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Interstate Migration of Hispanics, Asians and Blacks: Cultural Constraints and Middle Class Flight

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ABSTRACT

This report utilizes 2000 Census migration data to assess the role of race-ethnicity as part of inter-state migration within the United States. The rising prominence of immigrant minorities, Hispanics and Asians, as well as blacks in the US population, and their changing dispersal patterns, calls for explicit attention to their roles in inter-state migration. The analysis employs maps, graphs, descriptive statistics and a nested logit migration model that evaluates residents' departures from origin states, and migrants' selections of destination states over the 1995-2000 period.

The analysis focuses on two themes: First, we assess the role of 'cultural constraints' as they affect departures and destination selections for different race-ethnic groups. These constraints shape migration patterns for these groups due to their needs for social support networks, kinship ties, and access to informal employment opportunities that tend to be available in areas that house large concentrations of co-ethnics. For both the departure and destination selection parts of the migration process, we find that a concentration of co-ethnics in a state serves to deter potential out-migrants and to attract potential new migrants. There is also evidence of spatial assimilation in that cultural constraints are less pronounced in the destination selections for the more educated Hispanic, Black, and Asian migrants.

Second, we examine the impacts that low-skilled immigration and high housing costs exert on domestic out-migration from urbanized, high immigration states. Our earlier research indicated that the former factor affected a low skilled "white flight." However, more recently, high housing costs, along with more racially diverse populations in these areas, suggest that the latter may be promoting a more multiethnic "middle class flight". Our results support this interpretation by showing accentuated out-migration and reduced destination selections of less educated migrants among all race-ethnic groups for states with high housing values and high levels of foreign born immigration.

DATA USED: 2000 US Census 5% Public Use MicroSample (PUMS) files

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INTRODUCTION

This report examines the role of race-ethnicity toward the explanation of internal migration across US states. Minority racial and ethnic groups comprise an ever-larger share of the US population, though they are unevenly distributed across states (Kent et al., 2001; US Bureau of the Census 2002). The concentration of Hispanic and Asian populations in New York, California and a few other large states is related to their recent immigrant status and attachments to co-ethnic communities in those areas (Liaw and Frey, 1998; Gober, 2000; Waldinger, 2001). Yet, recent Census 2000 results suggest their greater geographic dispersal (Frey, 2002; Suro and Singer, 2002). The African American population, while less concentrated than these groups, has shown an increased tendency to locate in the South, countering a longstanding movement in the reverse direction (Frey, 2004).

The prominence of race-ethnic minorities in the US population, and their changing distribution and dispersal patterns, calls for explicit attention to their roles in models of internal migration. The history of such models has shown increasing elaboration over past decades. Early migration researchers conceptualized the migration process as a largely labor-market phenomenon where migration responds mainly to the spatial disparities in economic opportunities. The typical model explaining origin-to-destination specific flows of migrants included such factors as wage level and unemployment rate, together with distance and origin and destination populations (Lowry, 1966). Later, 'quality of life' factors, particularly those related to climate, became introduced into these models as movement from the snowbelt to the sunbelt became more widespread (Graves, 1976; Greenwood 1981; Liaw and Ledent, 1987). More recently, the wide disparity in housing costs across states has entered into the calculus of movers (Turner, 2000; Coy, 2002) such that it should also be considered in models of internal migration within the United States.

While US migration patterns adhere to well known selectivities according to personal characteristics such as age and education, it is increasingly important to take cognizance of the ways race and ethnic background affects migration in contemporary America. In this paper we will address the role of race-ethnicity in two ways. First, we will assess the role of what we call 'cultural constraints' as they affect departures and destination choices for different race-ethnic groups (Liaw and Frey, 1996). These constraints shape migration patterns for these groups due to their needs for social support networks, kinship ties, and access to informal employment opportunities that tend to be available in areas that house large concentrations of co-ethnics.

The second aspect of the migration process that has potential implications for race-ethnic movement is the impacts that low-skilled immigration and high housing costs exert on domestic out-migration from urbanized, high immigration states. A good deal of research subsequent to the 1980 and 1990 U.S. Censuses pointed to potential linkages between immigration and domestic out-migration (Walker et al, 1992; White and Hunter, 1993; White

and Imai, 1994; Wright et. al., 1997). Although this is often viewed to be largely a potential 'labor substitution' impact wherein low-skilled domestic migrants are in competition with new immigrants, the impact was shown to be especially strong for low-skilled Whites (Liaw and Frey, 1996; Frey and Liaw, 1998) and had been termed the "new white flight" (Frey, 1994). More recently, the higher housing costs, along with more diverse populations in these areas suggest the latter maybe promoting a more multiethnic "middle class flight".

While these issues will be highlighted in our analysis, we will also examine race-ethnic interactions with standard labor market, and climatic factors associated with interstate migrant departure, and destination choice.

Cultural Constraints on Race-Ethnic Migration

The impact of same-race residents as an inhibitor to out-migration and as an attraction for destination selection among Hispanics, Asians and Blacks was supported in our analysis of 1985-1990 interstate migration of young adults (Liaw and Frey, 1996). Its inhibiting effect on out-migration is especially strong for foreign-born Asians and Hispanics and its attraction of the least educated to potential destinations is especially strong for Hispanics. While we anticipate that these 'cultural constraints' are still operating on interstate migration, the recent dispersion of minorities suggests that they might be modeled with an eye toward the theory of spatial assimilation (Massey, 1985) or in light of contemporary trends in employment shifts.

The evidence of cultural constraints associated with co-ethnics is grounded in earlier work, especially for immigrant minority groups, Hispanics and Asians. Previous research has shown that even native-born and longer term residents among immigrant minorities follow 'channelized' migration patterns, shaped by racial and ethnic attachments and well worn migration networks. These 'traditional' group migration patterns are motivated by employment information and social support provided by social networks as these groups were assimilating and faced new destinations (Farley and Allen, 1987; Bean and Tienda, 1987; Barringer, Gardner, and Levin, 1993).

Among Latinos, McHugh (1989), McHugh et al., (1997), and Bean and Tienda (1987) find that a few port-of-entry areas attracted most initial immigrants of a given Latino group and served as 'spatial redistributors' of longer term immigrants and the native-born population over time. There is similar evidence of a dispersal of Puerto Ricans from New York to other parts of the Northeast region. Still, the migration streams away from these core areas follow fairly channelized paths (for example, between New York and Florida for Puerto Ricans and Cubans, and between Illinois and Texas for Mexicans) to and from areas with relatively large Hispanic populations. Saenz and his collaborators (Saenz, 1991; Saenz and Davila, 1992; Saenz and Cready, 1997) identify five core states that represent the homeland for Mexican Americans and show the significance of measures of social capital and especially human capital (e.g., education) toward selecting destinations out of this core area. These findings for Mexican Americans are consistent with Tienda and Wilson's (1992) finding that living in an ethnically concentrated metropolitan area significantly inhibits the out-migration of Mexican, Puerto Rican, and Cuban men after taking into account other relevant attributes.

While Blacks are not a new immigrant minority group, analogies of chain migration and the importance of same race neighbors in terms of social support and networking also apply to their historic movement out of the South during the years of the Great Migration (Tolnay, 2001; Tolnay et al., 2002), as well as the contemporary movement of Blacks between and out of metropolitan areas where they comprise large population shares (Long, 1988). McHugh's (1988) multivariate analyses of the 1965-1970 and 1975-80 inter-state migration streams show significant effects for a state's Black migration stock and Black migration composition in affecting migration streams to states (positively) and from states (negatively). This research also shows that same race attractions are diminished among more highly educated and well-off Blacks. In their study of the 1975-1980 Black out-migration from Los Angeles, Johnson and Roseman (1990) show that highly educated Blacks are more apt to relocate to thriving economic metropolitan areas elsewhere in California and across the country, whereas less well-off Black migrants relocate toward traditional Southern origin or Northern origin metropolitan areas that historically sent Black migrants to Los Angeles. Recent analyses for 1985-1090 migration by Roseman and Lee (1998) and Frey (1999) provide further evidence that highly educated Blacks select more prosperous, less traditional destinations that overlap with the destinations of Whites.

These earlier studies provide support for the argument that co-ethnics are important in 'constraining' the migration processes of minorities, but also suggest that a spatial assimilation dynamic may be at work. Spatial assimilation follows from Gordon's (1964) assimilation theory as it is applied to a spatial context (Massey, 1985). As such, spatial assimilation envisions a minority member's move to a new destination as an outcome of individual assimilation involving relocation to a higher status, or an economically more advantaged area, but also to an area that is removed from the residential concentration of his/her minority group.

In translating the concept of spatial assimilation to the process of interstate migration, we assume that assimilation will be achieved with a move out of a state that has a large same-minority concentration or into a state with a lesser minority concentration, but with better prospects for economic or quality-of-life improvement. For interstate migration, education represents a dimension of human capital. Persons with higher education, especially college graduates, are more responsive to migration 'pulls' in other states, irrespective of co-ethnic attractions. Similarly, assimilation is attributed to moves in similar directions that are associated with the native-born. In this context, movement away from a state with a large co-ethnic population again reflects less reliance on the social and economic support or the more general social capital that a large co-ethnic population provides (Pedraza and Rumbaut, 1996; Tienda and Wilson, 1992).

With these considerations, we anticipate that 'cultural constraints' in the migration process of race-ethnic minorities will be mediated by spatial assimilation considerations. Specifically, while a large same race-ethnic presence in a state will reduce the out-migration tendency, or increase the destination selection tendency of a race-ethnic group, these patterns will be weaker for more highly educated members of each group and for the native-born, as opposed to foreign-born members of each group.

Still, there are alternative reasons to suspect that dispersal should not be totally a result of race-ethnic constraints or assimilation factors as discussed. Specifically, descriptive results (Frey, 2005) suggest that less educated Hispanics, in particular, are prone to relocating into areas with relatively small numbers of co-ethnics. Many of these areas are receiving large numbers of more upscale domestic migrants who are creating jobs in service, retail, and construction industries which are attractive to low-skilled minorities. While this type of 'low-skilled' dispersion counters the expectations of the spatial assimilation theory, we will evaluate it as well by incorporating figures of service employment growth as a potential explanatory factor for evaluating this phenomenon.

"White Flight" or Multiethnic "Middle Class Flight"?

Our earlier studies highlighted the existence of a unique, largely white out-migration from highly urbanized, high immigration states that took place in the late 1980s and middle 1990s (Frey, 1993; Frey and Liaw, 1998) Of related concern, among researchers and policy-makers at the time, was the question of whether or not low-skilled immigrants displaced native-born workers and, as a consequence, provided motivation for the latter to migrate away from areas where a large number of immigrants cluster (see Borjas, Freeman, and Katz, 1996).

A sizeable body of research has looked at possible impacts that immigration imposed on domestic migration (reviewed in Wright et al., 1997; Frey and Liaw, 1998), although the evidence varies from study to study, based to some degree on methodology. Wright, Ellis and Reibel (1997) demonstrate that in studies where net domestic migration is the dependant variable, results can vary widely based on which metropolitan areas are included, and how independent and dependent variables are operationalized. They argue that apparent immigration – domestic out-migration dynamics may be restricted to a few large metropolitan areas where broad economic restructuring affects domestic migration patterns irrespective of any immigration effects.

