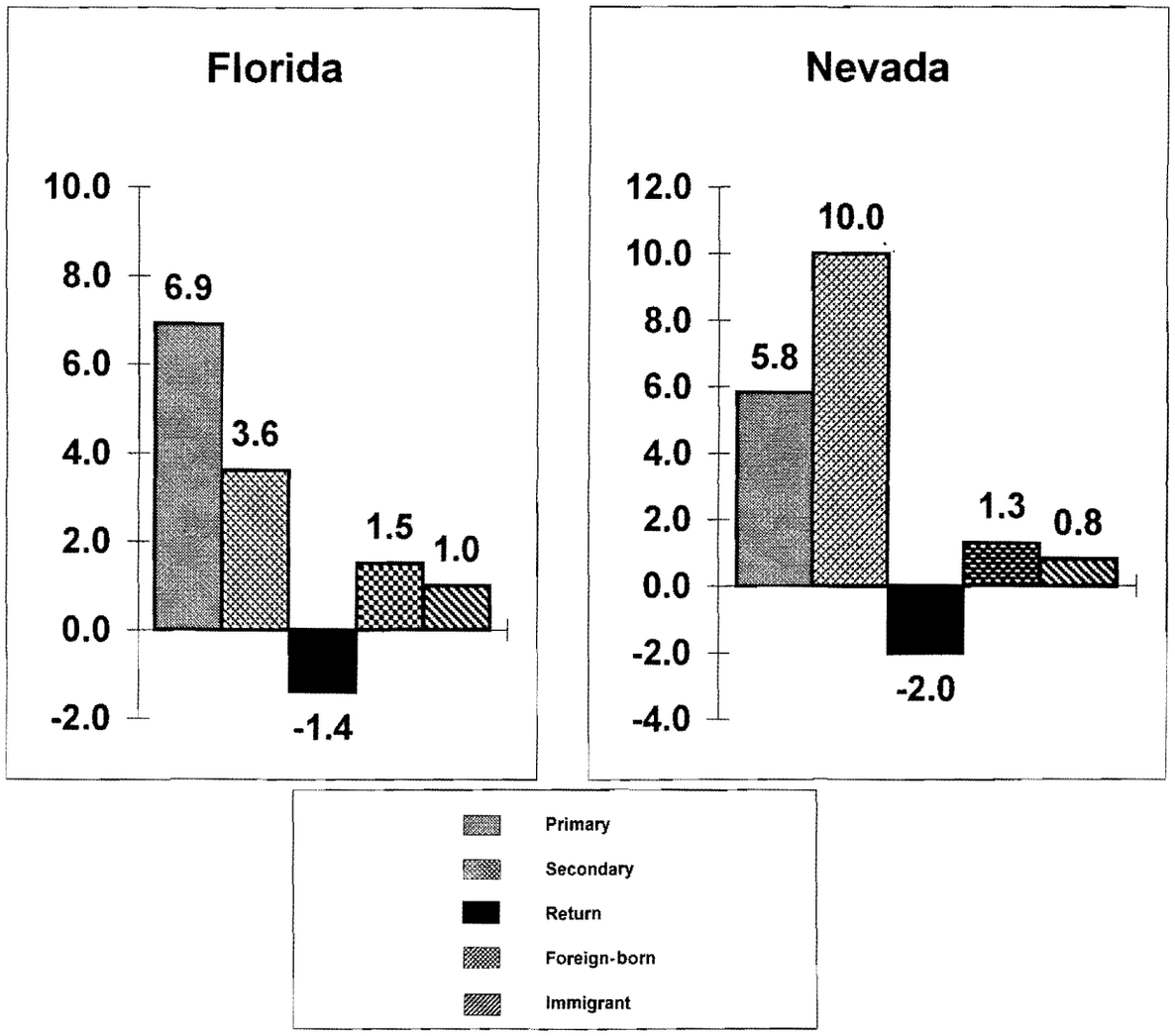

Figure 3. Elderly net migration rates (percent per 5 years) by migrant type: a classic retirement magnet (Florida) and a second tier retirement magnet (Nevada).

of return migrants with less advantageous demographic characteristics. There is also a subset of states that are the main destinations for older foreign-born and recent immigrant elderly migrants. These groups, as with the return migrants, tend to have weaker socio-demographic attributes.

