Definitions Matter: The Rural-Urban Dichotomy

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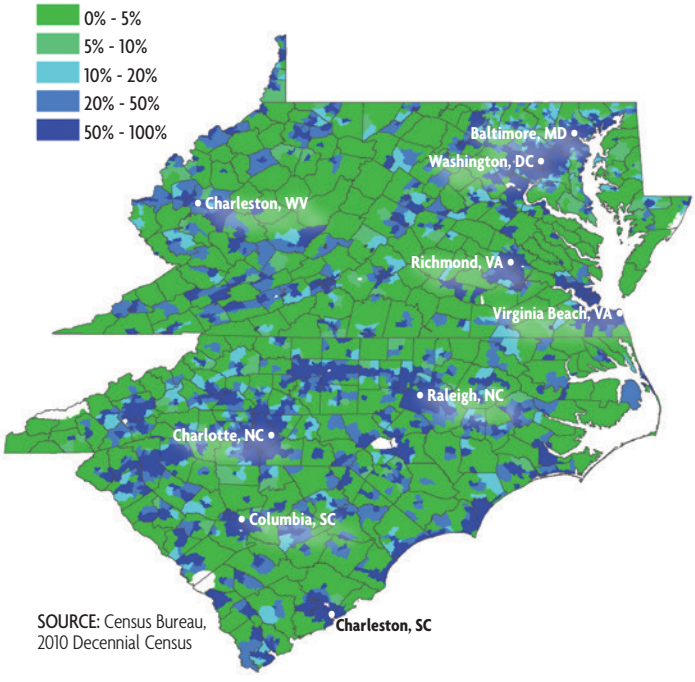
Economic disparities between urban and rural areas have been discussed widely in recent years, with larger metro areas seeing remarkably stronger growth, on average, than their smaller or more rural counterparts. The Richmond Fed's district, the Fifth Federal Reserve District, encompasses many points along this spectrum, from the Appalachian region of West Virginia to the Lowcountry of South Carolina, and from large metro areas such as Washington, D.C., and Charlotte to the sparsely populated Highland County in the western mountain region of Virginia.

What is the nature of the disparities across those regions? Do we see what is commonly called an urban-rural divide? And how is it influenced by the definition of urban or rural? This article will take a look at some commonly used ways to define urban and rural areas from agencies such as the U.S. Department of Agriculture (USDA), the National Center for Health Statistics (NCHS), and the Census Bureau to see what the current data tell us about disparities across measures of demography, education, employment, and poverty.

Defining Rural and Urban Areas

The first step is deciding how to define urban and rural. One crude approach is to rely on the Office of Management and Budget's (OMB) categorization of economically integrated areas: Any county that is within a metropolitan or micropolitan statistical area (metropolitans have at least one urbanized area with more than 50,000 inhabitants while micropolitans have at least one with a population between 10,000 and 49,999) could be treated as "urban" and the rest could be treated as "rural." However, this method would classify many counties as urban that, to most people, would seem less urban than some counties classified as rural. For example, Goochland County, Va., which is part of the Richmond MSA, has a population density of about 77 people per square mile, which is more similar to the density of Accomack County on Virginia's Eastern Shore (which is not in a metro area) than to Richmond City's approximately 3,400 people per square mile. Thus, it may be helpful to have ways of categorizing areas as urban or rural beyond the basic metro and nonmetro definitions.

Share of Population Living in Urban Areas by Census Tract



SOURCE: Census Bureau, 2010 Decennial Census

Census Bureau data are a commonly used alternative. The Census Bureau designates rural and urban areas at the Census tract or block level with each decennial Census. A block is considered urban if the density is greater than 1,000 people per square mile or if it has a density of 500 to 1,000 people per square mile plus a mix of residential and certain nonresidential land uses. The latter may include such uses as parks, schools, office buildings, or retail. Rural areas are simply those that do not meet the criteria to be considered urban. Using this definition, 81.2 percent of the U.S. population and 72.3 percent of the Fifth District population lived in urban areas in 2010. Of course, urban areas are denser, accounting for only 3.1 percent of land area in the United States in 2010 and 8.1 percent of land area in the Fifth District. (See map.)

