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## Shrinking cities, shrinking households, or both?

Maxwell D. Hartt, Cardiff University

Jason Hackworth, University of Toronto

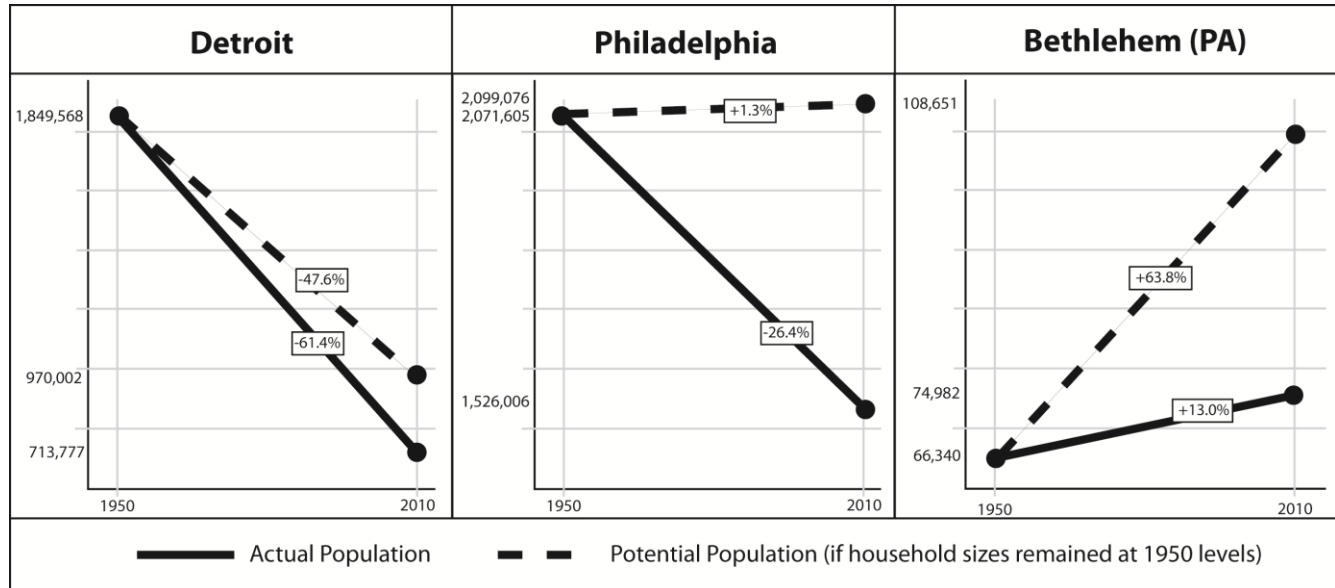
### **Abstract**

Household size decline accounts for a substantial portion of population loss in shrinking cities, yet little research has focused on it. Much of the literature presents a simple growth-decline binary that is largely determined via population figures. In this paper, we highlight the importance and assess the impact of household size changes on population decline, and determine what types of household size declines are more acute in shrinking cities than other locales. We find that elderly households and households with school-aged children are under-represented in shrinking cities, while households with pre-school aged children are over-represented. More tellingly, we find the biggest source of household-related loss in shrinking cities to be the growth of single-person households now living in houses that were once home to entire families. These findings puncture the binary on which much of the shrinking cities discourse is based. The population dynamics of most cities are subtler than either practitioners or critical scholars assert. We argue that plans and development strategies for shrinking cities should reflect a range of demographic changes, including out-migration and internal household restructuring.

## Introduction

Population change has long been used as a proxy for broader economic growth and decline in cities (Molotch, 1976; Beauregard, 2009; Filion, 2010). The underlying assumption is that cities with population loss are victims of an out-migration of residents in search of jobs, better housing, or better services. City managers are thus very sensitive to population declines (even small ones) and generally seek to reverse them through economic development. But while population figures do reveal important elements of a city's economic fortunes, they also elide other forms of population change that are not necessarily due to economic emigration. Population figures, for example, do not reveal much about the demographic changes, such as birth and death rates, which have led to significant restructuring of household sizes. In 1950, the average household size in the United States was 3.46. By 2015, the average had shrunk to 2.58 persons per household, a 25.4% drop. Household size has shrunk considerably throughout the Global North for a variety of reasons, among them, families having fewer (or no) children, and people living longer (i.e. more empty-nesters and single-person elderly households). For cities with more-or-less fixed boundaries (as is the case in much of the American Rust Belt), this can be significant component of population loss. If fewer people are living in essentially the same number of houses, there can be considerable "population loss" even though no one has theoretically migrated out of the city. Consider a few American examples (Figure 1). Using simple population figures, Detroit lost 1,135,791 (61.4%) of its 1950 population by 2010. But if household sizes had remained the same as they were in 1950, the city would have lost 258,790 fewer people. If the same rule were applied to the city of Philadelphia, which nominally lost 26.4% of its population, the potential population would have actually grown slightly. The steel town of Bethlehem Pennsylvania gained a meager 13% population between 1950 and 2010, but would have gained 63.8% had household sizes remained the same as they were in 1950. It is thus important to distinguish between out-migration-induced loss and household-change-induced loss. Out-migration loss is the actual abandonment of a city by its residents. Household change

loss is simply a smaller number of people occupying the same house that a larger household previously occupied. Most shrinking cities have a combination of both, but rarely is a distinction made.



