Cycles within the System: Metropolitanisation and Internal Migration in the US, 1965–90

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Summary. This paper uses a typology of local metropolitan development to examine population redistribution trends in the US over the past three decades. Theories of systemic maturation and urban life-cycles are discussed and evaluated. Analysis of population and inter-county migration data reveals that localised deconcentration has become an increasingly common sub-process of metropolitanisation, but that this sub-process cannot be fully explained by a life-cycle model of metropolitan development. More importantly, results indicate that metro-based migration varies significantly with local patterns of metropolitanisation. The nature of this variation implies that declining metropolitan areas tend to redistribute migrants to relatively distant metropolitan and non-metropolitan territory in a manner consistent with extended processes of population deconcentration.

Introduction

During the 1970s, a ‘migration turnaround’ saw proportionately more Americans move from metropolitan to non-metropolitan counties than vice versa. Hall and Hay (1980, p. 12) proclaimed it “one of the major demographic puzzles in the contemporary United States”. Since then, the enigma has only grown. As theoretical explanations for this historic reversal began to emerge, evidence from the 1980s revealed a return to more traditional patterns of metropolitan concentration. Now it appears that even this trend may be short-lived. Evidence from the early 1990s now indicates that the US might be experiencing its second ‘turnaround’ in 20 years (Beale and Fugitt, 1990; Johnson, 1993; Johnson and Beale, 1994).

While it is still premature to draw conclusions about this latest ‘ rural rebound’, its emergence underscores the importance of ongoing efforts to theorise contemporary population redistribution trends. Lately, scholars have suggested that recent fluctuations in these redistribution trends might reflect a national metropolitan system that is approaching saturation. The fact that nearly three-quarters of all Americans now live in metropolitan territory, however, does not mean that the urban system has ceased to develop. Under conditions of saturation, the national population may continue to cluster in a smaller number of megalopolises or, alternatively, may begin to disperse among a greater number of medium- and small-sized places (Korcelli, 1983). The overriding point is that the development of national urban systems is a complicated process which, if left to its own accord, does not lead to a state of equilibrium but rather will always be
fraught with friction and produce conflicting reactions that manifest themselves in changing patterns of population redistribution.

To understand better the dynamics of this process, a group of scholars has recently urged analysts to pay more attention to the connections that exist between changes in the structure of the urban system, on the one hand, and the development of individual urban centres, on the other (Van den Berg et al., 1982). This study aims to explore precisely these connections in an effort to understand whether local sub-processes of metropolitanisation correspond to distinct geographical patterns of population redistribution. A central hypothesis is that as metropolitan areas ‘mature’, they begin to send disproportionate shares of migrants to increasingly distant metropolitan and non-metropolitan territory in a manner consistent with a protracted process of metropolitan deconcentration. In this case, maturation is conceptualised in terms of a cyclical process in which local metropolitan populations first concentrate within an urban core and then begin to deconcentrate, first to surrounding suburbs and then to increasingly distant, or peripheral, territory.

To explore this hypothesis empirically, this paper uses population and inter-county migration data to examine three related questions: First, over the past three decades, has the US metropolitan system ‘matured’ in a manner consistent with increasing incidence of local metropolitan deconcentration? Secondly, if so, does this trend derive from a systematic progression of individual metropolitan areas through a common urban ‘life-cycle’, one which begins with population concentration and proceeds to suburbanisation and eventual deconcentration of the local population? Thirdly, and most importantly, do metropolitan areas that exhibit different stages of local demographic development also exhibit distinct patterns of internal, that is intra-national, migration, particularly to non-metropolitan territory?

The paper first briefly reviews two dominant perspectives on population redistribution in the contemporary US and then moves to consider alternative perspectives regarding systemic maturation and urban life-cycles. Next, a three-stage typology of metropolitanisation is offered and an explanation is given of how it will be used in subsequent analysis to examine connections between local metropolitan development and broader spatial patterns of internal migration.

**Dominant Perspectives: Deconcentration versus Regional Restructuring**

In an early attempt to theorise the ‘puzzle’ of the migration turnaround, Wardwell (1977, 1980) argued that the US had entered a new era of social and economic development—one characterised by the ‘convergence’ of urban and rural space (see also Hawley and Mazie, 1981; Kasarda, 1980; Long, 1981). Wardwell asserted that as this era of convergence progressed, internal migration would become increasingly random with respect to origin and destination. The implication was that larger metropolitan areas would continue to deconcentrate as technological developments and rising personal affluence allowed an increasing number of households and firms to “select from a wide range of city sizes without incurring increased production costs, reduced marketing gains, or fewer lifestyle options” (Wardwell, 1980, p. 89).

While this ‘deconcentration perspective’ tapped the importance of recent transport and communication innovations, as well as longstanding residential preferences for low-density environments, conceptually, it could account neither for the timing of the initial turnaround nor for its subsequent reversal during the 1980s. Research has since established that sub-national ‘turnarounds’ occurred at the level of US census divisions as early as 1940, which suggests that Wardwell’s ‘era of convergence’ was not in fact new in origin (Wilson, 1986). Moreover, related studies now suggest that metropolitan-based migration might instead reflect ongoing processes of deconcentration that extend outward from established urban centres (Gordon, 1979; Hawley et al., 1964; Kasarda and Redfearn, 1975). For example, Morrill (1980) found that the rate of growth
and the contribution of net migration to growth have both declined consistently in the North and Midwest regions of the US since the late 1930s. This transition occurred first in central counties and then in suburban counties, which suggests that deconcentration might be occurring in continuous waves from historical points of urban-industrial agglomeration.

In contrast to the deconcentration perspective, the ‘regional-restructuring’ perspective has come to the fore by stressing global transitions in industrial organisation and the changing functions that American metropolises perform within a ‘new’ international division of labour (Bluestone and Harrison, 1982; Castells, 1985; Frey and Speare, 1988; Noyelle and Stanback, 1984). Emphasising the apparent deindustrialisation of the US economy, this perspective asserts that recent fluctuations in internal migration reflect the selective depopulation of metropolitan areas that depend heavily upon traditional manufacturing. The implication for metropolitan-based migration is that areas which function as headquarter sites and/or exporters of producer services will continue to attract disproportionate shares of migrants, while smaller metropolitan and non-metropolitan areas engaged in routine production face almost certain decline. From this viewpoint, then, recent migration turnarounds reflect a contemporary restructuring of select metropolitan economies, not a fundamental convergence of metropolitan and non-metropolitan space.