In our previous studies (Liaw and Frey 1996: Frey and Liaw 1998), which used a multivariate nested logit model to estimate effects on resident departures, and migrant destination selections in 1985-90, we found that low-skilled immigration exerted an independent effect on domestic out-migration. This operates primarily on the departure process for persons with at most a high school education. In a simulation conducted with multi-state demographic methods, we demonstrated, for example, that for every 100 new low-skilled immigrants to California there would be a net out-migration of 51 low-skilled domestic migrants, primarily to surrounding states. More relevant to the present paper's focus on race-ethnicity, was the finding that the domestic out-migration response, in our models, was stronger for low-skilled and poverty Whites than for other race and ethnic groups. Because the skill and race-selectivity patterns of this inter-state out-migration mirrored earlier city-to-suburb "white flight" we characterized it as a new variety of white flight (Frey, 1994).

There are reasons to expect that, since the late 1980s and early 1990s, this education and race selective domestic out-migration has changed, as has the potential role of immigration in affecting this movement. Since that time, Hispanics, in particular, have comprised larger shares of the resident populations in high immigration states. At the same time, immigrant minorities

in general have moved to the suburbs in greater numbers (Frey, 2001) and have made greater inroads to the middle class (Clark, 2003; Myers, Pitkin and Park, 2004). Coincident with this has been a rise in housing costs in some immigrant gateway states (especially California) where there is competition for affordable housing, as well as for employment.

These factors are consistent with a domestic out-migration from high immigration states that reflects a more 'middle class' flight of all race-ethnic groups that are occupying the lower and middle tiers of these states' economic structures. Hence, in addition to considering low-skilled immigration as an explanatory factor of domestic out-migration, we will also include housing value as an explanatory variable, to reflect the housing competition that may promote this out-migration.

Sections that Follow

In the remaining sections of this paper we will present, first, descriptive analyses of race-ethnic migration patterns across states and examine their consistency with the expectations discussed above. We will then present a nested logit model of the migrant departure and destination selection processes associated with 1995-2000 migration, with particular attention to the roles of 'cultural constraints,' spatial assimilation, immigration, and housing value impacts on interstate migration. The final section discusses the main findings and some of their implications.

DESCRIPTIVE FINDINGS

Before examining migration patterns for the different race-ethnic groups, we first present Table 1 which shows overall foreign-born migration from abroad and net domestic migration in selected groups of states over the 1995 –2000 period. As in all other parts of this paper, we restrict our analysis to persons aged 25-59. This includes persons in the key labor force ages who, for the most part, have completed their educational attainment.

It is noteworthy that the states gaining the most immigrants from abroad (High Immigration states, listed in Table 1) are, with two exceptions, among those that are also losing the most domestic migrants. Florida and Texas are states that attract large numbers of migrants from both origins. However, they are the exceptions. Four of the top 6 large immigration magnets are losing domestic migrants. In fact, while California and New York rank first and second in attracting immigrants, they are also the top two net domestic migration losers over the 1995-2000 period. This is consistent with earlier periods, which prompted some of the inquiries about the possible impact of immigration on domestic out-migration.

Table 1: States classed by 1995-2000 immigration and Net Domestic Migration
Persons Ages 25 - 59

State	Foreign Born From Abroad	Net Domestic Migration	
HIGH IMMIGRATION STATES			
# California	640,738	***-390,312***	
# New York	347,741	***-452,982***	
** Florida	300,457	***281,254***	
** Texas	298,935	***94,330***	*
# Illinois	161,098	***-158,738***	
# New Jersey	160,795	***-44,620***	
HIGH DOMESTIC MIGRATION STATES			
* Florida	300,457	**281,254**	
Georgia	98,016	**194,176**	
Arizona	71,884	**161,982**	
North Carolina	76,213	**161,174**	
Nevada	30,555	**140,498**	
Colorado	51,701	**96,745**	
* Texas	298,935	**94,330**	
Tennessee	27,809	**71,719**	
South Carolina	20,188	**56,970**	
Oregon	31,886	**55,464**	
Washington	71,120	**52,859**	
HIGH OUT-MIGRATION STATES			
* New York	347,741	**-452,982**	
* California	640,738	**-390,312**	
* Illinois	161,098	**-158,738**	
Pennsylvania	65,256	**-82,564**	
Hawaii	18,785	**-51,581**	
Massachusetts	99,149	**-50,039**	
Ohio	47,262	**-47,185**	
Louisiana	11,226	**-47,058**	
* New Jersey	160,795	**-44,620**	

Source: Authors' analysis of 2000 US Census 5% Public Use Microsamples

* also classed as High Immigration State

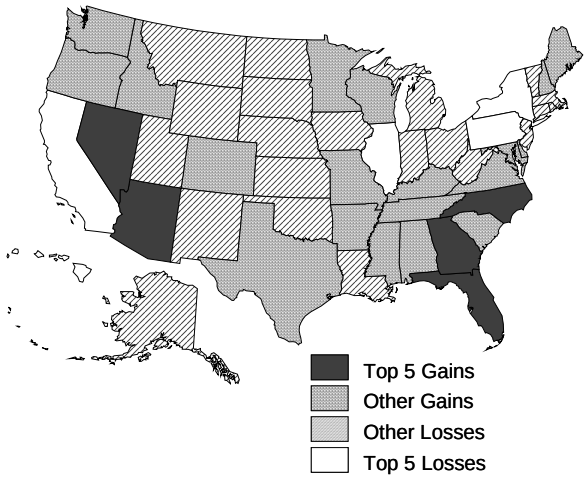
** also classed as High Domestic Migration State

also classed as High Out-Migration State

In contrast, all but 2 (Florida and Texas) of the 11 High Domestic Migration states are not among the largest gainers of immigrants, though some of these (Georgia, North Carolina and Arizona) have begun to receive substantial numbers of immigrants in the last decade. These domestic migration magnet states are in a position to receive large numbers of domestic migrants who are leaving the high immigration states, as well as those from other parts of the country. Some of the biggest gainers are in states surrounding California (see Map 1) and receive 'spillover migration' from this high housing cost state. Many are in the southeastern US, which experienced significant employment growth over the last part of the 90s.

At the other extreme are states in the Northeast, Midwest, and Great Plains that have sustained out-migration as part of the broad 'snowbelt to sunbelt' movement pattern in the US. However, several of the High Out-migration States including New York, New Jersey, and Illinois (including the greater-Chicago area), as well as California, are able to compensate for their domestic migration losses, with immigration gains.

Map I. Total Net Domestic Migration



Race-Ethnic Net Migration Patterns

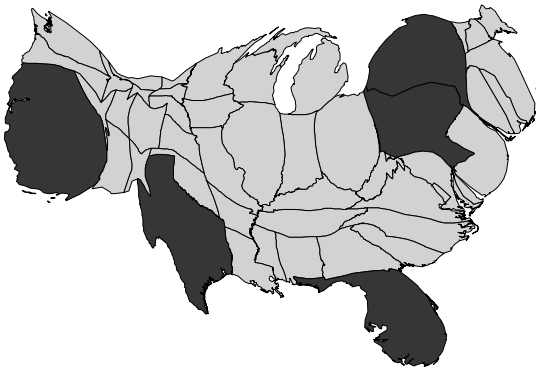
The race-ethnic groups examined in this study span the broad categories of Hispanics, non-Hispanic Whites, non-Hispanic Blacks, and non-Hispanic Asians (including Hawaiians and Pacific Islanders). For convenience, we will use the terms Whites, Blacks, and Asians, in this discussion. An additional category, 'Other', includes persons who identify themselves as non-Hispanic and a member of an 'Other' race as well as non-Hispanic responses that included two or more races.[1] The fact that these groups' populations are concentrated in sharply different ways is illustrated in Maps 2-5. These maps are cartograms wherein each state's size is proportional to the size of the total population for one of the race-ethnic groups. While

[1] We understand that using these broad race-ethnic categories camouflages important distinctions in ethnic and nationality groups within categories of 'Hispanics', 'Asians', and 'Blacks' (Lewis Mumford Center 2001a; 2001b; 2003). In later research we plan to evaluate the migration patterns for these more detailed subgroups.

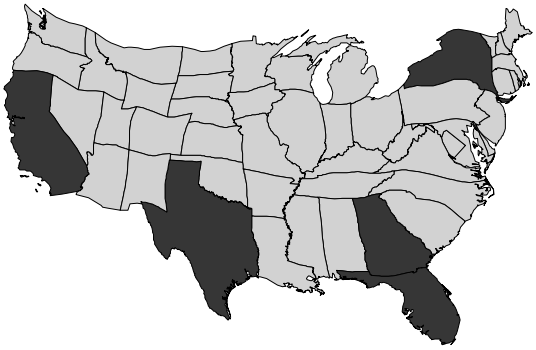
California and New York are in the top five for each group, these two states take on larger or smaller proportions depending on the race-ethnic group being examined.

Hispanics are the most concentrated among these groups, such that five states comprise 70% of the nation's Hispanic population. Among Asians, the top five states comprise 61%; whereas, for Whites and Blacks, the top five states represent around one-third of their national populations. These different distributions are important especially if minority migrant groups tend to follow chains, subject to the cultural constraints discussed earlier. It should also be noted that as with the total population, foreign immigration flows tend to focus on the 'high immigration states' (see Table 2). California is the top destination for Hispanics, Asians, and Whites. For Black foreign immigrants, however, there is a decided East Coast bias (Texas excepted) for New York, Florida, Maryland, and New Jersey.

Map 2. White Population: Five Largest States



Map 3. Black Population: Five Largest States



Map 4. Hispanic Population: Five Largest States

Map 5. Asian Population: Five Largest States

Table 2: States with Greatest 1995-2000 Immigration, Net Domestic Migration Gains and Net Domestic Losses Whites, Blacks, Hispanics and Asians, Persons Ages 25 - 59

White State Rankings

RANK	Population, Age 25-59	Size	Foreign Immigration	Size	Greatest Net Domestic Gains	Size	Greatest Net Domestic Losses	Size
1.	California	8,155,436	California	113,044	Florida	197,442	New York	-246,203
2.	New York	5,812,963	New York	93,278	Arizona	123,069	California	-160,353
3.	Texas	5,486,374	Florida	57,130	North Carolina	110,377	Illinois	-116,044
4.	Pennsylvania	4,948,668	Illinois	45,671	Georgia	87,694	Pennsylvania	-73,155
5.	Florida	4,843,520	Texas	37,056	Nevada	79,981	Ohio	-46,712
	Share of Total	30.5	Share of Total	48.8				

Black State Rankings

RANK	Population, Age 25-59	Size	Foreign Immigration	Size	Greatest Net Domestic Gains	Size	Greatest Net Domestic Losses	Size
1.	New York	1,419,582	New York	42,724	Georgia	70,323	New York	-80,912
2.	Texas	1,139,271	Florida	30,905	Texas	28,720	California	-29,881
3.	Georgia	1,122,373	Maryland	13,078	Maryland	27,926	District of Colur	-21,944
4.	California	1,083,969	Texas	12,376	Florida	26,051	Illinois	-21,186
5.	Florida	1,048,211	New Jersey	11,115	North Carolina	23,619	New Jersey	-14,113
	Share of Total	36.3	Share of Total	53.1				