In the light of these findings, we have identified several prototype states which can be characterised as follows:

(1) **Classic retirement magnets** (e.g. Florida, Arizona): states that receive substantial numbers of primary migrants and secondary migrants but send out large numbers of return migrants.

(2) **Second-tier retirement magnets** (e.g. North Carolina, Nevada): states that receive a significant number of secondary migrants which exceeds their gain of primary migrants.

(3) **Classic elderly out-migration states** (e.g. New York): states that show substantial losses of primary migrants and secondary migrants along with gains of return migrants.

(4) **'Revolving door' elderly migration states**

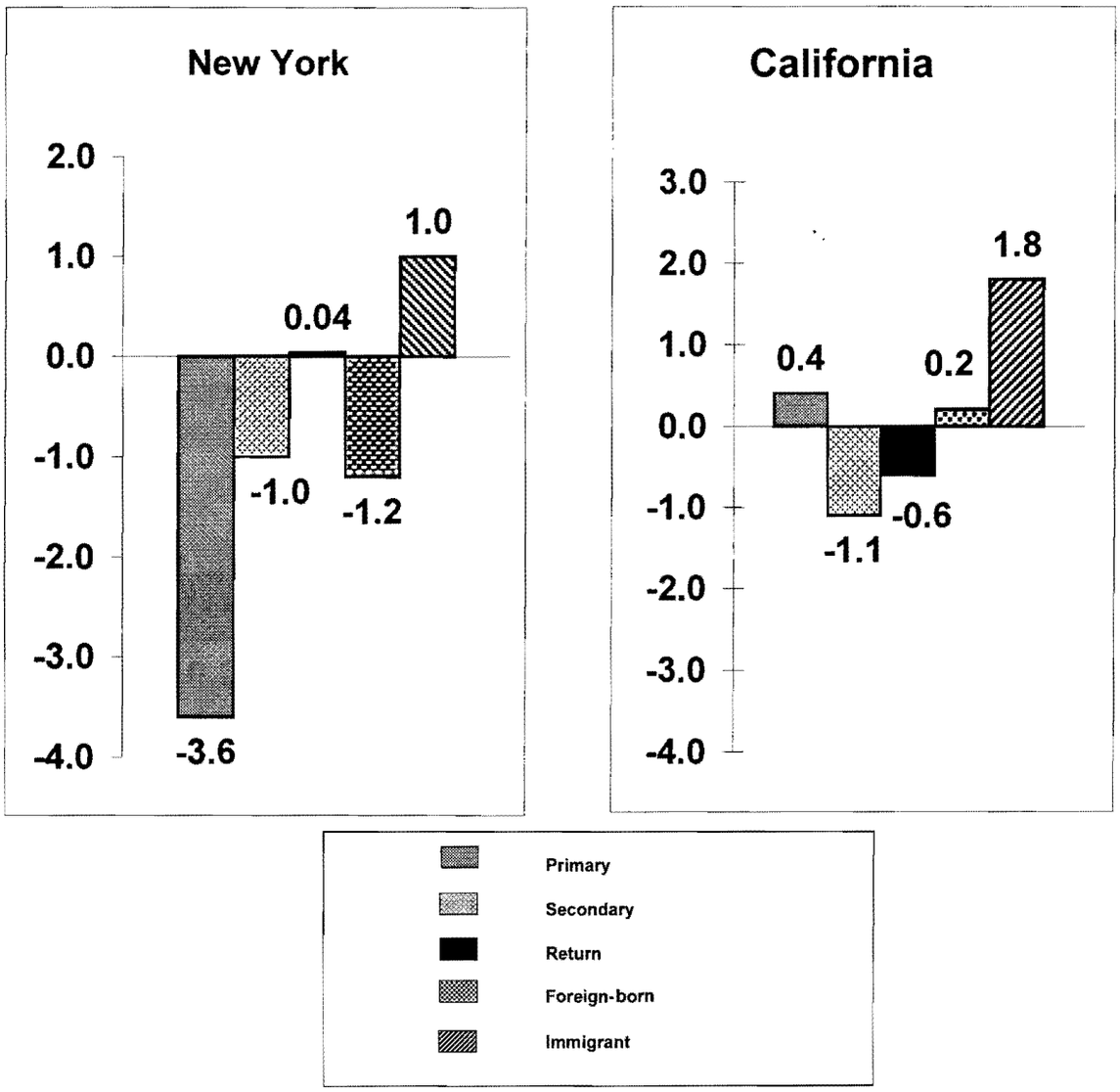

Figure 4. Elderly net migration rates (percent per 5 years) by migrant type: a classic elderly out-migration state (New York) and a revolving-door elderly migration state (California).

