
*A Joint Research Project of the California Research Bureau of the California State Library
and the Demographic Research Unit of the California Department of Finance*

Migration Between California and Other States: 1985-1994

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I. Digest

International migration (immigration) to California has been the focus of much public policy debate and controversy. Of less study and debate, but of equal historical significance to California's population growth, has been migration between California and the rest of the United States.¹ This second type of migration, termed "domestic migration," is the focus of this study. In this paper, we seek to provide a comprehensive summary of domestic migration, providing answers to basic questions about how many people move domestically to and from California each year, as well as providing information on socioeconomic and demographic characteristics of those domestic migrants.

Migration between California and other states is difficult to measure. No single source of data provides an accurate and complete picture of domestic migration to and from the State. The characteristics of domestic migrants as well as the number of domestic migrants are of interest to policy makers, but for the most recent years only rough estimates are possible.

In this paper, we develop and evaluate several different estimates of the number of domestic migrants entering and leaving California from 1985 through 1994. Primarily using the U.S. Department of Commerce's 1990 census and the annual Current Population Surveys, we also examine some socioeconomic and demographic characteristics of those domestic migrants. Among the key findings of this report are:

- In any given year, relatively few people move across state lines. Between 1985 and 1994, the annual average number of people *leaving* California for other states represented only about two percent of the State's population. The annual average number of people *entering* California from other states was also about two percent of the State's population. The net change in the State's population due to domestic migration has not amounted to more than one percent of the State's population for any single year between 1985 and 1994.
- A dramatic change in migration patterns between California and the rest of the country has occurred over the past ten years. In the decade prior to the recent recession, more people moved to California from other states (domestic in-migrants) than moved from California to other states (domestic out-migrants). With the recent recession, that long-standing trend was reversed. According to unofficial California Department of Finance estimates, from July 1989 to July 1990 domestic net migration to California was at a 25 year high, with almost 200,000 people added to the State's population due to domestic migration.² The Department of Finance unofficially estimates that just

¹ According to the 1990 census, 46 percent of California residents were born in California, 31 percent were born in other states, and 23 percent were born in foreign countries.

² Domestic net migration is the difference between the number of people who move to California from other states (domestic in-migrants) and the number of people who move from California to other states (domestic out-migrants).

four years later, between July 1993 and July 1994, the State lost a record 257,000 people through net domestic out-migration. Other data series suggest different numbers, but the same general patterns.

- On a net basis between 1985 and 1994, California tended to gain domestic migrants from the Northeast and Midwest, and tended to lose domestic migrants to other states in the West. Net losses to Nevada, Oregon, Washington, Arizona, and Colorado have been especially large since 1990.
- Between 1985 and 1990, California attracted domestic migrants with higher than average incomes, and experienced a net loss of domestic migrants with lower incomes. Since 1990, average incomes of persons moving to California from other states have remained higher than average incomes of domestic out-migrants. In absolute terms, however, since 1990 California has been losing both high and low income domestic migrants, although most of the net loss remains in the lower income groups.
- Persons between the ages of 18-34 account for almost half of all domestic migrants both to and from the State. The 18-34 age group accounted for most of the net gain in domestic migration to the State between 1985 and 1990, and accounted for much of the net loss in domestic migration from the State between 1990 and 1994.
- Most domestic migrants both to and from the State are White. On a net basis, only Hispanic domestic migrants experienced a net migration loss between 1985 and 1990. Since 1990, more Hispanic and White domestic migrants are leaving the State than are arriving from other states.
- Domestic in-migrants tend to be better educated than either domestic-out migrants or non-movers in the State. Between 1985 and 1990, California gained tens of thousands of college graduates and lost tens of thousands of persons with a high school education or less. Between 1990 and 1994 California continued to be a net domestic exporter of persons with a high school education or less, and despite massive domestic out-migration overall, experienced almost no net change in domestic migrants with college degrees.
- Domestic out-migrants from California are more likely to be unemployed than domestic in-migrants to California. Domestic migrants during the 1990-1994 period were more likely to be unemployed than domestic migrants during the pre-recession period of 1985-1990. California experienced a net gain of employed domestic migrants between 1985 and 1990, and a net loss of both unemployed and employed persons between 1990 and 1994.
- Domestic migrants to California are more likely to be white collar workers than are domestic migrants from the State. Between 1985 and 1990, California was a net domestic importer of white collar workers and a net domestic exporter of blue collar

workers. Since the onset of the recession, the net loss of blue collar workers has intensified. The most recent data also suggest that California is exporting white collar workers, although the numbers do not appear to be large.

- Domestic migrants who leave California are more likely to own a home than domestic migrants who move to the State.

II. Other Studies

William Frey of the University of Michigan Population Studies Center used 1990 census data to evaluate international and domestic migration flows. Frey's primary focus is on the relationship between migration, both international and domestic, and shifts in population by race/ethnicity and poverty status. Frey argues that California and other states which receive large numbers of international immigrants also experience a net outflow of less educated and lower income domestic migrants as a result of the inflow of international immigrants. Frey's study is based on 1990 census data, and it does not include data on more current flows of domestic migrants.

The California Senate Office of Research used 1990 census data to analyze domestic migration patterns of senior citizens. The report concludes that "[i]n the large scheme of the state's economy, the slight out-migration of seniors hardly registers." Because the study is based on the 1990 census, it does not include any updates on patterns since the onset of the recession. Also, the report does not consider the movements of persons other than senior citizens.

More recently, Bules and Associates surveyed thousands of California companies in order to identify manufacturers which have relocated or expanded their operations outside the State. While the survey contains estimates of jobs lost, destinations, and reasons for relocating or expanding outside the State, it is limited to the manufacturing sector and does not provide information on domestic migrants.

Finally, Nancy Bolton at the University of California at Los Angeles has been using tax data to examine migration and income in California. To date, Dr. Bolton's analyses focus on movements within regions in California rather than movements into and out of California.

III. Data Issues

Tracking the movement of persons from one State to another is an uncertain undertaking. The United States has no restrictions on internal migration. Persons who move from one State to another are not required to register that movement. Surveys, censuses, and administrative records do not capture the entire resident population of the State, and movers are probably more likely to be missed by such records than are non-movers. Nevertheless, numerous data sets do exist which give indications of interstate migration. Table 1 summarizes the data sets considered in this report.

The amount of information contained in the data sets varies considerably. Migration data from the 1990 census are based on a very large sample of the entire population, but are of course limited to the pre-recession period of 1985-1990. The U.S. Internal Revenue Service (IRS) and California Department of Motor Vehicles (DMV) data can be used to develop annual estimates of domestic migration for periods both before and after the onset of the recession in California, but the data sets cover only specific subsets of the population. In addition, the IRS and DMV data provide no information on social and economic characteristics of the migrants.

Another source of data, the March supplements of the Current Population Survey (CPS) can be used to develop estimates of the number of domestic migrants as well as their demographic and socioeconomic characteristics. Because one of the primary objectives of this study is to analyze characteristics of the most recent domestic migrants, we have used CPS data to provide estimates for numerous demographic and socioeconomic characteristics of interest. The CPS is both timely and provides detailed information, but suffers from imprecision due to small sample sizes. To decrease the sampling error associated with the CPS, we have pooled the annual CPS data into two periods delineated by the onset of the recession (1985-1990 and 1990-1994). Although the pooled CPS data for 1985-1990 are not directly comparable with the 1985-1990 census data,³ the dependability of the CPS estimates can be at least partially assessed by comparing the pre-recession CPS estimates with 1990 census data. In addition, because the CPS estimates are based on a much smaller sample of the population than the census data, it is necessary to quantitatively estimate the precision of the CPS based estimates.⁴

Appendix B contains a more complete description and analysis of the data sets shown in Table 1 as well as other data sets not used in this analysis.

³ Direct comparability between the CPS and census estimates is not possible due to coverage and time frame differences. See Appendix B, Table 1, and footnote 8.

⁴ In this paper, we report 90% confidence intervals for CPS estimates. For sample data such as the CPS, a 90% confidence intervals means that given the size of the sample, the true value of the parameter of interest will be captured by the confidence interval in 9 out of 10 random samples of the same size. Note that non-sampling error, or sample bias, is not included in the determination of the confidence intervals. It is not possible to statistically quantify non-sampling error. See Appendix C for a more complete discussion of the CPS.

Table 1			
Sources of Estimates of Domestic Migration			
Source	Basis of Determination of Migration Status	Coverage	Detail (a)
1990 census	Census question on location of residence five years prior to the census (April 1, 1985).	All persons in households completing the long form census questionnaire (1.7 million households in California, representing about 1 out of every 6 households), weighted to reflect the entire population counted in the census.	Socioeconomic, demographic, and geographic characteristics; gross flows.
Current Population Survey (CPS)	Survey question on location of residence one year prior to the survey (March of each year).	Persons in surveyed households (about 4500 households in California, 60,000 in the nation), weighted to reflect the total civilian population, excluding persons in institutions.	Socioeconomic, demographic, and geographic characteristics; gross flows
Internal Revenue Service (IRS)	Matching of income tax returns.	Persons and their dependents who file income tax returns in two consecutive years.	Geographic characteristics (by State); gross flows.
California Department of Motor Vehicles (DMV)	Driver's license interstate address changes (accumulated on a monthly basis).	Persons who move across State borders and who return the driver's license of their prior State of residence.	Age and geographic characteristics; gross flows.
(a) Some data sets may contain additional information which is not available publicly.			

IV. Demographic Characteristics: Estimates of the Number of Domestic Migrants

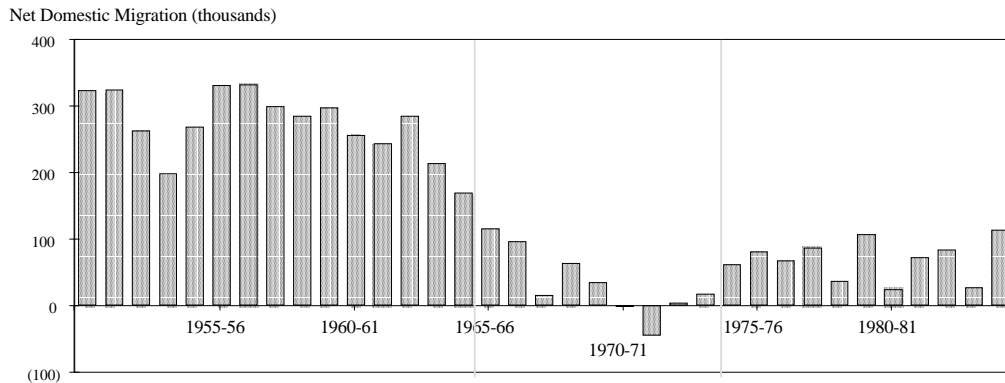
Historical Patterns in Domestic Net Migration Flows: 1950-1985

California has long been a destination for migrants, both those from other states as well as those from abroad. Since 1950, domestic migration has been as important as international migration to the State's population growth. On average between 1950 and 1985, about

half of the State's population increase due to migration can be attributed to domestic migration.

While the various data sets which measure domestic migration do not agree on the exact number of domestic migrants, the general patterns suggested in Figure 1 are somewhat consistent across data sets.⁵ As shown in Figure 1, at least three somewhat distinct periods of domestic net migration can be identified between 1950 and 1985.

Figure 1
Net Domestic Migration
July 1950-July 1985



Source: 1960-65, Ca. Department of Finance unofficial estimate of total net migration less INS legal immigration plus estimated emigration
1965-70, same as 1960-65 with additional adjustment for undocumented immigration
1970-85, California Department of Finance, unofficial estimates

The first period of domestic migration, between 1950 and 1965, was characterized by huge flows of domestic in-migrants to the State and relatively few domestic out-migrants. During this period, an annual average of 272,000 more people moved into California from other states than left California for other states. The vast majority (almost 90 percent) of all migrants to California during this period were domestic migrants rather than international migrants.

During the second period, from the late 1960s to the early 1970s, domestic net migration to the State declined substantially. Fueled by a decline in the aerospace industry, California's economy performed very poorly relative to the rest of the country. As a result, California actually experienced negative domestic net migration in 1971-72. Legal international migration to the State increased slightly during this time, but remained well under 100,000 per year.

