Volume 7
Issue 1 *Urban Long-Term Research Area Exploratory Awards (ULTRA-Ex)*

Article 7

February 2014

Urban Sprawl in the United States: 1970-2010

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This paper examines changes in urban sprawl in United States metropolitan areas from 1970 to 2010 using a sprawl measure based on the proportional differences in population percentages between high density and low density tracts. During the past four decades, sprawl has increased, but the rate of increase has dramatically decelerated since the 1970s. Considering individual metropolitan areas, there are several different sprawl histories. Some metros continue to have high rates of sprawl increases, others (the majority) have settled into steady state or modestly changing levels of sprawl, and others have a history of densification. Regression analysis shows that 1970 sprawl levels, western location, median household income, center city population change, African American and Hispanic population percentages, southern location and percent of the workforce employed in manufacturing were associated with changes between 1970 and 2010 sprawl levels. These divergent trajectories, along with a closer examination of sprawl in individual metropolitan areas, suggest sprawl may be neither inevitable nor irreversible.

Keywords

Urban sprawl, history, metropolitan area

Acknowledgements

The author wishes to thank Andrea Sarzynski for her comments on this article.

INTRODUCTION

People in the United States have been moving to the periphery of urban areas for 200 years (Hayden 2003, Bruegmann 2005). The reasons for this movement may have varied over time, but in general the United States has seen a progressive change in development patterns with a clear trend towards lower density growth on the edges of metropolitan areas. As early as the 1930s, the term urban sprawl had been coined to describe this tendency for decentralized, low density development.

Cities and metropolitan areas have a large scale impact on the environment and an important percentage of their ecological impacts are potentially associated with their urban form, development patterns, and degree of urban sprawl (Frumkin et al. 2004). The potential direst environmental impacts of sprawl include energy use and greenhouse gas emissions, destruction of natural habitats, and contamination of surface and ground waters (Cieslewicz 2002, Frumkin et al. 2008). Health and social consequences may include obesity, physical inactivity, higher risk of automobile accidents, decreased social capital, and similar important problems (Kunstler 1993, Kochtitzky et al. 2006).

For many years sprawl was an imprecise term and was often used to describe a wide variety of undesirable patterns of land use (Galster et al. 2001). This lack of precision began to change in the 1990s because of a number of factors. New technologies, including GIS and aerial photography, for example, allowed for large-scale analysis of land use. In addition, emerging concerns regarding the health and environmental impacts of urban sprawl created a demand for precise, objectively derived sprawl measures (Lopez 2012).

A number of researchers began to develop sprawl indexes and it became increasingly clear that sprawl was a multidimensional construct and more than just a lack of density or segregation of land uses (Cutsinger et al. 2005). At this time, two types of sprawl measures appeared. Some tried to incorporate the multidimensional aspects of sprawl into composite indexes. Others concentrated on single dimensions of urban sprawl in an attempt to develop measures that were easily calculated based on available data. Between 1990 and 2010, measures were developed that were based on population density, employment location, density gradients, land use patterns, etc., or a combination of some or all of them (Peiser 1989, Black 1996, Fulton et al. 2001, Glaeser et al. 2001, Burchfield et al. 2006).

Both of these types of sprawl measures have their advantages and drawbacks. The composite measures are more precise and provide a more nuanced portrait of sprawl, but they are difficult to calculate. Two of the most well-known of the composite measures were developed by Smart Growth America (referred to as the SGA index here) and a group associated with Wayne State University and George Washington University (referred to as the WSU/GWU index here) (Ewing et al. 2002). Though they are very comprehensive, neither the SGA or WSU/GWU index have been calculated for all US metropolitan areas or for years other than 1990 and 2000, and it may not be possible to calculate these indexes for years before 1990. In addition, for technical reasons, these measures are by necessity relative measures of sprawl. For any given metropolitan area in any given year, they measure that metro area's level of sprawl *relative* to other

metropolitan areas, thus they cannot provide information on how *absolute* sprawl levels have changed in that metropolitan area over time. Comparing calculations for Atlanta between 1990 and 2000, for example, can only demonstrate how Atlanta's sprawl changed relative to other US metro areas during that decade. It does not describe how Atlanta's sprawl itself changed during those ten years.

Single dimension sprawl measures have the virtue of being easier to calculate. For the most part, they are based on published data sets such as those provided by the U.S. Census. and as will be seen, at least one of these measures can be calculated at least as far back as 1970, the first census where there were both widespread division of counties into census tracts and the ability to reconstruct land area data for these tracts (though the census tract dates back to the early years of the twentieth century, for most of its early decades they were only defined for a select group of large cities) (Krieger 2006). But these single dimension sprawl measures have a limited ability to identify varieties of sprawl and they may oversimplify this multidimensional complex construct (Cutsinger and Galster 2006). For example, population density-based sprawl measures tend to find that multicentric or decentralized metropolitan areas with high relative population densities have low measured sprawl even though they may lack a strong downtown or a superdense inner core that many associate with urbanity. Thus Los Angeles and San Jose tend to score lower on sprawl when population density is the only measure in the index, even though they are very different from Boston and Philadelphia which have much larger areas of low density suburbs, but are focused on high density, high activity urban cores.

There have been innovations in measuring sprawl over the past decade including new measures based on Geographic Information Systems, remote sensing, geospatial statistics (MK Jat et al. 2008, Bhatta et al. 2010). These new techniques are powerful tools for monitoring current levels of sprawl and will be important for measuring sprawl going forward, but their ability to measure past sprawl levels are severely limited.

Despite these limitations, many single dimension measures tend to have a high degree of correlation with the multi-dimension measures. For example, in 2003, Lopez and Hynes published a paper describing a sprawl index that uses population density to create a measure of sprawl with potential values between zero, no sprawl, and 100, total sprawl (called the Density Balance Index here) (Lopez and Hynes 2003). They calculated this measure for all 310 metropolitan areas as defined in 2000 and they reported sprawl values for both 1990 and 2000. As explained in that paper, the Density Balance Index had a high level of correlation with the multidimensional SGA sprawl measure for the 86 metropolitan areas in 2000 where both measures were available. This is not surprising given that population density is probably the most important dimension of sprawl and that the various dimensions of sprawl most likely generally rise and fall with each other. This high degree of correlation suggests that a single dimension of sprawl, based on population density, may be an adequate overall indicator for measuring this complex construct when no other data are available.

This paper extends the Density Balance sprawl index back in time to 1970 and 1980, and forward to 2010. Using 2010 definitions of metropolitan areas, it is now possible to have sprawl measures at five points in time extending over 40 years, or more than half of the era of the large

scale growth of US suburbanization after World War II. This allows a greater understanding of how sprawl has changed decade by decade and how it varied within and between metropolitan areas.

DENSITY BALANCE SPRAWL INDEX

Calculation of these sprawl index values used data from the U.S. Census. Metropolitan area boundaries are defined by the US Office of Management and Budget (OMB) in consultation with state and local governments based on population settlement and commuting patterns. OMB has changed the definitions of many metropolitan areas over the past forty years, adding counties as urban and suburban populations have expanded. In this analysis, we used the 2010 definitions, applying them retroactively to the years 1970 to 2000. This may overstate the amount of sprawl in earlier years in some area, but the effect would small as most of the population in these yet to be metropolitanized counties would have still been living at rural population densities.

Metropolitan areas are the unit of analysis here because they are the way that researchers and policy makers define large scale settlements. These metropolitan areas are considered economic and social units that contain most of the day to day activities of their residents (Office of Management and Budget 2010). Smaller political entities (cities and towns) reflect more localized historical and political decisions and people regularly cross city boundaries to work, worship, shop, and for other purposes. Though the final designation of the sizes and extent of individual metropolitan areas change over time, the definition itself has been more stable (new entities such as, micropolitan statistical area and combined statistical areas, are not included in this analysis). In contrast, other census defined geographies, such as urbanized areas, have been repeatedly changed over the past forty years(US Bureau of the Census 2000).

2010 census data was downloaded from the U.S. Census web site using American Factfinder (US Bureau of the Census 2011). Data for the 1970 to 2000 censuses were based upon U.S. Census data that were normalized to the year 2000 census tracts by Geolytics, Inc. (Geolytics 2003) This involved using GIS to assign blocks from previous years to the year 2000 tracts.

