Rural Definitions and Measurement

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Rural Definitions and Measures

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1. Introduction

The term "rural" leads a double life. On the one hand, it is used to describe broadly shared images of open countryside, farms, crossroad communities, and small towns at some distance from a big city. If asked, most Americans would agree generally on the physical attributes that define rural: small populations, low-density settlement, and remoteness. On the other hand, the term applies to statistical definitions used to delineate a precise boundary between rural and urban territory for the purpose of generating statistics and insights about rural people and places. These boundaries also are used to determine eligibility for rural-based programs and to allocate billions of dollars of federal funding. The effective and equitable distribution of these funds depends, in large part, on selecting an appropriate definition of rural.

Drawing a precise line between urban and rural requires answering two questions:

- At what population threshold do rural places become urban?
- Where along the urban periphery do suburbs give way to rural territory?

Answers vary tremendously. Most population thresholds dividing rural from urban places range from 2,500 to 50,000. Methods to designate an urban periphery include narrow definitions based on municipal boundaries and much broader ones based on county-level commuting zones. Different choices lead to dramatic differences in the resulting rural populations, in terms of overall size, geographic distribution, and socio-economic characteristics. This leads to debates among experts on what constitutes rural, a variety of rural definitions currently in use across Federal agencies, and confusion and frustration among program leaders and policy makers looking for a straightforward solution to a tricky classification issue.

This report is designed as a brief guide to rural definitions and measures, and supplements information available from the Economic Research Service (https://www.ers.usda.gov/topics/rural-economy-population/rural-classifications/what-is-rural.aspx) and the Census Bureau (www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural.html). It begins with an explanation of why different definitions exist and a synthesis of key similarities and differences among them. This is followed by a detailed description of the primary sources for rural definitions. These descriptions and comparisons are designed to enhance understanding surrounding rural definitions and enable better decision-making in choosing definitions that best fit the purpose of specific applications.

Federal definitions generally follow three basic approaches to defining rural and urban areas:

- Place-based: Urban and rural areas are based on boundaries for places (generally municipalities), with rural places defined as those having populations below a specified threshold.

- Settlement structure: Urban and rural areas are defined based on measures of the built environment and settlement patterns, such as population density, housing density, and land uses.
- Functional relationships: Urban and rural areas defined based on measures of social and economic interaction, such as commuting, or measures of distance from or proximity to an urban center of specified size.

Different approaches are adopted for different reasons, including:

- Analytical purposes: Some questions may require information about settlement and development patterns (a settlement-structure approach) while others may focus on socio-economic relationships between communities and across urban and rural territory (a functional-relationship approach).
- Statutory versus statistical requirements: Some questions may require the use of rural definitions created for statutory programs that may differ from rural designations defined for statistical purposes. Statutory programs may require a definition that references governmental units, such as counties or municipalities.
- Geographic scale and data access: Some questions may require access to data that are only available at select geographic scales. For example, the abundance of county-level demographic economic, health, and other data often the abundance of demographic, economic, health, and other data for counties often leads to use of a county-based definition of rural (a place-based approach).
- Ease of use and implementation: density-based definitions that utilize small geographic areas (census blocks, census tracts) as building blocks generally require use of a Geographic Information System (GIS) for efficient and effective mapping and analysis.

Choosing a rural definition begins by considering the underlying concept that guides the construction of a specific definition and deciding whether that perspective fits the purpose of the application.

2. The Challenge of Classifications

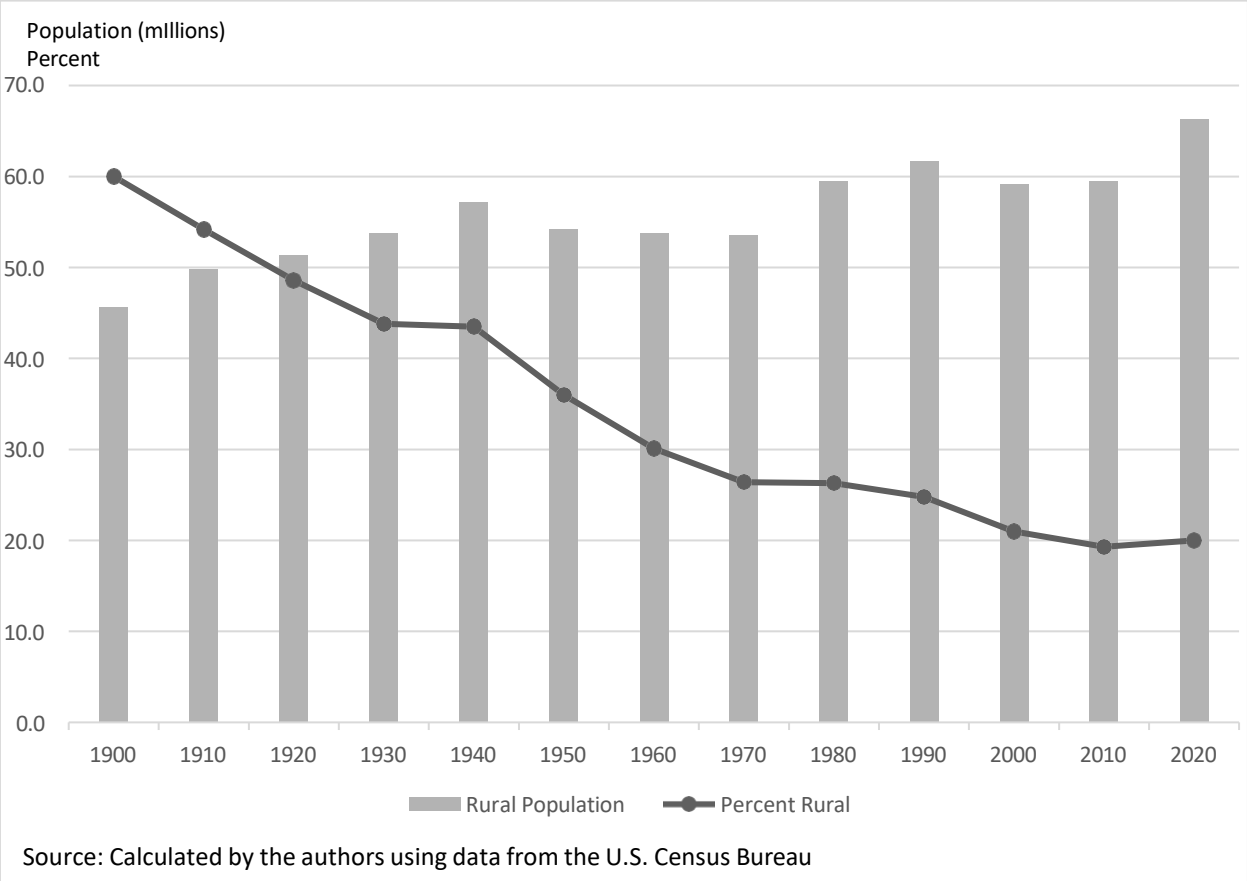
The classification of people and territory as rural poses a variety of challenges to researchers, policy makers, and program managers throughout the federal system and beyond. Most Americans share a common image of rural—open countryside and small towns at some distance from large urban centers—but disagree on where and how to draw the line between rural and urban. Similar conundrums exist for any measurement term that imposes a dichotomy on a continuum (e.g., the income level that serves as a poverty line, or the age at which a person enters old age). Confusion over rural definitions stems from the unavoidable task of drawing a categorical line through a broad continuum. Different solutions to this problem lead to different configurations of rural and urban space.

