



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.



Economic Research Service
U.S. DEPARTMENT OF AGRICULTURE

Rural America at a Glance

2021 Edition



By Elizabeth A. Dobis, Thomas P. Krumel, Jr., John Cromartie,
Kelsey L. Conley, Austin Sanders, and Ruben Ortiz

Economic Research Service
Economic Information Bulletin Number 230
November 2021



Cover designed using photos and vector graphics from Getty Images. All photos within this report are from Getty Images, except where noted.

Farmland cell tower photo on page 10 by author John Cromartie, Geographer, REE-ERS.

Use of commercial and trade names does not imply approval or constitute endorsement by USDA.

To ensure the quality of its research reports and satisfy governmentwide standards, ERS requires that all research reports with substantively new material be reviewed by qualified technical research peers. This technical peer review process, coordinated by ERS' Peer Review Coordinating Council, allows experts who possess the technical background, perspective, and expertise to provide an objective and meaningful assessment of the output's substantive content and clarity of communication during the publication's review.

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotope, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.

The Coronavirus (COVID-19) pandemic severely affected U.S. communities. Starting in March 2020, many States and communities ordered significant restrictions on nonessential businesses and government agencies. Schools moved classes online and governments asked people to minimize contact with anyone outside their immediate family to prevent spreading the disease. Even as communities began to reopen, restrictions such as building capacity and size limits for social gatherings remained in place, preventing economic and social life from returning to normal.

Rural parts of the United States experienced these shocks differently than urban areas.¹ This year's Rural America at a Glance focuses on characteristics and differences affecting the resiliency and recovery of rural communities in the wake of the COVID-19 pandemic from three aspects: population and employment change, intensity of infection, and broadband internet availability and adoption.

In addition to rural and urban differences, we highlight the differences between persistent poverty counties and counties that are not persistently poor. Counties are termed persistently poor if 20 percent or more of the population lived at or below the Federal poverty line during four consecutive U.S. Census measurements dating to 1980.² They are often more racially and ethnically diverse. Persistent poverty counties often have fewer resources for weathering economic and social stress, making them less resilient to these stresses and slower to recover.



¹Rural areas are defined throughout this document using nonmetropolitan (nonmetro) counties. The terms “rural” and “nonmetro” are used interchangeably as are “urban” and “metro.” Statistics are calculated using the 2013 nonmetro and metro county designations. For more on these definitions, visit the USDA, Economic Research Service “What Is Rural?” topic page.

²The four U.S. Census measurements used to determine persistent poverty for the ERS County Typology Codes, 2015 Edition were the 1980, 1990, and 2000 decennial censuses and the 2007–11 American Community Survey 5-year estimates. See the ERS “Rural Poverty & Well-Being” and “County Typology” pages for more information.



Rural population change over the last decade

The 46 million U.S. residents living in rural areas in 2020 made up 14 percent of the U.S. population. A typical rural county contained less than 10 percent of the population of a typical urban county in 2020—23,000 people compared with 245,000. Residents who live in smaller and more isolated rural settings often face greater difficulties accessing provisions and services or commuting to work, among other economic development challenges. These factors may affect their resiliency to and recovery from shocks such as the COVID-19 pandemic.

Nonmetro counties lost population during the 2010s, while the metro population increased nearly 9 percent

Population statistics for counties by persistent poverty and metropolitan status, 2010–20

	Number of counties	Population, 2020	Population per county	Population change 2010–20 Number	Percent
Nonmetro	1,976	46,005,635	23,282	-287,771	-0.6
Persistent poverty	301	5,742,693	19,079	-345,491	-5.7
Not persistent poverty	1,675	40,262,942	24,038	57,720	0.1
Metro	1,166	285,443,646	244,806	22,991,514	8.8
Persistent poverty	52	11,689,533	224,799	639,584	5.8
Not persistent poverty	1,114	273,754,113	245,740	22,351,930	8.9
United States	3,142	331,449,281	105,490	22,703,743	7.4

Note: County counts reflect 2019 U.S. Census boundary delineations.

Sources: USDA, Economic Research Service using 2015 County Typology Codes and data from the U.S. Department of Commerce, Bureau of the Census, PL-94 decennial census files, 2010 and 2020.

Trends in U.S. rural and urban population over the past decade widened these differences in relative population size. Rural areas declined slightly overall (–0.6 percent), while urban areas grew by 8.8 percent. The U.S. population (as a whole) grew at a slower pace during the 2010s compared with previous decades due in part to declining birth rates and decreased immigration to the United States. For example, population growth during 1990–2000 was 13.2 percent, and during 2000–10, growth was 9.7 percent.

The small decrease in overall rural population during 2010–20 masks significant geographic differences in growth and decline across rural America. Rural counties that are not persistently poor maintained their population overall, increasing 0.1 percent. In contrast, the population in persistently poor rural counties declined by 5.7 percent, indicating those counties were less attractive places to live than other rural counties with less poverty. In urban counties, populations grew in both persistently poor and other counties, but the overall rate was much lower for the former (5.8 percent) than the latter (8.9 percent).

While rural population decline may at times stem from persistently high poverty, this is not always the case. Rural population change is also related to the nature of the local economy. At the State level, rural population change ranged from a high of 12.5 percent in North Dakota to a low of -6.6 percent in West Virginia. All but one of the top five fastest growing States were in the West, where abundant scenic amenities and related recreation and retirement-based economies have attracted new migrants, young and old, for decades. The one exception, North Dakota, saw a large influx of workers into a booming energy sector during the 2010s. States with the highest rates of nonmetro population decline were relatively more dependent on farming (Kansas and Illinois), manufacturing (Pennsylvania and New York), and extraction of coal, gas, oil, and other natural resources (Louisiana and West Virginia). Population change persistently lags in rural areas dependent on these sectors, with the exception of shale oil and gas regions such as in North Dakota.

Nonmetro population change varied by State, reflecting economic differences

States with the highest and lowest nonmetro population change, 2010–20

State	Nonmetro Population, 2020	Nonmetro population change 2010–20	
		Number	Percent
North Dakota	383,875	42,701	12.5
Utah	334,199	32,927	10.9
Idaho	602,295	57,923	10.6
Montana	705,862	66,007	10.3
Washington	763,300	58,536	8.3
Pennsylvania	1,440,892	-69,323	-4.6
Arkansas	1,103,920	-59,585	-5.1
Louisiana	731,262	-43,954	-5.7
Illinois	1,439,587	-88,840	-5.8
West Virginia	672,791	-47,701	-6.6

Note: States with fewer than three nonmetro counties were excluded.

