

CLEVELAND FED

# Regional Policy Report



## Understanding Migration Trends to Prepare for the Post-Pandemic Future

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## Data sources in this report

The data used in this report come from several sources. The population change values are based on the decennial censuses. The components of population change are estimated by the US Census Bureau and are based on a variety of sources, including the decennial censuses, the American Community Survey, and births and deaths recorded by counties (vital statistics). For migration estimates with information on migrants' ages and labor force participation, I use American Community Survey microdata as harmonized by Flood et al. (2020). Estimates of individuals' long-term patterns of migration are created with a random anonymous sample drawn from credit histories maintained by Equifax known as the Federal Reserve Bank of New York/Equifax Consumer Credit Panel (CCP). The estimates of local labor market conditions are based on the Bureau of Labor Statistics' Local Area Unemployment Statistics. To be counted as a migrant, the individual must move from one labor market to another. They also must move at least 60 miles so that the estimates are not influenced by the many local moves that happen to cross a labor market boundary. The labor markets are either core-based statistical areas (CBSAs, referred to as metro areas) as defined by the Bureau of Labor Statistics, or commuting zones (CZ). Both CBSAs and CZs are defined as groups of counties in which commuting patterns suggest that the counties are functioning as a distinct labor market. Every county in the US is included in either a CBSA or a CZ, so all small towns and rural areas are included in the estimates.

The views expressed in this paper are those of the author and do not necessarily reflect the views of the Federal Reserve Bank of Cleveland or the Board of Governors of the Federal Reserve System.

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## Executive Summary

As our region and the world emerge from the challenges of the COVID-19 pandemic, we face a new set of challenges related to stabilizing or growing our populations. Population growth is closely intertwined with economic growth, and it is easier for individuals and families to prosper when their regions are moderately growing. In the Federal Reserve Bank of Cleveland's region of responsibility, known as the Fourth District, some metro areas have had solid population growth over the last decade, including Columbus, Lexington, and Cincinnati. However, many more have either barely grown or have experienced population declines. Due to our country's aging population and falling fertility rates, population growth is projected to be very slow over the next decade. Soon, a majority of regions in the Fourth District and the United States will have declining populations unless they can retain more residents or attract migrants from elsewhere in the country. This report presents an array of facts about population change and migration in particular. Understanding these facts can help regional policymakers formulate policies to help their regions grow and prosper.

Internal migration in the United States has been on a long, slow decline since the 1980s. Millions of people still move each year, but as the decades pass, a smaller and smaller fraction of the population is willing to head out to find new opportunities elsewhere. When people do move, they are motivated mostly by work opportunities if they are young and have much of their careers ahead of them. Late-career workers and retirees tend to move to places that are less expensive to live in and have pleasant weather and other amenities. Where does this leave the regions of the Fourth District? Metro areas such as Columbus and Lexington that have added jobs and people recently will probably be able to continue this momentum in the coming years. Other regions in the Fourth District might need to turn their attention to their current populations and try to benefit from the migration slowdown.

The results presented here show that many of the metro areas in the Fourth District are low-migration places. Relative to other areas of the country, they have lower rates of people arriving, but they also have lower rates of people leaving. Using panel data to observe people over many years shows that many young people who leave the region return a few years later.

The sizable waves of retirements occurring in the Fourth District are likely to have a stabilizing effect on our regional economies. Fourth District regions have more workers near retirement relative to areas across the country. While some retirees move to retirement destinations, the vast majority choose to age in place. As they retire, they will begin collecting their Social Security income, spending their retirement savings, and using Medicare. These things will bring additional revenue into the Fourth District. At the same time, retirements will create vacancies and opportunities for younger workers to remain in the region.

Understanding what successes the Fourth District may or may not attain by emulating other regions is helpful for regional policymakers to consider. Across the country, metro areas that are home to their states' capitals or flagship universities grow significantly faster than other regions. Both Columbus and Lexington have grown their populations to a great extent by drawing migrants from other parts of their states. This suggests that slower growing regions in Ohio, Kentucky, Pennsylvania, and West Virginia could benefit from searching for successful policies in places that are not capitals or college towns or seeking a share of the benefits of hosting state agencies and flagship universities.

Migrants to the Fourth District are more likely to become first-time homeowners than people heading to other areas of the country. Also, the Fourth District's metro areas are relatively well stocked with the type of urban neighborhoods for which highly educated young workers display a preference. The pandemic's loosening of the connection between people's locations and their employment will create a new opportunity for this region to compete for the people who work for employers in the extremely expensive coastal cities: This region can offer an urban lifestyle or spacious home for a fraction of the cost of living closer to their employer.

## Introduction

As the country emerges from the pandemic, many policy makers and executives expect to see that the places where people have traditionally lived and spent their money have shifted. Regional leaders hope these shifts will mean positive economic outcomes for their areas. And though the future locations of people and economic activity may be undefined, one thing we know is that they will be the result of the secular trends at work in the years before the pandemic combined with the shocks and changes the pandemic introduced. This report briefly reviews what economists have learned about regional growth in recent years and then discusses a variety of prepandemic migration and demographic measures. Estimates focus on the Federal Reserve Bank of Cleveland's area of responsibility—the Fourth District, which includes Ohio, western Pennsylvania, eastern Kentucky, and the northern panhandle of West Virginia (Figure 1). Considering how the Fourth District has fared relative to the rest of the nation, this analysis reveals the District's strengths and weaknesses and points to seven key insights that should guide policy decisions as we prepare for the post-pandemic years.

**Figure 1. Map of the Fourth District**



The measures and recommendations in this report will focus on maintaining or growing populations in the Fourth District. While rapid population growth can bring congestion and other challenges, moderate population growth brings a variety of benefits to a region's residents. If you sell goods or services locally, population growth enables you to grow your business beyond any market share you can take from competitors. If you employ people to produce goods or services locally, population growth refreshes your pool of potential employees. If you own a home, population growth ensures there will be demand for that home should you decide to sell it. Homes are most households' largest investment and asset, so population growth plays a significant role in building wealth (Eggleston et al., 2020). For people operating local governments, population growth helps to stabilize or grow the tax base. That means fixed costs of long-lived infrastructure can be maintained without onerous tax increases on a shrinking tax base.

To inform policymaking aimed at population growth, I present new estimates for several important related metrics. These include statistics that address the following questions:

- How does our region compare in terms of retaining its residents?
- Are people who move here able to purchase homes?
- Are state capitals and college towns luring residents away from the rest of their state?
- Has the pandemic improved our region's position relative to the expensive coastal metros?

The results that follow show that much of the Fourth District is struggling with below-average growth or declines in population. In terms of migration, most Fourth District metros are low-turnover places with relatively few people leaving and even fewer arriving. District metro areas that are gaining residents are drawing from their own state populations to achieve that. However, what we have more of in the Fourth District is retirees, natives who remain in their home metros, and the purchasing of inexpensive homes. In some sense, the Fourth District is leading national trends in aging and declining migration, and it has an advantage in affordable housing. Our challenge is finding policies that can make the most of these attributes.



## The economic literature on migration and population growth

In the 1990s and early 2000s, there was a debate in the economic literature about the main cause of population growth. Some economists attributed population growth to the availability of jobs, driven by the business climate or the rise or fall of a region's main industry—people moved to regions that offered the best job opportunities. Others claimed that people flocked to regions based on their amenities, and jobs were plentiful in high-amenity regions with growing populations because that is where the talent, labor, and consumer demand were.

One amenity a region can have is a climate that most people find pleasant. Empirically, there is no question that migration and growth have favored regions with mild winters for many decades (Graves, 1980; Rappaport, 2009; Partridge, 2010). Some research has documented that amenities that cities can create, such as restaurants and nightlife, or preserve, such as historic districts, are attractive to young adults and highly educated young adults in particular (Couture and Handbury, 2020; Carlino and Saiz, 2019). However, many other researchers have argued that a favorable business climate and job growth are what really drives employment and population growth (Storper and Scott, 2009).

In recent decades, favorable business environments have been found in regions that also have mild winters, a situation that has made it challenging to identify which factor is more important. Chen and Rosenthal (2008) made one of the most extensive and widely cited investigations into the relationships between migration and jobs, wages, careers, land prices, and rents. They found evidence that both jobs and amenities can create population growth. Using census data from 1970 to 2000, Chen and Rosenthal showed that employers and recent graduates most frequently find each other in growing mid-sized cities with favorable business environments. Young people move to these cities to establish their careers, and businesses choose to expand operations there because the cities' recent growth demonstrates that people can easily be recruited to move there. Chen and Rosenthal also found that older people displayed a strong tendency to move away from the cities with good business environments in favor of regions with high amenity values. While both younger and older people value amenities, people in or near retirement do not want to pay the higher cost of housing that arises in cities with strong job growth. Scott (2010) found a similar pattern with microdata on the location decisions of engineers. Engineers also move to cities with strongly growing businesses early in their careers but choose more amenity-rich places when relocating later in their careers.

The takeaway from these studies is that a region's population is likely to grow if it has a favorable business environment or attractive amenities. Regions that have neither of these features will likely see their populations fall. People are most mobile as young adults, so places attracting young people face a larger pool of potential migrants. Each year 2.5 million workers ages 18 to 34 relocate to another region, while just a little more than 1 million retirees move to another region.

As economists were analyzing why people move and where they move to, they discovered a long-term decline in people's tendency to move in general. A new strain of economic literature emerged that focuses on why people are moving less. Frey (2009) started the trend with an article documenting the slowing of US internal migration that began in the 1980s. Researchers have explored a wide variety of explanations for the slowdown, ranging from pay becoming more similar across the country, to aging, to two-career households (Kaplan and Schulhofer-Wohl, 2017; Partridge et al., 2012; Molloy, Smith, and Wozniak, 2014; Hyatt et al., 2018). Each of the factors seems to explain a fraction of the slowdown, but they cannot explain all of the national decline in migration. Economists continue to search for additional explanations.

Explaining why people are moving less will have to consider why potential locations have become less valuable or why people's current location has become more valuable. Recent research has attempted to estimate the value people place on remaining in their home region and having access to their existing social network (Gallagher and Persky, 2020; Kosar, Ransom, and van der Klaauw, 2022; Coate and Mangum, 2019). If working in a new region does not compensate people for the loss of this network, most people will opt not to move. Many people may be surprised to learn that domestic migrants in the United States are not consistently better off financially after they choose a new labor market (Whitaker, 2022b). In Europe, where more data are available on people's locations and earnings, studies have repeatedly documented this. Korpi and Clark (2017) found that a large fraction of movers in Sweden exhibited no financial gains from their moves. Venhorst and Cörvers (2018) conducted a similar analysis on Dutch migrants and found negative changes in their earnings in most cases. Once we know that migrants frequently gain little or nothing financially after moving, it makes sense that moving is usually not attractive to those who value their colleagues, friends and family, or a familiar environment.

Along with regional differences in wages and salaries, differences in the cost of living, especially housing costs, can strongly influence people's decisions to remain in place. In an essay entitled "The Closing of America's Urban Frontier," Glaeser (2020) argued that limitations on construction in the US cities with the greatest productivity have made housing costs unaffordable to those wishing to relocate from struggling regions. He suggests two options for responding to this issue: State officials could force the high-productivity localities to allow more construction or, accepting unattainable housing, national investments could pivot to place-based policies that help people be more productive where they are. In the Fourth District, more people would likely relocate if large coastal cities were not so expensive. For the time being, those cities remain expensive, so the potential migrants remain our current residents.

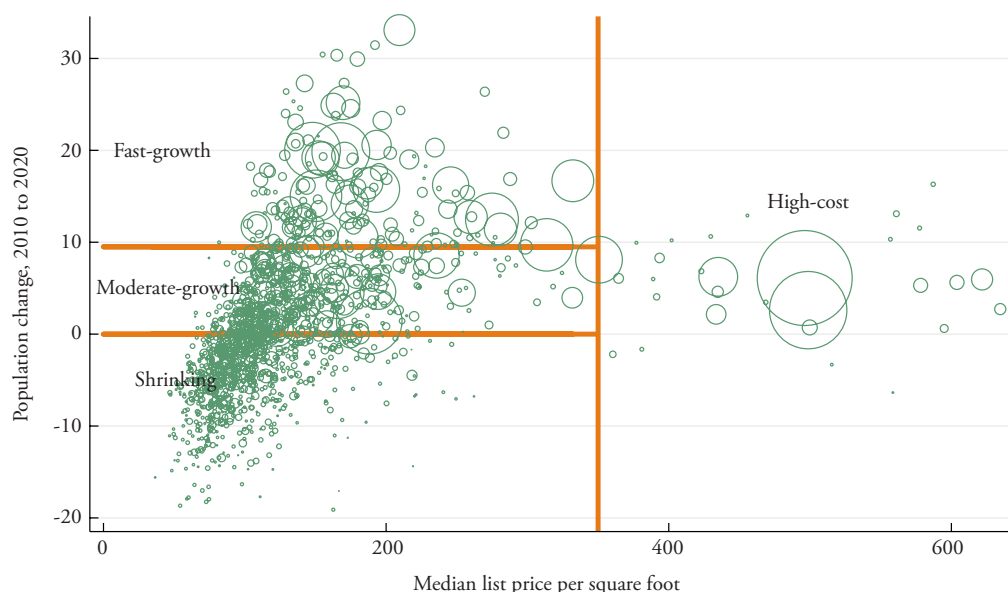
To recap, the economic literature tells us that young people move mostly to places with strong labor demand. Having good amenities, either natural (warm weather, beaches, mountains) or built (lively urban neighborhoods, arts and entertainment offerings), can increase this migration flow further. Older people who move usually seek places with good amenities and a low cost of living. Smaller cohorts of young adults and a declining share of people willing to move at all mean that attracting young people to one's region will be more difficult in the next few years than it was in recent decades.

## Migration and population trends

To understand how the Fourth District is performing on certain measurable demographic trends, we can compare it with other regions. Comparing a Fourth District metro area to other areas with high, middle, or low population growth is a simple way to understand where it falls in the national distribution. In examining population growth, we must also take housing costs into consideration because a tight limit on housing can keep population growth low in areas where work opportunities and amenities would otherwise draw in thousands of additional migrants.

In Figure 2, population growth from 2010 to 2020 is plotted over a measure of housing costs. Each observation is a metro area or a group of rural counties that share a local labor market.<sup>1</sup> There are several observations to take away from this figure and its underlying data. Even though the US population grew 6.5 percent over this period, from 309 million to 329 million, a substantial number of regions have declining populations. Approximately 43 million Americans live in regions with shrinking populations. In the figure, the size of the markers is proportional to the initial population; many fast-growing regions already had relatively large populations. The regions with declining populations are small metro areas, small towns, and rural commuting zones. Their populations are below 500,000 with just two exceptions: Syracuse and Hartford. Having a small initial population does not guarantee a place will decline, however. More than 560 of the growing regions have populations of less than 500,000. With the exception of Hartford, every metro area with more than 1 million people managed to achieve some population growth during the decade.