(e.g. California): states that gain significant numbers of primary migrants but lose larger numbers of secondary migrants and return migrants.

The contrasts between these states can be seen from the overall contributions of each migrant type in Tables 5, 6 and 7 (see totals). They are also depicted in Figs 3 and 4. The contrast between Florida and Nevada shows that Florida's gains in elderly migrants come substantially from primary migrants, whereas Nevada's gains come from secondary migrants. Both states, however, tend to lose return migrants so that, in each case, they are gaining groups with positive demographic characteristics among their domestic migration exchanges. In contrast, New York, a classic elderly out-migration state, loses primary migrants and secondary migrants, and gains minimal numbers of return migrants. Thus it is losing elderly populations with the most

Table 5. Migration components of elderly population change, 1985–90, for selected demographic groups in Florida and Arizona.

State/demographic group	1990 elderly population (1000s)	1985–90 net migration rate	1985–90 net migration components					
			Total	US-born primary	US-born secondary	US-born return	Foreign-born	Immigrants
Florida								
Total	3,090	11.7	361,125	213,327	111,501	−42,820	47,957	31,160
Whites	2,654	11.8	313,780	211,097	108,366	−42,615	25,556	11,376
Blacks	184	5.8	10,677	1,102	2,286	−62	4,853	2,498
Other	251	14.6	36,668	1,128	849	−143	17,548	17,286
Age 60–64	692	18.2	125,646	67,834	39,670	−6,299	13,551	10,890
Age 65–74	1,390	14.0	194,953	109,908	64,448	−18,532	24,734	14,395
Age 75+	1,007	4.0	40,526	35,585	7,383	−17,989	9,672	5,875
Less than High School	1,143	8.9	101,923	58,530	21,505	−18,455	23,913	16,430
High School	964	12.4	119,545	81,860	35,156	−14,123	10,679	5,973
Some College	983	14.2	139,657	72,937	54,840	−10,242	13,365	8,757
Poverty	314	8.1	25,270	10,712	4,646	−3,882	6,092	7,702
Non-poverty	2,694	12.5	337,140	199,120	107,926	−35,229	42,142	23,181
Married	1,957	14.7	286,757	159,340	93,880	−20,180	34,859	18,858
Widowed	676	5.0	33,493	30,401	5,650	−14,970	6,169	6,243
Arizona								
Total	628	10.1	63,153	31,828	32,601	−9,309	4,421	3,612
Whites	549	10.8	59,307	31,175	31,695	−9,469	3,836	2,070
Blacks	10	7.1	709	196	508	−69	24	50
Other	68	4.6	3,137	457	398	229	561	1,492
Age 60–64	154	13.5	20,758	10,223	9,954	−2,261	1,434	1,408
Age 65–74	288	12.3	35,451	15,901	19,673	−3,793	2,130	1,540
Age 75+	186	3.7	6,944	5,704	2,974	−3,255	857	664
Less than High School	205	6.2	12,759	7,687	5,665	−3,620	1,553	1,474
High School	181	11.0	19,931	10,815	10,367	−3,051	1,078	722
Some College	241	12.6	30,463	13,326	16,569	−2,638	1,790	1,416
Poverty	66	5.2	3,439	1,804	1,765	−1,359	533	696
Non-poverty	548	11.0	60,225	29,618	31,231	−7,350	3,855	2,871
Married	406	12.5	50,755	22,953	26,672	−4,444	3,098	2,476
Widowed	127	4.4	5,590	4,692	2,481	−2,791	634	574

Table 6. Migration components of elderly population change, 1985–90, for selected demographic groups in North Carolina and Nevada.

