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Internal Migration Effectiveness and Income Effectiveness in the Most Populous Cities in the United States

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Abstract

In this study, migration data compiled by the Internal Revenue Serve (IRS) and the US Census Bureau for 2006-07 were used to analyse internal migration patterns using migration and income effectiveness for the counties containing the 25 most populous cities in the United States. The results indicated that both large metropolitan and rural counties have lost population and income due to migration. Small metropolitan and non-metropolitan counties closer to cities gained population and income. Counties in South Florida attracted a large number of higher-income migrants from the largest cities in the US. In the last 13 years, New York, Los Angeles and Chicago, the three most populous cities in the US, had negative migration effectiveness. Suburban areas and second-tier cities continued to attract people from large metropolitan areas.

Keywords

Migration effectiveness, internal migration, income effectiveness

Introduction

Migration occurs because individual areas attract people with particular motivations and thus rejuvenates and renews the demographic structure of an area (Rowland 1979). The most common explanation for voluntary migration has been the "push-pull" of economic factors (Cebula 1979). Apart from age, education and job opportunities, people's decision to migrate sometimes depends on the availability of natural amenities such as topographical features, weather and scenic beauty in the destination (McGranahan and Beale 2002; Wardwell 1980). Internal migration patterns in the United States have changed tremendously over time. In the US, rural to urban migration started as early as the 1950s (Campbell and Garkovich 1984). There have been three major population turnarounds in the US since this time. The first population "turnaround" was noticed in the 1960s and 1970s (McCarthy and Morrison 1978; Beale 1975) when a significant population started migrating from urban to rural areas. The 1980s witnessed another population turnaround favoring urban areas (Fuguitt and Beale 1996). The early 1990s then showed "rural rebound" (Manson and Groop 2000; Long 1988) when cities lost population to rural areas.

Americans have continued to move. Between 2002 and 2003, 40.1 million United States residents changed their residency (Schachter 2003). Among the various factors that influence migration patterns, income plays an important role in the individual's decision to migrate. Hansen (1996) found that migrants from central cities in the US had relatively high incomes, and both the suburbs and non-metropolitan areas gained population and income through their migration linkages to central cities. Generally, younger people are more prone to move than are older people because the former receive higher returns to mobility. Middle-aged (between 25-44 years) people with children and those over 65 years old are the main age groups to migrate from metropolitan to non-metropolitan areas. Migrants from rural to urban areas are mostly in the age group 20-29 years (Fitzsimmons et al. 1980). While adult migrants are mostly attracted by the economic opportunities in the new destination, migration of the elderly is considered amenity-based migration since they are not constrained by employment opportunities (Fitzsimmons et al. 1980).

The major cities in the US have always been a main attraction for people of all races, ages and nationalities. Cities have always been attractive to people from rural areas that are looking for job opportunities. Migration from rural areas to towns and cities in the late nineteenth and early twentieth centuries provided the labor force for America's mills, factories and offices (Ferrie 2006). In recent decades, however, metropolitan areas have lost population to suburban areas (Ambinakudige et al. 2009). Migration out of central cities toward suburban counties—made possible by improved highways and transportation facilities—has spawned new communities. As a result, suburban areas now compete with nearby central cities for economic supremacy (Ferrie 2006).

Are the cities in the US still a major attraction for the rural population? Does the in-migration to cities still exceed the out-migration from cities? What are the preferred destinations for the out-migrants from cities? It is imperative to find answers to these questions, as they will indicate the livelihood and geographical choices of the people and provide directionality to the migration patterns. To answer these questions we need data that are collected more frequently than a decadal census. Scholars have used the US Internal Revenue Service (IRS) data on taxpayer address changes from one year to the next to study internal migration. In this study we analyzed the migration patterns in the 25 most populated cities in the US in 2006-07 using data compiled by both the IRS and the US Census Bureau. To analyze the directionality of the migration, the migration effectiveness index is calculated. The impact of migration in terms of income is measured by calculating the income effectiveness index. The spatial and temporal distribution of sources and destinations of internal migration in three major cities—New York, Los Angeles and Chicago from 1994-95 to 2006-07—were further analyzed in this study.