Source: USDA, Economic Research Service using data from the U.S. Department of Commerce, Bureau of the Census, PL-94 decennial census files, 2010 and 2020.



Variations in and resiliency to COVID-19 infections

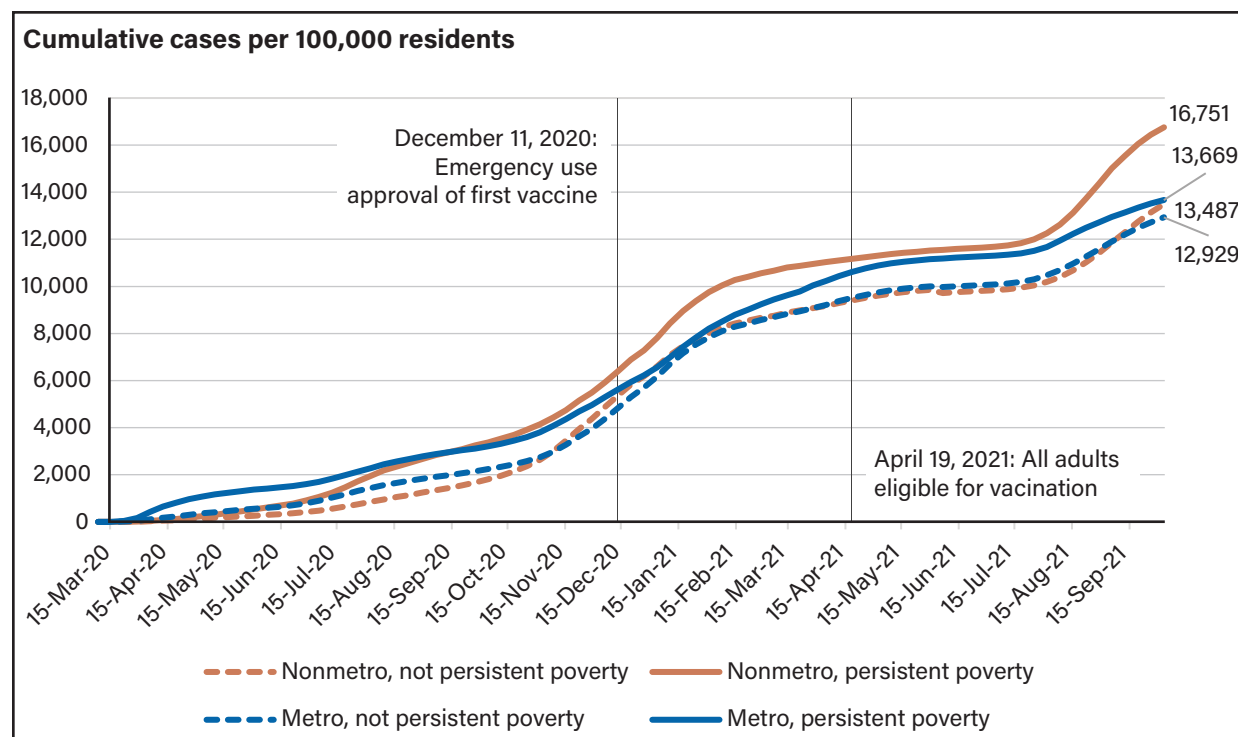
As of early October 2021, the United States surpassed 43 million COVID-19 infections and more than 700,000 deaths.³ As the pandemic evolved, researchers noted that indicators of social and economic well-being such as poverty rates were strong predictors of high COVID-19 case and mortality rates at the county level.

Throughout the pandemic, persistent poverty counties led the Nation in cumulative COVID-19 cases per 100,000 residents. The initial surge from March to May 2020 occurred mainly in large metropolitan areas, with persistently poor urban counties leading weekly rates of new infections throughout the surge. During the second surge in July and August 2020, the pandemic spread to rural areas, with persistently poor rural counties leading weekly rates of new infections and gradually closing in on the cumulative case rate in persistently poor urban counties. Starting in late September 2020, rural persistently poor counties led the Nation in cumulative cases per 100,000 residents.

³ We present information on COVID-19 infections, rather than deaths, because published infection rates drove the policies and recommendations related to health behaviors (e.g., wearing masks, social distancing) and location closures (e.g., economic shutdowns, school closures). These policies and recommendations affected unemployment rates and the importance of broadband, which are discussed in this publication.

Nonmetro persistently poor counties led the Nation in cumulative COVID-19 cases starting in late September 2020

Weekly cumulative COVID-19 cases per 100,000 residents by persistent poverty and metropolitan status, March 15, 2020 to October 3, 2021



