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The Rural Food-Away-from-Home Landscape, 1990–2019

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Abstract

Approximately half of consumer food expenditures and one-third of food calories consumed are as food-away-from-home (FAFH) purchases. FAFH often differs from food at home (FAH) in nutritional profile and convenience. The availability and variety of FAFH outlets may significantly affect diets, health, food choice, and food-related time use. Focusing on U.S. nonmetropolitan (nonmetro) counties over the course of 30 years from 1990 to 2019, the authors examined the rural FAFH landscape across the United States—i.e., the availability of restaurants, cafeterias, food trucks, and the like outside of the home. The authors focused on trends and differentiating features of FAFH access across the metropolitan divide and across the rural-urban continuum using annual establishment-level data from the National Establishment Time Series (NETS) dataset. The authors found that FAFH is generally less available in nonmetro counties and that there is a prevalence of national chain restaurants among the FAFH options in the most rural, nonmetro counties. However, this finding is not uniform across county types. Broad local economic conditions, captured by primary industry, are correlated with differences in the food landscape. Counties with recreation as their primary industry tended to offer more FAFH options than rural counties with other leading industries, including nonmetro counties. Furthermore, there has been an expansion of FAFH in nonmetro counties, including the most rural, nonmetro counties, led by growth in limited-service restaurants. These results could have implications for food access, overall health, and other consumer food metrics because FAFH generally offers a different nutritional profile than food at home and may provide additional convenience.

Keywords: National Establishment Time Series, NETS, rural, food away from home, food environment, metropolitan counties, nonmetropolitan counties, urban, Rural-Urban Continuum Codes, RUCC.

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Errata
On May 4, figures 2a, 2b, 7, 12a, and 12b were updated with data for Honolulu County, Hawaii. No other figures or text were affected.

On August 17, figures 2a, 2b, 7, 12a, and 12b were updated to reflect the non-metro status for Aleutians West, Alaska. No other figures or text were affected.

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What is the Issue?

National trends have shown that food-away-from-home (FAFH) spending rivals and sometimes surpasses food-at-home (FAH) spending (Saksena et al., 2018). Households in sparsely populated areas face unique food access challenges because the type of establishments may be more limited and travel distances may be greater, though certain local economic conditions or adjacency to a metro area may improve food access. Food access affects rural well-being through the abundance, convenience, and nutrition of food options. The relative abundance of FAH establishments has been summarized by Stevens et al. (2021), who found a dearth of food retailers in rural counties compared with urban counterparts, but comparisons of FAFH establishments across rurality have not been comprehensively summarized. Furthermore, FAFH establishments may offer convenient locations and reduce food preparation time when compared with FAH options, so the balance of food sources may also impact lifestyles, particularly for individuals with time constraints (Hamrick and Okrent, 2014). Finally, FAFH tends to differ in healthfulness from FAH, and healthfulness differs between types of FAFH establishments. So the nutritional profiles of residents may be affected by the variety of available establishments. As food access and landscapes interact with overall economies and lifestyles, an investigation of FAFH across geographies can inform future analysis of the differences between urban and rural communities, especially in terms of food and health.

What Did the Study Find?

We studied differences in FAFH access landscapes along the rural-urban continuum between 1990 and 2019, with an emphasis on 2019 for the most current outlook. Overall, rural, nonmetro counties—or those counties with populations under 2,500, regardless of proximity to metro areas—have fewer FAFH establishments per 1,000 people than more heavily populated nonmetropolitan, urban counties (populations between 2,500 and 20,000).

- As of 2019, there were 16 U.S. counties (0.4 percent of all U.S. counties) that did not have any FAFH options.
- Although the median number of FAFH options in a metropolitan county was more than 200, 20 percent of nonmetropolitan counties have fewer than 10 FAFH options.

ERS is a primary source of economic research and analysis from the U.S. Department of Agriculture, providing timely information on economic and policy issues related to agriculture, food, the environment, and rural America.



- FAFH outlets in sparsely populated areas are smaller operations (as measured by total employment) than their counterparts in more densely populated areas.

Nonmetropolitan counties are often discussed as a collective, but the counties have heterogeneous economies. Counties with recreation as the primary industry have more FAFH options and a greater proportion of FAFH options relative to FAH options, like grocery stores, when compared with similarly sized counties where farming is the primary industry, which demonstrates how the broader local economy relates to the local food landscape in rural areas. Among the rural counties that are not adjacent to a metro area, counties with recreation as their primary industry have 2.8 FAFH establishments per 1,000 people, whereas those with farming as their primary industry have 1.9 FAFH establishments per 1,000 people.