A major contention of this paper, however, is that intellectual fixation on contemporary events has blinded many researchers to the fact that US metropolitan development has depended upon processes of deconcentration for most this century. To be sure, large urban centres have experienced profound social and economic changes since the late 1960s, but population deconcentration in the US has always involved dynamic changes associated with technological innovation, changes in production and land-use conversion (see Schnore, 1957, especially pp. 77–134). In highlighting the concept of deconcentration, rather than economic restructuring or personal preference and affluence, this research considers whether local patterns of metropolitan development correspond to systematic movements of people to more distant, metropolitan and non-metropolitan territory. To understand how and why this correspondence might occur, the paper now turns to a discussion of systemic maturation and urban life-cycles.

Systemic Maturation

In contrast to both the deconcentration and regional-restructuring perspectives, the idea of systemic maturation posits that individual metropolitan areas co-evolve as both cause and consequence of longstanding migratory processes that bind national settlement systems. In a recent article, Geyer and Kontuly (1993) assert that these processes are best conceptualised at the national level in terms of three successive stages of ‘differential urbanisation’ (see also Geyer, 1989, 1990). During the first stage, which they call primate-city expansion, economic activity and demographic growth are presumed to concentrate in relatively few urban centres. An important aspect of this initial concentration is that it depends not only upon local developments but upon strengthening social and economic ties with other places. In theory, as these primacy centres continue to develop, so, too, do the ties, which, in turn, work to foster the development of new centres at lower ranks within an emergent urban system. As these new centres continue to develop, the urban system is presumed to mature into territorially organised sub-systems, which are characterised by overlapping processes of local concentration and regional dispersion. Geyer and Kontuly call this second stage of differential urbanisation intermediate-city growth. As these dual processes of concentration and dispersion continue to unfold, the metropolitan system is presumed to enter a third stage of differential urbanisation, which the authors call small-city growth. During this next stage, a growing number of primate and intermediate cities are presumed to begin
experiencing net out-migration, or ‘concentrated dispersion’ (Richardson, 1980), to smaller urban centres. As this stage progresses, Geyer and Kontuly assert, the national settlement system begins to experience a period of ‘counter-urbanisation’—that is, a period in which proportionately more people move from larger to smaller places than vice versa.

The key point for this research is that after an initial period of primate-city expansion, we might reasonably expect national settlement systems to exhibit countervailing processes of concentration and dispersion. Although the authors present no empirical evidence for the US, recent migration turnarounds coupled with the continued designation of new metropolitan areas suggest that the US might now be experiencing a stage of small-city growth. From this perspective, then, we might draw two hypotheses. First, over the past several decades the established metropolitan system has exhibited increasing incidence of concentrated dispersion, or deconcentration from individual metropolitan areas. Secondly, this concentrated dispersion has involved the redistribution of local metropolitan residents down the urban hierarchy to smaller, more distant places, including those located in more distant non-metropolitan territory.

Metropolitan Life-cycles

At the local level, scholars have suggested that processes of systemic maturation might derive, in part, from the orderly progression of individual metropolitan areas through a common urban life-cycle; one which begins with centralisation and proceeds to suburbanisation and eventual deconcentration of the local population (Hall and Hay, 1980; Korcelli, 1983; Morrill, 1992; Van den Berg et al., 1982). The concept of an urban life-cycle dates back at least to Patrick Geddes’ (1915) Cities in Evolution and Lewis Mumford’s (1938) The Culture of Cities, yet it was not until the late 1960s that references to a specifically American urban life-cycle became prevalent (Birch, 1970; Borchert, 1967; Forrester, 1969; Wilson, 1966). More recently, in City Life-cycles and American Urban Policy, Norton (1979, p. 120) argued that the historical development of older metropolitan centres has always depended upon balancing tendencies for local dispersion with “market-generated means of economic rejuvenation”. When innovative capacities wane, Norton explains, centrifugal tendencies characteristic of advanced industrial populations begin to predominate. As a result, processes once endemic to the metropolitan level, namely population deconcentration, begin to extend over broader spatial scales.

Norton’s thesis is important for the study of contemporary population redistribution because it suggests that recent trends might reflect the historical inability of older, larger metropolitan areas to overcome enduring tendencies for extended deconcentration—the same tendencies that helped to establish the US metropolitan system. In many ways, this perspective may be viewed as complementary to both the regional-restructuring and deconcentration perspectives since it asserts that recent ‘pushes’ from traditional manufacturing centres might spring not only from a new international division of labour, but also from common and longstanding tendencies for population deconcentration.

To examine how these tendencies unfold at the level of individual metropolitan areas, this research employs a three-stage typology of metropolitanisation to distinguish among different patterns of population change in the respective area’s central-city and suburban ring (see Table 1). Inspiration for the proposed typology comes from a recent study of urban Europe (Van den Berg et al., 1982), in which the authors use similar patterns of differential growth to construct an urban life-cycle of local metropolitanisation.

During the first stage of the cycle, urbanisation, growing numbers of people are presumed to concentrate in an urban core (cores) at the expense of surrounding hinterlands. In theory, this concentration provides businesses with advantages of economic agglomeration and residents with job opportunities
and access to a growing diversity of goods and services. As increasingly complex divisions of labour interact with organisational and technological innovations, particular industries flourish, often with employment opportunities outpacing urban concentration. These opportunities, in turn, encourage further population growth which, along with relative decreases in transport costs, contributes to territorial expansion.

As twin processes of regional concentration and local territorial expansion continue, the metropolitan area theoretically enters a second stage of development, called suburbanisation. According to Van den Berg and colleagues, this stage of urban development occurs when increased personal incomes combined with improved transport technologies (especially automobiles and trucks) allow a deconcentration of population and industry to adjacent peripheral areas. Historically, this spill-over of people and jobs to nearby communities has been encouraged by increasing competition among land uses within the central city and by government subsidies and infrastructural improvements in the metropolitan fringe. In the US, suburbanisation has also been driven by the historical realities of racial fear, traffic congestion and rising property values (Frisbie and Kasarda, 1988). Under such pressures, the centrifugal drift of people and jobs from the central city is presumed to continue and eventually to contribute to conditions that encourage the direct settlement of inter-regional migrants in newly developed suburbs, rather than in the established urban core. Accordingly, the locus of demographic growth shifts from the central city to surrounding suburbs in a pattern consistent with initial population deconcentration.