There is no single, official definition of rural or rurality in use by federal agencies. Individual agency and individual program definitions vary. As a result, areas of the U.S. that are considered rural encompass a wide variety of settlements and landscapes, from low-density housing subdivisions on the fringes of large urban areas, to small towns in predominantly agricultural areas, to frontier-like areas located long distances from urban centers. The individuals and communities in these diverse settings have different needs, face different challenges, and interact differently with other rural communities and urban centers. To classify them all under a single category, or to utilize a single definition of rural, masks their various characteristics, interactions, and needs. Different purposes for seeking to identify, count, understand, and serve the rural population can call for different definitions of rural.

Two factors contribute to multiple rural definitions. First, no consensus exists on a key question: At what population size does a place shift from rural to urban? Around 1910, the U.S. Bureau of the Census (Census Bureau) defined as urban any incorporated place with 2,500 or more people; all other territory, including incorporated places of less than 2,500 people, were defined as rural. While other elements of this classification were modified over time to reflect changing realities, this basic population threshold remained unchanged until 2022 when the Census Bureau announced that for Census Bureau publications and analysis starting with the 2020 Census the minimum threshold for urban would be either 2,000 housing units or 5,000 people. Arguments have been made for moving to a higher threshold because the average size of places is so much larger today and the country has switched from predominantly rural to majority urban (figure 1). Transportation and communication advances helped reorganize economic and social activities around larger towns and cities. Places of 2,500 people typically do not provide the same levels of employment, goods, and services that existed in many of those places in 1910. However, the choice of an appropriate population threshold delimiting rural and urban places has never been resolved and limited research exists to aid in choosing such a cut-off. Rural development programs within USDA employ various thresholds for defining a place as rural or urban, anywhere from 2,500 to 50,000 people. For example, the USDA's Business and Industry Loan Guarantees Program uses a 50,000-person threshold when identifying qualifying rural places. On the other hand, the USDA's Water and Waste Disposal

Loan and Grant Program identifies places of less than 10,000 persons as rural (see links in table 2 for details on the programs and selection of rural definitions in them).

Figure 1. Census Rural Population and Percent, 1900-2020



Source: Calculated by the authors using data from the U.S. Census Bureau

Second, rural definitions typically are based on what is not urban, with boundary lines drawn around each urban entity, marking where urban ends and rural begins along the urban periphery. This "urban-centric" approach generally resulted from operational considerations in which it was easier to compile and manage data for a discrete set of central places that could form the starting points for defining densely settled urban areas. Today, many U.S. residents live in suburbs or exurbs that intentionally combine rural and urban elements. A complex, interstitial zone of bedroom communities, office parks, retail corridors, residential subdivisions and individual house lots characterizes the urban periphery around almost any sizeable U.S. city. A narrow definition of the urban boundary risks defining a large segment of suburban population as rural. A broad definition inevitably classifies some rural residents as urban. No definition divides these populations in a way that could satisfy all users.

Despite the variety of definitions of rural (and urban) that are in use across federal agencies and programs, we can identify four basic components of a definition that track with the discussion of basic approaches followed in federal definitions noted at the opening:

- *settlement size*
- *population, housing, or development density*
- *proximity to or isolation from larger urban centers*
- *the broader social and economic context*

The first two components relate to structural aspects of settlement; that is, the nature of the built environment and settlement patterns. The second two relate to the functional aspects of settlement—how different communities are connected socially and economically. These two ways of looking at settlement patterns and community interaction—structural and functional—form the foundations of different definitions of rural and should be considered when deciding on a definition for a specific purpose, whether research, policy analysis, or program implementation. The Census Bureau's Urban-Rural Classification provides a good example of a structural approach to defining urban and rural. Examples of functional definitions include the Core-Based Statistical Areas (CBSAs) provided by the U.S. Office of Management and Budget (OMB) and the Rural-Urban Commuting Areas (RUCAs) provided by the Economic Research Service (ERS). The National Center for Education Statistics' (NCES) Locale Codes incorporate both the structural and functional aspects of settlement by referencing settlement size as well as proximity to larger urban centers. Each of these classifications is discussed in more detail below.