**Figure 1: Actual and potential population loss if 1950 household size had remained constant (source: US Census of Population, 1950 and 2010).**

Why does this distinction matter? First, in cities there has been a general over-reaction to stave population loss. Much of this hinges on a nostalgic desire to return the city to what it was during the population high point (Mayer and Greenberg, 2001; Leo and Anderson, 2006). In many cases, there has not been an abandonment of the city per se, but rather a restructuring of households living in it. People live in houses differently now than they did in 1950, in particular fewer people occupying the same housing spaces once filled by larger families. Second, this distinction highlights various important thresholds for population loss. At the moment, there is a simple growth-decline binary in the literature that is largely determined via population figures. For example, Oswalt and Rieniets (2006) argued that as many as 25% of the world's large cities are shrinking. This number and others like it do not account for household size changes. In our view, this fuels a crude binary, of either "accepting decline" (and planning for it) or "promoting growth". The population change of most cities is more complicated than

this binary would suggest (Hartt, 2017). At a minimum, we argue, there should be at least three categories used in making such assessments: 1) growing cities; 2) population loss but beneath the household change threshold; and 3) population loss above the household size threshold. Being in category 2 is very different than being in category 3, and planners should approach them differently. Third, we know very little about the types of household change that may or may not be more prevalent in shrinking cities than others. Boundary-fixed shrinking cities are vulnerable to *both of these types* of population loss in part because they cannot easily grow outward to build new forms of housing to accommodate new forms of households. They must largely work with the housing stock that already exists. So for such cities, understanding who is actually leaving and what types of households are staying is crucial for planning and other purposes. This subtlety is not only necessary for cities experiencing decline, but also shrinking cities experiencing economic growth and revitalization. Places like Boston and Chicago have long prospered with populations well below their peak, and signs of revitalization are increasingly present in cities such as Philadelphia and Detroit (Bowen & Kinahan, 2014; Doucet, 2017). The distinction between types of population loss and changing household structures is fundamental to planning shrinking cities across the spectrum.

This paper is a response to the overwhelmingly binary view of population loss in the academic literature. Through empirical analysis of the American Rust Belt, we explore the impact of household size change on urban population loss. The two guiding questions are: 1) how much of an impact has household shrinkage had on urban shrinkage throughout the region; and 2) what forms of household-change are more common in shrinking cities, and can they plan for them?

### **Declining American Cities**

The United States, of course, is not the only country to have a major concentration of shrinking cities. But there are several dimensions that make urban decline different there than other Global North

comparators. First, it is difficult to over-state the level of institutional isolation that many declining American cities have from higher levels of government (Weir, 1995). While places like Southern Ontario, and the English Rust Belt have been able to stave off forms of decline by having a strong relationship with either the provincial or national government (Hartt and Warkentin, 2017), the cities of the United States are largely left to fend for themselves (Hackworth, 2016a). There is no other rich country where the separation between wealth and poverty is so neatly circumscribed by municipal boundaries as the United States. Many of the most actively declining cities in the American Rust Belt have the same municipal boundaries today as in the mid-twentieth century. As the great historian of American suburbanization, Kenneth Jackson (1985) argued, cities have historically increased their population by expanding their boundaries to envelope incorporated and non-incorporated suburban areas<sup>1</sup>. By doing this, they can capture some of the population growth on the fringe of the metropolitan area and thus some of the property tax revenue. But since the 1950s the inclination of state governments to allow annexation has changed dramatically from the way it worked a century prior. In the mid-19th century, when cities like Detroit or St. Louis wanted to annex an adjacent town or swath of land, their state legislatures generally let them do it. As suburbs became more popular, wealthy and White, however, state legislatures became increasingly restrictive of inner city desires for annexation, and increasingly supportive of the “local control” of the suburbs. Thus most major (and many minor) Rust Belt municipalities have not been allowed to expand their boundaries since the 1950s, and as such remain isolated from the population and middle class tax revenue of the suburbs.

There is also increasing evidence that many of these patterns of decline and isolation from growth have begun to manifest in older, inner suburbs (Hanlon, Vicino and Short, 2006). Hanlon’s (2008) examination of almost 3,500 suburbs across the U.S. revealed that post-war, inner suburbs with increasing minority populations were especially prone to decline. Hanlon (2008) also concluded that, regionally, the South had the largest proportion of suburbs “in crisis”. This echoes the findings of

