

The Changing Shape of American Cities

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About this Report

This report describes demographic changes that have taken place in U.S. metropolitan areas since 1990 by looking at the spatial distribution of residents by income, education, age, etc. relative to the center of the city.

The Demographics Research Group

The Demographics Research Group produces the official annual population estimates for Virginia and its localities; conducts practical and policy-oriented analysis of census and demographic survey data under contract; and communicates rigorous research and its policy implications to the general public, as well as to clients including state and local governments, employers, and non-profit organizations through meaningful, intuitive publications and presentations.

About the Author

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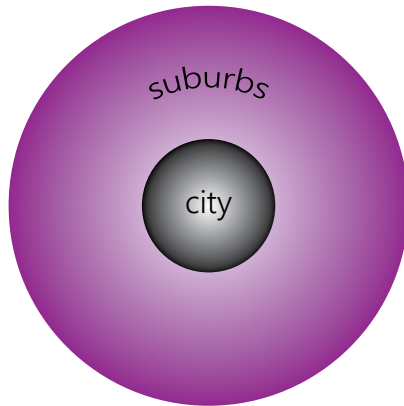
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Ring Around the City

The old donut

Metropolitan areas in the United States have changed significantly since the 1990's, making the widely-held conceptual model of cities increasingly inaccurate. That model has been called "the donut" and looks something like this:



In the original donut model, a ring of thriving suburbs surrounds a decaying city center. The suburban ring is growing and residents are wealthy, educated, and safe; the city center is poor, minority-dominated, crime-ridden, and increasingly being abandoned.

Many more cities in the United States resemble the "old donut" model than cities elsewhere in the developed world, possibly due to a uniquely American combination of the post-WWII economic boom, mass automobile ownership, racial strife, and government policy. By the late 20th-century, remnants of upper-class city life still existed in the largest metropolitan areas — like New York and Boston — but in most cities "urban" had become synonymous with "poor."

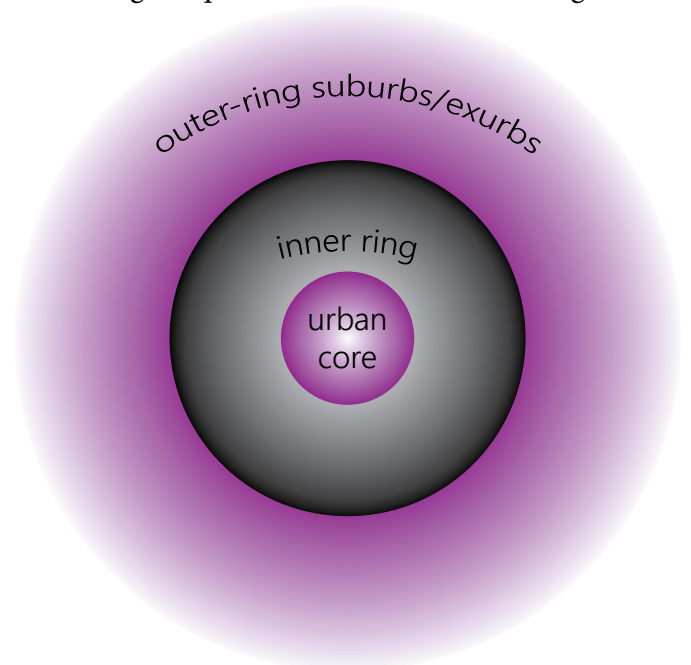
The new donut

Today, observers suggest that American cities are evolving into what researcher Aaron Renn calls "the new donut."¹ Across the country, anecdotal evidence supports a widespread resurgence of historic downtowns and urban neighborhoods, often driven by an influx of educated 20-somethings. Renewed interest and rising demand in these areas has the potential to drive up prices, bring new opportunities, and create conflict in neighborhoods abandoned by middle-class residents in the 1950s and 60s.

Meanwhile, many neighborhoods in the earliest ring of suburbs that were once the domain of middle-class professionals and their families now attract lower-income residents. This could be the result of aging housing stock, greater access to assistance for low-income families on the open housing market, or increasing pressure on renters in central urban neighborhoods. Poor families may be finding that an older single-family house with a yard in a suburban school division can be cheaper than an urban apartment in a rapidly gentrifying neighborhood.

Beyond the inner ring, new waves of development, accounting for most population growth, have continued to expand into the countryside, attracting the same middle-class residents who once populated the inner ring. These outer suburbs, however, demand longer commute times and are much less attractive to younger workers. Wealthy residents are also looking beyond the outermost suburban developments for rural seclusion with an urban paycheck.

While plenty of stories have been told about individual cities and neighborhoods, there has been little data to back them up. Are these stories just the result of individual revitalization programs taken up by city governments or non-profits? Or are they part of a larger shift? This report suggests the latter. Far from being unique to a few cities, these changes are



happening across the United States.

It is important to understand that the “new donut” is a theory about *desirability*, not *population*. Desirable places attract higher-income residents, who in turn bid up prices and attract investment. Where demand is lowest, lower-income residents move to get more bang for their buck. So a city’s “donut” is best observed by looking at income and educational attainment of residents, not change in population. Desirability may eventually translate into population growth depending on the political and economic constraints on building additional housing units, but the two are not equivalent. Most central cities have seen significant population increases since the recession, but those changes are easily dwarfed by increases in newer outer suburbs.²

The donut narrative portrays the city as a central node of activity surrounded by concentric rings of development. The further out one travels, the newer and less dense the development. While this is not a perfect model, there is something to it. New expansion tends to happen at the outermost edges. Over time, the growth of the city can be traced out from the center in rings even though, in every metropolitan area, the pattern is broken up by historical choices that create more and less desirable sides of town. The conceptual symmetry of the rings is further distorted by geographic features, secondary urban cores, major institutions (e.g. universities), highway and transit placement, and other factors. Proximity to the center, however, is a concept worth studying. It is easy to measure and almost always correlated with “urban” vs “suburban” neighborhood characteristics.

This study looks at levels of education, income, poverty, and other characteristics as one travels from the center of downtown to the periphery of the metropolitan area. Aggregating data from all neighborhoods at a given distance from the center exposes patterns that are obscured by the patchwork of developments with particular histories and attributes.

Data comes from the 50 largest metropolitan areas in the country and select cities from the 51-100 largest metropolitan areas.³ Each variable is graphed using 1990 census data and 2008-2012 American Community Survey 5-year data for comparison.⁴

Summary of findings

- Since 1990, downtowns and central neighborhoods in cities across the country have attracted significantly more educated and higher-income residents.
- Young adults (22-34 years old) have increased as a proportion of residents in the center of nearly every city in the country, while falling as a proportion across all other areas.
- Older residents (ages 60 and up) form a smaller proportion of the inner-city population than they did in 1990.
- In most cities, a decrease in income and education levels from 1990 to 2012 is evident several miles outside the core. How far outside depends on the city, with the sharpest drop being anywhere from 4 to 15 miles from the center.
- Households below the federal poverty line are migrating outwards from city centers. The poverty rate has increased significantly several miles outside the core in many cities.
- Racial groups are less concentrated in particular rings than they once were.
- Most growth in housing units and population continues to come at the outer edges of cities. Residents of the outer ring tend to be more educated and have higher incomes. They are much less likely to be younger adults, however.

Understanding the Data

In this study, characteristics of cities are graphed based on distance from the center of the city. The example at the right shows block groups (the lowest level at which much of the data is available) in Boston, MA colored by their distance from the center of the city.⁵ The corresponding graph below shows population density in 2012, with the highest densities 0-5 miles from the core and lowest densities 20 or more miles outside the city. For more information on data and methods, see the endnotes.⁶

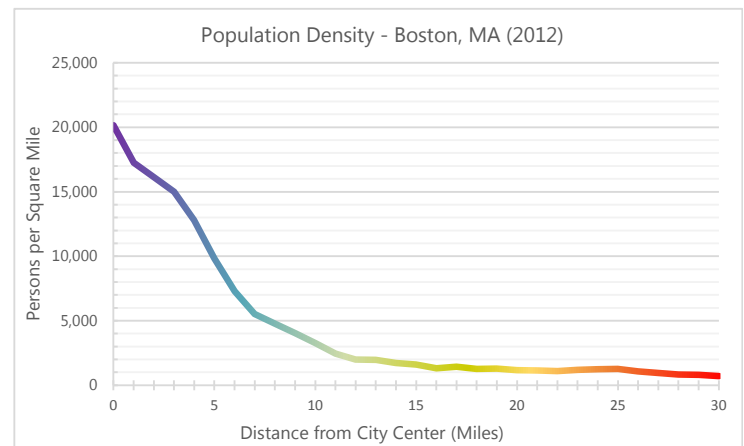
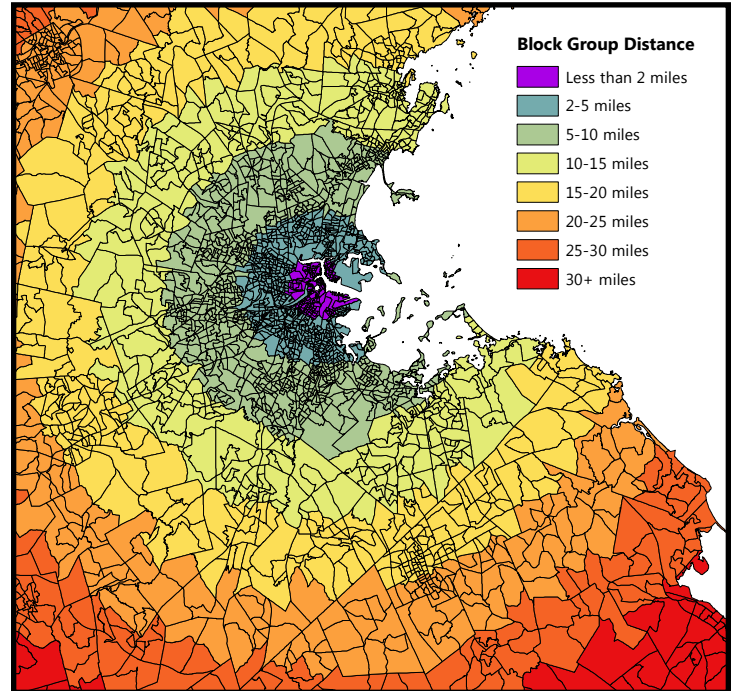
What's the "city center?"

"City center" in these graphs means the intuitive center - what a resident would point to as the core of the city. The zero-point on the graph includes data from a 1.5-mile radius around the center point, so the point's precise location is not crucial.

City center was determined by the following guidelines:

- Placement was in the city's downtown or central business district, indicated by the presence of interconnected streets, the densest development in the region, and the tallest buildings in the region.
- If available, a distinguishing feature of a city was used to mark the center. This included central plazas, state capitols, city halls, large monuments, or central parks around which the rest of the city was clearly oriented.
- Where there was no clearly demarcated center, the intersection of dominant commercial streets was also used.

Graphing the data



The Core

What is it?

The “urban core” refers to the heart of a city, including its central business district and the adjacent neighborhoods. The urban core tends to be the oldest and most densely populated part of the metropolitan area.