Additionally, the diversity of FAFH options has changed over time, which we investigated by analyzing the prominence of popular national chain restaurants. The chain restaurants with the most outlets in the United States have grown more prominent in the past two decades in rural, nonmetro counties (relative to 1990) and represent a sizeable share of the FAFH options in many nonmetropolitan counties, suggesting that the portfolio of FAFH options may vary less from rural county to rural county than it once did.

FAFH was significantly impacted by the Coronavirus (COVID-19) pandemic, but the impact was disproportionately felt by full-service restaurants, while limited-service restaurants fared better (Marchesi and McLaughlin, 2022). This study summarizes the trends and statistics for different types of FAFH across geographies leading up to the pandemic (through 2019), noting that limited-service restaurants make up a large and increasing share of FAFH options in many nonmetropolitan counties, which may have shielded these counties from some of the FAFH impacts of the pandemic. More broadly, this report shows geographic variation in FAFH options which can be useful in understanding differential impacts on the FAFH landscape after the onset of the pandemic.

How Was the Study Conducted?

Using data from all 50 States and the District of Columbia from 1990 to 2019, the authors obtained a census of establishments from the National Establishments Time Series (NETS) database, which categorized the census of establishments as FAFH or FAH. This report focused on FAFH establishments, such as full- and limited-service restaurants, cafeterias, etc. Data were analyzed at the county level, with each county identified by USDA, Economic Research Service's (ERS) Rural-Urban Continuum Codes (RUCC). These RUCC identifications allowed researchers to differentiate nonmetropolitan counties into three categories by urban characteristics: large urban nonmetro, small urban nonmetro, and completely rural nonmetro counties. Using economic nonoverlapping dependence typologies also defined by USDA, ERS, nonmetropolitan counties were characterized by their primary industry economy (e.g., recreation dependent or farming dependent).

The Rural Food-Away-from-Home Landscape, 1990–2019

Introduction

The objective of this study is to provide insights into food availability by describing how rural food landscapes differ from their urban counterparts and how rural food landscapes have changed over time.¹ Food types can be sorted into two broad categories: food at home (FAH) and food away from home (FAFH). FAH is food that is typically purchased at a food retailer, such as a grocery store, to be prepared and consumed at home. FAFH is food purchased at restaurants and other service establishments. Although both FAH and FAFH are important components of the food landscape, few studies have explored FAFH marketing channels in rural communities. We address two important questions faced by local, State, and Federal governments: (1) To what extent residents of rural counties can access FAFH, and (2) how has FAFH access changed between and within nonmetro counties since 1990? As such, this study may provide important context for researchers and policymakers as they consider rural food landscapes.

Rural and urban food landscapes are notably different, which can create contrasting effects on consumer behavior and impact nutritional and health outcomes for consumers. For instance, researchers have observed increases in body-mass index when people move from rural areas to urban areas with dense, small grocery store access because smaller food retailers tend to offer a greater proportion of unhealthy food options (Gibson, 2011). Other researchers have observed an overall scarcity of food retail outlets in rural areas when compared with their urban counterparts (Stevens et al., 2021). Specifically, they observed substantial differences in the number and size of FAH establishments in rural areas within the FAH landscape in the United States between metropolitan and nonmetropolitan counties.² Another contrasting feature is that rural locations in the United States have historically had higher poverty rates and lower population growth than urban areas (Cromartie et al., 2020), which could affect the overall demand for various food options in rural areas. However, demand for food options may increase in rural areas where populations are expanding and economic conditions are more conducive to FAFH business.

Though the overall rural U.S. population has remained essentially unchanged in aggregate, regions (especially in the Midwest and Northeast regions) have experienced a significant decline in nonmetropolitan population density between 2010 and 2020 (Cromartie et al., 2020; Sanders, 2021). The rural counties that added jobs in recent years tended to do so at a rate of less than half of urban counties. While poverty rates in rural counties have dropped in recent years, they have remained persistently higher than poverty rates in urban counties: 16.1 percent in nonmetro counties compared with 12.6 percent in metro counties in 2018 (Cromartie

¹ The distinction between urban and rural counties help delineate between population density of areas throughout the country. For this report, we utilize the USDA, Economic Research Service’s Rural-Urban Continuum Codes, which define and differentiate between metropolitan (metro) counties by population and by the population of their Metropolitan Statistical Area, and nonmetropolitan (nonmetro) counties by population and adjacency to a metro area (appendix table A.2). In RUCC and in the present study, counties that are nonmetro but have populations of 20,000 or more are classified as “large urban nonmetro,” counties with populations between 2,500 and 19,999 are classified as “small urban nonmetro,” and counties with populations under 2,500 are classified as “rural, nonmetro counties.” Although RUCC identifies nine unique designations for counties based on population and metropolitan adjacency, existing literature often simply uses the terms “urban” and “rural” to define areas that are more or less populated. We provide a more thorough definition of what is urban and rural in the context of this report in the “Data Description and Methodology” section of this report.