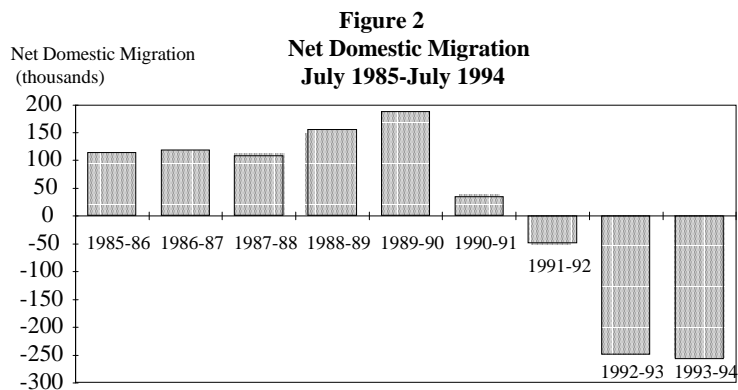
From the mid 1970s to the early 1980s, domestic net migration to California was positive but not remarkable. During this third period, annual domestic net migration averaged over 60,000 per year. International migration to the State increased substantially, to over 200,000 per year by the early 1980s.

⁵ Section IV includes comparisons between the data sets, and Appendix B contains a more complete comparison and analysis.

Recent Domestic Net Migration Flows: 1985-1994

Estimates of annual domestic migration between 1985 and 1994 vary substantially by data source. However, general patterns of the estimates over time are fairly consistent. Generally, estimates of domestic migration between 1985 and 1994 indicate that migration between California and other states changed dramatically during those years. In the pre-recession period of 1985-1990, domestic net migration to California was positive, and possibly at levels much higher than in the early 1980s. Unofficial estimates from the California Department of Finance (DOF) suggest that from July 1989 to July 1990, domestic net migration to California was at a 25 year high, with almost 200,000 people added to the State's population due to domestic migration (Figure 2). For the five year period 1985-1990, unofficial DOF estimates place the total net domestic migration gain at over 600,000 persons. Other estimates indicate less dramatic but still positive domestic net migration for the period 1985-1990 (Table 2).

Since 1990, in the most recent and ongoing period, a remarkable and unprecedented reversal has occurred. All of the estimates agree that with California's deep and sustained recession, domestic net migration has plummeted. In the early 1990's, California has experienced substantial levels of domestic out-migration. Unofficial estimates from the California Department of Finance indicate that fiscal year 1993-94 was a record year, as over 250,000 more people left the State than moved to the State domestically.



Source: California Department of Finance, unofficial estimates,
based on assumption of 125,000 illegal immigrants per year.

Comparison of Recent Estimates of Domestic Migration, 1985-1994

Various data sources may be used to develop estimates of domestic migration. These data sources cover different segments of the population at different points in time with different means of identifying migrants, and it is therefore not surprising that the estimates contain substantial differences.⁶ Because the census is designed to provide reliable estimates for all segments of the population, it is the standard by which other estimates may be evaluated.

⁶ See Appendix A for estimation methodologies. Appendix B includes a more complete treatment of the differences between the estimates derived from the various data sources.

In this paper, we develop estimates of domestic migration from four data sources:

1. Department of Motor Vehicle data on driver license address changes (DMV);
2. Internal Revenue Service data based on subsequent year matching of income tax returns (IRS);
3. Current Population Survey estimates of domestic migration based on responses to the survey question regarding location of residence one year prior to the survey (CPS); and
4. Census data on domestic migrants based on responses to the census question on location of residence five years prior to the census. Because the CPS estimates are derived from a sample of the population, it is possible to quantitatively estimate the precision of the CPS estimates.⁷

For the pre-recession period of 1985-1990, differences between the estimates of domestic migration from the four data sets are substantial (Table 2). Three of the four estimates for 1985-1990 are based on summations of annual estimates of domestic migrants. The other estimate is based on 1990 census data. While the 1990 census does not provide data on *annual* domestic migration, it does provide data for domestic migration for the five year period 1985-90. Tabulations of domestic migrants from the census are based on a person's residence five years prior to the census. The gross flows of domestic migration from the census data are lower than the five year sums of the gross flows from the other estimates because of return migration. However, because such moves are self-canceling on a net flow basis, the net migration figures from the census should be similar to the five year sum of the net migration figures from the estimates based on the other data series.⁸ As shown in Table 2, gross flows both into and out of California are indeed much higher for the summed annual estimates (DMV, CPS, and IRS) than for the five year period estimate from the 1990 census. In particular, despite the differences in the annual estimates noted above, the DMV, CPS, and IRS domestic in-migration summed estimates for the five years are fairly consistent, and range from 41 percent to 57 percent higher than the 1990 census five year period estimate. The 90 percent CPS confidence interval for domestic in-migration includes both the DMV and IRS estimates.

The domestic out-migration estimates for the 1985-1990 period are also, as expected, much higher for the summed annual estimates compared to the 1990 census five year period estimate. However, unlike the consistency between the three series in the case of

⁷ See Appendix C for a more complete treatment of the determination of confidence intervals for the CPS estimates.

⁸ For example, a person who moves from Texas to California in 1986 and then returns to California in 1989 will not be counted as a domestic migrant in the 1990 census. In this example, the migrant's residence in both 1985 and 1990 was California. In the other data series, such a return migrant would appear as a domestic migrant from California in 1986 and a domestic migrant to California in 1989. Summing the gross annual flows over the five year period would include the example migrant as both a domestic in-migrant and a domestic out-migrant. The effect of such return migration on the net migration five year sum, however, would be zero (plus one domestic in migrant in 1989 minus one domestic out migrant in 1986). Thus, while annual estimates based on *gross* flows summed over the five year period will exceed the census gross flows, the estimates of *net* migration should be similar.

domestic in-migration, the DMV summed estimate for domestic out-migration is much lower than the CPS and IRS estimates. The 90 percent CPS confidence interval for domestic out-migration does not include the DMV estimate, while the IRS estimate is well within the confidence interval (Table 2).

Table 2						
Estimates of Domestic Migration for the Five Year Period, 1985-90 (a)						
	1990 census	DMV Sum	IRS Sum	CPS Sum	CPS 90% Confidence Interval	
					Low	High
Domestic In	2,028,700	2,852,672	3,186,853	2,989,653	2,710,726	3,268,580
Domestic Out	1,782,900	2,125,672	2,940,493	3,072,200	2,786,103	3,358,297
Domestic Net	245,800	739,000	246,361	-82,547	-482,111	317,017

(a) See Appendix B for a detailed discussion of differences between the estimates.

Because return migration flows cancel out on a net basis, domestic net migration as measured by the census should be similar to domestic net migration as measured by the other sources. In fact, however, as shown in Table 2, estimates of domestic net migration between 1985 and 1990 vary tremendously, from an estimated net loss of over 80,000 persons according to CPS estimates to an estimated net gain of over 700,000 based on the DMV data. The CPS estimate is inexact, as indicated by the very wide 90 percent confidence interval. However, even the wide confidence interval of the CPS estimate does not include the DMV estimate. In contrast, the IRS and 1990 census estimates of domestic net migration are in close agreement.

In general, the CPS, IRS, and census data are consistent (in addition to Tables 2 and 3, see Figures B1-B3 in Appendix B). In comparison with the other data sets, the DMV estimates of domestic net migration appear to be too high. In particular, as discussed earlier, the DMV data differ from the other data sets primarily for estimates of domestic out-migrants. It is

possible that persons leaving the State are not adequately captured by the DMV data. The California Department of Motor Vehicles appears to be much more efficient at collecting out of State driver licenses than other states are at collecting and/or returning California driver licenses.

Table 3				
Estimates of Domestic Migration for the Period 1990-94				
	DMV Sum	CPS Sum	CPS 90% Confidence Interval	
			Low	High
Domestic In	1,924,519	1,906,310	1,692,075	2,120,545
Domestic Out	2,225,878	2,580,517	2,331,331	2,829,703
Domestic Net	-301,360	-674,207	-345,588	-1,002,826

For the period 1990-1994, the DMV and CPS estimates of domestic in-migration are in close agreement (Table 3). IRS data are only available through 1992, and indicate a domestic in-migration flow that is only slightly lower than the flows suggested by the DMV and CPS estimates (1.0 million for the IRS estimates, versus 1.1 million for both the DMV and CPS estimates for 1990-1992). All of the estimates indicate that the average

annual flow of domestic in-migrants to California has slowed substantially in the recessionary period as compared to the pre-recession period.

Estimates of domestic out-migration for the 1990-1994 period differ substantially. As in the 1985-1990 period, DMV based estimates of domestic out-migration are significantly lower than the CPS estimates (Table 3). The DMV estimates fall just below the lower bound of the CPS estimate confidence interval for domestic out-migration between 1990 and 1994. The IRS data are only available through 1992, and suggest much higher domestic out-migration than either the CPS or DMV based estimates (1.4 million for the IRS estimates, versus 1.2 million for the CPS estimates and 1.0 million for the DMV estimates). All of the estimates indicate that the average annual flow of domestic out-migrants from California has increased during the recessionary period compared to the pre-recession period.

Finally, all of the estimates of domestic net migration for the recessionary period indicate substantial net flows out of the State. For the 1990-1994 period, the CPS net outflow estimate is significantly higher than the estimate based on DMV data (Table 3), while for the period 1990-1992 the IRS estimate of net outflows is much higher than either the CPS or DMV based estimates for the same period of time, with net losses for 1990-1992 of almost 400,000 according to the IRS estimate compared to a net loss of over 125,000 according to the CPS estimate and an actual net gain of almost 40,000 according to the DMV estimate.

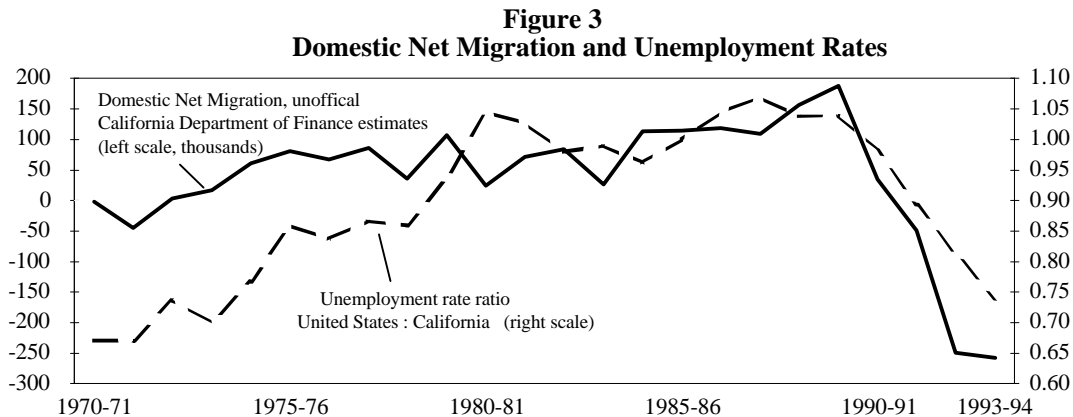
While these differences in the estimates of domestic migration are troubling, the general agreement in terms of changes in trends from the 1985-1990 period to the 1990-1994 period are at least somewhat reassuring. In particular, the 90 percent confidence intervals of the CPS estimates are consistent with all of the other estimates except for DMV based estimates of domestic out-migration. Because we rely extensively on the CPS data to evaluate characteristics of domestic migrants for the 1990-1994 period, such agreement is particularly noteworthy in the context of this report.

V. Economic Characteristics

Unemployment and Domestic Migration

As with most states, domestic migration to and from California is largely a function of the performance of the State's economy vis-à-vis the rest of the nation. Most domestic migrants to and from California tend to be young adult members of the labor force (see page 20). This is in contrast to a few states, particularly Florida and Arizona, where a substantial share of the domestic in-migrants are retirees who are moving for retirement reasons rather than for employment opportunities.

There is a strong association between unemployment rates and domestic net migration to California (Figure 3). When unemployment rates in California decline relative to unemployment rates in the nation as a whole, domestic migration to California increases substantially. For example, during the last part of the 1980s, unemployment rates in the United States were higher than in California, and domestic migration to the State was estimated by the California Department of Finance to be at a 25 year high. Since then, unemployment rates in the United States have declined relative to California unemployment rates, and domestic net migration has become negative: more people are now leaving California to live in other states than are coming from other states to live in California.