State/demographic group	1990 elderly population (1000s)	1985–90 net migration rate	1985–90 net migration components					
			Total	US-born primary	US-born secondary	US-born return	Foreign-born	Immigrants
North Carolina								
Total	1,091	3.5	38,661	9,734	15,427	9,650	2,340	1,510
Whites	893	3.7	33,123	10,388	14,103	5,528	2,140	964
Blacks	186	2.5	4,690	−680	1,162	4,063	57	88
Other	12	7.1	848	26	162	59	143	458
Age 60–64	289	4.5	13,056	3,940	5,000	3,082	536	498
Age 65–74	486	4.0	19,278	4,727	7,837	4,901	1,002	811
Age 75+	315	2.0	6,327	1,067	2,590	1,667	802	201
Less than High School	582	1.7	9,928	950	3,033	5,018	509	418
High School	247	3.8	9,292	3,270	3,126	2,213	410	273
Some College	262	7.4	19,441	5,514	9,268	2,419	1,421	819
Poverty	182	1.5	2,704	111	768	1,700	−52	177
Non-poverty	865	4.1	35,086	9,466	14,391	7,647	2,249	1,333
Married	630	4.3	27,094	8,493	11,222	5,011	1,408	960
Widowed	295	2.2	6,433	823	2,394	2,265	589	362
Nevada								
Total	179	15.8	28,301	10,361	17,914	−3,700	2,348	1,378
Whites	161	15.2	24,463	9,560	16,234	−3,541	1,686	524
Blacks	6	20.9	1,206	289	1,006	−47	−70	28
Other	12	21.6	2,632	512	674	−112	732	826
Age 60–64	53	20.4	10,780	4,009	6,281	−1,052	938	604
Age 65–74	86	15.8	13,499	4,778	9,284	−1,917	794	560
Age 75+	41	9.8	4,022	1,574	2,349	−731	616	214
Less than High School	64	15.0	9,512	3,653	5,357	−1,318	1,107	713
High School	58	16.7	9,618	3,682	6,101	−1,222	733	324
Some College	58	15.8	9,171	3,026	6,456	−1,160	508	341
Poverty	16	13.0	2,091	733	1,123	−366	322	279
Non-poverty	160	16.5	26,370	9,524	16,828	−3,194	2,163	1,049
Married	107	17.6	18,768	6,245	12,029	−1,700	1,466	728
Widowed	33	13.0	4,339	1,820	2,565	−989	506	437

Table 7. Migration components of elderly population change, 1985–90, for selected demographic groups in New York and California.

State/demographic group	1990 elderly population (1000s)	1985–90 net migration rate	1985–90 net migration components					
			Total	US-born primary	US-born secondary	US-born return	Foreign-born	Immigrants
New York								
Total	3,224	−4.8	−154,122	−114,790	−33,101	1,137	−38,760	31,392
Whites	2,672	−5.5	−145,961	−113,181	−28,111	7,266	−21,388	9,453
Blacks	331	−3.4	−11,278	−494	−4,705	−6,162	−5,394	5,477
Other	221	1.4	3,117	−1,115	−285	33	−11,978	16,462
Age 60–64	839	−5.2	−43,366	−35,757	−8,752	−683	−10,109	11,935
Age 65–74	1,373	−5.6	−77,290	−56,656	−17,478	278	−17,057	13,623
Age 75+	1,013	−3.3	−33,466	−22,377	−6,871	1,542	−11,594	5,834
Less than High School	1,398	−2.8	−38,712	−29,025	−8,605	−987	−19,117	19,022
High School	1,004	−5.7	−57,071	−44,791	−10,032	1,552	−9,761	5,961
Some College	822	−7.1	−58,339	−40,974	−14,464	572	−9,882	6,409
Poverty	332	−1.7	−5,739	−5,820	−1,997	−1,150	−4,207	7,435
Non-poverty	2,761	−5.1	−141,755	−104,513	−30,031	2,139	−33,048	23,698
Married	1,716	−6.3	−108,524	−79,624	−22,545	385	−23,366	16,626
Widowed	828	−3.0	−24,847	−19,778	−5,605	1,381	−8,773	7,928
California								
Total	4,203	0.4	18,421	16,703	−48,640	−26,302	950	75,710
Whites	3,236	−1.2	−37,401	14,518	−47,069	−21,753	−1,881	18,784
Blacks	224	−0.1	−156	2,361	−471	−2,915	−2	871
Other	742	7.5	55,978	−176	−1,100	−1,634	2,833	56,055
Age 60–64	1,097	0.6	7,031	2,001	−14,413	−7,215	−227	26,885
Age 65–74	1,856	0.2	3,879	6,634	−26,900	−11,884	997	35,032
Age 75+	1,250	0.6	7,511	8,068	−7,327	−7,203	180	13,793
Less than High School	1,472	1.9	28,307	7,866	−13,641	−11,730	722	45,090
High School	1,142	−0.7	−7,564	4,758	−16,739	−7,602	127	11,892
Some College	1,589	−0.1	−2,322	4,079	−18,260	−6,970	101	18,728
Poverty	305	2.5	7,678	1,179	−5,153	−3,313	−1,133	16,098
Non-poverty	3,755	0.2	8,834	13,583	−43,912	−21,600	1,698	59,065
Married	2,447	0.2	3,838	4,787	−34,095	−12,175	−206	45,527
Widowed	944	1.6	15,476	7,877	−5,760	−6,941	1,428	18,872

