US FAMILY MIGRATION: DOES HOUSING COST MATTER?

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Extended Abstract /Paper Draft

Introduction

Families migrate to make adjustments in the husband's job, or increasingly in both family members' jobs, as the number of two-worker households has increased substantially in the past two decades. Families also migrate to deal with family commitments, including care for elderly family members, and sometimes as part of family planning decisions. There is increasing evidence that family and household migration goes beyond the notion that people migrate from areas with relatively low wages and/or full employment opportunities to areas with higher wages and more employment opportunities. Going beyond economic motivations is sometimes identified as gendered family migration theory. It is the attempt to place the decision making of families about the employment of wives within the context of inter-regional migration where the decision to move may not be explained by adjustments to long-term economic benefits of the husband alone. However, neither the labor theory of interregional migration nor gendered family migration theory has specifically taken into account the role of costs of living in the migration process. In this paper, we attempt to redress the shortcoming by specifically examining the role of housing costs, as a proxy for larger costs of living impacts, in the migration process. Recent media coverage has identified the rapid increase in the cost of housing as a motivation for significant migration flows down the urban hierarchy. However, little empirical work has established the relationship between differential costs of living and migration flows, particularly for families. This paper provides empirical evidence of significant adjustments in the cost of living for migrants, especially for interstate migrants.

In the three decades since Mincer (1978) introduced the concept of "tied stayers" and "tied movers" the research on family migration has grown substantially and substantively. The growth in the research on family and household migration reflects two important changes that have occurred in US labor markets in the last quarter of a century. In the 1970s, nearly all couple households (90 percent) relied on the husband for most of the family income. Twenty-five years later, the 2000 census reported almost the reverse. Only 25% of couple households had a sole provider husband (Raley et al, 2006). The dramatic increase in wives labor force participation has changed the migration dynamic. Now families are juggling two jobs when they make migration decisions, and it is no longer simply the husband's job that controls whether or not a move will be made and where the household will move.

These migration decisions are now being made in a world of rapid housing price change. In the past two decades there have been a number of housing price increases, but the housing price rise in the late 1990s and early 2000 has pushed housing prices to a new level. Currently housing prices are regularly more than three times annual earnings (the old standard for deciding on the affordability of housing), and numerous media publications have focused on the increasing problems of affordability in the housing market.

A new Census Department report notes that there are strong migration flows out of the metropolitan areas of New York, Los Angeles, Chicago, and San Francisco - just those areas which are amongst the most expensive housing markets in the country (Lalasz, 2006). There is out-migration from traditional urban centers but also from older classic bedroom communities as well. Many of these metropolitan movers are choosing to settle in smaller cities across the United States. According to the report, 21 of the country's 25 largest micropolitan areas, areas with populations between 10,000 and 50, 000 and strong commuting links with neighboring counties, have had significant in-migration between 2000 and 2004 (US Census Bureau, 2006). These patterns obviously reflect the continuing transition within the US from a manufacturing economy to a service economy, and reflect the continuing shift of jobs from old metropolitan areas to new and distant suburbs and cities. But, the patterns also reflect the realities of the high costs of housing in major metropolitan centers.

In the context of changing workplace involvement and changing housing costs dynamics it is worthwhile considering just what role housing costs play in the migration decision-making process. In the past, the focus even within family migration studies has been on income gains and losses and whether wives are disadvantaged by migration. That work privileged income considerations but previous work showed that housing costs do matter on individual outcomes, now we extend that work to flows in general.

Previous Research and Theoretic Context

The labor theory of interregional migration assumes that people migrate in search of economic opportunities and income gains. The traditional interregional migration literature used variation in employment and wage rates to predict interregional flows (Greenwood, 1985, Isserman et al 1986). Even when extended from the individual to the family the notion is that families migrate when the expected long-term economic benefits outweigh the costs (Mincer, 1978).

More recent work has raised questions about the relationship between migration and wage differentials (Newbold, 1996; Pellegrini and Fotheringham,1999). Boyle et al (2001) suggests that migration is much more than an economically adjusting mechanism, and they have turned to gendered family migration theory to explain migration outcomes. This literature which has been widely reviewed (Clark and Davies Withers, 2002; Withers and Clark, 2006) demonstrates that the outcomes for women are not always positive and are frequently associated with a loss of earnings, interrupted labor force participation and unemployment or underemployment. Still, the latest work seems to suggest that the impact on women may be of shorter duration than previously suggested. The outcomes also depend on whether they were employed before the move and whether the move was motivated by their own career advancement or their partners (van Ham, 2001).

The shift in focus from specific economic outcomes for women led to research on the interconnection between family and work and in particular, the non-economic elements of family life. These studies argue that migration outcomes, for women, need to be considered within the broader context of family structures, including parenting and the linked lives of dual earner families (Cooke, 2002, 2003; Bailey et al 2004). Other research on two-worker households has stressed the extremely dynamic nature of labor-force participation for both movers and non-movers. Our focus on professional employment, often under plays the way in which many

spouses tend to leave and re-enter the labor force relatively quickly (Clark and Davies Withers, 2002; Clark and Huang, 2006).

The research on gendered migration also emphasizes the synchronicity of other life course events, including the birth of children and marriage. Both have been shown to be important factors in the dynamics of women's labor force participation. In these studies the emphasis is on how households gain or lose in the context of combined labor force participation and other family events.

The limited research on possible cost-of-living effects has focused in the main on examining the way in which wage differentials may be affected by cost-of-living differentials. Dumond et al (1999) show that adjusting for price differences has a large effect on estimates of inter-area wage differentials. With an adjustment for cost-of-living, workers in the South realized a major gain rather than a substantial loss in their wage incomes. The important geographic finding is that while nominal city size wage differentials show that wages are more than 20% higher in large metropolitan areas than small urban areas, after adjustment, there is a 7%, large city *disadvantage*. Their work is clear support for the importance of cost-of-living in terms of geographic outcomes and potential decisions about vocational choices.

In related work, Fosu (1999) examines the effect of economic variables such as the market wage on the likelihood of wives labor-force participation. He argues that the cost of living can influence a woman's labor-force participation by altering the real values of labor and non-labor income or by capitalizing on local amenities. A wife enters the labor force in this second context to maximize their access to local public goods. Interestingly for our analysis, Fosu (1999) includes housing in the important environmental attributes. He uses the example of a wife entering the labor force to satisfy a family's taste for a better climate in California which has associated higher housing costs. Although Fosu (1999) focuses on wives labor-force participation, rather than migration, the thesis is directly on target with our notion of the importance of geographic variations in housing cost as a factor in migration.

To date there is limited previous work on geographic variations in the cost of living and the impact on migration. Withers and Clark (2006) challenge the assumption that simple evaluation of economic gains and losses guide family migration. They show that nominally more affordable outcomes of migration are significantly more affordable when adjusted for the cost of housing differences. In contrast, nominally more expensive moves are significantly more expensive when adjusted for the cost of housing. Losses for wives based on nominally more affordable moves become gains when adjusted and neutral outcomes for nominally more expensive outcomes, become significantly negative outcomes when adjusted for the cost of housing.