Hispanic State Rankings

RANK	Population, Age 25-59	Size	Foreign Immigration	Size	Greatest Net Domestic Gains	Size	Greatest Net Domestic Losses	Size
1.	California	4,829,093	California	265,334	Florida	47,627	California	-187,798
2.	Texas	2,922,945	Texas	186,973	Nevada	34,916	New York	-82,637
3.	New York	1,376,618	Florida	181,025	Arizona	27,826	Illinois	-13,222
4.	Florida	1,313,362	New York	101,308	Georgia	27,258	Hawaii	-3,989
5.	Illinois	678,760	Illinois	62,714	Colorado	22,398	District of Colur	-3,546
	Share of Total	70.3	Share of Total	60.1				

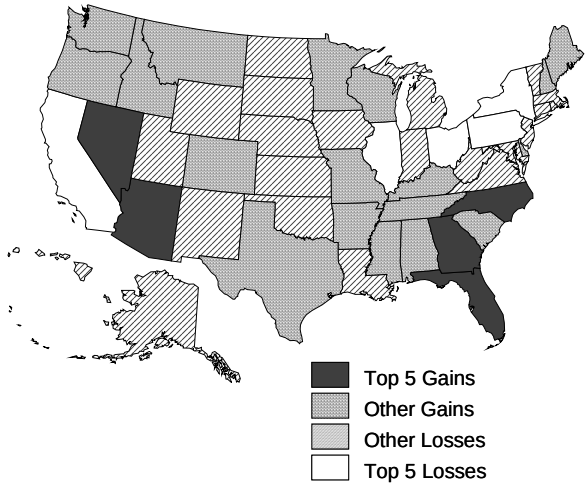
Asian State Rankings

RANK	Population, Age 25-59	Size	Foreign Immigration	Size	Greatest Net Domestic Gains	Size	Greatest Net Domestic Losses	Size
1.	California	2,015,007	California	228,733	Texas	14,012	New York	-36,720
2.	New York	587,740	New York	93,369	New Jersey	13,824	Hawaii	-11,018
3.	Texas	326,903	Texas	56,187	Nevada	12,375	California	-7,302
4.	Hawaii	303,431	New Jersey	52,360	Washington	9,531	Illinois	-5,504
5.	New Jersey	276,086	Illinois	42,047	Georgia	7,865	Pennsylvania	-4,071
	Share of Total	61.4	Share of Total	56.2				

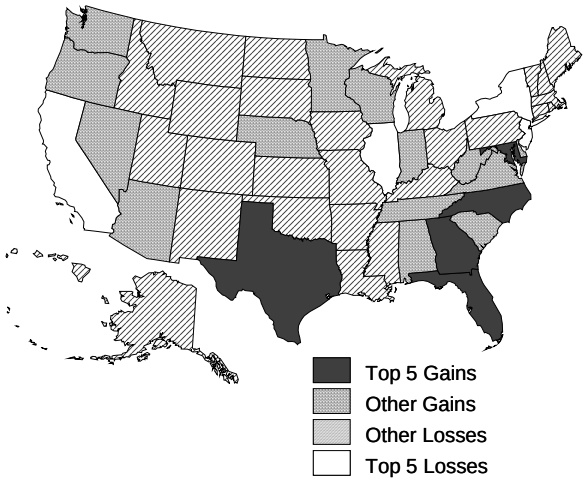
Source: Authors' analysis of 2000 US Census 5% Public Use Microsamples

The net domestic migration patterns for the four race-ethnic groups of interest show both commonalities and differences. (See Maps 6-9). On the commonality side, there is a strong tendency for fast-growing southeast states like Georgia, Florida and North Carolina to show up among the top five gaining states for most race-ethnic groups. On the other hand, there are differences that reflect the cultural and economic affinities for each group. For example, among Whites, 2 of the top 5 gaining states are in the West surrounding California; whereas for Blacks, all 5 top gainers were in the South, reflecting the Black return movement to a region with longstanding roots.

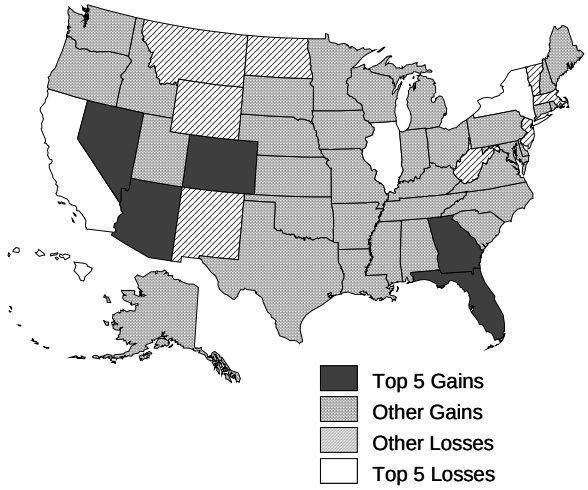
Map 6. White Net Domestic Migration



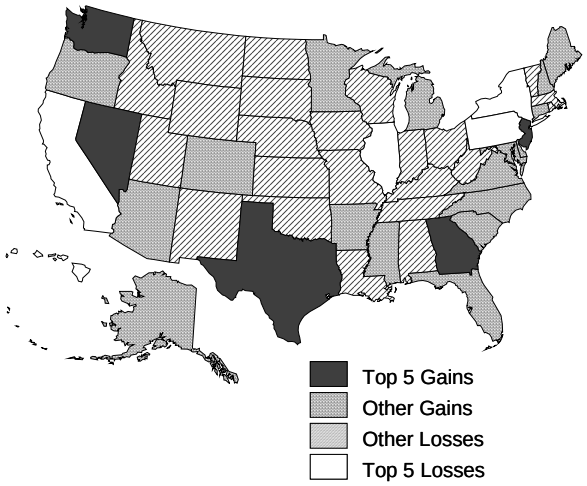
Map 7. Black Net Domestic Migration



Map 8. Hispanic Net Domestic Migration



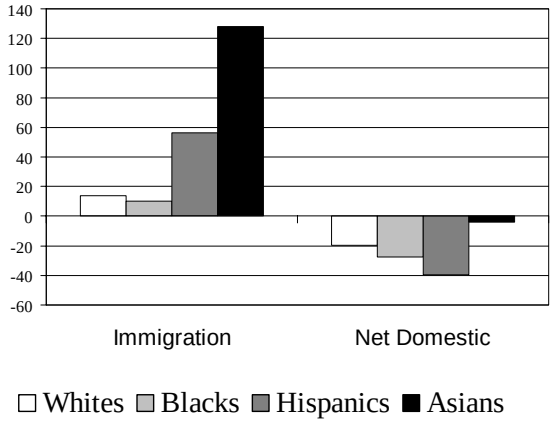
Map 9. Asian Net Domestic Migration



Hispanic net migration is distinguished from the other groups by its relative dispersion. Thirty-Eight states have seen a net domestic in-migration of Hispanics over the late 1990s, compared to less than 23 for each of the other groups. Yet, the biggest gaining Hispanic states overlap closely with Whites with only Colorado (for Hispanics) replacing North Carolina (for Whites) as one of the top five. The greatest Asian gaining states differ most from the other racial groups. Texas, New Jersey, and Washington, three states with significant Asian populations are among the top five gainers for Asians.

There seem to be more commonalities among race-ethnic groups in states showing the greatest net out-migration. New York, California, and Illinois are in the top five losers of migrants for each group. Because each of these states is a high immigration state, their net domestic losses tend to be made up by immigrants. (See Figure 1 for CA). Note that the unit of the rates in Figures 1 to 10 is "per 1000."

Figure 1. CA Migration Rates by Race



Overall, this examination of net domestic migration shows differences in the gaining patterns for each race-ethnic group. Still, there are some similarities. The fast growing state of Georgia is one of the top 5 gaining states for all groups. While this might have been expected for Whites and Blacks, in light of its prominence as a 'New South' destination for northern migrants, the attraction for Hispanics and Asians is not consistent with the 'cultural constraints' hypothesis above. Neither of these immigrant minority groups has shown large historic concentrations there. Another commonality is the substantial out-migration of all groups from three high immigration states. This brings some credence the view that there is a broader multi-ethnic movement away from these states. This will be explored in the later migration model analysis.

Migration Flows for Race-Ethnic Groups

We now turn from the discussion of net migration, to the migration flow process itself. One of the tenets of the 'cultural constraints' assumption is that states with large shares of a given race-ethnic group, will exhibit lower out-migration rates for that group. While we will explore this more rigorously in the model that follows later, this outcome is suggested in Map 10 that shows which race-ethnic group displays the lowest rate of out-migration for each state. The map shows that low incidences of Black out-migration tend to be concentrated in the South and in industrial Midwest states, which house large Black populations. States where Hispanic out-migration rates are lowest tend to be located in the west, southwest and the greater New York metropolitan region (extending into New Jersey and Connecticut). A broad swath of mostly

white states in the upper Midwest, in New England, Alaska[2], and a few Appalachian states show low White out-migration. Finally Hawaii, with its large Asian, Hawaiian population is the only state where Asian out-migration is lowest.

Map 10. Race with Lowest Out-Migration Rate

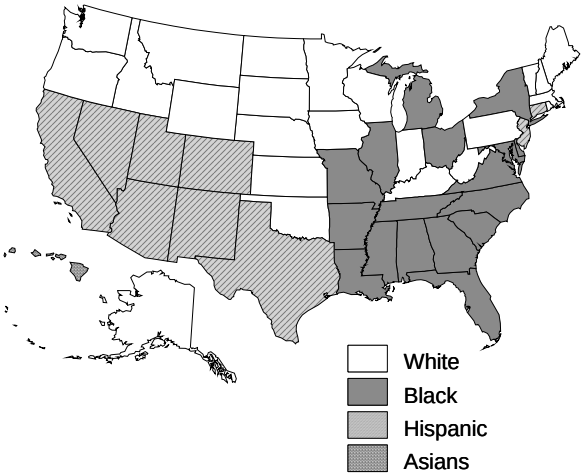
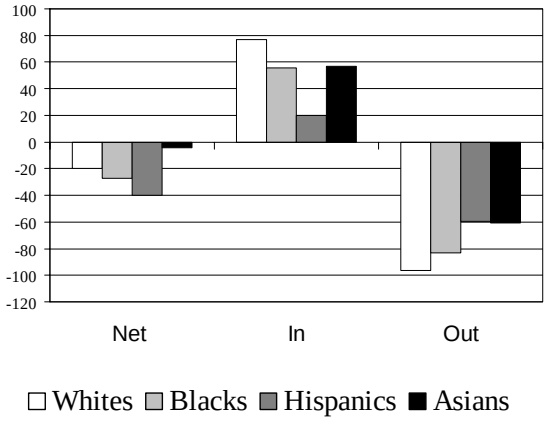


Figure 2. CA Domestic Migration Rates



This phenomenon is also reflected in Figure 2, which shows, respectively, the in-, out-, and net migration rates, by race-ethnicity, for California.[3] It is clear here that both Asian and Hispanic out-migration rates are lower than those for Blacks or Whites. This does not appear in the net domestic migration pattern, which is the sum of in- and out-flows. From a migration modeling perspective, therefore, this shows why specific attention needs to be paid to out-migration rates of residents, as distinct from the destination selections of migrants.