The density balance sprawl measure is based on the difference between the proportion of the population living in higher density and lower density census tracts. For a more detailed description of this measure, see the article, Sprawl in the 1990s in Urban Affairs Review (Lopez and Hynes 2003). For all data years, population densities were calculated by dividing total census tract population by the land area of that census tract. The US Census uses a number of population density threshold criteria for defining rural areas, ranging from 100 to 500 (Hall et al. 2006). In the methodology used here tracts with a population density less than 200 people per square mile were considered to be rural and excluded from the analysis. This threshold corresponds to a settlement pattern of a house on an average four acres (assuming 2.5 persons per household and that only half the land in an area is residential).

Tracts with population between 200 and 3500 people per square mile were defined as suburban or low density tracts, and tracts with a population greater than 3500 people per square

mile were considered urban or high density tracts. 3500 people per square mile represents the point in which minimal bus service becomes possible (Holtzclaw 2007). In addition, in the year 2000 they divided the US metropolitan population into two roughly equal groups.

Sprawl values were calculated based on the formula: SI*i* = ((S%*i* - D%*i*)/100) x 50 where:

SI*i* = sprawl index for metropolitan area i
S%*i* = percentage of total population in low density census tracts in metropolitan area *i*
D%*i* - percentage of total population in high density census tracts in metropolitan area *i*

One hundred represents the highest level of sprawl: the entire metropolitan population is living in low density tracts. Zero is the lowest possible level of sprawl: the entire population is living in high density tracts.

These values were calculated for both metropolitan areas, known formally as Metropolitan Statistical Areas (MSA), and for what are known as Metropolitan Divisions (MD), important sections of certain large metropolitan areas. Thus the sprawl index was calculated for the San Francisco - Oakland - Fremont MSA and for its San Francisco and Oakland MDs. Sprawl index values and population changes are reported here.

SPRAWL 1970 - 2000

Sprawl Index values were calculated for the 29 Metropolitan Divisions and 366 Metropolitan Statistical Areas defined by OMB in 2010. Because many counties were not subdivided into tracts prior to 1990, only 268 MSAs have calculated Sprawl Index values for 1970 and 330 had values for 1980. All counties were tracted by 1990, allowing for the calculation for every metropolitan area after that time. When only a subset of counties in a metro area was tracted in a year, the non-tracted counties were excluded.

Table 1. Total Population of US Metropolitan Areas, 1970 – 2010

Year	Suburban	Urban	National Sprawl Index
1970	49,101,068	84,283,519	36.81
1980	69,967,436	84,680,392	45.24
1990	85,239,692	92,431,065	47.98
2000	101,295,542	102,952,391	49.59
2010	114,357,186	111,554,393	50.60

For US metropolitan areas as a whole, the index went from 36.8 in 1970 to 50.6 in 2010 (Table 1). More than half of this increase occurred in the 1970s with overall sprawl values increasing by 8.43 points (22.9%) in that decade. Since 1980, the rate of sprawl has been decelerating to an increase of 1.01 points (2%) between 2000 and 2010. Similarly, the mean sprawl index for all MSAs and MDs increased from 41.11 to 73.53 with a deceleration in the rate

of sprawl increase over time. Some of this variation in increasing sprawl may be the result of extending census tracts into once rural counties as they began to experience suburban growth, but the deceleration of sprawl between 1990 and 2010 represents a real change not affected by increased tracting. At the same time, 2010 represents the first time that more people lived in lower density than higher density tracts in metropolitan America.

Reflective in the decline in the rate of increase of sprawl, the growth of population in low density tracts fell from over 20 million in the 1970s to 13 million in the 2000s. The overall population in dense census tracts in metropolitan America also increased over this time in every decade, though the increase in the 1970s was minimal. Despite the growth in dense areas, sprawl increased because the population grew faster in low density suburban tracts than in higher density urban tracts. Overall, there wasn't a decline in the population of high density tracts.

Looking at individual MSAs and MDs between 1970 and 2010, a more complex pattern emerges. A majority (209) of areas saw their sprawl increase by at least 10% between 1970 and 2010, but 44 areas saw their sprawl levels decrease. Between 1990 and 2010, 99 areas saw at least a 10% increase in sprawl while 33 areas saw at least a 10% decrease. Almost all of these decreasingly sprawled areas are located either in the Western United States or in Florida. Certain of these areas that have had decreased sprawl are known for their implementation of anti-sprawl policies: Portland, Oregon, San Jose, California, and Miami, Florida. In addition, it should be that 22 areas do not have any change in their overall sprawl level because their sprawl index value was 100 in both 1990 and 2010 (Table 2).

Table 2. Number of US Metropolitan Areas by Year and Sprawl Index, 1970 – 2010

Sprawl Index	Year				
	1970	**1980**	**1990**	**2000**	**2010**
Less than 25	8	5	6	7	6
25 to 50	103	62	54	48	48
50 to 75	104	158	149	142	136
Greater than 75	50	106	157	168	176

The areas with the least amount of sprawl are in the greater San Francisco Bay Area, New York City, Southern California, Southeastern Florida, and Las Vegas. The areas with the most sprawl tend to be in the Southern United States but include metropolitan individual areas in all parts of the country. The areas with the greatest decrease in sprawl tend to be in California and the West while the Midwest has many of the areas with the greatest increase in sprawl between 1970 and 2010. In the decades between 1990 and 2010, the pattern was similar with the greatest decrease in sprawl in the West and the areas with the greatest increases often in the Midwest.

Rather than a single pattern of historical sprawl changes in large metropolitan areas, there appear to be many different sprawl trajectories. Midwestern metropolitan areas with declining center cities including Cleveland and St. Louis have seen large increases of sprawl that show at best modest deceleration. Many metropolitan areas, whether they have moderate to high sprawl

levels such as Atlanta, Charlotte and Houston, or low sprawl values including New York City and San Francisco, have had fairly steady levels sprawl regardless of their degree of population growth. Other metropolitan areas such as Minneapolis and Philadelphia parallel the general trend in the US of decade by decade slowing of sprawl, though sprawl has not been reversed and continues to increase. There are a number of metropolitan areas scattered across the county, for example Boston and Oklahoma City, that have seen their sprawl increases level off and even decrease slightly in the last decade. Another group, Portland, Oregon and Baltimore, have seen large scale reversal of sprawl in the past decade in contrast to the early decades of this time period when they were experiencing large scale sprawl increases. Finally, there are the metropolitan areas where sprawl has decreased more or less continuously since 1970. These include San Jose, Miami, and Los Angeles.

FACTORS ASSOCIATED WITH SPRAWL

The varying trajectories of US metropolitan areas suggest that there are a number of forces affecting sprawl in the past forty years. An analysis was performed to see if some commonly suggested factors might be associated with changes in sprawl from 1970 to 2010. These variables and their rational for inclusion are:

Level of sprawl in 1970. Decentralization in the United States began well before 1970; this might mean that sprawl patterns were substantially set by that year.

Total population. Larger metropolitan areas may develop real estate markets that support dense residential neighborhoods.

Population growth. Faster growing metropolitan areas may sprawl more than slow growth areas.

Southern location. Residents of the South tend to drive more and may be less inclined to support government regulation of development. Also, the climate is more supportive of using private wells for residential water supplies.

Western location. Scarcity of water necessitates public water, increasing the development costs of residential land. Also, larger percentages of government owned land may inhibit peripheral growth.

Percent of workforce employed in manufacturing. This may be a marker of economic restructuring.

Percent of population that is Hispanic. In the 1990s, advocates for restricting immigration argued that increasing immigrant populations, along with White flight, encouraged sprawl (Federation for American Immigration Reform 2002). Latino population percentage is used here as a proxy for both of these. Alternatively, these populations could be associated with density because of preferences for urban locations along with low incomes of Latino households.

Percent of population that is African American. Sprawl may be associated with changing inner-city populations and white flight.

Median income. Sprawl may be enabled by increasing incomes and affluence.

Central city population change. Declining center city populations might be associated with increasing sprawl as residents move to lower density suburbs.

Data were downloaded from the US Census website. Demographic data were from the 2010 census, other data were from the 3 year American Community Survey ending in 2011. Only metropolitan areas with measured sprawl dating back to 1970 were included in this analysis resulting in 268 observations (Metropolitan Divisions were not included in this analysis). Data were analyzed using Stata (Stata 2005) utilizing single equation instrumental variation regression to reflect the endogeneity of the data.