widespread Southern suburban decline in Hollander's (2011) *Sunburnt Cities*. In the Rust Belt, Vicino (2008) demonstrated the strong force of decline in the spatial transformation of Baltimore's first-tier suburbs. While in Cuyahoga County (the Cleveland area), mature suburbs face a number of challenges including high property taxes, smaller home sizes and lots that do not permit expansion, fewer amenities, and relatively poor access to job locations (Anacker and Morrow-Jones, 2008). However, this paper focuses solely on the inner core city due to the specific context and challenges of service use and costs. Core city services are palpably worse and more expensive per capita than suburban municipalities. As the economist Tiebout (1956) famously argued, residential choice is largely a function of taxes charged and services provided. Places with high taxes and poor services are less desirable than places with the opposite. Because they are newer, wealthier, and essentially subsidized by the state (Checkoway, 1980), American suburbs have lower costs per capita than older inner core cities. Even declining suburbs house huge numbers of people who often commute to the inner core central business district (CBD), use the infrastructure, and commute back to the suburbs without paying anything meaningful to the coffers. The pattern is thus that inner core services are strained, while suburbs are liberated from fiscal responsibility (Kornberg, 2016). They have aging infrastructure, a suburban populace that uses their infrastructure, and state governments that resist providing assistance or allowing the inner core to properly tax commuters. As a consequence, property taxes per capita are often very high, and services very poor in the inner core. This further provokes the out-migration of people who can afford to move, and traps those who cannot within a crumbling social service network. School systems in particular suffer from this combination of factors. No other wealthy country in the world finances its schools in the way that the United States does—local property taxes<sup>2</sup>. The system of local financing virtually guarantees spatial inequality in the education system.

Finally, many shrinking American cities are surrounded by autonomous municipalities that are themselves trying to grow rapidly – this leaves the shrinking cores especially vulnerable to the economic

effects of urban sprawl. As economists have long argued, the degree of suburban fringe construction is a crucial determinant of what happens to the housing stock in the inner core (Breger, 1967; Galster, 2012). When suburban municipalities approve new construction permits and developers build newer modern housing units, it becomes more difficult for the owners of inner core houses (which are older, often smaller, and more expensive to maintain) to sell them. Most owners with resources prefer to own a house in the suburbs—with better services, easy access, via federally funded highways to inner core CBD jobs, and housing assets that actually appreciate in value. In countries where regional government is stronger, or where growth is managed by a higher level of government this tends not to matter as much. For example, the province of Ontario limits growth surrounding the city of Toronto, thus partially slowing the impact of the housing disassembly line (Hackworth, 2016a). But in the United States, all cities are largely left to fend for themselves (Harvey, 1989). So there is a palpable incentive for suburban municipalities to grow as much as possible (MacLeod, 2011). Growth helps them finance infrastructure, schools, and other services. In the process however, inner core cities are increasingly unable to stem the hemorrhage of people from their municipality who are fleeing to the suburbs in search of newer houses, better jobs and the like (Beauregard, 2009). House prices have collapsed to a point in many shrinking American cities that there is no economic incentive to build new housing on the largely vacated land. Building a house to code costs somewhere near \$120,000 in the United States, but the average sales price in distressed neighborhoods in the American Rust Belt can be as low as \$20,000 (Hackworth, 2014). Thus no developer, unless heavily subsidized, would logically build a housing unit in such a place. The quality and quantity of housing stock in distressed, boundary-constrained cities in the U.S. is thus very inflexible to change. The most meaningful form of housing stock change is likely demolition rather than building to accommodate contemporary households (Hackworth, 2016b). Institutionally-isolated, boundary-fixed cities with older housing are vulnerable to population loss resulting from both out-migration and household restructuring due to changing birth and death rates. In extreme cases like Detroit



thousands of people move out of the city and into the suburbs each year. The literature on urban decline is full of insights about emigration of this sort. We know a lot about why people leave such cities (“out-migration” population loss) but much less about what kinds of households stay, and changes in household size and structure. Such places are *also* more vulnerable to household size restructuring. Most shrinking cities literature does not focus on household size loss, but the issue of what households are more likely to stay in certain types of urban environments is rooted in a broader literature on residential choice. Several elements of this literature were particularly influential in formulating our hypotheses:

*Hypothesis 1:* We expect that there will be a greater than average *increase* in households with children younger than five years old, and a greater than average *decrease* in households with children older than five years old in the shrinking city.

Because of the aforementioned disparities in school quality, we expect there to be general tendency of families with school-aged children to pursue residential opportunities in the suburbs. As Darden and Thomas (2013) argue, the inner suburbs of cities like Detroit are actually more affordable than commonly thought, and many relatively poor families are able to move there without increasing their monthly costs. On the other hand, we recognize that the United States has one of the highest childhood poverty rates in the OECD. Much of this poverty is concentrated in families with young (under five years old) children. Unlike many other OECD countries, the United States offers no income supports for pregnancy or early childhood. Restricted residential choice is often one of the many things that families with young children face. Scholars at Case Western University in Cleveland have noted how such families are often drawn to the inner core for its inexpensive property costs but still move almost yearly (Theodos, et. al, 2015).

*Hypothesis 2:* We expect that there will be fewer family households, and more single-individual households in the shrinking core city.

Hoover and Vernon (1959, p. 188) argued that as neighborhoods begin to decline, much of the population loss is from single individuals replacing families, not a full abandonment of the property. We anticipate that shrinking cities will have greater than average (national and regional) increases in single-person households, and decreases in family households of all types.