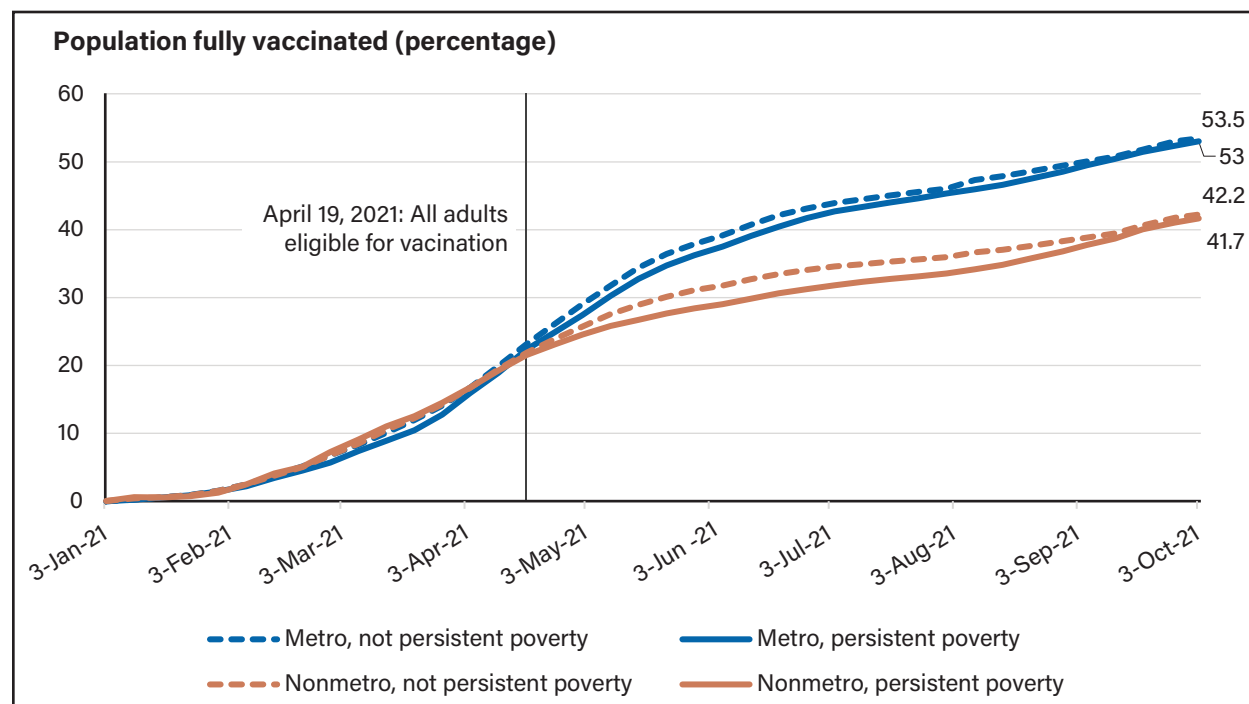
Sources: USDA, Economic Research Service using 2015 County Typology Codes and data from Johns Hopkins University Center for System Science and Engineering, supplemented with data from the New York Times.

During the third surge, which started in late September 2020, the entire Nation experienced high weekly rates of new COVID-19 infections, with no particular county type leading the surge. However, rural persistently poor counties experienced the highest peak during the third surge, with a 2-week moving average of 572 cases per 100,000 people in mid-January 2021. After a steep decline in new infections in late January and February 2021, the third surge ended, and cumulative cases leveled out with the help of vaccines.

During the early phases of vaccination, the percentage of people fully vaccinated increased at roughly the same rate regardless of persistent poverty or metropolitan status. By mid-April 2021, vaccination rates for urban and rural counties were slightly above 20 percent. Once all adults were eligible for vaccinations nationwide, the share of fully vaccinated residents increased faster in urban counties than in rural counties. The vaccination rate was consistently a few percentage points lower in persistently poor counties than in other counties.

Vaccination rates are higher in U.S. metro than in nonmetro counties, while the gap between persistently poor counties and counties that are not persistently poor is closing

Vaccination rates by persistent poverty and metropolitan status, January 3 to October 3, 2021



Notes: Completed vaccinations that are missing county identifiers are not included in this chart. County vaccination data are not readily available for Hawaii and are excluded from the data, while data for Texas are included starting March 2, 2021.

Sources: USDA, Economic Research Service using 2015 County Typology codes and data from the U.S. Centers for Disease Control and Prevention (CDC), Texas Department of State Health Services, and the U.S. Department of Commerce, Bureau of the Census, 2020 PL-94 decennial census file.

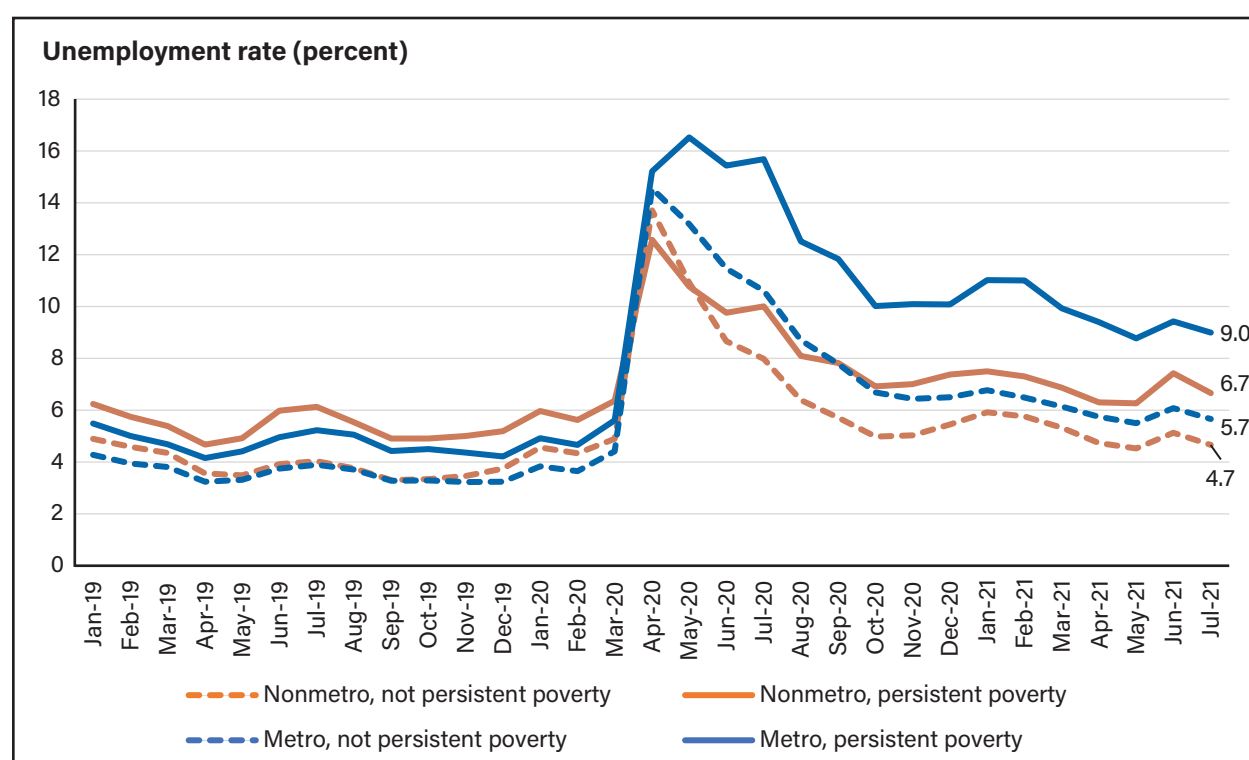
A fourth surge began in July 2021 with the spread of the new, highly infectious Delta variant of COVID-19. As of early October 2021, new weekly cases were decreasing, suggesting the surge may be nearing its end. Rural persistently poor counties again led new infections through much of the surge, peaking with a 2-week moving average of 644 cases per 100,000 people in early September 2021. As a result, the disparity in cumulative cases between rural persistently poor counties and all other counties reached its highest level since the pandemic started. This surge may also have motivated more residents to get vaccinated, as the gap in vaccination rates between persistently poor and other counties started to close in mid-August. However, the rural-urban vaccination gap persists. By early October 2021, the vaccination rate in urban counties had reached 53 percent, while the vaccination rate in rural counties was about 42 percent.