These four components to measuring and defining urban and rural areas intersect in several ways with the three approaches discuss earlier. For example, an administrative-based approach could specify that municipalities below a minimum population size are considered rural. Likewise, municipalities with populations at or above the specified minimum threshold would be considered urban, regardless of the overall density of development. Definition of urban areas based on continuity of densely populated or densely developed territory represents a structural approach and assumes that social and economic interactions occur between communities within the larger area. Functional approaches to defining urban and rural areas often start a densely developed core area of specified population size and include additional areas of varying settlement size and density based on measures of social and economic interaction. Measures of proximity or isolation, often based on distance or travel time, can act as proxies for more explicit measures of functional relationships.

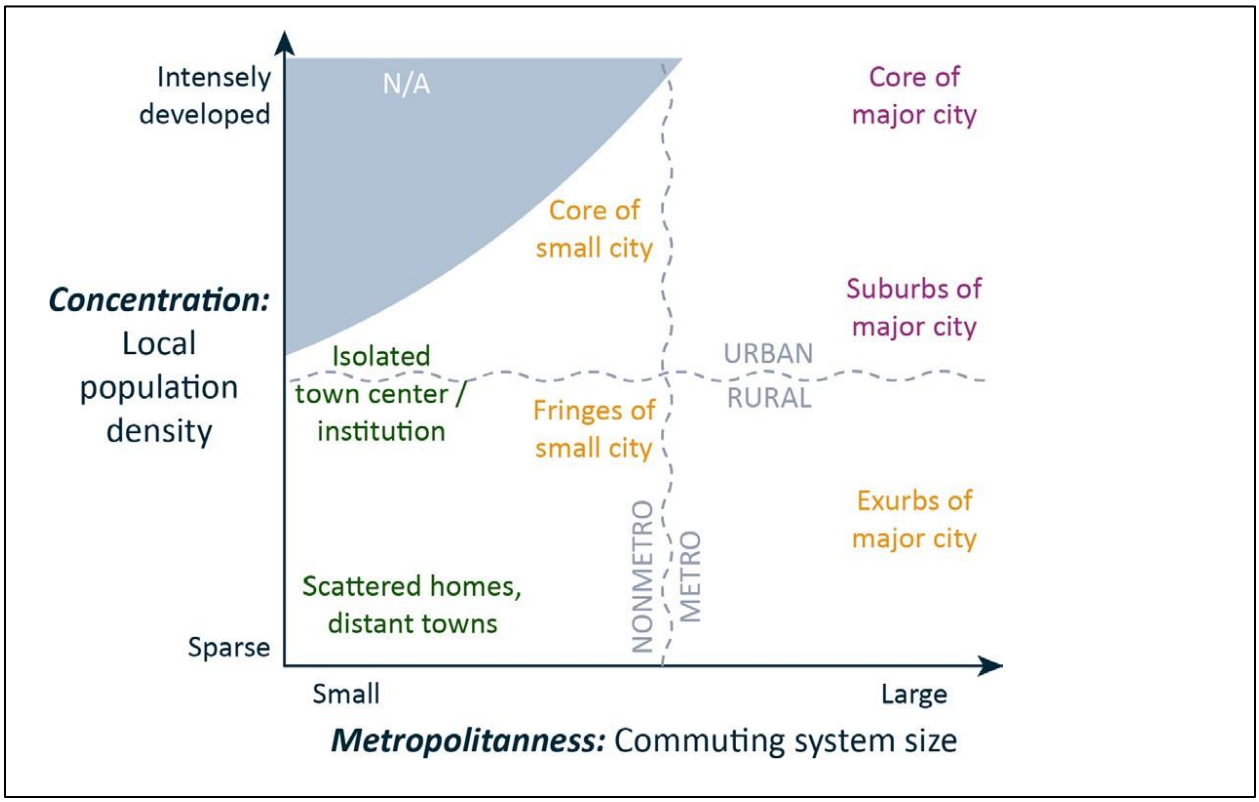
Across legislation and federal agencies, population thresholds dividing rural from urban places have ranged from 2,500 to 50,000. Methods to designate an urban periphery include narrow definitions based on census blocks, census tracts, or municipal boundaries and much broader definitions based on counties. The geographic "building block" (i.e., census block, census tract, place, county) used in definitions may have been chosen for a variety of reasons, including interest in a high degree of spatial precision (which census blocks offer); presence of a local government capable of applying for and receiving program funds (i.e., municipalities, counties); ease of use/smaller numbers of geographic units with which to work (i.e., census tracts, counties); or the availability of a wide variety of statistical data for use in analysis and decision

making (i.e., counties). Different choices lead to dramatic differences in the resulting rural populations, in terms of overall size, geographic distribution, and socio-economic characteristics.

3. Examining Definitions in a Settlement Concentration-Social and Economic Relationships Framework

We begin by acknowledging the multi-dimensionality of rural definitions—the fact that they combine size, density, and distance criteria in very different ways. Degrees of rurality (or urbanness) can be viewed in terms of both levels of concentration, which refers to the density of the population, and levels of social and economic ties, which captures the size of the area within which residents are commuting from home to work (figure 2). For example, intensely developed urban cores of major cities are focal points for commuting and other economic and social ties within large metropolitan regions. They also tend to be surrounded by suburbs and lower density exurban communities that are linked to the urban center. At the other end of the spectrum are medium- and small-sized towns that are densely developed (though not as much as a large urban center) and are beyond the commuting zone of a larger urban center. These smaller places may serve as an economic center and focal point for sparsely populated surrounding areas. Recognizing and accounting for these differences are important. A low-density area on the outskirts of a large urban center in a major metropolitan area exists in a different context than a densely settled small town located at a great distance from any other population center or a sparsely populated area isolated from urban centers of various sizes. A clearer summary of definitional issues can be achieved, and better choices made, by recognizing there can never be a one-size-fits-all definition of rural. For researchers and policy makers alike, the appropriate choice of a rural definition depends first and foremost on the purpose of the enterprise.