**Figure 2. Population Change from 2010 to 2020 over Median List Price per Square Foot**



Notes: List prices are adjusted for inflation and averaged over the period July 2016 to March 2022. The NAR provides median list prices per square foot for each county. Counties are aggregated to core-based statistical areas or commuting zones by weighting the counties by their count of active listings and averaging the median list prices per square foot. To ensure readability, the top and bottom 0.5 percent of observations by population growth are excluded, as are the top 0.5 percent of observations by list prices.

Sources: US Census Bureau, National Association of Realtors (NAR), and author's calculations.

The small number of regions represented on the right half of Figure 2 clearly do not fit the same pattern as the regions that appear on the left. The very high prices that people pay to live in these regions suggest strong demand, yet the supply of residences there is not expanding rapidly. Theories of urban economics suggest that eventually cities stop growing because congestion costs (for example, the time lost to commuting) and housing costs begin to rise exponentially, and people do not earn enough to justify moving to the region (Glaeser, 2010; Saito and Wu, 2016). Additionally, geographic obstacles to construction (such as the ocean or mountains) and zoning that prohibits dense construction can prevent the supply of housing from increasing, so existing housing is priced at a premium. The larger cities on the right side of the figure are all coastal regions, including New York, Los Angeles, Boston, San Francisco, San Diego, and San Jose.

The remainder of this report will give individual estimates for the 11 largest Fourth District metro areas: Pittsburgh, Cincinnati, Columbus, Cleveland, Dayton, Akron, Toledo, Youngstown, Lexington, Canton, and Erie. Estimates will also be reported for the balance of the Fourth District, which includes 4.6 million residents of small metro areas, small towns, and rural areas. For comparison, the figures include the same measures for all other regions of the country, with those regions grouped into four types:

**1. Fast-growth regions.** This group includes all metro areas and rural commuting zones with populations that grew by more than 9.5 percent between the 2010 and 2020 censuses. The fast-growing regions include Dallas, Houston, Washington, Miami, Atlanta, Phoenix, Seattle, Minneapolis, Tampa, Denver, Charlotte, Orlando, San Antonio, Portland, Sacramento, Las Vegas, Austin, and Indianapolis.

**2. Moderate-growth regions.** This group includes places with population growth that is more than 0 percent but less than 9.5 percent. The moderate growth regions include Chicago, Philadelphia, Riverside, Detroit, St. Louis, Baltimore, Kansas City, Virginia Beach, Providence, and Milwaukee.

**3. Shrinking regions.** This group includes places with a population that is declining, such as Shreveport, Flint, Peoria, Hickory, and Huntington.

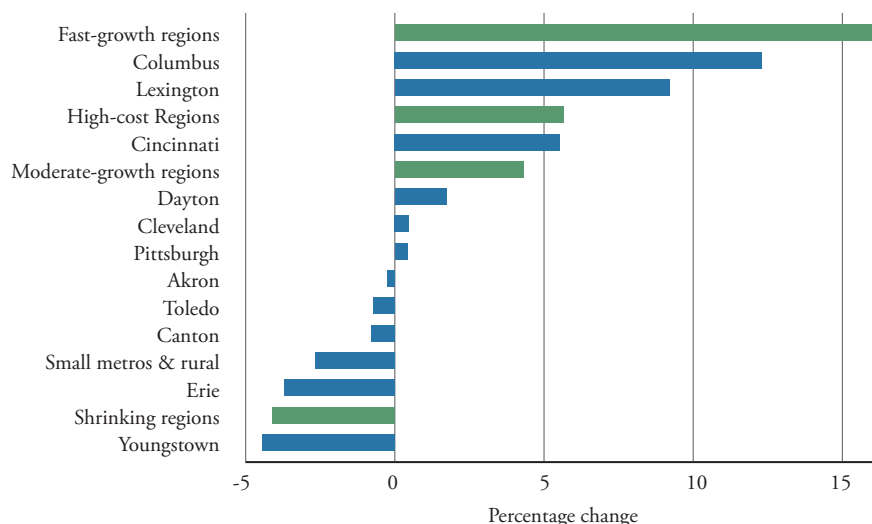
**4. High-cost regions.** This group includes places with very high housing costs (more than \$350 per square foot on average since 2016). Such high housing prices tell us that different forces are at work in these places. The major metros in this group include New York, Los Angeles, Boston, San Francisco, San Diego, San Jose, and Honolulu.

Los Angeles, New York, and San Diego have population growth similar to that of Cincinnati, Detroit, and New Orleans. However, the extremely high housing costs in the former metro areas tell us that their growth is probably limited by a lack of housing rather than a lack of demand to live and work there. People can move to a high-cost region only if they can find high-paying work. People who cannot maintain a high income need to migrate away, reducing the region's population growth. In contrast, Cincinnati, Detroit, and New Orleans either have or could more easily build affordable housing for additional residents, so their population growth is probably limited by their moderate levels of labor demand or amenities.

Most of the high-cost metro areas would be in the moderate-growth category. With 53 million residents, they would account for more than one-third of that category and influence all of its estimated measures. When we compare the Fourth District metro areas to other regions, we want to see how other moderate-growth regions are achieving that growth when their housing prices indicate they still have room to grow. Additionally, we need to separate the high-cost regions because they receive a disproportionate share of media attention. This can often lead policymakers and the public to believe their regions are facing the same challenges and constraints. The following results report estimates for high-cost regions separately so that we can see in what ways they are similar to our region and in what ways they are different.

Figure 3 shows how Fourth District population growth compares to the four types of regions. Columbus and Lexington grew faster than the nation as a whole between the censuses; however, they did not grow by more than 15 percent as the average fast-growth region did. Cincinnati's population growth was similar to that of the national average of 6 percent. Cleveland's and Pittsburgh's population growths were only about 0.5 percent. Among metro areas with populations of more than 1 million that experienced growth, Pittsburgh had the slowest growth and Cleveland had the second slowest growth.<sup>2</sup> Youngstown, Erie, and most smaller Fourth District metro areas had declining populations.

**Figure 3. Population Change from 2010 to 2020**



Notes: Blue bars represent Fourth District regions. Green bars represent population-weighted averages for the comparison groups.

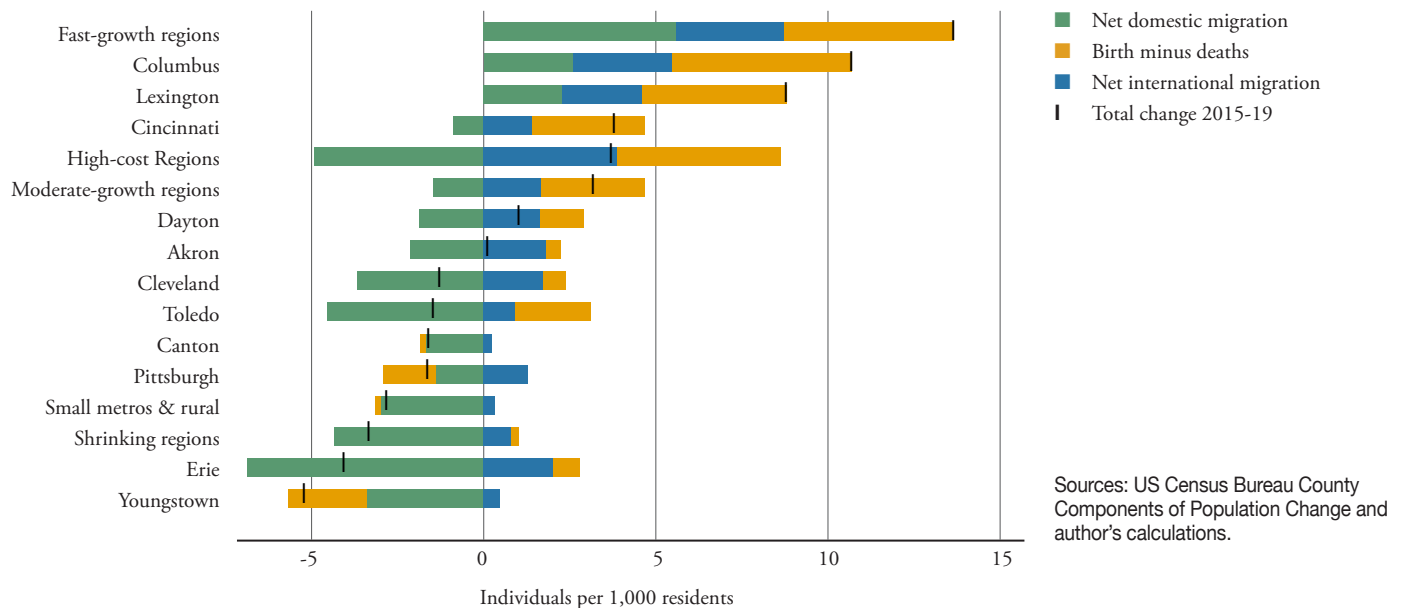
Sources: US Census Bureau and author's calculations.



## The breakdown of population change

As the US Census Bureau constructs an annual estimate of the population of each county in the United States, it also creates estimates of the three main components of population change: net domestic migration, net international migration, and natural increase, which is the difference between the numbers of births and deaths in the county. Building from the county estimates, Figure 4 reports the average annual changes for Fourth District metro areas and the other groups of regions. To focus on prepandemic patterns, the averages are taken over 2015 through 2019. Additionally, when we examine population change, the percentages can get quite small; so Figure 4 and the figures in the remainder of this report present more intuitive counts of people per 1,000 residents in the regions.

**Figure 4. Average Annual Components of Population Change (2015–2019)**

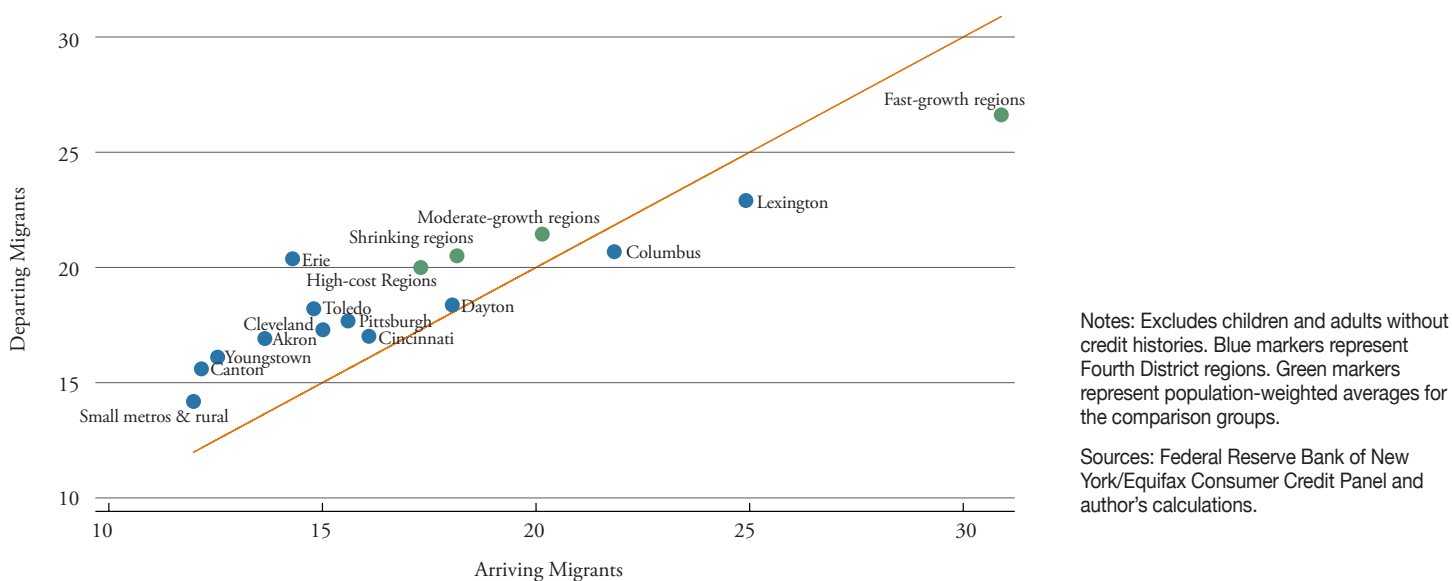


### Net domestic migration

Population growth can be achieved by all or almost all regions of the country at once, as was the case for most of US history. In contrast, one of the main components of population change, net domestic migration, is a zero-sum game by definition. If some locations are winners, there must also be regions that lose out in this measure. In Figure 4, we can see that only Columbus and Lexington received more domestic migrants than they lost to other regions in the years before the pandemic. Regions with negative net domestic migration can still have growing populations. On average, both the moderate-growth regions and the high-cost regions consistently lose more migrants to the fast-growth regions than they gain. To maintain population growth, these regions must gain residents through the other two components of population change: international migration and natural increase.

Net domestic migration can be improved by increasing in-migration or decreasing out-migration, so a first step in understanding the situation in the Fourth District metro areas is to look at gross flows of movers. The measure plotted in Figure 5 is the average annual count of in-migrants and out-migrants per 1,000 residents between 2015 and 2019. The regions to the left of the 45-degree line have negative net domestic migration in the Federal Reserve Bank of New York's Equifax Consumer Credit Panel (CCP) data, which observes only domestic migrations.<sup>3</sup> Columbus, Lexington, and the fast-growth regions all have relatively large flows of people entering and leaving their metro areas.<sup>4</sup> In general, people who have moved recently are more likely to move again than people who have lived in a region for many years. This applies to most post-secondary students who arrive to begin school, and then leave after graduation (Winters, 2011a,b). The shrinking, moderate-growth, and high-cost regions all have between 17 and 20 people per 1,000 residents entering and leaving each year. Most of the Fourth District metro areas are distinctively low-turnover places, with both inflows and outflows much lower than is typical in the four types of regions.

