Are We Moving Back to the City? Examining Residential Mobility in the Washington, DC Metropolitan Area

LISA A. STURTEVANT AND YU JIN JUNG

ABSTRACT This research assesses the extent to which there is evidence of population re-centralization or back to the city moves by tracking the historical trend of household and income mobility in the Washington, DC metropolitan area. County-to-county migration data and four migration efficiency measures are used to investigate net flows of households and income in the region. The results show a nascent tendency of back to the city movement; however, the redistribution of households and income in the metropolitan area is more complex. While the region’s core may be starting to gain households and income, there are still significant flows into the region’s most distant suburbs. The results of this research have implications for transportation, housing, and economic development policy making in Washington, DC and other regions. The study also offers a unique example of how to study household and income redistribution within U.S. metropolitan areas.

Introduction

The growth of U.S. metropolitan areas in the twentieth century has been characterized by the decentralization of people and jobs. Rapid growth of the suburbs has been accompanied by stagnant growth or decline of central cities. The history and extent of suburbanization in the U.S. has been well documented (Berube and Forman 2002; Ewen 2001; Fishman 1987; Stilgoe 1990), as has the debate regarding the impacts (Duany, Plater-Zyberk, and Speck 2000; Jackson and Kochtitzky 2001) and policy implications of decentralization (Katz 2001; Puentes and Orfield 2002). Some urban planners decry metropolitan decentralization, or “sprawl,” and bemoan the loss of green space, the long commutes, the loss of community, and the disfiguring physical landscape that have resulted. Many regional economists and others are more neutral in their assessment of the implications of suburbanization.

Lisa A. Sturtevant is an assistant research professor at George Mason University, School of Public Policy, Fairfax, Virginia. Her e-mail address is: lsturte2@gmu.edu. Yu Jin Jung is a graduate student at George Mason University, School of Public Policy, Fairfax, Virginia. Her e-mail address is: yjung4@gmu.edu.

Submitted August 2010; accepted September 2010.
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While decentralization of U.S. metropolitan areas has been the norm for decades, there are some researchers who have proclaimed that the flight to the suburbs has ended (or at least slowed) and that a new trend has emerged that will shape future regional growth—a back to the city movement (Birch 2002; Fishman 2005; Hughes and Seneca 2004; Sohmer and Lang 2003). A trend toward metropolitan recentralization has important implications for local and regional transportation, housing, economic development, and environmental policies.

The objective of this research is to assess the extent to which there is evidence of population recentralization—or back to the city movement—in the Washington, DC metropolitan area. This study uses county-to-county household migration data and quantitative methods commonly used in migration research to examine residential mobility and population redistribution within a single metropolitan area. The results of this analysis will provide a better understanding about whether and how the urban spatial structure of the Washington, DC metropolitan area is changing and will offer policy recommendations for local and regional planners.

The urban spatial structure and population distribution of metropolitan areas often has been studied under one of two models: the Alonso-Muth monocentric city model and the Tiebout sorting hypothesis. The recent pattern of suburbanization in the metropolitan areas of the U.S. and many other countries can be framed in either or both of these models.

The monocentric model (Alonso 1964; Muth 1968) assumes that a metropolitan area has one employment center (the central business district or CBD) where commuting costs are directly proportional to distance from the place of residence to the CBD. In long-run equilibrium, higher commuting costs are compensated for by lower housing costs at distances further from the CBD. Under the monocentric model, metropolitan suburbanization is explained by declining transportation costs and rising incomes (Nechyba and Walsh 2004). In the twentieth century, transportation costs declined first with the emergence of the electric streetcar and then, more importantly, with the widespread availability of the automobile. Cheaper commuting made it possible for households to move further away from the center city. Real wages also rose during the twentieth century, creating demand for larger housing available only in the suburbs where there was more undeveloped land. The resulting pattern is a metropolitan area that is more densely populated at the center and less densely populated as one moves out to the urban fringe. The monocentric model is useful for describing the long-term spatial structure of a metropolitan area (albeit with strict assumptions about one job location and households with equal incomes and preferences). Under this model, the reverse process of recentralization would imply a change in the spatial cost structure of a metropolitan area, where commuting costs and/or housing costs
have risen so much that living further from the CBD becomes less attractive for some populations. Recent increases in gas prices and worsening traffic congestion in many metropolitan areas suggest that this phenomenon is likely ongoing.