As this process of deconcentration continues, the ideal-typical metropolis is presumed to enter a third stage of development, which is here called deconcentration. During this stage, people and jobs begin to migrate to areas beyond the local metropolis, which, in turn, leads to net population loss for the entire metropolitan area. Note that this stage does not require the suburban ring to lose population; during early phases, net out-migration from the central city may simply outweigh continued suburban growth. With time, however, it is expected that both core and suburban populations will begin to decline as disproportionate shares of migrants move to areas beyond the local metropolitan boundaries. Along with this population decline, it is generally expected that the local metropolitan area will also experience declines in economic and building activities and urban decay. It is also a stage that can be marked by the absolute deconcentration of people and jobs not only within the region but also intra- and internationally, suggesting that regional and global competition play important roles (Frisbie and Kasarda, 1988).

To understand how this typology will be used in the empirical analysis below, consider data reported in Table 2 for the Dubuque, Iowa, metropolitan area. Using 1983 metropolitan boundaries, we see that the entire area grew by over 10,000 residents between 1960 and 1970 and that the central city accounted for the majority of this growth (5,703 versus 4,849). Thus, according to the schematic presented in Table 1, Dubuque experienced a stage of urbanisation during the 1960–70 period. During the next decade, 1970–80, Dubuque’s central-city population remained relatively stable (−12) while its suburban ring continued to grow (+3157). As a result, the entire metropolitan area grew in population and may be said to have entered a stage of suburbanisation during the 1970s. During the 1980s, however, both metropolitan sectors declined in population and contributed to a net decline in the metropolitan area’s total population. Dubuque, thus, entered a stage of deconcentration during the 1980s.

In the analysis that follows, this procedure is repeated for each US metropolitan area in order to assess the validity of the life-cycle model and to determine whether different stages of development correspond to significantly different patterns of internal migration over recent decades. Although the
Table 1. Schematic of three stages of metropolitan development

<table>
<thead>
<tr>
<th>Stage of development</th>
<th>Classification type</th>
<th>Population change characteristics over respective decade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Central city</td>
</tr>
<tr>
<td>1. Urbanisation</td>
<td>a. Absolute centralisation</td>
<td>++</td>
</tr>
<tr>
<td></td>
<td>b. Relative centralisation</td>
<td>++</td>
</tr>
<tr>
<td>2. Suburbanisation</td>
<td>a. Relative decentralisation</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>b. Absolute decentralisation</td>
<td>−</td>
</tr>
<tr>
<td>3. Deconcentration</td>
<td>a. Continued decentralisation</td>
<td>− −</td>
</tr>
<tr>
<td></td>
<td>b. Re-centralisation</td>
<td>− ( + )</td>
</tr>
</tbody>
</table>

Note: Classification types illustrate the two different combinations of central-city and suburban population change possible for each stage of metropolitan development. They are provided for clarification only and will not be used in the empirical analysis.

Source: Adapted from Van den Berg et al. (1982).
Table 2. Population change in respective sectors of the Dubuque, Iowa, Metropolitan Area, 1960–90

<table>
<thead>
<tr>
<th>Decade</th>
<th>Central city</th>
<th>Suburbs</th>
<th>Metropolitan area</th>
<th>Stage of development</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960–70</td>
<td>+ 5703</td>
<td>+ 4849</td>
<td>+ 10552</td>
<td>Urbanisation</td>
</tr>
<tr>
<td>1970–80</td>
<td>– 12</td>
<td>+ 3151</td>
<td>+ 3145</td>
<td>Suburbanisation</td>
</tr>
<tr>
<td>1980–90</td>
<td>– 4775</td>
<td>– 2567</td>
<td>– 7342</td>
<td>Deconcentration</td>
</tr>
</tbody>
</table>

proposed typology relies upon an admittedly narrow conceptualisation of metropolitan development, it offers three specific advantages for empirical research. First, its dynamic stages discriminate well among distinct subprocesses of local metropolitan development which may, in turn, be viewed as surrogates for more fundamental changes in the spatial and organisational structure of individual metropolises. Secondly, its classification scheme is both simple and intuitively appealing. A more complex, multi-dimensional approach would not only render interpretation more problematic, it would likely require significant transformation of available data. Thirdly and finally, its multi-stage design allows us to examine both local and national processes of metropolitan development over time. This final point is critical, because its means that we can use the typology to explore the connections that might exist between changes in the structure of the urban system, on the one hand, and the development of individual urban centres on the other (Van den Berg et al., 1982).

Methodology

This research uses data from the 1960, 1970, 1980 and 1990 US Censuses of Population and Housing to identify stages of development for each Metropolitan Statistical Area (MSA) in the continental US over the past three decades. Utilising county-level data, each MSA was reconstructed according to constant 1983 MSA boundaries in an effort to adhere to a basic principle of demographic analysis: measure historical change for the same territorial units for all periods. The resulting universe consists of 293 MSAs, which include 47 Primary Metropolitan Statistical Areas (PMSAs). This number falls short of the official count of 326 MSAs for four reasons. First, the use of New England County Metropolitan Areas (NECMAs) results in the ‘loss’ of 14 MSAs that were originally defined using Minor Civil Divisions. Secondly, five MSAs are merged with other metropolitan areas to maintain historically consistent boundaries. Thirdly, 10 MSAs lack consistent data for all three decades and so are excluded. Fourthly, four MSAs lack a central city and so are also dropped. (See the Appendix for a list of these 33 MSAs.)

Because available data preclude the maintenance of constant central-city boundaries, population counts current at each point in time are relied upon to compare central-city and suburban populations. This approach means that changes in an MSA’s central-city population may reflect territorial as well as demographic changes that occurred between decennial censuses. (For all cases, the suburban population consists of local metropolitan residents residing outside the respective central city (cities).) The potential bias that this strategy introduces varies across cases and depends primarily upon historical changes in central-city boundaries due to annexation. For older areas that experienced little or no boundary fluctuations in recent decades, there is no effective bias. For newly designated or expanding areas, however, current, or ‘historically specific’, central-city boundaries may overestimate changes in the ‘core’ population and, hence, the incidence of urbanisation.
within the national metropolitan system. Preliminary examination of the data, however, indicates that suburban growth has been sufficient in recent decades to minimise problems of classification resulting from central-city annexation.