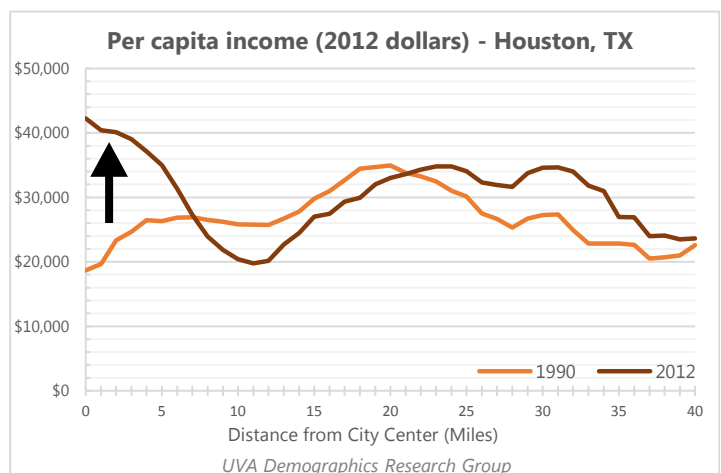
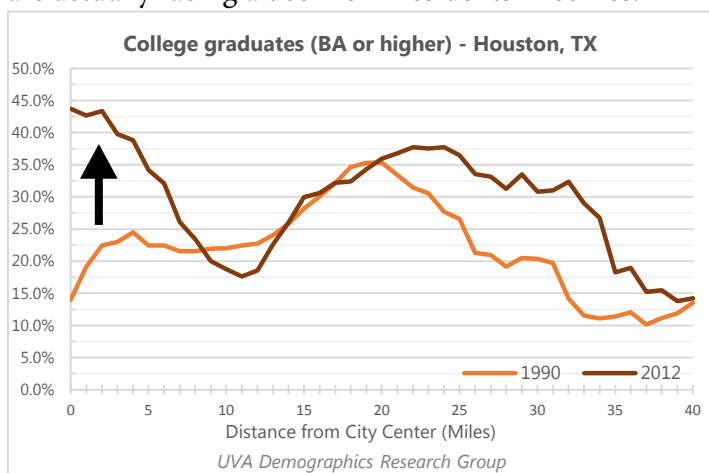
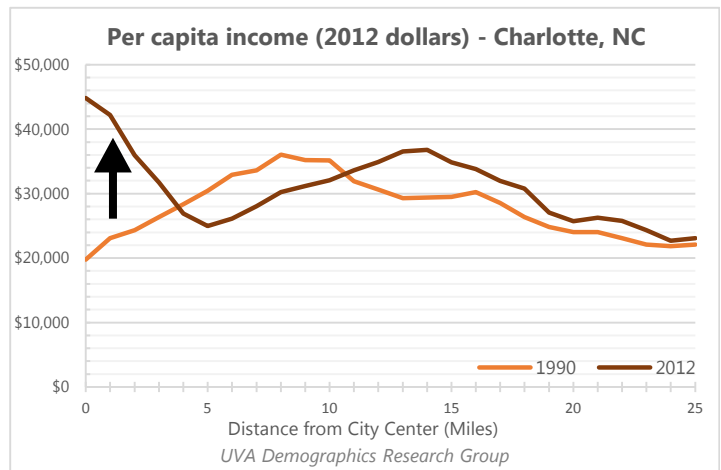
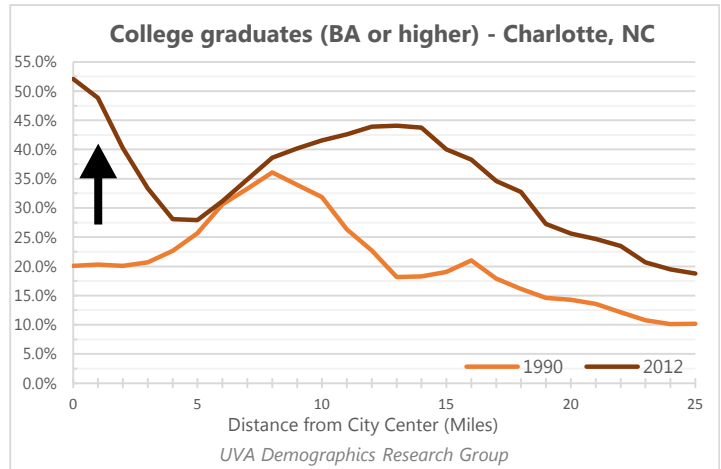
The dramatic increase in education and income levels in Charlotte and Houston stretches for several miles outside the downtown areas.

Recovery and revitalization

In 1990, the center of most cities in the United States was also the poorest, with the lowest levels of educational attainment. Two cities are excellent examples of this phenomenon: Charlotte, NC⁷ and Houston, TX. Both are booming Southeastern cities with relatively symmetrical shapes and few political constraints that might distort the pattern of development. The “old donut” shape can be seen clearly in the graph (right) of bachelor’s degree holders in Charlotte. In 1990, Charlotte had low levels of education in the center, high levels in the suburbs, and low in the surrounding rural areas.

The line representing 2012 on the graph looks quite different. The percentage of adults over the age of 25 who had earned a 4-year college degree rose from 20% in 1990 to 52% in 2012. Inflation-adjusted per-capita income more than doubled over the same period: from less than \$20,000 to almost \$45,000.

Houston (below) follows a similar story. Note that the percentage of adults with 4-year degrees has risen nationwide, while real wages have not. Thus areas that appear to have a stable percentage of college graduates are actually facing a decline in residents’ incomes.

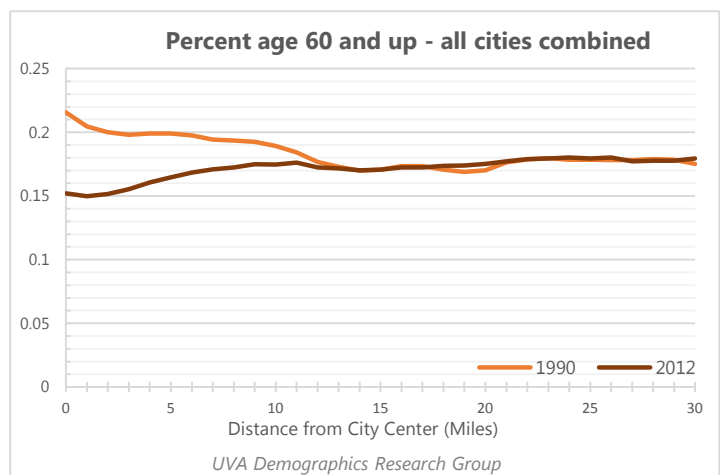
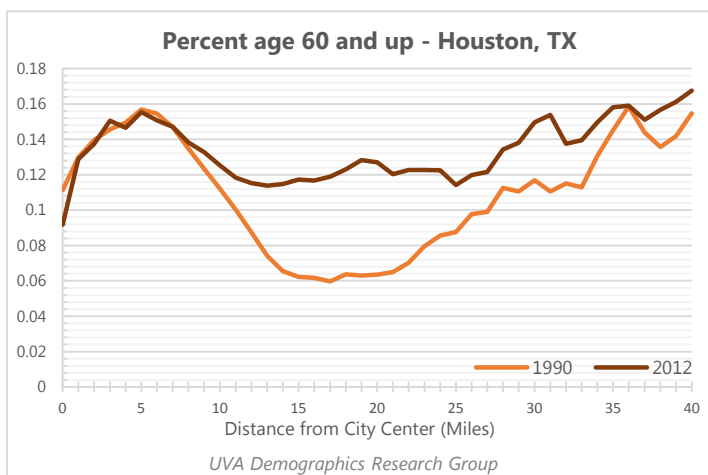
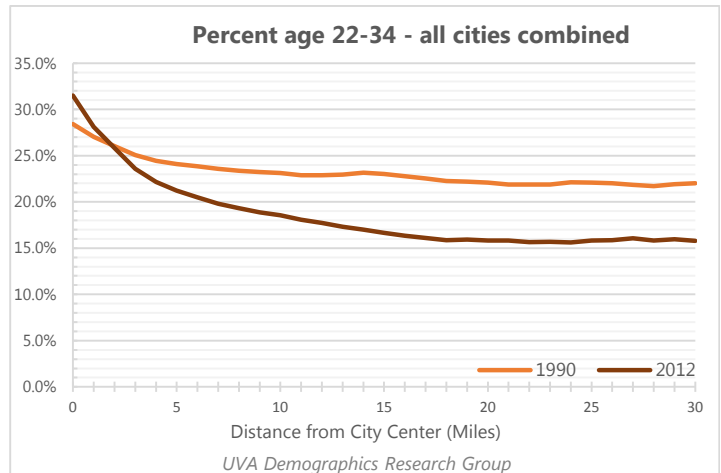
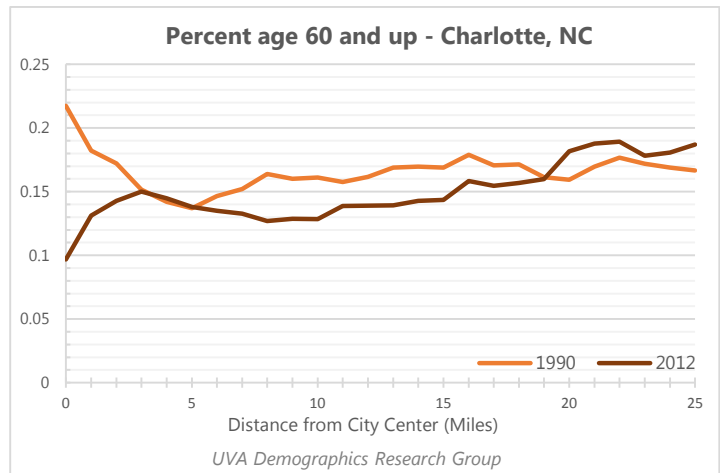
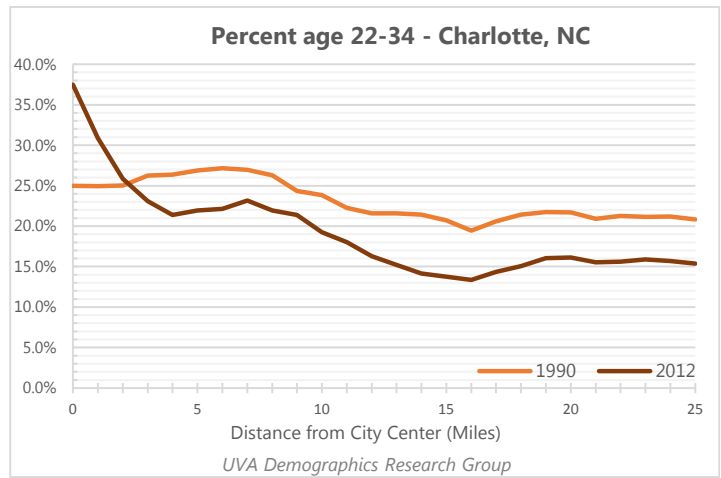


The youth invasion

In nearly every city in the country, downtowns have begun to attract disproportionately those who are just starting out in their careers but have not yet reached middle age. One researcher calls this “youthification.”⁸ While some cities, like New York, had a higher proportion of young adults living in the center of the city in 1990, most had a relatively even age distribution, with young adults making up 22-25% of the population at any distance from the center. By 2012, even though 22-34 year-olds were a much smaller proportion of the population as a whole (10-15% in the outer suburbs), they still made up 25-40% or more of the population within 2 miles of most cities’ centers.