*Hypothesis 3:* We expect that there will be a higher prevalence of households with elderly individuals in the shrinking core.

One dimension of housing choice is place attachment. The longer and more attached a person is to her/his urban space, the more traumatic it is to be removed from it (Fullilove, 2005). Because of this we anticipate that there will be a higher than average incidence of elderly households (which tend to be smaller than younger family households) in the shrinking city versus the remainder of its region and national levels.

## **Method**

To assess these hypotheses, we compared household structural changes in five shrinking cities to parallel changes in their suburbs and the United States as a whole between 1970 and 2015. The five shrinking cities are: Buffalo, Cleveland, Detroit, St. Louis, and Youngstown. Figure 2 depicts the location of the five case study cities and their metropolitan regions. These five were selected for several reasons. First, they are iconic examples of shrinking cities studied elsewhere so there is an established baseline for conditions in each (e.g. Gordon, 2009; Akers, 2013; Schatz, 2013; Tighe and Ganning, 2015). Second,

each has lost more than half of their populations since the 1950s (Table 1), and their municipal boundaries have not changed since. With an older housing stock that is difficult to adapt and land within fully developed, each city is particularly vulnerable to both household-size induced loss and out-migration loss. Each has experienced copious amounts of both. Our intent here is to delve further to see how household change processes within the shrinking city are similar to, or different from, national and regional trends. We compare the period 1970 to present because there is better age and household related data available for that time period than going back to 1950. We operationalized the three hypotheses as follows:

**Table 1:** Actual and potential population change in selected U.S. cities and their suburbs (sources: US Census 1950; American Community Survey 5-Year Estimates, 2011-2015).

Place	1950 Pop	2015 Pop	Difference	Household Change Population Loss <sup>a</sup>	Outmigration <sup>b</sup>
Buffalo	580,132	258,066	-322,066	129,921 (40%)	192,775 (60%)
<i>Buffalo Suburbs</i>	509,098	877,668	368,570		
Cleveland	914,808	388,059	-526,749	188,628 (36%)	338,121 (64%)
<i>Cleveland Suburbs</i>	765,928	1,676,424	910,496		
Detroit	1,849,568	677,124	-1,172,444	245,397 (21%)	927,047 (79%)
<i>Detroit Suburbs</i>	1,320,747	3,619,292	2,298,545		
St. Louis	856,796	315,685	-541,111	153,353 (28%)	387,758 (72%)
<i>St. Louis Suburbs</i>	1,047,702	2,508,724	1,461,022		
Youngstown	168,330	64,609	-103,721	37,240 (36%)	66,481 (64%)
<i>Youngstown Suburbs</i>	360,168	491,634	131,466		

#### NOTES

a This is the component of overall population loss attributable to household size declines. It is calculated by multiplying the 1950 average household size by the 2015 number of households for each city. The percentages in parentheses denote the ratio of household change to total population loss.

b Outmigration is the component of overall population loss attributable to people who physically left the city. It is the difference between the total population change and the household change component. The percentages in parentheses denote the ratio of outmigration to total population loss.

*Hypothesis 1:* To assess the prevalence of children of certain ages, we calculated the following as a percent of the total population: a) the number of pre-school aged children (0-4 years of age); and b) the number of school-aged children (5-17). These were calculated for 1970, 1980, 1990, 2000, 2010 and 2015 in each city, their suburbs<sup>3</sup> and the United States as a whole (Tables 2 and 3).

*Hypothesis 2:* To assess the prevalence of family households, we calculated the following as a percent of all households: a) the number of family households (including single parent households); and b) the number of single-person households. These were calculated for 1970, 1980, 1990, 2000, 2010 and 2015 in each city, their suburbs and the United States as a whole (Tables 4 and 5).

*Hypothesis 3:* To assess the prevalence of elderly households we calculated the following as a percent of population composed of people over 64 years of age. This figure was calculated for 1970, 1980, 1990, 2000, 2010 and 2015 in each city, their suburbs and the United States as a whole (Table 6)<sup>4</sup>.



**Figure 2:** Map depicting location of five case study cities and their metropolitan regions.

## Findings

Tables 2 and 3 contain data on the ratio of pre-school-aged and school-aged children in each shrinking city, their suburbs and the country as a whole. Above all, the tables illustrate a decline in the percentages of children at all levels that is generally fueled by families having fewer children today than in 1970. In this category, the relative patterns over time are slight. In 1970, most core areas had fewer pre-school-aged children (in relative terms) than their suburbs or the national rate (Table 2). By 2015, this pattern had reversed but not radically so (shrinking cores still had similar percentages). The pattern for school-aged children was the reverse: lower core ratios, and higher suburban and national figures (Table 3). Save for one data point (1990), shrinking cities had lower percentages of school-aged children than their suburbs indicating flow from city to suburb. But again, the differences are slight and there are individual city-suburb combinations where this did not occur. In short, we find light support for both components of Hypothesis 1, namely that core shrinking cities would contain higher ratios of young children, but lower ratios of school-aged children.