The USDA has another method of categorizing areas as urban or rural. The USDA uses the OMB determinations of core-based statistical areas as a starting point to create a county-level classification system that it calls the Rural-Urban Continuum. This system divides counties into nine classifications. The first three include all counties within an OMB-defined metropolitan statistical area, which are then separated by size of the metro area population. For the remaining six classifications, the USDA ignores the OMB's designations of a micropolitan statistical area and instead separates counties based on the size of the total population that live in urban areas of each county (based on data from the decennial census) and then by their adjacency to a metro area. The USDA system assigns a code that ranges from one (counties in metro areas with 1 million or more in population) to nine (counties with less than 2,500 urban population that are nonadjacent to metro areas).

The largest number of counties in the Fifth District

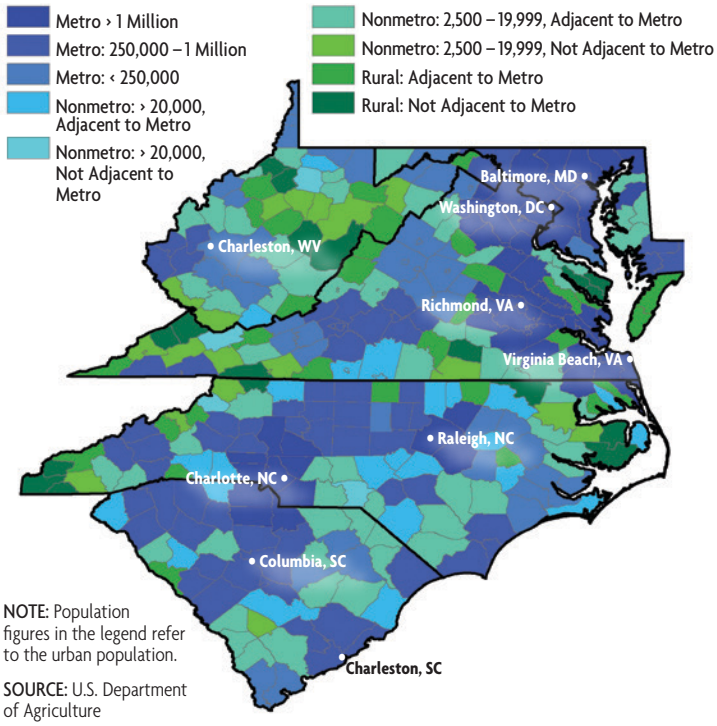
fall into the first category, large metro areas, and include those that are a part of the Washington, D.C., Virginia Beach, Richmond, Baltimore, or Charlotte MSAs. (See map.) These counties contained almost half of the 2016 population of the Fifth District. Nationally, this category contained 55 percent of the total population. The second-largest number of counties fall in the sixth category — counties not part of but adjacent to an MSA that have between 2,500 and 19,999 people living in urban areas of the county. This includes counties such as Logan and Wyoming in West Virginia that are near but not part of the Charleston and Beckley MSAs. Although a large number of counties fit in this category, they contained only 5.8 percent of the District's population in 2016, slightly less than the national share of 8.4 percent.

Another useful scheme for categorizing counties as more rural or less rural is that of the NCHS, which, similar to the USDA, uses the core-based statistical areas developed by the OMB as a basis. This system has six categories. The first four include counties in metropolitan statistical areas, and the last two include counties in micropolitan statistical areas and counties that are neither in a metro or micro area, which are labeled "noncore." (See table.)

One of the major benefits of using the NCHS system is that it separates the counties in large metro areas into one central county and fringe counties. As a result, the 78 Fifth District counties that were in the most urban category of the USDA rural-urban continuum are separated into two NCHS categories. Nine of these counties are in the most urban category of the NCHS system, while 69 are in what the NCHS deems "fringe" counties. It is easy to see why separating metropolitan counties might be important; in many metro areas, it is the suburbs of the cities that tend to be in the strongest economic position.