**Figure 5. Average Annual Gross Domestic Migrants per 1,000 Residents (2015–2019)**

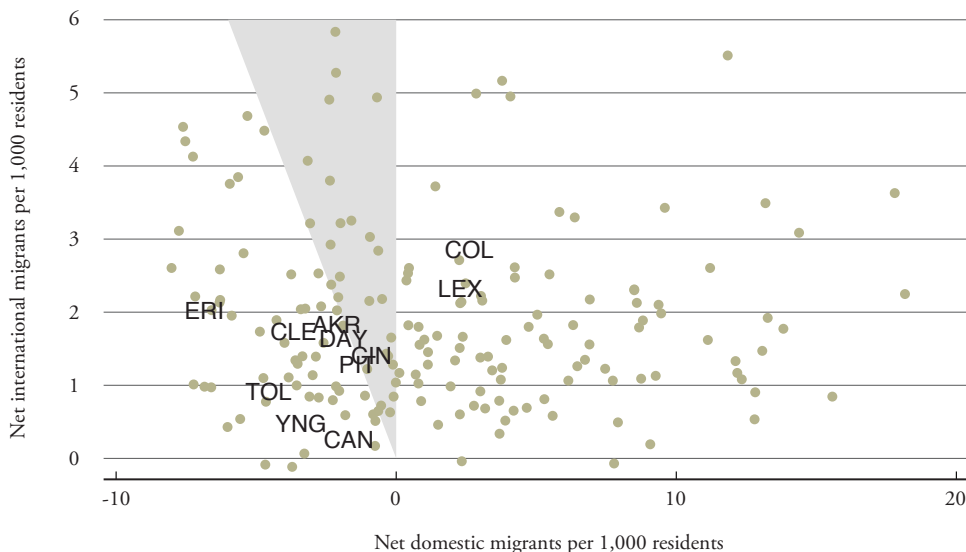


## International migration

Looking at the international migration components in Figure 4 brings some welcome good news for sustaining populations in the Fourth District's metro areas.<sup>5</sup> International migration, on net, is estimated to be positive for almost all metro areas and commuting zones, both in the Fourth District and in the nation. For Pittsburgh, Cincinnati, Dayton, Cleveland, and Akron, net international migration is estimated to be adding 1 to 2 people per 1,000 residents per year. The Fourth District metros that benefit the most from international migration are the same ones that benefit the most from net domestic migration: Columbus and Lexington.

It is important to note, however, that the coincidence of strong international and domestic migration to Columbus and Lexington is not representative of the situation across the United States. In Figure 6, the net international migration measure is plotted over the net domestic migration measure for regions with populations of 250,000 or more. We can see there are many mid-sized and large metros that attract strong international migration flows while having substantial net domestic out-migration. The metro areas that fall in the shaded region have enough net immigration to fully offset their net outflow of domestic migrants. One Fourth District metro area, Cincinnati, is in this category, along with Providence, Birmingham, Allentown, Scranton, Lansing, Fort Wayne, Kalamazoo, and Green Bay. A takeaway from this observation is that regional leaders should not assume that international migrants will be attracted by the same things that attract domestic migrants. This gives regions a second chance to bolster their population by developing a separate strategy to attract arriving immigrants.

**Figure 6. Net International Migrants per 1,000 Residents over Net Domestic Migrants per 1,000 Residents (2015–2019)**



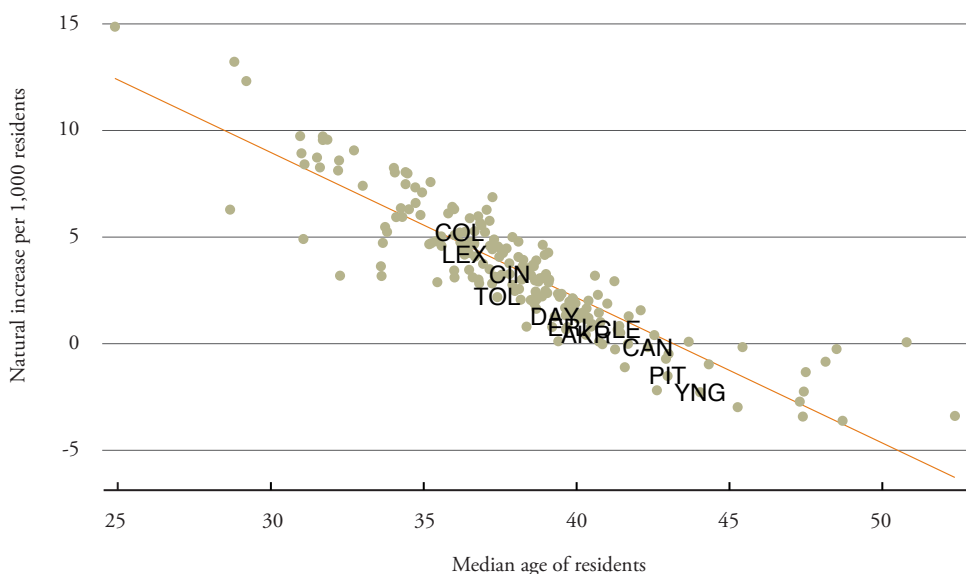
Notes: Markers represent metro areas with populations of at least 250,000. Fourth District metro areas are represented by abbreviations in black. The shaded region indicates that positive net international migration more than offsets negative net domestic migration.

Sources: US Census Bureau Components of Population Change Estimates, American Community Survey (Flood et al., 2020), and author's calculations.

### Natural increase

As illustrated in Figure 4, most regions within the Fourth District benefited from the third component of population change referred to as natural increase during the pre-pandemic years. Several metro areas in the Fourth District have populations that skew toward high shares of elderly individuals. Figure 7 displays the strong negative relationship between a region's median age and its natural increase. Having a population weighted toward more mature adults works against natural increase both because most children are born to people in their 20s and 30s, and death rates increase with age (Martin, Hamilton, and Osterman, 2021; Xu et al., 2021). In the near future, rising age distributions will cause natural increase to give way to natural decrease for many regions in the Fourth District and across the nation (Hauer, 2019; Johnson, 2020). The other components of population change, net domestic and international migration, will have to improve to stabilize each region's population.

**Figure 7. Average Annual Natural Increase over the Metro Area's Median Age (2015–2019)**



Notes: Markers represent metro areas with populations of at least 250,000. Fourth District metro areas are represented by abbreviations in black.

Sources: US Census Bureau Components of Population Change Estimates, American Community Survey (Flood et al., 2020), and author's calculations.

## Policy Discussion

In the sections above, we have discussed why population growth is important, how much population growth has occurred recently in Fourth District regions, and what types of demographic changes are contributing to that growth. The remainder of this report will present seven key insights that could help Fourth District regions grow their populations over the next decade. In each case, I will provide additional measures to explain the context, opportunities, and challenges involved.

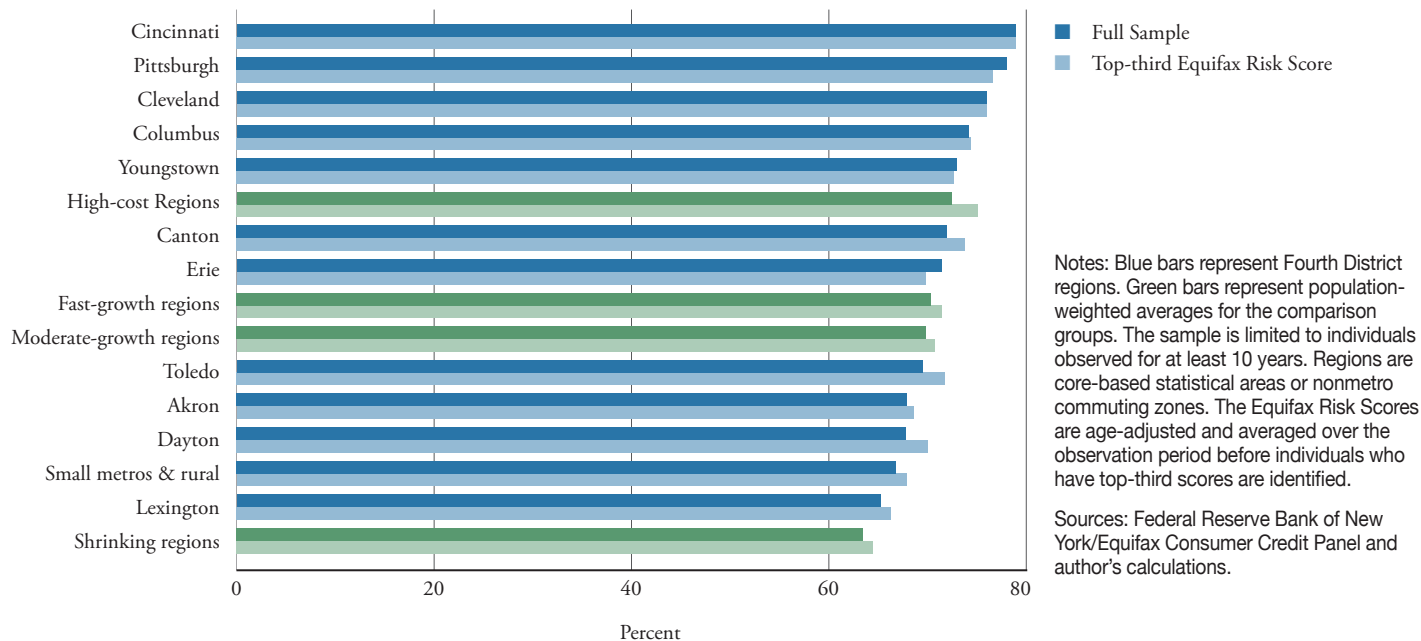
### Insight 1: Understand and develop high retention rates

Contrary to popular perceptions, many Fourth District metro areas are unusually good at retaining current residents. Understanding why, and building on this strength, will be increasingly important to maintaining our populations in the coming years. Economists have documented a long-term nationwide trend of declining domestic migration and increasing retention of residents, as discussed in Section 2. Civic leaders and residents in the Fourth District often believe their communities have a harder time retaining people than other parts of the country, and they have many anecdotes consistent with that belief. However, Figure 5 shows that many Fourth District regions have unusually low outflows of migrants. This suggests that the Fourth District may actually be good at retention, and we can use the long histories of individuals' locations observed in the CCP to measure retention directly.

Figure 8 presents a measure of retention for the regions of the Fourth District.<sup>6</sup> To create this measure, we first assign every borrower to a region based on where they are living when their credit history begins. Next, we calculate the share of each person's later quarters when they are observed living in their original region. Finally, we average the shares of everyone who started off in a region to get a retention share for that metro area or commuting zone. For example, consider that City A has three residents. All three turn 18 and open a credit card in the first quarter of 2010. Resident 1 stays in City A until 2020, so his retention value is 100. Resident 2 moves away in 2015 Q1, so her retention value is 50. Resident 3 moves away in 2013:Q1 and returns home in 2017:Q1, so he is away for 16 of the 40 quarters and he has a retention value of 60. We average the three residents' values (100, 50, 60) to get a retention rate estimate of 70 for City A.

Based on this measure, the high-cost regions are the best of the comparison groups at retention. Retention is similar on average in fast-growth and moderate-growth regions and lowest in shrinking regions. Cincinnati, Pittsburgh, Cleveland, and Columbus appear to be as good as or better than the high-cost regions at retention.

**Figure 8. Share of Natives' Quarters When They Are Observed in Their Original Region**

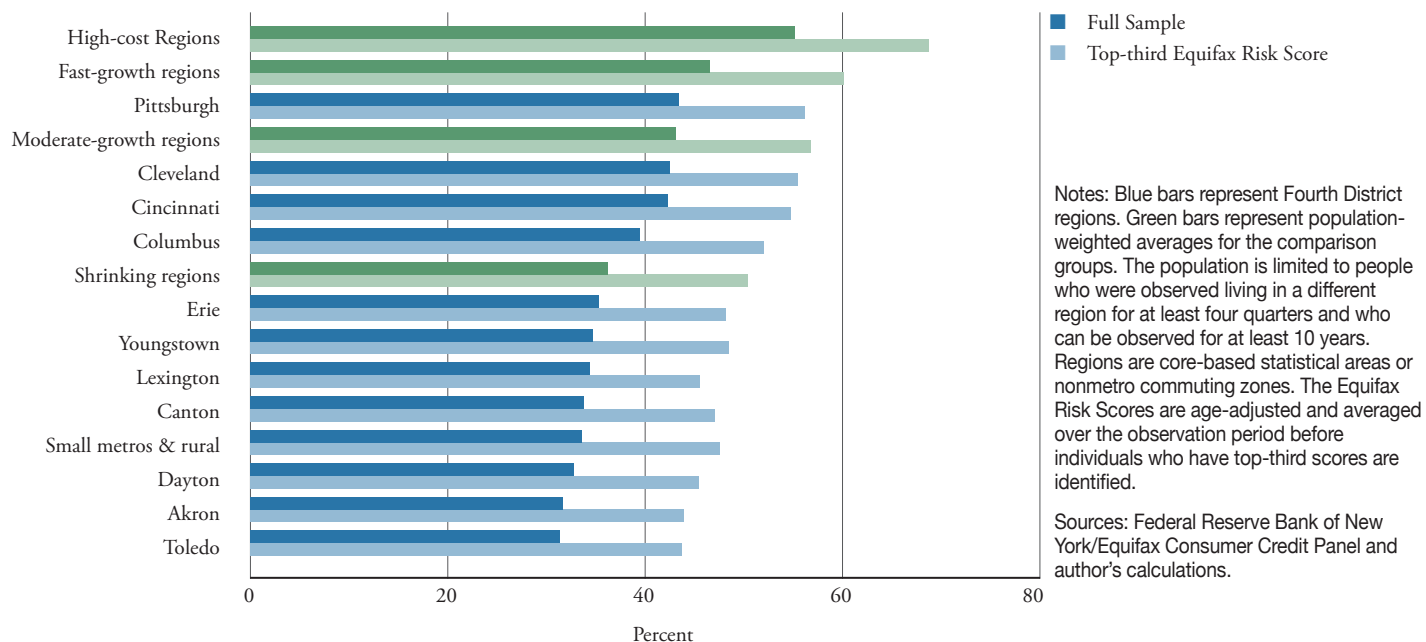


Looking at these results, some readers might be concerned that retention is high in their region because many of its residents lack skills and therefore have fewer opportunities elsewhere in the country. To address this concern, we can focus on people who have good credit. People with high credit scores have been able to consistently earn income and repay their debts. They are more likely to have skills that are marketable in many metro areas across the country. Figure 8 shows the retention measure for people whose average Equifax Risk Score is in the top third of all scores in the nation. With some variation, the pattern for these financially healthy individuals is similar to the overall pattern. Remaining in their home regions is more likely to be voluntary for these high-score individuals, suggesting that they are finding good opportunities in their home regions or they value being home more than the additional income they could earn somewhere else.