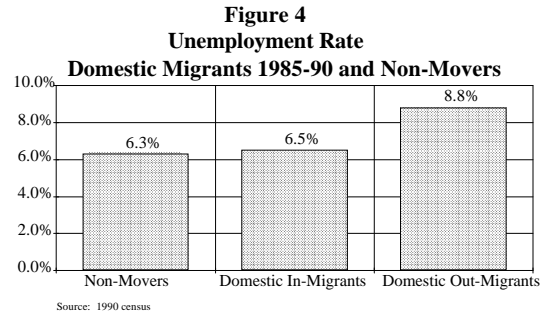


While the unemployment data support the view that domestic migration to and from California is economically motivated, consideration of the socioeconomic and demographic characteristics of domestic migrants to and from the State can give a more complete picture of the reasons people move to and from California.

Labor Force Status / Employment

Recent domestic migrants are slightly more likely to be unemployed than are non-movers. Persons who are unemployed might be more mobile than employed persons because they tend to be younger and are, by definition, looking for a job.

According to the 1990 census, domestic in-migrants to California were only slightly more likely to be unemployed than non-movers, while domestic out-migrants from California were much more likely to be unemployed than either non-movers or domestic in-migrants (Figure 4). Indeed, between 1985 and 1990 California experienced a net *gain* of employed persons and a net *loss* of unemployed persons through domestic migration (Table 4).⁹



Persons by Labor Force Status and Migration Status, 1985-1990 (a)					
		Non-Movers	Domestic In-Migrants	Domestic Out-Migrants	Domestic Net Migration
1990 census	Employed	12,223,600	1,065,700	855,600	210,100
	Unemployed	825,500	74,000	82,800	-8,800
	Percent Unemployed	6.3%	6.5%	8.8%	N/A
CPS estimates	Percent Unemployed		6.3%	8.5%	N/A

(a) Census data reflect employment status for the week prior to the census in April 1990, while CPS estimates reflect employment status for the week prior to the survey for each of the years in the five year period.

Since 1990, unemployment rates for domestic migrants have continued to be higher than for non-movers in California. The CPS estimates suggest that domestic out-migrants still have higher unemployment rates than domestic in-migrants, although the difference (13.2% vs. 10.3%) is not statistically significant (Table 5). As expected and attributable to the recession, unemployment rates for domestic migrants from 1990 to 1994 are significantly higher than unemployment rates for domestic migrants between 1985 and 1990. In net terms, between 1990 and 1994 California appeared to be losing both unemployed and employed persons to other states.

⁹ It is important to note that in both the census and the CPS employment status is determined by whether the respondent worked the week before the census/survey. Thus, the employment status of domestic migrants reflects their employment status at the time of the survey, but not necessarily at the time of the move. In addition, CPS estimates reflect employment status aggregated for each of the years in the five year period.

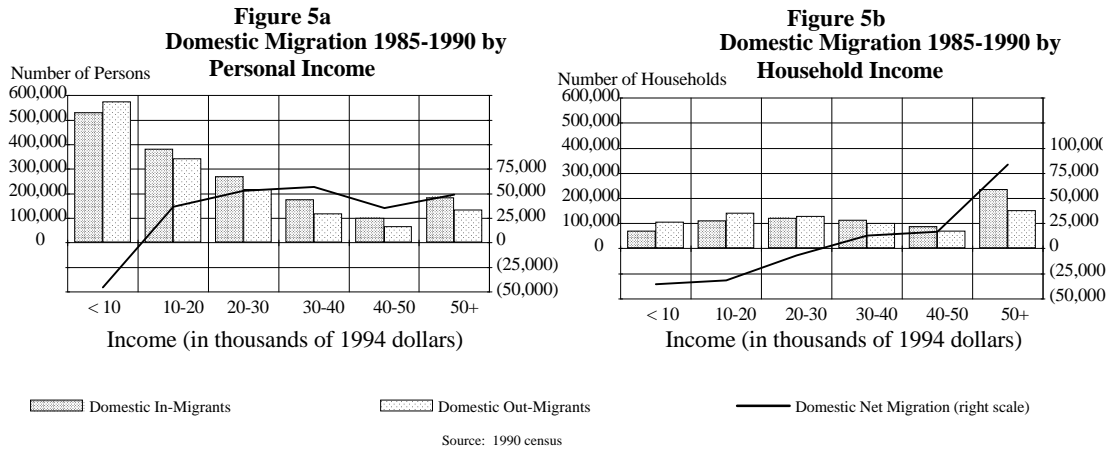
Table 5

Domestic Migrants 1990-1994 by Employment Status										
		Domestic In-Migrants			Domestic Out-Migrants			Domestic Net Migration		
		Estimate	Lower Bound	Upper Bound	Estimate	Lower Bound	Upper Bound	Estimate	Lower Bound	Upper Bound
1990-94	Employed	767,100	631,131	903,069	1,051,000	891,864	1,210,136	-283,900	-493,213	-74,587
1990-94	Unemployed	87,700	41,712	133,688	159,700	97,644	221,756	-72,000	-149,238	5,238
1990-94	% Unemployed	10.3%	5.1%	15.4%	13.2%	8.5%	17.9%			

Source: 1991, 1992, 1993, and 1994 Current Population Surveys aggregated. Employment status is determined for the week prior to the survey for each of the years in the four year period.

Household/Personal Income¹⁰

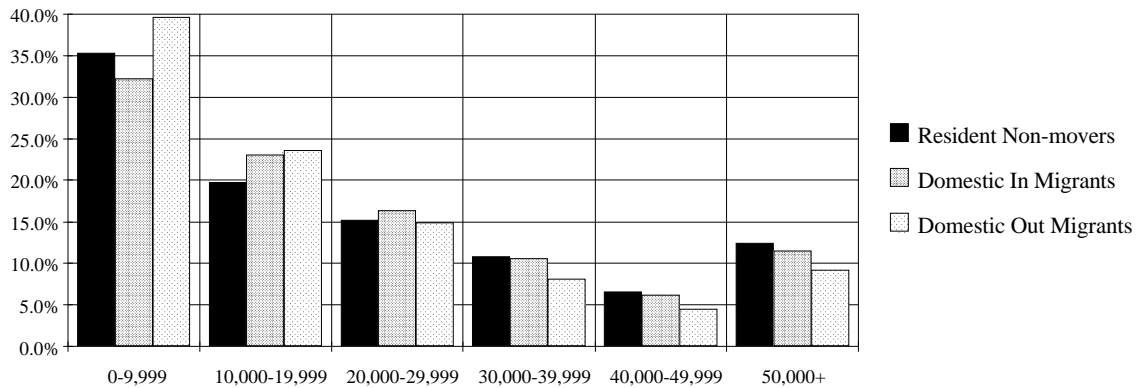
Between 1985 and 1990, California experienced a net loss of domestic migrants with low incomes, and a net gain of domestic migrants with high incomes. This pattern was more pronounced for households than for persons (Figures 5a and 5b).



Compared to the non-movers in the State, domestic migrants out of California were *more* likely to be in the lowest income group, while domestic migrants into California were *less* likely to be in either the lowest or highest income group (Figure 6). The mean personal income (in 1994 dollars) for domestic out-migrants between 1985 and 1990 was \$17,200, compared to \$20,700 for domestic in-migrants and \$18,300 for non-movers.

¹⁰ Personal income as used in this context refers to earnings and other money income as reported by individuals in the census or CPS.

Figure 6
Personal Income Distribution of Resident Non-movers in 1990
and Domestic Migrants 1985-90



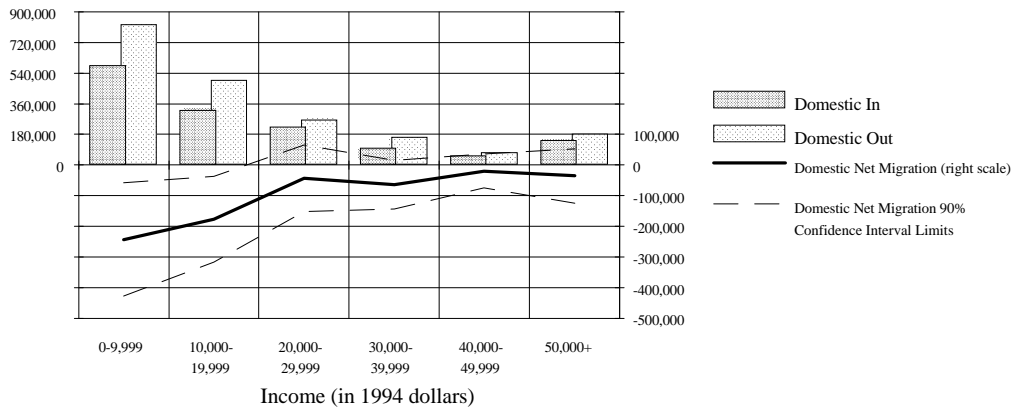
Source: 1990 Census

Given the age pattern of domestic migration between 1985 and 1990, with a net loss of older adults and a net gain of younger adults, this income pattern is somewhat surprising.¹¹ Typically an individual's income and earnings reach their peak between the ages of 40 and 60. Since the bulk of California's gain in domestic migration between 1985 and 1990 occurred for individuals between the ages of 18 and 35, the high incomes of domestic in-migrants indicates a strong selection effect is at work. Further analysis of 1985-1990 census estimates indicates that mean incomes of domestic migrants to California were higher than mean incomes of domestic out-migrants for every age group. In addition, labor force participation rates were substantially higher for domestic in-migrants between the ages of 50 and 64 than for domestic out-migrants in those same age groups. Thus, the stream of older adults leaving the state is disproportionately comprised of retirees (persons no longer in the labor force), who could be expected to have lower incomes than older adults still in the labor force. However, even for young adults of working age, despite little difference in labor force participation rates, incomes of domestic in-migrants were substantially higher than incomes of domestic out-migrants.

Since 1990, California has continued to experience a net loss of lower income domestic migrants (Figure 7). For middle and upper income domestic migrants, the pre-recession pattern appears to have been reversed in the 1990-94 period, with the State now experiencing slight declines of domestic migrants at middle and upper incomes (although the 90 percent confidence intervals do include the possibility that California continued to experience net gains of middle and upper income domestic migrants). At lower income levels, the net loss appears to have increased substantially in the 1990-1994 period compared to the 1985-1990 period.

¹¹ On the other hand, wages in California are, on average, higher than wages in other states.

Figure 7
Domestic Migration 1990-94 by Personal Income



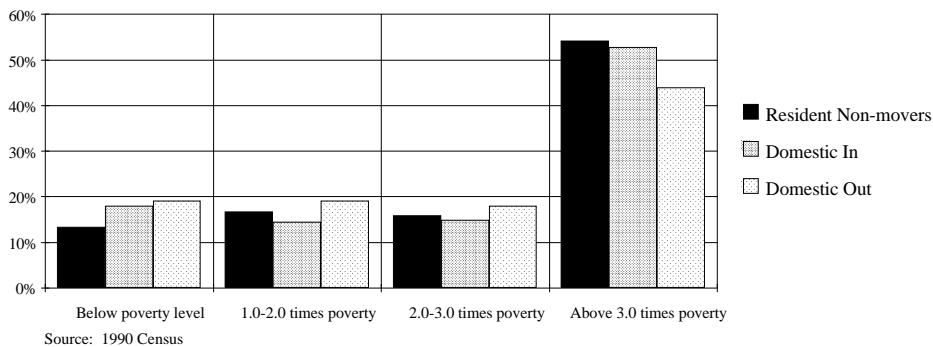
Source: 1991-1994 Current Population Surveys, aggregated

Poverty

According to the 1990 census, poverty rates were higher for persons moving out of California than for persons moving into the State². Poverty rates for non-movers were lower than for domestic out-migrants (Table 6). In absolute terms, between 1985 and 1990 California experienced a small net loss of persons in poverty (43,000) and a large gain of persons above poverty (174,500).

		Non-movers	Domestic In	Domestic Out
Census	1985-90	11.6%	11.2%	14.7
CPS	1990-94		14.4%	14.7%

Figure 8
Poverty Status of Resident Non-movers in 1990 and Domestic Migrants 1985-90



Between 1990 and 1994, poverty rates for domestic in-migrants were not significantly different from poverty rates for domestic out-migrants (14.4 percent vs. 14.7 percent).

¹² Census Bureau definitions of poverty vary by family size. For example, in 1989 the average poverty threshold for a family of four persons was \$12,674, and for a single person living alone (or with unrelated individuals) was \$6,310. Poverty thresholds do not vary by location (e.g. thresholds are the same in Mississippi as they are in California).