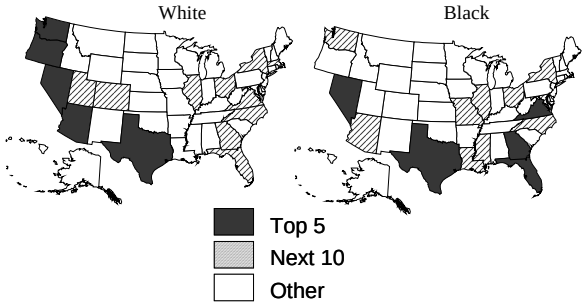
Nonetheless, the 'cultural constraints' argument does indicate that the destinations of migrants leaving a given origin state should be states with high same-race concentrations. This is given some support among California's out-migrants. Maps 11 and 12 and Table 3 show the greatest destination states for Whites, Blacks, Hispanics, and Asians leaving California. For both Whites and Hispanics, the top 5 destinations are located in the West plus Texas. Yet, for Hispanics, unlike Whites, the most popular destination is Texas, a state with a large Hispanic concentration. For Blacks, the greatest destinations, with the exception of Nevada, are all in the

[2] In Alaska, Oklahoma, and North Dakota where the "Other" race-ethnic group is a significant minority and contains mostly Eskimos and American Indians, our more detailed tabulation shows that the "Other" group has the lowest out migration rate. In Alaska, the out-migration rate is 7.5% for this group versus 23.0% for Whites. In Oklahoma, it is 7.3% for this group versus 10.8% for Whites. In North Dakota, it is 12.5% for this group versus 15.2% for Whites. This more detailed finding further demonstrates the effect of "cultural restraint" on out-migration.

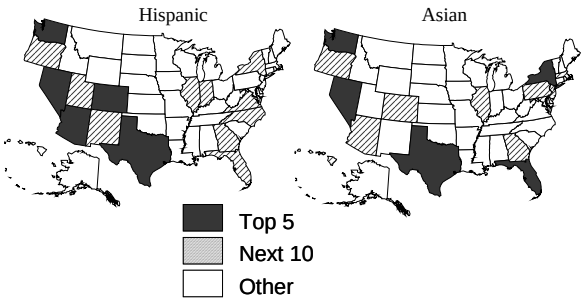
[3] Strictly speaking, the in-migration rate should be called in-migration *ratio*, because we let the denominator be the 1995 population size of the destination.

South, led by Texas and Georgia. Asians, as well, differ sharply from Whites, showing New York as one of their five greatest destinations.

Map I1. California Migrant Destinations: White and Black



Map I2. California Migrant Destinations: Hispanic and Asian



In addition to displaying the destinations of California out-migrants, Table 3 shows the greatest destinations for out-migrants from Illinois. Here, differences are apparent for Whites and Blacks: Georgia leads the list of the latter, whereas Florida leads the list of the former, although nearby states, Indiana and Wisconsin appear on both lists. For Hispanics leaving Illinois, the large Hispanic resident states of Texas, Florida, and California are the top three destinations. For Asian out-migrants, the large Asian resident states, California, Texas, New York, and New Jersey are top destinations. Hence, to a large degree, the race-ethnic patterns of destination selections from both of these states are consistent with the "cultural constraints" expectations discussed above.

Table 3: Greatest Destination States for Whites, Blacks, Hispanics, Asians, 1995-2000
California and Illinois Domestic Out-Migrants, Persons Ages 25 - 59

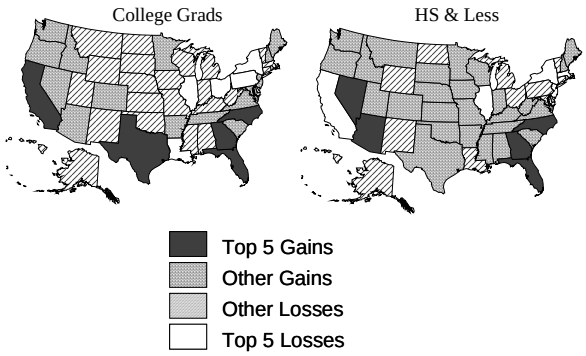
RANK	California Out-migrant Destinations							
	Whites	Share of Total	Blacks	Share of Total	Hispanics	Share of Total	Asians	Share of Total
1.	Washington	8.0	Texas	11.4	Texas	11.9	Texas	9.9
2.	Nevada	7.7	Georgia	9.4	Nevada	11.5	Washington	7.9
3.	Arizona	7.6	Nevada	8.0	Arizona	10.8	Nevada	7.4
4.	Oregon	7.1	Florida	5.4	Colorado	5.9	New York	7.3
5.	Texas	6.7	Virginia	5.1	Washington	5.0	Florida	4.8
	Top 5	37.0	Top 5	39.2	Top 5	45.1	Top 5	37.3
RANK	Illinois Out-migrant Destinations							
	Whites	Share of Total	Blacks	Share of Total	Hispanics	Share of Total	Asians	Share of Total
1.	Florida	8.1	Georgia	9.4	Texas	16.9	California	21.8
2.	Wisconsin	8.0	Indiana	8.8	Florida	13.3	Texas	9.1
3.	California	7.9	Wisconsin	7.9	California	11.2	New York	5.9
4.	Indiana	7.5	Texas	6.7	Indiana	6.2	New Jersey	5.6
5.	Missouri	6.4	Mississippi	5.8	Wisconsin	5.9	Florida	5.2
	Top 5	37.9	Top 5	38.6	Top 5	53.4	Top 5	47.6

Source: Authors' analysis of 2000 US Census 5% Public Use Microsamples

Education Selective Migration for Race-Ethnic Groups

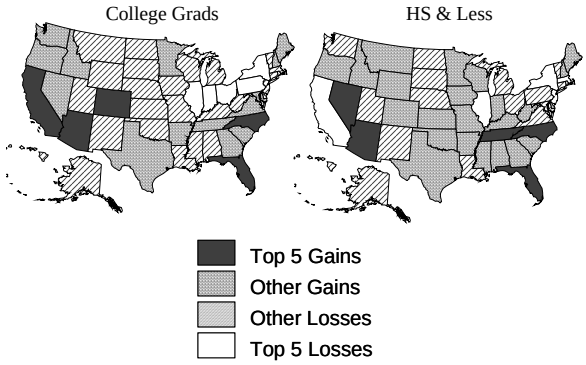
While it is well-known that college graduates show a higher rate of migration than those with lesser educations (Long, 1988), it is also the case that the most educated movers tend to be more focused toward a select set of destinations. This is demonstrated in Map 13, which shows the net domestic migration patterns for college graduates compared with those of high school or less education. Twenty states gained college graduates over the 1995-2000 period, compared with 33 that gained persons with high school or less education. Also, the top gainers do not overlap completely. While Florida, Georgia, and North Carolina are represented in the top five gainers for each group, there is an important difference: California is one of the top gainers of college graduates, while two surrounding states, Nevada and Arizona, are the top gainers of persons with high school or less education. This suggests that the high housing cost of California may be propelling these movers to the surrounding states. California has the greatest net out-migration among those with lesser educations.

Map 13. Total Net Migration by Education

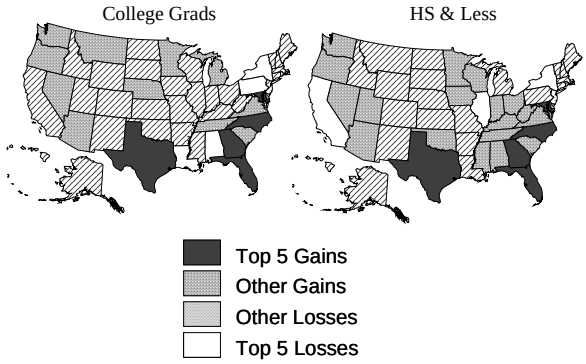


We now turn to education selective net migration by race-ethnic group. Net domestic migration, by education, for each group is displayed in Maps 14-17 and in Table 4. In reference to the earlier discussion of spatial assimilation, we are interested in whether or not the college graduate migration patterns of each race-ethnic group are more consistent with one another than with the more culturally constrained patterns that might be best reflected for less educated members of those groups.

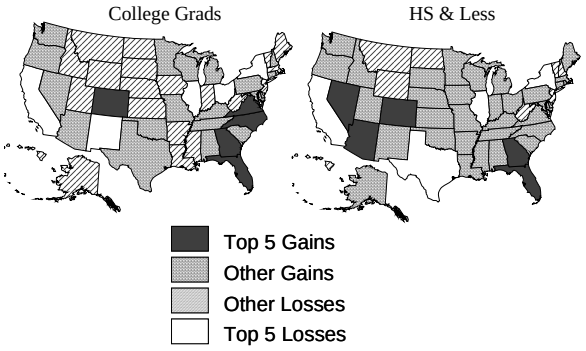
Map 14. White Net Migration by Education



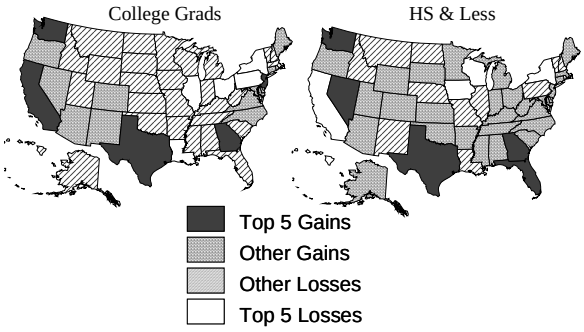
Map 15. Black Net Migration by Education



Map 16. Hispanic Net Migration by Education



Map 17. Asian Net Migration by Education



The descriptive patterns show mixed results in this regard. One consistency among all four racial groups is the more focused destinations for college graduates and a more diffuse redistribution of those with lesser educations. This is especially noteworthy among Hispanics where college graduates show net migration gains in 24 states but lesser educated Hispanics show gains in 38 states. This dispersion of the latter group runs somewhat counter the 'cultural constraints' argument. Nonetheless, there are some differences between the large gaining states of college graduate Hispanics and those attracting the less educated. The latter includes the California 'spillover' states of Nevada and Arizona, which are also attracting less educated Whites as well as some Blacks and Asians. College graduate Hispanics, however, show higher migration gains in Virginia (including suburban Washington, DC) and North Carolina.