In the conversations about retention or its opposite, “brain drain,” some people have consoled themselves by saying that the people who grew up in an area will boomerang back. Out-migrants have chased their dreams to the coasts, the story goes, but when they’re ready to raise a family, they’ll move home. This can be very beneficial for a region if the time spent working elsewhere is similar to time spent in school. The returnees bring with them valuable professional experience, connections to a professional network, and possibly savings for investing locally or purchasing a home. To what extent does boomeranging actually happen?

For this analysis, I have created a measure that looks at residents of each region who are 35 years old. If they first appeared in the region, left for at least a year, returned, and are living in the region when they are 35, I designate them a boomerang. Of the people that leave Pittsburgh, Cincinnati, and Cleveland, more than 40 percent do return before they are 35. In Figure 9, we can see that people are more likely to boomerang to the high-cost and fast-growth places that offer ample work opportunities and the chance to stay near family and friends. A smaller fraction boomerang to shrinking places.

**Figure 9. Share of Out-Migrants Who Are Observed Living in Their Original Region at Age 35**



As with overall retention, there is a negative interpretation of the boomerang phenomenon that views the option of returning home as a kind of insurance against a bad shock (for example, job loss, business failure) the migrant sometimes receives in his or her destination. For example, Chan, O'Regan, and You (2021) argue that the housing bust sent many young adults from housing-boom regions back to live with their parents, where they raised the unemployment rate of their home regions. If this phenomenon is important at the individual level, it could be that people boomerang more often to some regions because those people have fewer valuable skills, are more likely to lose their jobs, and therefore retreat to find help from their family more often. However, calculating the boomerang measure for people with top-third Equifax Risk Scores (the light blue and green bars in Figure 9) reveals an even greater propensity to return and a similar placement of Fourth District metro areas in the national distribution. It appears that people who have more ability to choose their location are more likely to choose home.



## Insight 2: Benefit from the wave of retirements

Most people are aware that millions of baby boomers (born from 1946 to 1964) are retiring each year, but fewer have thought about the opportunity and challenges this will present for maintaining their region's population over the next decade. As the number of retirees climbs nationally, more regions of the country will begin thinking of retirement as an export industry (Shields, Deller, and Stallmann, 2001; Lambert et al., 2007; Hamilton, 2010; Nefs et al., 2013). Just as an export industry sells a product or service globally and puts money into circulation locally, retirees derive their income from federal transfer programs, diversified investments, or pension funds (Poterba, 2014). Those are backed by national and international revenue sources. Consumer spending by retirees, and healthcare spending on their behalf, can help support the local economy (Poisal et al., 2022; Banks et al., 2019; Dieleman et al., 2016). While people's incomes are lower during retirement than during their working years, more of that income will be money flowing into the region rather than earned from local customers. A region's ability to benefit from retirements assumes that a similar number of local or arriving young adults will enter the local job market and mid-career workers will be promoted into the retirees' positions. If the retirements leave vacancies that are never filled, there would be a net loss of economic activity.

To maximize the benefit of retirement to the Fourth District's regions, policymakers should explore programs and investments that keep retirees in the region, rather than departing for retirement destinations. Also, physical and social programs that extend retirees' lives can extend the flow of defined-benefit funds into the local economy. Of course, income gains are in addition to the direct benefit to constituents' quality and quantity of life.

While most people do not move after they retire, the retirees who do move can demonstrate their economic benefit to a region. Table 1 lists the top 30 retirement destinations and some of their characteristics. The top destinations are those with the highest rate of retirees arriving relative to their initial population. Migrants are counted as retirees if they are over age 55 and not in the labor force. The retirement destinations display robust job growth, and, by definition, people other than the retirees are filling those jobs. Nineteen of the 30 destinations are fast-growth regions, and inflows of workers are higher than inflows in the typical fast-growth region in 25 of the 30. Population growth is strong despite the retirees themselves contributing many deaths and no births to the natural increase. For the working-age migrants to be able to stay in these regions (and possibly share in enjoying the amenities), they must find opportunities in the industries, from healthcare to construction, that are meeting the needs of the retirees. While regions in the Fourth District are unlikely to attract retirees from outside the District, the multiplier effect demonstrated by the retirement destinations still exists for retirees that we retain. Retirees who remain in Fourth District regions could encourage retention of prime-age adults by supporting local consumer demand.

**Table 1. Top 30 Retirement Destinations by Average Annual Inflow of Retirees per 1,000 Residents (2015–2019)**

Metro area	Inflow of retirees per 1,000	Inflow of workers per 1,000	Net domestic migrants per 1,000	Population growth 2010–20 (%)	Job growth 2010–20 (%)	Retiree share of income (%)	Population (1,000s)
The Villages, FL	27.0	15.8	41.7	38.8	48.5	56.0	125
Punta Gorda, FL	26.1	22.5	22.6	17.6	22.8	46.5	181
Lake Havasu City, AZ	25.4	26.8	11.0	6.9	11.0	36.4	208
Prescott, AZ	23.9	27.9	14.7	12.4	13.9	35.0	228
Homosassa Springs, FL	22.6	21.6	14.6	9.4	-0.1	42.7	145
Naples, FL	18.1	21.4	11.8	16.9	40.5	40.1	371
Myrtle Beach, SC	17.8	22.8	26.8	29.9	25.7	31.6	464
Ocala, FL	17.1	18.2	12.2	13.9	18.9	36.0	354
Sarasota, FL	16.8	22.8	18.2	19.0	30.3	35.3	804
Sebring, FL	16.2	13.1	9.7	2.6	0.5	35.0	103
Sebastian, FL	15.9	19.0	16.9	16.0	20.5	41.1	154
St. George, UT	15.9	26.7	18.6	31.5	51.4	24.9	166
Port St. Lucie, FL	14.8	20.0	13.3	15.2	26.6	31.0	472
Fort Myers, FL	14.5	21.3	17.8	23.2	39.3	34.3	737
Hilton Head Island, SC	13.4	36.7	12.1	15.4	25.8	32.9	215
Melbourne, FL	13.0	19.5	11.1	11.8	18.8	26.0	586
Yuma, AZ	12.3	21.3	-2.7	3.7	19.9	23.4	209
Daytona Beach, FL	12.2	17.6	13.8	13.6	20.8	28.7	646
Bend, OR	12.1	38.6	20.3	26.4	35.9	21.2	186
Roseburg, OR	10.3	20.6	6.1	3.3	8.1	30.0	109
Medford, OR	10.0	18.3	8.3	9.9	13.7	25.8	217
Coeur d'Alene, ID	9.3	20.0	15.2	24.3	28.5	22.7	157
New Bern, NC	9.1	28.1	-6.6	-4.3	3.7	23.0	125
Tucson, AZ	9.1	19.0	2.3	6.5	5.7	23.6	1,027
Lakeland, FL	9.1	16.8	13.2	20.9	23.1	22.7	686
Traverse City, MI	9.0	25.8	5.0	7.1	13.9	24.4	149
Eugene, OR	8.8	22.9	6.7	8.8	10.1	22.6	373
Salisbury, MD	8.7	15.6	9.3	11.9	20.5	25.2	404
Missoula, MT	8.3	30.6	5.0	8.0	17.7	21.7	117
Tampa, FL	8.1	18.5	9.6	14.2	25.4	18.9	3,098
Shrinking regions	3.9	12.2	-4.3	-4.1	0.7	20.4	36,556
Fast-growth regions	3.6	17.8	4.8	16.2	23.7	13.4	101,921
Moderate-growth regions	3.0	12.5	-1.6	4.3	11.3	16.0	102,842
High-cost regions	1.5	9.8	-4.9	5.7	15.0	12.1	53,376

Notes: Regions are core-based statistical areas. Retirees are age 55 or older and not in the labor force. Population-weighted averages for the comparison groups are presented in the shaded rows.

Sources: American Community Survey (Flood et al., 2020), US Census Bureau, Bureau of Labor Statistics, and author's calculations.

Among Fourth District metro areas, Pittsburgh, Cleveland, Akron, Canton, and Youngstown have unusually high shares of their population that are near retirement age. Figure 10 shows the share of the population that was born between 1946 and 1964 (baby boomers) who are still working and can be expected to retire sometime soon.

**Figure 10. Potential Retirees per 1,000 Residents**

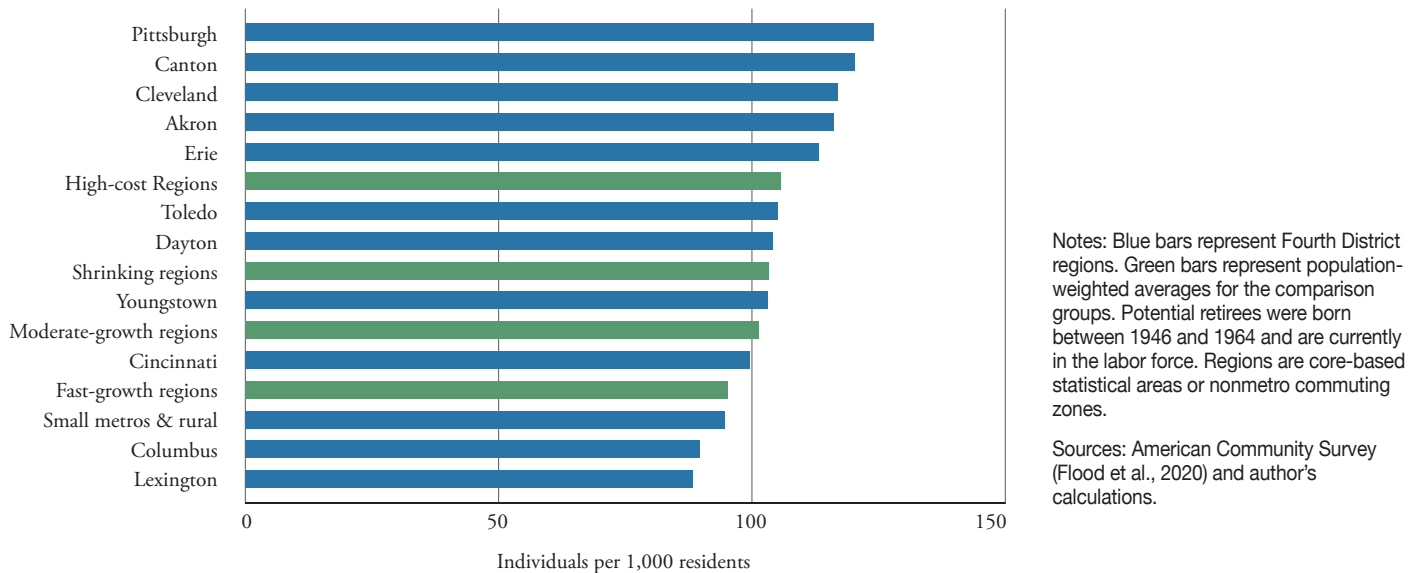
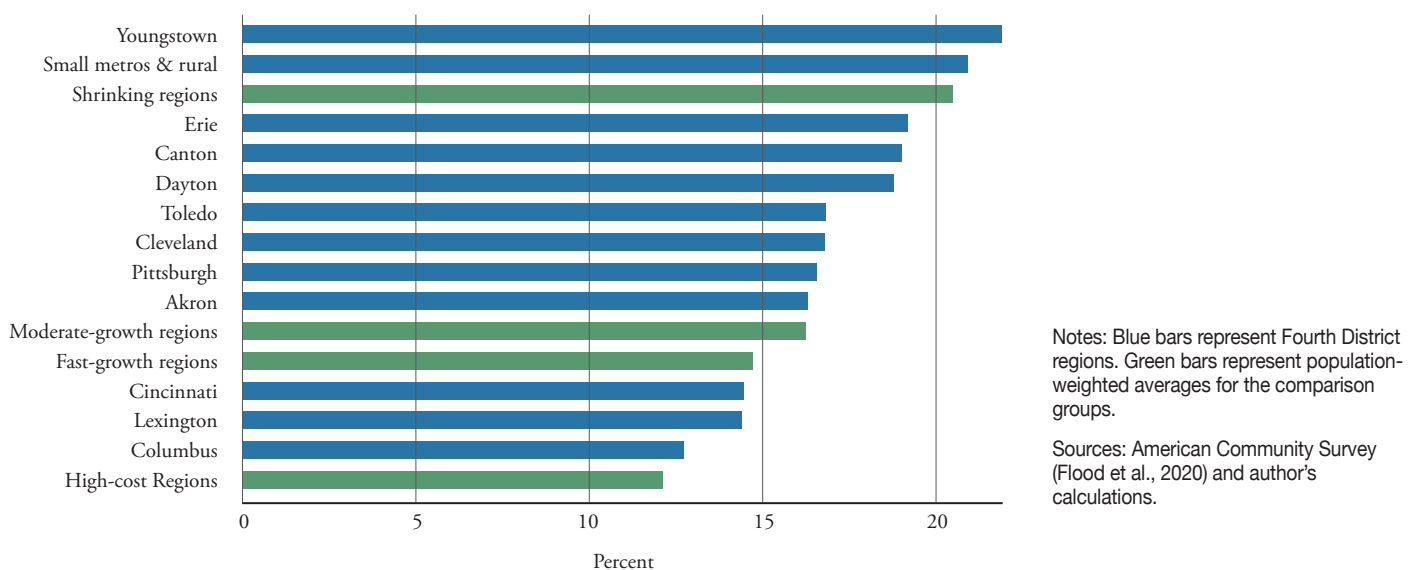


Figure 11 shows that an above-average share of personal income in Fourth District regions is already brought in by retirees. While few people associate government transfers such as Social Security with economic dynamism, research has proven their ability to stabilize and stimulate regional economies (Shoag, 2013; Pennings, 2021; Dupor and Guerrero, 2021). Retirees cannot be laid off during a recession. In many cases, retirement income is inflation adjusted, a situation that helps it persist in real value through times of higher inflation. Also, the predictability of retirement payments allows businesses that serve retirees to confidently make long-term investments.