**Table 2:** Percentage of pre-school aged children (0-4 years old) in selected cities, suburbs, and the United States (sources: U.S. Census Decennial Counts for 1970, 1980, 1990, 2010; American Community Survey, 2011-2015 for 2015).

<b>Place<sup>a</sup></b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2010</b>	<b>2015</b>
Buffalo	8.0%	6.6%	7.8%	7.1%	6.7%	6.8%
<i>Buffalo Suburbs</i>	8.5%	6.1%	6.6%	5.7%	4.9%	4.9%
Cleveland	8.9%	7.8%	8.7%	8.1%	7.1%	6.3%
<i>Cleveland Suburbs</i>	8.4%	6.5%	6.7%	6.2%	5.5%	5.5%
Detroit	8.8%	7.9%	9.1%	8.0%	7.0%	7.3%
<i>Detroit Suburbs</i>	9.2%	6.8%	7.1%	6.7%	5.8%	5.6%
St. Louis	8.0%	7.1%	7.9%	6.7%	6.6%	6.7%
<i>St. Louis Suburbs</i>	8.6%	7.3%	7.5%	6.6%	6.3%	6.0%
Youngstown	7.5%	7.5%	7.5%	7.1%	6.4%	6.8%
<i>Youngstown Suburbs</i>	8.3%	6.7%	6.4%	5.8%	5.2%	4.9%
<b>Core Average</b>	8.2%	7.4%	8.2%	7.4%	6.8%	6.8%
<b>Suburb Average</b>	8.6%	6.7%	6.8%	6.2%	5.6%	5.4%
<b>United States</b>	8.4%	7.2%	7.4%	6.8%	6.5%	6.2%

### NOTES

a Cities are the bounded areas as they are defined by the U.S. Census. Suburbs are calculated as the balance of the metropolitan statistical area (MSA) as it existed in 2013 (see United States Executive Office of the President, 2013, for MSA definitions).

**Table 3:** Percentage of school-aged children (5-17 years old) in selected cities, suburbs, and the United States (sources: U.S. Census Decennial Counts for 1970, 1980, 1990, 2010; American Community Survey, 2011-2015 for 2015).

<b>Place<sup>a</sup></b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2010</b>	<b>2015</b>
Buffalo	22.8%	18.6%	16.5%	19.2%	16.9%	16.2%
<i>Buffalo Suburbs</i>	28.0%	21.4%	16.8%	18.0%	16.1%	15.3%
Cleveland	24.8%	20.0%	18.2%	20.4%	17.5%	16.3%
<i>Cleveland Suburbs</i>	26.9%	21.2%	17.7%	18.3%	17.3%	16.6%
Detroit	24.1%	22.4%	20.4%	23.1%	19.6%	18.0%
<i>Detroit Suburbs</i>	29.4%	22.4%	17.8%	18.6%	18.0%	17.2%
St. Louis	23.9%	19.0%	17.3%	19.0%	14.5%	13.5%
<i>St. Louis Suburbs</i>	28.1%	21.9%	19.0%	19.7%	17.9%	17.3%
Youngstown	24.6%	18.8%	18.7%	18.7%	16.4%	15.8%
<i>Youngstown Suburbs</i>	27.2%	21.2%	17.9%	17.8%	16.4%	15.8%
<b>Core Average</b>	24.2%	19.9%	18.0%	19.8%	16.6%	15.7%
<b>Suburb Average</b>	27.9%	21.6%	17.8%	18.5%	17.1%	16.4%
<b>United States</b>	26.0%	20.9%	18.2%	18.9%	17.5%	16.7%

#### NOTES

a Cities are the bounded areas as they are defined by the U.S. Census. Suburbs are calculated as the balance of the metropolitan statistical area (MSA) as it existed in 2013 (see United States Executive Office of the President, 2013, for MSA definitions).

Tables 4 and 5 contain data on the prevalence of family and non-family (single-person) households. There has been an overall reduction in family households in shrinking cores, their suburbs, and the nation since 1970, but this is most pronounced in the cores. In 1970, nearly 75% of core households were families but by 2015 only 50% were. Suburban and national figures declined too but not as steeply as inner core cities. The city-suburb dissonance between dual-parent and single-parent family households was even more stark. Shrinking cores registered relative and absolute decreases in dual-parent households during this time period. A substantial replacement for family households appears to be single-person households (Table 5). Again the shrinking core increase outstripped rises in the suburbs and nation as a whole. Single individuals are now living in housing that once sheltered four-person families in cities like Detroit and Cleveland. We, thus, find strong support for Hypothesis 2, namely that the prevalence of family households is lower and shrinking at a more rapid rate in core cities than their suburbs or the nation as a whole.