All of the variables had an association with the change in sprawl from 1970 to 2010. Higher levels of sprawl in 1970, higher percentages of African American residents, metropolitan area population growth, and higher percentages of people employed in manufacturing were associated with increasing sprawl. The percent of population that was Hispanic, median income, center city population increase, and western location were associated with decreasing sprawl. One variable performed the opposite as was predicted. Southern location was associated with decreased sprawl increases.

Table 3. Regression Analysis of Change in Sprawl Values, 1970 - 2010

Variable	Coefficient	95% Confidence Interval
Sprawl 1970	.0426	(.0425, .0427)**
Metro Population Change 1970 - 2010	-.00848	(-00849, -.00846)**
South	-1.150	(-1.154, -1.147)**
West	-15.81	(-15.812, -15.805)**
Percent of Employment in Manufacturing	.218	(.2179, .2182)**
Latino Percent of Total Population	-.02869	(-.02872, -.02867)**
African American Percent of Total Population	.0635	(.0634, .0636)**
Median Income (thousands)	-.129	(-.01291, -.1288)**
Central City Population Change 1970 - 2010	-.04176	(-.041788, -.04174)**
Constant	17.097	(17.087, 17.1077)**

R^2 = .54; ** P<.01

These findings suggest that much of our current national pattern of sprawl was in place by 1970 and that changes since that time have only marginally affected sprawl. The effects of water scarcity or other factors in the Western United states that may have curtailed sprawl, suggested by Robert Lang and others, appear to be very strong and in general, western metropolitan areas sprawl substantially less than those in other areas. (Lang 2003) Higher median family income is associated with lower levels of sprawl, but the direction of causality is particularly difficult to determine. It could be that lesser sprawled areas attract higher income people (as suggested by Richard Florida, Florida 2005). Alternatively, lesser sprawled areas could be affected by anti-growth policies, resulting in higher housing prices that cause lower income households to move out of certain metropolitan areas, the Edward Glaeser argument (Glaeser and Gyourko 2003). More study on this issue is needed.

Note that the data here suggests that state and local policies may have an important impact on changes in sprawl in individual metropolitan areas. Portland, Oregon saw an increase

in sprawl from 41.55 in 1970 to 48.61 in 1980, but after its growth boundary program was initiated, sprawl decreased to 36.31 in 2010.(Jun 2004, Abbott and Margheim 2008) Another metropolitan area with a strong anti-sprawl program is San Jose, California. Sprawl in that metropolitan area decreased from 21.04 in 1970 to 14.13 in 2010. The latter metropolitan area saw the election of an anti-sprawl city council majority in the 1970s followed by programs to limit outward expansion and promote infill development (Mathews 1999, O'Toole 2003). See the appendix for detailed data on each metropolitan area.

The association with inner city population decline suggests that cities hollowing out and losing population are a factor in sprawl or that any resulting densification in the surrounding suburbs does not offset this decline. The varying associations between Hispanic and African American population percentages are also interesting. Again, these are complex issues that warrant additional study.

DISCUSSION

This study looked at 40 years of sprawl across all metropolitan areas and metropolitan divisions in the United States. It found that overall sprawl has substantially increased since 1970, though the rate of this increase has dramatically slowed. In addition, though sprawl continues to be pervasive and continues to increase, there are important exceptions to this overall pattern towards increased sprawl.

There are limitations to both the Density Balance Sprawl Index and the analysis reported here. Most important, this study uses a measure that relies on only one dimension of many that have been used to characterize sprawl. Though density is very likely to be the primary way that we think about sprawl, it is far from being a complete descriptor of this multidimensional construct. Another limitation is that the use of census tracts across all the total land area of the United States was not implemented until 1990. Thus the results from 1970 and 1980, and the reported changes in sprawl from 1970 to 1990, may have been affected by the inclusion of more rural counties in the tractable universe of the United States. This problem disappears from 1990 onwards when all counties in the United States were divided into tracts. Another caution is that the associations reported here do not necessarily reflect causality.

But given that the sprawl index used here at least approximates levels of sprawl in the United States and that the values reported for 1970 in 1980 represent one of the few estimates of sprawl that may ever be calculated for these years, the portrait of sprawl that is suggested by this analysis has several implications for the country as a whole. Perhaps the most important is that while sprawl continues to increase, the rate of this increase has slowed substantially since the 1970s. The 1970s were at the end of a time when many US cities were rapidly losing population, including some cities that later reversed this decline. Perhaps the proposition that sprawl is inevitable in the US is simply a reflection of a past history where sprawl was rapidly increasing and assumptions regarding the inevitability of sprawl or the nature of preferences for sprawled living may need to be reassessed given this marked deceleration. One issue that needs to be explored is that the sprawl measure used here is only based on population density. Other longitudinal studies of other dimensions of sprawl, such as job sprawl, have suggested no

deceleration of urban sprawl (Glaeser et al. 2001, Tomer et al. 2011). These differences warrant additional research.

The analysis on factors associated with 2010 sprawl levels also has several important implications. One is that sprawl patterns were basically set in place by 1970. Perhaps this reflects the peak in population losses in many US center cities that occurred after the 1950 census or it could mean that declining changes in sprawl after 1970 had a smaller cumulative impact on metropolitan areas than pre-1970 changes. Most of the other factors that contributed to this model - population growth, median income, geographic location, etc., are structural and may not be easy to change. There are most likely other factors associated with sprawl levels: presence of anti-sprawl policies, geographic barriers, highway and transit funding, etc., but the analysis here suggests they may be more important for local sprawl patterns rather than affecting national trends.

The data presented here may eventually help identify long-term association between urban sprawl and other outcomes. The data could be used to explore the association between sprawl and housing prices, policy initiatives, gasoline prices, travel behavior, and other factors. In addition, much of the research looking at associations between sprawl and adverse health outcomes was conducted using 2000 data. The data presented here allow for time series studies and the addition of other study years that might help validate the findings of this earlier research.

Sprawl in the US appears to have been higher in earlier decades and is now approaching a lower, perhaps steady-state, level of increase. At the same time, some metro areas are experiencing a decline in sprawl; others are finding that their sprawl is increasing or have remained steady at a very high rate. The diversity of the US sprawl experience suggests that sprawl is neither homogenous nor inevitable.

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Appendix 1. Density Balance Sprawl Index Values, 1970 - 2010