Tiebout’s treatise on the relationship between public goods and residential mobility within a region is another framework for examining the patterns of suburbanization and recentralization. The Tiebout model assumes that differences in local public amenities result in the sorting of households into different neighborhoods (Tiebout 1956). A household chooses a community within a metropolitan area that best satisfies its preferences for public amenities and local taxes. Thus, local communities seek to attract new residents (up to a certain point) by providing a better mix of amenities and taxes than its neighbor, if it can. The Tiebout model can be used to explain suburbanization because, generally, public amenities (i.e., schools, public safety, public parks, etc.) are better in suburban communities and worse in center city jurisdictions. Therefore, households prefer to live in the suburbs, and those households that are able to (i.e., households with higher incomes) move to the suburbs, leaving households with fewer resources in the less desirable center city.

In the Tiebout model, therefore, suburbanization is a result of differential public amenities and taxes between the suburbs and the central city. A return to the city would mean the center city started offering a relatively better mix of public goods and taxes. There have been recent efforts to revitalize downtown districts, which would be consistent with promoting population recentralization under the Tiebout hypothesis (Leinberger 2005).

This article continues with a discussion of migration efficiency, including the use of migration efficiency measures in prior research, and the applicability of these measures to the current study. The article continues with a description of the data and an overview of the Washington, DC metropolitan area. The following section summarizes results from the analysis and is followed by a concluding section that summarizes policy implications and avenues for future research.

**Migration Efficiency Measures**

Migration efficiency or migration effectiveness has been commonly used to analyze national and regional migration and population redistribution patterns and trends (Engels and Healy 1981; Galle and Williams 1972; Henrie and Plane 2008; Manson and Groop 2000; Plane 1984, 1999; Vias and Collins 2003; Voss, Hammer and Mier 2001). Four migration efficiency measures are used in this analysis: 1) migration efficiency, 2) income migration efficiency, 3) stream migration efficiency, and 4) stream income migration efficiency. The use of the word “efficiency” is a bit of a red herring. The term migration efficiency is used mainly
by demographic researchers as a descriptive measure of the relative importance and direction of migration in population redistribution. Efficiency in this context therefore has no relation to a measure of any economic condition (Manson and Groop 2000; Plane and Rogerson 1994).

The basic migration efficiency measure is calculated as the net migration into a jurisdiction (in-migration minus out-migration) divided by total migration into and out of a jurisdiction (in-migration plus out-migration):

$$E_i = \frac{N_i}{T_i} \times 100$$

where $E_i$ is the migration efficiency measure for jurisdiction $i$, $N_i$ is the net migration into jurisdiction $i$, and $T_i$ is the total migration into and out of jurisdiction $i$. Efficiency in this context has a specific non-economic meaning. Migration efficiency for a jurisdiction hypothetically varies from −100, if all migration flows were out of the jurisdiction, to 100, if all migration flows were into the jurisdiction (Plane, Henrie, and Perry 2005). Efficient migration generally refers to the state where inflows and outflows are equal and, as such, does not imply any sort of economic efficiency. While migration efficiency measures flows of households (or people), income (migration) efficiency measures the net flow of income into a jurisdiction:

$$IE_i = \frac{NI_i}{TI_i} \times 100$$

where $IE_i$ is the income migration efficiency of jurisdiction $i$, $NI_i$ is the net flow of income with moves of households into jurisdiction $i$, and $TI_i$ is the total of the flows of income into and out of jurisdiction $i$. The income efficiency measures have the same ranges and interpretations as the household migration efficiency measures and, again, are descriptive in nature with an economic interpretation. Positive income migration efficiency means that a jurisdiction receives more income from its in-migrating households than it loses from its out-migrating households, while negative income migration efficiency measures have the opposite interpretation. Measuring the flows of income can be even more important than measuring the flows of households. For example, Vias and Collins (2003) examined both household and income migration in the Great Plains region. They found that the income flows out of the region were greater than what would have been expected if only household flows were analyzed. Assessing the movement of income into and out of the region demonstrated that areas that were losing population were losing income at even greater rates. Examining only household migration would have missed that important trend.
The two migration efficiency measures above show which jurisdictions are losing or gaining households or household income; however, these measures do not identify where jurisdictions are losing households to or gaining households from within a given system. Stream efficiency measures are useful because they measure migration flows between two particular jurisdictions within a system. The stream migration efficiency measure between jurisdiction i and j is measured as follows:

$$E_{ij} = \frac{N_{ij}}{T_{ij}} \times 100$$  \hspace{1cm} (3)

where $N_{ij}$ is the net migration between jurisdiction i and j (i.e., net migration into i from j minus net migration into j from i), and $T_{ij}$ is the total migration between jurisdiction i and j (i.e., migration into i from j and out of i to j).