² Specifically, figures 3 and 4 in Stevens et al. (2021) show the number and size of FAH establishments in rural areas, the distribution of FAH retailers across the nonmetro areas as of 2015 (the most recent period in the study), and the distribution of different FAH retailer types across the nonmetro areas in 2015.

et al., 2020). These kinds of macro trends in rural places have led to important changes in retail food access for consumers. For example, some nonmetropolitan counties in the United States have had few or no retail food options, as indicated by the share of grocery stores decreasing by 15 percent between 1990 and 2015 in rural, nonmetro counties (Stevens et al., 2021). Aside from macro trends occurring in rural counties, time constraints can also impact consumer food choices between FAFH and FAH options (Hamrick and Okrent, 2014). For instance, FAFH has substantially different time costs associated with preparation than FAH and may offer valuable conveniences (Anekwe and Zeballos, 2019), which may drive some people to seek more convenient options from FAFH establishments. By exploring rural FAFH metrics and trends, this study builds on previous research from the USDA, Economic Research Service (ERS). In their comprehensive report on FAFH for the United States, Saksena et al. (2018) examined the rural-urban divide in the FAFH sector. The authors found a large part of restaurant growth occurred in metropolitan areas in ways that have been consistent with urban and rural migration (McLaughlin and Dicken, 2018). Although McLaughlin and Dicken (2018) did not focus exclusively on rural, nonmetro counties, they found that areas with a population decline saw an increased incidence of full-service restaurant closures. Among consumers, results showed no difference in the propensity to purchase meals from full-service restaurants among urban and rural consumers, but the results did show a slightly higher propensity to purchase fast food (i.e., quick or limited service) among urban consumers (Rhakovsky et al., 2018).³ A higher propensity to purchase meals from fast-food establishments likely relates to previous research that found higher proximity to fast-food establishments has been found to contribute to obesity (Chou, Grossman, and Saffer, 2004; Davis and Carpenter, 2009; Currie et al., 2010). The link between the propensity to purchase a food type and its availability in the area demonstrates how the food landscape can relate to overall health and nutrition.

Since there have been detailed findings about FAH access differences across rural-urban areas (Rhone et al., 2022; Stevens et al., 2021), we wanted to examine the extent of differences in FAFH access across the rural-urban continuum of counties. This report used the Rural-Urban Continuum Codes (RUCC) developed by USDA, ERS. RUCC provides classifications for how a county is categorized on the rural-urban continuum, whereas USDA, ERS's County Typology Codes provide designations for a county's primary industry (e.g., agriculture, tourism, etc.) in a county. County typology codes, which indicate a county's primary industry, provide context for how the local food landscape relates to the broader economy. The primary industry categories include farming, manufacturing, government, and recreation. Analysis by primary industry type differentiates counties that have similar populations but different primary industries and may thus face very different economic conditions despite the similarity in size. We found certain industry landscapes (e.g., recreation industry-dominant areas) have been more favorable for FAFH access.

This report provides visual and statistical descriptions of the FAFH landscape, such as the number of FAFH establishments per 1,000 people at the national and county levels, with counties further delineated by both RUCC and economic typology classifications. Furthermore, to explore the concentration of national chain restaurants, we calculated the percent of establishments run by the most frequent brands and provided summary statistics and maps across the county designations. Although there is a range of branded restaurants, higher concentrations of frequent brands may represent less dietary diversity in FAFH options for residents.

³ The authors also found rural consumers typically had fewer restaurants nearby, and that finding held for a range of distances from the home. To give a sense of the disparity, consider the following finding from Rhakovsky et al. (2018): "Rural consumers have only 0.73 fast-food restaurant [sometimes known as a limited-service restaurant] within 1 mile of their home, whereas urban consumers have 7.6."

Data Description and Methodology

We aggregated food establishments at the county level using National Establishment Time Series (NETS) data. We matched aggregate metrics to USDA, ERS’s county Rural-Urban Continuum Codes, County Typology Codes, and other county characteristics—such as population estimates from the U.S. Department of Commerce, Bureau of the Census. This allows us to provide a comprehensive examination of the differences in the FAFH landscape across the rural-urban divide and the counties’ leading economies.

National Establishment Time Series (NETS)

NETS is a longitudinal database that records geographic, industry, ownership and management, sales, and employment data for individual establishment locations across time. The NETS database can be used to identify changes in store metrics and trends in establishments and industries at various geographies (we examined county-level changes). Dun & Bradstreet Corporation and Walls & Associates, Inc. created NETS by using Dun & Bradstreet’s archival data from surveys of establishments (Walls & Associates, 2019). Updated annually, NETS provides yearly records with information as far back as 1990 through 2019. Each record includes the company (the legally licensed name of a business) and trade name (storefront or banner name).⁴ NETS contains geographic information, including geographic coordinates, the street address, and the county Federal Information Processing Standards (FIPS) code for each establishment. Similar geographic information is available for the associated headquarters and provides the total number of establishments under the same headquarters.⁵ Each establishment is assigned a unique identification number (known as a Data Universal Numbering System (DUNS) number) for both the establishment and its headquarters, allowing users to track establishments under the same parent company.