Poverty rates for domestic migrants were similar to poverty rates for all California residents.¹³ In absolute terms, it appears that California experienced a net loss of domestic migrants in poverty, although the 90 percent confidence intervals include the possibility that California gained persons in poverty through domestic migration (Table 7).

Table 7					
Persons in Poverty by Migration Status, 1990-94					
	Domestic Out-Migrants	Domestic In-Migrants	Domestic Net Migration		
	Estimate	Estimate	Estimate	Limits of 90% Confidence Interval	
				Lower Bound	Upper Bound
At or Below	379,200	273,800	-105,400	-230,875	20,075
Above Poverty	2,201,300	1,630,800	-570,500	-266,596	-874,404
Source: 1991-1994 Current Population Surveys, aggregated.					

Public Assistance

According to the 1990 census, domestic migrants were less likely to receive public assistance than were non-movers (Table 8).¹⁴ Domestic in-migrants were slightly more likely to receive public assistance than were domestic out-migrants, though the difference was not large (3.9 percent vs. 3.7 percent). In absolute terms between 1985 and 1990, through domestic migration California experienced a net gain of 11,800 persons on public assistance, with 67,300 domestic in-migrants receiving public assistance in 1989 and 55,500 domestic out-migrants receiving public assistance. This net gain represents one percent of the total number of persons receiving public assistance according to the 1990 census. Of the 1.2 million persons receiving public assistance in 1989 in California according to the census, approximately 6 percent were domestic in-migrants.

¹³ Poverty rates for all Californians according to the CPS were 14.0 percent in 1990, 15.8 percent in 1991, and 15.9 percent in 1992.

¹⁴ The Census Bureau defines public assistance to include supplemental security income (SSI), aid to families with dependent income (AFDC), and general assistance. It does not include Medicare, MediCal, or food stamps. Public assistance income is generally reported in the census by one person in a household, even though the determination of the eligibility for receiving public assistance and the amount of public assistance received is often based on the characteristics of the entire household or family. Thus, as reported in the census, the percent of persons receiving public assistance income is lower than the percent of households receiving public assistance, and understates the number of persons who directly benefit from public assistance payments.

Table 8				
Public Assistance Utilization Rates by Migration Status				
		Non-movers	Domestic In	Domestic Out
Census	1985-90	5.3%	3.9%	3.7%
CPS	1990-94		5.8%	4.8%

Since 1990 according to the CPS estimates, the percent of domestic in-migrants receiving public assistance remains slightly higher than the percent of domestic out-migrants, although the difference is not statistically significant. In terms of absolute numbers, California appears to have experienced a net loss of domestic migrants receiving public

assistance, although the 90 percent confidence interval includes the possibility that California experienced a net gain of domestic migrants receiving public assistance.

Table 9					
Persons Receiving Public Assistance by Migration Status					
		Domestic In	Domestic Out	Domestic Net	Lower and Upper Bounds of 90% CI for Domestic Net
Census	1985-90	67,300	55,500	11,800	
CPS	1990-94	86,100	100,600	-14,500	-81,600 to 52,600

Occupation

Domestic migrants to California are more likely to be white collar workers than are domestic out-migrants.¹⁵ Between 1985 and 1990, 72 percent of domestic in-migrants were employed in white collar occupations, compared to just over 61 percent of both domestic out-migrants and non-movers (Table 10). The pattern remained unchanged for the recession period of 1990-1994, with 71 percent of domestic in-migrants employed in white collar occupations, and 58 percent of domestic out-migrants employed in white collar occupations (Table 11).

Table 10				
Occupation by Migration Status, 1985-1990				
	Non-Movers	Domestic In- Migrants	Domestic Out- Migrants	Domestic Net Migration
Blue Collar	4,715,200	302,100	329,600	-27,500
White Collar	7,508,400	763,600	526,000	237,000
% White Collar	61.4%	71.6%	61.5%	N/A

Source: 1990 census

¹⁵ White collar occupations include those classified as managerial and professional specialty occupations, and technical, sales, and administrative support. Blue collar occupations include those classified as service (private household, protective, food preparation, etc.); farming, forestry, and fishing; precision production, craft, and repair; and operators, fabricators, and laborers.

Table 11									
Occupation by Migration Status, 1990-94									
	Domestic Out-Migrants			Domestic In-Migrants			Domestic Net Migration		
	Estimate	Limits of 90% Confidence Interval		Estimate	Limits of 90% Confidence Interval		Estimate	Limits of 90% Confidence Interval	
Lower Bound		Upper Bound	Lower Bound		Upper Bound	Lower Bound		Upper Bound	
Blue Collar	438,100	335,330	540,870	221,600	148,502	294,698	-216,500	-342,615	-90,385
White Collar	612,900	491,354	734,446	545,500	430,829	660,171	-67,400	-234,501	99,701
% White Collar	58.3%	50.9%	65.7%	71.1%	63.0%	79.3%			

Source: 1991-1994 Current Population Surveys, aggregated.

In absolute terms, California experienced a small net loss of blue collar workers through domestic migration between 1985 and 1990, and a large net gain of white collar workers. Between 1990 and 1994, California appears to have experienced a slight net loss of white collar workers (although the 90 percent confidence intervals include the possibility of a slight net gain), and a large net loss of blue collar workers. Of the total net migration loss of 284,000 workers between 1990 and 1994, about 76 percent were blue collar workers. The CPS estimates are imprecise, however, as indicated by the very wide confidence intervals.

Housing Ownership

Persons who move from California are more likely to own their residence than are persons who move to California. This was true both prior to and since the onset of the recession. The lower home ownership rates among domestic migrants to California versus domestic migrants from California is a reflection of the younger age structure of the domestic migrants to the State as well as California's higher housing prices versus most other locations. Some people may be leaving the State in order to be able to purchase a house, while other out-migrants who have sold their California house would typically have no difficulty affording a house in another state. For all households regardless of migration status, home ownership rates are higher in the United States (64%) than in California (56%).

According to census data, between 1985 and 1990, more home owners left the State than moved into the State, while the pattern was reversed for renters: more renters moved into California than left California (Table 12).

The CPS estimates of the percent of owners among domestic migrant households are lower than the census estimates. This difference is probably due to lower probabilities of home ownership

Table 12				
Housing Ownership by Migration Status of Householder, 1985-1990				
	Total Households	Owners	Renters	Percent Owners
Non-movers	9,307,800	5,515,500	3,792,300	59.3
Domestic In	738,000	196,400	541,600	26.6
Domestic Out	698,800	290,700	408,100	41.6
Domestic Net	39,200	-94,300	133,500	

Source: 1990 census; the Census Bureau defines householder as the person in whose name the home is owned or rented.

among return migrants captured in the CPS but not the census. In addition, even among more long-term domestic migrants, home ownership rates for domestic migrants who lived in another state one year ago (the CPS measure) versus those who lived in another state five years ago (the census measure) are undoubtedly lower because the one-year-ago migrants have not had as much time to purchase a home in their new State of residence. The most directly comparable figures between the census and CPS are the estimates of domestic net flows, and those estimates are in fairly close agreement.

According to the CPS data, between 1990 and 1994 the percent of owners has increased for both domestic in-migrants and domestic out-migrants, as compared to the pre-recession period of 1985-1990. In absolute terms, California has been experiencing a net loss of both renters and owners during the post 1990 period (Table 13).

Housing Ownership by Migration Status, CPS Estimates									
	Domestic In-Migrants			Domestic Out-Migrants			Domestic Net Migration		
	Estimate	Limits of 90% Confidence Interval		Estimate	Limits of 90% Confidence Interval		Estimate	Limits of 90% Confidence Interval	
Lower Bound		Upper Bound	Lower Bound		Upper Bound	Lower Bound		Upper Bound	
Owners 85-90	163,100	129,814	196,386	310,500	262,848	358,152	-147,400	-205,526	-89,274
Renters 85-90	874,700	796,482	952,918	706,900	636,156	777,644	167,800	62,336	273,264
Owners 90-94	136,400	106,803	165,997	346,400	299,241	393,559	-210,000	-265,677	-154,323
Renters 90-94	502,300	445,519	559,081	614,900	552,081	677,719	-112,600	-197,278	-27,922
% Owners 85-90	15.7%	10.0%	21.4%	30.5%	23.3%	37.8%			
% Owners 90-94	21.4%	7.3%	35.4%	36.0%	25.8%	46.3%			

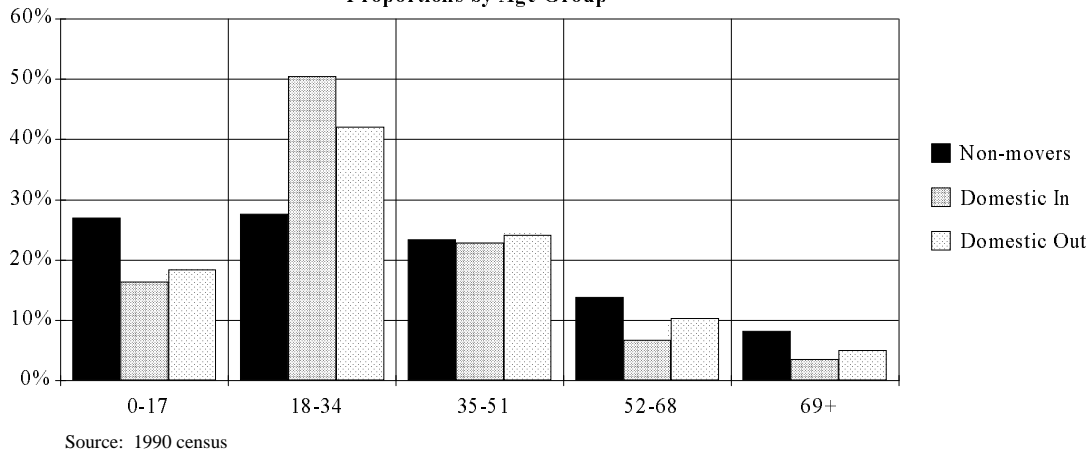
Source: 1991-1994 Current Population Surveys, aggregated

VI. Demographic Characteristics

Age Structure

Young adults are more likely to move than persons in other age groups. Domestic migrants both to and from California tend to be concentrated in young adult ages, particularly between the ages of 18 and 34 (Figure 9). This age pattern of migration is typical of migration which is primarily employment based. Young adults tend to have fewer restrictions on their mobility than do persons of other age groups. Such restrictions could include children, owning a home, marriage, and/or being established in a career. As a result, the economic and social cost of migrating tends to be less for young adults than for persons in other age groups.

Figure 9
Domestic Migrants 1985-1990 and Non-Movers
Proportions by Age Group



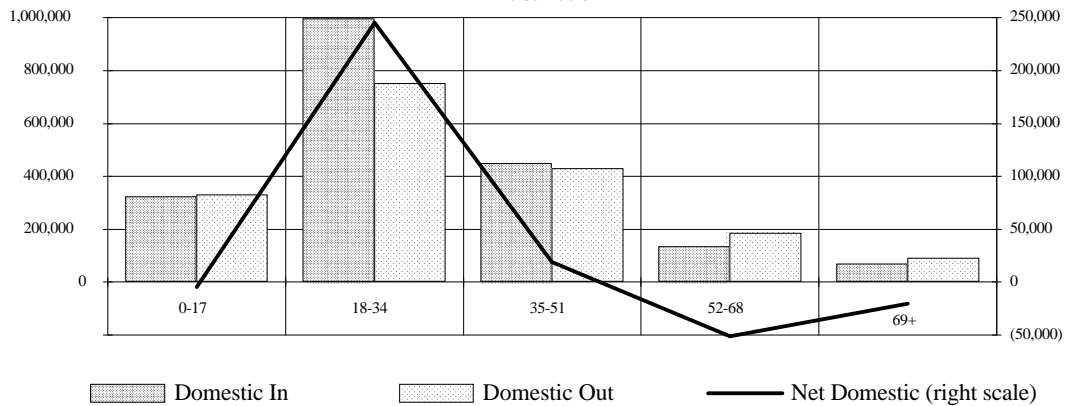
For California, domestic in-migrants are heavily concentrated in young adult age groups, with over 50% between the ages of 18 and 34. Domestic out-migrants are slightly less concentrated in the 18 to 34 age group than are domestic in-migrants, and are slightly more concentrated in the 52 and over age groups. However, even for domestic out-migrants, the proportions in the older age groups are still lower than for the resident non-moving population of the State, and the proportion in the 18 to 35 age group far exceeds that of the resident non-movers.