Table 6 focuses on the relative prevalence of elderly people in shrinking cities, their suburbs and the nation. As the numbers indicate, there has been a gradual increase in population over 64 years of age across the board, as life expectancy has increased markedly since 1970. Counter however to expectations, the *relative* prevalence of elderly people in shrinking cities was not found. In 1970, cores had a slightly higher prevalence of elderly people versus the suburbs and remainder of the country, but by 2015 that trend had reversed. It should be noted however, that while the *relative* trend had changed, the percentage of elderly people in cores did increase, just not as rapidly as elsewhere. Thus we do not find support for Hypothesis 3. Elderly populations are evidently not fueling the large increase in single person households. It is likely caused by working-age single people moving to shrinking cores (or staying there after others have left).

**Table 4:** Families as a percentage of all households in selected cities, suburbs, and the United States (sources: U.S. Census Decennial Counts for 1970, 1980, 1990, 2010; 2015 for 2015)<sup>a</sup>.

Place <sup>b</sup>	1970	1980	1990	2000	2010	2015
Buffalo	71.4%	62.0%	57.3%	54.6%	50.8%	49.0%
<i>Buffalo Suburbs</i>	86.0%	77.9%	72.5%	67.9%	63.8%	64.0%
Cleveland	74.0%	65.2%	61.5%	58.7%	53.6%	49.1%
<i>Cleveland Suburbs</i>	84.9%	76.1%	71.6%	67.7%	65.0%	64.6%
Detroit	74.5%	66.7%	65.3%	64.9%	60.5%	55.3%
<i>Detroit Suburbs</i>	86.8%	77.8%	72.7%	68.5%	67.1%	66.8%
St. Louis	69.1%	60.0%	55.1%	52.3%	47.5%	45.1%
<i>St. Louis Suburbs</i>	85.1%	77.6%	73.2%	70.0%	68.1%	67.8%
Youngstown	78.7%	71.5%	67.0%	61.3%	56.4%	51.4%
<i>Youngstown Suburbs</i>	86.2%	78.6%	73.9%	69.5%	66.1%	65.3%
<b>Core Average</b>	73.5%	65.1%	61.3%	58.4%	53.8%	50.0%
<b>Suburb Average</b>	85.8%	77.6%	72.8%	68.7%	66.0%	65.7%
<b>United States</b>	80.3%	73.2%	69.1%	68.6%	66.0%	62.2%

#### NOTES

a Percentage of all households that are “family households”. This includes single- and dual- parented households.

b Cities are the bounded areas as they are defined by the U.S. Census. Suburbs are calculated as the balance of the metropolitan statistical area (MSA) as it existed in 2013 (see United States Executive Office of the President, 2013, for MSA definitions).

**Table 5:** People residing alone (single-person households) as a percentage of all households in selected cities, suburbs, and the United States (sources: U.S. Census 2010; American Community Survey, 2011-2015 for 2015).

<b>Place<sup>a</sup></b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2010</b>	<b>2015</b>
Buffalo	28.5%	32.8%	35.0%	37.7%	39.7%	41.7%
<i>Buffalo Suburbs</i>	14.1%	19.6%	30.7%	34.8%	30.5%	38.8%
Cleveland	26.0%	31.2%	33.2%	35.2%	39.5%	43.9%
<i>Cleveland Suburbs</i>	15.1%	21.2%	30.1%	34.0%	29.9%	37.2%
Detroit	25.6%	28.9%	29.5%	29.6%	34.0%	39.2%
<i>Detroit Suburbs</i>	13.2%	18.9%	28.9%	32.9%	27.8%	34.2%
St. Louis	30.7%	36.0%	38.8%	40.3%	42.6%	44.8%
<i>St. Louis Suburbs</i>	14.9%	19.7%	26.8%	30.0%	26.4%	32.2%
Youngstown	21.1%	25.2%	29.3%	33.9%	37.8%	41.8%
<i>Youngstown Suburbs</i>	13.8%	19.6%	26.8%	31.3%	29.3%	35.6%
<b>Core Average</b>	26.4%	30.8%	33.2%	35.3%	38.7%	42.3%
<b>Suburb Average</b>	14.2%	19.8%	28.7%	32.6%	28.8%	35.6%
<b>United States</b>	19.7%	22.7%	24.6%	25.5%	26.7%	28.0%

## NOTES

a Cities are the bounded areas as they are defined by the U.S. Census. Suburbs are calculated as the balance of the metropolitan statistical area (MSA) as it existed in 2013 (see United States Executive Office of the President, 2013, for MSA definitions).

**Table 6:** Population over 64 years of age in selected cities, suburbs, and the United States (sources: U.S. Census Decennial Counts for 1970, 1980, 1990, 2010; American Community Survey, 2011-2015 for 2015).