Table 4: States with Greatest 1995-2000 Net Domestic Migration Gains for Race-Ethnic Groups College Graduates and Persons with High School or Less Educations, Ages 25 - 59

College Graduates - State Rankings of Greatest Net Domestic Migration Gains

RANK	Whites	Size	Blacks	Size	Hispanics	Size	Asians	Size
1.	Florida	71,365	Georgia	19,091	Florida	6,045	California	19,606
2.	Colorado	50,183	Texas	11,520	Georgia	3,969	New Jersey	10,266
3.	North Carolina	48,757	Maryland	11,226	Virginia	2,806	Texas	8,022
4.	Arizona	48,250	Florida	4,223	North Carolina	2,332	Washington	4,583
5.	California	44,069	North Carolina	3,602	Colorado	2,148	Georgia	3,972

High School or Less Education - State Rankings of Greatest Net Domestic Migration Gains

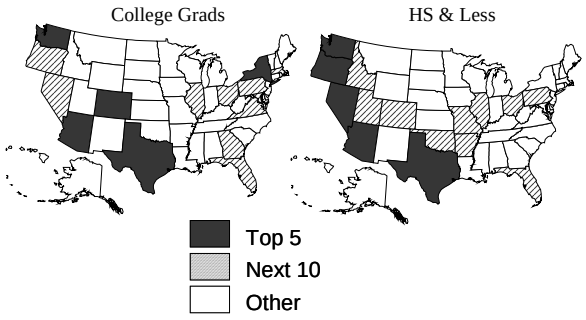
RANK	Whites	Size	Blacks	Size	Hispanics	Size	Asians	Size
1.	Florida	58,272	Georgia	22,218	Nevada	27,590	Nevada	4,889
2.	Arizona	29,382	Florida	10,353	Florida	25,231	Florida	4,153
3.	North Carolina	28,098	North Carolina	10,338	Georgia	19,744	Texas	3,313
4.	Nevada	25,429	Texas	8,117	Arizona	19,104	Georgia	2,555
5.	Tennessee	24,953	Maryland	7,913	Colorado	16,411	Washington	2,384

Source: Authors' analysis of 2000 US Census 5% Public Use Microsamples

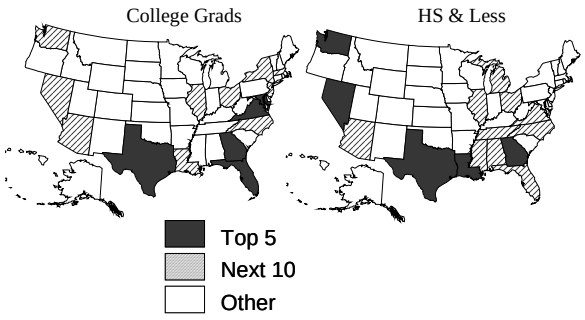
In fact, all four race-ethnic groups show the California-surrounding state dynamic wherein college graduates do better in showing gains, or reduced losses for California, while persons with high school or less educations exhibit greater gains in surrounding states like Nevada and Arizona.

This "spillover" pattern is demonstrated more explicitly in Maps 18-21, and in Table 5. These show for California out-migrants of each race-ethnic group, the greatest destination states for college graduates and for those with high school or less education. They make plain that prominent destinations for lesser educated members of each race-ethnic group are states surrounding California. In contrast, their college graduate counterparts tend to select a few more distant destinations. Still, distinct race-ethnic destination patterns are evident for both college graduates and lesser educated members of each group, reflecting their race-ethnic networks (e.g. the tendency for Southern destinations among Blacks, for Texas and Colorado among Hispanics, for Washington and New York among Asians)

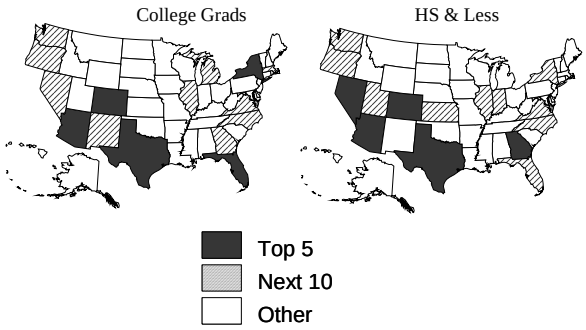
Map 18. White CA Migrant Destinations by Education



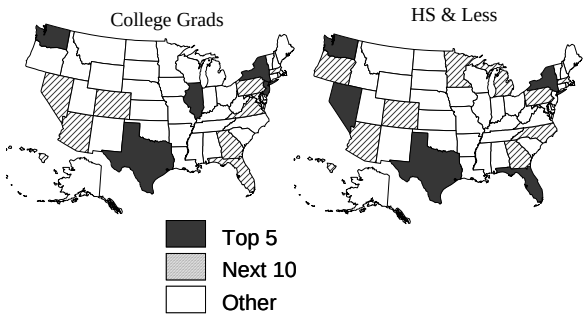
Map 19. Black CA Migrant Destinations by Education



Map 20. Hispanic CA Migrant Destinations by Education



Map 21. Asian CA Migrant Destinations by Education



In sum, the net migration and flow data reviewed suggest: (1) that college graduate migrants for each race-ethnic group tend to be more focused in their destinations, though these destinations differ somewhat for each group; (2) that less educated members of each group are far more dispersed across different states than their college graduate counterparts, including many destinations where there are not large co-ethnic communities; and (3) there is a general tendency among both well educated and less educated migrants to select Southeastern destinations such as Georgia, Florida, and North Carolina.

Table 5: California Out-Migrants' Greatest Destination States by Race-Ethnicity 1995-2000 College Graduates and Persons with High School or Less Educations, Ages 25-59

RANK	Destinations of College Graduates							
	Whites	Share of Total	Blacks	Share of Total	Hispanics	Share of Total	Asians	Share of Total
1.	Washington	8.3	Georgia	10.9	Texas	12.0	New York	10.5
2.	Texas	7.0	Texas	10.7	New York	8.2	Texas	10.1
3.	New York	6.4	Florida	7.1	Arizona	7.9	Washington	8.2
4.	Colorado	6.1	Virginia	6.7	Florida	7.9	Illinois	5.0
5.	Arizona	6.1	Maryland	6.3	Colorado	6.2	New Jersey	4.7
	Top 5	33.9	Top 5	41.7	Top 5	42.2	Top 5	38.5

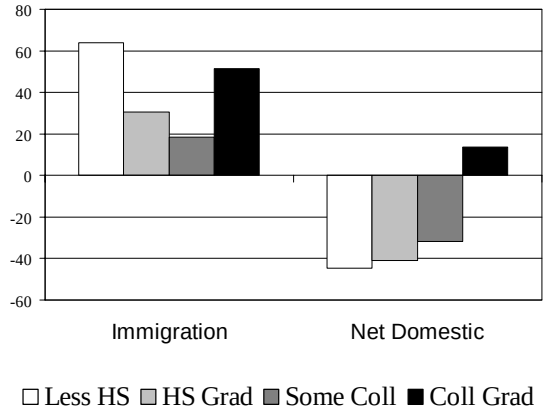
RANK	Destinations of Persons with High School or Less Educations							
	Whites	Share of Total	Blacks	Share of Total	Hispanics	Share of Total	Asians	Share of Total
1.	Nevada	10.9	Texas	12.2	Nevada	12.9	Texas	9.9
2.	Oregon	8.6	Nevada	10.8	Texas	11.5	Nevada	9.1
3.	Arizona	8.4	Georgia	6.6	Arizona	10.9	Washington	7.3
4.	Washington	7.0	Louisiana	6.1	Colorado	6.1	Florida	5.8
5.	Texas	5.7	Washington	4.8	Georgia	5.2	New York	4.7
	Top 5	40.7	Top 5	40.6	Top 5	46.6	Top 5	36.8

Source: Authors' analysis of 2000 US Census 5% Public Use Microsamples

Comparisons: California, Georgia and Ohio

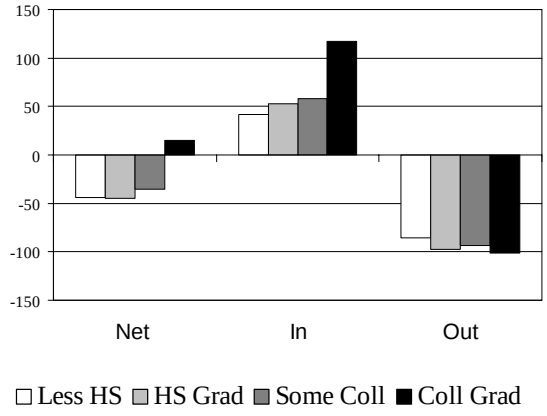
In order to amplify the distinct migration patterns of California, we focus on the contributions of in-migration and out-migration flows to its net migration, and make comparisons with two other states. Overall, of course, California's population gains from net immigration and loses from domestic out-migration. As Figure 3 shows, California's immigration rates are highest for those with less than high school educations and college graduates. Its domestic out-migration rates are most pronounced in the three non-college graduate categories. Such dynamics prompted earlier research that suggested an 'immigration push' on domestic migrants at the lower end of the education spectrum due to labor substitution effects (Frey and Liaw, 1998). This 'push' was not exerted on college graduates, however, for whom ample employment was available.

Figure 3. CA Migration Rates by Education



While the latter interpretation is subject to debate (Wright et. al., 1997), what is unique about California's migration patterns is the 'downwardly selective' domestic out-movement. This flies in the face of the typical 'circulation of elites' view of migration (Frey, 1979) which indicates that both in-migration and out-migration to an area is selective on the most educated part of the population. Thus, places that are receiving the most net in-migration should be disproportionately receiving college graduates, and conversely, places that are sustaining large net out-migration should be disproportionately losing college graduates. This view of migration is predicated on the assumption that it is the most educated members of the labor force who are in a nation-wide job market, have information about employment elsewhere, and respond most directly to changes in opportunities.

Figure 4. CA Domestic Migration Rates: Whites

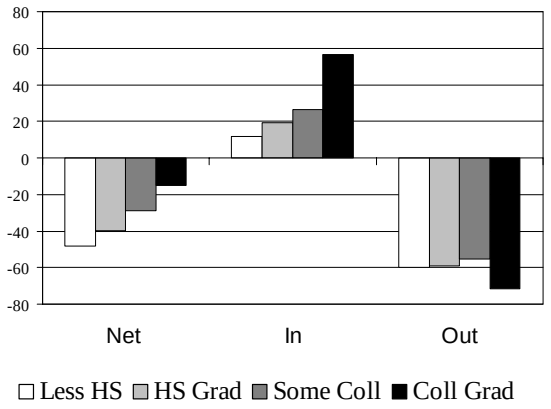


The fact that net domestic out-migration from California shows a different pattern suggests extraordinary 'push' forces operating among lower skilled and lower income members of the population. A better view of what is happening can be seen by decomposing white net domestic migration into its component in-migration and out-migration rates. (See Figure 4) Here it is clear that it is the out-migration from California which does not conform to the 'circulation of elites' model such that out-migration rates at different education levels are relatively similar. Even though in-migration to California follows the 'circulation of elites' model, the net result is for California to show a net out-migration of persons with less than college educations.

Figure 5 indicates that Hispanics, as well as Whites, show this unique domestic out-migration pattern in California. Thus, to the extent the lesser educated residents of California's population are responding to factors such as the labor substitution effects of immigrants, or high housing values, Hispanics are behaving similarly to Whites. In fact, the net out-migration for Blacks and Asians (not shown) displays a similar pattern.

Further insight into the destinations of California's Hispanic out-migrants can be observed by looking at similar migration information for Georgia. In contrast to California, Georgia receives greater net domestic in-migration than immigration (Figure 6), and its domestic in-

Figure 5. CA Domestic Migration Rates: Hispanics



migration conforms somewhat, but not entirely, to the 'circulation of elites' model. College graduates exhibit the highest net in-migration rates to Georgia, however, high school dropouts do not display the lowest. The reason for this somewhat 'U-shaped' pattern of net domestic in-migration can be accounted for, to a large degree, by Hispanic migration into the state. Figure 7 shows the in-migration and out-migration components for Whites to Georgia which very much conforms to this 'circulation of elites' model. Both in- and out-migration rates of Whites are most pronounced for college graduates, contributing to an accentuated net gain of White college graduates for the state.