Figure 2. Concentration and Metropolitanness are Two Dimensions for Understanding Rurality



Source: Schroeder and Pacas (2021)

Choosing a rural definition begins by considering 1) what you want to accomplish and which populations and communities you want to include in your research, analysis, or program and 2) the data to which you have access. For instance, tracking land-use change or studying the effect of urbanization on farmland prices may benefit from a geographically detailed definition of rural that distinguishes built-up territory from surrounding, less-developed land. Mapping health care accessibility and analyzing its effect on rural well-being may need to incorporate distance measures into the rural definition, along with distinguishing more isolated and less isolated settings in relation to an urban center that supports health clinics, medical services providers, and hospitals.

In any application involving empirical research, practical aspects of data availability will play a major role and may preclude choices that otherwise would be desirable. County-based definitions dominate rural demographic and economic research because of the wider availability of detailed statistical data at the county level. As a result, researchers have treated nonmetropolitan counties as rural even though, based on the Census Bureau's classification, some of those counties contain urban areas and many metropolitan counties contain rural territory. In fact, based on the Census Bureau's definition, over half of the rural population resides within metropolitan counties. Counties can be quite large in land area, especially in the West, and can include a wide variety of land uses. Many metropolitan counties in the western half of the United States contain vast areas of sparse, if any, settlement. In such counties, large

proportions of the population are clustered in densely developed urban centers, while a large proportion of the land area is decidedly rural in nature, with some small communities separated from urban centers by large distances. San Bernardino County, California and Mohave and Coconino Counties, Arizona offer good examples of metropolitan counties that contain large expanses of sparsely settled or uninhabited territory.

For policymaking and economic development applications, the choice of a desirable rural definition may not be as limited by data considerations. Choices of a rural definition may vary depending on program goals. A program providing housing assistance may choose to target more isolated or economically distressed rural settings compared with programs designed to stimulate business starts and job creation. For example, the need for access to municipal water and sewage disposal systems or transit systems may lead to the selection of a higher population threshold since larger places are more likely to contain the infrastructure needed to promote and sustain economic development. Rural communities lacking access to health services may not be the same ones dealing with limited telecommunications infrastructure. The infrastructure needed to support health clinics serving largely rural populations led to the definition of rural for the Rural Health Clinics Program (administered by the Center for Medicare and Medicaid Services) as any area outside a Census Bureau urban area of 50,000 or more persons (see link in table 2 for more program details). The need to encourage and support expansion of telecommunications infrastructure into sparsely populated areas might argue for a lower population threshold and use of a maximum population density criterion.

4. Classifications

The federal government currently uses over two dozen rural definitions. A study undertaken to identify key similarities and differences among these definitions revealed that many of these definitions are grounded in four geographic sources, each of which defines a particular set of urban entities (Cromartie and Bucholtz 2008):

1. Census Places: The Census Bureau's list of incorporated and unincorporated places.
2. Urban Areas: Rural is the residual territory not included in a Census Bureau-defined urban area.
3. Core-Based Statistical Areas (CBSAs): Defined by the Office of Management and Budget (OMB) using urban area population and commuting data applied at the county-level, and divided into metropolitan and micropolitan statistical areas (metro and micro areas). Territory not included in either a metropolitan or a micropolitan statistical area is labeled "outside CBSAs."
4. Rural-Urban Commuting Areas (RUCAs): Defined by ERS using urban area population and commuting data applied at the census tract-level and at the ZIP Code-level.

The NCES Locale Codes represents a fifth source for consideration, offering a multilevel classification that incorporates both the structural aspect of settlement by referencing the Census Bureau's urban and rural areas as well as principal cities of CBSAs and the functional aspect by measuring distance from Census Bureau urban areas of varying size.

We label these "sources" because they do not necessarily describe just one definition, as each can be manipulated to derive different definitions. Some definitions combine elements from more than one source. For example, both CBSAs and RUCAs utilize the Census Bureau's urban areas as cores or centers to which commuting is measured. The National Center for Health Statistics' Urban-Rural Classification (Data Access - Urban Rural Classification Scheme for Counties (cdc.gov) provides a good example of a multi-category county-based classification that uses OMB's CBSA classification as its basis. This six-level classification distinguishes counties as follows:

- Large Central Metro: central counties of metropolitan statistical areas of one million or more population.
- Large Fringe Metro: outlying counties of metropolitan statistical areas of one million or more population.
- Medium Metro: counties in metropolitan statistical areas of 250,000 to 999,999 population.
- Small Metro: counties in metropolitan statistical areas of less than 250,000 population.
- Micropolitan: counties in micropolitan statistical areas.
- Non-core: counties outside metropolitan and micropolitan statistical areas.

Choosing a definition appropriate for a particular purpose begins with understanding the features that differentiate these four sources. One fundamental difference is the underlying

concept of urban built into each source. Urban areas may be conceptualized as administrative units defined by the legal boundaries of municipalities, as structural entities delineated by high population or housing unit density and infrastructure, or as economic-functional units (such as labor market areas defined by commuting patterns). Other differences among the four sources include the geographical building blocks used to construct them (e.g., counties vs. census tracts), the criteria employed (e.g., the number of people or housing units per square mile in an urban area), and the population ranges covered by each source (e.g., micropolitan areas range in size from 10,000 to 50,000).