NAME	Type of Metropolitan Area	1970	1980	1990	2000	2010
Abilene, TX	Metropolitan Statistical Area	49.97	49.45	60.90	72.59	71.28
Akron, OH	Metropolitan Statistical Area	48.62	58.05	61.15	67.71	74.14
Albany, GA	Metropolitan Statistical Area	77.61	79.18	87.40	95.95	96.82
Albany-Schenectady-Troy, NY	Metropolitan Statistical Area	51.43	56.71	62.69	66.80	65.15
Albuquerque, NM	Metropolitan Statistical Area	36.22	37.25	44.95	46.85	42.67
Alexandria, LA	Metropolitan Statistical Area	n/a	82.47	83.90	87.63	91.49
Allentown-Bethlehem-Easton, PA-NJ	Metropolitan Statistical Area	43.39	55.11	59.04	60.39	60.14
Altoona, PA	Metropolitan Statistical Area	26.26	38.47	49.63	46.11	52.84
Amarillo, TX	Metropolitan Statistical Area	52.92	51.19	56.35	51.03	50.71
Ames, IA	Metropolitan Statistical Area	33.42	34.40	51.54	57.72	46.12
Anchorage, AK	Metropolitan Statistical Area	59.37	48.74	49.89	48.75	50.05
Anderson, IN	Metropolitan Statistical Area	70.48	79.07	78.97	82.10	89.20
Anderson, SC	Metropolitan Statistical Area	n/a	100.00	100.00	100.00	100.00
Ann Arbor, MI	Metropolitan Statistical Area	41.93	45.60	49.22	55.63	57.89
Anniston-Oxford, AL	Metropolitan Statistical Area	n/a	89.61	90.30	100.00	100.00
Appleton, WI	Metropolitan Statistical Area	47.13	55.55	52.72	59.43	65.43
Asheville, NC	Metropolitan Statistical Area	88.63	95.88	100.00	98.03	98.22
Athens-Clarke County, GA	Metropolitan Statistical Area	52.80	68.90	77.89	83.73	87.54
Atlanta-Sandy Springs-Marietta, GA	Metropolitan Statistical Area	60.71	78.34	83.48	80.59	82.04
Atlantic City-Hammonton, NJ	Metropolitan Statistical Area	53.41	62.26	60.06	57.13	67.22
Auburn-Opelika, AL	Metropolitan Statistical Area	n/a	88.22	89.61	92.66	93.47
Augusta-Richmond County, GA-SC	Metropolitan Statistical Area	78.33	89.00	94.61	97.35	98.67
Austin-Round Rock, TX	Metropolitan Statistical Area	36.28	48.02	52.71	56.55	57.30
Bakersfield, CA	Metropolitan Statistical Area	56.42	53.87	45.40	46.36	41.84
Baltimore-Towson, MD	Metropolitan Statistical Area	29.99	37.78	42.93	47.54	44.93
Bangor, ME	Metropolitan Statistical Area	58.21	66.48	71.38	80.01	72.77
Barnstable Town, MA	Metropolitan Statistical Area	n/a	n/a	100.00	98.67	97.66
Baton Rouge, LA	Metropolitan Statistical Area	49.42	62.72	77.78	78.99	80.21
Battle Creek, MI	Metropolitan Statistical Area	78.64	81.06	85.01	85.34	86.38
Bay City, MI	Metropolitan Statistical Area	54.69	62.45	65.45	73.11	71.91
Beaumont-Port Arthur, TX	Metropolitan Statistical Area	57.94	68.01	78.96	81.20	79.91
Bellingham, WA	Metropolitan Statistical Area	n/a	70.55	67.15	77.78	74.96
Bend, OR	Metropolitan Statistical Area	n/a	n/a	100.00	89.18	92.79
Bethesda-Frederick-Rockville, MD	Metropolitan Division	30.39	46.85	44.20	41.72	36.61
Billings, MT	Metropolitan Statistical Area	58.40	62.64	67.07	69.34	61.99
Binghamton, NY	Metropolitan Statistical Area	45.62	51.20	56.41	61.44	59.12
Birmingham-Hoover, AL	Metropolitan Statistical Area	55.93	69.86	80.37	83.39	86.85
Bismarck, ND	Metropolitan Statistical Area	n/a	46.21	50.92	52.89	71.20
Blacksburg-Christiansburg-Radford, VA	Metropolitan Statistical Area	n/a	100.00	83.05	80.61	82.92
Bloomington, IN	Metropolitan Statistical Area	52.14	59.12	66.00	68.06	68.31
Bloomington-Normal, IL	Metropolitan Statistical Area	44.38	46.24	44.81	50.97	61.96
Boise City-Nampa, ID	Metropolitan Statistical Area	63.43	70.45	66.47	62.02	63.03
Boston-Cambridge-Quincy, MA-NH	Metropolitan Statistical Area	37.10	47.16	49.65	50.89	49.37
Boston-Quincy, MA	Metropolitan Division	35.09	40.93	43.33	44.86	42.92

Boulder, CO /1	Metropolitan Statistical Area	49.68	58.62	53.21	52.09	49.08
Bowling Green, KY	Metropolitan Statistical Area	n/a	n/a	80.76	82.81	77.80
Bradenton-Sarasota-Venice, FL	Metropolitan Statistical Area	80.66	78.12	66.80	73.24	76.12
Bremerton-Silverdale, WA	Metropolitan Statistical Area	n/a	77.58	78.91	85.44	86.95
Bridgeport-Stamford-Norwalk, CT	Metropolitan Statistical Area	42.41	55.03	55.49	56.88	54.24
Brownsville-Harlingen, TX	Metropolitan Statistical Area	56.39	55.19	56.75	59.93	57.03
Brunswick, GA	Metropolitan Statistical Area	n/a	n/a	100.00	100.00	90.80
Buffalo-Niagara Falls, NY	Metropolitan Statistical Area	31.56	37.38	42.15	47.70	49.80
Burlington, NC	Metropolitan Statistical Area	100.00	100.00	100.00	100.00	100.00
Burlington-South Burlington, VT	Metropolitan Statistical Area	n/a	66.04	67.46	70.42	72.37
Cambridge-Newton-Framingham, MA	Metropolitan Division	37.05	46.73	48.35	48.62	47.01
Camden, NJ	Metropolitan Division	43.48	51.97	57.64	61.67	63.50
Canton-Massillon, OH	Metropolitan Statistical Area	55.44	70.46	70.39	72.82	78.60
Cape Coral-Fort Myers, FL	Metropolitan Statistical Area	n/a	92.36	92.37	88.98	88.28
Cape Girardeau-Jackson, MO-IL	Metropolitan Statistical Area	n/a	n/a	89.10	90.46	87.52
Carson City, NV	Metropolitan Statistical Area	n/a	100.00	83.90	62.13	44.13
Casper, WY	Metropolitan Statistical Area	n/a	67.55	76.09	69.35	69.81
Cedar Rapids, IA	Metropolitan Statistical Area	50.53	62.07	73.03	73.12	78.92
Champaign-Urbana, IL	Metropolitan Statistical Area	53.12	54.30	52.35	55.88	55.99
Charleston, WV	Metropolitan Statistical Area	63.62	75.38	80.58	83.30	82.74
Charleston-North Charleston-Summerville, SC	Metropolitan Statistical Area	65.25	75.68	82.48	85.66	85.94
Charlotte-Gastonia-Concord, NC-SC	Metropolitan Statistical Area	76.79	86.12	86.08	86.54	85.86
Charlottesville, VA	Metropolitan Statistical Area	37.61	55.13	42.16	61.27	65.76
Chattanooga, TN-GA	Metropolitan Statistical Area	79.53	89.02	94.48	95.88	95.58
Cheyenne, WY	Metropolitan Statistical Area	n/a	84.81	85.86	86.99	85.66
Chicago-Naperville-Joliet, IL	Metropolitan Division	19.61	23.88	26.15	27.85	29.91
Chicago-Naperville-Joliet, IL-IN-WI	Metropolitan Statistical Area	24.49	29.48	31.98	33.71	36.36
Chico, CA	Metropolitan Statistical Area	n/a	75.00	72.69	74.41	64.57
Cincinnati-Middletown, OH-KY-IN	Metropolitan Statistical Area	40.37	51.32	57.44	64.70	70.35
Clarksville, TN-KY	Metropolitan Statistical Area	n/a	94.55	95.50	100.00	97.09
Cleveland, TN	Metropolitan Statistical Area	n/a	n/a	88.50	94.85	94.14
Cleveland-Elyria-Mentor, OH	Metropolitan Statistical Area	30.62	38.07	42.79	47.00	53.44
Coeur d'Alene, ID	Metropolitan Statistical Area	n/a	n/a	91.85	83.64	84.12
College Station-Bryan, TX	Metropolitan Statistical Area	77.92	57.59	54.41	57.96	45.70
Colorado Springs, CO	Metropolitan Statistical Area	48.35	48.02	49.39	49.16	51.31
Columbia, MO	Metropolitan Statistical Area	54.90	63.26	69.49	79.93	83.44
Columbia, SC	Metropolitan Statistical Area	69.41	76.70	83.16	87.85	88.30
Columbus, GA-AL	Metropolitan Statistical Area	52.73	64.78	72.50	84.33	87.07
Columbus, IN	Metropolitan Statistical Area	n/a	n/a	100.00	100.00	100.00
Columbus, OH	Metropolitan Statistical Area	27.93	40.30	46.33	53.20	58.31
Corpus Christi, TX	Metropolitan Statistical Area	48.94	51.19	48.16	51.28	48.06
Corvallis, OR	Metropolitan Statistical Area	n/a	64.40	65.90	70.75	70.35
Cumberland, MD-WV	Metropolitan Statistical Area	81.71	85.53	86.24	87.25	86.09
Dallas-Fort Worth-Arlington, TX	Metropolitan Statistical Area	44.36	49.11	49.42	46.19	47.08
Dallas-Plano-Irving, TX	Metropolitan Division	41.21	43.22	45.20	44.20	45.58
Dalton, GA	Metropolitan Statistical Area	n/a	n/a	100.00	100.00	100.00
Danville, IL	Metropolitan Statistical Area	77.92	85.34	94.91	94.95	94.56
Danville, VA	Metropolitan Statistical Area	78.26	82.51	83.89	84.99	100.00
Davenport-Moline-Rock ` Island, IA-IL	Metropolitan Statistical Area	41.46	58.21	64.23	65.27	64.67
Dayton, OH	Metropolitan Statistical Area	49.67	63.98	65.98	70.00	73.37
Decatur, AL	Metropolitan Statistical Area	76.85	100.00	100.00	100.00	100.00
Decatur, IL	Metropolitan Statistical Area	49.51	61.06	66.33	69.46	77.83
Deltona-Daytona Beach-Ormond Beach, FL	Metropolitan Statistical Area	70.09	74.67	81.44	83.41	85.11
Denver-Aurora-Broomfield, CO /1	Metropolitan Statistical Area	29.97	33.91	33.71	32.15	32.07
Des Moines-West Des Moines, IA	Metropolitan Statistical Area	46.26	55.49	57.19	61.49	63.85
Detroit-Livonia-Dearborn, MI	Metropolitan Division	9.83	15.88	20.05	22.60	29.41
Detroit-Warren-Livonia, MI	Metropolitan Statistical Area	22.00	31.19	36.45	42.37	47.58