The NETS database contains business establishments from all industries. The database categorizes each establishment using the Standard Industrial Classification (SIC) industry codes for each year (e.g., SIC19 for 2019) in the database and provides a SIC to the current North American Industry Classification System (NAICS) code crosswalk, allowing users to make standardized industry comparisons with other datasets. These codes are published for each year (e.g., NAICS19 for 2019) to capture changes in establishment classification over time. This report utilized the primary SIC and subsequent NAICS codes available for each year to classify establishments.⁶ Although this method could lead to undercounting FAFH establishments, employment records under this methodology have been consistent with other Federal datasets related to the food retail landscape (Zeballos and Marchesi, 2022). Retailers are differentiated by the items they sell and the services they provide. Tables 1a and 1b list the 2017 NAICS codes analyzed in this study for FAH and FAFH.⁷ We

⁴ Every establishment has a company name, but not all establishments have a trade name.

⁵ This report excludes those establishments that are identified as a headquarters in NETS from our analysis, as most headquarters focus on executing the day-to-day operations of the stores but do not generally participate in the sale of foods themselves.

⁶ NETS provides a primary 8-digit SIC code for every year an establishment is in the database (i.e., some establishments switch their main SIC code over time) and provides a crosswalk to match the latest NAICS codes. NETS is limited to the extent that additional codes are only provided in the most recent year (not over time). Thus, for continuity, we focused only on the primary code provided over time. This work utilized the same SIC to NAICS code classifications as Zeballos and Marchesi’s (2022) work. Zeballos and Marchesi (2022) grouped NAICS codes based on the Food Expenditure Series using broader categories, and we do the same to provide comparable results.

⁷ In instances where an industry changed its categorization (such as a food truck later becoming a restaurant), that information has been captured longitudinally to the extent that NETS was able to update the corresponding SIC code associated with the business in the year the change occurred. The approach we used for this report then resulted in the new classification being used for the following years. However, in the instance that a food truck operator opened a brick-and-mortar location, it could be expected those establishments would be related through the headquarters identifier within the dataset, and the two would likely be treated as separate establishments as part of the same general organization. Future work could explore the potential disparities between those businesses that stayed in a given industry or those that changed their business model.

primarily followed the same categories outlined in previous work for FAH and FAFH (Stevens et al., 2021; Zeballos and Marchesi, 2022); for FAH establishments, we focused on supermarkets, warehouse clubs and supercenters, convenience stores and gas stations with convenience stores, and most specialty food stores.⁸ For FAFH establishments, we included all restaurants (full service and limited service), drinking places, and other miscellaneous FAFH establishments (such as food service contractors and caterers). Since there is a large share of traditional FAFH retailers that are associated with this NAICS code in NETS, we included baked goods stores in this analysis for FAFH instead of categorizing them as specialty food stores in FAH. This inclusion is particularly important when considered alongside the nonemployee establishments available in NETS and the growth in cottage business—a business where the place of business is the owner’s home—included in the baked goods sector (O’Hara et al., 2021).

Table 1a

Definitions and NAICS codes of food-away-from-home (FAFH) establishments

Format	NAICS code	Definition
Baked goods stores	445291	This U.S. industry comprises establishments that are primarily retailing baked goods that are not for immediate consumption and not made on the premises. These establishments are included in our tallies of FAFH establishments for the large share of traditional FAFH retailers that are associated with this NAICS code.
Caterers	722320	This industry comprises establishments that are primarily providing single event-based food services. These establishments generally have equipment and vehicles to transport meals and snacks to events and/or prepare food at an off-premises site. Banquet halls with catering staff are included in this industry. Examples of events catered by establishments in this industry are graduation parties, wedding receptions, business or retirement luncheons, and trade shows.
Mobile food services	722330	This industry comprises establishments that are primarily preparing and serving meals and snacks for immediate consumption, serving from motorized vehicles or nonmotorized carts. The establishment is the central location from which the caterer route is serviced, not each vehicle or cart. Included in this industry are establishments primarily providing food services from vehicles, such as hot dog carts and ice cream trucks.
Full-service restaurants	722511	This U.S. industry comprises establishments that are primarily providing food services to patrons who order and are served while seated (i.e., waiter/waitress service) and pay after eating. These establishments may provide this type of food service to patrons in combination with selling alcoholic beverages, providing carryout services, or presenting live non-theatrical entertainment.
Limited-service restaurants	722513	This U.S. industry comprises establishments that are primarily providing food services (except snacks and nonalcoholic beverage bars) where patrons generally order or select items and pay before eating. Food and drink may be consumed on premises, taken out, or delivered to the customer’s location. Some establishments in this industry may provide these food services in combination with selling alcoholic beverages.