Table 1. Rural Definitions and Their Key Features

Classification	Underlying Concept	Geographic Building Block	Criteria for Setting Urban-Rural Boundary	Population Threshold Between Urban and Rural Places
U.S. Census Bureau's List of Places	Administrative: rural areas defined in relation to legal or locally recognized place boundaries	Municipalities and census designated places (CDPs)	Corporate boundaries or locally defined unincorporated place boundaries	Varies: can be set at any level
U.S. Census Bureau's Urban Areas	Land use: rural areas defined in relation to high-density, built-up areas	Census blocks	Population density (prior to 2020) Housing unit density (2020)	2,500 (prior to 2020) 5,000 (2020) or 2,000 housing units
Office of Management and Budget's Core-Based Statistical Areas (CBSAs)	Economic: rural areas defined in relation to labor market areas	Counties	Population density and commuting	Usually 50,000; can be adjusted upward or down to 10,000
Economic Research Service's Rural-Urban Commuting Areas (RUCAs)	Economic: rural areas defined in relation to labor market areas	Census tracts or ZIP Code areas	Population density and commuting	Usually 50,000; can be adjusted upward or down to 2,500
National Center for Education Statistics' Locales	Land use and proximity: rural areas defined relative to high-density areas	Census blocks and distance buffers	Population/housing density (post-2020) and distance	5,000 (2020) or 2,000 housing units

Source: authors' analysis

Census Bureau's list of incorporated and unincorporated places

The Census Bureau maintains a list of places (https://www.census.gov/geographies/reference-files/time-series/geo/gazetteer-files.html) and publishes decennial census and American

Community Survey (ACS) data and a limited set of intercensal population estimates and Economic Census data for places (accessed through data.census.gov). The majority of places are incorporated entities with legally prescribed boundaries. The list also includes a set of census designated places (CDPs), representing locally recognized, unincorporated communities. CDP boundaries are determined with local input. Incorporated places and CDPs are mutually exclusive and do not overlap.

Rural is not defined officially using places. Instead, in several policy contexts (e.g., designating rural health clinics), rural consists of open countryside and places below a selected population threshold. Several rural development programs within USDA follow such a strategy, including the Single-Family Housing Program and the Community Facilities Loan and Grant Program. Although the programs share a common strategy, they do use different thresholds. The underlying concept is that a place-based approach provides another structural definition to the extent that municipal boundaries and CDPs accurately distinguish more and less densely settled territory. However, the underlying concept also includes the administrative functions of municipalities, which may provide advantages in the administration of economic development programs.

Advantages:
- geographically detailed
- decennial census data available along with intercensal estimates
- easy to understand; consists of geography to which the public easily relates
- municipalities are active political jurisdictions that provide critical services relevant to rural development and are sometimes the targeted entity for federal funding

Disadvantages:
- not statistically consistent in delineating high-density areas
- municipal incorporation and annexation laws differ by State; those differences and other factors contribute to variation in whether and by how much places expand over time to incorporate their suburbs
- actual population growth may or may not be reflected in boundary changes
- the CDP concept encompasses a variety of unincorporated communities, ranging from quasi-municipal special districts (such as, the unincorporated towns in Nevada), to places with the same range of social and economic activities as incorporated places, but lacking local government, to communities with unique characteristics and needs for data (such as colonias in the border regions of Texas, New Mexico, Arizona, and California).

Census Bureau's urban areas
https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural.html

The Census Bureau delineates and publishes data for the only federal classification system that uses the term urban in an official, statistical capacity. The classification itself defines rural by default (what is not urban) and the Census Bureau produces statistics for rural areas based on

this definition. In this scheme, rural areas encompass a variety of settlements, including low-density subdivisions (often on the fringes of urban areas), settlements with fewer than 2,000 housing units or 5,000 residents (fewer than 2,500 residents prior to 2020) that are not part of a densely developed urban area, and open countryside. Prior to 2020, the Census Bureau identified two types of densely settled urban areas: urban clusters (with populations of at least 2,500 and less than 50,000) or urbanized areas (if the population is 50,000 or higher). For the delineation of areas based on the 2020 Census, the Census Bureau increased the minimum population threshold for an urban area to 5,000 and added a minimum housing unit threshold of 2,000 as an alternative to qualification based on population. It is a structural definition only, one that distinguishes less densely settled areas from more densely settled areas and smaller from larger settlements. Urban areas include most territory that would be considered suburban but does not incorporate a functional perspective to reflect the broader economic sphere of influence of urban areas.

This version of rural is the most geographically detailed. Census blocks are used as the primary geographical building block. Urban area delineation begins by aggregating census blocks with densities of at least 425 housing units per square mile (1,000 persons per square mile prior to 2020) to form an initial core. Additional blocks are then added based on a lower density threshold of 200 housing units per square mile (500 persons per square mile prior to 2020). Additional measures are employed to account for nonresidential urban land uses. The Census Bureau's adoption of housing unit density-based criteria provides a nuanced reflection of the structural footprint of human settlement, moving closer to a definition based on the built environment rather than distribution of residential population.

Although there is an established population threshold that is defined as rural for statistical purposes, it is possible to establish alternative levels by combining smaller urban areas with the area already defined as rural. For instance, to move the threshold to 10,000, simply label as rural those urban areas with populations less than 10,000.

Advantages:

- geographic detail
- statistical consistency of estimates over time—the basic concept of a densely settled area since 1910. The 2,500-person threshold was in place from 1910 through 2010 (the higher 5,000-person threshold was adopted in 2022 for use with 2020 Census data)
- detailed decennial census statistics are available for urban areas and rural components of census geography (tracts, counties, etc.)
- annual data are available from the American Community Survey with limited geographical detail; more detail available with ACS five-year averages

Disadvantages:

- not part of the Census Bureau's annual population estimates program

- not included in the Census Bureau's Economic Census data tabulations and no annual economic data such as those available for counties in the Census Bureau's County Business Patterns or available from the Bureau of Labor Statistics and elsewhere
- does not follow municipal boundaries, so not a geography familiar to the public
- though the basic concept has not changed, criteria have been adjusted over the years, somewhat hampering analysis of urbanization trends over time

OMB's Core Based Statistical Areas (CBSAs)
https://www.census.gov/programs-surveys/metro-micro.html.

OMB defines broad economic-functional regions known as CBSAs. They are defined in terms of their economic function and represent labor market areas that extend well beyond the built-up urban core. There are two types of CBSAs. Metropolitan statistical areas (metro areas) are defined as (1) central (or core) counties with one or more Census Bureau urban areas with 50,000 people or more, and (2) outlying counties that are economically integrated with the core counties. Economic integration is measured by the share of employed population that commutes to core counties to work or the share of workers coming from core counties (reverse commuting). Micropolitan statistical areas are defined using the same criteria as metro areas, except the core county (or counties) contains a Census Bureau urban area of at least 10,000 population.