Dothan, AL	Metropolitan Statistical Area	n/a	100.00	100.00	100.00	100.00
Dover, DE	Metropolitan Statistical Area	n/a	93.31	91.61	97.31	97.75
Dubuque, IA	Metropolitan Statistical Area	58.50	53.98	66.84	68.36	72.01
Duluth, MN-WI	Metropolitan Statistical Area	58.46	64.61	68.14	70.42	76.60
Durham-Chapel Hill, NC	Metropolitan Statistical Area	64.52	67.57	74.24	75.07	79.15
Eau Claire, WI	Metropolitan Statistical Area	62.53	74.91	72.05	74.87	79.85
Edison-New Brunswick, NJ	Metropolitan Division	45.56	57.99	57.86	56.25	57.24
El Centro, CA	Metropolitan Statistical Area	n/a	57.72	57.92	38.27	42.19
El Paso, TX	Metropolitan Statistical Area	32.08	31.21	30.44	34.41	40.07
Elizabethtown, KY	Metropolitan Statistical Area	n/a	n/a	100.00	100.00	100.00
Elkhart-Goshen, IN	Metropolitan Statistical Area	80.71	85.08	86.79	87.78	90.99
Elmira, NY	Metropolitan Statistical Area	57.67	60.54	60.48	64.37	65.26
Erie, PA	Metropolitan Statistical Area	38.69	46.75	55.08	57.02	59.54
Eugene-Springfield, OR	Metropolitan Statistical Area	54.93	60.65	61.17	57.22	83.83
Evansville, IN-KY	Metropolitan Statistical Area	43.22	62.48	68.92	73.94	100.00
Fairbanks, AK	Metropolitan Statistical Area	n/a	100.00	80.58	76.50	80.56
Fargo, ND-MN	Metropolitan Statistical Area	49.44	51.72	47.20	56.20	55.79
Farmington, NM	Metropolitan Statistical Area	100.00	77.04	78.74	84.40	89.52
Fayetteville, NC	Metropolitan Statistical Area	98.16	96.68	95.55	94.20	86.29
Fayetteville-Springdale-Rogers, AR-MO	Metropolitan Statistical Area	83.25	92.06	95.39	91.79	93.86
Flagstaff, AZ	Metropolitan Statistical Area	n/a	n/a	79.49	74.37	57.14
Flint, MI	Metropolitan Statistical Area	54.10	64.90	68.56	74.48	81.27
Florence, SC	Metropolitan Statistical Area	n/a	100.00	100.00	100.00	100.00
Florence-Muscle Shoals, AL	Metropolitan Statistical Area	89.50	91.60	95.10	96.13	96.25
Fond du Lac, WI	Metropolitan Statistical Area	n/a	51.15	47.46	57.99	53.59
Fort Collins-Loveland, CO	Metropolitan Statistical Area	59.38	60.01	55.10	51.79	52.35
Fort Lauderdale-Pompano Beach-Deerfield Beach, FL	Metropolitan Division	27.53	26.26	23.55	20.78	18.27
Fort Smith, AR-OK	Metropolitan Statistical Area	70.16	76.26	78.95	81.71	72.35
Fort Walton Beach-Crestview-Destin, FL	Metropolitan Statistical Area	n/a	89.38	86.17	84.69	83.57
Fort Wayne, IN	Metropolitan Statistical Area	50.51	62.50	68.66	71.26	73.63
Fort Worth-Arlington, TX	Metropolitan Division	50.55	61.17	57.64	50.29	50.13
Fresno, CA	Metropolitan Statistical Area	48.29	47.38	42.30	39.60	37.53
Gadsden, AL	Metropolitan Statistical Area	70.66	93.58	97.23	97.36	100.00
Gainesville, FL	Metropolitan Statistical Area	78.98	89.39	75.78	76.59	76.43
Gainesville, GA	Metropolitan Statistical Area	n/a	n/a	100.00	100.00	100.00
Gary, IN	Metropolitan Division	50.91	58.14	65.22	69.55	74.29
Glens Falls, NY	Metropolitan Statistical Area	n/a	62.80	67.49	70.28	70.51
Goldsboro, NC	Metropolitan Statistical Area	100.00	100.00	100.00	100.00	100.00
Grand Forks, ND-MN	Metropolitan Statistical Area	n/a	63.76	67.16	72.47	65.29
Grand Junction, CO	Metropolitan Statistical Area	76.30	87.03	88.39	90.72	81.64
Grand Rapids-Wyoming, MI	Metropolitan Statistical Area	46.12	54.47	58.57	56.62	60.81
Great Falls, MT	Metropolitan Statistical Area	45.84	63.34	72.42	73.88	75.20
Greeley, CO	Metropolitan Statistical Area	49.38	45.53	50.83	43.70	61.47
Green Bay, WI	Metropolitan Statistical Area	55.46	56.17	63.04	66.45	72.42
Greensboro-High Point, NC	Metropolitan Statistical Area	75.13	84.89	86.21	87.32	86.95
Greenville, NC	Metropolitan Statistical Area	n/a	n/a	77.05	75.10	75.75
Greenville-Mauldin-Easley, SC	Metropolitan Statistical Area	81.28	88.21	94.13	97.83	95.83
Gulfport-Biloxi, MS	Metropolitan Statistical Area	58.46	76.31	87.34	91.53	97.18
Hagerstown-Martinsburg, MD-WV	Metropolitan Statistical Area	66.34	74.11	79.35	83.14	86.75
Hanford-Corcoran, CA	Metropolitan Statistical Area	86.65	88.55	75.57	59.18	44.21
Harrisburg-Carlisle, PA	Metropolitan Statistical Area	55.20	65.12	70.84	78.33	71.77
Harrisonburg, VA	Metropolitan Statistical Area	100.00	100.00	84.64	81.24	72.22
Hartford-West Hartford-East Hartford, CT	Metropolitan Statistical Area	56.30	65.70	69.27	71.67	72.59
Hattiesburg, MS	Metropolitan Statistical Area	n/a	92.11	91.02	91.92	95.65
Hickory-Lenoir-Morganton, NC	Metropolitan Statistical Area	100.00	100.00	100.00	100.00	100.00
Hinesville-Fort Stewart, GA	Metropolitan Statistical Area	n/a	n/a	100.00	85.95	100.00
Holland-Grand Haven, MI	Metropolitan Statistical Area	77.45	89.04	86.92	90.34	89.54
Honolulu, HI	Metropolitan Statistical Area	34.49	33.44	31.85	35.35	29.43
Hot Springs, AR	Metropolitan Statistical Area	n/a	n/a	100.00	93.18	93.78
Houma-Bayou Cane-Thibodaux, LA	Metropolitan Statistical Area	n/a	87.12	86.67	84.98	89.93
Houston-Sugar Land-						