If young adults are increasing or staying steady as a proportion of the population, which demographic group is becoming less likely to live in the core? There are slight decreases in several groups depending on the city; however, in most cities, the most noticeable decline from 1990 to 2012 is in elderly residents. The graphs at the right show the percentage of residents age 60 and up. In 1990, they were less likely than in 2012 to be found in the suburbs, which were populated by young families and new homebuyers. Today, seniors make up a much smaller percentage of the population in urban core areas.

City centers have proportionally more young adults and fewer seniors than they did in 1990. Charlotte illustrates this pattern, but it is also visible when data is combined from all cities in the study. Below, Houston’s graph of residents age 60 and up shows a common phenomenon for late 20th-century boom towns. In 1990, the suburbs were dominated by young professionals and families in need of new homes. Today, the suburban ring is much older.



The Inner Ring

What is the “inner ring?”

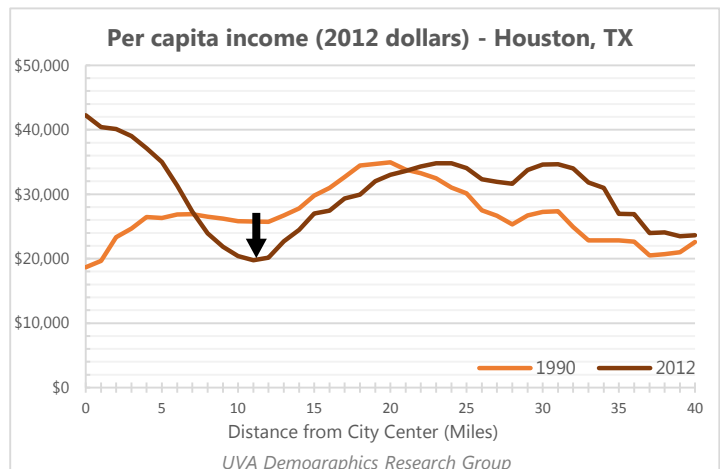
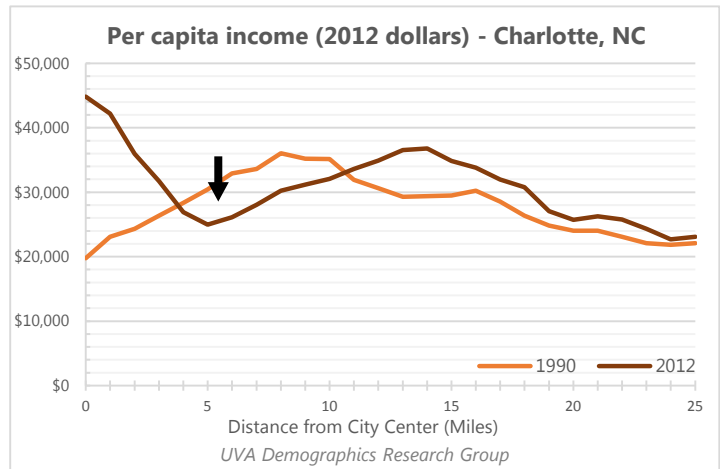
“Inner-ring suburbs” are the first and oldest belt of suburban neighborhoods surrounding the core. They vary significantly, from pre-WWII streetcar suburbs to post-WWII Levitttown-style developments, parking-heavy townhomes, and ranch houses on cul-de-sacs. Some of these neighborhoods and towns once served as a landing pad for professionals and their families in the era of white flight, but today they are increasingly diverse, with a higher concentration of poverty than in the past.

The shift does not always have a racial element and is taking place even in cities which lack a large minority population. However, in many cities the history of segregation and correlation of poverty and race have made race the most visible sign of change. In the last year, Ferguson, MO came to prominence as an extreme example of an inner-ring suburb. Ferguson was built in the post-WWII era for residents moving out of St. Louis and was over 98% white for most of its early history. The city is made up of small single-family houses and strip malls. In recent years, the city’s poverty rate has skyrocketed. Large numbers of African-American families have moved into a city that still possesses a mostly-white police force and city government. While most inner-ring suburbs’ stories are not as dramatic as Ferguson’s, the shift is taking place in inner-ring suburbs across the country.⁹

How far out is the inner ring?

The size of the core and the surrounding rings varies based on the size of the metropolitan area and its relative density. For the country’s 50 largest metropolitan areas, the “nadir,” or place where income declines the most, ranges from 4 to 15 miles from the city center. In most cities, it sits between 7 and 10 miles out.

Among the 50 largest metropolitan areas in the country, 42 have urban centers that show a clear “new donut” pattern of change - rising income in the center, falling or stagnant in the inner ring, and rising again at the periphery. These cities have an average **increase** in per capita income of **\$11,063** in the core and an



The “nadir” or “lowest point” in the income graphs has moved outward. In 1990, most cities’ poorest point was the center. Today, it is 6 miles out in Charlotte and 11 miles out in Houston.

average **decrease** in per capita income of **-\$2,995** at the nadir (lowest point) of the inner ring.

Decreasing demand does not mean fewer people

The indicators that some may see as “decline” — falling property values, rising poverty rates, and decreased incomes — do not necessarily mean that the population of these areas is decreasing. In fact, the opposite is often true. Demand may be lower, but population may increase anyway if the lower-income residents moving in have larger household sizes or if local leaders decide to allow for higher densities.

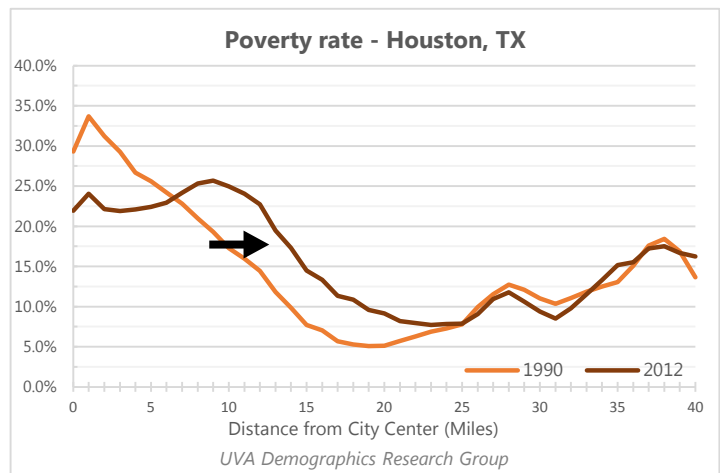
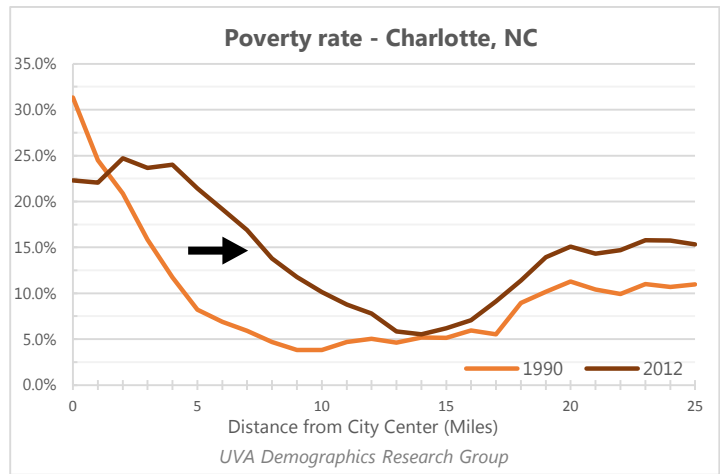
Poverty rate

While changes in poverty are neither as consistent nor prominent across cities as changes in education and age, in most cities there are signs of an outward movement of poverty from the center to the inner ring.

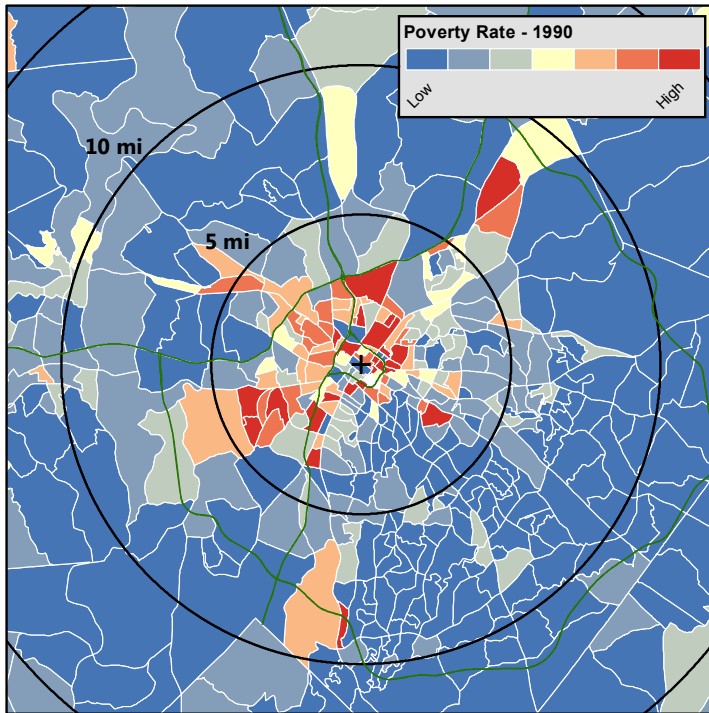
Charlotte, NC illustrates this change. At right is the graph of the poverty rate in Charlotte. The maps at the bottom show the spread of poverty from the downtown area to the surrounding suburbs.

Cities with little or no population growth over the last two decades and little movement of wealthier residents are most likely to still have a high concentration of poverty in the center. Cities with significant population growth are likely to have the most evident outward movement of poverty.

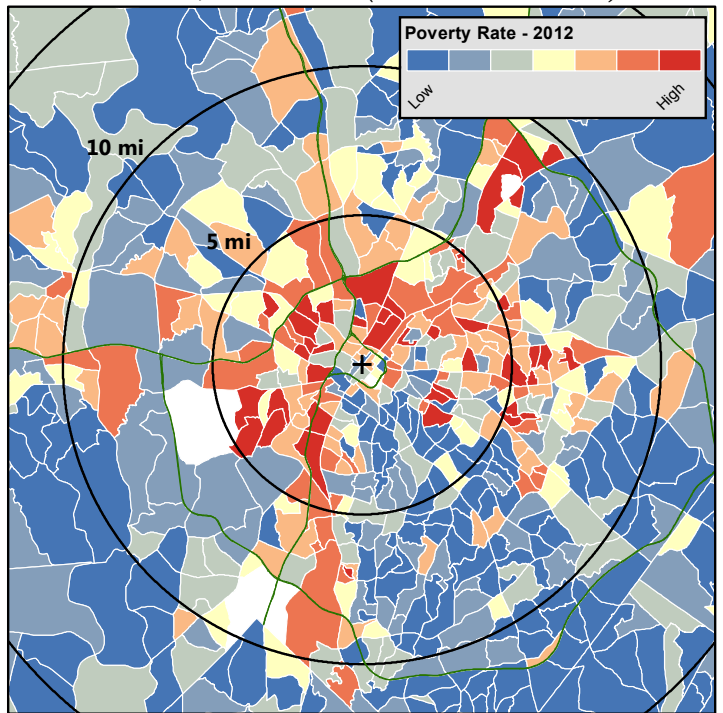
While poverty rates have risen significantly in the inner ring, they have not decreased as dramatically in the center as might be expected. Instead, it appears in most cities that overall poverty rates have risen, and that the rise has been concentrated in the inner ring.¹⁰



Charlotte, NC in 1990



Charlotte, NC in 2012 (scales are the same)



The Periphery

The outer ring

Beyond the inner ring, development has continued at a steady rate, expanding the footprint of most metropolitan areas. The outer ring is primarily made up of newer suburbs, built within the last several decades. Some may be stereotypical auto-oriented “suburban sprawl” while others have tried to become new nodes that provide a walkable urban experience in the suburbs. But all feature larger homes, bigger shopping centers, and better infrastructure than their older counterparts in the inner ring.