Meanwhile, on the rural end of the spectrum, the NCHS system groups all counties that are not part of any MSA or micropolitan statistical area into one "rural" category. In the Fifth District, then, 112 counties are considered to be rural, or "noncore," and there is no distinction by proximity to metro areas. (See map on next page.) And

Fifth District Counties by Rural-Urban Continuum Area



NOTE: Population figures in the legend refer to the urban population.

SOURCE: U.S. Department of Agriculture

counties that are adjacent to metro areas might see different economic outcomes than those that are more distant from an urban core.

Demographics of the Fifth District's Rural Areas

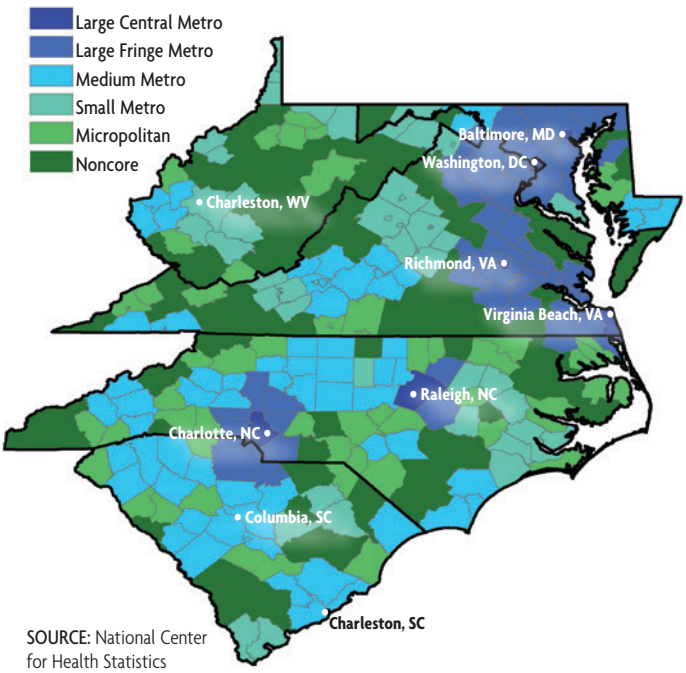
So what do the data tell us about differences between urban and rural areas? For one thing, no matter which definition of urban and rural we use — Census, USDA, or NCHS — rural populations are older. Using the Census definition, about 17.5 percent of the 2016 U.S. population in rural areas was over the age of 65 compared to only about 14 percent of the urban population. Most of the states in the Fifth District had similar shares and similar discrepancies between urban and rural areas. Virginia had the largest urban/rural divide with respect to the older

NCHS 2013 Rural-Urban Classifications

Code	Name	Description
Metropolitan		
1	Large central metro	NCHS-defined "central" counties of MSAs of 1 million or more population
2	Large fringe metro	NCHS-defined "fringe" counties of MSAs of 1 million or more population
3	Medium metro	Counties within MSAs of 250,000 – 999,999 population
4	Small metro	Counties within MSAS of 50,000 – 249,999 population
Nonmetropolitan		
5	Micropolitan	Counties in micropolitan statistical areas areas (urban core population 10,000 – 49,999)
6	Noncore	Counties not within micropolitan statistical areas

SOURCE: National Center for Health Statistics, U.S. Dept. of Health and Human Services

Fifth District Counties by NCHS Rural-Urban Classification



SOURCE: National Center for Health Statistics

population with just under 13 percent of the urban population over 65 compared to around 20 percent of the population in rural areas. Moreover, while the rural population in West Virginia is older than its urban population, West Virginia's population is also just generally older. In fact, the share of the population over 65 in urban areas of West Virginia was higher than that in rural areas of the nation.