Baytown, TX	Metropolitan Statistical Area	39.94	46.33	50.46	49.25	46.94
Huntington-Ashland, WV-KY-OH	Metropolitan Statistical Area	54.11	68.62	78.74	79.01	80.19
Huntsville, AL	Metropolitan Statistical Area	60.09	71.52	86.45	94.82	95.42
Idaho Falls, ID	Metropolitan Statistical Area	n/a	n/a	80.37	76.54	81.96
Indianapolis-Carmel, IN	Metropolitan Statistical Area	45.25	57.30	65.56	71.42	76.35
Iowa City, IA	Metropolitan Statistical Area	n/a	46.24	53.67	49.87	58.30
Ithaca, NY	Metropolitan Statistical Area	n/a	n/a	69.96	71.75	71.50
Jackson, MI	Metropolitan Statistical Area	59.56	68.28	71.31	75.55	72.45
Jackson, MS	Metropolitan Statistical Area	60.52	69.12	74.41	83.52	89.57
Jackson, TN	Metropolitan Statistical Area	73.30	82.43	96.04	92.30	97.37
Jacksonville, FL	Metropolitan Statistical Area	48.18	66.80	74.64	74.65	77.85
Jacksonville, NC	Metropolitan Statistical Area	n/a	95.98	96.70	97.32	94.33
Janesville, WI	Metropolitan Statistical Area	57.63	52.79	54.99	64.13	61.01
Jefferson City, MO	Metropolitan Statistical Area	n/a	n/a	96.81	91.66	100.00
Johnson City, TN	Metropolitan Statistical Area	n/a	88.11	92.65	95.46	96.03
Johnstown, PA	Metropolitan Statistical Area	59.55	66.31	69.68	72.68	74.63
Jonesboro, AR	Metropolitan Statistical Area	n/a	n/a	100.00	100.00	84.92
Joplin, MO	Metropolitan Statistical Area	n/a	80.12	89.70	91.79	91.24
Kalamazoo-Portage, MI	Metropolitan Statistical Area	63.08	75.88	75.58	74.15	76.22
Kankakee-Bradley, IL	Metropolitan Statistical Area	n/a	57.71	59.39	64.74	86.92
Kansas City, MO-KS	Metropolitan Statistical Area	44.24	56.29	62.51	68.21	71.35
Kennewick-Pasco-Richland, WA	Metropolitan Statistical Area	77.63	77.87	75.32	76.68	72.03
Killeen-Temple-Fort Hood, TX	Metropolitan Statistical Area	n/a	83.52	76.09	78.34	73.78
Kingsport-Bristol-Bristol, TN-VA	Metropolitan Statistical Area	100.00	98.04	98.28	98.53	98.50
Kingston, NY	Metropolitan Statistical Area	n/a	n/a	90.12	90.27	89.24
Knoxville, TN	Metropolitan Statistical Area	80.54	88.40	90.95	93.72	94.79
Kokomo, IN	Metropolitan Statistical Area	n/a	62.07	82.80	81.08	80.58
La Crosse, WI-MN	Metropolitan Statistical Area	n/a	67.06	65.17	67.35	69.03
Lafayette, IN	Metropolitan Statistical Area	36.87	40.19	47.11	54.52	56.59
Lafayette, LA	Metropolitan Statistical Area	63.80	63.97	84.77	91.78	86.99
Lake Charles, LA	Metropolitan Statistical Area	70.25	81.57	88.79	87.02	93.06
Lake County-Kenosha County, IL-WI	Metropolitan Division	58.62	65.81	64.32	62.84	67.27
Lake Havasu City-Kingman, AZ	Metropolitan Statistical Area	n/a	n/a	100.00	85.94	87.00
Lakeland-Winter Haven, FL	Metropolitan Statistical Area	81.40	92.28	88.61	88.40	92.86
Lancaster, PA	Metropolitan Statistical Area	70.33	77.70	76.35	77.13	78.72
Lansing-East Lansing, MI	Metropolitan Statistical Area	48.00	56.75	59.70	65.30	65.80
Laredo, TX	Metropolitan Statistical Area	27.54	23.49	16.25	31.56	36.11
Las Cruces, NM	Metropolitan Statistical Area	62.78	75.84	69.20	72.88	70.49
Las Vegas-Paradise, NV	Metropolitan Statistical Area	47.35	37.97	23.59	20.81	20.93
Lawrence, KS	Metropolitan Statistical Area	n/a	56.22	52.31	55.53	64.83
Lawton, OK	Metropolitan Statistical Area	28.12	43.52	53.63	63.83	67.89
Lebanon, PA	Metropolitan Statistical Area	n/a	52.21	55.69	61.43	64.79
Lewiston, ID-WA	Metropolitan Statistical Area	n/a	n/a	78.74	81.17	76.07
Lewiston-Auburn, ME	Metropolitan Statistical Area	53.16	59.40	62.61	70.49	70.24
Lexington-Fayette, KY	Metropolitan Statistical Area	30.67	52.89	49.16	54.26	52.39
Lima, OH	Metropolitan Statistical Area	44.22	58.48	64.30	66.17	71.54
Lincoln, NE	Metropolitan Statistical Area	23.25	33.76	36.56	35.24	39.65
Little Rock-North Little Rock-Conway, AR	Metropolitan Statistical Area	74.33	80.06	84.44	86.07	89.25
Logan, UT-ID	Metropolitan Statistical Area	n/a	n/a	71.12	72.57	70.16
Longview, TX	Metropolitan Statistical Area	n/a	94.44	100.00	95.76	95.83
Longview, WA	Metropolitan Statistical Area	n/a	64.56	65.91	66.80	76.89
Los Angeles-Long Beach-Glendale, CA	Metropolitan Division	12.10	12.28	10.65	10.62	9.94
Los Angeles-Long Beach-Santa Ana, CA	Metropolitan Statistical Area	13.15	13.18	11.82	11.45	11.04
Louisville/Jefferson County, KY-IN	Metropolitan Statistical Area	39.60	51.18	60.02	62.23	61.06
Lubbock, TX	Metropolitan Statistical Area	48.36	41.61	40.36	39.69	40.56
Lynchburg, VA	Metropolitan Statistical Area	69.26	86.95	91.51	92.56	94.39
Macon, GA	Metropolitan Statistical Area	59.30	71.65	80.47	87.32	94.44
Madera-Chowchilla, CA	Metropolitan Statistical Area	90.03	60.75	54.38	54.76	55.32
Madison, WI	Metropolitan Statistical Area	38.90	50.22	50.97	58.22	60.38
Manchester-Nashua, NH	Metropolitan Statistical Area	37.10	64.01	67.66	70.62	71.79
Manhattan, KS	Metropolitan Statistical Area	n/a	n/a	76.63	75.87	81.52