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⁸ As identified in Zeballos and Marchesi (2022), although the NETS database tends to mostly classify establishments as convenience stores, Federal records (such as the County Business Patterns) tend to classify similar stores as gas stations with convenience stores. For that reason, this report included both types of classifications to accurately depict the FAH environment as much as possible.

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Format	NAICS code	Definition
Cafeterias, grill buffets, and buffets	722514	This U.S. industry comprises establishments (known as cafeterias, grill buffets, or buffets) that are primarily preparing and serving meals for immediate consumption, using cafeteria-style or buffet serving equipment (such as steam tables, refrigerated areas, display grills, and self-service nonalcoholic beverage dispensing equipment). Patrons select from food and drink items on display in a continuous cafeteria line or from buffet stations.
Snack and nonalcoholic beverage bars	722515	This U.S. industry comprises establishments that are primarily engaged in (1) preparing and/or serving a specialty snack (such as ice cream, frozen yogurt, cookies, or popcorn) or (2) serving nonalcoholic beverages (such as coffee, juices, or sodas for consumption on or near the premises). These establishments may carry and sell a combination of snacks, nonalcoholic beverages, and other related products (e.g., coffee beans, mugs, coffee makers) but generally promote and sell a unique snack or nonalcoholic beverage.

Source: USDA, Economic Research Service using U.S. Department of Commerce, Bureau of the Census, North American Industry Classification System (NAICS) code definitions.

Table 1b
Definitions and NAICS codes of food-at-home (FAH) establishments

Format	NAICS code	Definition
Meat markets	445210	This industry comprises establishments that are primarily engaged in retailing fresh, frozen, or cured meats and poultry. Delicatessen-type establishments that are primarily retailing fresh meat are included in this industry.
Fish and seafood markets	445220	This industry comprises establishments that are primarily engaged in retailing fresh, frozen, or cured fish and seafood products.
Fruit and vegetable markets	445230	This industry comprises establishments that are primarily engaged in retailing fresh fruits and vegetables.
Confectionary and nuts stores	445292	This U.S. industry comprises establishments that are primarily engaged in retailing candy and other confections, nuts, and popcorn that are not for immediate consumption and not made on the premises.
All other specialty foods stores	445299	This U.S. industry comprises establishments that are primarily engaged in retailing miscellaneous specialty foods (except meat, fish, seafood, fruit and vegetables, confections, nuts, popcorn, and baked goods) that are not for immediate consumption and not made on the premises.
Supermarkets and other grocery	445110	This industry comprises establishments generally known as supermarkets and grocery stores that are primarily engaged in retailing a general line of food (such as canned and frozen foods; fresh fruits and vegetables; and fresh and prepared meats, fish, and poultry). Included in this industry are delicatessen-type establishments that are primarily retailing a general line of food.
Convenience stores	445120	This industry comprises establishments known as convenience stores or food marts (except those with fuel pumps) that are primarily engaged in retailing a limited line of goods that generally includes milk, bread, soda, and snacks.
Gasoline stations with convenience stores	447110	This industry comprises establishments that are retailing automotive fuels in combination with convenience stores or food mart items. These establishments can be in a convenience store (i.e., food mart) setting or a gasoline station setting. *These are included alongside NAICS code 445120 in order to get a complete picture of potential food availability to consumers.

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Format	NAICS code	Definition
Warehouse clubs and supercenters	452311	This U.S. industry comprises establishments known as warehouse clubs, superstores, or supercenters that are primarily retailing a general line of groceries (including a significant amount and variety of fresh fruits, vegetables, dairy products, meats, and other perishable groceries), in combination with a general line of new merchandise (such as apparel, furniture, and appliances).
Dollar stores	452319	**Researchers used headquarter identification numbers of prominent dollar store establishments to ID stores within the database.** This U.S. industry comprises establishments that are primarily engaged in retailing new goods in general merchandise stores (except department stores, warehouse clubs, superstores, and supercenters). These establishments retail a general line of new merchandise (such as apparel, automotive parts, dry goods, hardware, housewares or home furnishings) and other lines in limited amounts, with none of the lines predominating.

Source: USDA, Economic Research Service using U.S. Department of Commerce, Bureau of the Census, North American Industry Classification System (NAICS) code definitions.