Rural unemployment during the pandemic and recovery

Nearly a decade of uninterrupted decline in rural unemployment rates occurred prior to the COVID-19 pandemic, reaching a low of 3.5 percent in September 2019. Once the pandemic took hold in early 2020, unemployment rates reached levels not seen since the Great Depression in the 1930s, peaking in April 2020 at 13.6 percent in rural areas, 14.6 percent in urban areas, and 14.4 percent nationally. While this increase was similar for both rural and urban counties, it varied by persistent poverty status.

Unemployment rates have returned to pre-pandemic levels in rural counties but are still significantly higher in urban counties

U.S. monthly unemployment rates by persistent poverty and metropolitan status, January 2019 to July 2021



Notes: Data are not seasonally adjusted. Unemployment rate estimates for July 2021 are preliminary.

Sources: USDA, Economic Research Service using 2015 County Typology Codes and data from U.S. Department of Labor, Bureau of Labor Statistics, Local Area Unemployment Statistics program (accessed September 2, 2021).

At the start of 2020, the unemployment rate in persistently poor rural counties was higher than in rural counties that were not persistently poor (6 percent versus 4.6 percent). By the time the economic downturn took firm hold in April 2020, the unemployment rate had more than doubled in persistently poor rural counties and more than tripled in other rural counties. A similar pattern is observed in urban areas, suggesting that the employment shock at the start of the pandemic was not as large in persistently poor counties in comparison to other counties. This pattern hints that persistently poor counties may have had higher COVID-19 rates because more people in these counties were working and that this situation could be related to industry dependence. For example, a disproportionate share of rural meatpacking-dependent counties are also persistently poor.

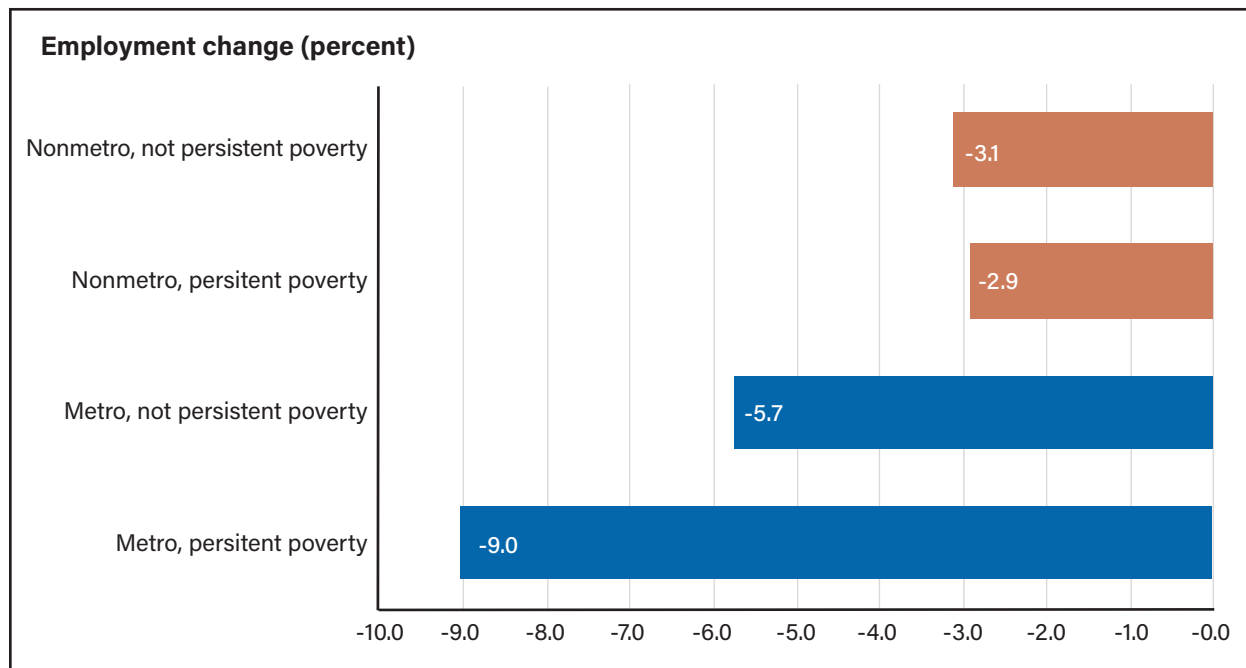


The initial employment recovery appeared stronger in rural counties than in urban counties, but since the fall of 2020, the unemployment rate has been lowest for counties that are not persistently poor. As of July 2021, rural counties that are not persistently poor had the lowest average unemployment rate (4.7 percent versus 4.3 percent in February 2020), followed by not persistently poor urban counties (5.7 percent versus 3.6 percent in February 2020) and persistently poor rural counties (6.7 percent versus 5.6 percent in February 2020). While still higher than in the pre-pandemic period, these rural unemployment rates demonstrate greater relative recovery than their urban counterparts. Persistently poor urban counties were the least responsive to economic recovery, with an unemployment rate of 9 percent, still nearly double the unemployment rate in February 2020. This rate is likely due to positions in retail and hospitality (hotel, food and drink, tourism and travel) remaining unfilled.

Mirroring the unemployment trends, employment was lower in January 2021 compared with January 2020, regardless of county type. The decrease in employed workers was much smaller in rural counties than urban counties over this period, and rural persistent poverty counties had the smallest loss in employment levels of any county type (-2.9 percent). Urban persistent poverty counties had the most significant decrease in employment levels (-9 percent), consistent with the elevated unemployment rates that continue in these counties.

Rural counties lost fewer jobs during the pandemic-driven economic downturn than urban counties

Percentage change in employed workers by county persistent poverty and metropolitan status, January 2020 to January 2021



Notes: Year-over-year changes are calculated using employment numbers from January 2020 and January 2021.