<b>Place<sup>a</sup></b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2010</b>	<b>2015</b>
Buffalo	13.3%	15.0%	14.8%	13.4%	11.4%	12.2%
<i>Buffalo Suburbs</i>	8.3%	11.3%	15.3%	16.6%	17.0%	17.6%
Cleveland	10.6%	13.0%	14.0%	12.5%	12.0%	13.5%
<i>Cleveland Suburbs</i>	8.2%	10.7%	14.3%	15.1%	16.0%	16.8%
Detroit	11.5%	11.7%	12.2%	10.4%	11.5%	12.7%
<i>Detroit Suburbs</i>	6.4%	8.7%	11.8%	12.4%	13.5%	14.6%
St. Louis	14.7%	17.6%	16.6%	13.7%	11.0%	11.6%
<i>St. Louis Suburbs</i>	8.7%	10.6%	12.3%	12.9%	13.7%	14.8%
Youngstown	12.7%	14.6%	18.2%	17.4%	15.8%	17.6%
<i>Youngstown Suburbs</i>	8.8%	11.1%	15.7%	17.0%	18.1%	19.1%
<b>Core Average</b>	12.6%	14.4%	15.2%	13.5%	12.3%	13.5%
<b>Suburb Average</b>	8.1%	10.5%	13.9%	14.8%	15.7%	16.6%
<b>United States</b>	9.9%	11.3%	12.6%	12.4%	13.0%	14.9%

## NOTES

a Cities are the bounded areas as they are defined by the U.S. Census. Suburbs are calculated as the balance of the metropolitan statistical area (MSA) as it existed in 2013 (see United States Executive Office of the President, 2013, for MSA definitions).



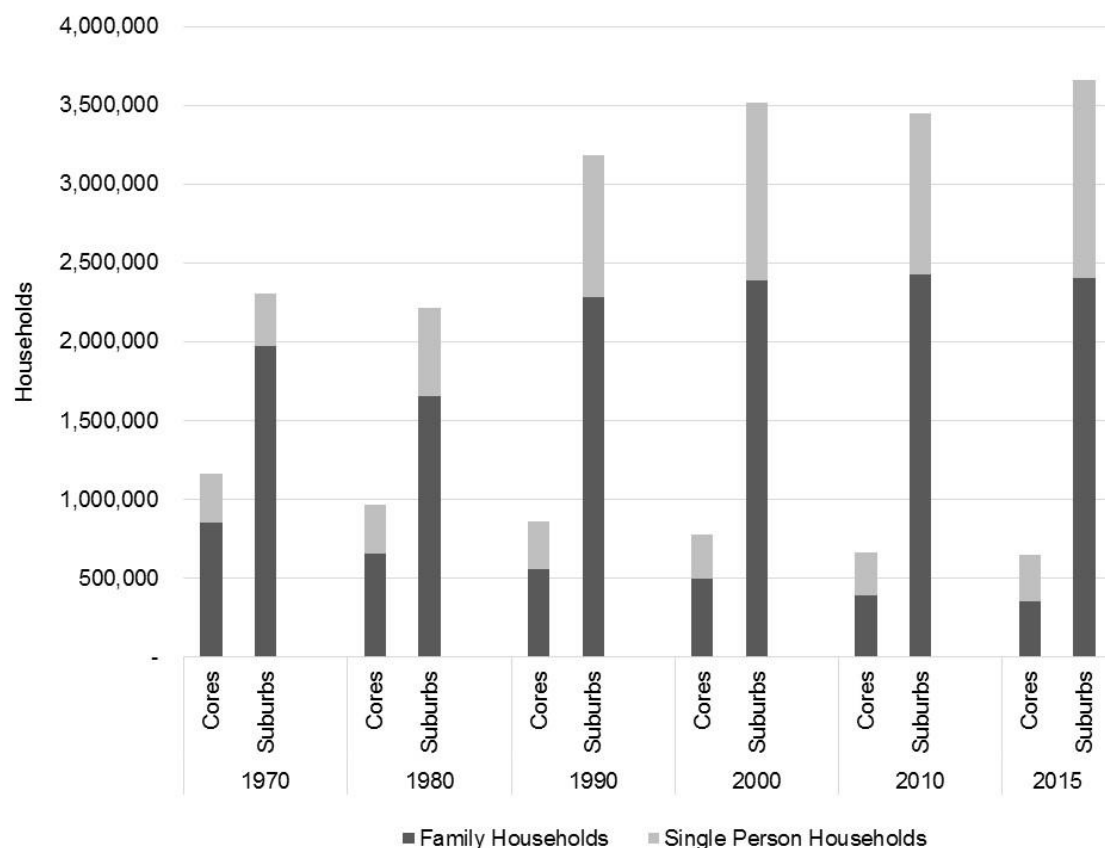
Overall, most household patterns in inner core cities paralleled national and even suburban rates between 1970 and 2015. This was somewhat surprising given the living conditions in such cores—older, smaller, housing with poor social and municipal services. The area of greatest difference was family and single-person households. Cores lost the former and gained the latter more rapidly than their suburbs or the rest of the country. This suggests the most significant area of household size decrease for cores is the rise of single-person households replacing what were once family households.

## **Discussion**

The literature on urban shrinkage does not fully capture an important element of population loss. The population decline figures used in this literature largely assume that the losses are completely attributable to out-migration: people abandoning the city for more prosperous locales. Such out-migration is, of course, a serious issue for iconically-shrinking cities like Detroit and Cleveland, but it is not the only component. A great deal of the population loss in such places is due not to the actual movement of people out of the city but by the restructuring of households within it. Fewer residents live in the same houses that four-person families did a generation ago. Even if there were no out-migration, these cities are likely not going to return to previous population peaks. Thus the nostalgic desire to return to this is, we argue, misplaced.