Mankato-North Mankato, MN	Metropolitan Statistical Area	n/a	n/a	71.17	73.48	67.71
Mansfield, OH	Metropolitan Statistical Area	70.13	75.33	76.46	78.28	89.15
McAllen-Edinburg-Mission, TX	Metropolitan Statistical Area	79.38	83.01	86.68	87.32	81.17
Medford, OR	Metropolitan Statistical Area	n/a	74.90	77.74	67.48	67.46
Memphis, TN-MS-AR	Metropolitan Statistical Area	35.18	49.45	56.90	63.03	66.15
Merced, CA	Metropolitan Statistical Area	n/a	75.51	56.85	62.68	68.26
Miami-Fort Lauderdale-Pompano Beach, FL	Metropolitan Statistical Area	28.58	26.34	25.76	24.25	21.24
Miami-Miami Beach-Kendall, FL	Metropolitan Division	20.27	16.95	14.89	15.61	11.11
Michigan City-La Porte, IN	Metropolitan Statistical Area	n/a	70.84	76.59	79.72	80.09
Midland, TX	Metropolitan Statistical Area	75.76	62.80	60.12	61.61	59.15
Milwaukee-Waukesha-West Allis, WI	Metropolitan Statistical Area	29.91	40.61	43.52	49.41	50.07
Minneapolis-St. Paul-Bloomington, MN-WI	Metropolitan Statistical Area	35.97	47.32	53.51	59.19	60.69
Missoula, MT	Metropolitan Statistical Area	42.55	52.99	54.29	62.00	54.85
Mobile, AL	Metropolitan Statistical Area	50.80	62.16	70.43	77.85	83.59
Modesto, CA	Metropolitan Statistical Area	64.17	50.70	39.06	34.76	31.22
Monroe, LA	Metropolitan Statistical Area	76.45	82.07	89.71	93.42	94.85
Monroe, MI	Metropolitan Statistical Area	92.98	90.06	94.57	95.06	95.36
Montgomery, AL	Metropolitan Statistical Area	43.21	68.36	75.91	84.42	84.90
Morgantown, WV	Metropolitan Statistical Area	n/a	68.71	69.91	63.27	65.02
Morristown, TN	Metropolitan Statistical Area	n/a	n/a	100.00	100.00	100.00
Mount Vernon-Anacortes, WA	Metropolitan Statistical Area	n/a	n/a	89.95	92.49	84.17
Muncie, IN	Metropolitan Statistical Area	35.41	57.13	66.09	71.34	76.14
Muskegon-Norton Shores, MI	Metropolitan Statistical Area	64.11	72.35	74.81	78.48	81.41
Myrtle Beach-North Myrtle Beach-Conway, SC	Metropolitan Statistical Area	n/a	n/a	100.00	100.00	100.00
Napa, CA	Metropolitan Statistical Area	67.43	69.47	68.42	45.90	35.11
Naples-Marco Island, FL	Metropolitan Statistical Area	n/a	100.00	80.04	75.00	76.99
Nashville-Davidson-Murfreesboro-Franklin, TN	Metropolitan Statistical Area	66.21	75.42	78.84	79.43	80.26
Nassau-Suffolk, NY	Metropolitan Division	29.02	33.63	35.79	34.80	35.28
New Haven-Milford, CT	Metropolitan Statistical Area	50.07	58.46	60.87	60.67	60.14
New Orleans-Metairie-Kenner, LA	Metropolitan Statistical Area	18.11	20.52	28.38	31.09	39.33
New York-Northern New Jersey-Long Island, NY- PA	Metropolitan Statistical Area	15.56	20.51	21.95	21.84	21.99
New York-White Plains-Wayne, NY-NJ	Metropolitan Division	7.34	9.11	9.44	9.14	8.90
Newark-Union, NJ-PA	Metropolitan Division	26.19	32.35	37.00	39.01	38.30
Niles-Benton Harbor, MI	Metropolitan Statistical Area	n/a	93.56	93.72	94.64	94.75
Norwich-New London, CT	Metropolitan Statistical Area	80.80	78.11	77.94	86.07	84.59
Oakland-Fremont-Hayward, CA	Metropolitan Division	26.68	29.57	27.79	27.75	27.10
Ocala, FL	Metropolitan Statistical Area	n/a	92.91	100.00	100.00	100.00
Ocean City, NJ	Metropolitan Statistical Area	n/a	81.40	87.43	79.65	84.95
Odessa, TX	Metropolitan Statistical Area	36.40	48.25	46.19	47.51	52.19
Ogden-Clearfield, UT	Metropolitan Statistical Area	60.32	64.23	66.72	53.95	51.13
Oklahoma City, OK	Metropolitan Statistical Area	36.93	47.73	58.03	58.24	57.68
Olympia, WA	Metropolitan Statistical Area	n/a	95.83	91.38	93.39	82.61
Omaha-Council Bluffs, NE-IA	Metropolitan Statistical Area	37.01	41.91	44.81	45.91	47.76
Orlando-Kissimmee, FL	Metropolitan Statistical Area	71.20	70.02	68.49	64.30	65.55
Oshkosh-Neenah, WI	Metropolitan Statistical Area	37.52	55.18	58.12	56.39	57.72
Owensboro, KY	Metropolitan Statistical Area	n/a	55.51	62.95	74.74	73.37
Oxnard-Thousand Oaks-Ventura, CA	Metropolitan Statistical Area	53.00	46.93	42.32	40.17	38.43
Palm Bay-Melbourne-Titusville, FL	Metropolitan Statistical Area	76.90	77.71	80.70	85.38	82.79
Palm Coast, FL	Metropolitan Statistical Area	n/a	n/a	100.00	100.00	100.00
Panama City-Lynn Haven-Panama City Beach, FL	Metropolitan Statistical Area	n/a	88.54	91.42	96.86	100.00
Parkersburg-Marietta-Vienna, WV-OH	Metropolitan Statistical Area	69.84	75.61	79.50	80.20	82.76
Pascagoula, MS	Metropolitan Statistical Area	n/a	78.41	94.08	94.71	94.79
Peabody, MA	Metropolitan Division	40.03	49.07	49.72	50.66	49.86
Pensacola-Ferry Pass-Brent, FL	Metropolitan Statistical Area	68.33	85.78	93.94	95.71	95.74
Peoria, IL	Metropolitan Statistical Area	53.59	57.78	65.80	70.86	71.13

Philadelphia, PA	Metropolitan Division	21.88	28.09	33.15	37.30	39.53
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	Metropolitan Statistical Area	28.10	35.63	40.91	45.20	47.45
Phoenix-Mesa-Scottsdale, AZ	Metropolitan Statistical Area	37.70	42.57	35.53	31.31	37.43
Pine Bluff, AR	Metropolitan Statistical Area	60.54	76.52	84.73	91.85	92.13
Pittsburgh, PA	Metropolitan Statistical Area	39.53	47.68	53.67	57.43	62.10
Pittsfield, MA	Metropolitan Statistical Area	64.11	77.72	77.21	83.71	83.95
Pocatello, ID	Metropolitan Statistical Area	n/a	84.71	85.77	81.88	84.53
Port St. Lucie, FL	Metropolitan Statistical Area	n/a	85.67	89.77	91.95	93.06
Portland-South Portland-Biddeford, ME	Metropolitan Statistical Area	57.12	73.33	77.42	81.19	80.48
Portland-Vancouver-Beaverton, OR-WA	Metropolitan Statistical Area	41.66	48.61	44.67	41.12	36.31
Poughkeepsie-Newburgh-Middletown, NY	Metropolitan Statistical Area	80.96	81.74	79.75	79.48	76.19
Prescott, AZ	Metropolitan Statistical Area	n/a	n/a	100.00	100.00	95.49
Providence-New Bedford-Fall River, RI-MA	Metropolitan Statistical Area	43.84	47.91	50.47	53.31	53.91
Provo-Orem, UT	Metropolitan Statistical Area	71.61	59.59	50.74	52.82	52.02
Pueblo, CO	Metropolitan Statistical Area	34.19	37.68	35.81	46.52	51.03
Punta Gorda, FL	Metropolitan Statistical Area	n/a	n/a	95.85	92.80	94.37
Racine, WI	Metropolitan Statistical Area	45.51	52.00	53.48	61.60	62.82
Raleigh-Cary, NC	Metropolitan Statistical Area	65.09	79.16	80.18	85.38	86.01
Rapid City, SD	Metropolitan Statistical Area	60.86	91.19	93.74	94.56	89.79
Reading, PA	Metropolitan Statistical Area	45.42	57.80	62.71	64.26	62.11
Redding, CA	Metropolitan Statistical Area	n/a	100.00	93.05	90.86	85.08
Reno-Sparks, NV	Metropolitan Statistical Area	41.03	51.18	51.56	55.50	54.49
Richmond, VA	Metropolitan Statistical Area	53.06	66.35	74.22	77.98	77.75
Riverside-San Bernardino-Ontario, CA	Metropolitan Statistical Area	66.68	63.07	49.86	48.61	44.11
Roanoke, VA	Metropolitan Statistical Area	62.28	80.31	82.82	90.84	88.74
Rochester, MN	Metropolitan Statistical Area	57.75	64.79	57.98	64.32	74.25
Rochester, NY	Metropolitan Statistical Area	47.18	55.06	61.03	64.88	65.64
Rockford, IL	Metropolitan Statistical Area	39.94	54.53	65.68	67.61	69.15
Rockingham County-Strafford County, NH	Metropolitan Division	100.00	92.13	94.10	94.93	94.96
Rocky Mount, NC	Metropolitan Statistical Area	87.78	100.00	100.00	100.00	100.00
Rome, GA	Metropolitan Statistical Area	100.00	100.00	100.00	100.00	100.00
Sacramento--Arden-Arcade—Roseville, CA	Metropolitan Statistical Area	49.40	41.84	31.28	32.76	33.19
Saginaw-Saginaw Township North, MI	Metropolitan Statistical Area	47.12	55.69	57.26	72.64	76.28
Salem, OR	Metropolitan Statistical Area	71.97	70.95	60.39	55.28	43.49
Salinas, CA	Metropolitan Statistical Area	47.34	44.10	44.00	36.60	31.89
Salisbury, MD	Metropolitan Statistical Area	76.25	80.95	70.49	76.22	84.51
Salt Lake City, UT	Metropolitan Statistical Area	41.98	33.48	28.24	28.32	33.69
San Angelo, TX	Metropolitan Statistical Area	73.76	74.33	72.71	78.22	77.45
San Antonio, TX	Metropolitan Statistical Area	31.30	44.05	43.79	45.66	44.40
San Diego-Carlsbad-San Marcos, CA	Metropolitan Statistical Area	31.46	33.32	28.79	26.59	27.61
San Francisco-Oakland-Fremont, CA	Metropolitan Statistical Area	22.24	25.28	23.59	23.30	22.63
San Francisco-San Mateo-Redwood City, CA	Metropolitan Division	17.33	20.17	18.14	17.16	16.22
San Jose-Sunnyvale-Santa Clara, CA	Metropolitan Statistical Area	21.04	16.50	16.33	15.25	14.13
San Luis Obispo-Paso Robles, CA	Metropolitan Statistical Area	n/a	75.26	75.88	71.21	70.04
Sandusky, OH	Metropolitan Statistical Area	100.00	62.89	70.29	76.21	72.99
Santa Ana-Anaheim-Irvine, CA	Metropolitan Division	18.41	16.68	16.10	14.22	14.65
Santa Barbara-Santa Maria-Goleta, CA	Metropolitan Statistical Area	42.07	45.70	40.98	37.87	28.30
Santa Cruz-Watsonville, CA	Metropolitan Statistical Area	n/a	52.14	49.15	48.03	44.55
Santa Fe, NM	Metropolitan Statistical Area	62.59	56.25	70.17	59.09	62.77
Santa Rosa-Petaluma, CA	Metropolitan Statistical Area	87.71	68.75	59.59	55.44	47.73
Savannah, GA	Metropolitan Statistical Area	42.99	51.03	65.88	68.34	74.25
Scranton--Wilkes-Barre, PA	Metropolitan Statistical Area	44.21	50.28	53.52	60.87	59.18
Seattle-Bellevue-Everett, WA	Metropolitan Division	41.05	46.13	44.68	40.95	36.72