valued demographic characteristics: those with better education, lower levels of widowhood and lower levels of poverty.

California is an example of a revolving-door elderly migration state, which may eventually characterise Florida or Arizona. It still gains a significant number of demographically 'select' primary migrants, but loses even greater numbers of secondary migrants, as well as return migrants. In a sense, California serves as a 'feeder' of secondary migrants for states such as Nevada (in like manner, Florida may eventually serve as a feeder of secondary migrants for North Carolina). While not explicitly part of our typology, it can be seen that foreign-born migrants and recent immigrants can make additional contributions, both in size and in sociodemographic composition, to states such as Florida, New York and California.

It is interesting to note that Larry Long called California the 'end of line', because among all states it had the lowest out-migration rate for its non-natives (aged 5 years and over) in 1975–80: 12.4%, compared with Oregon's 14.5% and Washington's 14.7% (Long, 1988: 117–19). However, our computation shows that California's elderly non-natives had an out-migration rate of 5.8% in 1985–90, which was somewhat higher than those of Washington (5.1%), Oregon (5.6%) and Florida (5.6%). It seems that the elderly have been leading California's evolution from the 'end of line' to a 'revolving door'. However, keeping in mind the fact that among all 50 states, California had the fourth lowest out-migration rate for elderly non-natives in 1985–90, we see that its large net loss of secondary migrants was mainly due to its very large pool of previous in-migrants rather than its weak retention power. For reference, we note that the 1985–90 out-migration rate of New York's elderly non-natives was as high as 9.7%.

The detailed statistics displayed in Tables 5, 6 and 7 for these prototype states serve to show how these different migration types contribute to each state's demographic profile. For example, in both Florida and Arizona, the net in-migration rate, specific to educational attainment, is higher for college graduates than for high school graduates. Both are higher than for those without a high school diploma (see Table 5). The net gains of college graduates into both states are brought about by contributions of primary and secondary migrants; the declines for people with less than high school attainment are associated with the net out-migration of return migrants.

Table 6 shows a similar analysis for North Carolina and Nevada, two second-tier retirement magnets. For both of these states, rates of gain are typically highest for the elderly who are in the 60–64 age group, married, not in poverty, and better educated. In each case, it is the secondary migrant contribution, when combined with the primary migrant contribution, that brings about these distinctions. In both of these states, secondary migrants contribute to greater gains and greater socioeconomic selectivity distinctions than do primary migrants. This contrasts with New York (Table 7) where the out-migration of both primary and secondary migrants is responsible for the selective losses which are greatest (in rates) for college graduates, persons not in poverty, married persons, persons under age 75, and whites. This classic elderly out-migration state shows domestic net gains only for return migrants.

California may serve as a prototype for an emerging 'revolving door' model of elderly migration. While this state has historically attracted retirement migrants, it is now beginning to lose larger numbers of secondary migrants than it is able to gain primary migrants. At the same time, like other 'retirement magnets', it is losing return migrants. A careful look at the socioeconomic selectivity of these different migrant types indicates that it is the selective out-migration of secondary migrants which is contributing to most of the losses of California's college graduate population and its white population. Were it not for immigration, the out-migration of its domestic secondary migrants would also result in overall net migration losses of married persons, persons not in poverty, and persons under age 75.

Aside from serving as a 'revolving door' elderly migration state, California is also significant because, like Florida and New York, it is attracting large numbers of recent immigrants. While bolstering the size of each state's elderly population (and, in some cases, more than compensating for domestic out-

Table 8. Estimation result of the departure model for the elderly (aged over 60) white and black natives of the United States: 1990.