For analysis of metropolitan-based migration trends, data are drawn from Inter-County Migration (ICM) files compiled by the US Bureau of the Census for three 5-year periods: 1965–70, 1975–80 and 1985–90. To examine flows to and from individual MSAs, inter-county migration streams are sub-divided according to adjacency status and whether migrants crossed metropolitan, state and regional boundaries. For cases where an adjacent county is located within a different state, adjacency status overrides inter-state status. Moreover, all geographical sectors used in the analysis below are mutually exclusive—that is, migration counts for the sub-category ‘inside region’ exclude those for ‘inside state’, those for ‘inside state’ exclude those for ‘adjacent county’, and so forth. The migration flows have been organised in this way in order to facilitate interpretation and to highlight the successive distance of each migration field from the reference MSA. This approach enables a clear assessment of whether metropolitan-based migration patterns conform to processes of extended deconcentration.

For analytical purposes, net migration statistics are used as both descriptive tools and dependent variables in ordinary least squares (OLS) regression equations. In addition, the concept of migration efficiency is used in Table 7 to assess the relative redistributive property of particular metropolitan-based exchanges. Statistically, an efficiency measure is simply the ratio of net migration to gross migration between two areas, \(i\) and \(j\). A relatively high measure (in either a positive or negative direction) indicates that the migratory stream is an ‘efficient’ redistributor of people from one area to another; a low measure indicates that the two areas tend merely to swap local residents, with little net population redistribution occurring (see Galle and Williams, 1972; Gober, 1993; Shryock and Siegel, 1971).

**Findings**

Again, a central objective of this study is to determine whether identifiable patterns of local metropolitisation help to explain recent fluctuations in population redistribution within the US. In pursuit of this aim, the following analysis focuses upon three related questions raised at the outset. First, does evidence support the idea that the US metropolitan system is maturing in a manner consistent with increasing incidence of concentrated dispersion, or local deconcentration? Secondly, if so, can this evidence of systemic maturation be explained by the orderly progression of individual metropolitan areas through a common urban life-cycle? Thirdly, and most importantly, do the different stages of metropolitisation outlined above correspond to distinct patterns of internal migration and suggest an ongoing process of extended deconcentration from established points of metropolitan concentration? These questions will be addressed, in order, in the sub-sections below.

**Systemic Maturation**

Before we consider recent migration trends, we must first establish whether the US metropolitan system is in fact ‘maturing’. In this study, systemic maturation is approximated by the number of MSAs exhibiting a stage of deconcentration (net population loss) over each of the past three decades. Data reported in Table 3 reveal that the percentage of MSAs experiencing deconcentration has, in fact, increased over the past three decades, from 8 to 9 to 21 per cent of the entire metropolitan universe. This pattern suggests that the US metropolitan system is, in fact, ‘evolving’ in a manner consistent with systemic maturation. Percentages for MSAs experiencing urbanisation, however, present a curious twist. As expected with a constant metropolitan universe, the incidence of urbanisation dropped from 31 per cent during the 1960s to 26 per cent during the 1970s;
Table 3. Percentage of MSAs at each stage of development, 1960–90

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Urbanisation</td>
<td>31 (31)</td>
<td>26 (20)</td>
<td>31 (22)</td>
</tr>
<tr>
<td>Suburbanisation</td>
<td>61 (61)</td>
<td>65 (71)</td>
<td>48 (57)</td>
</tr>
<tr>
<td>Deconcentration</td>
<td>8 (8)</td>
<td>9 (9)</td>
<td>21 (21)</td>
</tr>
<tr>
<td>(N = 293)</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

*Numbers in parentheses report percentages if we were to assume that all urbanising MSAs in which the central city annexed territory during the respective decade should be classified as suburbanising rather than urbanising.

Urbanisation: Entire MSA grew in population during the decade and the central city accounted for the majority of this net growth.

Suburbanisation: Entire MSA grew in population during the decade and the suburbs accounted for the majority of this net growth.

Deconcentration: Entire MSA declined in population during the decade.

However, during the 1980s, this percentage rebounded to 31 per cent. If Geyer and Kontuly (1993) are correct, it is plausible that migration down the urban hierarchy toward newly established MSAs contributed to this upturn in urbanisation. A look ahead to the ‘ages’ of urbanising MSAs (see Table 5), however, reveals that a growing proportion of these MSAs actually reached central-city populations of 50,000 prior to World War I (13 per cent of all urbanising MSAs during the 1960s; 16 per cent during the 1970s; and 23 per cent during the 1980s). This pattern indicates that a growing percentage of these MSAs are not newly emergent. Therefore, more probable explanations for the fluctuating incidence of urbanisation include selective gentrification, heightened immigration, and central-city annexation.

With respect to annexation, Table 3 also reports percentages for the assumption that all urbanising MSAs in which the central city annexed territory during the respective decade should be classified as suburbanising rather than urbanising. Note that these numbers remain a matter of assumption because available data preclude the determination of whether central-city population growth occurred within established central-city boundaries or within newly annexed territory. With this caveat in mind, we see that while adjustments for annexation reduce the amount of change between 1970–80 and 1980–90, the same general pattern prevails. In other words, fluctuations in the proportion of MSAs experiencing urbanisation over the past three decades cannot be fully explained by central-city annexation. (The rising incidence of deconcentration remains unaffected by central-city annexation, since it is based solely on net population loss for the entire metropolitan area.)

A more refined assessment of the systemic-maturation thesis considers the regional location of individual MSAs, since prior research suggests that local processes of metropolisation continue to reflect the inter-regional diffusion of urban-industrialism within the US (Morrill, 1980; Wilson, 1988). Information reported in Table 4 reveals that between 1960–70 and 1970–80, ‘core’ regions of the country (i.e. the Northeast and Midwest census regions) consistently accounted for the smallest proportion of MSAs experiencing urbanisation and the largest proportion experiencing deconcentration. Moreover, the percentage of ‘core’ MSAs that experienced net population loss
Table 4. Percentage of MSAs at each stage of development, by US census region, 1960–90

<table>
<thead>
<tr>
<th>Decade and region</th>
<th>Stage of development</th>
<th>Urbanisation</th>
<th>Suburbanisation</th>
<th>Deconcentration</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960–70 North</td>
<td>131</td>
<td>25</td>
<td>67</td>
<td>8</td>
<td>100</td>
</tr>
<tr>
<td>South</td>
<td>112</td>
<td>33</td>
<td>59</td>
<td>8</td>
<td>100</td>
</tr>
<tr>
<td>West</td>
<td>50</td>
<td>40</td>
<td>56</td>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>1970–80 North</td>
<td>131</td>
<td>18</td>
<td>63</td>
<td>19</td>
<td>100</td>
</tr>
<tr>
<td>South</td>
<td>112</td>
<td>31</td>
<td>68</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>West</td>
<td>50</td>
<td>32</td>
<td>66</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>1980–90 North</td>
<td>131</td>
<td>24</td>
<td>43</td>
<td>33</td>
<td>100</td>
</tr>
<tr>
<td>South</td>
<td>112</td>
<td>31</td>
<td>56</td>
<td>13</td>
<td>100</td>
</tr>
<tr>
<td>West</td>
<td>50</td>
<td>52</td>
<td>42</td>
<td>6</td>
<td>100</td>
</tr>
</tbody>
</table>