The stream migration efficiency measure has the same range of values of the general migration efficiency measure. Negative stream migration efficiency between jurisdiction i and jurisdiction j indicates that jurisdiction i is losing more households to jurisdiction j than it is gaining from jurisdiction j. Positive stream migration efficiency between jurisdiction i and jurisdiction j means that jurisdiction i is gaining more households from jurisdiction j than it is losing to jurisdiction j.

An income stream migration efficiency measure between jurisdiction i and jurisdiction j can also be calculated:

$$IE_{ij} = \frac{NI_{ij}}{TI_{ij}} \times 100$$  \hspace{1cm} (4)

where $NI_{ij}$ is the net income flow between jurisdictions i and j (i.e., net income to i from j minus net income into j from i) and $TI_{ij}$ is the total income migration between jurisdictions i and j (i.e., income migration into i from j and out of i to j).

Stream efficiency measures are better than general migration efficiency measures for examining population redistribution within a metropolitan area. While a general migration efficiency measure can indicate whether a jurisdiction is gaining population, it does not indicate where households are moving from within the region. If the net positive migration is coming to a suburban jurisdiction from the center city, it indicates decentralization. On the other hand, if the net positive migration to an inner suburban jurisdiction is coming from a more far-flung suburb, it indicates a recentralizing of the population. Thus, knowing both the origin and destination jurisdictions, which are accounted for in stream migration efficiency measures, is essential for analyzing the extent of population (and income) recentralization in a region.
Data

This research uses county migration flow data from the Internal Revenue Service (IRS). The IRS uses address-level data from individual tax returns to summarize county-level in-flows and out-flows from year to year, as well as to identify nonmigrants in each county. Households are matched from year to year based on the household members’ Social Security numbers. The data used in this analysis are for the period 1987 through 2007 and include the number of returns (used to approximate households) and adjusted gross income (beginning in 1993 and used to approximate household income) flowing from county to county each year (U.S. Internal Revenue Service 2006).

The IRS county-to-county migration files are useful for studying the movement of households and income in the U.S. Unlike the decennial Census, which provides 5-year mobility data, the IRS migration data track movement of households every year. The IRS data provide flow data for all possible county origin—destination combinations, with some exceptions noted below. The summary decennial Census data only has information on households that moved and whether they moved within the same county, within the same state, or from another state. The Census microdata allow for the analysis of household-level characteristics of 5-year movers, but the origins and destinations of households are measured at much broader geographic scales than counties. Finally, the IRS data are available in a relatively timely manner. Annual flow data are available within about 16 months of the end of the period.

The IRS county-to-county migration data do have disadvantages. The data are not directly comparable with other data sources, such as U.S. Census data. The IRS only collects data on households that file tax returns and therefore likely understates the total domestic population flows in the U.S. (Vias and Collins 2003). The IRS also suppresses data when flows between counties are less than 10 households. Therefore, small movements between counties are not captured in the IRS file (Henrie and Plane 2008). In addition, these data cannot be used to identify foreign migrants to the U.S. A household is included in the IRS file only if it filed taxes in each of the years of the flow (i.e., in both 2006 and 2007). These data limitations are important considerations when interpreting results from this analysis. If the excluded groups of nonfiles and international immigrants are relatively large in numbers and have substantially different mobility patterns, the results could be misleading. This issue will be returned to in the concluding section.

Despite the limitations, the IRS county-to-county migration data represent a good and underutilized source of data on domestic migration. Researchers recently have emphasized the importance of the IRS county-to-county flow data
for studying migration and have advocated for greater use of the data set (Henrie and Plane 2008; Vias and Collins 2003).

While the IRS data and migration efficiency measures generally have been used to examine migration on a national scale (Manson and Groop 2000; McHugh and Gober 1992; Plane 1999; Plane, Henrie, and Perry 2005) or for large regions (Henrie and Plane 2008; Shumway and Otterstrom 2001; Vias and Collins 2003), they can also be used in analyses of population and income redistribution within a single metropolitan area. While small flows (i.e., flows of less than 10 households) will be missed, overall patterns of household movement within a metropolitan area can be analyzed using these data and methods.