Sources: USDA, Economic Research Service using 2015 County Typology Codes and data from U.S. Department of Labor, Bureau of Labor Statistics, Local Area Unemployment Statistics program (accessed June 1, 2021).






Internet availability and adoption in rural America

During the COVID-19 pandemic, face-to-face activities such as school, work, and shopping moved online turning homes into offices, classrooms, and private movie theaters. Residents with slower internet speeds or without the means to access internet at home faced increased challenges to complete work and school assignments when outside facilities such as schools and libraries were unavailable. Additionally, these residents may not have been able to reduce the risk of contracting COVID-19 through services such as online shopping and telehealth. Therefore, households that may not be able to afford internet subscriptions, like the 15.3 percent of rural U.S. citizens living in poverty,⁴ and communities without internet access or with slower internet speeds may be less resilient to personal and economic stresses during the pandemic.

Historically, internet providers have underserved rural areas due to a myriad of factors, including smaller rural populations providing fewer customers, decreased rural adoption rates, and more difficult rural terrain in comparison to urban areas. Even when internet is available in rural areas, less competition among limited providers may result in higher prices and limited speed options for residents. To understand local availability of internet services, we analyzed the share of residents with access to moderate-speed (100–999 Megabits per second (Mbps) download speed) or high-speed (at least 1,000 Mbps download speed) wired internet within their census block.⁵

⁴In 2019, rural poverty was 15.3 percent and urban poverty was 11.9 percent. USDA, Economic Research Service calculations using U.S. Census Bureau, Small Area Income and Poverty Estimates.

⁵Internet availability data are the second iteration of the June 2019 Federal Communications Commission (FCC) Fixed Broadband Deployment data Form 477 and are available at the census block level. Wired internet refers to fixed broadband technologies, including asymmetric xDSL, ADSL2, VDSL, symmetric xDSL, copper wireline, cable modem, optical carrier/fiber to the end user, and terrestrial fixed wireless. Population data are from the 2010 U.S. Census, which is the most recent data available. The data measure internet availability, not adoption, and assume that availability is the same throughout the block. Census blocks are the smallest geographic unit used to tabulate population and FCC Form 477 statistics and are used to measure variation in internet availability within the county.



As of June 2019, more than 90 percent of people living in the United States had the moderate-speed or high-speed broadband internet service needed for high-quality video calls available in their census blocks. However, only 72 percent of rural residents and only 63 percent of rural residents in persistent poverty counties had moderate- or high-speed broadband available in their census blocks.

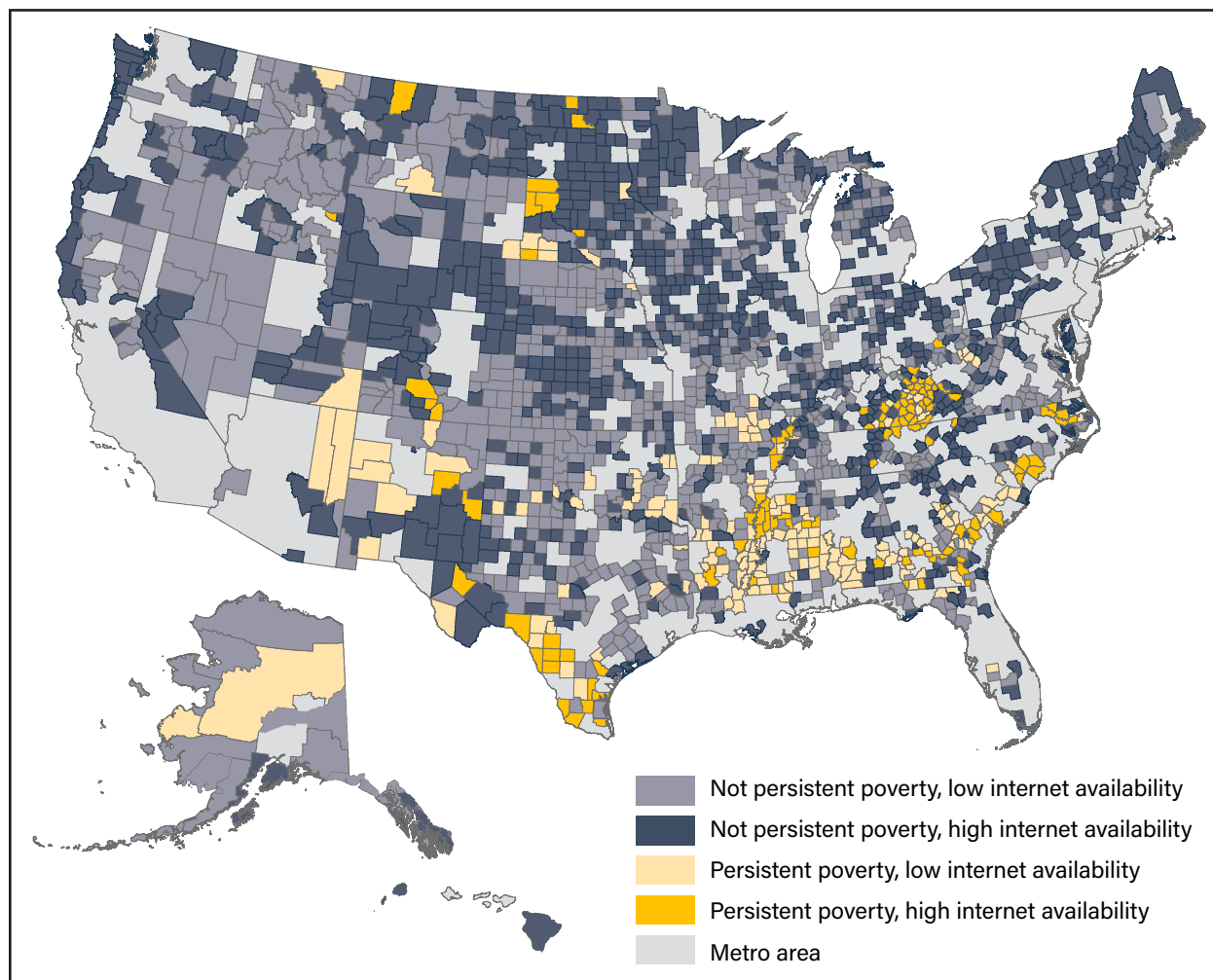
The average share of residents in census blocks with moderate- or high-speed broadband within a county was higher in urban counties than rural counties (83.3 percent versus 62.7 percent). Persistent poverty counties had a lower average share of residents in census blocks with moderate- or high-speed broadband than counties that were not persistently poor (58.3 percent versus 71.8 percent), but this difference is particularly large for urban counties. In rural counties, the average share of residents in census blocks with at least moderate-speed broadband was lower than in urban counties for both persistently poor and not persistently poor counties.