Nonmetropolitan (nonmetro) counties are outside the boundaries of metro areas and have been widely adopted as a version of rural in many research and policy contexts. Micropolitan statistical areas, first introduced in 2000, subdivide previously undifferentiated nonmetro territory into two distinct types of counties—micro and noncore, thus providing a window on the diversity found in nonmetro America.

It is important to note that OMB provides explicit guidance that the CBSA classification is not an urban/rural classification. CBSAs contain a mix of urban and rural territory (based on the Census Bureau's urban and rural classification).

Advantages
- composed of familiar geographic units; counties are typically active political jurisdictions, have stable borders, and usually have programmatic importance at the Federal and State level
- in addition to decennial census data, estimates of county population, employment, and income are available annually
- Economic Census, County Business Patterns, and other economic data are available for counties
- the Current Population Survey's individual and household characteristics, such as age, race, education, migration, and poverty status, are estimated annually for metro and nonmetro areas by State

- most studies of rural conditions and trends, and rural research generally, refer to conditions in nonmetro areas

Disadvantages

- counties are too large, especially in western States, to adequately capture the growing complexity of settlement patterns and labor market areas; this guarantees that, along with populations living in open countryside and small towns that are economically tied to cities (as reflected in their commuting levels), metro areas include people who are legitimately rural from both a structural and economic perspective
- the underlying concept and 50,000-person threshold have remained the same since they were first defined in 1950, but criteria have changed considerably with almost every decennial update, hampering the study of trends over time

USDA's Rural-Urban Commuting Areas (RUCAs)
https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes.aspx

RUCA codes are based on the same theoretical concepts used by OMB. Population density, urbanization, and daily commuting identify urban cores and adjacent territory that is economically integrated with those cores. Rural can be defined in several ways but consists of open countryside and small towns outside the economic influence of larger cities. OMB's metro, micro, and nonmetro terminology is adopted to highlight the underlying conceptual connectedness between the two classification systems. The use of census tracts instead of counties as building blocks for RUCA codes provides a different and more detailed geographic pattern of settlement classification.

The classification contains 10 primary and 30 secondary codes. Few, if any, research or policy applications need the full set of codes. Rather, the system allows for the selective combination of codes to meet varying definitional needs. Metropolitan cores (code 1) are defined as census tract equivalents of urbanized areas. Micropolitan and small-town cores (codes 4 and 7, respectively) are tract equivalents of smaller urban areas (known as urban clusters until 2022). High commuting (codes 2, 5, and 8) means that the largest commuting share was at least 30 percent to a metropolitan, micropolitan, or small-town core. Low commuting (codes 3, 6, and 9) refers to cases where the single largest flow is to a core but is less than 30 percent. The last of the general classification codes (10) identifies rural tracts where the primary flow is local or to another rural tract.

The primary RUCA codes are further subdivided to identify areas where settlement classifications overlap, based on the size and direction of the secondary, or second largest, commuting flow. For example, 10.1, 10.2, and 10.3 identify rural tracts for which the primary commuting share is local, but more than 30 percent also commute to a metropolitan, micropolitan, or small-town core, respectively.

Advantages

- provides an alternative to OMB's county-based system for situations where more detailed geographic delineation is needed
- allows for the identification of economic functional areas surrounding small towns, those between 2,500 and 10,000 population; counties are too large to adequately delineate these small labor market areas
- identifies rapidly growing, potentially urbanizing zones within current nonmetro territory; conversely, identifies territory within metro counties that are outside the economic influence of the metro core
- permits stricter or looser delimitation of metropolitan, micropolitan, and small town commuting areas

Disadvantages
- census tracts are less familiar geographic entities, compared with counties or municipalities
- no intercensal data
- unstable boundaries; census tracts in many States are routinely redefined (split or merged) between decennial censuses in response to population change and the need to comply with specified population size criteria
- depends on measuring tract-to-tract commuting using data from the American Community Survey, which can include very small flows with high margins of error

National Center for Education Statistics' Locale Codes
https://nces.ed.gov/programs/edge/Geographic/LocaleBoundaries

The National Center for Education Statistics Locale Code typology extends the Census Bureau urban area framework and classifies all U.S. territory into an annually updated 12-category continuum. The framework initially classifies areas into four core types – City, Suburban, Town, and Rural – with each type further classified into three subtypes. City classifications are based on principal city designations determined for CBSAs (limited to the portion of Principal City boundaries contained within a Census urban area with a population of 50,000 or more); Suburban classifications are based on Census urban areas with a population of 50,000 or more; Town classifications are based on Census urban areas with a population less than 50,000; and Rural classifications are based on territory located outside of Census urban areas.

City and Suburban locales are further classified as Large, Midsize, and Small based on population size. Town and Rural locales are further classified as Fringe, Distant, and Remote based on proximity to urban areas of different sizes. This classification is an extension of the Census Bureau's standard urban definition and can be collapsed into the standard Census urban/rural dichotomy or extended into 12 detailed classifications to address a variety of analytic needs.

Advantages:
- Consistent with Census Bureau urban areas and collapsible into urban/rural dichotomy

- Provides additional granularity for Rural-Fringe, Rural-Distant, and Rural-Remote areas based on varying proximity to large and small urban areas
- Rural classifications are not constrained by county or tract boundaries
- Locale boundaries are easily accessible as data web services and static geospatial data files
- Education conditions for public schools, private schools, postsecondary schools, and school districts are available by locale
- Easily explorable through dedicated reference tools (https://nces.ed.gov/programs/maped/LocaleLookup/)

Disadvantages:

- Social/economic data are limited to core types and cannot be disaggregated for City/Suburban without custom tabulation
- Does not follow county or municipal boundaries except for Principal Cities of CBSAs
- Newer and less familiar to data users than CBSAs and RUCAs

A study comparing these sources using 2000 Census data showed major differences in overall population size and population characteristics (Cromartie and Bucholz, 2008). The biggest differences can be attributed to the underlying concept of rural as administrative, structural, or economic-functional, which strongly affects the placement of suburban and exurban populations.