The Washington, DC Metropolitan Area

The Washington, DC metropolitan area comprises 22 counties and cities in the states of Maryland, Virginia, and West Virginia and has at its center city the District of Columbia. According to estimates from the U.S. Census Bureau, between 1987 and 2007, the population of the Washington, DC metropolitan area grew from 3.92 million to 5.31 million people, an increase of about 35.5 percent. Over the same period, per capita income in the region increased by nearly 150 percent, according to the U.S. Bureau of Economic Analysis.

For this analysis, the Washington, DC metropolitan area is divided into five subregions—Center City, Inner Core, Inner Suburbs, Outer Suburbs, and Far-Flung Suburbs (Figure 1). Population growth rates vary considerably across the subregions. The Center City experienced a 7.6 percent population decline between 1987 and 2007 while all of the other subregions in the metropolitan area grew. The fastest-growing subregion was the Outer Suburbs, where the population grew by 109.6 percent over the 20-year period, followed by the Far-Flung Suburbs (80.0 percent), Inner Suburbs (27.4 percent), and Inner Core (23.7 percent).

The distribution of the metropolitan area’s population has shifted over the two-decade period. In 1987, 16.3 percent of the region’s population lived in the Center City, but by 2007, the Center City share was only 11.1 percent. Both the Outer Suburbs and the Far-Flung Suburbs contain more of the region’s population than does the Center City. Population in Outer Suburbs surpassed the Center City in 1995 while the Far-Flung Suburbs surpassed the Center City in 1999. Meanwhile, the shares of the population in both the Inner Core and the Inner Suburbs declined slightly over the period.

These population figures confirm the pattern of decentralization of the region over the past 20 years. However, these population totals miss the underlying distributional flows that may be just beginning to reshape the spatial structure of the region. By examining household and income movements within the
metropolitan area, it is possible to document either a continuation of the decentralization trend or the start of a new trend of back to the city movement.

**Analysis**

Table 1 shows the household migration and income migration totals between the five subregions in the Washington, DC metropolitan area over the study period. In-migration refers to households (and income) moving into a particular subregion from another subregion in the metropolitan area. Out-migration refers to households (and income) moving out of a particular subregion to another subregion in the metropolitan area. Net migration for a subregion is the difference between in-migration to the subregion and out-migration from the subregion and total migration is the sum of these two flows. These migration flows do not include movements into and out of the Washington, DC metropolitan area. In addition, household and income flows within a subregion are not included.  

The annual flow data illustrate the different levels of migration activity in different parts of the metropolitan area. For example, about one-third of the total...
migration flows within the Washington, DC metropolitan area were either into or out of the Inner Suburbs while only 7 percent of the total flows involved movement into or out of the Far-Flung Suburbs region.

**Migration efficiency.** Figure 2 shows the annual migration efficiency measures for each of the five subregions in the Washington, DC region over the period 1987 through 2007. The Far-Flung Suburbs consistently have the highest positive migration efficiency, indicating that the jurisdictions furthest from the region’s core have consistently gained more households from the region than they have lost. The net migration efficiency measures for the Outer Suburbs are also positive over the period. For the Inner Suburbs, the migration efficiency measure was positive (but small) until 1998 when it became negative. Thus, in 1998 the Inner Suburbs became a net loser of households in the region after years of being a net gainer. The migration efficiency measures for both the Inner Core and Center City subregions
were negative throughout the 20-year period, meaning that the inner jurisdictions of the Washington, DC metropolitan area experienced an outflow of households to other parts of the region greater than the level of inflows in every year between 1987 and 2007. During the 1990s, these net losses were fairly substantial in the Center City when the migration efficiency measures were close to −30.

Beginning in 2005, the migration efficiency measures in both the Inner Core and the Center City became less negative, approaching zero. At the same time, migration efficiency for the Outer Suburbs and Far-Flung Suburbs, while still positive and fairly high, trended downward. These trends suggest that the inner subregions of the Washington, DC region are losing households to the rest of the region more slowly and that the outer subregions are gaining households more slowly, suggesting the possibility of the beginning of a movement back to the core of the DC region.