There is also evidence that shows that wives leave the labor market when the move is to a more affordable place and wives enter the labor market when the move is to more expensive housing market. This latter finding is consistent with the Fosu (1999) research reviewed earlier. The findings based on individual family data do not tell us about the overall role of differential housing costs. The current paper takes up that issue in the context of state to state and county to county moves. We extend our earlier work on the mechanism of cost-of-living impacts by examining aggregate flows and the geography of the cost-of-living adjustment process.

Analysis of Migration and Adjustments in the Cost of Living

In this paper we measure the difference in the cost of living between origin and destination for all migration flows across the United States at the county level from 1995-2000. This is achieved by merging two data sources. The Census 2000 county-to-county migration file provides the number of migrants out of, and into, each county in the United States. Measures for median home value and median income were collected from the 1990 and 2000 census at the county level. The geography of housing costs has changed considerably from 1990 to 2000, as costs have increased at varying rates throughout the country.

(figures for map of housing costs in 1990 and map of housing cost 2000 here)

Census 2000 migration flows refer to migration since 1995, so we used the midpoint between 1990 and 2000 to represent 1995 median income and 1995 median housing costs by county. Following Withers and Clark (2006), we then measure the cost of living (COL) at the origin county using the ratio of median housing costs to median income in 1995. Similarly, we measure the cost of living at the destination by the ratio of median housing costs to median income in 2000. Adjustments in COL for migrants are determined by comparing the cost of living in the origin to the destination. We measure these differences in absolute terms and percentage change.

A map of the calculated cost of living in 1990 indicates expected geographic variations in these values. Traditionally, housing affordability was measured by a 3:1 rule of thumb, representing the idea that one could afford a home at a value roughly 3 times annual income. The map of the cost of living in 2000 indicates significant increases substantively (ratios are now far above 3) and a spreading geographic distribution of housing affordability challenges. As well, the traditional 3:1 rule of thumb was applied at a time when predominantly only one member of the household worked. Many households now rely on two incomes.

(map of COL 1990 and map COL 2000 here)

The county-to-county migration flows indicate there were somewhat more than 47 million moves between about 735,000 county pairs. The possible set of pairs was more than 9 million (3040x3040 counties). The average flow size is 64 people. There are many exchanges between counties that involve very few migrants. The largest 1% of migration flows involved only 5438 pairs with an average flow size of almost 3500 people. By contrast, the largest 0.1% of migration flows occurred between 739 pairs, representing about 9.5 million migrants. The average size of these streams about 13,000 people. Clearly migration streams are focused, directed, and constrained to a few major counties. Of course, many of these are the largest metropolitan counties which generate much of the national change in population.

(table 1 here)

Just over half of all migration flows are intrastate flows. This increases as we restrict migration to the largest flows. Clearly 90% of the largest migration flows are intrastate. For all flows the most frequent intrastate flows are within California (12.28%), Texas (9.55%), New York (5.82) and Florida (5.22%). The same top three occur in the top 0.1 percent of flows with magnitudes

changing to 21.57, 8.98 and 8.74 percent of flows, for California, Texas and New York, respectively. For all migration flows, the most frequent interstate migration destinations are Florida (8.42%), California (6.56%) and Texas (6.17%). These change considerably when focus turns to only the top 0.01% of migrant flows. Then Nevada (13.87%), Arizona (13.30%), California (9.82%) and New Jersey (9.65%) are the top destinations. As well, for these largest migrant flows the top origin states are California (28.44%), New York (16.95%), Illinois (10.49%), and DC (8.63%). Much speculation has occurred with the literature regarding regional white flight as an explanation for these large population flows out of these high immigration states. However, little has been made of the cost of housing, and cost of living differences that accompany these migration streams.

(table 2 here)

What are the changes in cost of living associated with migration? To be clear, these changes in the cost of living are not migrant specific, rather they describe the changed context of these moves. People are moving from (or to) more affordable or more expensive places. Our analysis proceeds by focusing on the aggregate changes in the cost of living for all migration flows, the top 1% of migration flows (magnitude) and the top 0.1% of migration flows. Subsequently, we differentiate between interstate county migration flows and intrastate county migration flows, while maintaining the comparison amongst all migrants, the top 1%, and the top 0.1% of migrants.

The maximum percentage change in the cost of living amongst all migrants was 625%, and the minimum was -89%. These are the extremes. The 75th percentile was 15% and the 25th percentile was -18%. The midpoint indicates that half of all flows were associated with a decrease of at least -2%. Some of the extreme values are reduced when turning to the top 0.1% of flows. The maximum increase in cost of living was 152%, the 75th percentile was 7 percent. At the other end of the spectrum, the greatest decrease in the cost of living was -73% and the 25th percentile was -22%. The midpoint indicates that half of the flows were associated with a decrease of at least -0.08. The graph portrays the differences in percentage change in the cost of living for all migrants, the top 1% of flows and the top 0.1% of flows. While the top 0.1% of flows have greater decreases in the cost of living, generally speaking there is not a great deal of difference between these distributions. However, when we differentiate by scale of migration we see marked differences. Interstate migration is more closely associated with decreases in the cost of living, and this is especially true for the largest magnitude of migration flows.

(figure 5 and 6 here)

Interstate migration and changes in the cost of living

With respect to interstate migration, the most extreme percentage change in the cost living is 288%, and the greatest decrease is -81%. The 75th percentile lies at a 7% increase, and the 25th percentile falls at a decrease of -42%. The midpoint is a percentage change in COL of -20%. So, over half of all interstate migrants experience a cost-of-living decrease of at least 20%, and indeed three-quarters of interstate migrants experience changes below 7%. There is strong association between interstate migration and downward adjustments in the cost of living.

The top 100 interstate migration streams at the county level provide an interest picture of the types of COL shifts that are occurring. We have created a table of the top 100 interstate migration flows listing the county and state or origin and destination, absolute change in COL, median income and median home value, as well as percentage change in these three measures. Within these largest flows there is a correlation of 0.368 between the absolute change in median home value and the absolute change in median income. This is positive and significant but not really strong. The correlation between the percentage change in median income and percentage change in median home value is stronger at 0.425. This graph portraying this relationship shows that while most county to county migration streams are associated with an increase in median income, three-fifths are associated with moves to places with more affordable housing. Such shifts have the potential to profoundly influence the labor-force behavior of married-couple families.