Explanatory variable	Best model		Contribution to Rho-square
	Coef.	*t*	
Constant term	−3.540	−15.5	
Race: black	−0.550	−5.2	0.0022
Gender: male	0.035	2.1	0.0001
Marital status			0.0051
Single	−0.305	−4.9	
Widowed	0.181	3.4	
Divorced/separated	0.601	11.0	
Single* black	1.264	9.3	
Widowed* black	0.727	8.1	
Divorced/separated* black	0.607	5.8	
Widowed* aged 75–79	0.254	6.4	
Widowed* aged 80+	0.501	14.8	
Age			0.0026
Aged 65–69* male	0.092	3.1	
Aged 65–69* black	−0.209	−2.6	
Poverty status			0.0006
Poor	−0.236	−8.3	
Poor* black	−0.386	−4.4	
Educational attainment			0.0053
High School graduate	0.260	15.4	
College and university	0.587	33.8	
College and university* black	−0.346	−3.8	
Climatic factors			0.0037
Coldness	0.086	10.8	
Coldness* married	0.096	11.1	
Coldness* aged 65–69	0.036	8.3	
Cost of Living Index	0.021	13.9	0.0009
Medicaid	−0.041	−12.0	0.0007
Proportion home owners	−0.038	−26.8	0.0033
Employment growth* age 60–64	−1.179	−3.6	0.0001
Racial similarity	−0.166	−12.9	0.0008
Ln(population size)* black	−0.342	−8.0	0.0003
Attraction of rest of system (Inclusive Variable)	0.101	8.3	0.0003
Rho-square: 0.0379			

Note: The contribution to the Rho-square of a factor includes those of all its interaction terms. For example, the contribution of age includes those of 'widowed* aged 75–79', 'widowed* aged 80+', 'aged 65–69* male', 'aged 65–69* black', 'coldness* aged 65–69', and 'employment growth* aged 60–64'.

migration), recent immigrants tend to infuse these states with disproportionate numbers of poor, relatively less educated, married, and younger migrants. In California, the aggregate gains for this group overwhelm those for each of the other migrant types.

In summary, this analysis provides support for the idea of assessing the impact of elderly migration upon a destination area (state, metropolitan area, etc.) by identifying its pattern of 'migrant types'. To what extent will these prototypic states continue to maintain their current profiles of primary, secondary, and return migration? The answer requires further analyses to shed light on which personal and area-specific attributes affect the out-migration and destination selection processes of each migrant type. Such analyses will

be the focus of our continuing research. The section that follows presents results for the first part of this research, focusing on elderly primary migrants.

A MULTIVARIATE ANALYSIS OF PRIMARY ELDERLY MIGRATION

This analysis of the determinants of primary elderly migration employs a two-level nested logit model of migration (Liaw and Ledent, 1988; Liaw and Frey, 1996) and identifies separate determinants of residents' departures and out-migrants' destination choices. The analysis will be restricted to whites (non-Hispanic whites) and blacks since the above results showed these groups to follow different migration patterns[1]. Our multivariate model will incorporate the other personal variables used earlier, as well as state-level attributes that are known to affect elderly migration, including indices of coldness and cloudiness, labour market variables (per capita income and employment growth), a cost of living index, Medicaid payments (for elderly recipients in 1986), an index of racial similarity (between migrants and state populations), and the proportion of the state's elderly population owning homes. To control for the effects of geographical structure, our explanatory variables also include distance and contiguity (between origin and potential destinations) as well as the origin and destination population sizes. The definitions of these variables are shown in the Appendix.

In the estimation results of the departure sub-model (Table 8), we find from the 'contribution to Rho-square' that the departure propensities of the elderly primary migrants are most strongly affected by personal attributes, especially educational attainment and marital status. The estimated coefficients and the associated *t*-ratios allow the following specific interpretations. The better the education, the greater the departure propensity; this education effect is stronger for whites than for blacks. With respect to marital status, the divorced and separated are more prone to make primary migration than their married counterparts. This is especially true for blacks. The widowed are also more prone to make primary migration than their married counterparts. This tendency is stronger for blacks than for whites and increases significantly with age. Single whites are moderately less prone to make primary migration than married whites, whereas single blacks are much more prone to do so than married blacks. The elderly blacks are in general less likely to make primary migration than the elderly whites. The retirement peak around age 65 is significant only for white males. The poverty status, although much less important than educational attainment and marital status, has a negative effect on the elderly migration propensity. This is especially true for blacks.