In addition, NETS provides the number of employees including all workers at an establishment for each year an establishment is open, which allows us to estimate the average size of an establishment and its associated operations. NETS also includes an annual code to indicate the level of reporting accuracy. While NETS provides annual sales estimates, previous reports have discussed and provided recommendations on calculating new sales estimates for the food retail environment because of the high volume of imputed sales measures (Zeballos and Marchesi, 2022). Therefore, this report has followed the methodology outlined by Zeballos and Marchesi (2022) to calculate new food-related sales estimates at the establishment level. The report used an employee-to-sales ratio developed utilizing the Economic Census based on the establishment size and industrial classification. The estimation methodology provided sales estimates that trended more closely with the national estimates outlined in USDA, ERS’s Food Expenditure Series (FES). FES provides comprehensive, national-level food expenditures across the economy. The newly estimated sales are subsequently validated at a national level that allows for a validated understanding of sales volume and growth in the food retail landscape and, for this report, the FAFH sector specifically.

As previously mentioned, NETS provides information about firms’ structures, which allows individual establishments to be linked to their headquarters and their relationship to other firms in the database. Although the NETS database provides its own classification system—establishments are classified as either standalone or identified as a branch or a headquarters location—we aimed to provide a more specific understanding of the geographic spread of specific FAFH retailers which is a geographic classification following Stevens et al. (2021) who defined a classification system based on the number of stores and State locations of these stores associated with a single headquarters DUNS number.⁹

NETS is frequently used to understand changes in establishment growth, performance, and job creation due to its detailed tracking of establishments over long periods of time (Neumark et al., 2011; Choi et al., 2013; Drucker et al., 2019; Low et al., 2020; Artz et al., 2021). Although other datasets exist that also provide establishment information for the restaurant industry (such as the NPD Group’s ReCount[®]),¹⁰ this report aimed to provide an overview of all FAFH options, and NETS provides both restaurants and other FAFH vendors, such as caterers or food trucks. As such, NETS provides a clear understanding of not just the largest but all aspects of the FAFH sector and allows us to contextualize the FAFH sector against the FAH sector.

⁹ Table A.1 provides an overview of the classification used to define store structure. While other work has used alternative classifications (McLaughlin and Dickens, 2018), utilizing this methodology allowed the analysis in the present study to be directly compared with the work on rural retail establishments by Stevens et al. (2021).

¹⁰ For more information about the NPD Group’s ReCount[®] dataset, please see Cho et al. (2019) or McLaughlin and Dicken (2018).

Given NETS' increased popularity, researchers have been investigating its capabilities and limitations. For instance, researchers have highlighted that although generally reliable, employment counts in NETS tended to be rounded and commonly are divisible by 5, 10, or 100 (depending on the size of the establishment) for newer establishments (Neumark et al., 2005). Other researchers have performed validation analyses of NETS data relative to Federal data sources, such as the U.S. Department of Commerce, Bureau of the Census's County Business Patterns or the U.S. Department of Labor, Bureau of Labor Statistics's Quarterly Census of Employment and Wages (Barnatchez et al., 2017). Although not focused exclusively on the FAFH sector, Barnatchez et al. (2017) found NETS establishment counts in the service sector (the larger sector where most FAFH establishments are sub-classified) were generally similar to those found in Federal datasets. More recently, however, Zeballos and Marchesi (2022) validated NETS against the County Business Patterns exclusively for the food retail landscape (including FAH and FAFH) and provided evidence showing NETS captured much of the same employment information for the overall FAFH sector, finding only an average -1.8-percent difference between the two datasets at a national level. Furthermore, to overcome concerns related to sales information, which is frequently imputed in NETS, Zeballos and Marchesi (2022) also provided a framework for recalculating food specific sales for food retail establishments in NETS at the establishment level using the Economic Census for each NAICS code by firm size,¹¹ so when aggregated, they were in line with USDA, ERS's Food Expenditure Series (FES).¹² This research used these facts to provide an overview of sales information in the FAFH sector in nonmetropolitan counties and to contextualize store growth by estimating average employment at FAFH establishments.

Findings: The Rural Food-Away-From-Home Landscape in 2019

Food-Away-From-Home (FAFH) Prevalence in Nonmetropolitan Counties

We examined the overall FAFH landscape in 2019. We found a small proportion of U.S. counties have extremely limited food options. For all 3,142 counties included within the sample,¹³ 16 did not have some version of a FAFH retailer in NETS. Of these 16 counties, 13 of them existed in a "rural, nonmetro" county (defined in terms of RUCC as areas coded with an 8 or 9), and 5 out of these 16 counties were in Texas. Of the counties that did not have any FAFH establishment in NETS, 11 have at least 1 FAH establishment, such as a grocery store, though 7 of those counties have only 1 FAH establishment.