Data and Methods

Compiled data from the US Internal Revenue Service (IRS) for the year 2006–07 are used in this study (IRS and Census Bureau 2008). These county-to-county migration data are based on year-to-year changes in the addresses shown on the tax returns in the IRS Individual Master File system. These data show the number, origins and destinations of persons making inter-county moves between two filing years. These data also include the aggregate "income" received by inter-county migrants. For each of the 25 most populous cities, both migration and income effectiveness were calculated for the counties in which the city is located.

The USDA Economic Research Service (ERS) developed urban influence codes in 2003 that divide counties, county equivalents and independent cities in the United States in to 12 groups. These include two metropolitan and 10 non-metropolitan county types. Metropolitan counties are either large (those with populations of 1 million or more) or small (those with less than a million residents). First, non-metropolitan counties are classified as either micropolitan (with an urban core of at least 10,000 residents) or non-core (without an urban core that large). The micropolitan and non-core counties are further classified based on their adjacency to metropolitan areas and on population size. In this study, the 12 county types were regrouped into four categories: metropolitan large, metropolitan small (less than 1 million population), counties adjacent to metropolitan areas, and rural counties.

Measures of migration and income effectiveness

Net migration rates are commonly used to measure the impacts of internal migration in inter-county population redistribution within a nation (Stillwell et al. 2003). Net migration rates are difficult to interpret because out-migration is a measure of propensity while in-migration is a measure of prevalence (Rogers 1990; Manson and Groop 2000), which renders the meaning of net migration rates "ambiguous" (Rogers 1990). To overcome this shortcoming, studies have used the migration effectiveness index (Stillwell et al. 2003; Manson and Groop 2000). The effectiveness measure is a function of movements to and from an area that occur in a defined period; it is sensitive to temporal shifts and spatial variations in the pattern of migration flows (Stillwell et al. 2003). Migration effectiveness (ME) measures the degree of efficiency in redistributing population and is a function of the magnitude of migration rather than population size (Plane and Rogerson 1994; Manson and Groop 2000; Ambinakudige et al. 2009).

The ME for a particular location can be calculated as

$$ME_i = 100 * (D_i - O_i) / (D_i + O_i)$$

where i is the geographical area in question, D_i is the in-migration to the area and O_i is the out-migration from the area.

ME values may range from -100 to +100, with -100 indicating unidirectional out-migration and +100, unidirectional in-migration. When ME equals 0, in-migration and out-migration are equal. Similar to migration effectiveness, income effectiveness is calculated in this study. Personal income of the migrants was used to characterize economic gains or losses experienced by the study cities because of internal migration. The income effectiveness (IE) index developed by Manson and Groop (1994) is calculated as

$$IE_i = 100 * (X_i - Y_i) / (X_i + Y_i)$$

where i is the place in question, X_i is the gross income from in-migration to the area and O_i is the gross income from out-migration from the area. IE values also range from -100 to +100 and are interpreted in the same manner as ME. In this study, ME and IE indices were calculated for each county and each of the four county types.

Results

About 41 percent (1,316) of the 3,142 counties in the US have gained population (i.e. they had positive ME values) via internal migration in 2006-07. Widespread gains are evident in traditional destinations in Florida, Tennessee, Virginia, North Carolina, South Carolina, Georgia, Alabama and throughout the West.

Table 1. Migration and Income effectiveness in different county types

County Categories	ME	IE
Large Metropolitan Counties	-1.18	-2.06
Small Metropolitan Counties	2.61	4.14
Counties Adjacent to Metropolitan Counties	1.27	6.80
Rural Counties	-4.15	0.19

The results of the analysis (Table 1) indicated that the large metropolitan counties lost both population and income. Small metropolitan areas showed positive migration and income effectiveness, indicating gains in population and income. Similarly, counties adjacent to metropolitan areas showed positive migration and income effectiveness values. Rural counties, however, lost population but slightly gained income in 2006-07. It is apparent from the results that smaller metropolitan areas and suburban areas of the large metropolitan areas are expanding. Large metropolitan counties still attract population, but the number of people opting to leave metropolitan areas is higher than the number of people opting to move in. This is an interesting observation that calls for further inquiry into migration and income effectiveness in the most populous counties in the U.S.