The most important state attributes in affecting the elderly's propensity to primary migration are the coldness of winter and the extent of home ownership. The coldness of winter has a significant push effect, which is moderately stronger on those at the retirement age and much stronger on married couples. A state with a high proportion of the elderly owning homes is significantly less likely to push out its elderly population.

Although the other state attributes are much less influential, they all have sensible coefficients in the departure model. For example, the estimated coefficients show that the elderly are less likely to engage in primary migration if their state of residence provides more generous Medicaid benefits or has a high proportion of co-ethnics in its population, and that the elderly in the pre-retirement age group are less likely to leave a state with higher employment growth.

In the estimation results of the destination choice sub-model (Table 9), the values of the 'contribution to Rho-square' show that the destination choices of the primary elderly migrants are most strongly affected by the climatic conditions of the potential destination (coldness of winter and cloudiness). The estimated coefficients indicate that these migrants tend to be strongly attracted by states with warm winters. This tendency is particularly strong for the married elderly. It increases from the 60–64 age group to a maximum in the 65–69 age group, and then decreases as the age increases further. It is weaker for the poor and is very weak for blacks. Actually, among the black elderly primary migrants, only those who are married and at retirement age show

Table 9. Estimation result of destination choice model for the 1985–90 interstate white and black elderly primary migrants in the United States: aged 60+ in 1990.

Explanatory variable	Best model		Contribution to Rho-square
	Coef.	*t*	
Climatic factors			**0.1370**
Coldness	−0.647	−60.6	
Coldness* married	−0.238	−24.4	
Coldness* aged 65–69	−0.174	−18.8	
Coldness* aged 70–74	−0.133	−12.7	
Coldness* aged 80+	0.051	4.6	
Coldness* poor	0.062	4.6	
Coldness* black	0.753	35.3	
Cloudy days	−0.988	−25.2	
Racial Attraction			**0.0282**
Racial similarity	1.025	69.3	
Racial similarity* black	−0.704	−14.4	
Medicaid	0.053	10.4	**0.0006**
Labour market variables			**0.0054**
Income* 60–64 age group	0.830	6.9	
Employment growth* age 60–64	8.253	22.9	
Relative location			**0.0729**
Ln(distance)	−0.680	−34.1	
Ln(distance)* married	−0.188	−9.2	
Ln(distance)* at least college education	0.036	2.2	
Contiguity	1.082	39.5	
Contiguity* black	−0.509	−6.5	
Size of ecumene			**0.0299**
Ln(population size)	0.694	65.8	
Ln(population size)* black	0.302	6.6	
Rho-square: 0.3100			

an enhanced attraction to the warm winters of the potential destinations. The estimated coefficient of 'cloudy days' indicates that the primary elderly migrants tend to choose states with fewer cloudy days.

We also see in Table 9 that the primary elderly migrants tend to be rather strongly attracted by racial similarity. This tendency is much stronger for whites than for blacks. We believe that a large part of this is the attraction of adult children whose residence is outside of the elderly's state of birth.

Table 9 also shows that the elderly's destination choices are subject to the strong constraints of relative location and destination population size, and that the strengths of these constraints vary with demographic subgroups. It also indicates that the elderly in the pre-retirement age group are somewhat more subject to the attractions of states with higher income level and greater employment growth, and that the potential destinations with more generous Medicaid benefits are somewhat more attractive.

In summary our key findings in the multivariate analysis point to (1) the very strong positive selectivity by educational attainment and the enhanced push of cold winters on married couples around retirement age in the departure model; and (2) the particularly strong attraction of warm winters on white primary migrants who are married, aged 65–69, and above the poverty line, in the destination choice model. These findings are consistent with the view that primary elderly migrants tend to make 'amenity-seeking' moves and are strongly selective on 'positive' demographic attributes.

CONCLUSIONS

This article has shown the utility of distinguishing different elderly 'migrant types': primary migrants, secondary migrants, return migrants, as well as foreign-born and recent immigrants. Because each migrant type is associated with a different level of attachment to its origin community, and tends to hold different motivations for migration, we have shown that these migrant types differ with respect to their sociodemographic profiles. This means that states that tend to attract or send elderly migrants of a given type will experience distinct migration impacts. For example, states that attract large numbers of primary or secondary migrants will infuse their elderly populations with more educated, married, and well-off elderly residents. In contrast, states that attract large numbers of return migrants will receive elderly residents with less economically attractive characteristics.