(Table 3 and figure 7 here)

Family migration and changes in the cost of living

It has been well established that significant adjustments in the cost of living occur with migration and interstate migration in particular. We turn now to the connection between housing costs and family migration. Unfortunately, the county-to-county migration files do not provide demographic information about the composition of the flows, for ideally we would continue our analysis to examine life course aspects of the migrant streams. To do this, with a sizeable sample we turn to the PUMS 2000 5% sample. It provides information on the prior metropolitan area for migrants who have moved in the past five years. This is a very large dataset from which we can contrast the cost of living at the previous metropolitan area with current metropolitan area. Again we merged the data with census 1990 and census 2000 measures of median income and median housing value, but the scale of analysis is now the metropolitan area rather than the county. This enables us to examine intermetropolitan interstate migration at the household level. In particular we focus on family migration and the geography of family migration to determine if families are making COL increases or decreases when they move.

Specifically, we ask the following questions:

1. When family households migrate do they increase, decrease, or have no appreciable change in their COL?; and lastly,
2. Are there significant differences in labor-force participation amongst married couples between the three different types of COL migration streams?

From the original PUMS sample of 14,081,466 individuals, our sample is reduced by only including inter-metropolitan migrants who are married-couple households, between the age of 18 and 65. Nonetheless we still have over 150,000 households. Assessing these questions with the PUMS will provide very robust answers to these questions. (analysis is underway, but the numbers are not yet reliable to report at this time)

We anticipate this paper to provide convincing evidence that cost of living adjustments are a critical component of understanding recent long distance migration flows and family migration strategies.

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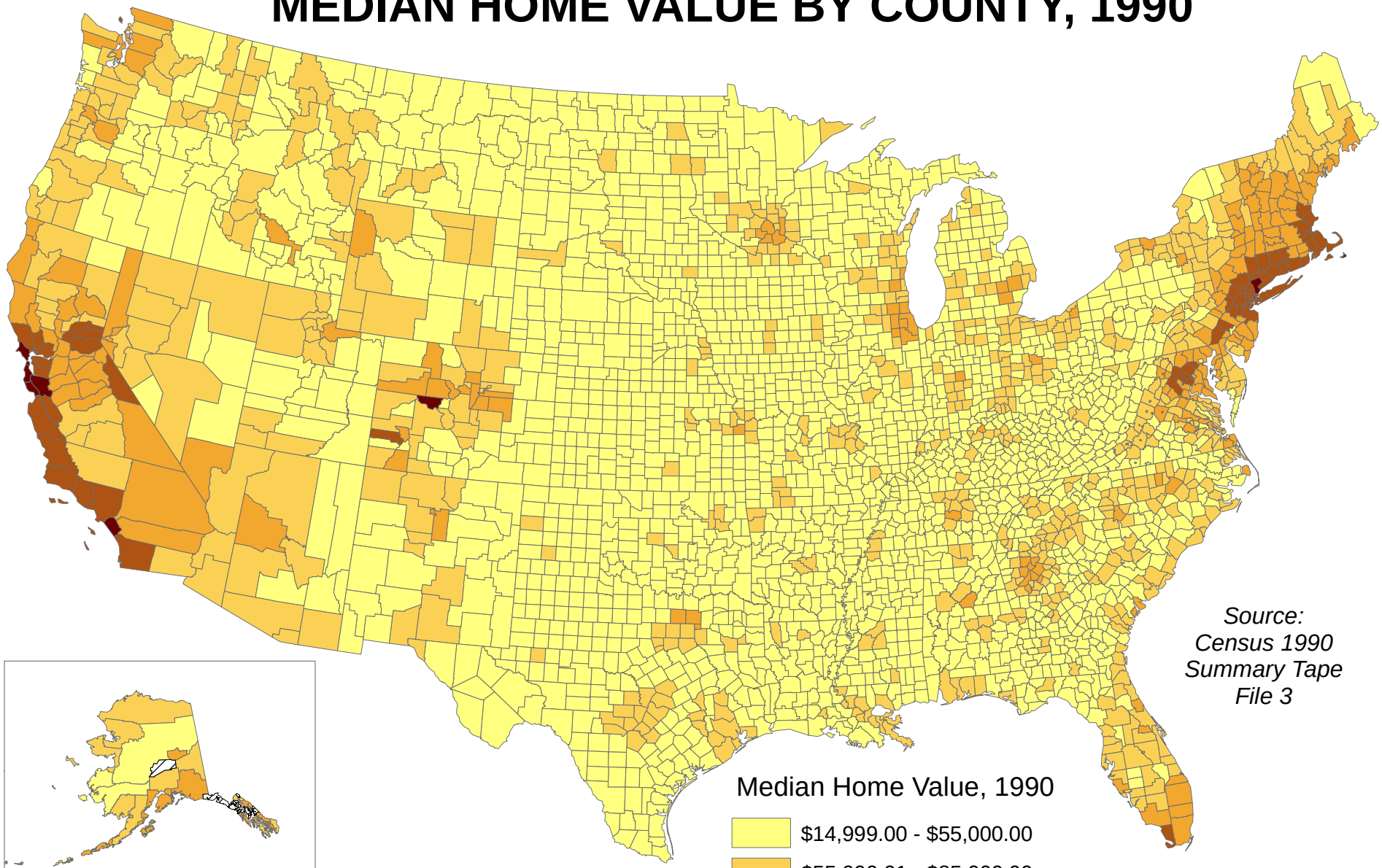
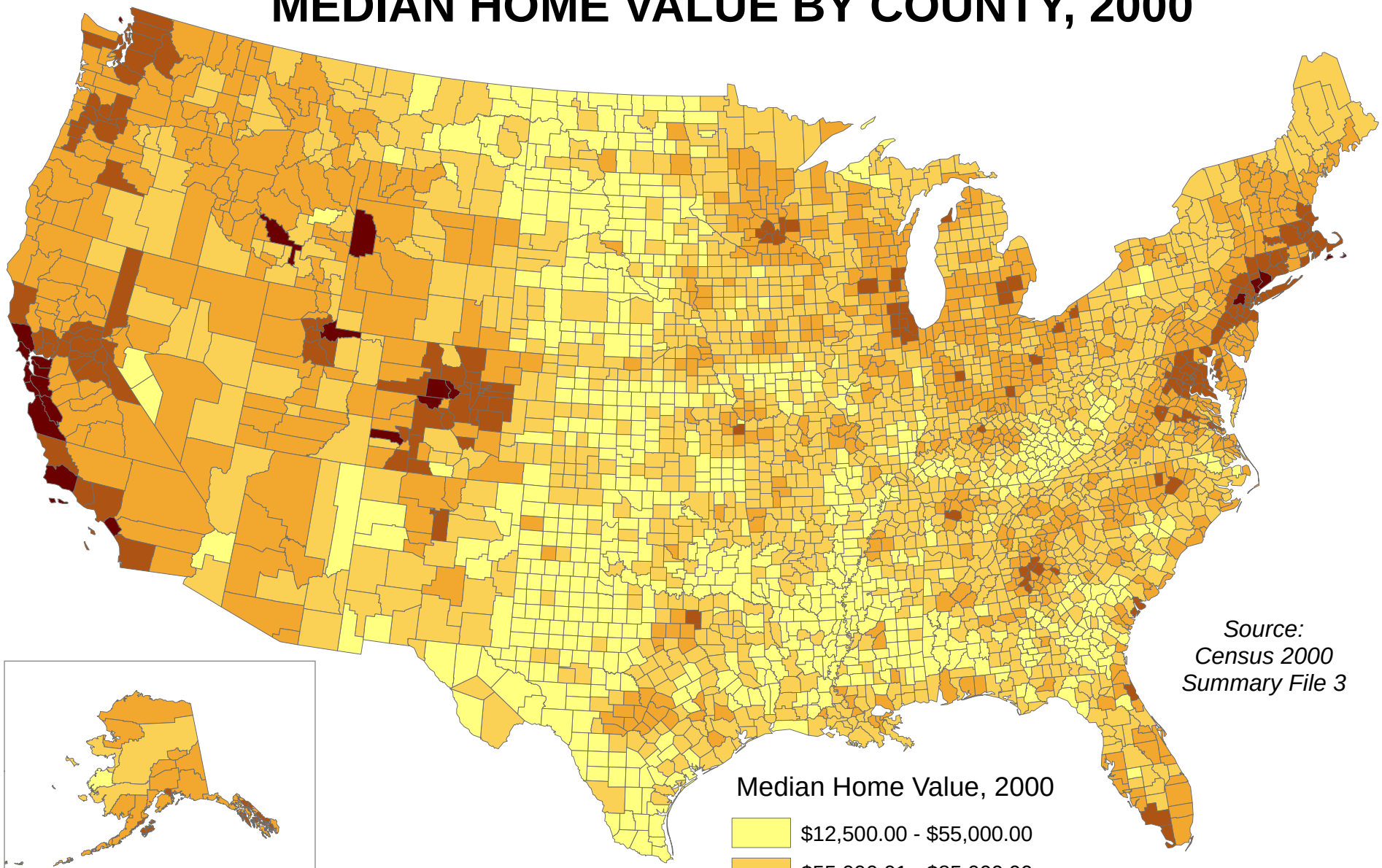
MEDIAN HOME VALUE BY COUNTY, 1990