Of the 1,976 "nonmetropolitan" counties (defined in terms of RUCC as areas coded with a 4 or greater) in the 50 States, 404 (approximately 20 percent) had 10 or fewer FAFH establishments (figure 1a). Of those 404, 156 (approximately 39 percent) had 4 or fewer FAFH establishments.¹⁴ When accounting for population, there are only 28 nonmetro counties that had more than 5 FAFH establishments per 1,000 people (figure 1b), and the average among those 28 counties was only about 6 establishments per 1,000 people. For

¹¹ Firm size is determined by the number of employees.

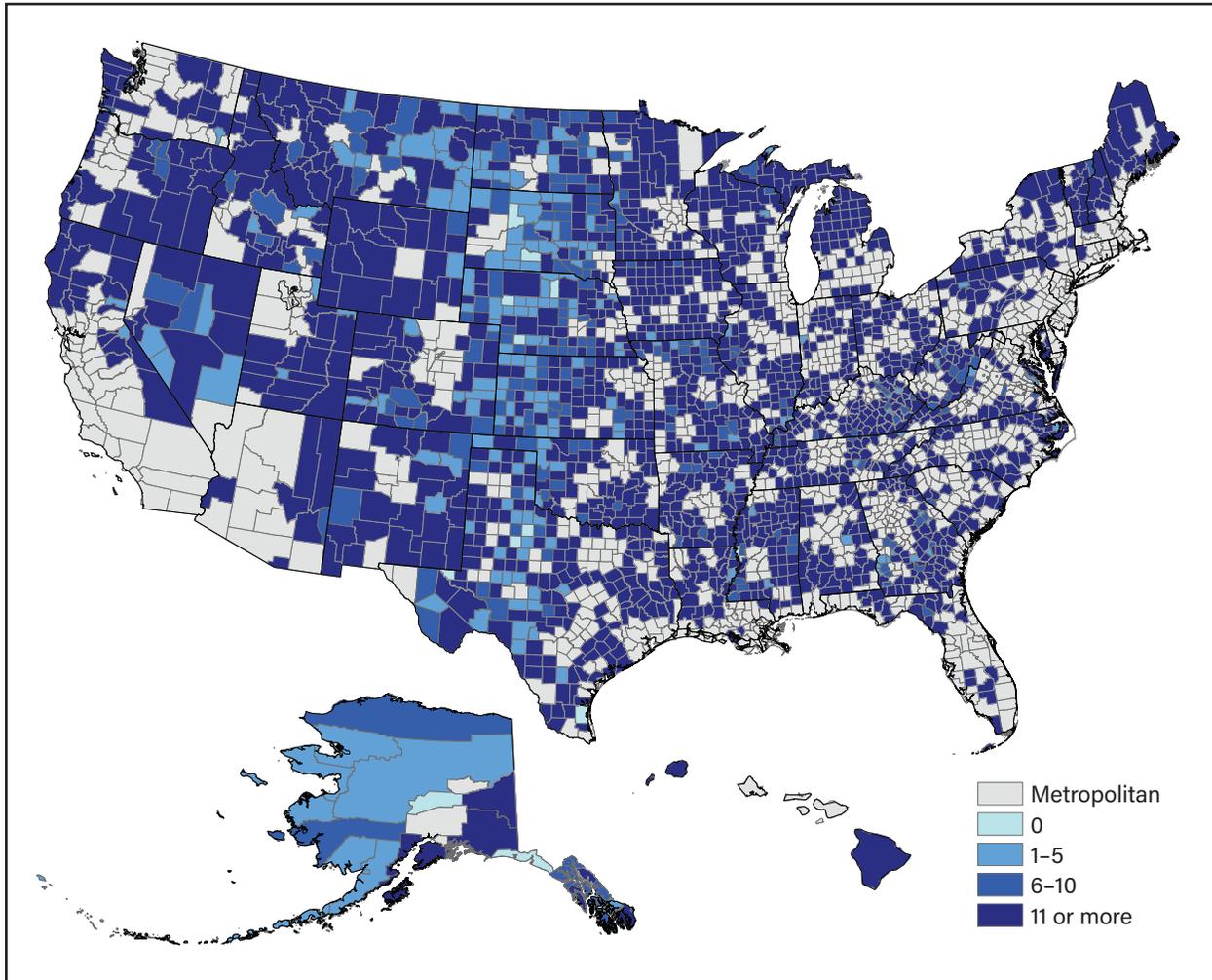
¹² To align with the FES, total annual sales are adjusted using the product and service codes developed by the U.S. Department of Commerce, Bureau of the Census that detail the percentage of sales by product and the associated industry. Thus, all sales reported throughout this report are adjusted for food specific sales. This methodology was also adopted in Zeballos et al. (2023).

¹³ In 2010, there were 3,143 counties or county equivalents across the United States. Effective July 1, 2013, Bedford (independent) City, VA, was changed to town status and added to Bedford County. Our analysis used 3,142 counties for this reason, and any datasets that did not account for this change were subsequently modified to include it.