The outer ring attracts more educated, higher-income households, many of whom are older adults and families. Young adults, on the other hand, are scarcer than they once were. They are less likely to be found in the outer ring than in any other zone.

New development in the outer ring and densification of parts of the inner ring account for most of the raw population growth of cities across the country. The reasons for this are simple.

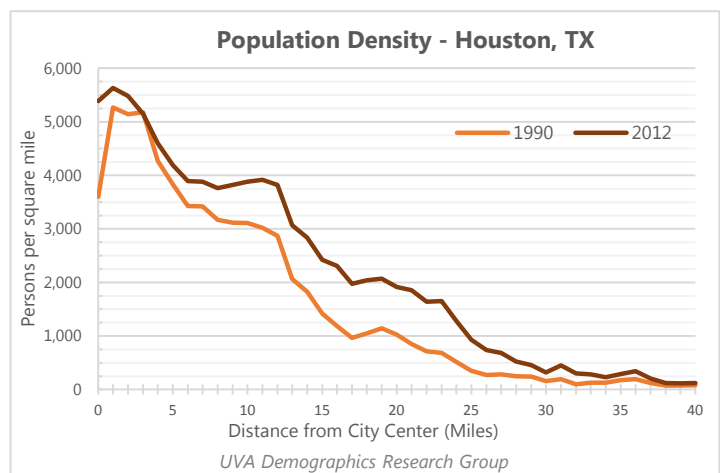
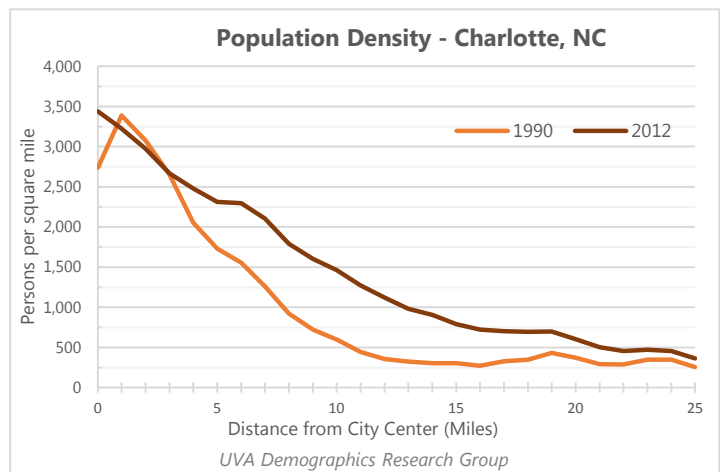
High demand in the core is more difficult to translate into new housing units. In cities with difficult development regulations and already-high densities, such as San Francisco and New York City, prices may skyrocket as new units come online slowly. New development also often replaces older units. In other cities, like Dallas and Houston, which had lower population densities to begin with and few development restrictions, the number of housing units in the core has doubled or even tripled. Higher-income urban residents often have smaller household sizes, however, blunting some of this impact.

Even in a downtown where the number of housing units has doubled, the number of units added in a small area is easily dwarfed by the geographic size of rural areas where housing units are increasing five- or ten-fold. In Manhattan, where new units have been packed in wherever they can fit, the proportional increase is still small thanks to the existing density. And even in a place like Charlotte, with a relatively pro-growth regime and lower densities, navigating the political pitfalls to build new units in existing



neighborhoods is still more difficult than developing a green field.

Population change in the inner ring is not as easy to explain from looking at these graphs. While the worst inner-ring suburbs are suffering from low demand, population density still increases slightly due to larger household sizes. This can be seen at the nadir (lowest point) of the income graph, where very few new housing units are being built. However, development is easier due to low land costs and lower original densities. Additionally, the aggregation of all neighborhoods into one point on the graph means there are still desirable neighborhoods lumped in at each point, which obscures population trends.



Increasing demand does not mean more people

It is also important to note that the amount of land in each ring increases as one moves farther from the center. So while population density is very high at the center of the city, there are actually more people at mile 5 or 10 than at mile 1. The net population tends to reach its peak around the nadir of the inner ring, which carries much of the bulk of the population. Changes in education or income at different points on the graph are affecting very different numbers of people, as can be seen in the graph of net population for Charlotte at the right.

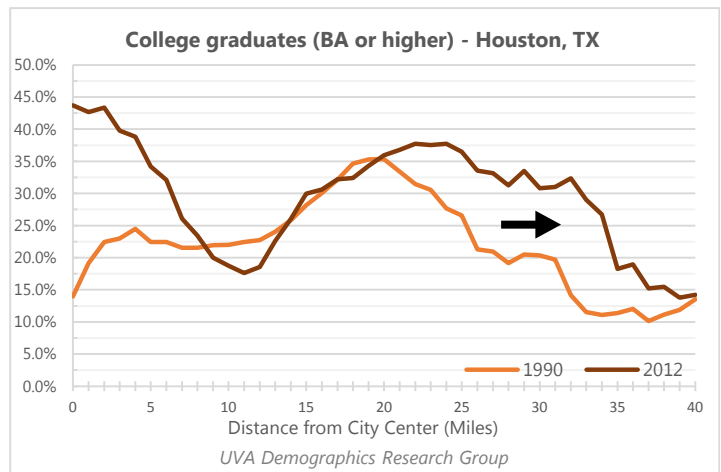
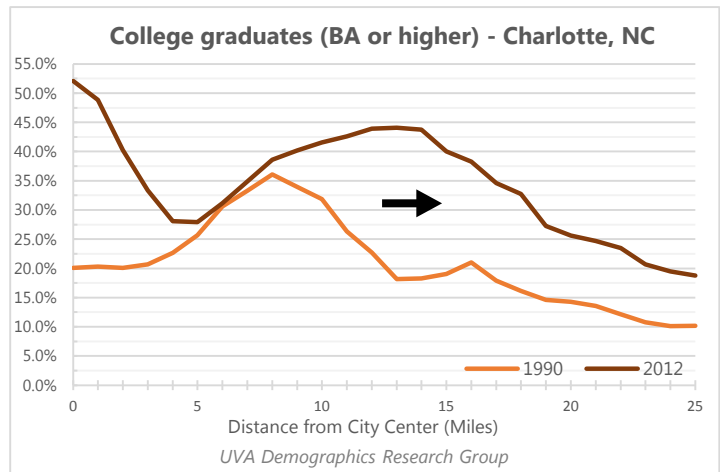
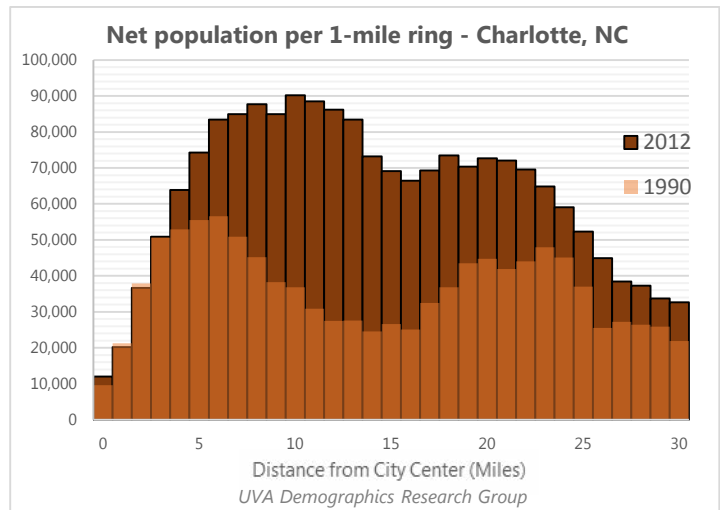
It may baffle readers to find that population has risen so little even as demand (and with it, price) has risen rapidly. Economic historian Robert Bruegmann explains:

“Many smart growth activists believe that as people return to the city in greater numbers, this movement of people will create population gains and an increased density that will reduce the pressure for outward expansion. Increasingly, however, as affluent citizens have moved to the center, they are doing just what their counterparts have long done in the suburbs. They have found that they can use zoning ordinances, historic preservation measures, environmental regulations, and other means to resist continued change, to control the appearance and character of their neighborhoods, and to stop densities from rising. In city after city, the old zoning codes have been downzoned time and again to reduce the ultimate possible population and prevent existing densities from rising.”¹¹

Exurbs

Beyond the growth of new developments, the outer ring bleeds into “exurbs,” which appear essentially rural. These are areas on the fringe that have had little large-scale construction, but which have the same demographic traits as the outer ring. Here, on hobby farms and in satellite towns, urban professionals can enjoy a rural environment with an urban job if they are willing to make the drive or telecommute.