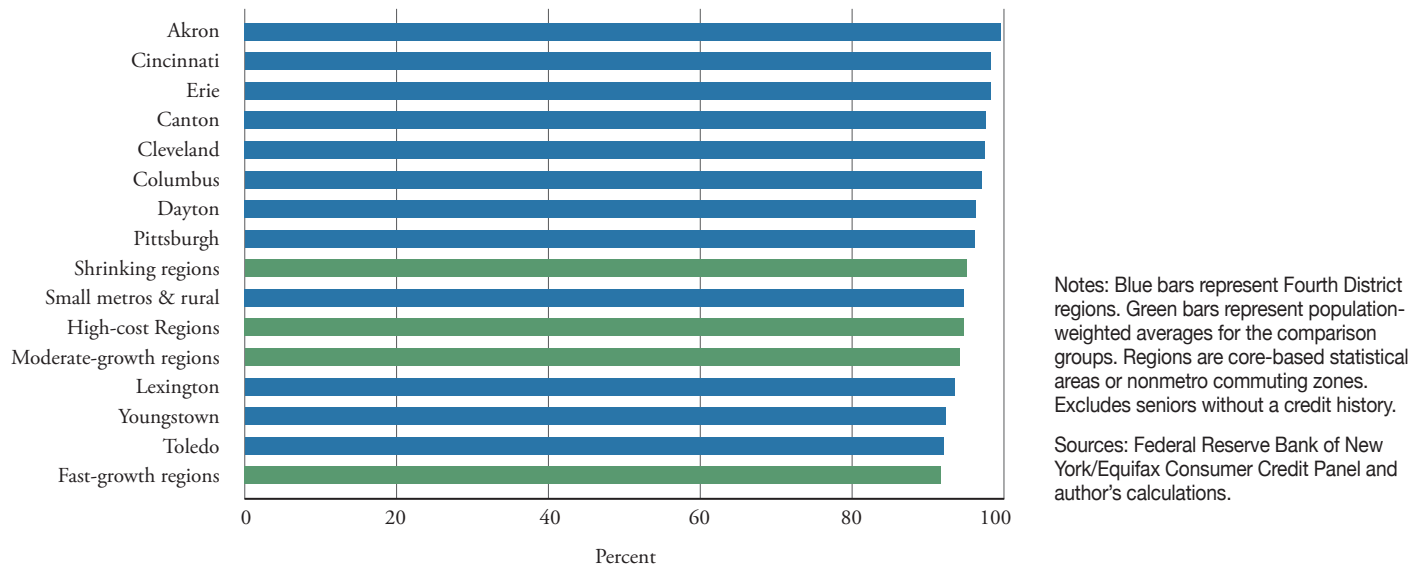
Many of us have encountered recent discussions of dependency ratios (retirees per worker) and the debates about how to keep Social Security and Medicare solvent. However, while large and growing transfers can be a very real challenge to the overall economy, that does not mean that the retirees receiving those transfers do not benefit. Regions that have larger concentrations of these retirees become net beneficiaries as well.

**Figure 11. Share of Personal Income Reported by People Ages 55 and Older and Not in the Labor Force**



While there is a flow of retirees toward retirement destinations, it is also true that most people opt to age in place. Figure 12 shows that among people age 65 and older observed from 2010 to 2020 in the credit bureau data (CCP), more than 90 percent of their time is spent in the region where they are first observed. As with the retention discussion above, the tendency for people to prefer aging in place provides a foundation for efforts to increase retention of retirees in the Fourth District metro areas and commuting zones. Surveys of local retirees and retirees who moved away could reveal what factors contributed to their decisions. Policies could be designed to address some of these factors.

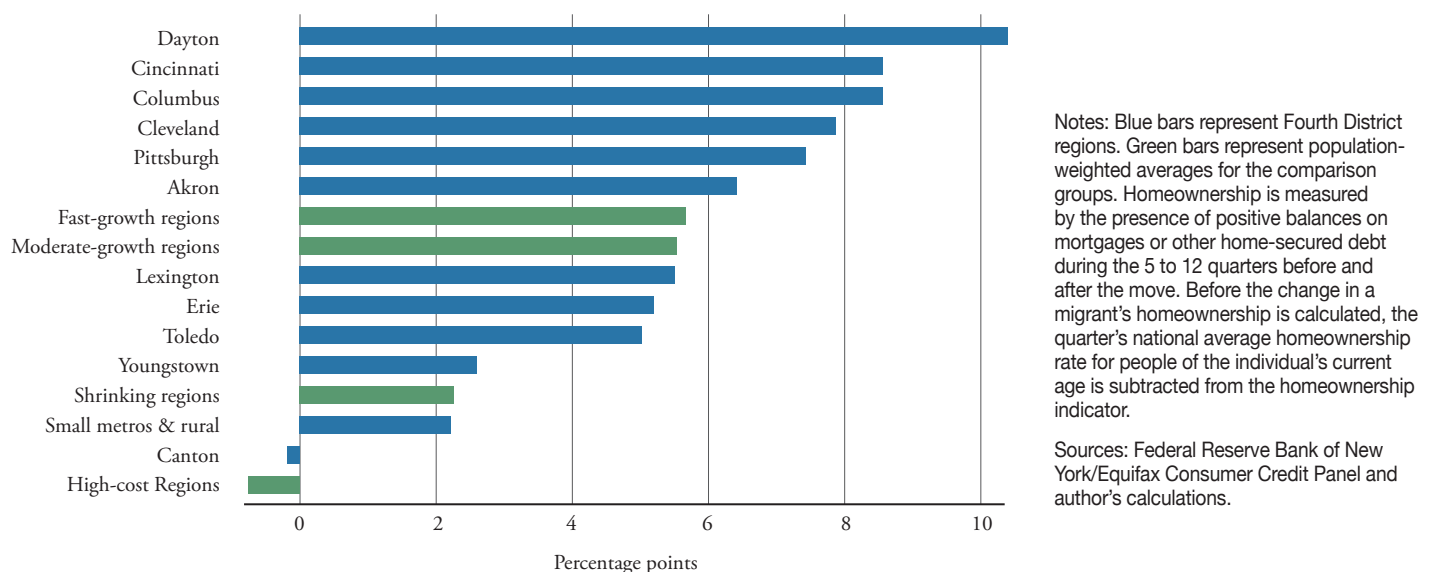
**Figure 12. Share of Quarters When Seniors, Ages 65 and Older, Are Observed in Their Initial Region from 2010 to 2020**



### Insight 3: Understand and develop the advantage in homeownership

Many regions with lower-cost housing tout this as an advantage over regions with higher incomes and job growth (NPR, 2022). To support these claims, some people might cite higher homeownership rates in their region or observe housing prices relative to measures of people's incomes. While those cross-sectional data are suggestive, they cannot observe if arriving migrants are more likely to own homes after they move. Using the CCP, we can measure just how much of an increase in homeownership is realized by migrants to each Fourth District region. Figure 13 shows the average change in homeownership by area for arriving migrants in each region.<sup>7</sup>

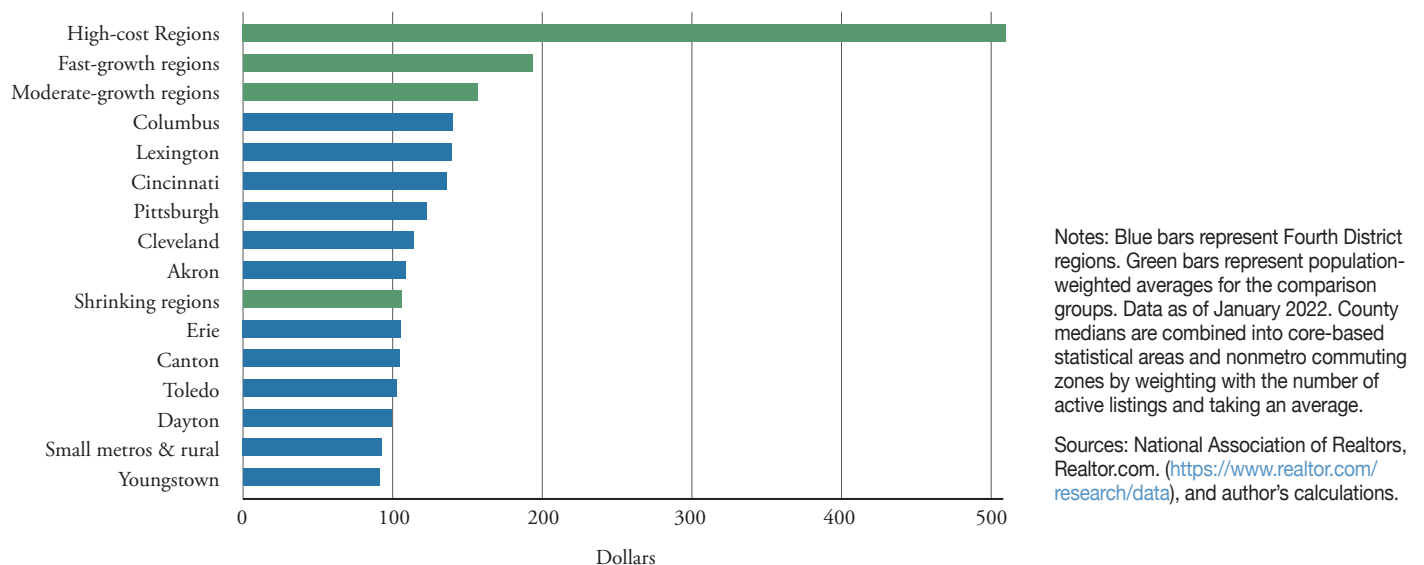
**Figure 13. Increase in Homeownership for Arriving Migrants**



Movers to fast-growth and moderate-growth regions increase their homeownership by 5 percentage points beyond what we would expect just based on their age. Intuitively, the migrants to high-cost regions are slightly less likely to be homeowners than they were before they moved. Remarkably, there is evidence that increases are substantially higher for people moving to Dayton, Cincinnati, Columbus, Cleveland, Pittsburgh, and Akron.

People who move to several Fourth District metro areas are unusually likely to become homeowners, and this can be a selling point for the District. However, local policymakers should understand the context. In Figure 14, we see Fourth District and national distributions of the median list price per square foot. Most of the rest of the US population, where most potential in-migrants live, reside in places where housing is not very expensive. Some of the alarm about a housing affordability crisis is driven by the 18 percent of the US population that lives in the 13 metro areas with prices of more than \$350 per square foot. People in these areas may feel locked out of homeownership, making them amenable to invitations to move to the Fourth District. To attract people from less costly regions, leaders in the Fourth District may need to use a different appeal.

**Figure 14. Median List Price per Square Foot**



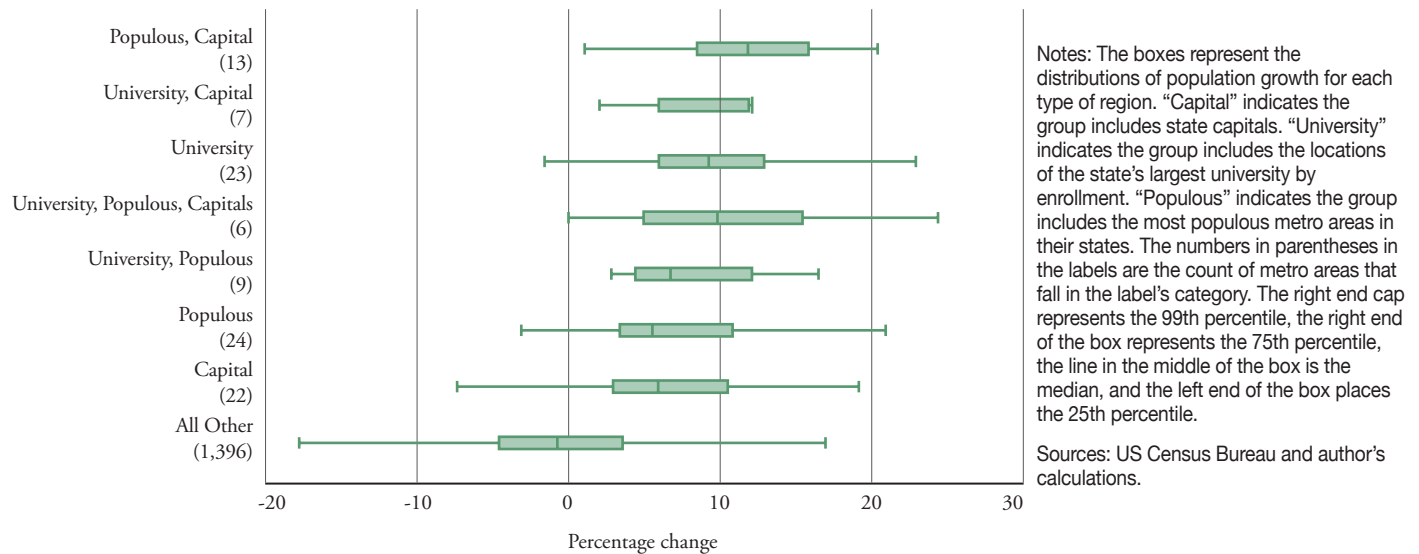
#### Insight 4: Use public universities to circulate residents

If one spends time looking at relative performance in population growth or economic growth by various measures, it is difficult to not notice the strong performance of metro areas that are state capitals, host a large university, and are much larger than others in their state. For example, the growing metro areas of Salt Lake City, Phoenix, Denver, Minneapolis, Indianapolis, Nashville, and Atlanta all combine two or three of these characteristics. How much does this really matter? Figure 15 suggests that these characteristics matter quite a bit. It displays a box plot that represents the population growth from 2010 to 2020 for metro areas grouped by whether they are a state capital, the state's most populous metro area, host to the state's largest university (measured by full-time enrollment), or have combinations of these characteristics (National Center for Education Statistics, 2022). The lines in the middle of the boxes represent the median region of the group. The differences in population growth between each of the groups of metro areas (each bar) versus regions with none of the characteristics are statistically significant.