Figure 6. GA Domestic Migration Rates by Education

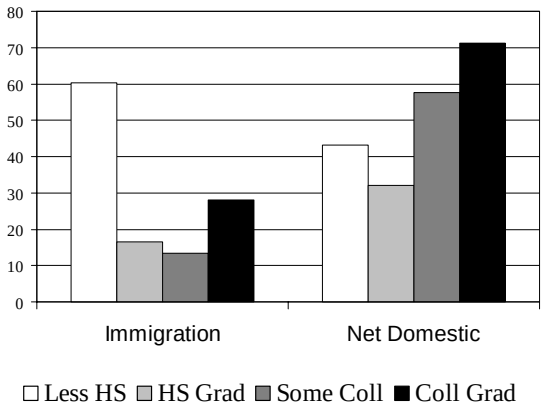
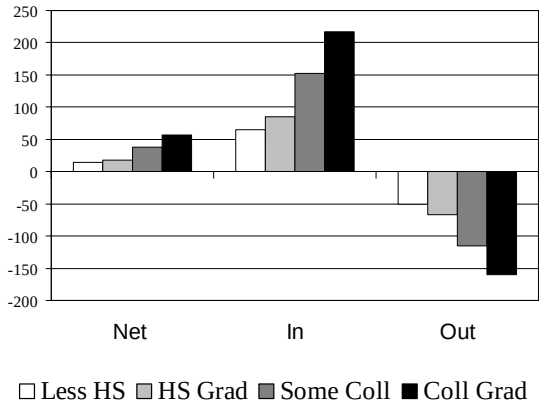


Figure 7. GA Domestic Migration Rates: Whites



In contrast, the Hispanic in-migration rates (Figure 8) reflect a 'mirror image' of the Hispanic out-migration rates in California. That is, both low-skilled and high-skilled Hispanics are similarly prone to moving into Georgia. The former are arriving, probably, to take lower skilled service jobs in construction, retail, and like industries that are being created by the more upscale in-migrants who are arriving in the state. It is also noteworthy that the out-migration of Hispanics from Georgia does, pretty much, follow the 'circulation of elites' model; so that while Georgia is gaining both low and high skilled Hispanics, it is experiencing a 'brain drain' among its existing Hispanic residents. The Georgia pattern of 'negatively selective' Hispanic net migration is similar to those observed in North Carolina and other fast growing southeastern states. This suggests that lower skilled and middle class Hispanic out-migrants from states like California are moving to places where employment is more available, irrespective of any history of Hispanic settlement.

As an alternative to California and Georgia, we also present migration components by education for Ohio -- a state that is losing population through migration and suffering a 'brain drain.' Ohio is a classic example of where the 'circulation of elites' model leads to an accentuated net domestic out-migration of college graduates (Figure 9). The components shown for Whites (Figure 10) indicates that although White in-migration to Ohio selects on college graduates, the out-migration selects on them even more strongly. This is the case for Blacks, as well, since Ohio is one of the Northern states contributing to the increased Black migration to the South.

Figure 8. GA Domestic Migration Rates: Hispanics

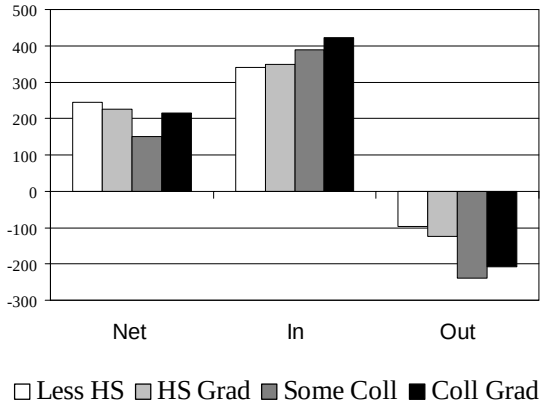


Figure 9. Ohio Migration Rates by Education

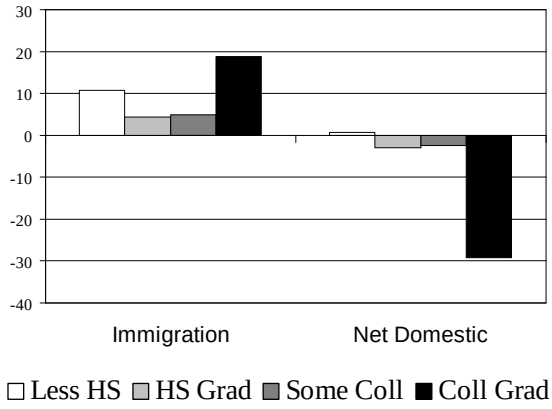


Figure 10. Ohio Domestic Migration Rates: Whites

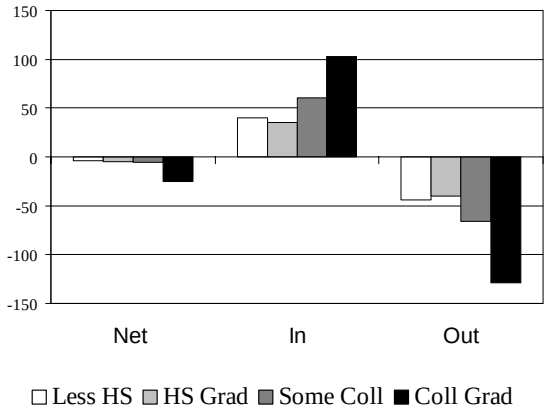
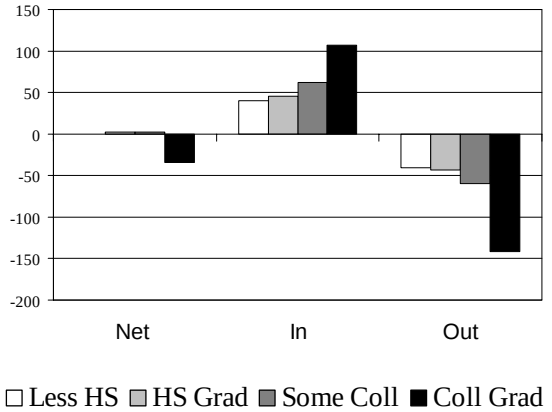


Figure 11. Ohio Domestic Migration Rates: Blacks



Overall, this analysis of education selective movement for each race-ethnic group provides some support for each of our perspectives. 'Cultural constraints' clearly are responsible for the somewhat distinct redistribution patterns of both high- and low-skilled Blacks, Hispanics, and Asians. The spatial assimilation model is given some support by the fact that states with higher costs of living, like California, are more attractive to college graduates than those with less education. Yet, there is also support for the theory of 'middle class flight', since the least and

modestly educated Whites, Hispanics, Blacks, and Asians are highly prone to leaving states with high housing costs and high low-skilled immigration. Moreover, many of the low-skilled out-migrants from these states are relocating to places where more well-off domestic migrants are creating more low-skilled jobs.

MODELING INTERSTATE MIGRATION

In this section we will evaluate the role of race-ethnicity in the interstate migration process by fitting a two-level nested logit model to a highly disaggregated table that was generated from the 5% PUMS of the 2000 Census. The two-level model allows us to test, separately, how origin area and personal characteristics affect out-migration (departure) propensities and how destination area and personal characteristics interact to affect movers' destination selection propensities in a multivariate context. An important advantage of the nested logit model is that by using properly defined propensity measures as dependent variables, its estimated results can be interpreted at both macro and micro levels. The highly disaggregated migration data help to reduce the risk of committing an ecological fallacy.

Our objectives in conducting this analysis will be to specify the role of race-ethnicity by considering significant interactions (or lack thereof) between race-ethnic categories and various area attributes as predictors of out-migration rates and destination selection proportions. We pay particular attention to area attributes associated with our expectations regarding cultural constraints on the migration process, their interactions with variables which relate to spatial assimilation (e.g. education and nativity) and those area attributes which we have associated with 'middle class flight' (low-skilled immigration rate, housing value).

Area Attributes

The area attributes to be included in our model are defined as follows.

1. Low-skilled Immigration
Low-skilled Foreign-born Immigration Rate: For each state, this is the immigration rate of those with less than some college education (in % per 5 years). The numerator is the number of foreign-born immigrants with less than some college education who entered into the US in 1995-2000 and resided in the state in question in 2000. The denominator is the number of 1995 population size of the state in question. Both numerator and denominator are restricted to the 25-59 age interval. The data source is the PUMS of the 2000 census.

2. Labor Market Factors
Total Employment Growth Rate: For each state, this variable is the state-specific 1995-2000 growth of total employment divided by the 1995 total employment of the state in question (in % per 5 years). It is computed from the observed sizes of total employment in 1995 and 2000. The data source is the web-site of the Bureau of Economic Analysis: www.bea.doc.gov/bea/regional/data.htm.

Service Employment Growth Rate: For each state, this variable is the state-specific 1995-2000 growth of service employment divided by the 1995 service employment of the state in question (in % per 5 years). It is computed from the observed sizes of service employment in 1995 and 2000. The data source is the web-site of the Bureau of Economic Analysis: www.bea.doc.gov/bea/regional/data.htm.

Unemployment Rate: For each state, this is the average of the actual (not preliminary) unemployment rate in the month of April in 1995, 1996, 1997, 1998, and 1999 (in %). The data source is the Bureau of Labor Statistics (www.bls.gov/sae).

Income: For each state, this is the 1995 income per capita of a state (in $10,000). It is computed by linear interpolation of the 1990 and 2000 observed data. The data sources are US Census of Population and Housing Summary Files, 1990 and 2000. With respect to the concern about the potential bias resulting from our use of the data observed in 2000, it is reassuring that our interpolated per capita income for 1995 turns out to have an extremely high correlation coefficient (0.98) with the 1995 per capita personal income data we later obtained from REIS (Regional Economic Information System 1969-2000, U.S. Department of Commerce) after we had completed our logit analysis.

3. Racial Attraction

Racial Similarity: For the migrants of a specific race in the destination choice sub-model, this is the logit of the specific race's proportional share of the potential destination's population in 1995, computed indirectly from the data of the 2000 census. For the potential migrants of a specific race in the departure sub-model, this is the logit of the specific race's proportional share of the origin's population in 1995, computed indirectly from the data of the 2000 census. The data for computing this variable are restricted to the 25-59 age interval. The data source is the PUMS of the 2000 census.

4. Housing Value

Median Housing Value: For each state, this is the 1995 median housing value (in $100,000). It is obtained by linear interpolation of the observed values of 1990 and 2000. The data sources are US Census of Population and Housing Summary Files, 1990 and 2000. Note that we learned from several housing specialists that the 1995 observed data for this variable do not exist. Fortunately, the interstate variation of median housing value changes rather slowly over time so that the interpolated values for 1995 are likely to be very close the true values. The correlation coefficient between the 1990 and 2000 observed values turns out to be as high as 0.90.

5. Relative Location

Ln(Distance): This variable is the natural log of the distance between the population gravity centers of origin and destination states (in 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. Climatic Factor
Coldness: 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 (in 1000 degree(F)-days). Data source: US National Oceanic and Atmospheric Administration.

7. Size of Ecumene
Ln(Population Size): This the natural log of a state's population size in 1995, computed indirectly from the data of the 2000 census (in ln(1,000,000 persons)). The data source is the PUMS of the 2000 census.

The expected directions of these variables in explaining out-migration departures and destination selections are consistent with much of the previous literature. The total employment growth rate, service employment growth rate, and state per-capita income should be negatively related to the out-migration rate, and positively related to the destination selection proportion. The unemployment rate is expected to operate in the reverse direction. The coldness variable reflects an element of the 'snowbelt to sunbelt' movement and is expected to be positively related to out-migration and negatively related to destination selection.