Source: Census 1990 Summary Tape File 3

MEDIAN HOME VALUE BY COUNTY, 2000



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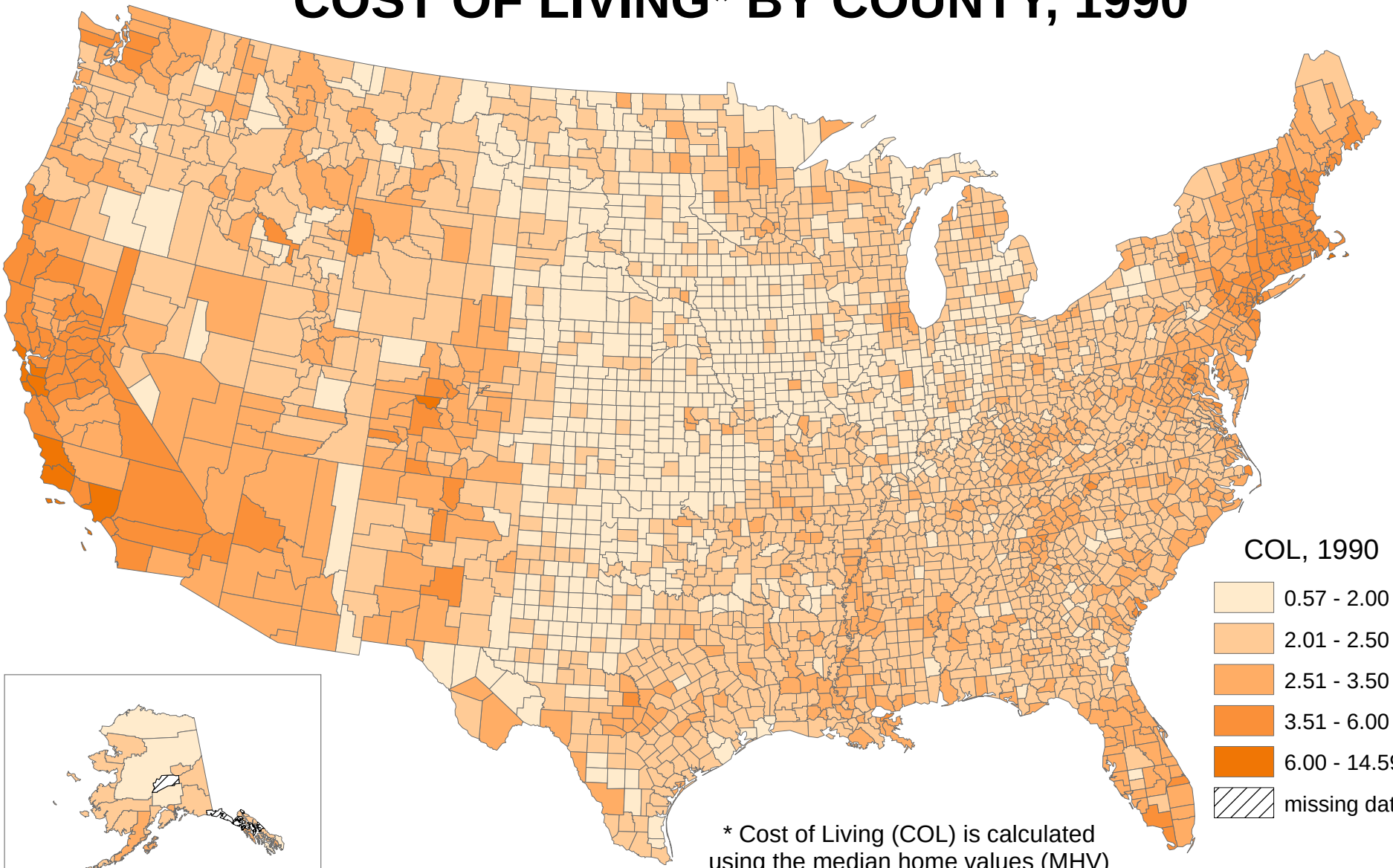
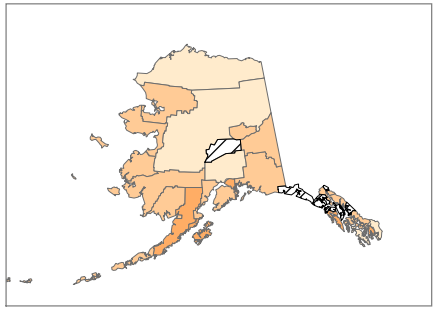
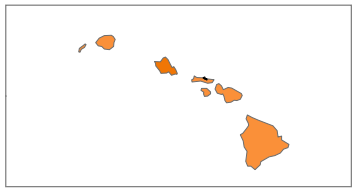
Census 2000
Summary File 3