*North consists of both the Northeast and Midwest census regions—the first such regions to reach a metropolitan majority.

has consistently increased over the past three decades, from 8 per cent in 1960–70, to 19 per cent in 1970–80 and finally to 33 per cent by 1980–90. As for the other two stages of development, we find that urbanisation has been consistently highest in the West (accounting for over half of all MSAs in this region during the 1980s), while suburbanisation, on the other hand, has become an increasingly southern phenomenon (accounting for a majority of all southern MSAs in all three decades).

To summarise, temporal trends lend initial support to the idea of systemic maturation by showing that local deconcentration was not an anomaly of the 1970s but rather has been an increasingly common sub-process of metropolitanisation since the 1960s. Regional trends refine this picture by demonstrating that northern and midwestern, or ‘core’, MSAs have been most likely to experience deconcentration, followed by southern MSAs and then western MSAs. To determine whether these patterns of systemic maturation derive from the orderly development of local MSAs, the paper now turns to a descriptive analysis of the metropolitan life-cycle.

Metropolitan Life-cycle

The central question behind the life-cycle model is whether individual MSAs tend to develop in a manner consistent with the typology of local metropolitanisation presented above. At an aggregate level, it appears that they do. Considering all MSAs together, fully 86 per cent of the metropolitan universe either ‘evolved’ to the next stage of development or remained in the same stage between 1960–70 and 1970–80. This percentage increased to 90 per cent between 1970–80 and 1980–90.

According to Norton’s (1979) work on city life-cycles, we might expect the percentage of deconcentrating MSAs to rise with age, since the propensity for extended deconcentration presumably increases with time. To test this hypothesis, Table 5 provides a cross-classification of MSAs by metropolitan ‘age’ and stage of development. For the purposes of this study, metropolitan ‘age’ is defined as the census year in which an MSA’s central city (cities) first reached a population of 50,000—a common indicator in the urban studies literature. To facilitate interpretation, these years are partitioned into three historical epochs: pre-World War I
Table 5. Percentage of MSAs at each stage of development by metropolitan age, 1960–90

<table>
<thead>
<tr>
<th>Decade and age</th>
<th>n</th>
<th>Urbanisation</th>
<th>Suburbanisation</th>
<th>Deconcentration</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960–70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1790–1910</td>
<td>87</td>
<td>13</td>
<td>80</td>
<td>7</td>
<td>100</td>
</tr>
<tr>
<td>1920–60</td>
<td>120</td>
<td>40</td>
<td>49</td>
<td>11</td>
<td>100</td>
</tr>
<tr>
<td>1970–90</td>
<td>47</td>
<td>55</td>
<td>43</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>‘Not yet’</td>
<td>39</td>
<td>13</td>
<td>82</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>1970–80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1790–1910</td>
<td>87</td>
<td>16</td>
<td>63</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>1920–60</td>
<td>120</td>
<td>33</td>
<td>60</td>
<td>7</td>
<td>100</td>
</tr>
<tr>
<td>1970–90</td>
<td>47</td>
<td>36</td>
<td>62</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>‘Not yet’</td>
<td>39</td>
<td>10</td>
<td>90</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>1980–90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1790–1910</td>
<td>87</td>
<td>23</td>
<td>52</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>1920–60</td>
<td>120</td>
<td>38</td>
<td>44</td>
<td>18</td>
<td>100</td>
</tr>
<tr>
<td>1970–90</td>
<td>47</td>
<td>47</td>
<td>34</td>
<td>18</td>
<td>100</td>
</tr>
<tr>
<td>‘Not yet’</td>
<td>39</td>
<td>13</td>
<td>67</td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

Metropolitan age is approximated by the census year in which an MSA’s central-city population reached 50,000. The ‘Not yet’ category refers to MSAs in which the central city had not reached a population of 50,000 by the 1990 census.

(1790–1910); post-World War I to ‘pre-turnaround’ (1920–60); and ‘turnaround’ to the present (1970–90). A fourth category, ‘not yet’, is also included and refers to MSAs in which the central-city population had yet to reach 50,000 by 1990. As expected, results in Table 5 show that the incidence of deconcentration tends to increase with age, while the incidence of urbanisation tends to decrease. With respect to suburbanisation, we find that the ‘not yet’ category consistently accounts for the highest proportion of areas experiencing this stage over the past three decades. This finding is not as surprising as we might first think, given that the same small central-city population that accounts for an MSA’s ‘not yet’ categorisation must, by definition, be surrounded by a relatively large suburban population in order for the area to achieve metropolitan status.

More thorough assessment of the life-cycle model requires that we focus on the development of individual MSAs over time, in addition to composite shifts in the entire metropolitan universe. For this purpose, Table 6 reports data on transitions from one stage of development to another over respective decades. From this more dynamic perspective, we find less support for the urban life-cycle hypothesis. For example, while 16 per cent of MSAs that experienced suburbanisation during the 1960s made a forward transition to a stage of deconcentration by the 1970s, 12 per cent experienced a reverse transition to urbanisation. Although similar inter-stage transitions between 1970–80 and 1980–90 offer a kinder assessment, results still indicate that more suburbanising MSAs moved backward rather than forward through the constituent stages of the life-cycle (23 per cent versus 19 per cent). These findings run counter to the evolutionary tenets of the life-cycle model and raise important questions about its validity.

To assess how these findings are affected by annexation, numbers are again reported based on the assumption that urbanising MSAs in which the central city annexed territory during the respective decade should rightly be classified as suburbanising rather than urbanising. Under this assumption, we still find evidence of reverse transitions through the life-cycle over time but now at a much lower level. For example, instead of 12 per cent of suburbanising MSAs ‘devolving’ to a stage of urbanisation
### Table 6. Percentage of MSAs at each stage of development by type of transition during subsequent decade, 1960–90

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Stationary&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Forward&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>1960–70</td>
<td></td>
<td>90</td>
<td>44 (44)&lt;sup&gt;e&lt;/sup&gt;</td>
</tr>
<tr>
<td>Urbanisation</td>
<td></td>
<td>181</td>
<td>72 (82)</td>
</tr>
<tr>
<td>Deconcentration</td>
<td></td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1970–80</td>
<td></td>
<td>75 (57)</td>
<td>57 (63)</td>
</tr>
<tr>
<td>Urbanisation</td>
<td></td>
<td>191 (209)</td>
<td>58 (70)</td>
</tr>
<tr>
<td>Deconcentration</td>
<td></td>
<td>27</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Stationary refers to MSAs that remained in their respective stage of development over the next decade.