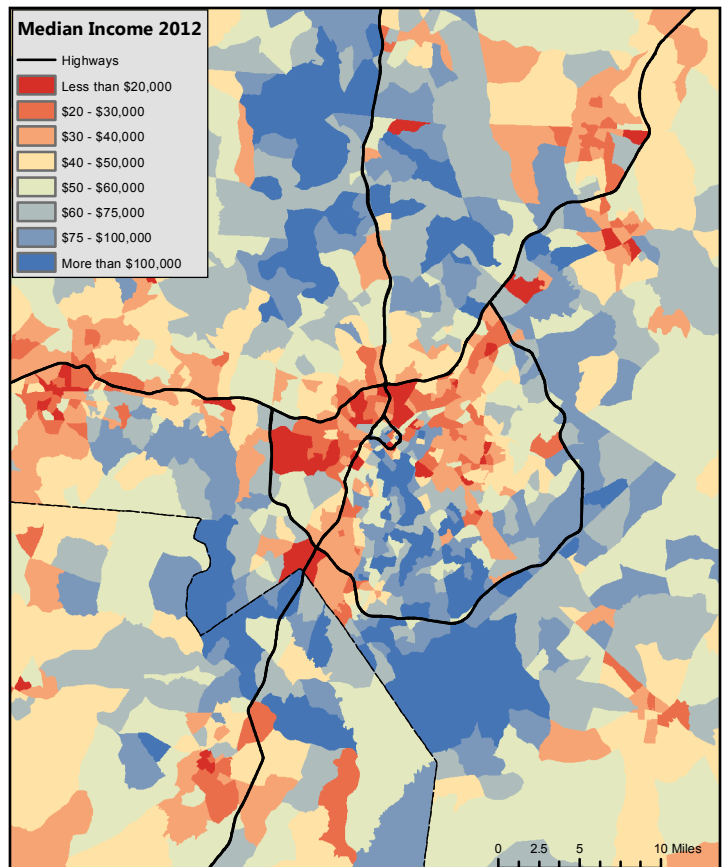
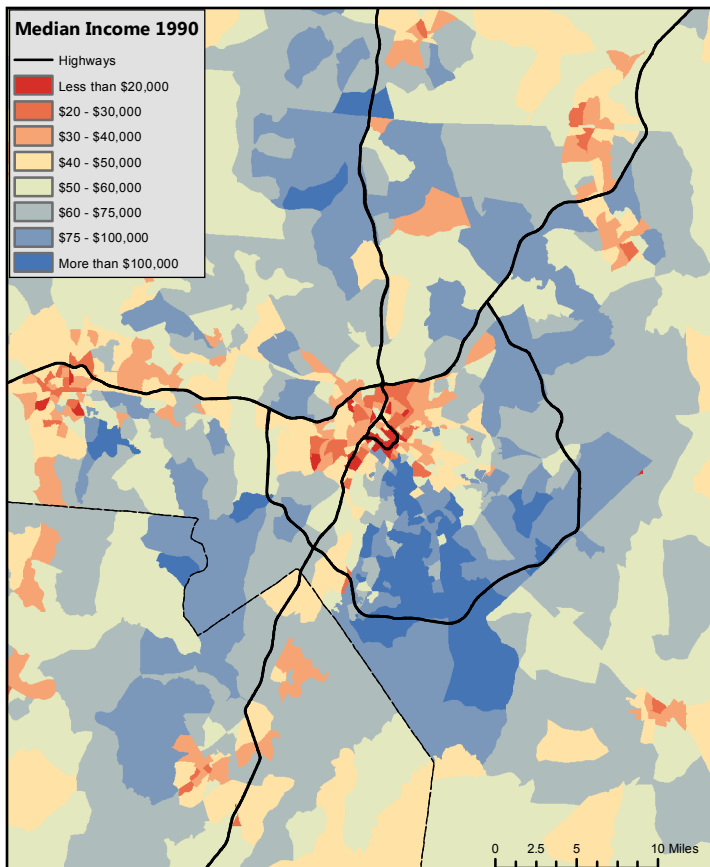
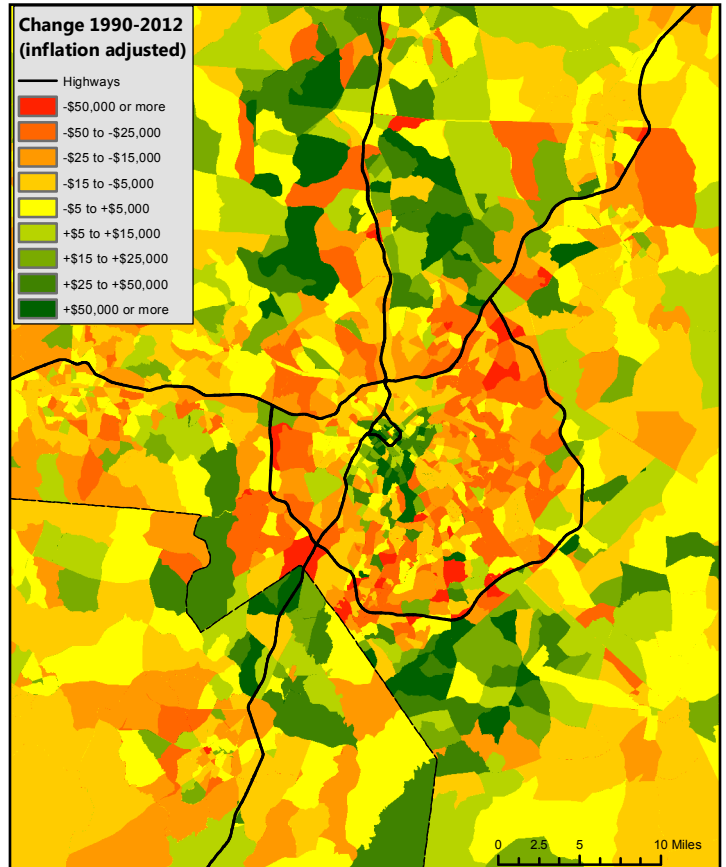
Exurbs are visible on the graphs as areas where the education and income levels are still high despite population density falling off to rural levels (less than a couple hundred people per square mile).¹²



Major gains in education levels at the periphery show the expanding reach of the metropolitan area. True rural areas will almost always have fewer high-paying professional jobs requiring extensive education. In 1990, most homes 35 miles from downtown Houston were probably occupied by residents who were part of rural economies outside of Houston’s reach. Today, the data suggests that this zone is dominated by exurbanites who probably work in the greater Houston area or have retired and moved just outside it. They are likely to commute longer to jobs in the city and are likely to have higher incomes than longstanding rural families.

Mapping the Rings

Line graphs show trends that may not be obvious on a patchwork map. But the rings can still be seen in many cities. Geographer William Rankin concluded from looking at income maps that the new donut was visible in older large cities, but that newer cities tended to have a “wedge” of wealth.¹³ This is true in many cities, including Charlotte as seen in the maps below. Yet while Charlotte has a wedge of high-income areas on the south side of the city, the “new donut” rings become immediately visible when one maps the *change* in median income (right). Even the high-income neighborhoods of the wedge are vulnerable to the inner-ring effect.



A National Phenomenon

A national phenomenon

While there is, no doubt, a concerted effort by cities across the country to revitalize downtowns, there is a larger movement at work that cannot be explained adequately by the actions of one proactive mayor or city council. Instead, these revitalization efforts appear to be catching a larger wave that is making central cities more attractive.

Why is this happening?

Something in the milieu of factors that caused central cities to go into decline has changed in the last two decades. Isolating explanations from this data set is impossible, but there is no shortage of speculation. Here are just a few popular narratives about why central cities are attracting more interest, and poverty is moving outward:

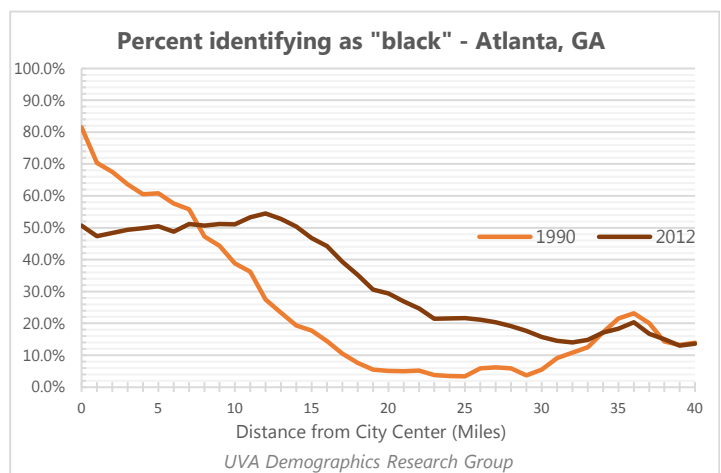
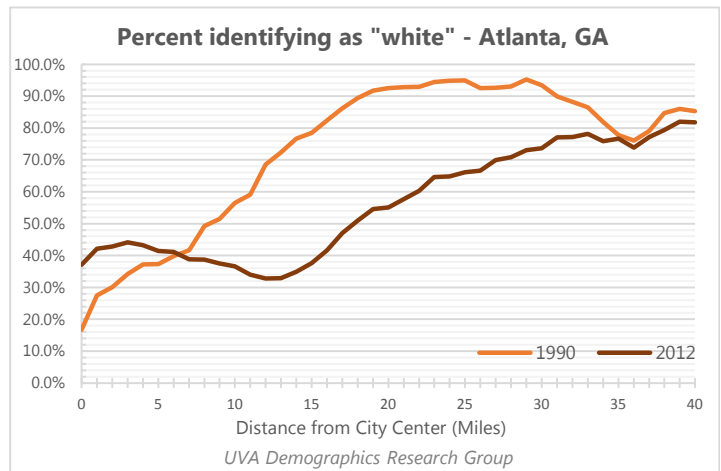
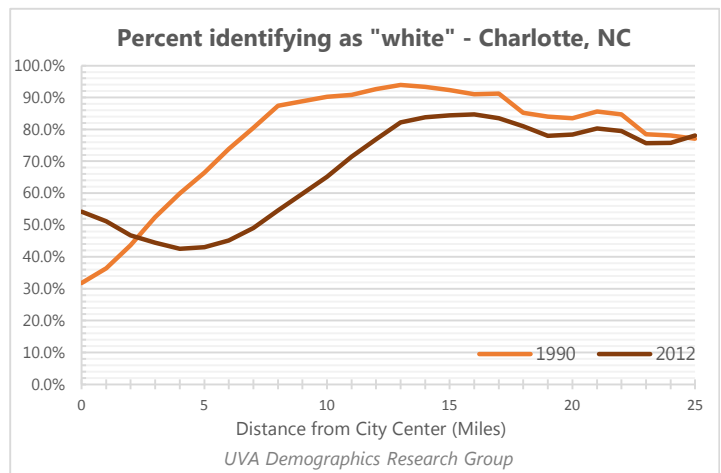
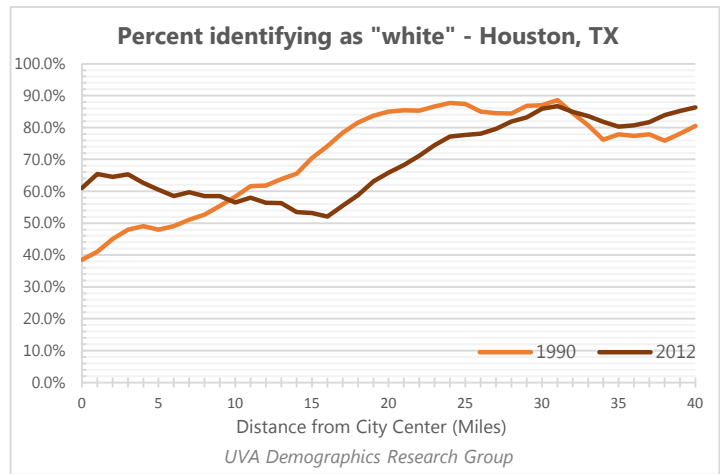
- Housing size and age is crucial to the socio-economic class of an area. New homebuyers tend to have higher incomes. As they purchase newer, larger homes, their older homes are resold to successively lower-income buyers. At some point, homes become so cheap that they are demolished and replaced by new homes, at which point the cycle may repeat itself, though the best homes are always retained for historic value. As older central areas reached the bottom of the income pile, they became a mixture of historic mansions and new redevelopments, launching them back to the top.¹⁴
- The movement away from public housing projects and towards providing Section 8 vouchers decreased the concentration of poverty in inner-city ghettos and allowed low-income families to move into better neighborhoods further out. Regulatory changes in the 1990's allowed recipients to use their vouchers in neighboring municipalities, not just in the jurisdiction where they were issued. Additionally, car ownership has become more attainable and widespread in the lowest income brackets, opening up parts of metropolitan areas that were formerly inaccessible to the poor.¹⁵
- Crime in cities has decreased dramatically since its peak in the late 1970's. From 1993 to 2012, violent crime (homicide, robbery, rape, and aggravated assault) fell by 48% across the country and 71% in New York City alone. Whatever other positives or negatives urban life may have presented in 1990, it was still considered unsafe by upper middle-class Americans. This viewpoint appears to have changed, and groups that may have been deterred by concerns about safety are now moving into urban neighborhoods.¹⁶
- Americans, especially in the millennial generation, are increasingly interested in walkable neighborhoods, most of which exist in central cities built before the advent of current engineering standards and automobile-oriented design. Walkability carries a high premium today in real estate development, something that was not nearly as true two decades ago. Because millennials are delaying marriage and childbirth much longer than previous generations, concerns like having a large backyard or finding a good school system are less important to them.¹⁷
- America's donut pattern is a historical and global anomaly that is largely the result of our country's history of racial segregation, urban renewal, and public housing policy. The most central land in an urban area ought to be the most desirable, and it is the most desirable in cities worldwide. What is happening now is perhaps a slow self-correction of the white flight of the 1950s – 70s.¹⁸
- The subprime mortgage crisis and ensuing credit crunch, combined with high student loan debt and a stagnant economy have made it difficult for buyers to get loans for homes, keeping many in rental situations in large cities.¹⁹

All of these explanations have reasons to recommend themselves and reasons to warrant skepticism, but evaluating them is beyond the scope of this report.