Table 2 (next page) shows the migration and income effectiveness of 25 of the most populous cities in the US. Of the 25 large cities, 18 cities lost population, 19 cities lost income and 17 cities showed both population and income loss in 2006-07. Phoenix, Austin and Seattle are the only three cities that gained both population and income in the study period.

With such a large number of cities showing negative migration and income effectiveness, this study further investigated the migration patterns in the three most populous cities in the US: New York, Los Angeles and Chicago (see Figure 1 in appendix).

Table 2. Migration and Income Effectiveness for counties with the 25 largest U.S Cities

Cities	ME	IE
New York	-13	-9
Los Angeles	-25	-18
Chicago	-13	-6
Houston	-4	-2
Philadelphia	-9	-4
Phoenix	8	10
San Diego	-3	-1
Dallas	-6	-2
Austin	8	10
Detroit	-27	-25
San Jose	-5	-1
Indianapolis	-5	-2
San Francisco	-1	4
Jacksonville	2	4
Columbus	-3	1
San Antonio	11	10
Boston	-6	-2
Nashville	0	4
Milwaukee	-12	-8
Baltimore	-6	-1
Washington	-2	3
El Paso	-6	-7
Seattle	1	3
Denver	0	5
Memphis	-10	-9

New York, Los Angeles and Chicago all had negative migration effectiveness in the last decade (Figure 1). Among these big cities, Chicago experienced a significant fluctuation in migration effectiveness. New York and Los Angeles had very similar trends in migration effectiveness.

For New York City, consisting of five counties (Bronx, Kings, New York, Queens and Richmond), the major out-migration destination outside New York or New Jersey counties is Los Angeles County, California. In terms of income, Fairfield County in Connecticut received the highest income from New York City due to out-migration. Migrants from New York City moved to 975 different counties in 47 different states. Counties in the Southeastern region of the US received about 55 percent of the total out-migration from New York (see Figure 2 in appendix). Migrants with more than $50,000 annual income generally preferred to move to Florida, suburban New York and the West coast. No particular pattern was found in the out-migration of people making less than $ 50,000 in New York.

In the case of Los Angeles (Figure 2), the county outside L.A. that received the highest income and number of people due to out-migration is Clark County, Nevada (where Las Vegas is located). The next major out-migration destination was Maricopa County, Arizona (where Phoenix is located). People in Los Angeles migrated to 669 different counties in 50 states. In terms of in-migration, Los Angeles received more people and income from New York City than did other counties. Unlike New York, a large percentage of people migrated from Los Angeles and moved to counties in the Pacific Southwest (about 67 percent). There, migrants with higher annual income moved to counties closer to other big cities. Florida again attracted people with high income. Counties in South Central, Midwest and Rocky Mountain regions received more people with lower income.

The third largest city in the United States is Chicago (Figure 2). People from Chicago moved to 561 different counties. The county that received the highest population from Chicago (apart from Chicago's neighboring counties) is Lake County, Illinois. In terms of in-migration, more people and income came to Chicago from New York than from any other county. Supporting the common belief that elderly people prefer to migrate to Florida, Palm Beach and Polk counties in Florida gained financially wealthy migrants from Chicago. The North Central region is, however, the primary region that gained population from Chicago: 76 percent of out-migrants went to that region. Chicago also experienced substantial out-migration of its residents to its adjacent counties. Migration of people from the central city to suburban areas has been recorded in all major cities. The Rocky Mountains, Midwest and South Central regions attracted fewer people and less income from Chicago than from the other two cities.

Overall, the results showed that large cities had the largest exchange of both population and income among themselves than with any other counties. People and income from the three largest cities went to most of the states in the United States. Florida was the most attractive destination for rich migrants, while the poor moved to counties in all directions and distances. The small metropolitan counties and micropolitan counties at a distance from metropolitan areas also attracted people with less income. In general, the Southeastern region is a major hotspot for out-migrants from the major cities in the US. The results of this study indicate that metropolitan areas are losing population to smaller towns and cities. This could be a positive trend, and it could help to promote economic development in second-tier cities in the United States.