Rural counties with high internet availability—as measured by the share of residents in census blocks where moderate- or high-speed broadband was available—were clustered in the upper Great Plains and eastern Mountain States, as well as scattered throughout the eastern half of the United States. Among persistently poor counties, high internet availability was clustered in and around eastern Kentucky and southern Texas. Conversely, rural counties located in the lower Great Plains and western Mountain States, and persistently poor counties in the Deep South and Southwest, had low internet availability.



Broadband is less available in nonmetro persistent poverty counties in the Deep South and Southwest, and among nonmetro counties in the lower Great Plains and western Mountain States

Moderate- or high-speed broadband availability in nonmetro counties by persistent poverty status, 2019



Notes: Internet availability is calculated using the share residents in a county that live in a census block with moderate- or high-speed internet availability. High internet availability indicates the county's share is at or above the county-national average (70.3 percent), while low internet availability indicates the county's share is below the county-national average. Moderate-speed broadband is defined as a download speed of 100–999 Megabits per second (Mbps) while high-speed broadband is defined as a download speed of at least 1,000 Mbps. This rate more accurately captures the speeds necessary for video conferencing than the Federal definition of broadband (25 Mbps download, 3 Mbps upload).

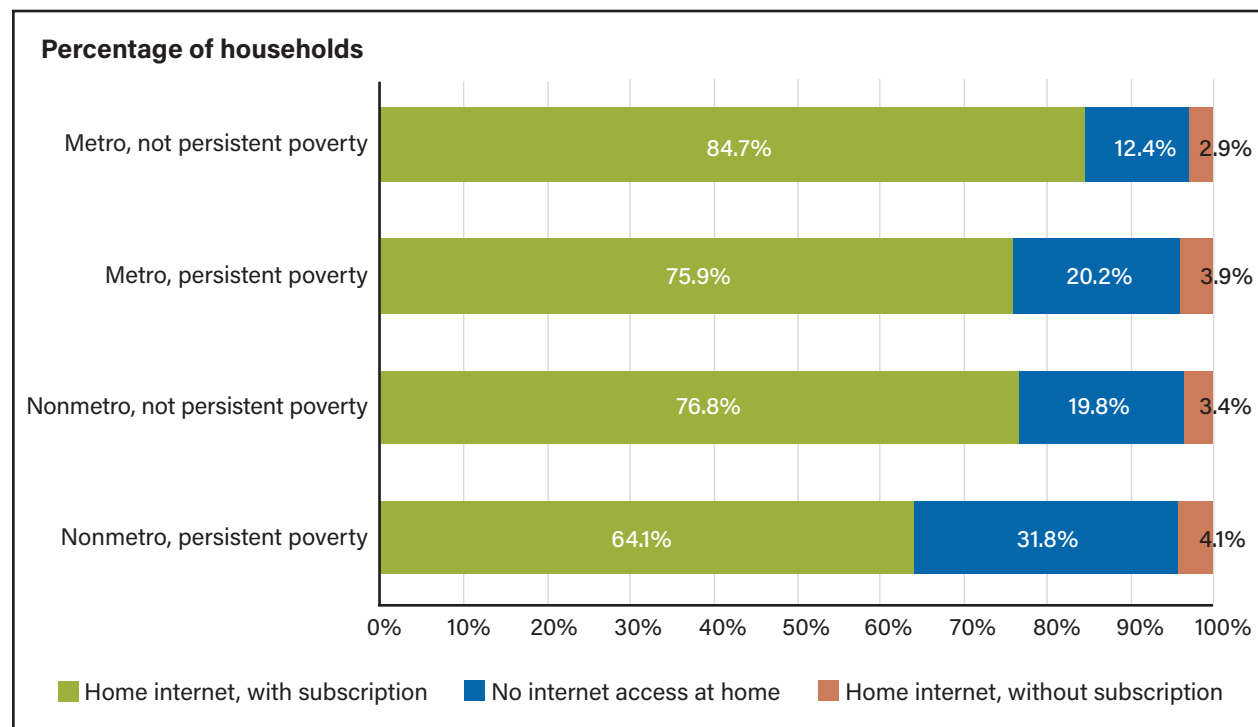
Sources: USDA, Economic Research Service calculations using 2015 County Typology Codes and Federal Communications Commission Form 477 Broadband Deployment (June 2019, version 2) data for fixed connections.

In 2015–19, rural households were less likely to have internet subscriptions than urban households (75.2 percent versus 84.4 percent). In both rural and urban persistent poverty counties, a higher share of households lack internet adoption than in counties that are not persistently poor (31.8 percent and 20.2 percent, respectively). These gaps in internet subscriptions suggest that households in persistently poor counties—and more specifically, households in rural persistent poverty counties—had additional barriers to internet adoption, such as affordability and digital literacy. This gap may have made the households less resilient to and not as well equipped for the increase of the everyday online climate seen during the pandemic.