What about race?

Race remains a factor commonly associated with gentrification, class conflict, and neighborhood choice. It is commonly believed that the “white flight” of the desegregation era played a role in creating the old donut shape, though the extent of its influence is difficult to pin down. In 1990, most cities’ downtowns were the place where white residents were least likely to be found, with their numbers steadily rising towards the suburban ring.

Today, this nearly universal pattern has faded significantly. Changes in race are certainly correlated with changes in income and education (the correlation is very strong in Charlotte), but in most cities it does not follow them strictly. Instead, there appears to be a gradual fading of the sharp distinction visible in the 1990 graphs of race in most cities. Today, all racial groups are less likely to dominate a particular ring. This doesn’t necessarily mean that individual neighborhoods are becoming more diverse, but it does mean that a person’s race is a less accurate predictor of whether he or she lives in an “urban” or “suburban” neighborhood.

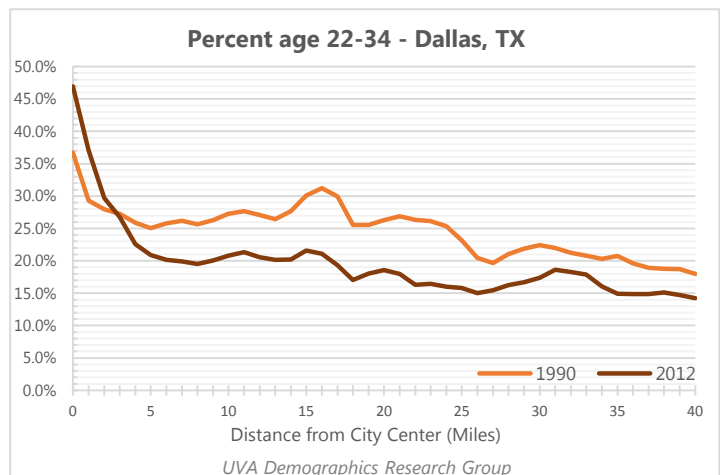
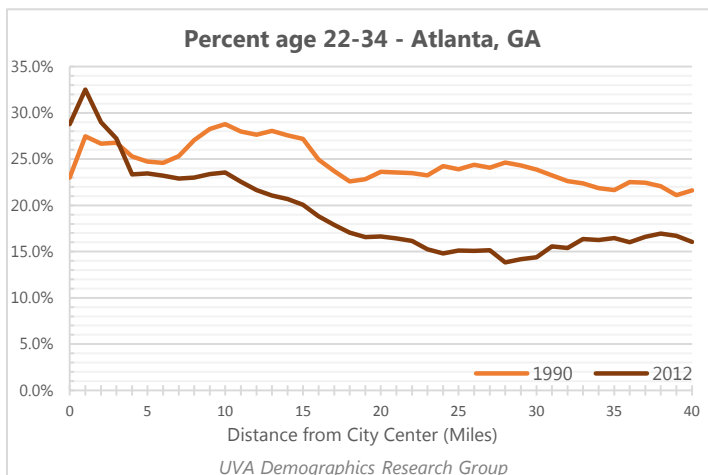
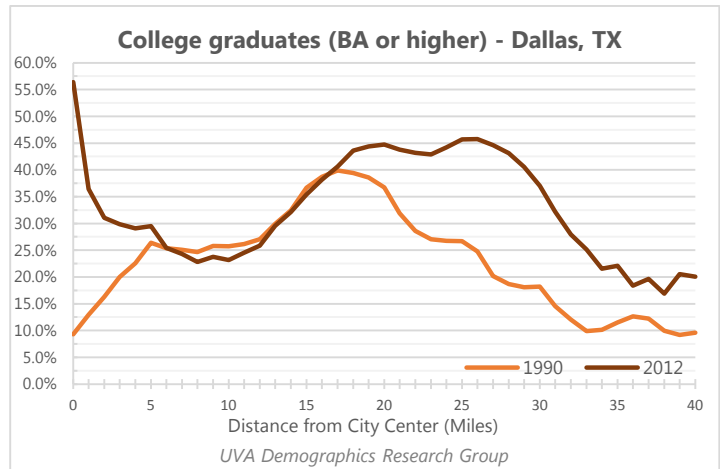
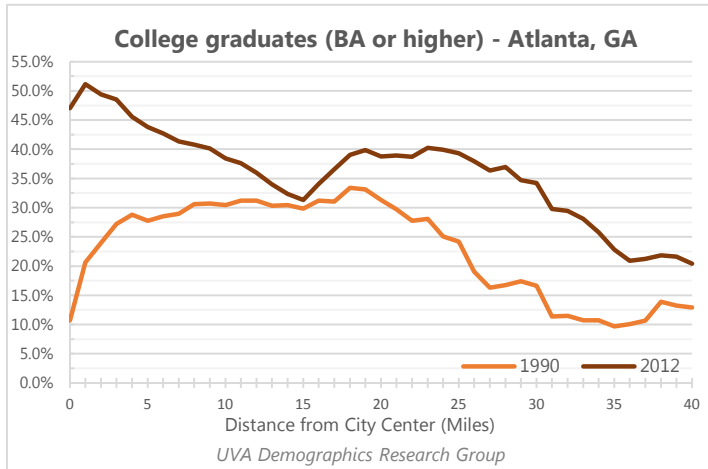
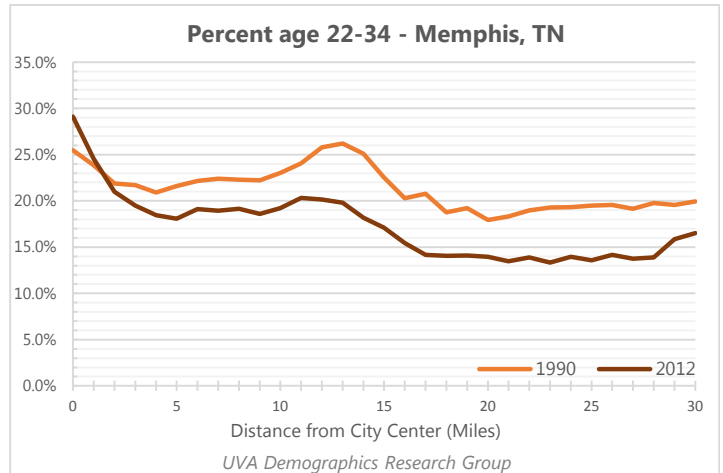
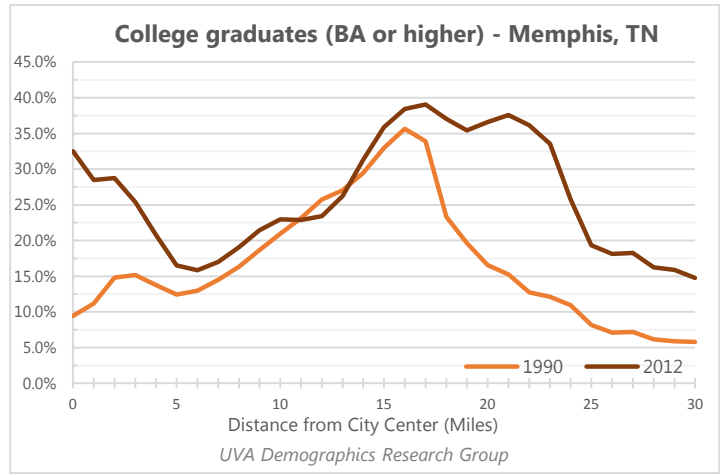


Regional variation and more examples

While the new donut shift is a national phenomenon, the changes are starkest in Southeastern cities. This may be connected to greater racial diversity and historical problems with segregation, or it may be because Southern cities have been growing faster than cities in other parts of the country over the past two decades. Southern cities are also more likely than cities in other parts of the country to be large and evenly distributed, with few major geographic or political barriers to distort their shapes, making them more likely to develop in concentric rings and thus show patterns on these graphs.