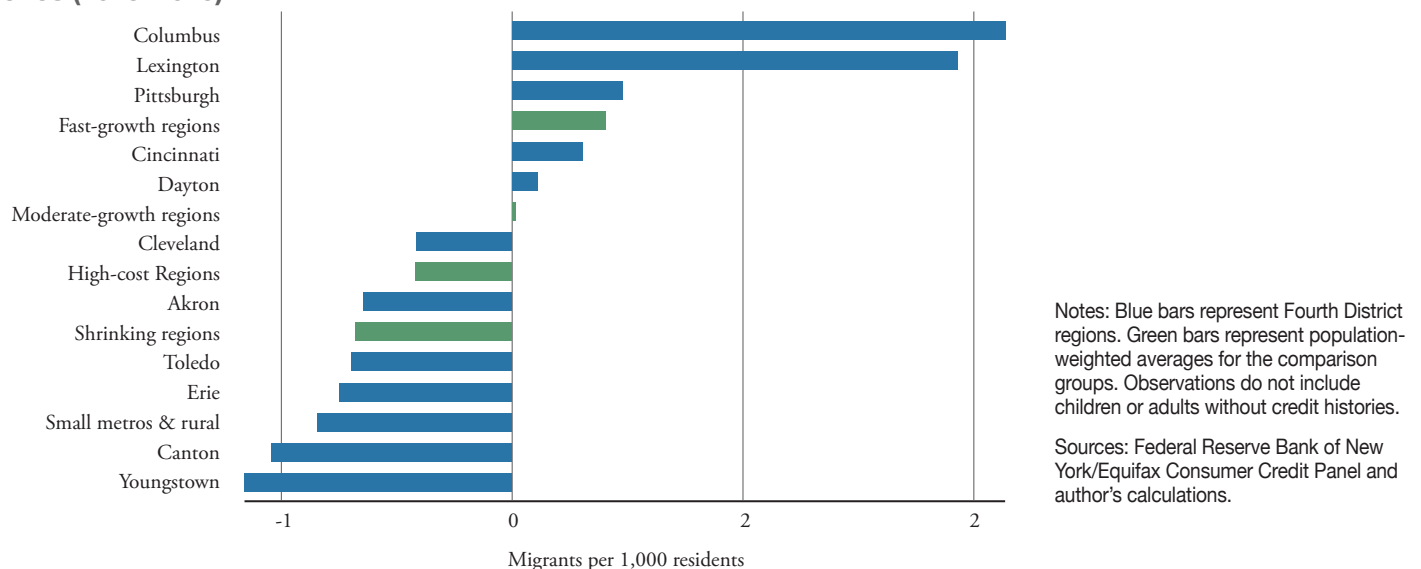
Being the state capital is associated with 5.5 percentage points of growth, conditional on the other two variables.<sup>8</sup> Similarly, being the largest metro area in the state is associated with an additional 5 percentage points of growth, while being home to the state's largest university adds 7.2 percentage points. In the Fourth District, Columbus has the state capital and university characteristics, while Cincinnati is the largest metro area in Ohio, being slightly larger than Cleveland and Columbus. Lexington is home to its state's largest university, while the capital of Kentucky is in a neighboring metro area outside of the Fourth District, Frankfort. Pittsburgh, Cleveland, and all other Fourth District metro areas lack any of the three characteristics that are strongly linked to population growth.

**Figure 15. Population Growth by Region Type (2010–2020)**



Throughout this report, Columbus and Lexington are highlighted as being more successful at attracting migrants than other Fourth District metro areas. Is this because they are draining the rest of their states of talent and labor? In Figure 16, we can see that they benefit far more from net in-state migration than the other areas in the Fourth District. In fact, Figure 4 shows that Columbus and Lexington's net domestic migration with the whole country is around 2 to 3 people per 1,000 residents per year. Their in-state net migration is similar, suggesting that if not for their advantage in in-state migration, they would be close to breaking even on net domestic migration.

**Figure 16. Average Annual Net In-State Migration for Core-Based Statistical Areas and Nonmetro Commuting Zones (2015–2019)**



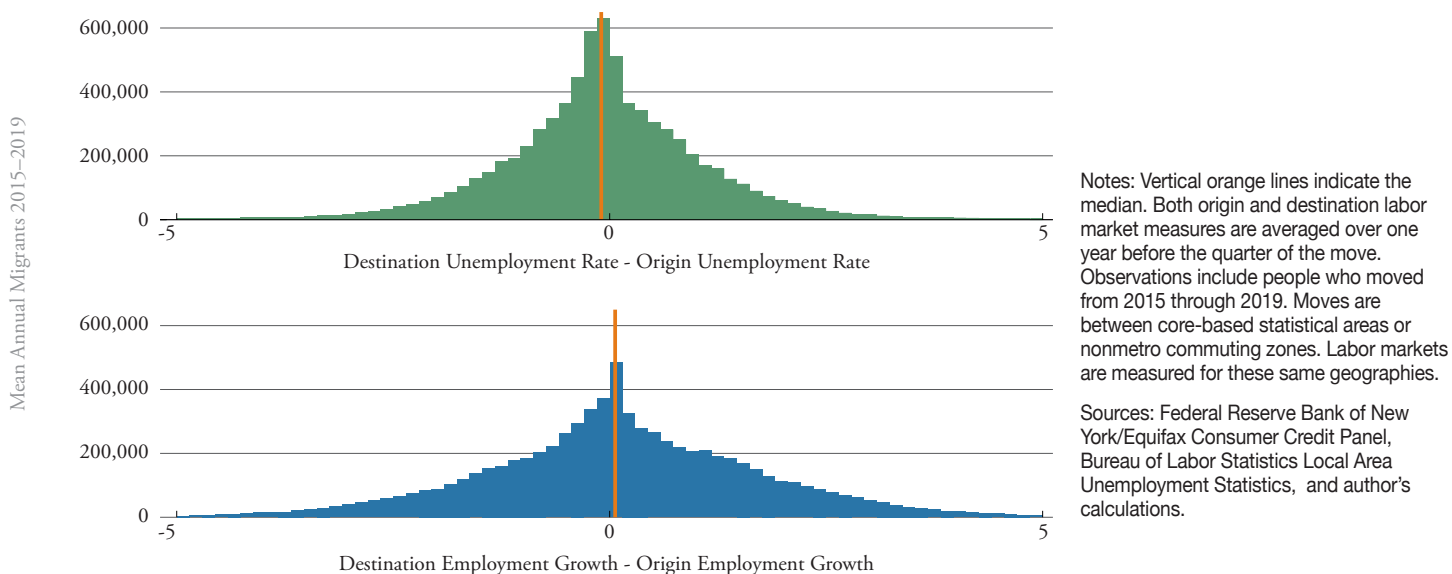
While policymakers are unlikely to change state capitals or population rankings, they might have some control over the way universities support population growth. Winters (2011b) documents that many of the fastest-growing places after 2000 were the home metro areas of each state's flagship university, which were absorbing in-state migrants. More generally, research has shown that part of a region's growth is caused by students who move to the region to attend school and then remain in the area after graduation (Groen, 2004; Faggian and Franklin, 2014).<sup>9</sup> State legislatures might be able to create more equal growth throughout the state by shifting investments toward the public universities that already exist in each metro area. Narrowing the quality or attractiveness differences between the flagship school and other schools could lead to a circulation of in-state students, rather than a concentration of them in a single metro area. Some of those students will be retained by the hosting metro area and contribute to the workforce there after graduation.

Drawing students and workers to multiple metro areas across a state could involve giving up some efficiency to gain some equity. Urban economists argue that clusters of highly skilled workers in large metro areas increase workers' productivity. Gathering all of a state's skilled workers in a single metro area would be extremely unequal, but it might maximize productivity. The force that prevents all skilled workers in a country from concentrating in a single region is congestion costs, such as commuting time. Congestion costs in Fourth District metro areas are relatively low, so they cannot justify dispersing employees across our states. Instead the motivation for elevating the nonflagship universities would have to be a goal of spreading workers and their wealth across the state.<sup>10</sup>

### Insight 5: Improve the business climate

As discussed in Section 2, most of us assume that when people move, they will choose a destination with a stronger labor market. We expect to see flows of migrants toward places with low unemployment rates and high employment growth. In a recent working paper, I explore the differences that migrants actually experience and find that migrants are slightly more likely to move to stronger labor markets, but there are large gross flows of people moving toward weaker labor markets every quarter, too (Whitaker, 2022b). Figure 17 displays two graphs that illustrate this point. One shows the difference in unemployment rates between the region migrants left and the place to which they moved. The other shows the difference in recent employment growth between the mover's origin and destination. We can see that hundreds of thousands of people move to weaker labor markets each year—almost as many as those who move to stronger labor markets. On one hand, this could be encouraging to places that have recently had weaker job markets because it demonstrates that people are still willing to move to such places. However, migrations do slightly favor places with lower unemployment rates and faster employment growth, and this favoring translates into net migration favoring stronger labor markets. Over many years, this chips away at population growth in the weaker markets.

**Figure 17. Migration Counts Based on the Difference in Unemployment Rate or Employment Growth Rate in the Migrants' Origins and Destinations**



What policies create a favorable business climate and encourage firms to grow employment locally? The direction that local policymakers should take may depend on their region's starting point. Rickman and Wang (2020) published a review of 46 studies conducted between 2003 and 2018 on the question of how both state and local fiscal policy impact economic activity. The studies looked at increases and cuts in income, corporate, property, and sales taxes. Some of the articles reviewed also investigated changes in expenditures on education, transportation, welfare, and other categories. Rickman and Wang concluded that there is no universal policy recommendation that can be given to all state and local governments. Cutting taxes and spending was found to stimulate growth in states that already had a high tax burden. Similar cuts in states without a high tax burden might have no effect or even a negative effect. The other side of this arc is that increasing taxes and public investments is more likely to be beneficial in a state or region that is starting from a low level of public services. This is intuitive if we think about diminishing returns. For example, if a state has inadequate highway infrastructure for its population, adding highways facilitates growth. If another state already has ample highways, adding more provides no benefits, only additional costs. Each state and local government should search for its optimal level of taxes and expenditures rather than simply seeking to minimize or maximize both of them. Also, Rickman and Wang found that context matters for realizing benefits from fiscal policies. For example, cutting taxes and expenditures during or just after a recession removes demand from the regional economy without stimulating enough business activity to offset the cuts. Also, state and local governments must always consider the neighboring jurisdictions with which they are competing when setting fiscal policy. A state might be at its optimal level of taxing and spending one year, but a major tax cut in a neighboring state means that a new, lower level of taxation is needed to keep the state's business climate attractive.

Recent research also points to policies other than fiscal policy that can encourage businesses to stay and expand. Plemmons and Ghosh (2022) studied measures of the ease of business activities such as incorporating, complying with employment regulations, and paying taxes. They found more growth in regions where businesses reported greater ease of repeated interactions with governments, such as paying taxes. The ease of tasks that were done only occasionally, such as registering a property, had no detectable impact. This suggests that state and local governments should invest in systems and staff for processes that businesses need to do many times each year. It's helpful to make tasks such as onboarding new employees and paying taxes as easy as possible. Johnson and Kleiner (2020) demonstrated that people who work in occupations that require state licenses are less likely to move to other states. Deyo and Plemmons (2022) find that recognizing occupational licenses acquired in other states encourages migrants with those licenses to move to the states offering reciprocity. These findings suggest that forgoing licensing requirements or recognizing other states' licenses are examples of nonfiscal policies that could encourage growth.

## **Insight 6: Preserve and develop our built amenities**

The amenities-as-driver-of-growth side of the debate described in Section 2 had a resurgence in the early 2000s because it shifted focus from climate and topography to amenities that can be produced anywhere, such as arts and entertainment. Proponents of the creative class concepts claimed investing in retail and nightlife would attract highly skilled young people to a region, and businesses would locate operations there because they could hire talented workers (Florida, 2005). Many cities and regions embraced this amenity-first growth strategy, midway through the nationwide decline in violent crime and the arrival of millions of Millennials into adulthood.

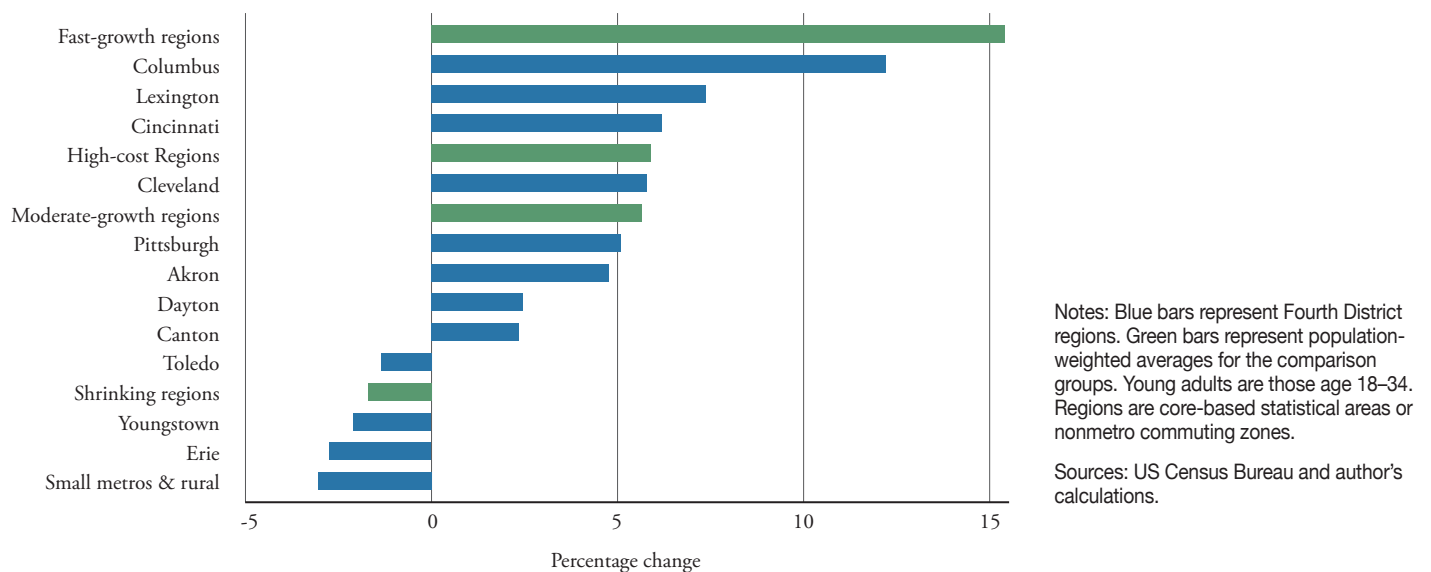
When Generation X (born 1965–1979) were in their twenties, most central cities were at their all-time lows by various measures (Boustan and Shertzer, 2010). Central city populations were rapidly declining, and violent crime peaked in 1989 (Foote, 2015). Among large central cities in the United States, only a few had neighborhoods with amenities and housing marketed to young adults. During the 2000s, this began changing (Edlund, Machado, and Sviatschi, 2022; Couture and Handbury, 2020). Entrepreneurs in other metro areas created a supply of new housing, entertainment venues, restaurants, coffee shops, and breweries to meet the rising demand of Millennials (McLaughlin, Reid, and Moore, 2016; Glaeser, Kim, and Luca, 2018). The revitalization of central business districts and adjacent neighborhoods has been documented (Whitaker, 2019), with some debate over whether preferences for dense urban neighborhoods have changed (Couture and Handbury, 2020), or whether the large Millennial cohorts (born 1980–1994) increased demand because of the life-cycle pattern of young adults living in these neighborhoods (Myers, 2016). Millsap (2018)

argues that preferences for dense urban neighborhoods have consistently been higher among people with bachelor's and graduate degrees for cohorts born in the 1950s through the 1990s. Because more people earned degrees in the later cohorts, more of their members selected these neighborhoods. Su (2022) argues that the rising value of skilled workers' time prompts them to seek shorter commutes, but once the presence of those workers supports the creation of neighborhood amenities, additional residents arrive who seek the amenities rather than short commutes.