In terms of absolute domestic migrant flows by age, the 1990 census data agree with the DMV data that between 1985 and 1990 California lost older residents and gained younger residents through domestic migration (Table 14 and Figure 10). CPS data for 1985-90 also suggest the same age pattern of domestic migration, but at overall lower net levels. The 90 percent confidence intervals of the CPS estimates are consistent with the 1990 census estimates.

Table 14					
Domestic Migrants by Age Group, 1985-1990					
	Age Group				
	0-17	18-34	35-51	52-68	69+
Domestic In	323,909	995,634	449,331	132,733	68,529
Domestic Out	328,743	750,334	430,495	184,165	89,165
Net Domestic	-4,834	245,300	18,836	-51,432	-20,636

Source: 1990 census

Figure 10
Domestic Migration by Age Group
1985-1990



Source: 1990 Census

For the recession period of 1990-1994, the CPS data indicate that California experienced net domestic out-migration for all age groups (Table 15 and Figure 10). In particular, according to the CPS estimates, the average annual domestic net migration of young adults plummeted between the pre-recession and recession periods. Prior to the recession, young adults between the ages of 18 and 34 were more likely to move to California than any other age group, according to both census and CPS data. In contrast, during the recession period of 1990-94 the CPS data indicate that young adults were experiencing the greatest negative domestic net migration of any age group. The 18-34 year old age group has the greatest tendency to move, and when the total flow reverses it is not surprising to see this group highly represented.

Average Annual Domestic Migration by Age Group, CPS Data										
		Domestic In-Migrants			Domestic Out-Migrants			Domestic Net Migration		
		Estimate	Limits of 90% Confidence Interval		Estimate	Limits of 90% Confidence Interval		Estimate	Limits of 90% Confidence Interval	
			Lower Bound	Upper Bound		Lower Bound	Upper Bound		Lower Bound	Upper Bound
1990-94	0-17	120,050	93,152	146,948	143,525	114,116	172,934	-23,475	-63,330	16,380
	18-34	202,625	167,686	237,564	263,550	223,706	303,394	-60,925	-113,919	-7,931
	35-51	110,350	84,561	136,139	146,750	117,012	176,488	-36,400	-75,763	2,963
	52-68	32,600	18,581	46,619	64,900	45,121	84,679	-32,300	-56,544	-8,056
	69+	16,500	6,526	26,474	26,400	13,784	39,016	-9,900	-25,982	6,182

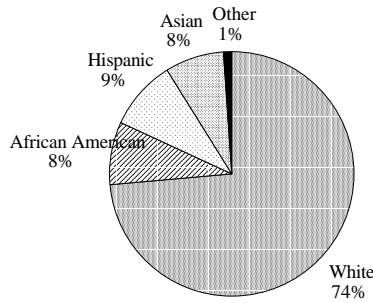
The CPS estimates indicate that the negative domestic net migration of young adults between 1990 and 1994 was fueled by a large decline in young adults moving to California, rather than a large increase in young adults moving away from the State. This suggests that the recession seems to have caused California to lose its attractiveness to young adults in other parts of the country, but does not seem to have dramatically

increased the number of young adults leaving the State. The CPS estimates are imprecise, however, and may overstate the decline in domestic in-migration among young adults as well as fail to note an increase in domestic out-migration for young adults.

Race/Ethnicity

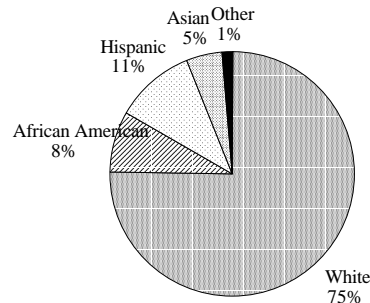
Most domestic migrants both to and from California are White. Compared to the resident non-migratory population of the State, White persons are over represented in the domestic migration flows and Hispanic persons are underrepresented. Between 1985 and 1990, three of every four domestic migrants both to and from California were White (Figures 11 and 12). In comparison, only 58 percent of the resident non-moving population of the State in 1990 were White. Hispanic persons represented only about 10 percent of the domestic migration flows, but comprised 25 percent of the resident non-moving population of the State.

Figure 11
Domestic In-Migrants 1985-90



Source: 1990 Census

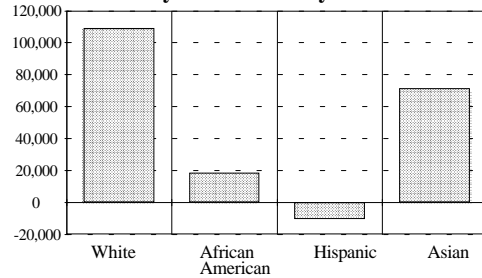
Figure 12
Domestic Out-Migrants 1985-90



Source: 1990 Census

In absolute terms, according to census data between 1985 and 1990 California experienced net gains of White persons (109,000), Asians and Pacific Islanders (71,300), and African Americans (18,300), and a net loss of Hispanic persons (-10,400) through domestic migration (Figure 13).¹⁶ Thus, between 1985 and 1990 California experienced domestic net migration gains for all major race/ethnic groups except Hispanic. Between 1985 and 1990, in terms of domestic migration, California experienced "Hispanic flight" rather than "White flight."¹⁷

Figure 13
Domestic Net Migration 1985-90
by Race/Ethnicity



Source: 1990 Census

This net domestic out-migration of Hispanics is not surprising given California's much higher proportion of Hispanic residents than in the rest of the country. Instead, perhaps

¹⁶ CPS data are consistent with the 1990 census. That is, the census estimates for 1985-1990 lie within the confidence intervals of the CPS estimates.

¹⁷ With 'flight' defined as net domestic out-migration.

the most remarkable feature of the domestic migration patterns by race/ethnicity is the net gain of Asians and Pacific Islanders. California has much higher concentrations of Asians and Pacific Islanders than does the rest of the country. If the race/ethnic composition of domestic migration flows into and out of California were consistent with the race/ethnic composition of the sending regions, then California would experience net domestic out-migration of Asians and Pacific Islanders. That California actually experienced a net gain of Asians and Pacific Islanders through domestic migration indicates a strong locational preference for California among Asians and Pacific Islanders.

Table 16									
Race/Ethnic Composition of Domestic Migrants, 1990-1994									
	Domestic In-Migrants			Domestic Out-Migrants			Domestic Net Migration		
	Estimate	Limits of 90% Confidence Interval		Estimate	Limits of 90% Confidence Interval		Estimate	Limits of 90% Confidence Interval	
		Lower Bound	Upper Bound		Lower Bound	Upper Bound		Lower Bound	Upper Bound
Asian	173,800	109,199	238,401	116,400	63,491	169,309	57,400	-26,103	140,903
African American	239,000	163,287	314,713	143,800	84,997	202,603	95,200	-666	191,066
Hispanic	189,200	121,785	256,615	279,800	197,918	361,682	-90,600	-196,664	15,464
Other	9,000	-5,729	23,729	48,500	14,321	82,679	-39,500	-76,718	-2,282
White	1,295,400	1,118,750	1,472,050	1,992,400	1,773,385	2,211,415	-697,000	-978,376	-415,624
Asian	9.1%	6.6%	11.7%	4.5%	2.9%	6.1%			
African American	12.5%	10.2%	14.9%	5.6%	4.0%	7.1%			
Hispanic	9.9%	7.6%	12.3%	10.8%	8.9%	12.7%			
Other	0.5%	0.0%	1.0%	1.9%	1.1%	2.7%			
White	68.0%	64.4%	71.5%	77.2%	74.5%	79.9%			

Source: 1991-1994 Current Population Surveys, aggregated

Since the onset of the recession, in terms of domestic migration California is experiencing White flight and probably Hispanic flight. For the period 1990-94, the CPS data suggest that White residents are leaving California in much higher numbers than other race and ethnic groups (Table 16). Even the upper bound of the 90 percent confidence interval for domestic net migration indicates that California was losing over 100,000 White residents per year between 1990 and 1994, while the lower bound indicates a net loss of almost 250,000 per year due to domestic migration. The CPS point estimate suggests that Hispanic domestic net migration was also negative, with a net loss of almost 25,000 Hispanic residents per year due to domestic migration (however, the lack of precision of the CPS data means that the possibility of slightly positive Hispanic domestic net migration cannot be ruled out).

The CPS data also indicate that between 1990 and 1994, California experienced domestic net migration gains of African Americans and Asians and Pacific Islanders, although the estimates are not significantly positive (Table 16).

From the pre-recession period to the recession period, the proportion of White persons in the flow of domestic migrants out of California increased (from 74 percent to 77 percent according to the CPS), while the proportion of White persons in the flow of domestic migrants into California decreased (from 74 percent to 68 percent). Only the decline in the proportion White among domestic in-migrants is statistically significant.

For the 1990-1994 period, the proportion of White persons among the domestic out-migration flow is significantly higher than the proportion of White persons among the domestic in-migration flow, while no significant differences exist in the pre-recession flows of White domestic migrants.

Non-white domestic migration, and in particular Asian and Pacific Islander domestic migration to California, may be less influenced by economic factors than White migration to and from the State. Domestic migration is the product of economic and social factors. While California's economy remains depressed vis-à-vis the nation's economy, Asian and Pacific Islanders appear to be moving to the State in greater numbers than moving out of the State. Given California's high concentration of Asian and Pacific Islanders, and the low concentration in the rest of the country, this pattern of net inflows to the State serves to further concentrate the nation's Asian and Pacific Islander population into California, and suggests that social factors may outweigh economic factors in locational decisions for some Asian and Pacific Islanders.

Gender

Males are slightly more likely to migrate, both into and out of California, than are females. Between 1985 and 1990 according to census data, 54% of domestic in-migrants to California were males, while 53% of adult domestic out-migrants from California were males. Between 1990 and 1994, according to CPS estimates, slightly over half of adult domestic migrants are males (although the 90 percent confidence intervals include the possibility that less than half of domestic migrants are males).

Table 17				
Domestic Migrants by Gender: Percent Male				
	Domestic In-Migrants		Domestic Out-Migrants	
	Estimate	90% Confidence Interval	Estimate	90% Confidence Interval
Census 1985-90	53.6%		52.9%	
CPS 1990-94	51.5%	44.5% to 58.5%	50.6%	44.3% to 56.8%

Because domestic migration to and from California is primarily economically motivated and men are more likely to be in the labor force than women, it is not surprising that men are slightly more likely than women to move into and out of California. Indeed, among domestic migrants in the labor force, census data indicate that well over half were males (56% of domestic-in-migrants, and 58% of domestic-out-migrants). The pattern has not changed since the onset of the recession. According to CPS data for 1990-1994, among members of the labor force almost 60 percent of the domestic migrants into and out of California were males.

VII. Social Characteristics

Educational Attainment

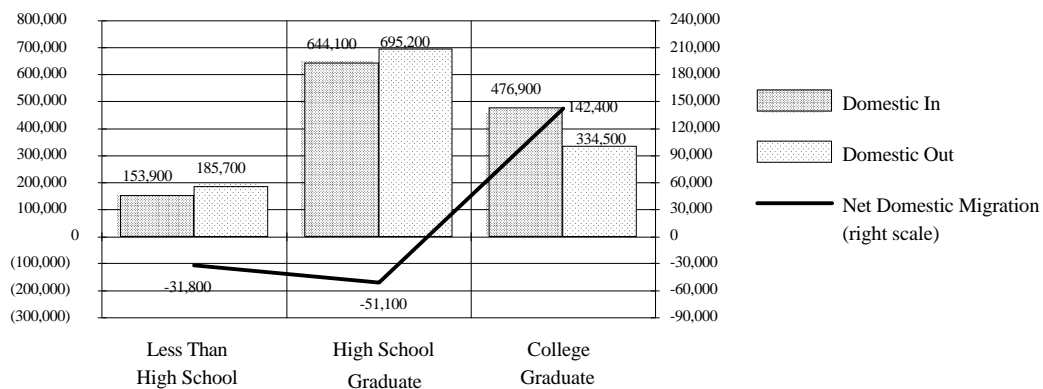
Persons who move to California from other states tend to be better educated than the resident non-movers in the State, and better educated than persons who leave California to live in other states. According to 1990 census data, of domestic in-migrants to California aged 25 and older, over 37 percent had graduated from college, compared to only 22 percent for non-movers and 27 percent for domestic migrants from California (Table 18).