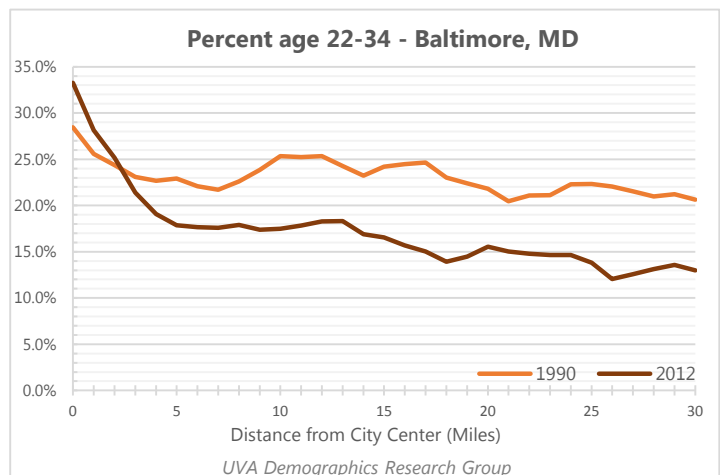
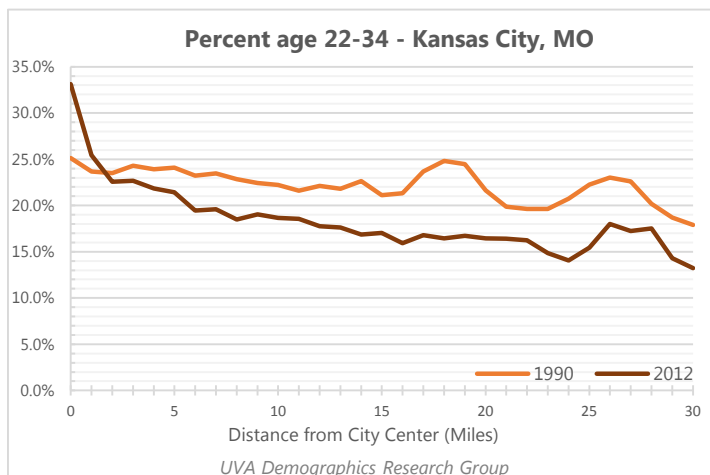
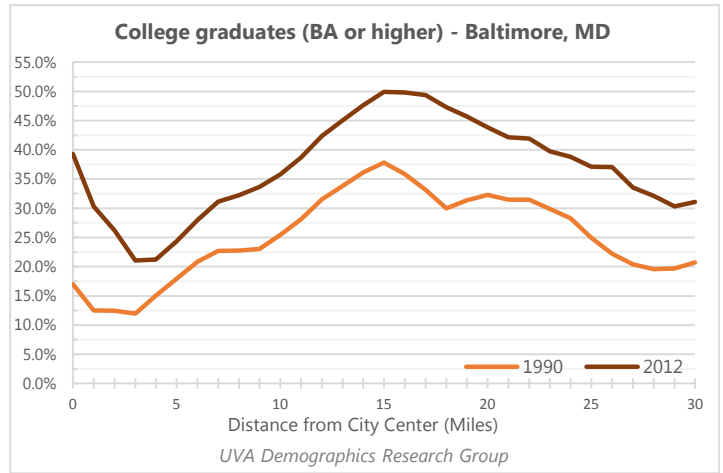
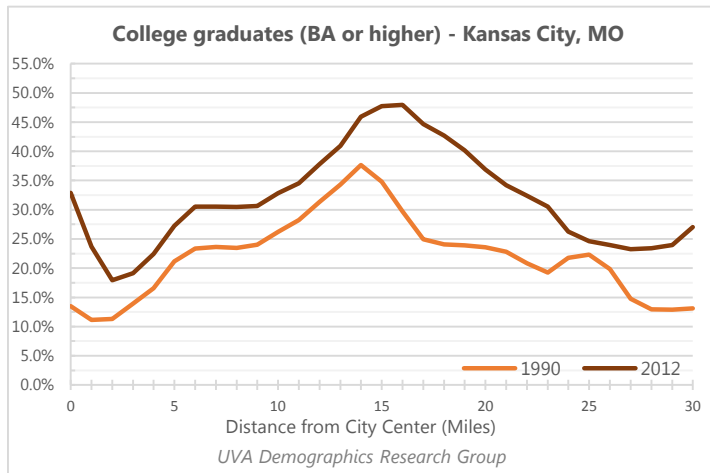
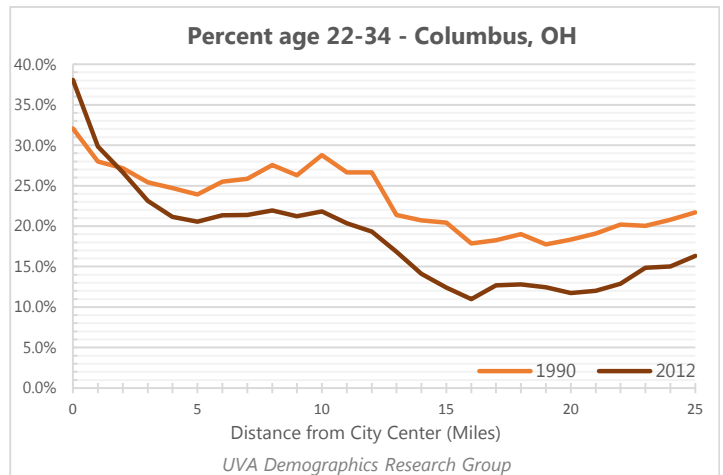
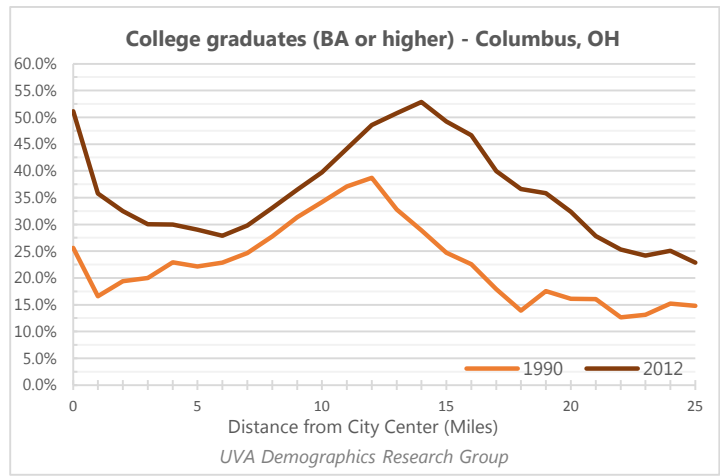
For each of these additional examples, two graphs are provided. Educational attainment illustrates the new donut shift and percent age 22-34 shows the shift in age groups. In the Midwest, the downtown boom is

Memphis, Dallas, and Atlanta all show clear new donut patterns. Downtown Dallas has had the most dramatic turnaround, in large part because it was much more sparsely populated in 1990 and has had a construction boom. Atlanta's transformation is more notable for the sheer geographic size, which means the urban core and inner ring "zones" include far more residents than in most cities.

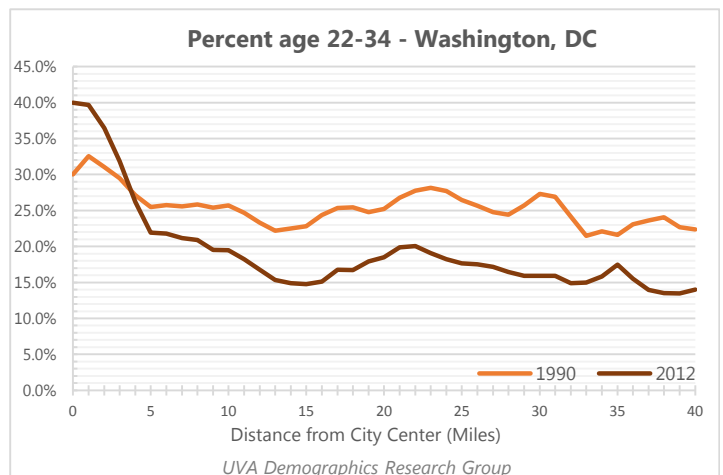
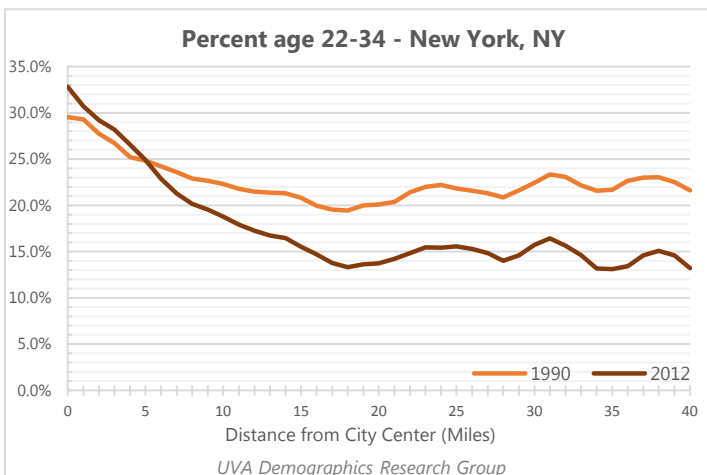
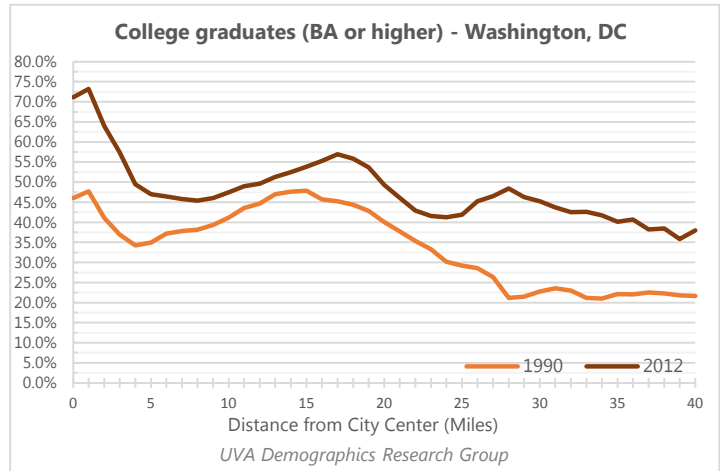
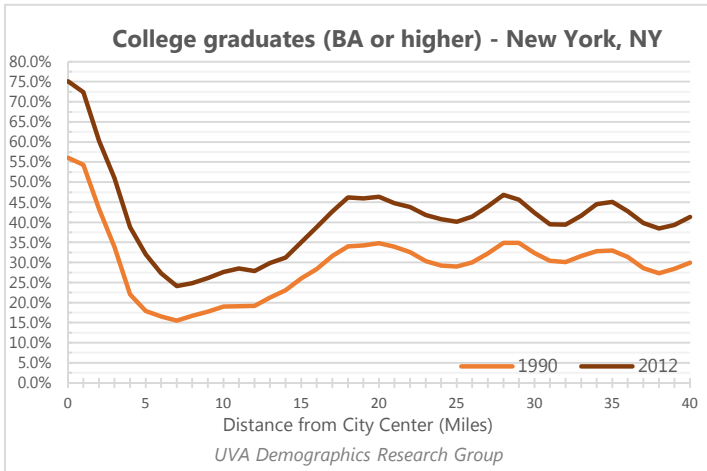
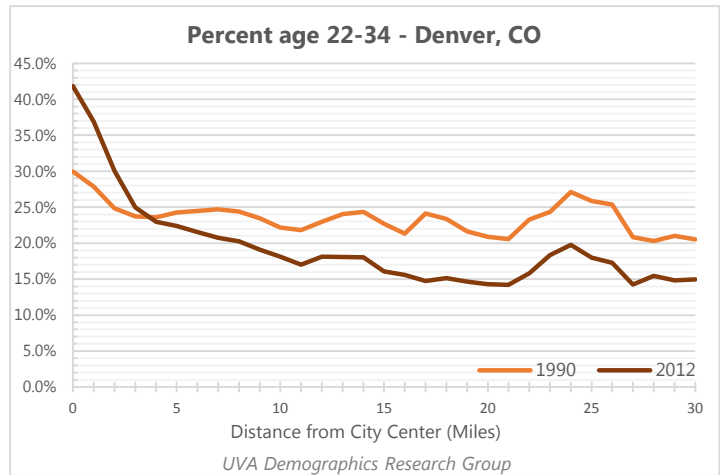
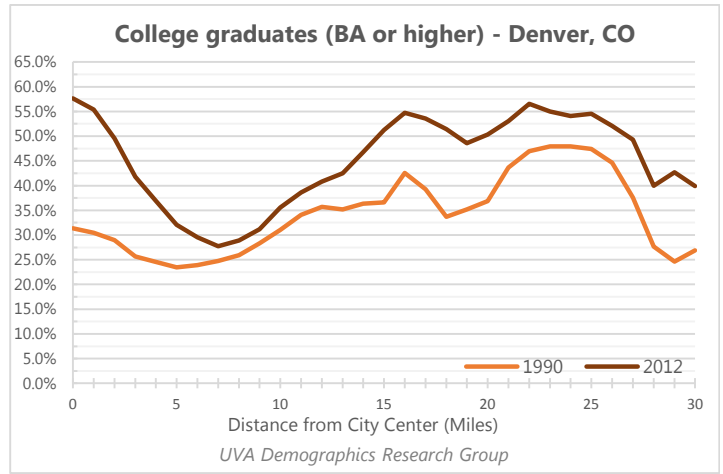


also strong, but tends to occupy a much smaller area. In several of the country's largest cities, especially New York, Philadelphia, and Chicago, the new donut shape already existed in 1990, but has become even more exaggerated since then. Western cities are more difficult to decipher, their land use laws and complex geographic features often making it difficult to see concentric zones on a graph. Nonetheless, changes in Western cities from 1990 to 2012 still broadly follow the new donut pattern.