**Income migration efficiency.** Income migration efficiency measure assesses the relative income flows into and out of a subregion. Figure 3 shows the income migration efficiency measures for each year for the 1993 through 2007 period. Income migration efficiency measures were positive and fairly large for the Outer Suburbs and Far-Flung Suburbs subregions throughout the period, indicating that the households moving into these subregions brought more money into the subregion than the households leaving the subregion took away...
with them. The income migration efficiency measures for the Inner Suburbs were basically flat (i.e., the income of in-migrating households was about the same as the income out of out-migrating households) until 1998 when the measure became negative. Income migration efficiency measures were negative through the period for both the Inner Core and Center City subregions, indicating that the households moving into those subregions had lower incomes than the households moving out. Between 1996 and 2001, however, the income migration efficiency measures for the Center City steadily increased, approaching zero, before declining again through 2003 and then rising once more between 2003 and 2007. While these trends in income migration efficiency are similar to the migration efficiency trends for the Center City, the changes beginning in the late 1990s are more dramatic, suggesting the inflows of higher-income people.

Based on the migration efficiency and income migration efficiency measures, it appears in recent years that the inner jurisdictions of the Washington, DC metropolitan area lost households and income more slowly than in the past and the outer jurisdictions gained households and income from the rest of the region more slowly. The efficiency measures are approaching zero for the Inner Core and Center City, meaning that inflows and outflows of households and income are moving toward equilibrium. If these trends continue, they could provide evidence...
of back to the city—or at least back to the inner jurisdictions—movement in the Washington, DC region. These are trends that are not observable in annual population estimates. Because the net migration flows represent a relatively small share of the total population of each subregion, they will only impact the overall population number over years.

*Stream migration efficiency.* Stream migration efficiency measures flows between two specific subregions and can indicate how jurisdictions are trading off households and income with other jurisdictions within a metropolitan area. As a result, these measures can show the direction of household redistribution throughout the Washington, DC metropolitan area by quantifying flows between particular subregions.

Figures 4–8 show the annual stream migration efficiency measures for each subregion. The stream efficiency measures for the Center City were negative with all subregions except for the Inner Core in the 2005–2007 period (Figure 4). Thus, in every year between 1987 and 2007, the Center City experienced a net loss of households to every other subregion in the Washington, DC area except the Inner Core in 2005–2007, indicating an outflow of households from the Center City to all types of suburbs. The most dramatic out-migration from the Center City was to the Outer Suburbs and Far-Flung Suburbs in 2002 and 2003. However, these stream efficiency measures rebounded fairly quickly. In recent years, a relatively
A smaller share of households has moved to the Inner and Outer Suburbs from the Center City. Linear trend lines show an upward trend in the stream efficiency measures with the Inner Core, Inner Suburbs, and Outer Suburbs. The Central City actually gained households from its nearest suburban jurisdictions in the

**FIGURE 5. STREAM MIGRATION EFFICIENCIES—INNER CORE.**
*Source:* Internal Revenue Service county-to-county migration files and authors’ calculations.

**FIGURE 6. STREAM MIGRATION EFFICIENCIES—INNER SUBURBS.**
*Source:* Internal Revenue Service county-to-county migration files and authors’ calculations.
Inner Core subregion in 2005–2007. The trend line for the Far-Flung Suburbs, however, continues a slight downward trajectory, indicating that the Center City is losing relatively more households to the Far-Flung Suburbs in the 2005–2007 period.

**FIGURE 7. STREAM MIGRATION EFFICIENCIES—OUTER SUBURBS.**
*Source:* Internal Revenue Service county-to-county migration files and authors’ calculations.

**FIGURE 8. STREAM MIGRATION EFFICIENCIES—FAR FLUNG.**
*Source:* Internal Revenue Service county-to-county migration files and authors’ calculations.

Inner Core subregion in 2005–2007. The trend line for the Far-Flung Suburbs, however, continues a slight downward trajectory, indicating that the Center City is losing relatively more households to the Far-Flung Suburbs in the 2005–2007 period.
A somewhat different pattern can be seen in the stream migration efficiency measures for the Inner Core. Figure 5 shows a general trend toward stream efficiencies of zero with the other subregions. This trend indicates that the Inner Core’s net exchange of households with each of the other subregions is getting closer to zero. Late in the period, the Inner Core had a negative net migration with the Center City, implying that more households moved into the District of Columbia from the Inner Core jurisdictions. The stream efficiency measures with the Inner Suburbs, Outer Suburbs, and Far-Flung Suburbs were all negative but moved toward zero at the end of the period.