Moreover, the nature of household change in shrinking cities is not terribly different from the nature of change in its surrounding suburbs. This is somewhat unexpected, as the literature on residential choice frames the two spaces as distinct spheres each attracting different kinds of households. We found minimal or no evidence of this in the realm of elderly households and households with children, but we found considerable evidence that the two spaces are distinct when it comes to family household choice. The shrinking inner core was considerably less likely to be home to family households and considerably more likely to be home to single-person households than its suburbs. The biggest source of household-

related loss in shrinking cities thus appears to be the growth of single-person households now living in houses that were once home to entire families. Figure 3 depicts the substantial change in the absolute number of family and single-person households in shrinking cities and their suburbs over time.



**Figure 3: Change in absolute number of family and single-person households in shrinking cities and their suburbs from 1970 to 2010 (source: U.S. Census Decennial Counts for 1970, 1980, 1990, 2010; American Community Survey, 2011-2015 for 2015).**

We caution however against the conclusion that because households with elderly and school-aged children are becoming *relatively* less common in shrinking cities that social services targeted at those populations should be cut. For elderly households, the decrease has only been relative. That is, while the relative likelihood (to suburbs and national trends) of small elderly households has shrunk, the absolute proportion has increased at all scales. In places like Detroit, this is very challenging population to help with needed social and infrastructure assistance, and this is only likely to increase. Such places have little

extra resources for social services. And the physical separation between occupied houses makes the connections necessary for community challenging. Finally, isolation and physical deterioration in such places is a serious planning challenge for community and service. For example, Detroit and Cleveland are filled with sidewalks so broken that no wheelchair could feasibly be used on them. Aging is still a very challenging problem for shrinking cities, but the attachment to place is less of a challenge than we expected it to be.

Similarly, we argue that the relative reduction in school-aged children should not be seen as a cause for further austerity in school funds. They are indeed reductions relative to the suburbs, but there are still hundreds of thousands of school-aged children in just our case cities alone. Subtle reductions vis-à-vis national trends should not be used to justify already-ravaged school districts and social programming aimed at school-aged children. Moreover, the relative increase in the prevalence of households with pre-school aged children could perhaps be used to justify an *expansion* of funds into early childhood education and childcare programs. Perhaps a focus on child-care services might have the dual benefit of helping such families and also giving them a reason to socially invest in the city (and stay) when their children reach school-age. At present, they tend to flee to the relatively better schools of the inner suburbs when their children reach that age and their finances stabilize.

These findings and others puncture the binary on which much of the shrinking cities literature is based. On the one hand, there are economic development practitioners whose work aims to return growth and restore previous population levels. On the other hand, there are critical scholars aiming to transcend the ideology of growth by accepting decline or planning for it. In our view, the population dynamics of most cities are subtler than this. Almost every city is affected by population change rooted in both out-migration, and internal household restructuring. We argue that planning should reflect this subtlety. In doing so, there is an opportunity to broaden the conceptualization of population loss and alleviate some of the associated stigma. The stigma of shrinkage can provoke civic leaders to pursue damaging pro-

growth policies (Leo and Anderson, 2006); therefore, by acknowledging the complex causality of population loss, misguided responses may be averted. This research also highlights the need for alternative measures of city growth and decline. While absolute population change can be useful, we argue that at the very least household size change must be taken into account. Additional measures such as housing unit loss (Hackworth, 2018) and tax foreclosure (Akers, 2013) can also more telling than absolute population change.

Furthermore, by unpacking population loss, it becomes apparent that places can lose population and still prosper. The stigmatization of shrinkage as “an undesirable side effect of failed economic and political policy” (Rieniets, 2006, 5) corrodes as population loss can simply be the result of shifting demographics. Future research examining the potential for places to lose population and prosper economically would further broaden our understanding of the diversity, causes, and effects of population loss. In doing so, inform planners and decision-makers in shrinking cities and, ultimately, promote the development of context-specific, appropriate responses to population loss. Lastly, our findings highlight the need for more research on policies and strategies that could stimulate integrated development at the regional level. Future research on innovative State or Regional policies could potentially help establish a level playing field between shrinking cities and their surrounding regions.

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<sup>1</sup> In the American Rust Belt, the (Spearman's) correlation between land area changes and population change between 1950 and 2010 in the cores of the 42 largest metropolitan areas in the region is 0.829. Annexation thus explains more than half of the variation in population loss and gain in the region.

<sup>2</sup> It is much more common for schools in other countries to be funded by a more general income tax that is then distributed to schools on a formulaic basis of population size or other needs.

<sup>3</sup> We defined suburbs as the portion of the metropolitan statistical area (MSA) not including the core city. To maintain common boundaries we used 2013 MSA definitions (United States Executive Office of the President, 2013).

<sup>4</sup> Separately, we also calculated ratios of people 65-74, and over 74 years of age. They did not deviate from the relative or absolute patterns found in the simpler over 64 calculations so were not included in the table.