Applying the USDA and NCHS definitions to county-level data corroborates this pattern in age demographics, with the lowest shares of the over-65 population occurring in the most urban categories and the highest shares in the most rural. In particular, applying the USDA definitions to the Fifth District and aggregating counties within each category gave a range from about 18 percent of the population over age 65 in large MSAs to almost 31 percent in the most rural counties. And under the NCHS system's separation of large MSAs into central and fringe counties, the central counties had an even lower share, about 16 percent.

Rural areas also tend to be less educated. According to the Census, each state in the Fifth District had a smaller share with a bachelor's degree (or higher) in rural areas than in urban areas. The District of Columbia, which is completely urban, had the highest share of those with at least a bachelor's degree, almost 57 percent; on the other hand, among the rural population of West Virginia, only about 16 percent of the population had a college degree. (West Virginia's urban population also had a relatively low share at about 26 percent.) Of course, this is only one measure of human capital accumulation — if one is interested in economic divides between rural and urban areas, it is important to also understand high school graduation rates and access to vocational or technical schools, among other human capital measures.

As with the Census definitions, statistics based on the USDA definitions show that college attainment was highest in the most urban areas and lowest in the most rural. But the data also show, perhaps unsurprisingly, that the counties that were adjacent to metro areas generally had higher shares of college graduates than those that were nonadjacent. In the Fifth District, this was particularly the case for Virginia. Further, the NCHS categories showed a substantial difference in college attainment between central and fringe counties of large urban areas, with about 45 percent of the population in central counties having a bachelor's degree or higher compared to 39 percent in the fringe counties. But as always, or almost always, there are exceptions; for example, fringe counties of Baltimore City had a higher share of the college educated than the central county of Baltimore City.

Labor Market Outcomes and Poverty in the Rural Fifth District

There are many measures of labor market outcomes; here, we explore labor force participation, unemployment, and wages to get some sense of labor market activity across areas. In general, labor force participation rates were higher in urban areas than rural areas. This is true at the state level according to the Census data, but the county-level systems offer further insight. Although generally the highest participation rates were in central counties of large urban areas (using the NCHS system), this was not always the case. For example, in Maryland, fringe counties had the highest participation rates.

Again, the USDA system offers insight for rural counties by considering adjacency to metro areas. For example, some of the lowest participation rates in the Fifth District of 35.1 percent and 36.5 percent occurred in Virginia's neighboring counties of Buchanan and Dickenson, respectively. Both counties are in the southwest region of the commonwealth and are designated as rural, not adjacent to a metro area by the USDA. Meanwhile, in the nearby county of Wythe, Va., which is also rural but adjacent to the Blacksburg MSA, the participation rate was more than 20 percentage points higher at 57.1 percent.

Such differences in the data may lead a policymaker to ask: What drives the lower participation rates in more rural counties? Is it the fact that those areas tend to be older, or are there potential workers on the sidelines in rural areas who can be brought into the fold, especially in this period of very low unemployment?

Using data from 2016, one can aggregate the number of unemployed and the labor force for all the counties in each rural-urban continuum group and calculate an unemployment rate. Doing so reveals that unemployment was lowest in large metro areas and generally increased with rurality, with a notable exception of counties considered rural but adjacent to a metro area. Fifth District rural, metro-adjacent counties had a combined unemployment rate of 5.2

percent. That was lower than nonadjacent rural areas, which had a rate of 6.7 percent.

Meanwhile, under the NCHS scheme, unemployment was lowest in fringe counties of large MSAs in the Fifth District, which had an aggregate rate of 4.1 percent compared to central counties and medium-sized cities with 4.8 percent each. And the highest aggregate rate of 6.1 percent occurred in the category for micropolitan areas. Some of the highest county-level unemployment rates were in rural counties, but this category is large and included many counties with very low unemployment rates.