The Inner Suburbs subregion comprises the largest share of population in the Washington, DC metropolitan area and the largest shares of migration flows within the region. Over the 20-year period the Inner Suburbs consistently lost households to the Outer Suburbs and the Far-Flung Suburbs and gained households from the Center City and the Inner Core (Figure 6). This pattern is consistent with regional decentralization. In recent years there has been a slight downward trend in the stream migration efficiency measure with the Center City and the Inner Core, indicating that while the net migration is still positive from the Center City and the Inner Core, the levels have gotten somewhat smaller. The Inner Suburbs continued to lose households to the Outer Suburbs and Far-Flung Suburbs with stream migration efficiency measures of around −35 in recent years.

The Outer Suburbs have consistently gained households from all subregions except the Far-Flung Suburbs over the 20-year period (Figure 7). There is a notable uptick in 2002–2003 when the positive stream efficiencies with the Center City and, to a lesser extent, the Inner Core spiked. At the same time, the negative stream efficiency measure with the Far-Flung Suburbs turned even more negative. These changes may be related to movements of the population in response to the 2001 terrorist attacks. While there was no increase in movement from the Center City and Inner Core to the Inner Suburbs following 2001, there seems to be an uptick in movement to the jurisdictions even further out. As the Inner Suburbs include two jurisdictions adjacent to the District of Columbia, perhaps the Inner Suburbs were not a far enough away move for people concerned about living near a potential terrorist target. Thus, households moved into the next ring of suburbs. If this is indeed the case, the flight appears to be temporary. By 2005–2007, the stream efficiency measures for the Outer Suburbs subregion were back in line with what they would have been had it not been for the 2002–2003 spike.

Figure 8 shows the annual stream migration efficiency measures for the Far-Flung Suburbs. The Far-Flung Suburbs consistently gained households from all other subregions in the Washington, DC metropolitan area (with the minor
exception in 1999 with the Inner Core subregion). The stream efficiency measures over time are more erratic for the Far-Flung Suburbs than for the other subregions, partly reflecting the relatively smaller populations and share of flows to that subregion. The trend line indicates that the stream efficiency measures have remained fairly constant over time, with the exception of the flows from the Inner Core. While still positive, the stream migration efficiency measure with the Inner Core has trended downward, indicating that the Far-Flung Suburbs are gaining households from the Inner Core at a slower pace than earlier in the period.

**Stream income migration efficiency.** Figures 9 through 13 show annual stream income migration efficiency measures for the five subregions. The trends in income migration generally mirror the household migration trends for the 1993–2007 period. The stream income efficiency measures for the Center City are negative with all subregions during the most time period (Figure 9) except for the Inner Core in 2001 and in 2005–2007. Stream income efficiency measures suggest that the income redistribution effects of the Inner Core migrants to the Center City were more significant than the actual household movement. The stream migration efficiency with the Inner Core peaked at +5 in 2006 when the stream income efficiency measure was nearly +10. While stream income efficiency with the Inner Core peaked at +10 in 2001, the stream household migration efficiency measure was still negative. These differences indicate that the households that moved
from the Inner Core into the Center City had relatively higher incomes than the households moving out of the Center City to the Inner Core. In fact, in 2001, the Center City lost households but gained household income from the Inner Core jurisdictions.

Figure 10 shows that the stream income migration efficiency measures for the Inner Core are moving closer to zero, especially after 2001. The trends observed in the income efficiency measures mirror closely the trends in household migration, indicating no major changes in the relative income of households moving into and out of the Inner Core jurisdictions.

The stream migration efficiency measures for the Inner Suburbs (Figure 11) display the same general trend as the household migration efficiency measures. While stream income efficiency with the Outer Suburbs and Far-Flung Suburbs trended upward, the actual levels remained somewhat lower than the household migration efficiency levels. For example, in 2007, the stream income migration efficiency with the Far-Flung Suburbs was about −45 (up from a low of about −52 in 2002), but the household stream migration efficiency level was −35 (up from a low of about −41 in 2002). These differences suggest that as the Inner Suburbs continued to lose households to the more distant jurisdictions, they lost income to out-migration at even faster rates.

The stream income migration efficiencies for the Outer Suburbs (Figure 12) are also similar to the subregion’s migration efficiency trends. Except for the Far
FIGURE 11. STREAM INCOME MIGRATION EFFICIENCIES—INNER SUBURBS.
Source: Internal Revenue Service county-to-county migration files and authors’ calculations.