Households within nonmetro, persistent poverty counties have less access to the internet at home

Internet subscription and access for households by county persistent poverty and metropolitan status, 2015-19



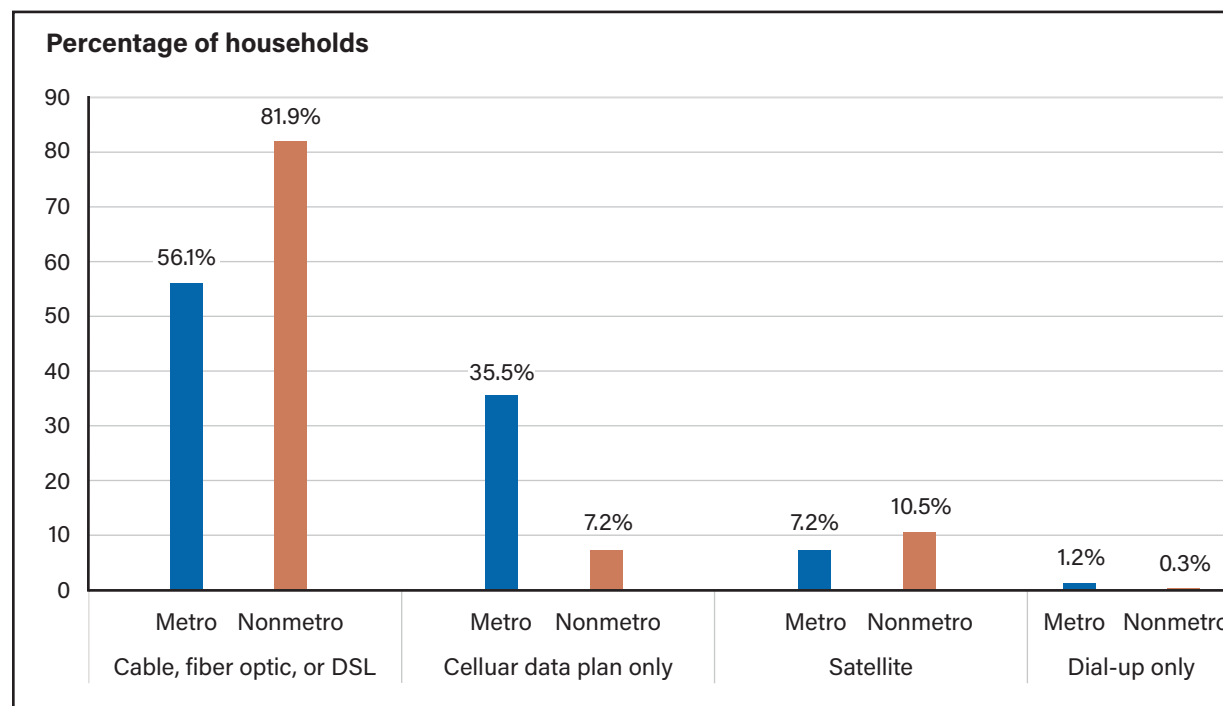
Note: "Home internet, with subscription" includes dial-up and wired broadband connections, cellular data plans, and satellite internet service. "Home internet, without subscription" includes internet access without a subscription, such as community- or university-provided internet. "No internet access at home" refers to only using internet outside the home, such as going to a public library or coffee shop.

Sources: USDA, Economic Research Service using 2015 County Typology Codes and data from the U.S. Department of Commerce, Bureau of the Census, 2019 American Community Survey 5-year estimates.

Households in both rural (81.9 percent) and urban (56.1 percent) counties most commonly had internet subscriptions through wired sources such as cable, fiber optic lines, or digital subscriber line (DSL) broadband connections. Households in urban counties subscribed to solely cellular data plans for internet adoption at a much higher rate than rural counties (35.5 percent versus 7.2 percent), which may be attributed to the lower volume of cell towers in rural areas or only being able to afford one type of subscription. Many Federal programs focus on increasing access to wired internet service, further explaining the higher proportion of wired broadband subscriptions in rural counties. Additionally, rural households that were not able to obtain broadband through wired services or cellular plans might opt for satellite, explaining why 1.5 times more rural than urban households use satellite to access the internet.

More rural residents have wired broadband subscriptions at home, while urban residents are more reliant on only cellular data plans

Type of subscription for households with internet service by county metropolitan status, 2015-19



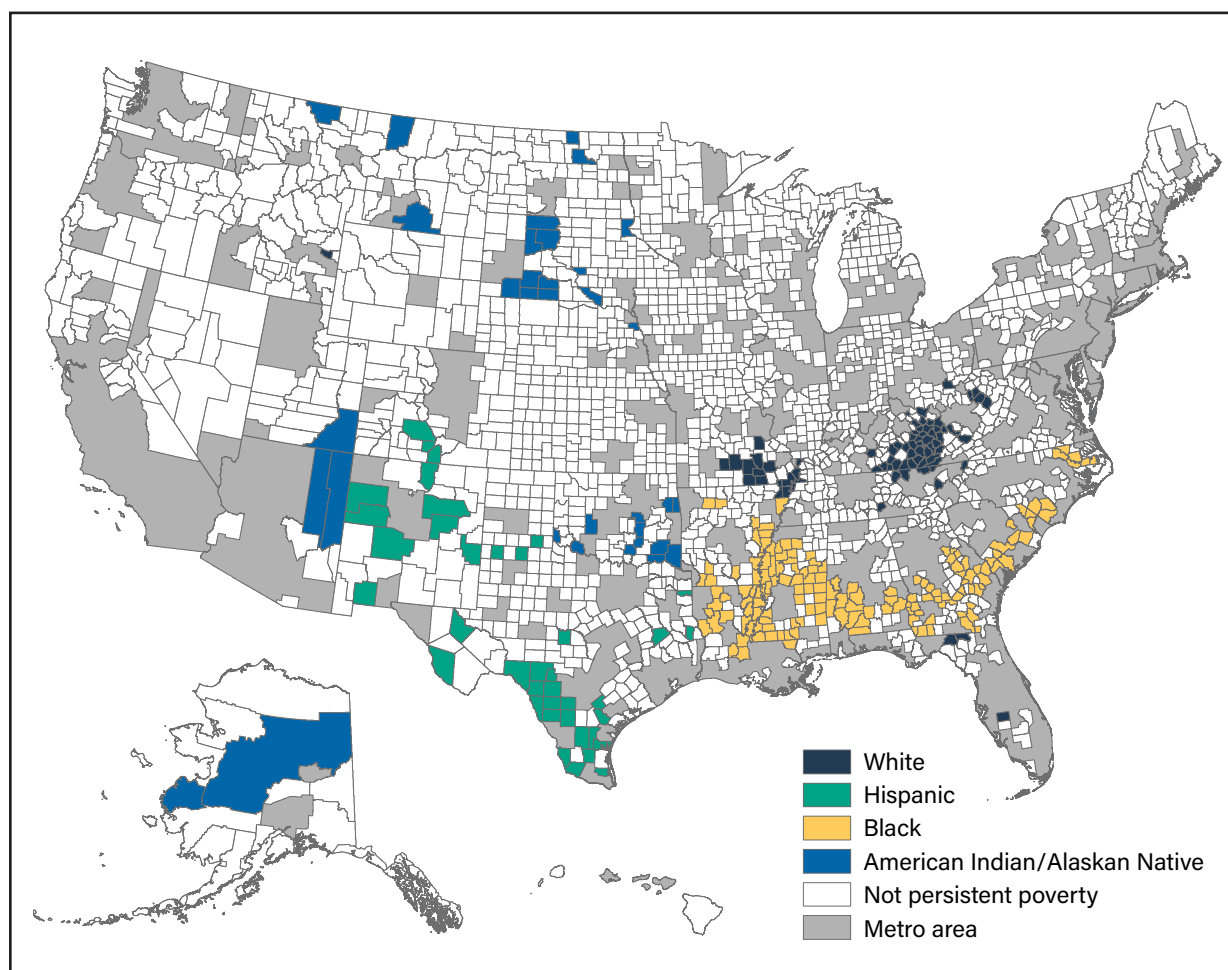
Note: "Wired broadband" includes fixed broadband connections such as cable, fiber optic, or digital subscriber line (DSL). Wired broadband and satellite are not mutually exclusive but have little overlap, so they are treated as separate categories. Differences between persistent poverty and not persistent poverty counties were not included because the differences are negligible among counties with the same metropolitan status.