COST OF LIVING* BY COUNTY, 1990





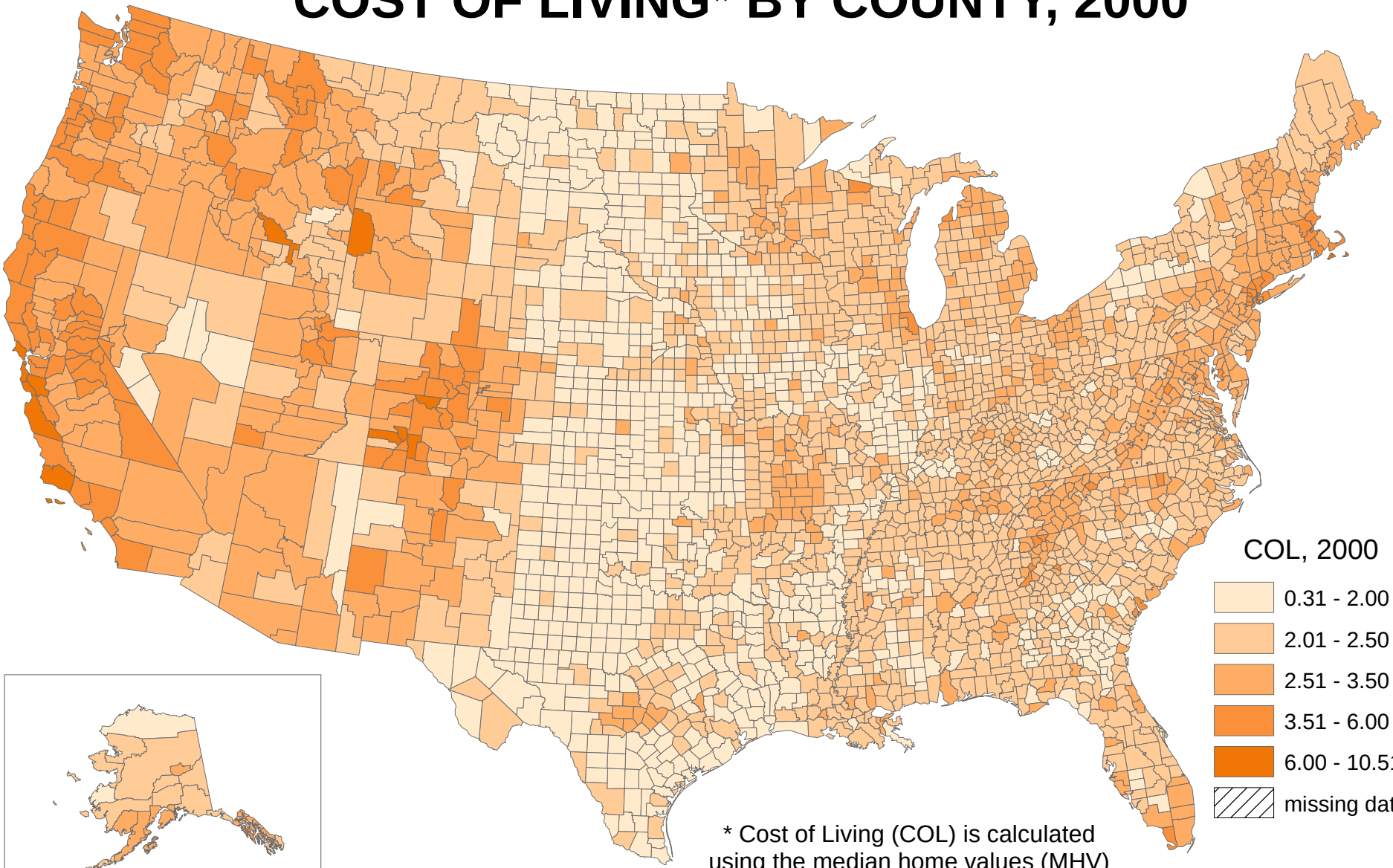


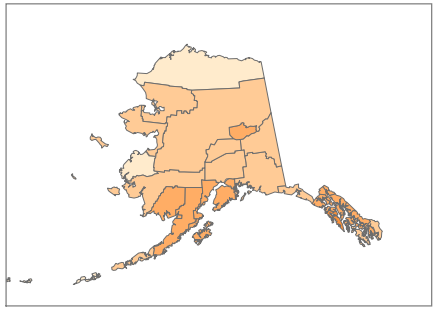
* Cost of Living (COL) is calculated using the median home values (MHV) and median income (MINC) at the county level.

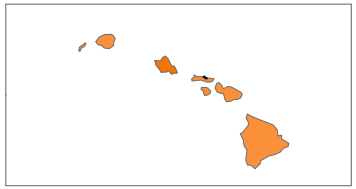
COL = MHV/MINC

Source for MHV and MINC values: Census 1990 Summary Tape File 3

COST OF LIVING* BY COUNTY, 2000







* Cost of Living (COL) is calculated using the median home values (MHV) and median income (MINC) at the county level.

COL = MHV/MINC

Source for MHV and MINC values: Census 2000 Summary File 3

Table 1. US Census County-to-county migration, 1995-2000

	All Flows	Top 1% Largest Flows	Top 0.1% Largest Flows
County pairs	735,377	5,348	739
Streams (in-migrants)	47,237,906	18,449,802	9,566,305
mean	64	3,449	12,944
Intrastate	53%	81%	90%
Interstate	47%	19%	10%
States with most Intrastate Migration	CA 12.28% TX 9.55% NY 5.82% FL 5.22%	CA 17.47% TX 8.90% NY 7.31% FL 5.94%	CA 21.57% TX 8.98% NY 8.74%
Most frequent destinations: Interstate Migration	FL 8.42% CA 6.56% TX 6.17%	CA 10.53% AZ 9.62% FL 8.40% NV 6.77%	NV 13.87% AZ 13.30% CA 9.82% NJ 9.65%
Most frequent origins: Interstate Migration	CA 9.98% NY 7.25% FL 5.68% TX 5.50%	CA 20.57% NY 14.67% IL 9.02%	CA 28.44% NY 16.95% IL 10.49% DC 8.63%