<sup>b</sup> Forward refers to a one-stage, forward transition through the life-cycle.

<sup>c</sup> Reverse refers to a one-stage, reverse transition through the life-cycle.

<sup>d</sup>Prior research on the urban life-cycle suggests that after a prolonged period of deconcentration, an MSA may begin to re-urbanise and perhaps eventually make a second pass through the life-cycle. Thus, the transition from deconcentration to urbanisation is referred to here as a forward transition and the transition from deconcentration to suburbanisation as a reverse transition. Given the historical and conceptual ambiguity of both types of transitions, however, one should not over interpret them.

<sup>e</sup>Numbers in parentheses report percentages if we were to assume that all urbanising MSAs in which the central city annexed territory during the respective decade should be reclassified as suburbanising rather than urbanising.

---

between 1960–70 and 1970–80, we now find 6 per cent. Likewise, the percentage making this particular transition (suburbanisation to urbanisation) between 1970–80 and 1980–90 drops from 23 per cent to 11 per cent. Thus, while it is impossible to say which numbers are most realistic, it does appear that annexation accounts for at least some of the validity issues raised in the initial interpretation of Table 6.

To recap, aggregate and local trends provide mixed support for the urban life-cycle model. A conservative stance underscores the fact that a non-trivial percentage of MSAs exhibited reverse transitions through the hypothesised life-cycle over the past three decades. A more liberal appraisal highlights the fact that no less than 86 per cent of all MSAs exhibited transitions consistent with the life-cycle model and that older MSAs, as expected, were more likely to experience deconcentration than younger ones. In light of this evidence, it is submitted that even if we were to accept the conservative argument and reject the urban life-cycle model, it is still important to consider whether different stages of local metropolisation correspond to distinct patterns of internal migration. The aim of the next section is to examine this possibility empirically through an examination of metropolitan-based migration flows to and from particular geographical sectors.

### Local Stages of Metropolitanisation and Internal Migration

Consensus now holds that two distinct trends have driven fluctuations in US population redistribution since the late 1960s: the continued growth of settlements within commuting range of established MSAs; and a more recent growth in remote rural and small urban places (Fuguitt <i>et al.</i>, 1981; Richter, 1985; Long and DeAre, 1982; Long, 1981; Fuguitt and Beale, 1984; Fuguitt, 1985). In
this section, inter-county migration data for 1965–70, 1975–80 and 1985–90 are used to examine both types of flows and to determine whether metropolitan-based migration has varied significantly with local stages of metropolitan development over the past three decades. Of particular interest, again, is whether evidence of this variation conforms to patterns suggested of extended deconcentration.

To begin, Table 7 reports net migration values for respective metropolitan-based migration flows. Results here reveal a consistent pattern of net out-migration from deconcentrating MSAs to non-metropolitan territory during the late 1970s and 1980s. This finding indicates that although the US metropolitan system began to re-concentrate in large metropolitan centres during the 1980s, a growing number of deconcentrating MSAs continued to redistribute their populations to all sectors of non-metropolitan America. Furthermore, counter to common ‘spill-over’ explanations, which emphasise the movement of people and jobs to surrounding non-metropolitan counties, results show that net out-migration from declining MSAs tends to increase steadily with geographical distance. This finding holds regardless of metropolitan or non-metropolitan classification of the respective geographical sector and demonstrates that deconcentrating MSAs are not merely artefacts of local territorial expansion, but rather actively serve to redistribute sub-national populations to relatively distant territory.

A common criticism of net migration statistics, however, is that they hide the size of the gross flows used in their calculation. For example, a net migration value in Table 7 informs us that between 1975 and 1980 an average urbanising MSA gained 1411 migrants from non-metropolitan counties located outside its respective census region. This statistic, however, obscures the fact that it took an average of over 21,400 migrants moving between these two areas to produce this net change. In other words, only about 6.5 per cent of the gross migration between these two areas resulted in net population change (net migration/gross migration = 1411/21,400 = 0.065). In the demography literature, this percentage is called an efficiency measure because it tells us how efficient, or non-random, a given exchange is in redistributing population.

For each exchange reported in Table 7, this efficiency measure has been calculated and instances where the absolute value was greater than or equal to 20 per cent were underlined. From these measures, we gain two additional insights into recent metropolitan-based redistribution trends. First, while national patterns of internal migration have exhibited marked fluctuation since the late 1960s, the vast majority of metropolitan-based exchanges have remained remarkably inefficient during this period. Exceptions are found exclusively among deconcentrating MSAs and indicate that, in contrast to growing metropolitan areas, declining MSAs tend to experience consistent and efficient out-migration to counties located beyond their respective geographical regions. In other words, local deconcentration appears to involve systematic out-migration to more distant counties, rather than an accumulation of strictly random, or inefficient, exchanges. Secondly, metropolitan-based exchanges with adjacent non-metropolitan counties have remained relatively inefficient over the past three decades. This finding indicates that recent and well-documented patterns of exurban growth have depended more upon immigration from distant territory than upon systematic spill-over from adjacent metropolitan centres. While somewhat surprising, this finding nonetheless echoes one of Ravenstein’s original laws of migration: migration efficiency will tend to increase with distance due to the rising social and economic ‘barriers’ to random movement that geographical space presents (Lee, 1966; Ravenstein, 1889).