Wage data aggregated across the USDA's urban-rural continuum likewise show that wages were higher the more urban the area. In fact, in 2016, wages were almost 40 percent higher in large metro areas than in mid-sized and smaller MSAs. But unlike with educational attainment and labor force participation, there was very little difference between adjacent and nonadjacent rural areas. Using the NCHS classification further showed the wage premium earned in large cities. The average employee working in a central county of one of the Fifth District's large MSAs earned a wage about 20 percent higher than the average employee working in a fringe county. Wage data are reported by place of work, so a person earning those higher wages might live in the fringe county and commute to the central county.

Although the data above show generally lower unemployment, higher wages, and higher labor force participation in urban areas (with some key exceptions), those areas also tend to have higher levels of poverty. Using Census definitions, a higher share of the urban population lived below the poverty line than the rural population in the United States and in most Fifth District jurisdictions (the exceptions being Virginia and South Carolina). This, however, is where the classification system matters. Using the USDA classification and creating an aggregate measure of the share of the population living below the poverty line for each urban-rural category, we observe that counties in large metro areas actually tended to have the lowest poverty rate at around 11 percent, followed by mid-sized and small MSAs. Among the nonmetro categories, poverty rates were between 20 percent and 22 percent, with the exception of rural areas that are adjacent to a metro area, where the aggregate measure was about 18 percent.

There is also a considerable amount of variation within categories. For example, poverty rates among large metro areas ranged from 2.7 percent in Falls Church City, Va. (part of the Washington, D.C., MSA) to 29.4 percent in Petersburg City, Va. (part of the Richmond MSA). In fact, the poverty rate in Petersburg is higher than that of any completely rural county, adjacent to a metro area or not. Similarly, there was a large variation in poverty rates in nonmetro counties with urban populations between 2,500 and 19,999, which ranged from 5.6 percent to 33.0 percent.

Meanwhile, using the NCHS system showed that fringe counties of large MSAs had the lowest poverty rate (9 percent), while central counties of large MSAs actually had similar poverty rates to medium and small sized MSAs. The category with the highest poverty rate was micropolitan areas, at just over 20 percent. Although this classification system showed that central counties had higher poverty rates than fringe counties, it is important to remember that aggregating to the county level might mask large differences within counties, such as the difference between poverty inside the city and outside of the city.

For example, the central county of the Richmond, Va., metro area is the independent city of Richmond, where the poverty rate was 25.4 percent in 2016. Meanwhile, the more suburban neighboring counties of Henrico and Chesterfield had poverty rates of just 10.6 percent and 7.4 percent, respectively. Comparatively, in Mecklenburg County, N.C. (the central county of the Charlotte MSA), the poverty rate was 14.2 percent. But although Mecklenburg's 524 square miles contain the center city of Charlotte, the county also contains a large portion of the city's suburban areas. This could mask differences in economic outcomes between the city of Charlotte and its suburbs.

Definitions Matter, but so Does Geography

No matter the classification system, the data indicate that more rural areas tend to be both older and less educated. It is no coincidence, then, that measures such as labor force participation and wages tend to be lower. Nonetheless, analyzing the classification systems for urban and rural areas shows the importance of close attention to how data are aggregated.

The USDA and NCHS county-based systems enable distinctions among urban areas by population size and between central and fringe counties of large MSAs, which can highlight important differences. Likewise, separating rural areas by adjacency to metro areas shows the potential importance of proximity to a city.

With each method comes costs and benefits. The Census' block-level definition, while the most comprehensive, is also the most difficult to use with other data, since data at the block or tract level are usually collected at best every few years and at worst every decade. What is more, since counties are a common geographic category, classification schemes like those of the USDA or the NCHS enable a researcher to use much more data to characterize an area that most people can relate to. On the other hand, the USDA classification system, with its nine categories, allows for a richer comparison across the rural and urban continuum but obfuscates some differences between central and fringe counties of large MSAs. The NCHS system's fewer categories do distinguish between central and fringe counties, but it groups a larger set of rural areas together, making it difficult to understand how adjacency to metro areas might influence outcomes. Recognizing and understanding these limitations is important for researchers and policymakers when trying to understand geographic disparities broadly and the urban-rural divide more specifically. **EF**