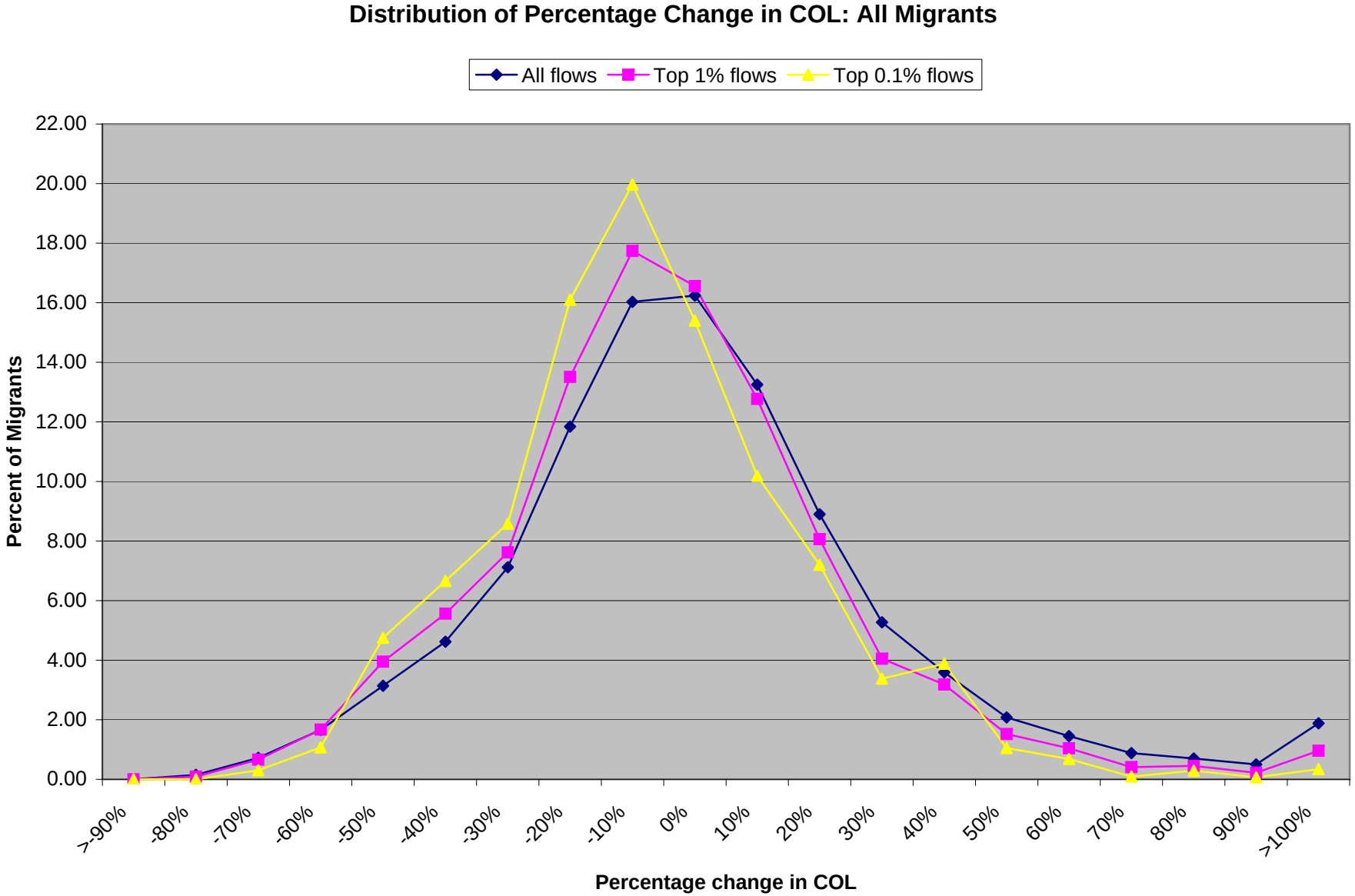
Table 2. Change in the cost of living for all county-to-county flows and interstate flows

All County to County migration flows

Distribution	All Flows	Top 0.1% Largest Flows	All Flows	Top 0.1% Largest Flows
	(percentage change)	(percentage change)	(absolute change)	(absolute change)
Maximum	625%	152%	8.58	4.63
75th percentile	15%	7%	0.35	0.17
50th percentile	-2%	-8%	-0.05	-0.22
25th percentile	-0.18%	-22%	-0.54	-0.90
Minimum	-0.89%	-73%	-9.33	-7.68

Interstate county-to-county flows

Distribution	All Flows	Top 0.1% Largest Flows	All Flows	Top 0.1% Largest Flows
	(percentage change)	(percentage change)	(absolute change)	(absolute change)
Maximum	625%	288%	8.58	5.70
75th percentile	19%	7%	0.44	0.18
50th percentile	-3%	-20%	-0.08	-0.64
25th percentile	-23%	-42%	-0.71	-2.16
Minimum	-89%	-81%	-9.33	-8.51


Distribution of Percentage Change in COL: All Migrants
All flows
Top 1% flows
Top 0.1% flows
Percent of Migrants
22.00
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
>-90%
-80%
-70%
-60%
-50%
-40%
-30%
-20%
-10%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
>100%
Percentage change in COL