FIGURE 12. STREAM INCOME MIGRATION EFFICIENCIES—OUTER SUBURBS.
Source: Internal Revenue Service county-to-county migration files and authors’ calculations.
Flung suburbs, the income flows from the other subregions exceeded the flows to the others over the period. The spike in 2002–2003 is also observed in the income efficiencies, but the magnitude is even higher, suggesting that somewhat higher income households (i.e., households with greater means to move) moved to the Outer Suburbs following the 2001 terrorist attacks. As with the household flows, the trends in income migration returned to expected levels by 2004.

Figure 13 shows the stream income migration efficiency measures for the Far-Flung subregion. While the measures broadly follow the pattern presented in the stream migration efficiency measures, the most notable difference is found in the stream income migration efficiency for the Center City. Stream migration efficiency measures in the Center City hovered around +10; however, income efficiency values were around +30 or even +40 during the period. Thus, while the Far-Flung Suburbs gained households from the Center City, overall they gained higher income households than they lost.

This analysis of county-to-county migration data for the period 1987 through 2007 demonstrates that decentralization is still the dominant population settlement pattern in the region, but there may be the beginning of a more complicated trend.

While the net household flows into the outer jurisdictions are still positive at the end of the study period, they are slowing. At the same time, the inner
subregions are losing households to the outer jurisdictions more slowly. Since 2005, the Inner Core and the Central City continued to be net losers of households to the suburban jurisdictions, but the net migration levels for these inner jurisdictions have trended toward zero during the most recent years in the study period. If these trends continue, it is possible that there will be migration efficiency measures close to zero for all subregions in the Washington, DC area in a few years, which is an indication of the growing attractiveness of Center City and Inner Core locations relative to more suburban locations.

Similar to the pattern of household flows, the net income flows have converged toward zero in recent years. The trend became more obvious after 2005 not only in the income migration efficiencies but also in the stream income migration efficiencies for all subregions. While the migration and income efficiency measures indicate the possibility of the beginning of a back to the city movement, there is also evidence of a trend toward the migration of relative higher-income households to the region’s most distant suburbs.

Even as household and income migration exhibit new patterns, the impact on population totals will be slow. Furthermore, this new pattern is very preliminary and possibly precarious. Many factors could slow or even reverse the nascent back to the city course.

**Conclusion and Policy Implications**

This research analyzed household and income mobility in the Washington, DC metropolitan area in an attempt to assess the extent to which there is evidence of population recentralization—or back to the city movement—in the region. This study also showed how IRS migration data and quantitative measures commonly used in migration research can be used to explore mobility within a region. The analysis found that the outer jurisdictions in the Washington, DC metropolitan area—particularly the Outer Suburbs and Far-Flung Suburbs—continue to gain relatively higher shares of households and income as a result of intraregional mobility. However, there is evidence that the trend may be changing, particularly after 2005. The rate of inflows to the Outer Suburbs and Far-Flung Suburbs and the rate of outflows from the Inner Core and the Center City are slowing. Migration efficiency measures in all subregions are moving toward zero, which indicates a movement toward similar numbers of in-migrating and out-migrating households.

Careful analysis of the data, however, reveals a more complicated picture of demographic restructuring in the Washington, DC metropolitan area. The Inner Suburbs, the largest and richest subregion and once a magnet for households and income, has become a net loser of households. In addition, the Inner Suburbs not
only continue to lose households to the Outer Suburbs and Far-Flung Suburbs, but it is also losing relatively higher income households. At the same time, net migration from the Inner Core and the Center City to the Inner Suburbs is slowing.

The IRS county-to-county migration data and migration efficiency measures are a good way to measure household flows within a metropolitan area, and they can be a leading indicator of household redistribution through the region—a trend not observable with aggregate population or household totals.

However, there are some limitations to using these data because some households are excluded from the file. The potential for bias exists if the number of excluded households is relatively large and if the excluded households have significantly different mobility patterns than the included households. The IRS data exclude U.S. households that are not legally required to file federal income taxes (because of low incomes), as well as those that choose not to file. If these nonfilers have different migration patterns than filers, the results presented here could be biased. While the size of the nonfiling group is relatively small (Huang and Kim 2000), there is some evidence that they have significant different characteristics that are related to mobility. In a study of county-to-county migration in 32 counties, Thibaudeau (2001) suggests that the IRS migration data may not provide an unbiased account of between-county movements and that movers and nonmovers likely have different characteristics. Specifically, Thibaudeau found that nonfilers are less likely than filers to be homeowners, and they are more likely to be young and poor. As a result, Thibaudeau concludes that nonfilers are more likely to migrate in any given year. Those nonfilers who do migrate probably choose different destinations than filers. Thus, even though the group of nonfilers is not large, they may have different mobility patterns. Future research should investigate how the county-to-county mobility of lower-income households (who are more likely to be nonfilers) differs from the mobility of higher-income households to better understand how big a bias might exist.