For additional information about these classifications, see https://www.ers.usda.gov/data-products/rural-definitions/.

For example, an administrative definition in which municipalities of a specified population size or more are considered urban (for example, 25,000 persons) would result in designation of adjacent densely populated unincorporated territory as rural. In other words, a densely settled subdivision adjacent to, but outside, the boundaries of an urban city or town, would be classified as rural even though the settlement pattern is similar to that of neighborhoods within the city limits.

The inconsistencies created by use of a definition focused on administrative units are solved by use of a definition based on population density, housing density, or other criteria that measure the settlement structure without reference to municipal boundaries. The Census Bureau's urban areas are structural entities defined at a high degree of spatial resolution, which provides for a highly detailed (but also complicated) demarcation between urban/suburban and rural territory. These structural entities, however, do not provide a measure of the economic relationships that might exist between the entity and the surrounding rural territory, or even the economic relationships between multiple urban centers. For that level of insight, the economic-functional approach is needed.

Rural definitions based on an economic-functional perspective generate larger socioeconomic contrasts between rural and urban populations. This result emerges because a higher proportion of the population living in lower density suburban and exurban areas as well as some rural settings is counted as urban. The choice of a population threshold separating rural from urban entities affects the total size of the rural population for definitions based on census places, but does not significantly affect population size or characteristics for definitions based on the other three sources.

Table 2 provides examples of rural definitions used to administer federal programs targeting rural populations. Although many of these examples use a 50,000-person threshold to distinguish rural and urban places, the use of different definitional sources (e.g., places versus urban areas) means sometimes large differences in the targeted populations.

Table 2. Examples of Rural Definitions Used by Federal Agencies for Program Eligibility or Statistics

Department/Agency/Program or Data Product	**Purpose/Website**	**Source of Rural Definition**	**Population threshold**
Department of Agriculture, Water & Waste Disposal Loan & Grant Program	Water and Waste loans and grants eligibility	Census Bureau Places	Less than 10,000
Department of Agriculture, Business & Industry Loan Guarantees	Business and Industry loans eligibility	Combination of Census Bureau Places and Census Bureau Urban Areas	Less than 50,000
Department of Agriculture, Economic Research Service, State Fact Sheets	Statistics for rural and urban areas by State	OMB Core Based Statistical Areas	Less than 50,000
Department of Education, Rural Education Achievement Program	Rural school district grant eligibility	NCES Locales and Census Bureau Urban Areas	5,000
Department of Health and Human Services, National Center for Health Statistics natality and mortality data; monitoring of health of urban and rural residents	Statistics for rural and urban areas by county	OMB Core Based Statistical Areas	Less than 50,000
Department of Health and Human Services, Centers for Medicare & Medicaid Services, Rural Health Clinics	Rural Health Clinics certification	Census Bureau Urban Areas	Less than 50,000

Department of Health and Human Services, Health Resources and Services Administration, Federal Office of Rural Health Policy	Rural health funding eligibility	ERS Rural-Urban Commuting Areas (RUCAs)	50,000
Department of Transportation Metropolitan Planning Organization (MPO) Program	MPO designation; transportation planning and funding	Census Bureau Urban Areas	50,000 or more
Department of Transportation, Transportation Infrastructure Finance and Innovation Act (TIFIA)	TIFIA Rural Project Initiative eligibility	Census Bureau Urban Areas	150,000
Department of Veteran Affairs, Veterans Health Administration, Office of Rural Health	Statistics for rural veterans	ERS Rural-Urban Commuting Areas (RUCAs)	50,000

5. Practical Considerations and Pitfalls in Choosing a Rural Definition

The Census Bureau's classification of urban and rural territory is widely accepted as the baseline definition for statistical purposes. It is a geographically detailed delineation of the Nation's built-up territory that forms the basis for both OMB's delineation of CBSAs, the ERS RUCA codes, and the NCES Locale Codes. As mentioned previously, it is the only federal classification system that uses both "urban" and "rural" as terminology in data products (ERS RUCA codes and NCES Locales use the terms "rural areas" and "rural," but employ other terminology, such as "metropolitan area core," "city," "suburb," or "small town" for other categories). Researchers and other users commonly adopt the term rural to describe definitions based on the other three geographical sources. Research reports analyzing conditions and trends in nonmetropolitan counties often include stipulations such as: "In this report, the terms 'nonmetro' and 'rural' are used interchangeably." Legislation creating rural-based economic development programs typically include language such as "The term 'rural' is here defined as…" Confusion regarding the use of rural definitions comes in part from this ubiquitous practice of applying the term rural interchangeably across vastly different classification schemes. In the policy arena, the practice often leads to simply replacing the proper term (such as census places or nonmetro areas) with rural without adequate explanation.