Distribution of Percentage change in Cost of Living for Interstate Migrants

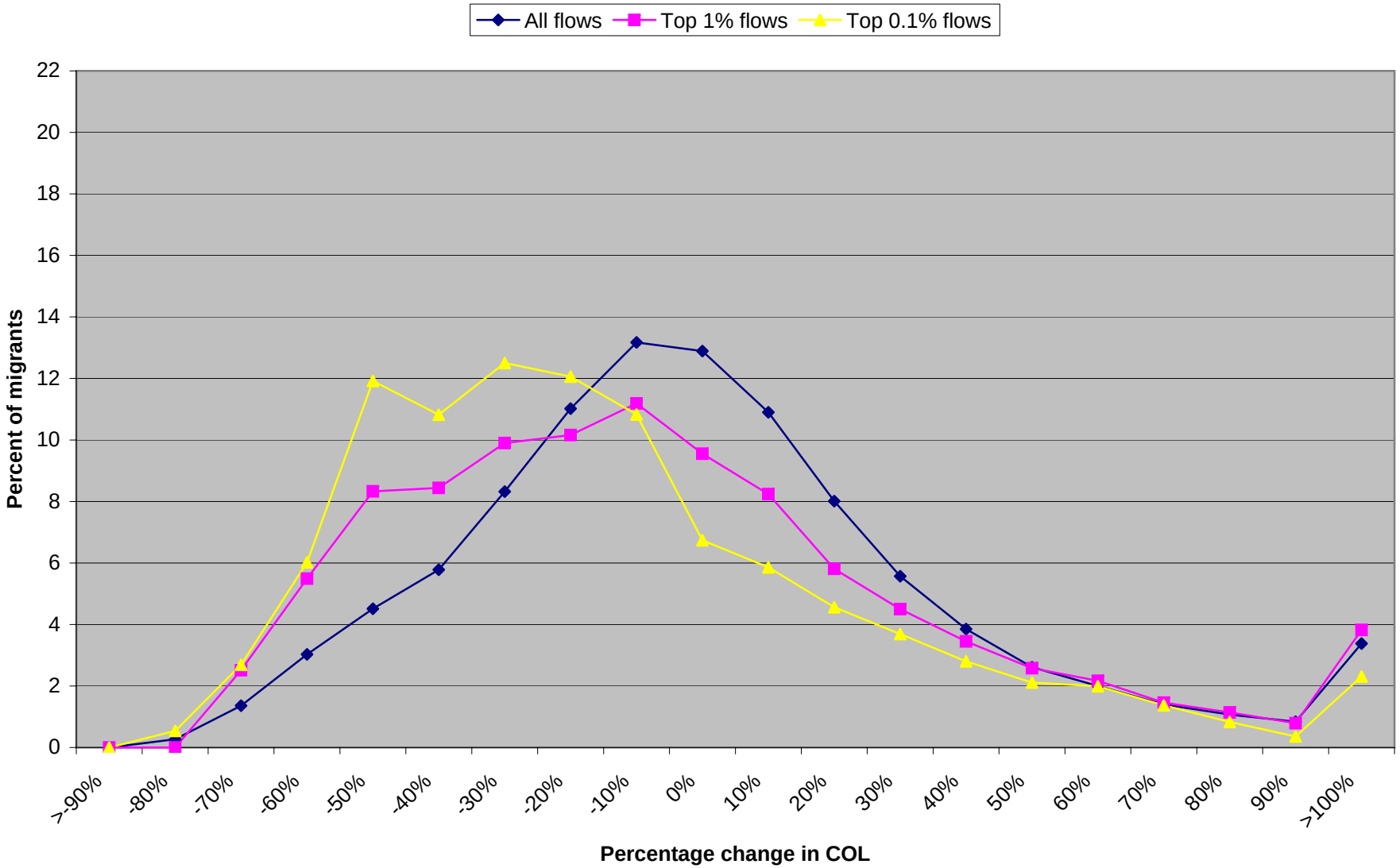


Table 3. Change in cost of living for top 100 county-to-county interstate flows

Origin County 1995	Destination County 2000	Inmigrant Flows	Cost of Living		Median Income		Median Housing Value	
			Absolute Difference	Percentage Change	Absolute Difference	Percentage Change	Absolute Difference	Percentage Change
Kings County, New York	Palm Beach County, Florid	4,946	-4.78	-65	16,153	56	-96,900	-46
Honolulu County, Hawaii	King County, Washington	4,986	-1.75	-29	6,910	15	-51,650	-19
San Diego County, Califor	Honolulu County, Hawaii	5,128	0.44	9	10,870	26	75,500	38
Wyandotte County, Kansas	Jackson County, Missouri	5,163	0.51	31	10,495	36	37,300	78
Suffolk County, Massachus	New York County, New York	5,260	2.42	46	12,653	37	180,300	100
Harris County, Texas	Los Angeles County, Calif	5,310	2.78	139	5,405	15	128,000	174
Kings County, New York	Miami-Dade County, Florid	5,340	-4.18	-57	7,057	24	-98,700	-47
New York County, New York	Essex County, New Jersey	5,383	-6.30	-60	5,298	13	-227,500	-55
Hillsborough County, New	Middlesex County, Massach	5,391	1.11	38	13,927	30	108,100	79
Salt Lake County, Utah	Maricopa County, Arizona	5,396	-0.17	-6	6,097	16	9,900	9
Cook County, Illinois	San Diego County, Califor	5,418	1.26	39	7,770	20	84,400	66
District of Columbia, Dis	New York County, New York	5,434	3.79	98	11,603	33	223,500	162
Rockingham County, New Ha	Essex County, Massachuset	5,438	0.93	30	1,561	3	52,750	34
Kings County, New York	Bergen County, New Jersey	5,445	-3.64	-50	36,332	126	28,900	14
Los Angeles County, Calif	Pima County, Arizona	5,475	-2.72	-49	-1,819	-5	-110,000	-52
Los Angeles County, Calif	Miami-Dade County, Florid	5,478	-2.36	-43	-2,611	-7	-99,400	-47
Fairfax County, Virginia	Montgomery County, Maryla	5,479	-0.16	-5	1,384	2	-7,150	-3
Kings County, New York	Essex County, New Jersey	5,488	-3.14	-43	16,035	55	-23,500	-11
New Castle County, Delawa	Chester County, Pennsylva	5,550	0.07	3	19,777	43	57,400	47
Mecklenburg County, North	York County, South Caroli	5,564	-0.31	-12	2,335	6	-7,750	-7
New York County, New York	San Francisco County, Cal	5,612	-2.84	-27	15,575	39	6,800	2
Riverside County, Califor	Maricopa County, Arizona	5,648	-0.91	-25	7,374	19	-14,900	-11
Los Angeles County, Calif	Arapahoe County, Colorado	5,677	-2.41	-44	14,993	39	-46,600	-22
Providence County, Rhode	Bristol County, Massachus	5,688	-0.35	-9	10,231	31	23,000	19
Philadelphia County, Penn	Gloucester County, New Je	5,749	0.20	10	26,599	96	63,500	116
Queens County, New York	Palm Beach County, Florid	5,808	-2.61	-51	6,750	18	-82,650	-42
El Paso County, Texas	Dona Ana County, New Mexi	5,819	0.18	8	2,961	11	12,100	20
Prince George's County, M	Fairfax County, Virginia	5,821	0.05	2	31,859	65	89,950	68
Cook County, Illinois	Harris County, Texas	5,925	-1.27	-39	3,301	8	-43,400	-34
Santa Clara County, Calif	Maricopa County, Arizona	5,934	-3.11	-54	-15,867	-26	-233,150	-66
Los Angeles County, Calif	Denver County, Colorado	5,995	-1.46	-26	923	2	-52,500	-25