In sum, net statistics and efficiency measures both suggest that metropolitan-based migration varies systematically according to local stages of metropolitan development. To assess whether this variation is statistically significant, a series of ordinary
Table 7. Mean net flows between MSAs at different stages of development and select geographical sectors, 1965–90

<table>
<thead>
<tr>
<th>Year and stage</th>
<th>Metropolitan counties</th>
<th>Non-metropolitan counties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adjacent (N = 252)</td>
<td>Non-adjacent in state (N = 286)</td>
</tr>
<tr>
<td>1965–70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urbanisation</td>
<td>612</td>
<td>1290</td>
</tr>
<tr>
<td>Suburbanisation</td>
<td>-1109</td>
<td>-1094</td>
</tr>
<tr>
<td>Deconcentration</td>
<td>-774</td>
<td>-5051</td>
</tr>
<tr>
<td>1975–80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urbanisation</td>
<td>1118</td>
<td>919</td>
</tr>
<tr>
<td>Suburbanisation</td>
<td>171</td>
<td>435</td>
</tr>
<tr>
<td>Deconcentration</td>
<td>-10299</td>
<td>-9992</td>
</tr>
<tr>
<td>1985–90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urbanisation</td>
<td>-5967</td>
<td>-1897</td>
</tr>
<tr>
<td>Suburbanisation</td>
<td>1975</td>
<td>1818</td>
</tr>
<tr>
<td>Deconcentration</td>
<td>528</td>
<td>-3371</td>
</tr>
</tbody>
</table>

Notes:
Positive numbers refer to net in-migration to the MSA classified in the left-most column; negative numbers refer to net out-migration. Each subsequent sector is exclusive of preceding sectors (e.g., ‘Within region’ excludes ‘Non-adjacent in state’).
Underlined values have ‘efficiency measures’ greater than 0.20, which means that the respective net flow constitutes at least 20 per cent of the gross inter-area flow. Thus, underlined values suggest that the particular metropolitan-based stream is ‘efficiently’ redistributing population from one area to the other, rather than merely resulting in an exchange of local residents.

\[ EM_{ij} = \frac{(m_i - m_j)(m_i + m_j)}{N} \]

where \( EM_{ij} \) = migration efficiency; \( m_i \) = migration from region \( i \) to region \( j \); and \( m_j \) = migration from region \( j \) to region \( i \).
least squares (OLS) regression equations are estimated, taking the following general form:

\[
\text{Net migration}_{i,j} = \alpha + \beta_1 (\text{suburbanisation}) + \beta_2 (\text{deconcentration}) + \varepsilon
\]

where, Net migration\(_{i,j}\) refers to the respective metropolitan-based migration exchange reported in Table 7, and the beta coefficients refer to dummy variables used to identify each MSA’s stage of metropolitanisation for the respective time-period. (For all equations, urbanising MSAs serve as the omitted, or reference, category against which comparisons are made.)

Because the main purpose with these equations is to refine comparisons of net migration values across stages of metropolitan development, rather than to explain as much variance as possible, other factors, such as regional location and metropolitan age, are not controlled for. Beta coefficients are reported in Table 8 along with F-statistics, which test the null hypothesis that mean migration values are equal for all stages.

Looking first at the F-statistics, we find that for 13 of the 24 exchanges reported in Table 8, we can reject the null hypothesis. That is, for about half all the exchanges that occurred over the past three decades, net migration values varied significantly among stages of development. This finding is especially strong for metropolitan-based exchanges involving two types of territory: adjacent non-metropolitan counties; and non-metropolitan counties located in other regions. That F-statistics for these two exchanges are statistically significant across all three decades indicates that variation among the developmental stages might be a function of underlying processes of extended deconcentration, rather than a product of recent historical circumstance.

To determine whether this is in fact the case, it is necessary to consider the individual beta coefficients reported for each migratory exchange. Based on this information, two key patterns emerge. First, comparing urbanising and suburbanising MSAs, we find that over the past three decades the only significant difference between these two stages of metropolitan growth lies in intra-state exchanges with non-metropolitan counties (see columns for ‘Adjacent’ and ‘Non-adjacent in state’ in Table 8). As expected, findings show that urbanising MSAs typically experience net in-migration from these types of non-metropolitan flow, whereas suburbanising MSAs tend to experience net out-migration. By contrast, the second key pattern that emerges from the beta coefficients in Table 8 indicates that differences between growing and declining MSAs largely reflect differences in inter-regional flows, which are particularly strong for exchanges with non-metropolitan territory. The tendency here is for urbanising areas to experience the greatest net in-migration from these more distant areas and for deconcentrating MSAs to experience the greatest net out-migration. Together, these statistical regularities suggest that over the past three decades, metropolitan-based migration has in fact conformed to a pattern of extended deconcentration.

To help visualise this pattern, Figure 1 graphs the estimated net migration values for each non-metropolitan exchange reported in Table 8. The respective panels, which chart migration trends for MSAs at different stages of development over time, merit three final comments. First, Figure 1 illustrates that after the late 1960s, non-metropolitan flows contributed relatively little to overall metropolitanisation, regardless of a local MSA’s particular stage of development. This finding implies that traditional images of a non-metropolitan hinterland concentrating within a regional metropolis no longer conform to the realities of US metropolitan development, even for urbanising MSAs. Secondly, metropolitan spill-over to adjacent non-metropolitan counties has remained a relatively small piece of the redistribution puzzle over the past three decades. This trend confirms that growth of adjacent non-metropolitan counties has depended more upon inter-regional exchanges than upon the redistribution of nearby metropolitan populations. Thirdly and finally, the panel for deconcen-
<table>
<thead>
<tr>
<th>Year and stage</th>
<th>Metropolitan counties</th>
<th>Non-metropolitan counties</th>
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<tr>
<td></td>
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<tr>
<td>1965–70</td>
<td></td>
<td></td>
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<tr>
<td>Urbanisation</td>
<td>612</td>
<td>1290</td>
</tr>
<tr>
<td>Suburbanisation</td>
<td>−1721</td>
<td>−2384</td>
</tr>
<tr>
<td>Deconcentration</td>
<td>−1386</td>
<td>−6341*</td>
</tr>
<tr>
<td>F</td>
<td>0.2</td>
<td>2.8</td>
</tr>
<tr>
<td>1975–80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urbanisation</td>
<td>674</td>
<td>883</td>
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<tr>
<td>Suburbanisation</td>
<td>−503</td>
<td>−457</td>
</tr>
<tr>
<td>Deconcentration</td>
<td>−10825*</td>
<td>−10874**</td>
</tr>
<tr>
<td>F</td>
<td>2.3*</td>
<td>7.4**</td>
</tr>
<tr>
<td>1985–90</td>
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<tr>
<td>Urbanisation</td>
<td>−5967</td>
<td>−1815</td>
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<tr>
<td>Suburbanisation</td>
<td>7942</td>
<td>3607</td>
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<tr>
<td>Deconcentration</td>
<td>6496</td>
<td>−1501</td>
</tr>
<tr>
<td>F</td>
<td>1.9</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Notes:
Positive numbers represent net in-migration to the metropolitan area classified in the left-hand column; negative numbers represent out-migration.
Each subsequent sector is exclusive of preceding sectors (e.g. 'Within region' excludes 'Non-adjacent, in state').
Urbanising MSAs served as the omitted category in each OLS equation.
*: p < 0.05; **: p < 0.01.
trating MSAs underscores the fact that while absolute differences exist between 1975–80 and 1985–90, net out-migration to non-metropolitan counties tends to increase consistently with distance. In other words, declining MSAs tend to send disproportionate shares of local migrants to increasingly distant non-metropolitan counties.