Table 18			
Educational Attainment by Migration Status 1985-1990 (a)			
	Non-movers	Domestic In- Migrants	Domestic Out- Migrants
Less Than High School	23.8%	12.1%	15.3%
High School Graduate	53.9%	50.5%	57.2%
College Graduate	22.3%	37.4%	27.5%

(a) For persons aged 25 and over only.
Source: 1990 census

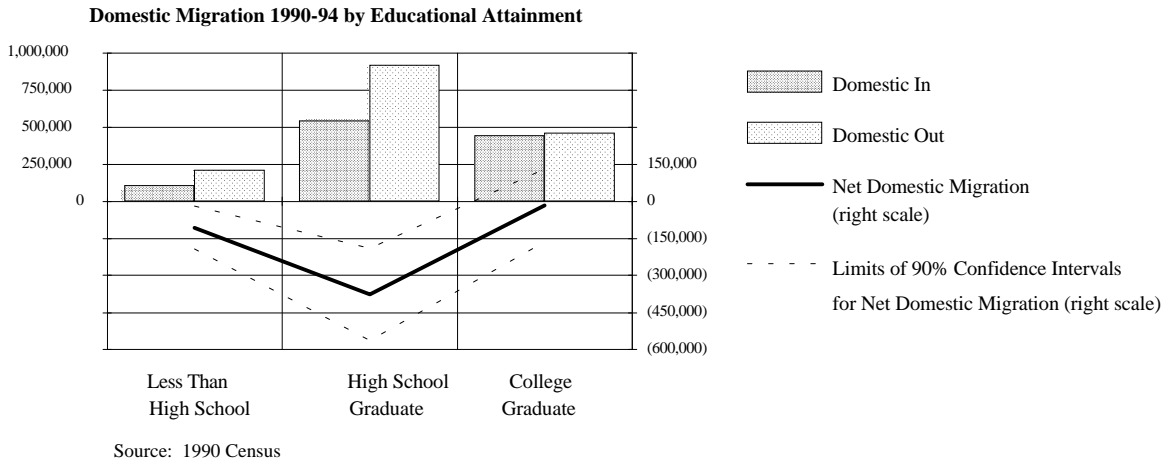
In absolute terms, census data suggest that between 1985 and 1990 California gained large numbers of college graduates through domestic migration. At the same time, persons with relatively low educational attainment levels were more likely to leave the State than move to California (Figure 14).

Figure 14
Domestic Migration 1985-90 by Educational Attainment



Source: 1990 census

Figure 15



Since the onset of the recession, the educational attainment levels of domestic migrants moving to California have increased relative to the prior period, and are significantly higher than the educational attainment levels of domestic migrants leaving California (41% vs. 29%, based on CPS estimates). Even in absolute terms, despite massive domestic migration out of California between 1990 and 1994, the CPS estimate suggests that California experienced only a very small (and statistically insignificant) net loss of college graduates through domestic migration. At the same time, according to the CPS data, California experienced a large net loss of persons with less than a college degree (Table 19).

Table 19									
Educational Attainment of Domestic Migrants 1990-1994									
	Domestic In-Migrants			Domestic Out-Migrants			Domestic Net Migration		
	Estimate	Limits of 90% Confidence Interval		Estimate	Limits of 90% Confidence Interval		Estimate	Limits of 90% Confidence Interval	
Lower Bound		Upper Bound	Lower Bound		Upper Bound	Lower Bound		Upper Bound	
College Graduates	444,900	341,337	548,463	460,800	355,401	566,199	-15,900	-163,664	131,864
High School Graduates	542,000	427,697	656,303	918,000	769,266	1,066,734	-376,000	-563,582	-188,418
Less than High School	104,700	54,452	154,948	210,400	139,174	281,626	-105,700	-192,867	-18,533
% College Graduates	40.8%	33.5%	48.0%	29.0%	23.4%	34.6%			

Source: 1991-1994 Current Population Surveys, aggregated for persons aged 25 and over at the time of the survey

Household Living Arrangements

California tends to lose families to other states, and tends to attract single persons (either living alone or living with unrelated individuals) from other states. Both the 1990 census and the CPS indicate that family households comprise a greater proportion of the migrant stream leaving California than the migrant stream entering California, although the differences are not great. Between 1985 and 1990, according to the census 68% of the householders who left the State were in family households, while 63% of the householders who moved to the State were in family households. In absolute terms, both the census and the CPS suggest that California was a net exporter of families between 1985 and 1990 (Table 20).

Table 20					
Household Type and Migration Status 1985-90					
	1990 census				CPS Estimates
	Non-Movers	Domestic In	Domestic Out	Domestic Net	Domestic Net 90% CI
Non-family households	2,839,440	291,967	241,853	50,114	8,600 to 151,400
Family households	6,468,344	446,079	456,981	-10,902	-156,700 to 37,400
% Families	69.5%	60.4%	65.4%		

This pattern appears to have continued during the recession period of 1990 to 1994, with the CPS indicating that 63% of the householders who moved from the State were in family households compared to 60% of the householders who moved to California. The difference, however, is not large and is not statistically significant. In absolute terms, the CPS estimates suggest that California experienced a net loss of both non-family and family households between 1990 and 1994 (Table 21).

Table 21									
Households by Type and Migration Status 1990-1994									
	Domestic In-Migrants			Domestic Out-Migrants			Domestic Net Migration		
	Estimate	Limits of 90% Confidence Interval		Estimate	Limits of 90% Confidence Interval		Estimate	Limits of 90% Confidence Interval	
Lower Bound		Upper Bound	Lower Bound		Upper Bound	Lower Bound		Upper Bound	
Total Households	638,700	574,679	702,721	961,300	882,775	1,039,825	-322,600	-423,915	-221,285
Non-Family Households	252,500	212,236	292,764	351,800	304,276	399,324	-99,300	-161,587	-37,013
Family Households	386,300	336,500	436,100	609,400	546,863	671,937	-223,100	-303,043	-143,157
% Family Households	60.5%	48.3%	72.7%	63.4%	53.8%	73.0%			

Source: 1991-1994 Current Population Surveys, aggregated

VIII. Geographic Detail - Origins and Destinations

The small CPS sample will not support analyses of origins and destinations of domestic migrants at the state level. However, DMV data from driver license address changes and IRS data from tax returns do provide state level detail for both the pre-recession and recession periods. The 1990 census provides state level detail for domestic migrants for the pre-recession period only.

Domestic migration between California and another state is primarily a function of the relative economic conditions of California and the other state, the proximity of the state to California, and the population of the other state. Not surprisingly, most of the domestic migration between California and other states takes place with neighboring or close-by states and with populous states in other parts of the country. The states which are the leading destinations of domestic out-migrants from California are generally the same states which are the leading sources of domestic in-migrants to California. Net differences in the gross flows of domestic migrants are perhaps a more interesting and telling means of measuring California's attractiveness vis-à-vis another state.

Prior to the onset of the recession, California experienced positive domestic net migration from most states. For domestic migration between 1985 and 1990, the estimates based on DMV and IRS data are in general agreement with each other and with the 1990 census in terms of the primary states of origin and destination, although differences in the estimates of the number of domestic migrants can be substantial. Between 1985 and 1990 on a net basis, California tended to attract domestic migrants from distant states, and tended to send domestic migrants to nearby states in the West (Table 22). The states which send the most migrants to California are also likely to be the states which receive the most migrants from California. Of the ten leading states of origin of domestic in-migrants to California, eight are among the ten leading states of destination.

Table 22							
Leading States of Origin and Destination of Domestic Migrants To/From California 1985-1990							
Leading States of Origin for Domestic-In Migrants to California		Leading States of Destination for Domestic-Out Migrants from California		Leading States of Origin of Net Migration Gain to California		Leading States of Destination of Net Migration Loss from California	
Texas	207,600	Washington	155,400	Texas	74,600	Washington	-59,500
New York	124,900	Arizona	133,000	New York	63,100	Nevada	-58,600
Illinois	110,800	Texas	133,000	Illinois	50,700	Oregon	-50,500
Arizona	110,000	Oregon	129,600	Colorado	35,600	Arizona	-23,000
Washington	96,000	Nevada	109,400	Louisiana	23,200	Florida	-23,000
Colorado	96,000	Florida	95,600	Michigan	20,800	Georgia	-11,000
Oregon	79,100	New York	61,800	Ohio	14,700	Virginia	-10,500
Florida	72,600	Colorado	60,300	Utah	14,600	N. Carolina	-7,800
Michigan	58,000	Illinois	60,200	Pennsylvania	14,200	Arkansas	-3,800
Ohio	53,000	Virginia	59,000	Alaska	13,500	Tennessee	-3,700

Source: 1990 census

Since the onset of the recession, California has experienced negative domestic net migration with most other states. For most states, the number of persons moving to California has declined, while the number of persons arriving from California has increased.

Table 23					
Leading States of Origin of Domestic Migrants to California since 1990					
IRS Data 1990-1992		DMV Data 1990-1992		DMV Data 1990-1994	
Texas	94,700	Texas	99,300	Texas	171,700
Arizona	68,300	Arizona	72,600	Arizona	125,500
New York	58,800	New York	69,000	New York	122,700
Washington	57,700	Washington	52,100	Washington	100,400
Florida	49,000	Florida	51,400	Florida	95,200
Illinois	48,600	Illinois	51,700	Illinois	92,800
Nevada	40,100	Colorado	44,200	Oregon	78,200
Oregon	38,600	Oregon	42,200	Colorado	75,400
Colorado	36,200	Nevada	38,900	Nevada	73,200
Virginia	33,900	Massachusetts	39,400	Michigan	68,900

As shown in Table 23, the IRS and DMV estimates are in relatively close agreement regarding the states of origin of domestic-in migrants and the number of domestic in-migrants from those states. The leading states of origin for domestic migrants to California has not substantially changed from the pre-recession period.

The leading states of destination of domestic out-migrants from California since 1990 are the same states as in the pre-recession period, according to both the IRS and DMV estimates. However, as noted previously, the DMV data seem to underestimate domestic out-migration from California in comparison with other estimates (Table 24).

Table 24**Leading States of Destination of Domestic Migrants From California since 1990**

IRS Data 1990-1992		DMV Data 1990-1992		DMV Data 1990-1994	
Texas	134,600	Washington	92,600	Washington	193,000
Washington	125,900	Arizona	89,400	Nevada	191,400
Arizona	110,900	Oregon	89,000	Arizona	181,700
Oregon	99,900	Nevada	87,900	Oregon	178,100
Nevada	89,900	Texas	71,800	Texas	140,700
Florida	64,300	Colorado	54,600	Colorado	137,100
Colorado	64,200	Florida	50,800	Florida	106,300
Illinois	48,700	New York	36,700	New York	74,300
Virginia	39,600	Illinois	35,500	Illinois	67,600
New York	37,300	Virginia	25,712	Utah	58,200

According to the DMV data, between 1990 and 1994 California experienced a large net loss of domestic migrants to other states in the West, and experienced a moderate net gain of domestic migrants from Texas, Illinois, and several Northeastern states (Table 25).

Table 25**Domestic Net Migration: DMV Data 1990-1994**

Leading States of Origin of Net Migration Gain to California		Leading States of destination of Net Migration Loss from California	
New York	48,400	Nevada	-118,200
Massachusetts	45,100	Oregon	-99,800
Texas	31,000	Washington	-92,600
New Jersey	27,800	Colorado	-61,700
Illinois	25,200	Arizona	-56,200

Again, with a few exceptions, there is general agreement between the DMV and IRS data in terms of primary source and destination states for domestic net migration. However, there are substantial differences in terms of numbers, with the IRS estimates indicating fewer gains and greater losses. The IRS data are only available through 1992. The IRS domestic net migration estimates by state are compared with those of the DMV for the same 1990-1992 period in Table 26.

Table 26			
Domestic Net Migration: 1990-1992			
Leading States of Origin of Net Migration Gain to California			
IRS Estimates		DMV Estimates	
New York	21,400	New York	32,300
Massachusetts	13,900	Massachusetts	29,100
New Jersey	7,900	Texas	27,500
Connecticut	4,600	New Jersey	17,800
New Hampshire	2,300	Michigan	17,300
Leading States of Destination of Net Migration Loss from California			
IRS Estimates		DMV Estimates	
Washington	-68,200	Nevada	-49,000
Oregon	-61,300	Oregon	-46,800
Nevada	-49,700	Washington	-40,500
Arizona	-42,600	Arizona	-16,800
Texas	-39,900	Idaho	-10,600

IX. Domestic Migration in Perspective

For any individual year, domestic migration is not a demographic phenomena which dramatically impacts the State. In terms of population growth, net changes in the State's population due to domestic migration have not exceeded one percent for over 30 years. Welfare caseloads, school enrollments, employment, and tax revenues are also only marginally affected by domestic migration for any given year.