Seattle-Tacoma-Bellevue, WA	Metropolitan Statistical Area	46.34	50.64	47.40	45.25	41.34
Sebastian-Vero Beach, FL	Metropolitan Statistical Area	100.00	100.00	100.00	100.00	100.00
Sheboygan, WI	Metropolitan Statistical Area	n/a	56.83	57.00	61.38	60.81
Sherman-Denison, TX	Metropolitan Statistical Area	100.00	100.00	100.00	100.00	100.00
Shreveport-Bossier City, LA	Metropolitan Statistical Area	49.78	64.93	71.95	75.70	82.47
Sioux City, IA-NE-SD	Metropolitan Statistical Area	53.07	69.86	70.52	77.45	72.78
Sioux Falls, SD	Metropolitan Statistical Area	47.21	60.60	67.89	61.04	63.15
South Bend-Mishawaka, IN-MI	Metropolitan Statistical Area	40.95	54.13	59.81	63.39	70.73
Spartanburg, SC	Metropolitan Statistical Area	84.32	89.32	91.42	99.28	99.35
Spokane, WA	Metropolitan Statistical Area	39.43	45.44	45.91	47.65	50.07
Springfield, IL	Metropolitan Statistical Area	43.28	54.74	56.65	69.38	73.36
Springfield, MA	Metropolitan Statistical Area	54.83	57.45	59.92	63.87	62.38
Springfield, MO	Metropolitan Statistical Area	59.66	81.46	78.49	83.50	83.42
Springfield, OH	Metropolitan Statistical Area	50.68	58.91	56.28	61.40	74.74
St. Cloud, MN	Metropolitan Statistical Area	n/a	77.32	71.48	76.14	79.60
St. George, UT	Metropolitan Statistical Area	n/a	n/a	68.17	84.76	90.59
St. Joseph, MO-KS	Metropolitan Statistical Area	47.97	54.60	62.56	65.24	71.22
St. Louis, MO-IL	Metropolitan Statistical Area	35.75	46.02	53.14	58.55	62.94
State College, PA	Metropolitan Statistical Area	n/a	47.76	57.21	51.61	61.17
Stockton, CA	Metropolitan Statistical Area	40.40	31.84	26.86	21.62	28.29
Sumter, SC	Metropolitan Statistical Area	89.79	100.00	100.00	100.00	100.00
Syracuse, NY	Metropolitan Statistical Area	47.39	52.45	58.31	62.71	64.46
Tacoma, WA	Metropolitan Division	65.02	65.77	57.33	60.27	56.82
Tallahassee, FL	Metropolitan Statistical Area	68.13	78.18	80.29	78.46	75.00
Tampa-St. Petersburg-Clearwater, FL	Metropolitan Statistical Area	48.95	47.34	49.56	50.33	52.47
Terre Haute, IN	Metropolitan Statistical Area	59.38	67.04	72.17	79.87	79.88
Texarkana, TX-Texarkana, AR	Metropolitan Statistical Area	72.05	90.52	91.44	92.14	96.13
Toledo, OH	Metropolitan Statistical Area	36.18	47.35	53.05	58.04	63.99
Topeka, KS	Metropolitan Statistical Area	55.00	61.25	66.83	72.24	71.80
Trenton-Ewing, NJ	Metropolitan Statistical Area	39.55	43.41	55.23	56.13	54.43
Tucson, AZ	Metropolitan Statistical Area	47.10	51.52	48.63	46.52	50.39
Tulsa, OK	Metropolitan Statistical Area	47.60	60.90	64.06	63.96	69.30
Tuscaloosa, AL	Metropolitan Statistical Area	60.40	82.79	84.31	80.25	81.55
Tyler, TX	Metropolitan Statistical Area	84.14	84.48	83.80	86.31	86.64
Utica-Rome, NY	Metropolitan Statistical Area	53.09	63.00	67.98	70.94	66.47
Valdosta, GA	Metropolitan Statistical Area	n/a	n/a	76.61	72.39	75.74
Vallejo-Fairfield, CA	Metropolitan Statistical Area	45.22	46.42	36.99	40.64	34.73
Victoria, TX	Metropolitan Statistical Area	64.21	70.03	73.21	50.02	48.19
Vineland-Millville-Bridgeton, NJ	Metropolitan Statistical Area	65.88	71.29	70.97	66.73	64.92
Virginia Beach-Norfolk-Newport News, VA-NC	Metropolitan Statistical Area	39.60	46.44	42.66	47.49	45.47
Visalia-Porterville, CA	Metropolitan Statistical Area	77.81	66.48	52.51	47.74	48.38
Waco, TX	Metropolitan Statistical Area	64.37	77.78	79.80	72.59	78.66
Warner Robins, GA	Metropolitan Statistical Area	88.76	81.16	94.65	100.00	100.00
Warren-Troy-Farmington Hills, MI	Metropolitan Division	42.15	50.80	54.26	60.93	62.37
Washington-Arlington-Alexandria, DC-VA-MD-WV	Metropolitan Division	26.28	37.04	41.08	41.54	39.48
Washington-Arlington-Alexandria, DC-VA-MD-WV	Metropolitan Statistical Area	27.03	39.08	41.77	41.58	38.86
Waterloo-Cedar Falls, IA	Metropolitan Statistical Area	50.47	52.79	68.38	68.66	70.05
Wausau, WI	Metropolitan Statistical Area	73.42	78.56	80.10	81.51	82.74
Weirton-Steubenville, WV-OH	Metropolitan Statistical Area	71.55	77.23	83.17	87.15	89.06
Wenatchee-East Wenatchee, WA	Metropolitan Statistical Area	n/a	n/a	86.10	80.68	61.21
West Palm Beach-Boca Raton-Boynton Beach, FL	Metropolitan Division	62.28	54.17	54.00	46.70	44.60
Wheeling, WV-OH	Metropolitan Statistical Area	70.97	80.61	82.23	90.14	92.92
Wichita Falls, TX	Metropolitan Statistical Area	75.11	83.52	88.21	89.27	88.58
Wichita, KS	Metropolitan Statistical Area	41.41	58.02	60.74	65.24	68.77
Williamsport, PA	Metropolitan Statistical Area	n/a	63.98	70.58	75.73	74.86
Wilmington, DE-MD-NJ	Metropolitan Division	50.08	59.62	61.20	64.40	66.66
Wilmington, NC	Metropolitan Statistical Area	72.39	84.22	90.53	92.38	91.32
Winchester, VA-WV	Metropolitan Statistical Area	n/a	n/a	72.46	78.31	82.58
Winston-Salem, NC	Metropolitan Statistical Area	79.89	89.02	92.46	94.19	93.57
Worcester, MA	Metropolitan Statistical Area	60.07	68.13	71.72	74.58	71.09
Yakima, WA	Metropolitan Statistical Area	n/a	62.25	65.46	67.48	67.06
York-Hanover, PA	Metropolitan Statistical Area	62.13	72.03	75.52	77.01	79.32

Youngstown-Warren-Boardman, OH-PA	Metropolitan Statistical Area	54.62	63.73	68.13	74.25	83.70
Yuba City, CA	Metropolitan Statistical Area	n/a	66.78	62.77	62.48	58.55
Yuma, AZ	Metropolitan Statistical Area	n/a	61.53	53.42	60.53	55.18