Key variables that are associated with our expectations, discussed earlier, include the racial similarity variable which is expected to be negatively related to out-migration and positively related to destination selection for each race-ethnic group, though we anticipate interactions with education and nativity to the extent that more highly educated members of each group and the native born are less likely to respond to this variable. The low- skilled foreign-born immigration rate is expected to relate positively to the out-migration of high school dropouts among all race-ethnic groups, and negatively to their destination selections. The median housing value is expected to relate positively to the out-migration in lower educated members of the population and negatively to their destination selections.

Finally, we include several geographic structural variables: distance, contiguity to the next state, and size of the origin and destination populations. They draw from the ideas of the 'gravity' model that moves are less likely across long distances and non-contiguous states, and that origin and destination population sizes have retaining and attracting effects on the departure and destination selection propensities, respectively. Maps 22-25 display state variations in the values of selected area attributes.

Personal Characteristics

Our multi-dimensional migration table for the 25-59 age group includes the following dimensions: (1) age (25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59); (2) sex (male, female): (3) race (Hispanic, non-Hispanic White, non-Hispanic Black, non-Hispanic Asian, non-Hispanic Other); (4) education (less than high school, high school, some college, and college); (5) poverty status (poor, non-poor, undetermined); (6) place of birth (same state, different state, foreign born); (7) state of residence in 1995; (8) state of residence in 2000. For explaining migration behavior, the census data have well known shortcomings. First, the level of migration is understated because no more than one migration in the five-year period for each person can be revealed. Second, since the values of all personal attributes are measured at or

near the end of the five-year interval, it is difficult to figure out the values of attributes like poverty status as of the beginning of the migration interval period. For such attributes, causal inference depends on the plausibility of the assumption that the 1995 values remained largely similar to the 2000 values.

The census data, however, also have important advantages. First, their very large sample size permits highly reliable statistical inference in a multivariate context. Second, it permits the incorporation of a variety of interactions with demographic sub-groups (e.g. race-ethnicity, education, poverty status, and nativity). Third, their national scope yields a comprehensive picture of interstate migration.

Model Specification

Our multivariate statistical model is a two-level nested logit model formulated in the following way. For a potential migrant with personal attributes s and residing in state i, we specify that the migration behaviour depends on (1) a departure probability $P(s, i)$ at the upper level, and (2) a set of destination choice probabilities, $P(j/s, i)$ for all j not equal to i, at the lower level. Based on a set of reasonable assumptions, these probabilities then become functions of observable explanatory variables in the following two sub-models (Kanaroglou et al., 1986).

Destination Choice Sub-model:

$$P(j|i,s)=\frac{\exp(b' x[j,i,s])}{\sum_{k\neq i}\exp(b' x[k,i,s])} \qquad j\neq i \tag{1}$$

where $x[j, i, s]$ is a column-vector of observable explanatory variables; b' is a row-vector of unknown coefficients.

Departure Sub-model:

$$P(i,s)=\frac{\exp(d+c' y[i,s]+u*I[i,s])}{1+\exp(d+c' y[i,s]+u*I[i,s])} \tag{2}$$

where $y[i, s]$ is another column-vector of observable explanatory variables; d, c' and u are unknown coefficients, with u being bounded between 0 and 1; and $I[i, s]$ is the so-called inclusive variable defined as:

$$I[i,s]=Ln\left(\sum_{k\neq i}\exp(b' x[k,i,s])\right) \tag{3}$$

Assuming that the migration behaviours of all persons in the same cell of the multidimensional migration table depend on the same set of $P(i, s)$ and $P(j/i, s)$, we estimate the unknown coefficients in equations (1) and (2) sequentially by the maximum quasi-likelihood method (McCullagh 1983; Liaw and Ledent 1987).

In constructing a relatively concise specification of each sub-model (to be called the best specification for simplicity) for each age interval, we only include the explanatory variables that are statistically significant (i.e. those whose t-ratios have a magnitude of at least 2.0) and substantively sensible.

The goodness of fit of a given specification of a sub-model is to be measured by

$$Rho\text{-}square = 1 - L_g / L_o, \quad (4)$$

where L_g is the maximum quasi-log-likelihood of the given specification and L_o is the maximum quasi-log-likelihood of the corresponding null sub-model (i.e. the destination choice sub-model with $b' = 0$ or the departure sub-model with $c' = 0$). Note that the ceiling of Rho-square is much less than 1.0 so that a value of 0.2 may indicate a very good fit (McFadden, 1974).

To help evaluate the relative importance of one subset of explanatory variables (say conventional labor market variables) against another subset (say variables representing the effects of foreign immigration), we will delete the two subsets of variables in turn from the best specification and then compare the resulting decreases in Rho-square: the greater the decrease, the more important the deleted subset of variables. The decrease in Rho-square resulting from the deletion of a subset of explanatory variables is called *marginal contribution in Rho-square*.

Findings: Out-Migration

Findings of the best specification of the departure sub-model are presented in Table 6 (background information used to compute the marginal contributions can be found at www.frey-demographer.org/reports/AppendixTables.xls). This specification is a result of extensive preliminary analyses that considered all likely interactions with race-ethnicity and other relevant variables.

The findings for variables of greatest interest are as follows. First, the impact of racial similarity on the departure of migrants is present for each race-ethnic group, but it is not affected by education or nativity. This means that while 'cultural constraints' reduce out-migration from areas with large co-ethnic concentrations, these constraints do not play a stronger role for less educated than for more educated members of these groups. Thus, at least the departure part of the migration process does not conform to our expectations for the spatial assimilation model, although members of any minority group can become more migratory be achieving a higher level of education. Second, we do find evidence supporting our expectations with respect to two variables we felt might be promoting 'middle class flight'. Both the positive impacts on migrant departure of a state's low-skilled immigration rate and of its median housing value are mediated by education, but not by race-ethnicity. While low-skilled immigration rates promote some increase in departure for all race-ethnic groups, this effect is substantially muted for college graduates. Similarly, the push effect that median housing value exerts on out-migration is limited to residents who have less than some college education.

Table 6. Estimation Result of the Departure Model of the 1995-2000 Interstate Migration of Those Aged 25-59

Explanatory Variable	Best Specification		Marginal Contribution in Rho-square
	Coefficient	t-ratio	
Constant	-1.304	-1.8	
1. Personal Atributes			**0.0087**
Male	0.096	4.5	
Aged 30-34	-0.368	-11.3	
Aged 35-39	-0.708	-21.1	
Aged 40-44	-1.006	-27.5	
Aged 45-49	-1.274	-31.8	
Aged 50-54	-1.348	-27.6	
Aged 55-59	-1.362	-25.7	
High School Graduate	0.090	2.1	
Some College	0.684	9.8	
College Graduate	1.040	7.2	
Born in Different State	1.395	56.6	
Foreign-born * White	0.828	13.7	
Foreign-born * Black	0.711	6.0	
Foreign-born * Asian	0.712	4.8	
Foreign-born * Hispanic	0.596	7.3	
Foreign-born * Other Race	0.599	4.0	
Poor	0.232	6.0	
Unknown Poverty Status	0.517	6.4	
2. Effects of Low-skilled Foreign-born Immigration			**0.0011**
Low-skilled Immigration Rate	0.126	7.7	
Low-skilled Immigration Rate * College Graduate	-0.099	-6.9	
3. Effects of Labor Market Variables			**0.0012**
Total Employment Growth Rate * White	-0.030	-7.2	
Total Employment Growth Rate * Black	-0.045	-4.7	
Total Employment Growth Rate * Asian	-0.044	-3.6	
Total Employment Growth Rate * Hispanic	-0.040	-4.6	
Income per Capita * White	-0.213	-3.0	
Income per Capita * Hispanic	-0.472	-2.6	
Income per Capita * (Black, Asian, Other)	-0.263	-2.3	
4. Effects of Racial/Ethnic Attractions			**0.0036**
Racial Similarity * White	-0.102	-4.6	
Racial Similarity * Black	-0.196	-4.3	
Racial Similarity * Asian	-0.490	-10.3	
Racial Similarity * Hispanic	-0.244	-6.8	
Racial Similarity * Other Race	-0.518	-5.5	
5. Effect of Housing Value			**0.0006**
Housing Value * Less Than Some College	0.310	6.1	
6. Effect of Ecumene Size			**0.0025**
Ln(Population Size) * White	-0.189	-12.3	
Ln(Population Size) * Black	-0.254	-8.8	
Ln(Population Size) * Asian	-0.241	-8.9	
Ln(Population Size) * Hispanic	-0.182	-6.6	
Ln(Population Size) * Other Race	-0.293	-9.0	
7. Drawing Power of the Rest of System			**0.0002**
Inclusive Variable	0.146	2.5	
Inclusive Variable * Black	0.077	2.6	
Rho-square	**0.1101**		

Note: Size of the at-risk population: 132,359,739 persons. No of observations in the input file: 115,050.
Rin No. D1
No. of explanatory variables: 40
filename: Logit_Model_2559.wb3 (page=DP_best_only)

Among other findings of interest are the impacts of total employment growth and per-capita income, each of which is negatively related to the departure of members of all race-ethnic groups. This finding confirms the generality of the main ideas of the human capital investment theory of migration (Sjaastad, 1962).[4] It turns out that total employment growth rate has a stronger impact on Blacks, Asians, and Hispanics than on Whites, whereas per capita income has a greater impact on Hispanics than on other race-ethnic groups. The departure sub-model also incorporates the impact of individual characteristics as direct effects.[5] As expected, younger persons, less educated persons, and non-poor persons are least likely to move. A noteworthy finding in this analysis is the fact that both persons born in a different state and the foreign-born are more likely to out-migrate than persons born in the same state. This suggests that states that have already experienced a good deal of out-migration of their native-born residents, such as those in the Great Plains, can be expected to have relatively low rates of out-migration (*ceteris paribus*)[6], and that the long-term accumulation of location-specific capital has a more powerful negative effect on out-migration than does the attraction of the foreign-born by co-ethnic communities.

For completeness, we mention briefly that members of all race-ethnic groups are shown to be subject to the retaining effect of the population size a origin, and that the inclusive variable (representing the drawing power of the rest of the system) turns out to have the expected positive effect on out-migration, which is stronger for Blacks than for other groups.

Leaving aside the contributions to explanation of the geographic structural variables and personal attributes, the marginal contributions in Rho-square indicate that racial similarity contributes more to the explanation of migrant departure than either the labor market variables or housing value. Nonetheless, it is noteworthy that low-skilled foreign-born immigration contributes almost as much to the explanation as labor market variables; and that the effects of both are more important than the push effect of median housing value.

Returning to the role of race-ethnicity in the migrant departure process, we find that its main impact is through inhibiting out-migration from states where there are large numbers of co-

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[4] It is useful to note that unemployment rate has turned out to have no significant effect of out-migration. This finding is due to the fact that unemployment rate is a relatively poor measure of the spatial variation in employment opportunities, because in several states with relatively poor long-term economic prospects (e.g. Nebraska, Iowa, South and North Dakotas), it has become a rather common and sensible practice for many young adults to move to other states soon after finishing education so that the unemployment rates of such states are paradoxically low in both boom and bust periods. For example, the 1995-1999 average unemployment rate is only 2.8% for Nebraska, 3.2% for Iowa, 3.1% for South Dakota, and 3.2% for North Dakota, compared with the average of 4.8% over all states.