By 2015, young adults no longer needed to leave midsized metros across the country in search of a specific lifestyle because formerly rare amenities were now available almost everywhere (Schwindt, 2019; Renn 2014). Other researchers have emphasized the lack of job opportunities following the Great Recession, leaving unusually large shares of cohorts in their 20s in midsized cities, rather than gathering them into a few superstar cities (Chan, O'Regan, and You, 2021; Kemeny and Storper, 2020). For employers outside the largest metro areas, this meant that a larger pool of local talent remained local.

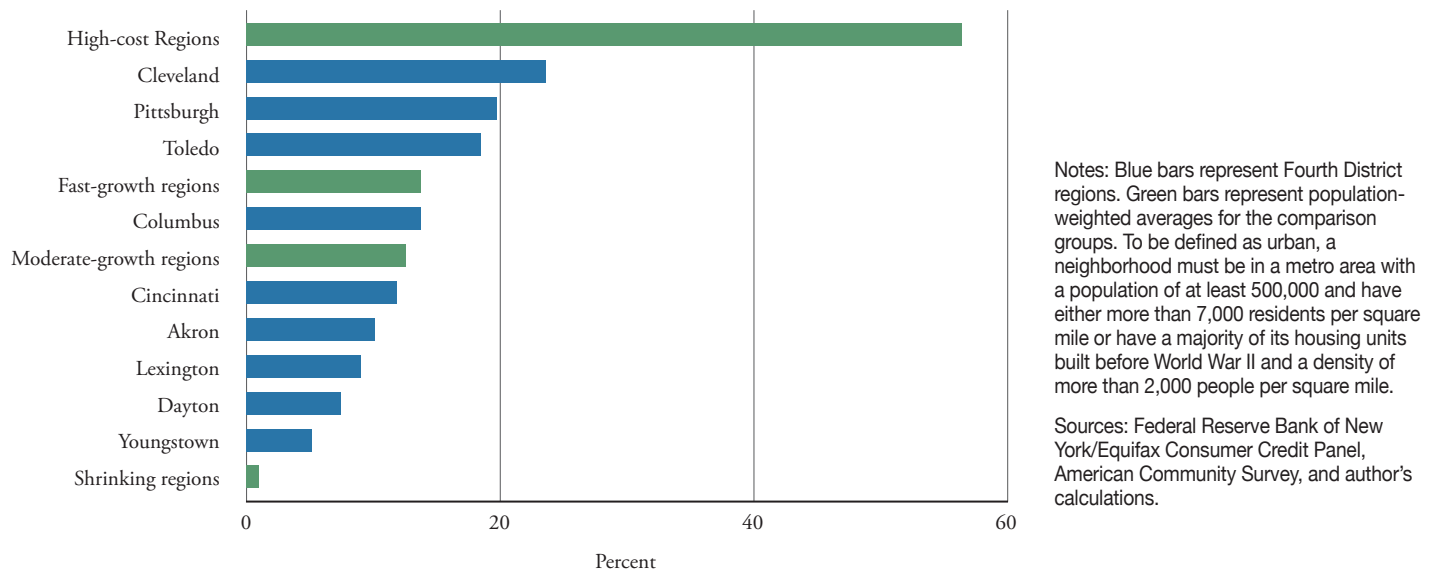
With these trends at play, how have the Fourth District metro areas fared in terms of growing their young-adult populations? The national increase in the population between 18 and 34 was 7.5 percent between the 2010 and 2020 censuses. In the Fourth District, only Columbus exceeded the national average increase (Figure 18). Lexington, Cincinnati, Cleveland, and Pittsburgh displayed growth of more than 5 percent. Toledo and Erie lost ground in their young-adult populations over the decade.

**Figure 18. Change in the Young-Adult Population (2010–2020)**



The Fourth District is a relatively old region of the country in the sense that it had several large cities developed before World War II. This means that the Fourth District has inherited authentic dense urban neighborhoods that, to a great extent, are not reproduced in new developments in other regions because of zoning and code limitations. In Figure 19 we can see that many Fourth District residents are in metro areas that have a substantial share of their population in dense urban neighborhoods. For this analysis, a census tract (neighborhood) is categorized as urban if it is in a metro area with a population of at least 500,000 and has either more than 7,000 residents per square mile or a majority of its housing units built before World War II and a density of more than 2,000 people per square mile.<sup>11</sup>

**Figure 19. Share of Residents That Live in an Urban Neighborhood**

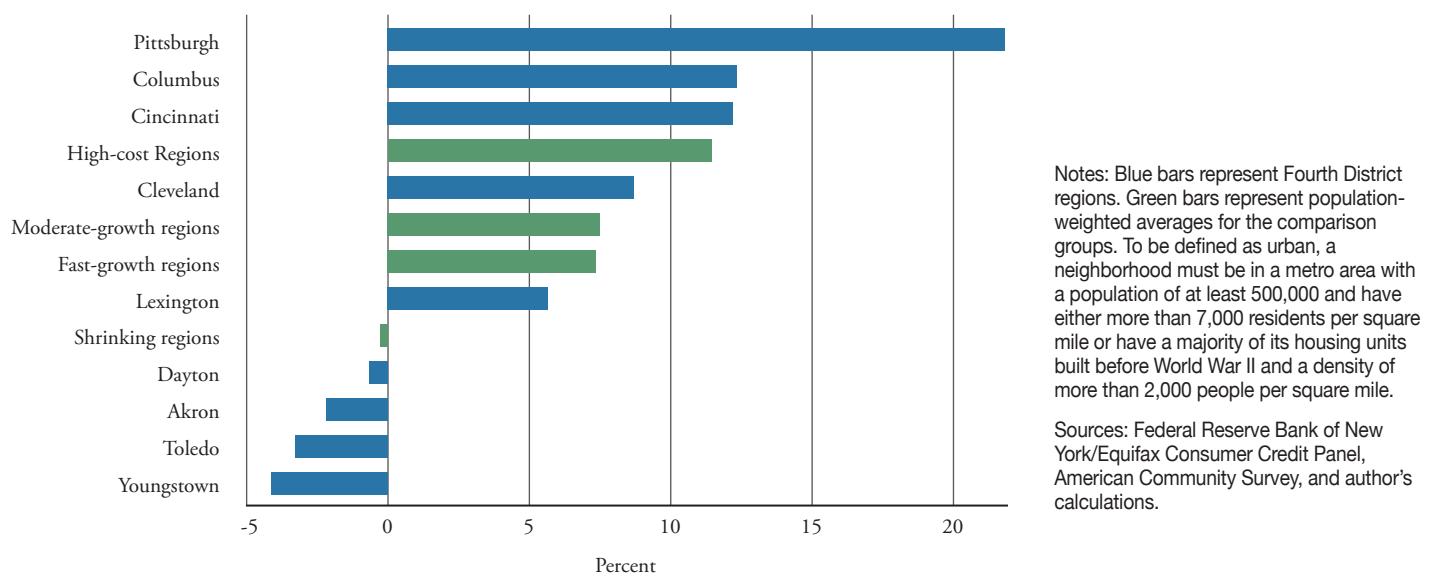


On the one hand, the improvement of dense neighborhoods and the expansion of their housing and amenities are clearly not sufficient to sustain or raise a region's population. Pittsburgh, Cleveland, and Akron all have neighborhoods that were extensively redeveloped during the last decade. There was strong population growth in these neighborhoods, but it was not enough to create strong growth in the region overall. On the other hand, there is ample evidence that young people, especially young people with higher levels of education, prefer these neighborhoods (Millsap, 2018; Carlino and Saiz, 2019). Figure 20 shows that young migrants with high credit scores choose urban neighborhoods when they arrive in most destinations. These migrants are between the ages of 18 and 34 and have top-third credit scores.



If these migrants did not care about urban neighborhoods, when they arrived in a metro area that has one-third of its population living in urban neighborhoods, we would expect them to scatter themselves across the region and end up with 33 percent in urban neighborhoods. Figure 20 displays the difference between the percent of migrants who chose an urban neighborhood and the percent of the metro area's current residents in urban neighborhoods. For example, just less than 20 percent of the residents of the Pittsburgh metro area live in urban neighborhoods, but more than 41 percent of the young migrants with high credit scores live in an urban neighborhood. This difference—or urban preference—of 21 percentage points in the Pittsburgh area is represented by the figure's top bar. Urban preference is highest in regions that attract large populations of young graduates, such as Boston (31 percentage points), Seattle (28 percentage points), Washington (27 percentage points), and Chicago (25 percentage points). To take advantage of this phenomenon in the Fourth District, regional policymakers will need to continue maintaining the urban neighborhoods in its metro areas. Doing so preserves one of the region's valuable advantages and makes it easier to attract young and highly educated migrants.

**Figure 20. Difference Between the Share of High-Credit-Score Young In-Migrants Who Choose an Urban Neighborhood and the Metro Area's Share of Its Population in Urban Neighborhoods (2015–2019)**



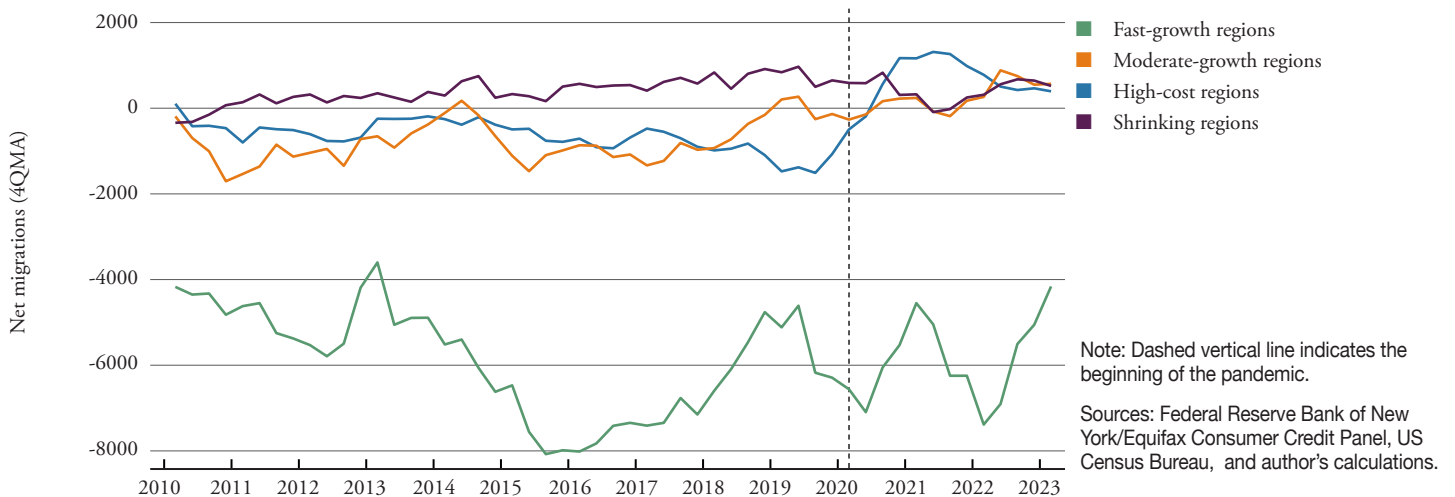
### Insight 7: Prepare for the dispersion of remote workers

Most of this analysis has focused on the second half of the last expansion because of data availability and an understanding that some of the extremes in the 2020 and 2021 data are unlikely to ever be repeated. However, it is also reasonable to expect that some pandemic-induced changes will shape trends for the next decade or more. The pivotal question is how many employees will be permitted to choose a different metro area now that they have demonstrated to their employers that they can be productive while working remotely.

During the early months of the pandemic, there was a major slowdown in migration to the largest and most expensive metro areas (Whitaker, 2021). Migration out of these metro areas continued with less change, so net migration for New York, Chicago, Washington, Boston, and other large, high-cost metro areas briefly favored Fourth District metro areas, including Pittsburgh and Cleveland. As lockdown restrictions were lifted, and people began returning to some offices, migration patterns shifted to favor a combination of places booming before the pandemic and small metro areas close to the largest high-cost metro areas (Whitaker, 2022a). Migration out of the largest, most expensive metro areas was rising before the pandemic, probably due to a relentless rise in housing costs. Housing costs in the cores of the most expensive metro areas paused their growth in 2020, but resumed their rise in 2021 (Li and Zhang, 2021).

Figure 21 presents a time series of the net migration between the Fourth District and the four types of regions considered in this report. In each quarter since 2017, the Fourth District has lost 4,000 to 8,000 residents to fast-growth regions in other parts of the country. Before the pandemic, the Fourth District was losing about 1,000 people per quarter to moderate-growth regions while gaining a few hundred people on net from shrinking regions outside the Fourth District. The net flows with moderate-growth and shrinking regions have shifted closer to zero since the pandemic began. Most interestingly, the steady flow of migrants from the Fourth District to high-cost regions distinctly reversed during the pandemic.

**Figure 21. Quarterly Net Migration among the Fourth District and Four Types of Regions**

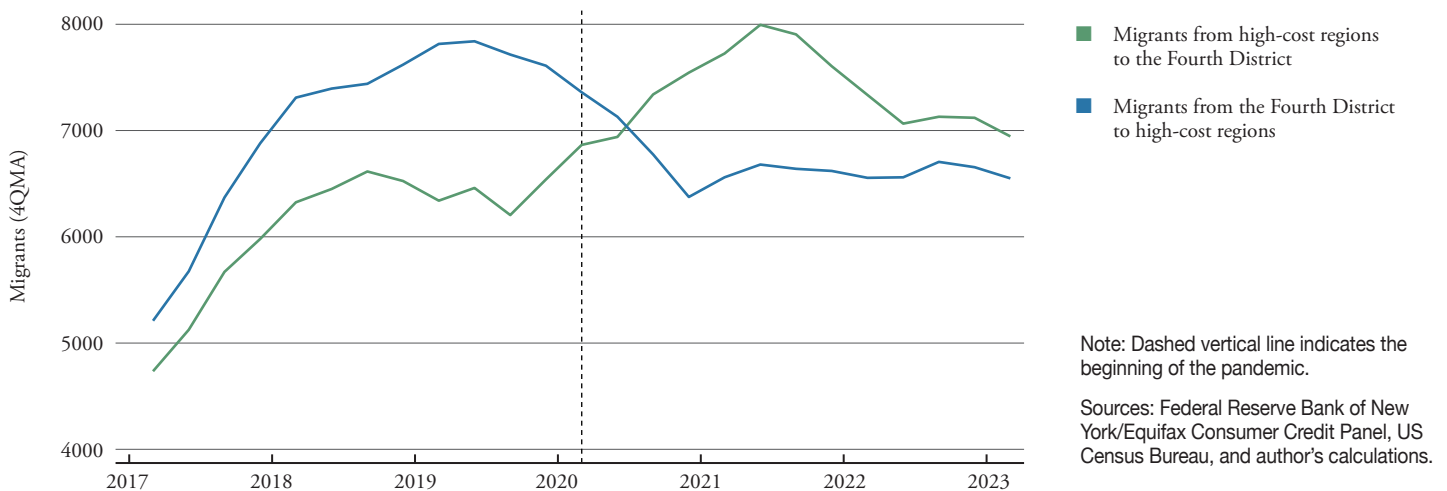


The literature on the migration of remote workers is necessarily in its infancy. Several studies have already documented drops in commercial and residential real estate values closer to central business districts because of remote work during the pandemic and workers' anticipating that remote work will be elevated afterward (Delventhal, Kwon, and Parkhomenko, 2022; Althoff et al., 2020; Ramani and Bloom, 2021; Davis, Ghent, and Gregory, 2021; Liu and Su, 2021). Despite the lifting of state, local, and corporate restrictions on returning to offices, office attendance in major cities remained below 60 percent in 2022 (Putzier, 2022).