Before closing, it is again important to consider how annexation influences the nature of these findings. Thus, the regression equations reported in Table 8 were re-run, but this time with the inclusion of a dummy variable that was scored one if the central city annexed territory during the respective decade and zero if it did not. Overall, results (not reported) vary little with those discussed above—that is, the same $F$-statistics and beta coefficients were found to be statistically significant after controlling for annexation. There was one noteworthy exception, however. For exchanges with adjacent non-metropolitan counties and non-metropolitan counties within the same state, the annexation variable was positive and statistically significant for the 1985–90 period. This means that during this time, MSAs in which the central city annexed territory were significantly more likely to experience net in-migration from intra-state flows than were MSAs in which there was no annexation. In all likelihood, this finding is linked to the economic revitalisation and selective gentrification of many established central cities during the 1980s. Whether this trend is likely to continue in the decades ahead remains to be seen.

In sum, descriptive and statistical analyses lend reasonable support to the idea that metropolitan-based migration streams vary significantly by local stage of development. This variation is particularly strong for flows to and from the nearest and farthest sub-sectors of non-metropolitan territory, which implies that these types of exchange are somehow linked to local processes of metropolitan development. Furthermore, examination of OLS coefficients supports the hypothesis that these links are likely to reflect structural processes of population deconcentration that extend outward from declining MSAs.

**Summary and Conclusion**

To summarise, this research began with the ‘puzzle’ of recent population redistribution trends in the US and then proceeded to employ a three-stage typology of metropolitan development to explore the connections that exist between changes in the structure of the urban system, on the one hand, and the development of individual urban centres on the other. Results show that ‘concentrated dispersion’, or deconcentration, has in fact increased over recent decades in a manner consistent with theories of systemic maturation. Moreover, an examination of regional variation supports the idea that the US settlement system is deconcentrating outward from older, more established metropolitan regions. These findings are important because they challenge traditional theories of urban agglomeration by demonstrating that local deconcentration was not an anomaly of the 1970s but, rather, has become an increasingly common sub-process of metropolitanisation in the US over the past three decades.

Empirical assessment of the urban life-cycle model, however, suggests that this rising incidence of deconcentration cannot be fully explained by the systematic progression of individual MSAs through a common demographic sequence—that is, MSAs do not appear to pass in unilinear fashion from urbanisation to suburbanisation, and from suburbanisation to eventual deconcentration of the local population. Evidence of reverse transitions through these three stages challenges the validity of the life-cycle model for individual MSAs and contributes to an underlying sense that local metropolitanisation is a much more complex process than such evolutionary models imply. It is worth noting, however, that after controlling for central-city annexation, these validity challenges were not nearly as strong.

With respect to recent population redistribution trends, results demonstrate that, de-
Figure 1. Estimated net migration values for select non-metropolitan exchanges, by stage of development, 1965–90: urbanising MSAs (above); suburbanising MSAs (centre); deconcentrating MSAs (below).
spite the questionable validity of the urban life-cycle model for the contemporary US, metro-based migration has, in fact, varied significantly within local patterns of metropolitanisation over the past three decades. This finding is particularly strong for exchanges involving the closest and farthest categories of non-metropolitan territory. In addition, results show that the only consistent difference in the migratory experiences of urbanising and suburbanising MSAs lies in their exchanges with nearby non-metropolitan counties. By contrast, differences between growing and declining MSAs derive largely from dissimilarities in inter-regional exchanges with non-metropolitan territory. Together, these findings indicate that distinct stages of local metropolitanisation are strongly associated with broader patterns of internal migration and that these patterns might reasonably reflect longstanding tendencies for extended deconcentration that extend outward from initial points of urban agglomeration.

In conclusion, this research has shown that migratory flows between metropolitan and non-metropolitan areas in the US are not as chaotic as national-level studies often lead us to believe. While results presented here do not tell us why individual MSAs experience particular stages of development at any given time, they do suggest that the US metropolitan system is likely to continue to experience a relatively high incidence of local deconcentration in years to come and that this sub-process of metropolitanisation is likely to involve the redistribution of local metropolitan populations to more distant, non-metropolitan territory, as well as to other metropolitan areas. These findings are important for ongoing efforts to theorise recent population redistribution trends because they imply that contemporary economic change is not the only force driving metropolitan-based migration. Historic and enduring processes of population deconcentration also continue to play a key role in what remains of “one of the major demographic puzzles in the contemporary United States”.

References


Appendix. Metropolitan Statistical Areas dropped from analysis for respective reasons

MSAs ‘lost’ due to use of New England County Metropolitan Areas (NECMAs) \( (n = 14) \):

- Bristol, CT; Brockton, MA; Danbury, CT; Fall River, MA-RI; Fitchburg-Leominster, MA; Lawrence-Haverhill, MA-NH; Lowell, MA-NH; Middleton, CT; Nashua, NH; New Britain, CT; Norwalk, CT; Pawtucket-Woonsocket-Attleboro, RI-MA; Salem-Gloucester, MA; Stamford, CT.

MSAs that merged with other MSAs to maintain historically consistent boundaries \( (n = 5) \):

- Boulder-Longmont, CO (added to Denver, CO); Kansas City, KS (added to Kansas City, MO); Niagara Falls, NY (added to Buffalo, NY); Oakland, CA (added to San...
Francisco, CA); Vancouver, WA (added to Portland, OR).

**MSAs dropped for lack of consistent data (n = 10).** Alton-Granite City, IL; Aurora-Elgin, IL; East St Louis-Belleville, IL; Fort Pierce, FL; Forth Worth-Arlington, TX; Houma-Thibodaux, LA; Joliet, IL; Lake County, IL; New Brunswick-Perth Amboy-Sayreville, NJ; Waterbury, CT.

**MSAs dropped for lack of an officially recognised central city (n = 4).** Beaver County, PA; Brazoria, TX; Nassau-Suffolk, NY; Orange County, NY.