The transformative power of domestic migration, like the other components of population change, is instead felt over the long run. In terms of long-term impacts, domestic migration has been as important as international migration to the State's rapid population growth. In general, domestic migration has been good to California, providing the State with many highly educated persons with higher than average incomes. Even during the most recent recessionary period, the large outflow of domestic migrants has perhaps kept the State's unemployment rate from rising to even higher levels.

As California's economy continues to recover, it remains to be seen whether domestic migration to the State will also recover. The historical record suggests that net domestic migration to California will become positive as the State's economy improves relative to the nation's. The most recent data indicate that California's unemployment rate is now 1.3 times higher than the nation's (compared to 1.5 times higher in January of 1994), and anecdotal evidence from moving companies and the monthly driver license address change data indicate that California net domestic out-migration has slowed. Still, some would argue that the large flows of international migrants to California have fundamentally altered the relationship between economic growth and domestic migration in the State, and that net domestic migration will not begin to approach the numbers seen prior to the recession. Certainly the large exodus from the State during the early 1990s is without

precedent, and could portend a fundamental change in domestic migration to and from California.

X. Additional Information

This report only includes selected data from the 1990 census and from the 1986 to 1994 Current Population Surveys. A variety of tables containing detailed data as extracted from the 1990 Public Use Microdata File (PUMS) and the 1986-1994 Current Population Surveys are available from the California Department of Finance. The cost for these tables is \$100. For further information or to order the data, please contact Richard Lovelady at (916) 323-4141.

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Appendix A Descriptions of the Data Sets and Estimation Procedures

1990 census

Estimates of domestic migration from the 1990 census are based on responses to the mobility question asked of persons who completed the long form census questionnaire. Specifically, the 1990 census asked one respondent from each sampled household to answer the following question for each person in the household:

Did this person live in this house or apartment 5 years ago (on April 1, 1985)?

If the response was "No", the respondent was instructed to write in the state or foreign country of residence of 5 years ago. Our tabulations of domestic in-migrants are derived from the 5 percent Public Use Microdata Sample for California, while our tabulations of domestic out-migrants are derived from tabulations of the 5 percent Public Use Microdata Sample for the United States.¹⁸

Current Population Surveys

The Current Population Survey is a monthly survey conducted by the Bureau of the census for the Bureau of Labor Statistics. The data used in this report come from the March supplemental survey that is also referred to as the Annual Demographic Survey.

Surveyors asked one respondent from each household questions about each member of the household. The migration data was taken from responses to the question:

Was . . . living in this house (apt.) 1 year ago; that is on March 1, 199x?

If the response was "No", the respondent was further questioned regarding the location of the prior place of residence. Persons living in California at the time of the survey and who lived in some other state one year earlier were tabulated as domestic in-migrants, while persons living outside of California at the time of the survey and who lived in California one year earlier were tabulated as domestic out-migrants.

¹⁸ The 5 percent sample provides detailed information for one out of every twenty households in the state, while the 1 percent sample provides detailed information for one out of every hundred households in the country. The samples are weighted to reflect the total census count of persons and households.

California Department of Motor Vehicles data (DMV)

The California Department of Motor Vehicles produces an annual report which includes information on interstate driver license address changes. When a person with a driver license from another state applies for a California driver license, that person is required to relinquish the driver license from his/her previous state of residence. The California Department of Motor Vehicles records the information on their own files, and returns the driver license to the previous state of residence. Similarly, other states return California driver licenses to the California Department of Motor Vehicles when former California drivers apply for licenses in other states.

Potential problems with the driver license address change data fall into two categories: 1) problems associated with the process, and reporting of driver licenses, and 2) coverage issues.

Problems associated with the process and reporting of driver licenses include:

- Failure on the part of the applicant to report the possession of a driver license from another state.
- Failure of an interstate mover to obtain a new license in his/her new state of residence.
- A lag between the time of the move and the time of the reporting of the move to the DMV.
- Failures in obtaining and recording prior state of residence licenses among motor vehicle departments in California but especially in other states.

The extent of such problems is unknown, but could severely erode the quality of the data.

Other potential problems with the driver license address change data can be classified as coverage issues. Many domestic migrants do not drive. Alternatively, some domestic migrants will stop driving around the time of their move, and therefore will no longer need a driver license. And still others will not begin driving until just after their move, and therefore will not have a license from their prior state of residence. Such coverage issues can partially be resolved by making assumptions about the rate of non-coverage.

Prior to 1993, the Department of Finance monitored the data monthly, and sometimes made adjustments to the series based on inconsistencies in the reporting of California driver licenses received from other states. In addition, the Department of Finance estimated that one driver license address change corresponded to 1.5 actual moves, representing an undercoverage rate of 33 percent. Unpublished data provided by the Department of Finance include this adjustment, and are the source of the estimates for the annual DMV based estimates used in this report for 1985 through 1992. For fiscal year 1987, no driver license address change data is available. In that year, coding errors and inconsistencies in the data prevented the Department of Finance from developing meaningful tabulations.

For fiscal years 1993 and 1994, we have estimated domestic migration by applying the same undercoverage rate of 33% to unadjusted driver license address change data reported by the Department of Motor Vehicles. A comparison of population estimates

with the total number of driver licenses in the State indicates that the ratio of persons to driver licenses statewide is about 1.5:1 (Table A1).¹⁹ The implicit assumption in applying this ratio to interstate driver license address changes is that the ratio of persons per driver license address change is the same for domestic migrants as it is for non-movers in the State (i.e. that the migration patterns of non-drivers matches that of drivers).

Table A-1			
Total Population and Driver Licenses in California			
Year	January 1 Population Estimate (DOF)	December 31 (prior year) Driver Licenses	Persons per Driver License
1989	28,771,200	19,577,100	1.47
1990	29,557,800	19,877,400	1.49
1991	30,325,400	20,065,900	1.51
1992	30,981,900	20,140,700	1.54
1993	31,522,300	20,182,200	1.56
1994	31,960,600		

However, there is some evidence that there may be more movers per driver license address change for departures from California than there are per driver license address change for entrants to California. Specifically, according to IRS data for 1986 through 1992 there were 1.83 exemptions per return for tax filers who moved to California, and 2.02 exemptions per return for tax filers who left the State. Census data and CPS data are in agreement that more families leave the State than

enter the State. For the 1985-1990 period, according to census estimates California experienced negative domestic net migration for persons in age groups least likely to hold a driver license (persons less than 18 years old and greater than 51 years old), although the pattern for 1990-1994 based on CPS estimates suggests that California experienced net losses of person in all age groups.

Internal Revenue Service Interstate Migration Flows

The Internal Revenue Service estimates interstate migration flows of taxpayers by matching tax returns from year to year. Matching is based on the social security number of the primary taxpayer. If the state in the address on the most recent tax return is different from the state in the address of the previous year's return, then the taxpayer and the dependents on the return are considered interstate migrants; if the match indicates no change in state, then the taxpayer and the dependents are considered non-migrants; and if no match can be made, the tax return is not considered. Table A-2 provides unadjusted IRS data as received from the California Department of Finance.

¹⁹ Recent Census Bureau estimates of the state's population are slightly lower than those of the Department of Finance, but the difference is less than 2 percent. Persons per driver license for 1993 based on census estimates are practically the same as those based on DOF estimates (1.54 versus 1.56).

Table A-2						
Unadjusted Internal Revenue Service Interstate Migration Flows to and from California (based on exemptions)						
	Non-mover	Foreign to California	Foreign from California	Domestic to California	Domestic from California	Total exemptions in California
1985 to 1986	20,126,480	54,151	47,129	530,239	429,496	20,710,870
1986 to 1987	20,598,864	51,601	49,739	501,494	402,325	21,151,959
1987 to 1988	20,276,697	49,682	42,940	471,035	408,690	20,797,414
1988 to 1989	20,975,225	51,412	42,993	451,527	454,342	21,478,164
1989 to 1990	22,510,549	53,383	44,112	446,309	520,362	23,010,241
1990 to 1991	23,010,999	50,814	39,086	397,444	531,946	23,459,257
1991 to 1992	23,340,798	57,708	34,674	372,254	542,349	23,770,760

Potential problems with the data include:

- Lack of complete coverage - - not everyone files a return or is listed as a dependent in two subsequent years. The migration patterns of persons who do not file in subsequent years might be very different from those that do.
- Changes in filing status from one year to the next will result in non-matches. For example, an individual who moves out of his/her parents home to a different state and files a tax return as a primary taxpayer will not be matched and will therefore not be considered an interstate migrant. In the adjusted estimates we develop, this is a problem only if the interstate migration patterns of persons whose filing status changes are different than for other taxpayers.
- Dependents might have moved or not moved independently of the primary taxpayer.

Because the IRS matching only covers primary taxpayers (plus exemptions) who file tax returns in two subsequent years and who are successfully matched via their social security numbers, it is necessary to adjust the data to reflect interstate movements for all persons.

Table A-3			
Adjustment Factors Applied to IRS interstate Migration Flow Data			
Year Filed	Total California Exemptions	July 1 Population Estimate /a	Adj. Factors /b
1986	20,710,870	27,052,000	1.31
1987	21,151,959	27,717,000	1.31
1988	20,797,414	28,393,000	1.37
1989	21,478,164	29,142,000	1.36
1990	23,010,241	29,976,000	1.30
1991	23,459,257	30,646,000	1.31
1992	23,770,760	31,300,000	1.32

/a Department of Finance estimates
/b Factors = population estimate / total exemptions

We have estimated domestic migration from IRS data by applying an adjustment or weighting factor to individual year IRS data (Table A-3). These factors are lower than those for the DMV data (Table A-1), and indicate that tax return data provide a more complete coverage of the population than the driver license data. The undercoverage rate for the IRS data is about 24%, compared to an undercoverage rate of about 33% for the DMV data. Our methodology in adjusting the IRS data implicitly assumes that the migration patterns of persons who are not matched are the same as the migration patterns of

those who are matched, and that the migration pattern of dependents is accurately reflected by the migration patterns of primary taxpayers.

Appendix B Detailed Comparisons of Domestic Migration Estimates

Comparisons of Recent Estimates of Annual Domestic Migration

As stated previously (Table 1), only the Department of Motor Vehicle driver's license address change report (DMV), the Current Population Survey (CPS), and the Internal Revenue Service data on tax returns (IRS) provide annual information for gross flows of domestic migrants (i.e. both domestic in-migrants and domestic out-migrants). Estimates of domestic migration derived from each of these annual data sets are shown in Table B-1. Estimation procedures are described in Appendix A.

Table B-1									
Estimates of Domestic Migration by Source of Data (a)									
	Driver License Address Changes (DMV)			Current Population Survey (CPS)			Internal Revenue Service (IRS)		
	Domestic In	Domestic Out	Domestic Net	Domestic In	Domestic Out	Domestic Net	Domestic In	Domestic Out	Domestic Net
1985-86	484,500	369,000	115,500	637,139	572,412	64,727	692,584	560,997	131,588
1986-87	442,500	330,000	112,500	575,970	526,775	49,195	657,145	527,197	129,949
1987-88	624,700	448,700	176,000	513,263	574,626	-61,359	643,065	557,951	85,115
1988-89	656,000	459,000	209,000	611,015	747,993	-136,978	612,641	616,460	-3,819
1989-90	645,000	519,000	126,000	652,266	650,394	1,872	581,418	677,888	-96,471
1990-91	564,100	509,500	54,600	559,523	593,599	-34,076	519,201	694,908	-175,707
1991-92	512,700	532,300	-19,600	526,239	621,030	-94,791	486,294	708,498	-222,204
1992-93	434,100	583,900	-149,900	421,842	731,273	-309,431			
1993-94	413,600	600,200	-186,500	398,810	634,617	-235,807			

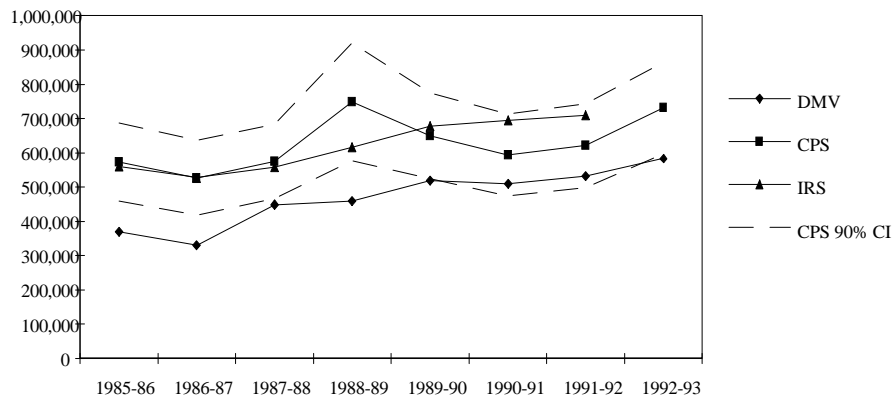
(a) See Appendix A for estimation procedures.