Before the pandemic, the most populous metro areas were losing people via net migration to less populous but fast-growing regions in the South and mountain West. The pandemic substantially accelerated this trend (Brown and Tousey, 2021; Whitaker, 2021).

As noted above, net migration between the Fourth District and the high-cost metro areas turned favorable to the District during the pandemic after years of favoring the high-cost metro areas. It could be the case that more severe lockdowns in the high-cost metro areas made it more difficult and less desirable to move there. If that were the case, the end of the pandemic and easing of restrictions might allow that flow to resume. Figure 22 shows that migration from the Fourth District to high-cost metro areas remains lower than it was in 2018 or 2019, while migration from the high-cost metro areas to the District remains above prepandemic highs. The latter flow could include people who are employed with a firm in the high-cost metro area that is now allowing remote work.

**Figure 22. Quarterly Gross Migration between the Fourth District and High-Cost Regions**



If remote workers do disperse from the existing concentrations of high-skilled employment, at a minimum, they need high-speed internet access and transportation that lets them easily visit their employer's physical location. In the first year of the pandemic, Scranton, Allentown, Bakersfield, and Stockton all experienced unusually large influxes of migrants from the large, high-cost metro areas nearby (Whitaker, 2021). Unfortunately, no part of the Fourth District is within reasonable driving distance of the coastal metro areas or Chicago, so our focus must be on the availability of frequent direct flights.<sup>12</sup> Funds may be needed to stabilize airports, port authorities, and air carriers that lost revenue during pandemic travel restrictions. Fortunately, the American Rescue Plan contains funding specifically for this purpose and other funds that local policymakers could direct to recovering air service as needed.

## Conclusion

Translating insights into policy recommendations and implementing them is always more easily said than done in a world of scarce resources. However, the analysis presented here illustrates several important facts that can be used by local policymakers and businesses to focus their efforts.

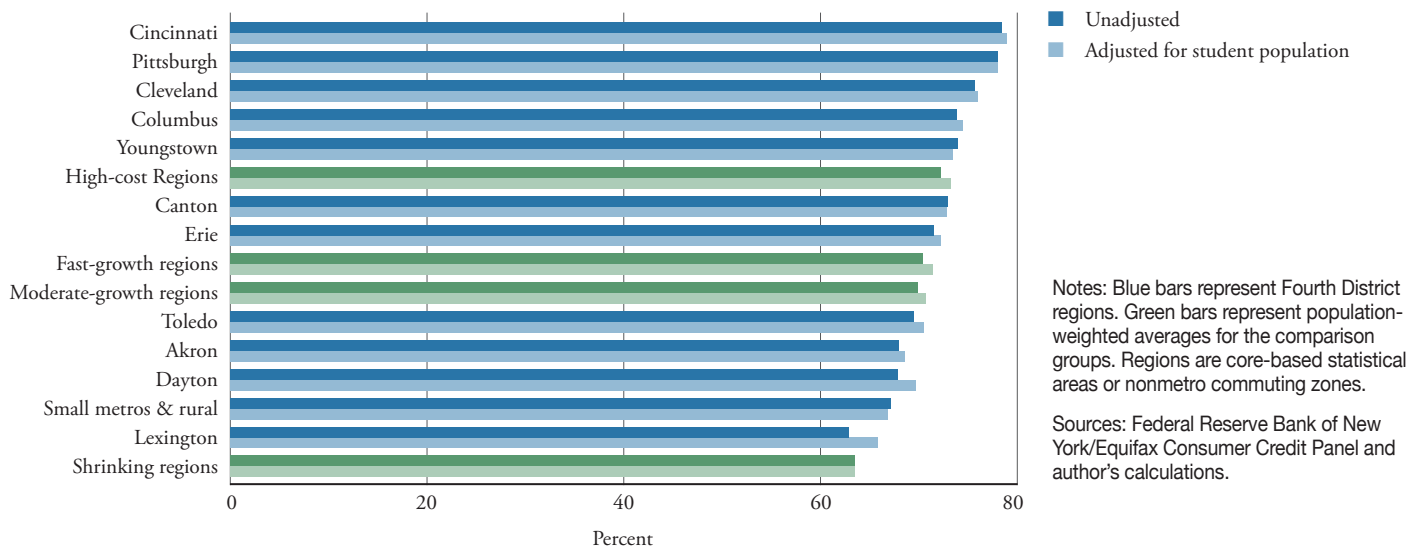
Among the regions of the Fourth District, Columbus and Lexington are clearly faring well relative to metro areas across the nation on many measures from population growth to the attraction of international migrants. The other Fourth District metro areas are challenged by slow growth, declining populations, and weaker attraction of migrants who can enhance the local talent pool. Some have suspected that state capitals and college towns are growing at the expense of in-state neighbors, and there are data to support that theory.

In this analysis, we have learned other facts that may not be common knowledge but should be if Fourth District regions intend to maintain their populations. Rather than losing an unusually large number of out-migrants, the major metro areas of Cincinnati, Cleveland, and Pittsburgh retain more locals and returning natives than most regions of the country. The Fourth District has an unusually high share of older residents at a time when retirees are becoming a major driver of economic activity even in fast-growing places. These considerations suggest underappreciated opportunities to grow regional populations by building on existing trends.

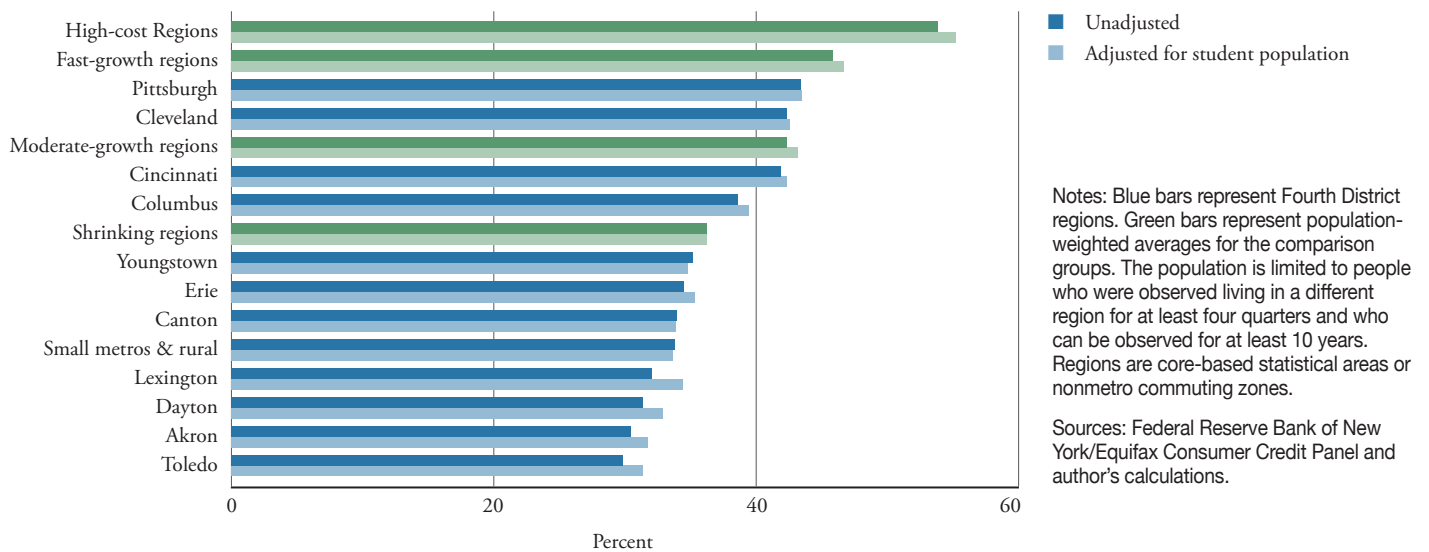
With carefully crafted recruiting around affordable housing and urban amenities, the Fourth District can take advantage of the dispersion of high-skilled workers that is likely to follow the pandemic. A combination of these undertakings could secure the benefits of population growth for the residents of the Fourth District over the coming decade.

## Appendix

**Figure A1. Share of Quarters in Which Individuals Are Observed Living in Their Original Region, Including Quarters after Individuals Have Returned from Living Outside the Region**



**Figure A2. Share of Out-Migrants Who Are Observed Living in Their Original Region at Age 35**



**Table A1. Regression of Regional Population Growth on Indicators of the Home Region of the State's Largest University, Capital, or Largest Population (2010–2020)**

	Coef.	SE
Home of state's largest university	7.2***	(1.3)
State capital	5.5***	(1.3)
Most populous metro area in the state	5.0***	(1.2)
Constant	0.1	(0.2)
R <sup>2</sup>	0.06	
N	1,503	

Significance key: \* for p<.1, \*\* for p<.05, and \*\*\* for p<.01.



## Endnotes

1. There are several definitions of metro areas, and the one used here is the core-based statistical area. The rural labor markets are identified by commuting patterns, and they are referred to as commuting zones.
2. Recall that only one metro area with a population of more than 1 million lost population: Hartford, Connecticut.
3. To protect survey respondents' confidentiality, the US Census Bureau reports migrants' origins using larger geographies (migration public use microdata areas) that are different from the geographies reported for destinations. To create comparable gross inflows and outflows, I have used the CCP data instead. The US Census Bureau's estimates of regions' net domestic migration do not have the same confidentiality concerns or suppression because they do not reveal respondents' origins and destinations together. For Figure 4, I report the census estimates. If we subtract the CCP-estimated outflows from the CCP-estimated inflow, we have a net flow measure that is similar to the census's net domestic migration measure reported in Figure 4. The correlation between the two is .93. We cannot expect the measures to match exactly because the CCP does not observe children, young adults who have not started using credit, and individuals who do not use traditional lenders. If the CCP observed these people as the census does, the CCP estimates would capture more of the out-migrants from net-loss places who become the in-migrants in the net-gain places.
4. If we adjust the estimates to remove the influence of students, none of the key takeaways change.
5. While international migrants to the United States are observed directly, the census must use proxies to estimate international out-migrants. Population declines beyond what can be explained by deaths and domestic migration are assumed to be international departures. See <https://www2.census.gov/programs-surveys/popest/technical-documentation/methodology/2020-2021/methods-statement-v2021.pdf>.
6. This measure can only be constructed using the CCP. Unfortunately, we know that many students start their credit histories while they are in college, so the first observed address may be near their campus, rather than their childhood home. This will create the appearance of less retention for areas with more students because most graduates will leave the region after they complete their degree. To correct for this, I regress the retention measures on a measure of students for the region. There is a negative relationship between the two. I calculate how much lower the model suggests the retention or boomerang measures will be based on the student population alone, and then I add this factor to the unadjusted estimate for the region. For unadjusted estimates, see Figure A2.
7. The measure is calculated using  $h_{it}$ , an indicator that equals one if the migrant has a nonzero mortgage or home equity balance in quarter  $t$ .  $\bar{h}_{at}$  is the national homeownership rate for people of the same age as the migrant in quarter  $t$ .  
 Let  $h_{it}^a = h_{it} - \bar{h}_{at}$   

$$migrant\_homeownership\_change_i = \frac{1}{8} \sum_{t=5}^{12} h_{it}^a - \frac{1}{8} \sum_{t=-12}^{-5} h_{it}^a$$
 Observations are excluded from the year just before and after the move ( $t = -4$  to  $t = 4$ ) because the migrants may sell their home in anticipation of moving or after their move, and they may spend several months searching for a home to purchase after they move. The values shown in Figure 13 are the averages of *migrant\_homeownership\_change* for all migrants arriving in the region from 2015 through 2019. Peak ages for migration overlap with peak years for becoming a homeowner. The age adjustment removes about 5 percentage points of increase, and variance in the adjustment between regions reflects the age distributions of their arriving migrants.
8. These percentages are from a regression of population growth on indicators of the characteristics. See Table A1.
9. Groen (2004) reported that approximately one out of ten students who move to enroll as undergraduates stay in the region after graduation. However, that retention ratio will be very different for small college towns versus major metros with plentiful job opportunities. Academic articles that address this phenomenon usually identify some significant difference, such as the marginal probability of graduates being retained if they grew up locally. Unfortunately, this does not answer the question of what share of growing regions' growth comes from retaining students or how to increase retention. This appears to be a gap in the literature that needs further research.
10. In discussions of maintaining populations, policymakers may wonder if students should "count." On one hand, few out-of-town students arrive with the intention of staying in the region. However, while they are studying, they are spending their money in the local area. If graduating students are consistently replaced with incoming students, their presence will be similar to an equivalent number of permanent residents. Additionally, living in the region will give them good information about the job opportunities and amenities there, and some will opt to stay (Winters, 2011b).
11. In the economic literature, there is no standard definition of an urban neighborhood. The definition here is intended to use nationally available data to identify tracts that people would recognize as urban in person. Tracts that were developed before widespread car ownership dictated that retail and commercial land uses be close to residences, so trips could be made on foot or via mass transit. High-density, post-war neighborhoods could also support walkable retail and create the type of street life that distinguishes an urban neighborhood from a suburban one. There are dense tracts in the center of small towns and small cities, but most people would not consider these places urban because living in these tracts would not provide access to the variety of amenities that can only be supported by the scale of a larger metro area.
12. For an example of a program encouraging air service, see JobsOhio's Commercial Air Service Restoration Program. <https://www.jobsohio.com/programs-services/sites/commercial-air-service-restoration-program>.

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