Bernalillo County, New Me	Maricopa County, Arizona	6,002	-0.45	-14	12,273	37	18,100	17
Lake County, Illinois	Kenosha County, Wisconsin	6,010	-0.38	-13	-9,540	-17	-45,650	-28
Bristol County, Massachus	Providence County, Rhode	6,083	-0.54	-14	-558	-1	-22,050	-15
Lucas County, Ohio	Monroe County, Michigan	6,084	0.26	12	18,619	56	54,100	75
New York County, New York	Miami-Dade County, Florid	6,154	-7.34	-70	-3,680	-9	-302,700	-73
Honolulu County, Hawaii	Los Angeles County, Calif	6,212	-1.24	-21	-4,059	-9	-76,650	-28
Bergen County, New Jersey	New York County, New York	6,237	3.60	88	-10,215	-18	127,700	55
Los Angeles County, Calif	Salt Lake County, Utah	6,283	-2.34	-42	9,796	25	-59,100	-28
Delaware County, Pennsylv	New Castle County, Delawa	6,314	-0.19	-7	8,705	20	13,550	11
Richmond County, New York	Monmouth County, New Jers	6,323	-1.01	-25	14,821	30	-4,800	-2
Clark County, Nevada	Maricopa County, Arizona	6,364	-0.29	-10	7,677	20	9,550	8
Fairfax County, Virginia	District of Columbia, Dis	6,571	0.72	23	-30,040	-43	-64,250	-30
San Bernardino County, Ca	Maricopa County, Arizona	6,939	-0.67	-20	7,604	20	-4,700	-4
Middlesex County, Massach	Rockingham County, New Ha	7,015	-1.45	-35	5,816	11	-60,000	-27
Philadelphia County, Penn	Burlington County, New Je	7,080	0.31	16	30,934	112	79,300	145
District of Columbia, Dis	Fairfax County, Virginia	7,215	-1.14	-29	45,623	129	84,800	62
New York County, New York	Fairfield County, Connect	7,226	-6.43	-61	25,603	65	-150,800	-36
Cook County, Illinois	Hennepin County, Minnesot	7,453	-0.52	-16	12,414	32	13,500	11
King County, Washington	Los Angeles County, Calif	7,460	0.68	17	-2,479	-6	18,450	10
Queens County, New York	Miami-Dade County, Florid	7,467	-2.01	-39	2,347	-6	-84,450	-43
Lake County, Indiana	Cook County, Illinois	7,507	1.28	61	9,788	27	79,100	105
Honolulu County, Hawaii	Clark County, Nevada	7,738	-3.05	-51	-1,632	-4	-145,850	-52
Honolulu County, Hawaii	San Diego County, Califor	7,757	-1.51	-25	820	2	-66,050	-24
King County, Washington	Maricopa County, Arizona	7,906	-1.41	-34	690	2	-60,950	-33
Queens County, New York	Bergen County, New Jersey	7,967	-1.47	-28	26,929	70	43,150	22
Kings County, New York	Monmouth County, New Jers	7,991	-4.28	-58	35,362	122	-16,100	-8
Riverside County, Califor	Clark County, Nevada	8,109	-0.64	-18	6,632	17	-4,700	-3
New York County, New York	Hudson County, New Jersey	8,244	-6.45	-61	647	2	-253,100	-61
Kings County, New York	Middlesex County, New Jer	8,262	-4.65	-63	32,537	113	-47,500	-22
Maricopa County, Arizona	Clark County, Nevada	8,311	0.25	9	6,539	17	28,850	28
Los Angeles County, Calif	New York County, New York	8,446	2.17	39	8,453	22	148,500	70
Montgomery County, Maryla	District of Columbia, Dis	8,474	0.57	17	-22,693	-36	-51,300	-25
Maricopa County, Arizona	San Diego County, Califor	8,715	1.79	66	8,990	24	108,650	105
Nassau County, New York	Palm Beach County, Florid	8,859	-1.00	-28	-18,095	-29	-109,350	-49
Montgomery County, Maryla	Fairfax County, Virginia	8,884	-0.52	-16	18,230	29	17,600	9
Clark County, Nevada	Los Angeles County, Calif	9,021	1.79	60	4,508	12	88,950	79
Cook County, Illinois	Milwaukee County, Wiscons	9,034	-0.61	-19	-1,198	-3	-27,100	-21

Kings County, New York	Broward County, Florida	9,053	-4.86	-66	12,782	44	-109,100	-51
Johnson County, Kansas	Jackson County, Missouri	9,320	-0.15	-6	-12,821	-25	-35,350	-29
New York County, New York	Bergen County, New Jersey	9,423	-6.80	-65	25,595	65	-175,100	-42
District of Columbia, Dis	Arlington County, Virgini	9,599	-0.17	-4	27,574	78	96,100	70
Maricopa County, Arizona	Los Angeles County, Calif	9,647	2.06	76	4,112	11	98,050	95
Los Angeles County, Calif	Harris County, Texas	9,752	-3.53	-64	4,012	10	-128,400	-60
Los Angeles County, Calif	Dallas County, Texas	9,824	-3.42	-62	4,747	12	-121,800	-57
Cook County, Illinois	Clark County, Nevada	9,963	-0.28	-9	5,319	14	4,600	4
Middlesex County, Massach	Hillsborough County, New	10,325	-1.63	-39	1,050	2	-82,800	-38
Queens County, New York	Broward County, Florida	10,460	-2.69	-52	3,379	9	-94,850	-48
Orange County, California	Maricopa County, Arizona	10,549	-2.12	-44	-7,013	-13	-129,650	-52
Los Angeles County, Calif	Cook County, Illinois	11,292	-2.15	-39	7,354	19	-58,300	-27
Philadelphia County, Penn	Camden County, New Jersey	11,472	0.31	16	20,423	74	55,500	101
Cook County, Illinois	Los Angeles County, Calif	12,270	1.53	47	2,892	7	73,800	58
Orange County, California	Clark County, Nevada	12,283	-1.84	-38	-7,755	-15	-119,450	-47
San Diego County, Califor	Maricopa County, Arizona	12,516	-2.16	-45	4,314	11	-77,100	-39
Westchester County, New Y	Fairfield County, Connect	12,543	-1.01	-20	9,256	17	-18,900	-7
San Diego County, Califor	Clark County, Nevada	12,548	-1.89	-39	3,572	9	-66,900	-34
Los Angeles County, Calif	King County, Washington	12,575	-1.25	-23	14,580	38	13,800	6
San Bernardino County, Ca	Clark County, Nevada	12,779	-0.39	-12	6,862	18	5,500	4
Shelby County, Tennessee	DeSoto County, Mississipp	12,920	-0.24	-10	14,844	44	23,000	29
New York County, New York	Los Angeles County, Calif	12,965	-5.72	-54	2,543	6	-214,500	-52
Essex County, Massachuset	Rockingham County, New Ha	12,994	-1.56	-36	13,406	30	-33,300	-17
Multnomah County, Oregon	Clark County, Washington	13,475	-0.03	-1	14,273	42	44,250	41
Jackson County, Missouri	Johnson County, Kansas	14,220	0.30	14	27,890	83	77,850	109
Prince George's County, M	District of Columbia, Dis	14,771	1.13	42	-9,065	-18	21,050	16
Cook County, Illinois	Maricopa County, Arizona	17,057	-0.56	-17	6,061	15	-5,600	-4
District of Columbia, Dis	Montgomery County, Maryla	18,448	-0.94	-24	36,124	102	73,000	53
Cook County, Illinois	Lake County, Indiana	23,396	-0.94	-29	2,532	6	-31,300	-25
Los Angeles County, Calif	Maricopa County, Arizona	32,598	-2.82	-51	6,781	18	-90,600	-43
District of Columbia, Dis	Prince George's County, M	38,754	-1.28	-33	19,829	56	6,100	4
Los Angeles County, Calif	Clark County, Nevada	55,857	-2.55	-46	6,039	16	-80,400	-38
Total		930,113	-116.55	-1383	821,590	2466	-1,818,450	619
Average			-1.1655	-13.83	8,216	24.66	-18,185	6.19

Association between Change in Median Housing Value and Change in Median Income
for the Top 100 Interstate county-to-county flows