Because the CPS estimates are based on a sample of the population, it is possible to quantitatively estimate the precision of the CPS estimates. Ninety percent confidence intervals for the CPS estimates are shown in Table B-2. The 90 percent confidence intervals for the CPS estimates are quite wide, indicative of a very high degree of uncertainty. The confidence intervals for annual domestic net migration are particularly wide, and suggest that the *annual* domestic migration point estimates from the CPS are not dependable.²⁰

	Domestic In-Migrants		Domestic Out-Migrants		Net Migration	
	Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound	Upper Bound
1985-86	517,199	757,079	458,728	686,096	-100,530	229,984
1986-87	461,933	690,007	417,717	635,833	-108,597	206,987
1987-88	410,458	616,068	465,849	683,403	-211,030	88,312
1988-89	455,740	766,290	576,193	919,793	-368,550	94,594
1989-90	526,843	777,689	525,151	775,637	-175,376	179,120
1990-91	443,358	675,688	473,949	713,249	-200,840	132,688
1991-92	413,582	638,896	498,647	743,413	-261,132	71,550
1992-93	320,977	522,707	598,471	864,075	-476,195	-142,667
1993-94	300,806	496,814	511,040	758,194	-393,529	-78,085

These three data series which are available on an annual basis and which allow for gross flow estimates provide relatively consistent estimates of the number of persons leaving the State (Figure B-1). Each of the estimates series indicates generally increasing numbers of people leaving the State between 1985 and 1994. The DMV estimates show the same

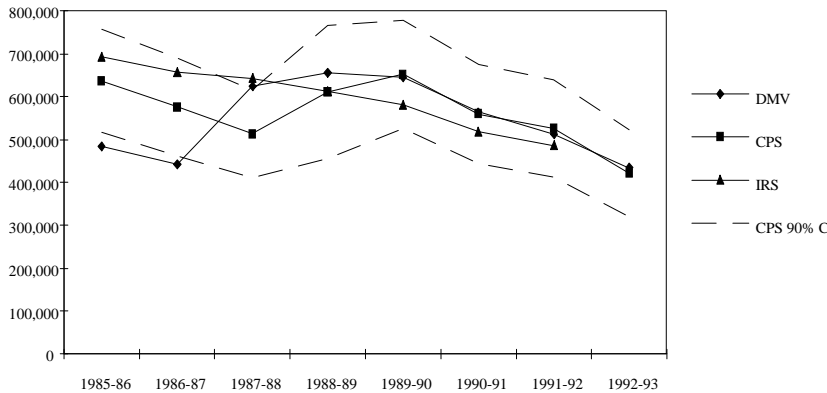
Figure B-1
Measures of Domestic Out Migration From California



trend over time as the IRS and CPS series, but the level is consistently lower than the other series. In particular, the DMV series lies below the CPS confidence intervals for six of the eight years. In contrast, the IRS series is contained in the CPS confidence intervals for the entire period. These discrepancies suggest that the DMV estimates understate domestic out-migration from California.

²⁰ See Appendix C for a more complete treatment of the determination of confidence intervals for the CPS estimates.

Figure B-2
Measures of Domestic In Migration to California

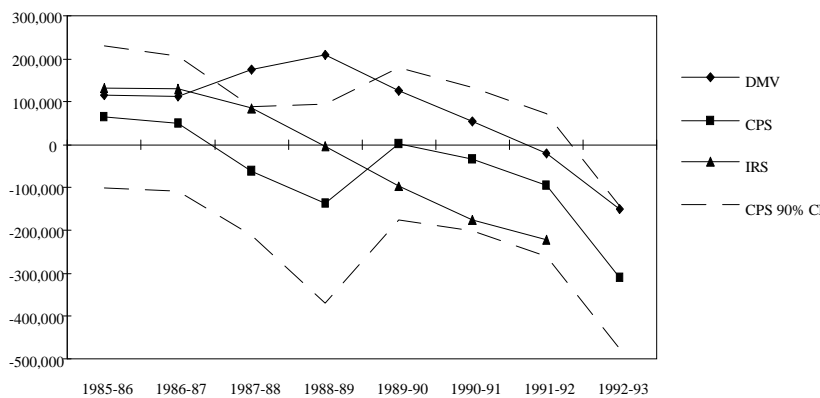


California between 1986 and 1989 increased, while the IRS based estimates show consistent declines during the same period. According to the CPS estimates, domestic in-migration declined between 1985 and 1988 and then increased between 1988 and 1990. The DMV estimates fall just outside the very wide CPS confidence intervals for each estimate between 1985 and 1988, though the direction of the difference is not consistent. With the slight exception of 1987-88, the IRS estimates consistently fall within the CPS confidence intervals.

Since 1989-90, all three series indicate large declines in the number of people moving to California (Figure B-2). However, prior to 1989-90 the series suggest very different patterns. Prior to 1989-90, according to the estimates based on DMV data the number of people moving to

Domestic net migration is simply the difference between domestic out-migration and domestic in-migration. The three series of domestic net migration estimates are displayed in Figure B-3. All the series show declining domestic net migration over the past few years, and all agree that domestic net migration has become negative (that is, more people are leaving California than moving to California domestically).

Figure B-3
Measures of Net Domestic Migration to California



However, disparities between the domestic net migration estimates are large and troubling. The CPS and IRS estimates of domestic net migration are much lower than the DMV estimates. Indeed, between 1988 and 1990 the DMV estimates indicate substantial *increases* in the State's

population due to domestic net migration, while the CPS and IRS estimates suggest slight *decreases* in the State's population due to domestic net migration. In general, the IRS and CPS annual estimates show greater consistency with each other than does either series with the DMV estimates.

Reconciling these differences is not easy. Because not all of the data sets produce estimates for the same migratory population, nor for the same time frame (for example, the census measure is based residence five years ago, while the CPS measure is based on residence one year ago) inconsistencies between the various estimates should be expected. Appendix A contains descriptions of each of the data sets.

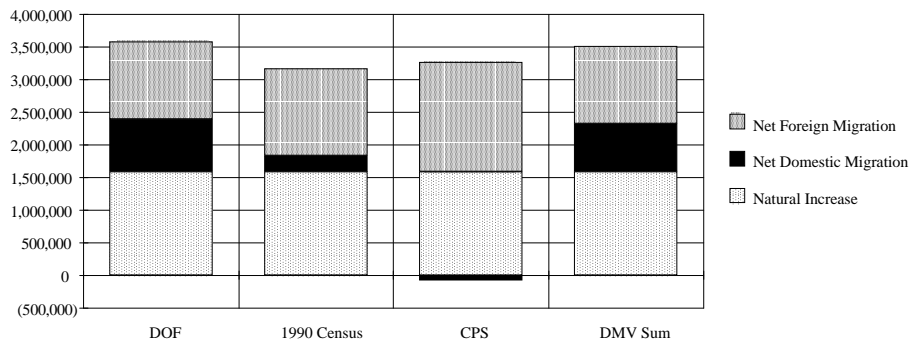
Unfortunately, as shown in Figures B1-B3 and as discussed above, the inconsistencies between these data sets are not small, and are not solely due to differences in coverage. Because the DMV based estimates of domestic out-migrants are substantially lower than

Table B-3			
Percent of Annual Movers that are Return Migrants, 1985-90 (a)			
	DMV Sum	CPS Sum	IRS Sum
Domestic In	29%	32%	36%
Domestic Out	16%	42%	39%
(a) Assumes census is accurate.			

those of the CPS, the census, and the IRS estimates, it seems reasonable to conclude that the DMV based estimates understate domestic out migration. A plausible scenario is that other states are not very efficient at returning the driver licenses of Californians who have moved.

However, two other factors suggest that the IRS, census, and CPS data understate domestic net migration to California between 1985 and 1990. One factor to be considered is total population change between 1985 and 1990. The California Department of Finance has estimated that California's population increased by over 3.5 million persons between 1985 and 1990. Similarly, the United States Census Bureau estimates that the State's population increased by 3.4 million over the same period. These estimates are based on a method which examines a number of indicators of the size of the population, and are benchmarked to the censuses of 1980 and 1990. There are only three ways a population can change over time: births, deaths, and migration. Estimates of births and deaths are thought to be highly accurate, since they are based on near universal registration of these vital events. Thus, migration is the primary unknown. For the total population change to be around 3.5 million between 1985 and 1990, net migration to the State would have to be much higher than that estimated by either the census, CPS, or IRS based estimates. The DMV based estimates are consistent with the estimates of total population change between 1985 and 1990.

Figure B-4
Components of Population Change, 1985-90



The other factor is the relationship between domestic migration and unemployment rates in the United States and California. Between 1985 and 1990, unemployment rates in the United States were as high or higher than unemployment rates in California. Such a situation is historically unusual, and is indicative of the robust California economy of the late 1980s. Traditionally, domestic net migration to California has been substantial when the State's unemployment rate is lower than the nation's. Thus, the DMV adjusted estimates would appear to be more consistent with economic factors than the other estimates.

Appendix C

Establishing Confidence Intervals for Current Population Survey Data

The Current Population Survey (CPS) is a monthly survey conducted by the U.S. Bureau of the Census for the Bureau of Labor Statistics. The data used in this report come from the March supplemental survey that is also referred to as the Annual Demographic Survey.

The sample for this survey is approximately 60,000 households nationwide and approximately 4,500 in California. The sample design and weighting methodology are geared toward producing estimates for states as well as the nation. California data, however, are not as reliable as the national data.

The weighted samples are controlled to independent estimates of the civilian non-institutional population of the U.S. by age, sex, race and Hispanic origin.

CPS data has both sampling and non-sampling errors. The non-sampling errors contribute to the imprecision of both the national and state level data. Sampling errors affect national level data and to a much greater degree the California data.

To determine the magnitude of the sampling error or how precise or imprecise the CPS estimates are, we calculated standard errors and 90% confidence intervals for each of the estimates pertaining to California.

The source and accuracy statement appendix of the CPS documentation provides a simplified method for calculating standard errors and confidence intervals. Tables IV & V in particular were used to provide the appropriate parameters and state factors. The 90% confidence level is used by the Bureau of the census in producing their CPS reports.

Data collected in the CPS survey are not directly comparable to data from other sources because of definitional differences, survey methodology, coverage, etc. Due to methodological changes that may occur from year to year, CPS data are not always directly comparable to CPS data from other years.

Two major changes occurred in 1994 that affect the 1994 CPS estimates and make comparisons with previous years more difficult. The first change involved computer-

assisted personal interviews (CAPI). A revised questionnaire was employed in the CAPI procedures that affects, in particular, all labor force estimates. Also beginning in 1994, the independent national population controls used for the age-race-sex groups were prepared by projecting forward the population as enumerated in the 1990 decennial census. In addition, and of significance to California, estimates of the 1990 decennial census undercount were added to the population controls.

The sample for the 1989 CPS was cut significantly in certain urban areas of the nation. California, and the Los Angeles Metropolitan Statistical Area (MSA) in particular, absorbed much of the reduction. Consequently, the sample reduction in California was approximately 38% compared to a sample reduction of approximately 3% for the remainder of the United States. In 1990, the sample size was returned to pre-1989 levels.

Perhaps related to the sample reduction of 1989 is the out-migrant estimate for California and the subsequent net migration estimate. The out-migrant estimate in 1989 is something of an anomaly in that it was the highest for the period of 1985-94 while DMV data was indicating a high in-migration to California.