Sources: USDA, Economic Research Service using data from the U.S. Department of Commerce, Bureau of the Census, 2019 American Community Survey 5-year estimates.

Persistent poverty counties coincide with high-minority counties in most regions of the country

The geography of persistent poverty counties is strongly associated with historical patterns of rural settlement going back centuries. While minority groups make up a smaller share of the overall rural population compared with urban areas, the groups are often highly concentrated in persistent poverty clusters. In the 153 rural persistent poverty counties located in the southeastern Coastal Plains stretching from North Carolina to Louisiana and Arkansas, Blacks make up 43.3 percent of the population. In Texas, New Mexico, and Colorado, 63.1 percent of the population in the 39 rural persistent poverty counties are Hispanics. American Indians make up 45.5 percent of residents in the 34 rural persistent poverty counties in Alaska, Arizona, Oklahoma, Utah, and the northern Great Plains. The remaining 75 rural persistent poverty counties are predominantly White (88.9 percent) and are located mostly in the southern Appalachians and the Ozarks.

Nonmetro counties by persistent poverty status and predominant race or ethnicity



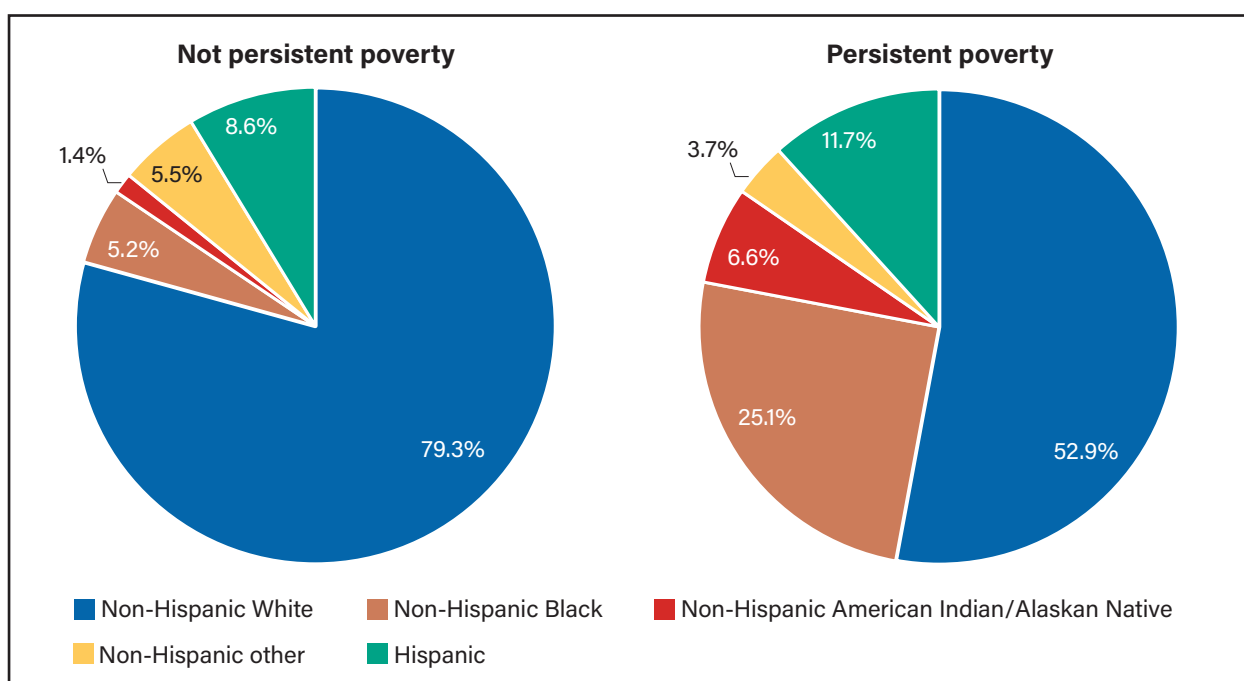
Note: Predominant race or ethnicity was determined at the State level and indicates the race or ethnicity that has been historically predominant in those locations.

Sources: USDA, Economic Research Service using 2015 County Typology Codes and data from the U.S. Department of Commerce, Bureau of the Census, PL-94 decennial census files, 2020.

Persistently poor counties are more racially and ethnically diverse than counties that are not persistently poor. Whites make up 79.3 percent of the nonmetro population located outside of persistent poverty counties but only 52.9 percent of persistent poverty counties. Conversely, nonmetro Blacks make up 5.2 percent of the nonmetro population located outside of persistent poverty counties but 25.1 percent within nonmetro persistent poverty counties. Hispanics and American Indians also have higher shares of persistent poverty populations. Findings in this report to a large extent reflect the ongoing challenges facing rural minorities.

The share of racial and ethnic minorities in nonmetro persistently poor counties is more than double the share in other nonmetro counties

Share of population by race and ethnicity in nonmetropolitan counties by persistent poverty status, 2020



Note: Categories are mutually exclusive.

Sources: USDA, Economic Research Service using 2015 County Typology Codes and data from the U.S. Department of Commerce, Bureau of the Census, PL-94 decennial census files, 2020