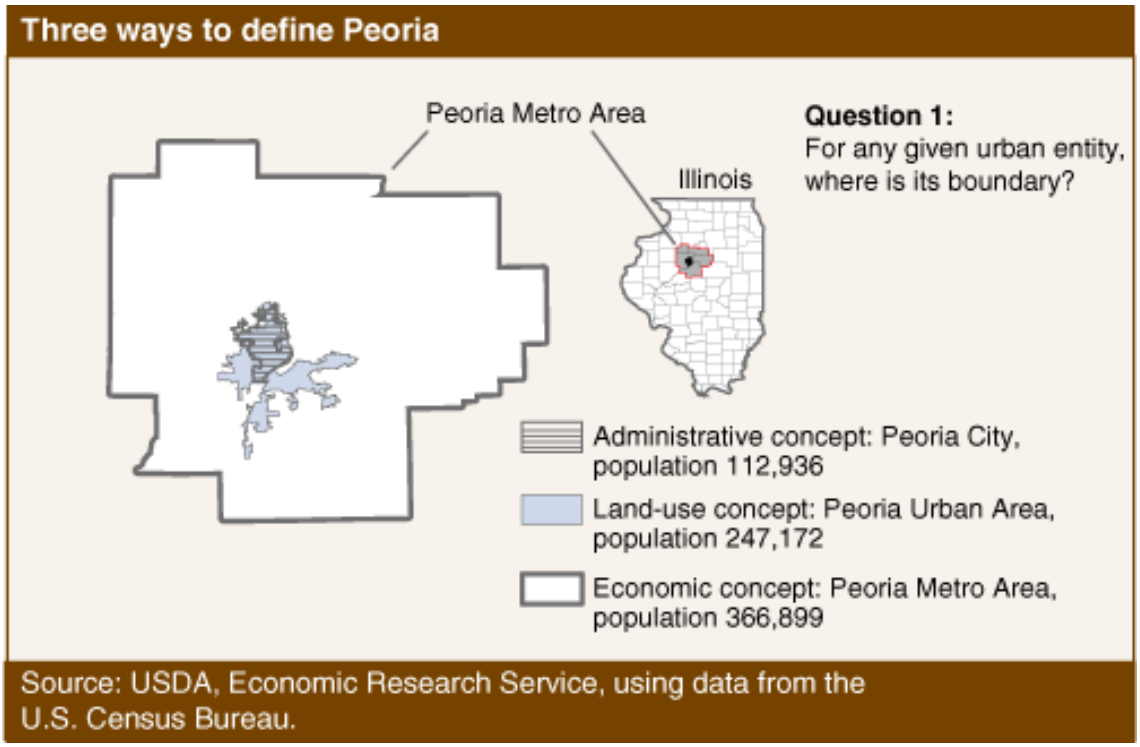
Over the years, congressional acts creating rural-based programs have applied different rural definitions to establish eligibility. For example, a 2002 proposal to amend the Consolidated Farm and Rural Development Act included this language:

> *Except as otherwise provided in this paragraph, the terms 'rural' and 'rural area' mean any area other than—*
>
> *(i) a city or town that has a population of greater than 50,000 inhabitants; and*
> *(ii) the urbanized area contiguous and adjacent to such a city or town.*

The rest of the paragraph described alternative definitions to be applied to specified programs. Many of these rural definitions are written into legislative or regulatory language with major financial implications for rural communities and families throughout the country.

All of these sources define what is urban. That is, they delineate boundaries for, and identify by name, individual entities centered on areas of population concentration, but do so in vastly different ways. Thus, someone looking for statistics on Peoria, Illinois may choose among three versions, ranging in population from just over 100,000 (Peoria city) to just under 367,000 (Peoria metro area).

Figure 3. Three Ways to Define Peoria



Source: Cromartie and Bucholtz, 2008, https://www.ers.usda.gov/amber-waves/2008/june/defining-the-rural-in-rural-america/

Rural definitions typically constitute territory lying outside these entities. For instance, the Census Bureau defines rural as all territory lying outside urban areas. Rural researchers, depending heavily on county-level data, often classify as rural all counties lying outside metro areas. Other rural definitions include, in addition to the undefined territory, some of the defined entities small enough in population to be considered rural. For example, the USDA rural housing program determines eligibility, in part, as residence outside places or in places with fewer than 25,000 people.

The urban focus of the geographic sources discussed earlier makes it more economical, in almost all cases, to describe rural in terms of the territory that is not included, such as the above descriptions of rural as territory outside urban areas or outside metro areas. Part of the confusion faced by users of rural definitions comes from having to mentally "flip" definitions to focus on what is not described. On maps, it often means focusing on the white areas rather than the highlighted portions that naturally draw the eye. The descriptions of the five geographic sources—their underlying concepts, geographical building blocks, criteria, and population thresholds—often take an urban perspective. However, good decision-making in choosing an appropriate rural definition requires an understanding of the key characteristics of urban entities and how they, in turn, determine the characteristics of rural definitions derived from them.

Nonmetro territory has long served as a proxy for rural in research applications based on county-level data. So ubiquitous is the county as a unit of analysis for demographic and other

social science research, and so extensive is the adoption of metro and nonmetro as a fundamental rural-urban divide, that nonmetro has become a standard definition of rural for many research purposes. So far, the availability of micro areas (first defined in 2000) has not resulted in any shift away from this standard practice of defining rural as nonmetro. Most researchers view micro areas as a useful means to subdivide previously undifferentiated nonmetro territory, thus providing an important window on the economic and social diversity found in nonmetro America.

Counties are familiar geographic units, typically active political jurisdictions with relatively stable borders and usually of programmatic importance at the Federal and State level. In addition to decennial census data, estimates of county population, employment, and income are available annually. In the Census Bureau's Current Population Survey, individual and household characteristics (e.g., age, race, education, migration, employment, income, poverty status) are estimated annually for nonmetro areas by State. Most ERS studies of rural conditions and trends, and rural research generally, refer to conditions in nonmetro areas.

6. Conclusions

Rural researchers and policy makers constantly face a complex and vexing geographic puzzle that defies simple answers. Delineating a line between rural and urban America has always been problematic, and the complexity of today's settlement system now makes futile any search for a one-size-fits-all solution. A better strategy is to recognize that urban and rural are multi-dimensional concepts incorporating size, density, distance, and other perspectives. The choice of a rural definition should be based first and foremost on the purpose of the enterprise. It is both a challenge and an opportunity that the range of definitional options available today is quite broad.

The five types of urban entities (as defined by the four geographic sources in Table 1) and the range of thresholds available within each source permit flexibility in tailoring definitions to suit a given application. Choices for research activities are sometimes limited by data requirements. Ideally, researchers understand and report the implications of any definitional choice: Who is included and who is left out? What is being masked by using large geographical building blocks? How does the urban-rural geography vary by State? Policy makers have the opportunity to craft eligibility rules that best fit particular programs. Careful consideration of rural definitions has the potential to improve the overall efficiency of economic development programs by better targeting the intended beneficiaries.

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