Conclusions

This study analyzed the migration and income effectiveness for major U.S cities using Internal Revenue Service data for the year 2006-07. The American population is dispersing. Generally, most of the major cities in the United States are losing population and thus losing the incomes of those who moved out. The second-tier cities are gaining population and income that could help in their development. The Southeastern region is attracting people from major cities. Through migration, cities tend to lose higher-income earners to the suburbs. The phenomenon of a decrease in the number of migrants and their income to the exurbs is widely recognized (Manson and Groop 2000). This out-migration pattern from the cities confirms that people still want to work in the cities but do not want to live there. Although this study did not establish any relationship between urban sprawl and the gain of population and income by the metropolitan-small counties and adjoining non-metropolitan counties, it appears there is a clear, positive correlation between them.

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Appendix

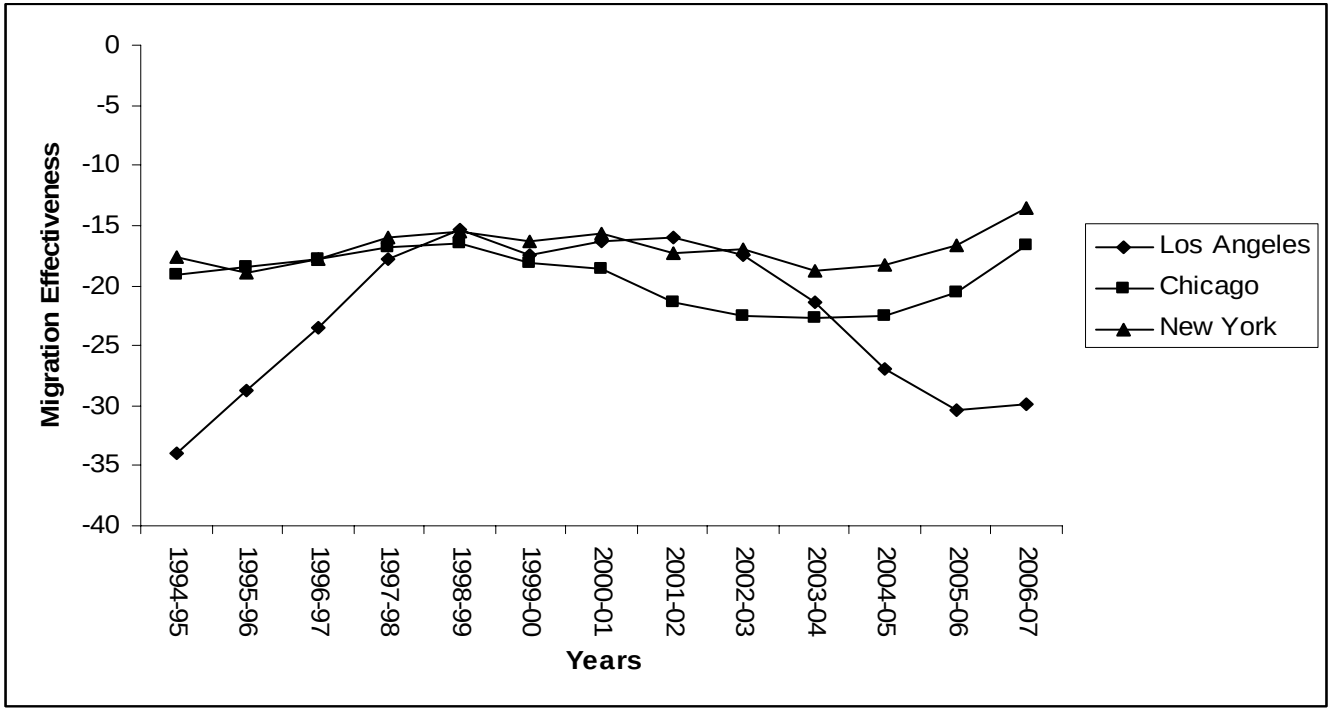

Figure 1. Migration effectiveness in three major cities in US

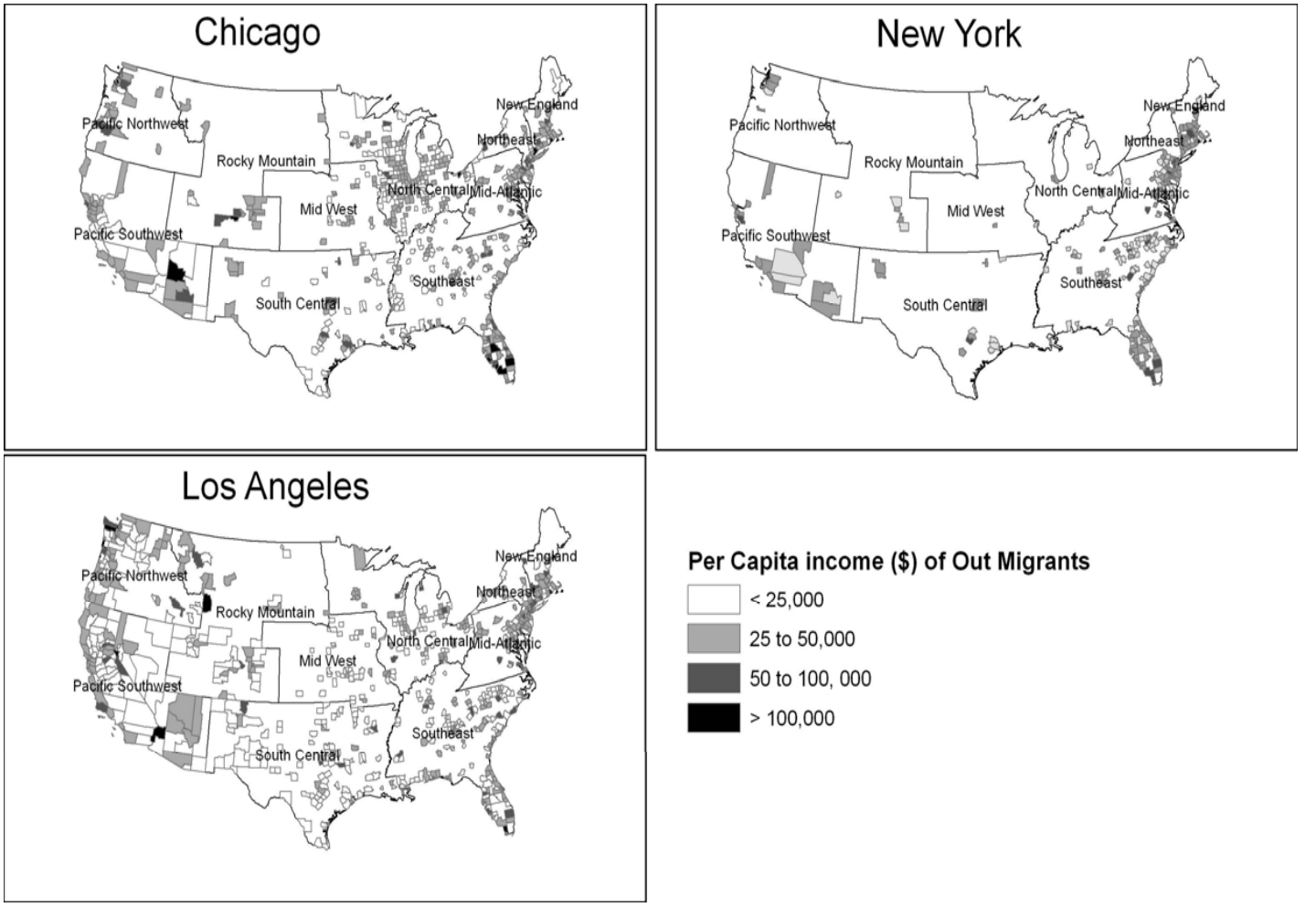

Figure 2. Average per capita income of out-migrants from three cities and their destination counties in 2006-07