Kansas City, Baltimore, and Columbus are all excellent examples of the new donut, though their "urban core" zones are geographically smaller than in some of the Southeastern cities. All three have had a significant shift of young adults into the core and away from the exurbs.



Denver, CO is one of the best Western examples of the new donut pattern, along with Albuquerque, Sacramento, and San Diego. New York City and Washington, DC both show a well-defined new donut pattern already present in 1990. Since then, the pattern has become even more exaggerated, with the largest gains in education and income coming in the downtowns and much smaller gains in the already low inner ring. Chicago and Philadelphia are similar to New York and Washington in this regard.



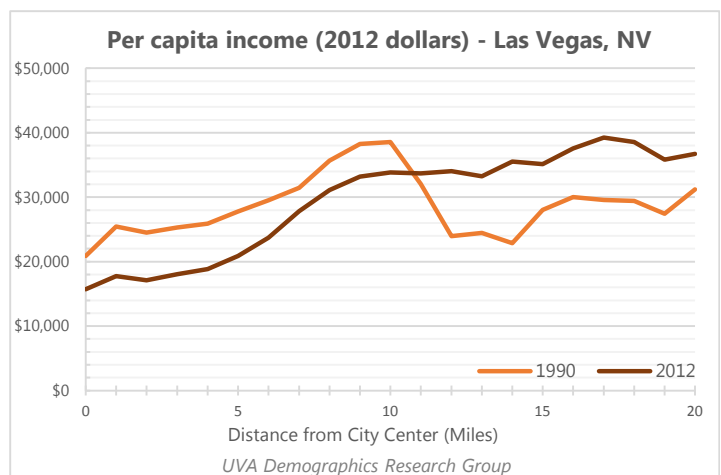
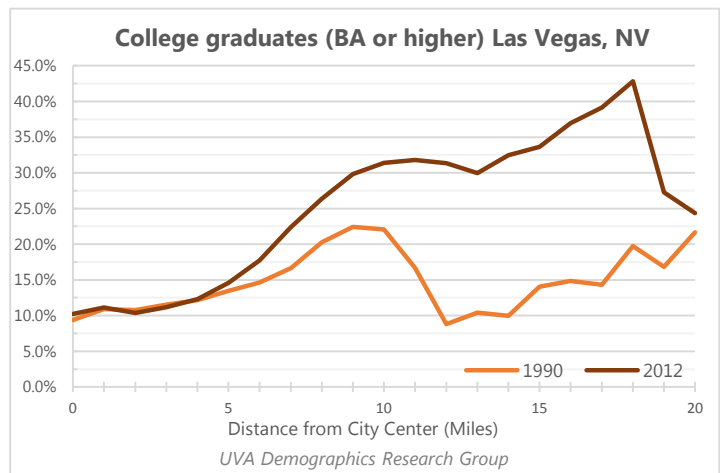
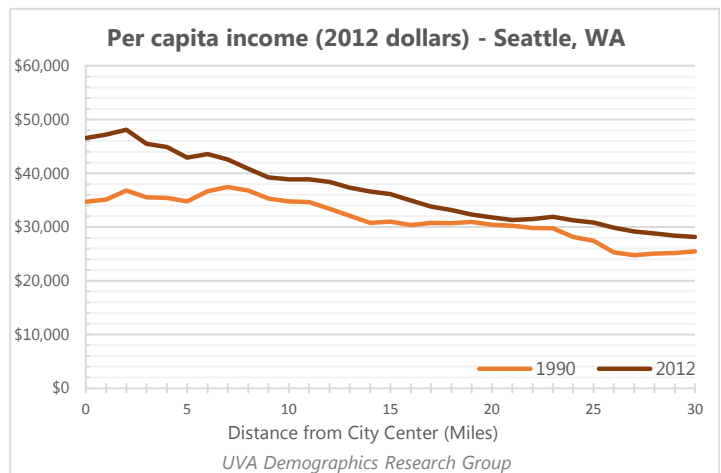
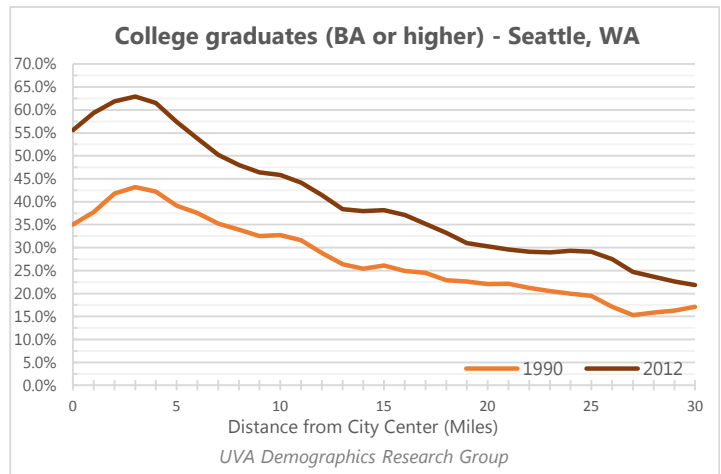
What about the outliers?

In most cities in this report, including 42 of the 50 largest metropolitan areas, changes between 1990 and 2012 follow a “new donut” pattern, though it is more or less pronounced in different parts of the country.

A few cities, however, remain outliers. Those outliers fall into two broad categories that are interesting in their own right. “**Magnetic**” cities have the highest incomes and education rates in the center and the highest increases in the center as well. But rather than dip down and rise again, these rates stay the same or decline gradually all the way to the periphery, suggesting that proximity to the core is desirable at any distance and there is no large inner ring. These cities include Boston, MA; Seattle, WA; Madison, WI; Minneapolis, MN; Portland, OR; and Charleston, SC. In all of these cities, income and education have still risen in the core more than anywhere else.

“**Old donut**” cities are exactly the opposite. They have no noticeable uptick in the downtown area. All growth and increases in wealth continue to be in the suburbs, which have often expanded, suggesting that the most desirable place to be is still as far away from downtown as possible. The best examples are Las Vegas, NV; Hartford, CT; and Fresno, CA. In these cities, there has also been little outward migration of poverty and no pronounced move of young people into the core. Several other cities are also very close to being in this category, with only a very minor rise in education or income downtown. These include Birmingham, AL; Louisville, KY; Phoenix, AZ; and San Antonio, TX.

Seattle’s rates of education and income are highest near the center and fall off gradually all the way to the periphery. Its biggest gains in income and education are also in the city center. Downtown Las Vegas, on the other hand, continues to be its least desirable location. While the city has grown and education levels have mushroomed outside the city, incomes in the center continue to fall. Las Vegas and its other “old donut” companions are the least likely to have an influx of young adults into the core.



Conclusion

Across the nation, city centers have become more attractive to younger, educated residents than they were in 1990. The largest population growth, also driven by educated, high-income residents, is still happening at the periphery, creating an inner ring of urban areas and older suburbs where wealth and education levels are stagnant.

This is important as we consider national and state policy. Stereotypes of metropolitan poverty are almost entirely framed by dense older neighborhoods with apartment buildings, housing projects, or row homes. That stereotype is now less accurate than it has ever been as inner-ring suburbs absorb a larger proportion of residents living below the poverty line.

Local governments need to understand that the demographic character of places is not set in stone. Local leaders frequently act based on assumptions about the value of homes in new neighborhoods over long periods of time. In contrast, this data suggests localities need to pay attention to details that will allow neighborhoods to age well and be fiscally sustainable under different market conditions as the housing stock ages. They should also consider the restrictions that will push renters out when higher-income residents begin to move in.

Whether the shifting preferences of different socioeconomic classes signals a cultural shift or a product of economic context remains to be seen. The retirement of the Baby Boomer generation; the delayed entry of Millennials into marriage, children, and homeownership; and the coming of age of a new generation may bring changes we have not yet imagined.

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2. Wendell Cox, "Flocking Elsewhere: The Downtown Growth Story," *New Geography*, October 1, 2012, <http://www.newgeography.com/content/003108-flocking-elsewhere-the-downtown-growth-story>.
3. This report uses data from the top 50 largest metropolitan areas in the U.S., with the exception of San Juan, PR and the Inland Empire area of California (Riverside-San Bernardino-Ontario, CA). San Juan is, in terms of both history and culture, different from every other city and not likely to give much insight into the state of American cities as a whole. The Riverside-San Bernardino-Ontario, CA metropolitan area lacks a clear center from which to calculate distances. Data from these cities is present in the graphs of the Los Angeles area.
4. One of the limitations of this study is that it includes only two points in time. Graphs were also produced for 2000 for most cities. In most cases, the 2000 graphs fell roughly between the 1990 and the 2008-2012 graphs. In general, more of the change seems to have come after 2000 than before. Even the 2008-2012 5-year estimate data does not provide much insight into the effect of the housing crisis and recession, which appear to have accelerated the pace of the changes described in this report. The Brookings Institute's William Frey has documented a spike in the growth rates of most large cities since 2010.
5. A rolling average was taken at each mile point to smooth out the graphs. For each block group, the distance was calculated from the center point of the city to the centroid of the block group. This was then rounded to the nearest mile - e.g. 5.4 miles to 5 - and all block groups at each mile aggregated into one-mile rings. To get a better picture of overall trends and eliminate anomalous points, a rolling average was taken - including data from each of the adjacent rings. The 0-mile point on the graph includes all block groups rounded to both 0 and 1. The 1-mile point includes all block groups rounded to 0, 1, and 2. The 2-mile point includes miles 1, 2, and 3. The 10-mile point includes miles 9, 10, and 11, etc. The only important implication of this is that the zero-point (center of the city) on the graph includes data from all neighborhoods within 1.5 miles of the center and the 1-mile point actually includes data from all neighborhoods within 2.5 miles of the center, not just the block that the center point is located on. That means even changes at miles 0 and 1 are taking place over a large enough area to be relevant.
6. ACS 5-year estimate data is just that - an estimate - and has a margin of error. For small block groups, that margin of error can sometimes be quite high. However, because all block groups are aggregated into mile-rings to graph, then averaged with the adjacent miles, the effects of these margins of error are greatly reduced. Each data point on the graph is generated from an average of 40-300 block groups.
7. One crucial distinction between this study and most other comparisons of urban vs suburban demographic shifts is that this study uses a spatial definition rather than a political one. Neighborhoods are graphed based on their distance from the center, not whether they are technically within the political boundaries of the central city. Because of North Carolina's annexation laws, the city of Charlotte actually encompasses most of its suburbs, thus studies that focus on comparing Charlotte to neighboring municipalities fail to distinguish between the urban and suburban areas of Charlotte.
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12. For more on exurban sprawl, see the work of Arthur C. Nelson, <http://capla.arizona.edu/users/arthur-c-nelson>.
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