[5] It is useful to note that by allowing the race-ethnic dummy variables to interact with place attributes in the departure sub-model, we find that the coefficients of all of these dummy variables by themselves only are not significantly different from zero. This finding suggests that the variation of the observed departure rate among the race-ethnic groups (9.9% for Whites, 8.2% for Blacks, 13.1% for Asians, 7.7% for Hispanics, 14.6% for the "Other" group) are mainly due to contextual reasons rather than due to some intrinsic cultural differences.

[6] In reality, reflecting their relatively slow employment growth, most Great Plains states have relatively high departure rates: 13.6% for Kansas, 12.3% for Nebraska, 13.5% for South Dakota, and 15.9% for North Dakota, compared with 9.7% for the residents all states.

ethnics for a given race-ethnic group. We did not find evidence for spatial assimilation in this part of the model as neither education nor nativity interacted with race-ethnicity toward their inhibiting effects on out-migration. Nor did we find race-ethnic interactions with the positive effects on migrant departure of high housing values or low skilled immigration rates. Rather, these effects on migrant departure are more strongly related to education or, more broadly, with class rather than with race-ethnicity.

Findings: Destination Selection

Findings with respect to our estimation of the destination selection model appear in Table 7 (background information used to compute the marginal contributions can be found at www.frey-demographer.org/reports/AppendixTables.xls). Beginning first with the role of a state's racial similarity, we find positive effects on migrant destination selections for each race-ethnic group, and interactions with education for all groups except Blacks. Thus, there is support not only for our 'cultural constraints' model, but also for our expectations with respect to spatial assimilation. Members of race-ethnic groups are more likely to select destinations with large numbers of co-ethnics and this is especially the case if they have only a high school or less education. While this may seem inconsistent with some of the descriptive observations above, such as the propensity for Hispanics to move to a broad number of states where there are only small concentrations of Hispanics, there are aspects of this sub-model which are relevant to those observations.

One of these is the interaction between racial similarity and foreign born status which reduces the attraction of states with large same-race communities for foreign born domestic migrants. These foreign born domestic migrants may be especially drawn to states with lower-skilled employment opportunities, irrespective of the state's co-ethnic community. This interpretation is further supported by the interaction between service employment growth and foreign born status such that, the attraction of service employment for all race-ethnic groups and education statuses is even more accentuated for the foreign born. As indicated earlier, states that are attracting large numbers of well-off domestic migrants may be creating service jobs that will attract residents of all skill levels, and especially the foreign born.

Another aspect involves two destination area attributes that were expected to repel migrants with lesser educations: low-skilled immigration rate and housing value. Each of these factors has the expected effect on lesser skilled migrants, with the repelling effect of low-skilled immigration rate being particularly strong on Hispanic high school dropouts. In light of the fact that Hispanics are strongly represented at the lower end of the educational scale, these findings help account for the widely dispersed destination selection pattern of Hispanic migrants, which is part of what we call the "middle class flight". However, it is also important to note that the repelling effect of the low-skilled immigration rate focuses on a relatively small segment of the population: high school dropouts. For other migrants, the low-skilled immigration rate turns out to have a mild positive effect, suggesting that the new immigrants may play a complementary role to better educated interstate migrants.

Among other attributes, it is clear that in addition to service employment growth rate, total employment growth rate has a strong positive effect on destination selections, especially for Whites. Also, a state's income per capita has a strong attractive power on college graduates.

Table 7. Estimation Result of the Destination Choice Model of the 1995-2000 Interstate Migration Made by Those Aged 25-59:

Explanatory Variable	Best Specification Coeffient	t-ratio	Marginal Contribution in Rho-square
1. Effects of Low-skilled Foreign-born Immigration			**0.0001**
Low-skilled Immigration Rate	0.014	6.9	
Low-skilled Immigration Rate * White HS Dropout	-0.042	-9.1	
Low-skilled Immigration Rate * Asian HS Dropout	-0.052	-3.3	
Low-skilled Immigration Rate * Hispanic HS Dropout	-0.126	-9.0	
Low-skilled Immigration Rate * Other Race HS Dropout	-0.026	-3.6	
Low-skilled Immigration Rate * Poor Black HS Dropout	-0.052	-3.8	
2. Effects of Labor Market Variables			**0.0042**
Total Employment Growth	0.030	35.6	0.0024
Total Employment Growth * White	0.013	17.1	
Service Employment Growth	0.020	29.4	
Service Employment Growth * Foreign-born	0.010	11.2	
Unemployment Rate	-0.024	-9.4	0.0000
Income per Capita * College Graduate	0.718	60.5	0.0010
Joint Effects of Immigration and Labor Market Variables			***0.0101***
3. Effects of Racial/Ethnic Attractions			**0.0059**
Racial Similarity * White	0.238	52.2	
Racial Similarity * Black	0.540	83.3	
Racial Similarity * Asian	0.621	62.7	
Racial Similarity * Hispanic	0.396	51.0	
Racial Similarity * Other Race	0.437	28.4	
Racial Similarity * White with Less Than Some College Ed.	0.085	14.8	
Racial Similarity * Asian with Less Than Some College Ed.	0.068	3.7	
Racial Similarity * Hispanic with Less Than Some College Ed.	0.025	2.3	
Racial Similarity * Other Race with Less Than Some College Ed.	0.107	4.3	
Racial Similarity * Foreign-born	-0.154	-24.6	
4. Effect of Housing Value			**0.0003**
Housing Value * Less Than Some College	-0.314	-34.6	
5. Effects of Distance and Contiguity			**0.0557**
Ln(Distance)	-0.653	-189.6	
Ln(Distance) * College Graduate	0.104	28.5	
Ln(Distance) * Alaska	0.223	66.5	
Ln(Distance) * Hawaii	0.145	46.7	
Contiguity	0.637	121.2	
6. Effect of Climate			**0.0018**
Coldness	-0.058	-27.0	
Coldness * Aged 40-49	-0.030	-17.0	
Coldness * Aged 50-59	-0.103	-46.3	
Coldness * White	-0.026	-11.3	
7. Effect of Ecumene Size			**0.0341**
Ln(Population Size)	0.786	321.5	
Rho-square	**0.1518**		
Run No.	25		
No. of unknown parameters	33		

Total number of interstate migrants, aged 25-59 = 12,837,555.
No. of obs. = 2,282,050.
filename: Logit_Model_2559.wb3 (Best_DP_only)

In addition to our findings in the departure sub-model, these findings also provide some support for the main ideas of the human capital investment theory of migration. With respect the effects of climate, our estimation result shows that migrants tend to gravitate towards states with relatively warm winter, and that this tendency strengthens with age and is stronger for Whites than for minority groups.

When assessing the relative contributions to the explanation of destination choice, it is clear that with the increase in Rho-square being 0.0059, racial similarity plays an important role—more important than the roles of climate and housing value. However, it is important to point out that the joint effect of the immigration and labor market variables (marginal contribution in Rho-square = 0.0101) is even more important than the effect of racial similarity. Note that the marginal contributions in Rho-square attributed separately to low-skilled immigration (0.0001) and labor market variables (0.0042) are misleadingly understated, because the explanatory powers of these two explanatory factors overlap substantially. This overlap in explanatory powers is related to the fact that the immigrants arriving in 1995-2000 were subject to the strong attractions of the states with a rapidly expanding labor market. Keeping this multicolliearity aspect in mind, we learn from the destination choice sub-model that the strong employment growth that prevailed in several South and Mountain states are part of the important reasons for the 'middle class flight'.

Of course, all of these destination attribute variables pale in comparison to the explanation provided by structural geographic variables such as distance, contiguity, and population size. Overall, however, there is much support here for several of our expectations regarding cultural constraints, spatial assimilation, and 'middle class flight'.

Finally, in order to see whether our model can closely replicate some salient features of the observed migration process, we conducted a simulation of the1995-2000 interstate migration by applying its estimated departure rates and destination choice proportions to appropriate beginning subpopulations. Our confidence in the usefulness of the model is enhanced by its ability to closely replicate a clear counterexample of the "circulation of elites" pattern-- the negative educational selectivity in California's net loss of Hispanic migrants (Table 8).

Table 8. The Observed and Predicted Net Migration Volumes and Net Migration Rates of California's Hispanics (Aged 25-59) in the 1995-2000 Interstate Migration: Selectivity by Educational Attainment

Educational Attainment	Net Migration Volume		Net Migration Rate	
	Observed	Predicted	Observed	Predicted
	(persons)		(percent)	
Less Than High School	-115,690	-110,608	-4.8	-4.6
High School Graduate	-37,760	-37,861	-4.0	-4.0
Some College	-28,617	-24,060	-2.9	-2.4
College Graduate	-5,731	-1,731	-1.5	-0.5

DISCUSSION

The purpose of this report was to understand the role of race-ethnicity as part of the inter-state migration process over the late 1990s. The increased immigration of persons with Latin American and Asian roots, have made our population more racially and ethnically diverse than was the case in earlier decades when traditional labor market migration models were used to explain migration across states and labor market areas. Not only do minority race-ethnic groups comprise a larger share of the U.S. population, they are also unevenly distributed across states and have, in the past, migrated according to channelized paths which tended to reinforce this uneven distribution. The native-born Black population has also been unevenly distributed, historically in the South, and later in large Northern cities. Yet, descriptive analyses over the last decade have shown more dispersed distribution patterns among immigrant minorities, Hispanics and Asians, as well as a pronounced reversal of the past South to North migration of Blacks.

The history of migration models has been rooted in conventional labor market variables with less appreciation for the unique migration tendencies of different race-ethnic populations. In the present paper we have attempted to incorporate, into such a model, interactions of race-ethnicity with conventional labor market variables, and also to include an indicator of 'cultural constraints' associated with different minority groups.

Our findings, by and large, support the role that 'cultural constraints' were expected to exert on minority migration. This is evident in the descriptive findings that we presented in maps and tables for net domestic migration and migration flows. It is also apparent in the two-level nested logit models we estimated. For both the departure and destination selection parts of the migration process, we find that a concentration of co-ethnics in a state serves to retain potential out-migrants and to attract potential new migrants. Still, because of the dispersed nature of new immigrant minorities and the return of Blacks to the South, we anticipated interactions between social constraints and measures of assimilation, such as education and nativity. The results show that, in fact, there is evidence of spatial assimilation in that cultural constraints are less pronounced in the destination selections for the more educated Hispanic, Black, and Asian migrants.

Finally, we examined the impact of factors which we anticipated might instigate a "middle class flight" away from highly urbanized states, such as California, which also attract large numbers of low-skilled immigrants. Our results generally show no race-specific "flight" of whites alone from these states, but rather show an accentuated out-migration and reduced destination selection of less educated migrants of all race-ethnic groups from states with high housing values and high levels of foreign born immigration. This suggests a multi-racial middle class flight resulting from competition for low-skilled jobs and from housing market replacement in these states. To some extent, the flight may also reflect attempts at achieving the aspiration to become homeowners in states with lower housing values.

This is the first of a series of analyses we plan on race-ethnic inter-labor market migration in the United States. Later reports will introduce greater specificity with respect to geography, race-ethnicity, and many of the variables we have included here. In future studies, we will

employ metropolitan areas as our geographic areas rather than states since the former more closely approximate labor markets. We will also include different race and ethnic populations within the broad categories of 'Hispanic', 'Asian', and 'Black'. Nonetheless, this first analysis, designed to understand the potential for including indices for cultural constraints, spatial assimilation, and determinants of 'middle class flight' suggests that conventional labor market migration models that leave out these influences will be insufficient in our increasingly multiethnic society.

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