In light of the distinct impacts that different migrant types can exert, we have identified four prototypic states that tend to attract or send characteristic mixes of migrant types: classic retirement magnets (e.g. Florida and Arizona); second-tier retirement magnets (e.g. North Carolina and Nevada); classic elderly out-migration states (e.g. New York); and 'revolving door' elderly migration states (e.g. California). While both classic and second-tier retirement magnets select 'positively' in drawing elderly residents, we have discovered an emerging dynamic where the once classic retirement magnet of California continues to attract highly selective primary elderly migrants, only to lose even more selective secondary elderly migrants to second-tier retirement magnets such as Nevada. For this reason, it is likely that current classic retirement magnets will serve as 'revolving doors' for primary migrants who decide to make an additional move to a growing number of second-tier retirement magnet states.

Our multivariate analysis of elderly primary migration has confirmed that primary migrants tend to make 'amenity-seeking' moves and are strongly selective on positive demographic attributes. Later studies will conduct similar analyses for secondary migrants, return migrants and foreign-born migrants. These analyses should shed additional light on distinctions between the different elderly migrant types identified in this article.

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APPENDIX. DEFINITION OF THE AREA ATTRIBUTES IN THE NESTED LOGIT MODEL

The explanatory factors include both ***personal attributes*** that describe the characteristics of the potential inter-state migrants (e.g. marital status), and ***area attributes*** that characterise the alternatives in the choice set (e.g. coldness of a state's winter). Since the personal attributes are defined in the main text of the paper, we only deal with the area attributes in this appendix. Among the area attributes, there are (1) ***relational factors*** (e.g. distance) that are defined for each origin state and all potential destination states in the destination choice submodel, and (2) ***alternative-specific factors*** (e.g. Medicaid benefit) that are defined for a potential destination state in the destination choice submodel and for an origin state in the departure submodel. Unless identified specifically below, the sources of data are shown in Frey *et al.* (1996).

1. Climatic Factors

Coldness of winter:
For each state, this variable is defined as a weighted average of the heating degree-days of cities with records from 1951 to 1980, using city populations as the weights. The unit is

1000 degree(F)-days. Data source: US National Oceanic and Atmospheric Administration.

Cloudy days:
This is the weighted average of the numbers of cloudy days in a year of the cities within a state, with the weights being the population sizes of the metropolitan areas where the cities are located. The unit is 100 days. Data source: US National Oceanic and Atmospheric Administration.

2. Cost of Living

Cost of Living Index:
This is a state's cost of living in 1985, with the national average set at 100.

3. Government Benefit

Medicaid:
This is the 1986 Medicaid payment per elderly recipient. The unit is $1000 per person. The missing value of Arizona is replaced by the average of the other states. Source: Health Care Financing Administration (1990).

4. Labour Market Factors

Income:
This is the income per capita of a state computed in the following way. Firstly, we adjust the state-specific 1985 and 1989 nominal per capita incomes by the corresponding state-specific cost of living indices of the same years. Secondly, the 1985 and 1989 adjusted values are then averaged. The unit is $10,000 per person.

Employment growth:
For each state, this variable is the state-specific 1985–89 growth of total civilian employment divided by the 1985 total civilian employment. The unit is 'proportion per four years'.

5. Relative Location

Ln(distance):
This variable is the natural log of the population gravity centres of origin and destination states. The unit is ln(miles).

Contiguity:
For each potential destination, this is a dummy variable assuming the value of 1 if it shares a common border with the state of origin.

6. Racial Attraction

Racial similarity:
For the migrants of a specific race in the destination choice submodel, this is the logit of the specific race's proportional share of the potential destination's population in 1985, computed indirectly from the data of the 1990 census. For the potential migrants of a specific race in the departure submodel, this is the logit of the specific race's proportional share of the origin's population in 1985, computed indirectly from the data of the 1990 census.

7. Home Ownership

Proportion home owners:
This variable is the percentage of the elderly (aged over 65) owning homes in 1990. Data source: 1990 Census 5% PUMS.

8. Size of Ecumene

Ln(population size):
This the natural log of a state's population size in 1985, computed indirectly from the data of the 1990 census. The unit is ln(1,000,000 persons).

NOTES

(1) Since the census sample contains very few Hispanics, Asians and Native Americans who are the potential primary migrants, we found that the inclusion of them in the model does not help generate statistically significant results that are specific to these ethnic groups.

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