The other limitation of the research comes from the fact that this study has focused exclusively on household moves within the Washington, DC metropolitan area and on households that filed federal income taxes. As such, it excludes at least two groups important to shaping the structure of the region—migrants into the Washington, DC metropolitan area from other places in the U.S. and international migrants. Both groups are important for explaining trends in population and household distribution within the region. Based on the preliminary analysis of other IRS county-to-county migration data, it appears as though the domestic migrants coming to the Washington, DC metropolitan area are more likely to initially settle in the Center City and Inner Core jurisdictions. An analysis of 2000
Census data shows that the immigrant population is scattered widely throughout the region but has concentrations in neighborhoods of the Center City, Inner Core, and Inner Suburbs, and, to a lesser degree, the Outer Suburbs, especially Prince William County, Virginia (Singer 2003). The settlement patterns of these two groups could either reinforce or dilute the beginnings of the back to the city movement observed in this analysis. A more careful examination of these groups will allow for a more complete analysis of the changing distribution of households and people throughout the Washington, DC metropolitan area.

Despite the limitations of this research, the results also provide some policy implications. If there is the beginning of a trend of households moving back to the inner core of the Washington, DC metropolitan area, there are important local and regional policy implications. Local (and state) governments may need to reconsider how money is spent on transportation-related projects by switching their targeted area from the Inner Suburbs or Outer Suburbs to the Center City or the Inner Core. The major transportation projects such as HOT lanes on I-495 and I-395, Metrorail to Dulles, and InterCounty Connector, which are ongoing in the Washington, DC metropolitan area, will serve the jurisdictions of the Inner Suburbs or Outer Suburbs. However, if the Washington, DC metropolitan area begins to experience a widespread movement of people back to the inner core, living and working in more densely populated communities, there will be a greater need for investment in infrastructure in the Center City and the Inner Core, with an emphasis on public transportation rather than roads.

A back to the city or inner core movement also matters for housing issues. Population recentralization will increase the demand for housing in the Center City and the Inner Core where average home prices are already higher than those in the more distant suburbs. Therefore, local governments should encourage more housing through denser residential development, particularly around Metro stations and along bus lines.

Finally, this research offers particular policy implications for the jurisdictions of the Inner Suburbs, which experienced over the 1987–2007 period the unique pattern of becoming a net loser of households to both the outer and inner subregions. Perhaps in response to increased urbanity and diversity, the Inner Suburbs have lost households to the more distant suburbs. As traffic congestion worsens and the population of the region gets younger, the Inner Suburbs lose out to the Inner Core and the Center City. The Inner Suburbs need to continue to focus on attracting households by maintaining high levels of public amenities, including public schools and public safety. It may also be wise for local policy makers to explore land use and economic development policies in some parts of the jurisdiction to capitalize on the growing urbanity.
NOTES

1. The American Community Survey (ACS) will eventually provide annual household mobility data. However, the ACS will continue to report only whether households did not move, moved with the county, moved from another county within the state, or moved from outside the state.

2. The IRS data only include movers as those households that change counties from one year to the next. The IRS data do not identify households that move within a particular county. As a result, we do not have information on the total number of moves within a subregion. We do have data on moves between counties within a subregion (i.e., from Arlington County to the City of Alexandria in the Inner Core subregion), but we do not have data on moves within a jurisdiction of a subregion (i.e., moves within Arlington County in the Inner Core or moves within the District of Columbia, which is the sole jurisdiction making up the Center City subregion.) Thus, the table understates the total amount of intraregional mobility within the Washington, DC metropolitan area. This exclusion, however, does not impact the following discussion of population recentralization in the region.

3. Income data are not available from the IRS before 1992–1993. Data for 1994–1995 are not shown because of an error in the IRS data file, which showed negative income flows between two jurisdictions in the region.

REFERENCES