¹⁴ These counties, on average, have about 1.6 FAFH establishments per 1,000 people.

such counties with only a handful of FAFH establishments, the FAFH options were limited compared with metropolitan counterparts, where the (mean) average number of establishments per county was 726, with a median of 239.¹⁵ These numbers indicated a greater abundance of FAFH establishments locally available to residents in metropolitan areas.

Figure 1a
Number of FAFH establishments by U.S. county in nonmetropolitan (nonmetro) counties, 2019



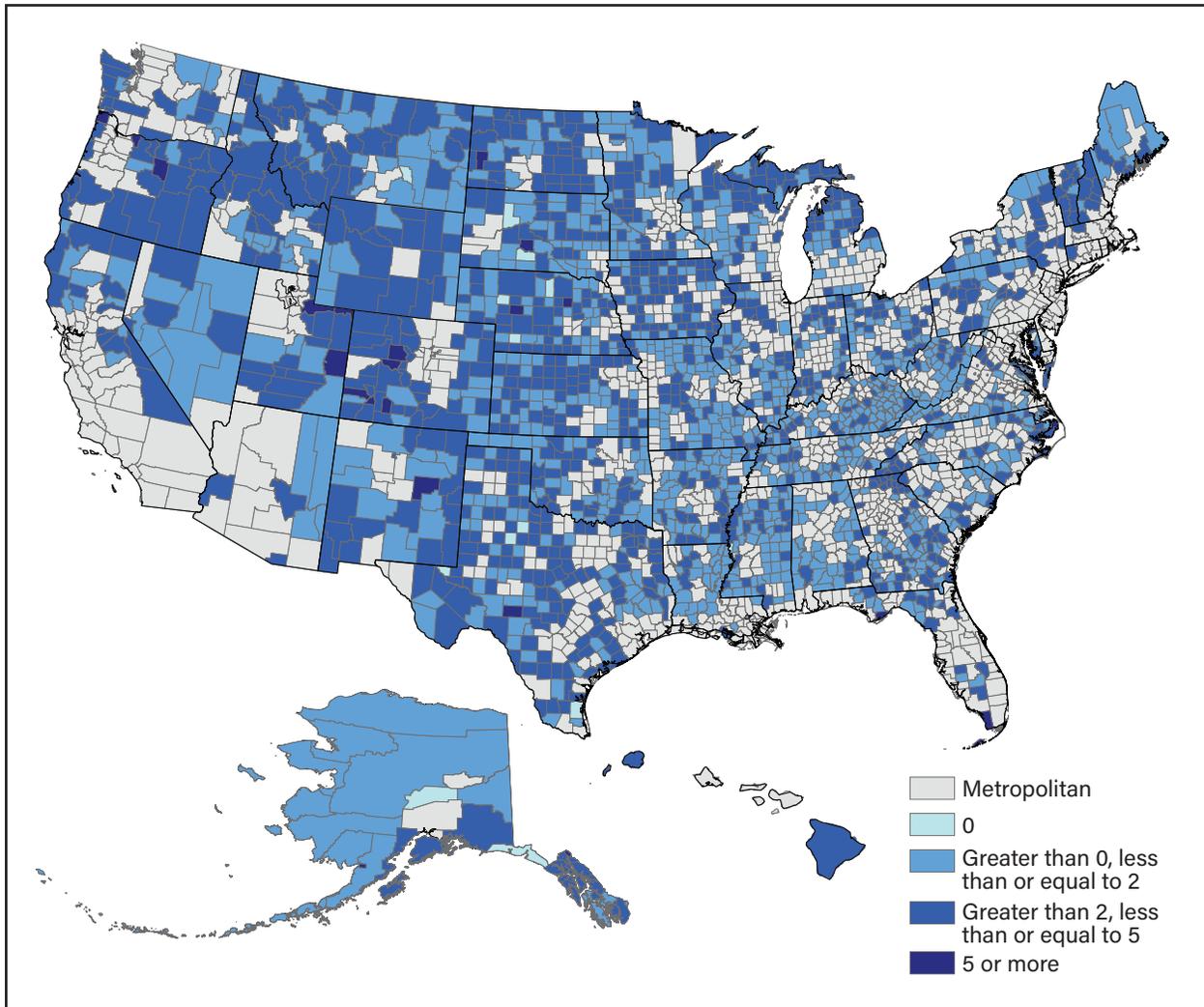
FAFH = Food away from home.

Note: Nonmetro counties are those counties classified with RUCC codes between 4-9.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; and USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC).

¹⁵ We find that these counties have 2.4 FAFH establishments per 1,000 people and a median of 2.3 FAFH establishments per 1,000 people.

Figure 1b
Number of FAFH establishments per 1,000 people by U.S. county in nonmetropolitan (nonmetro) counties, 2019



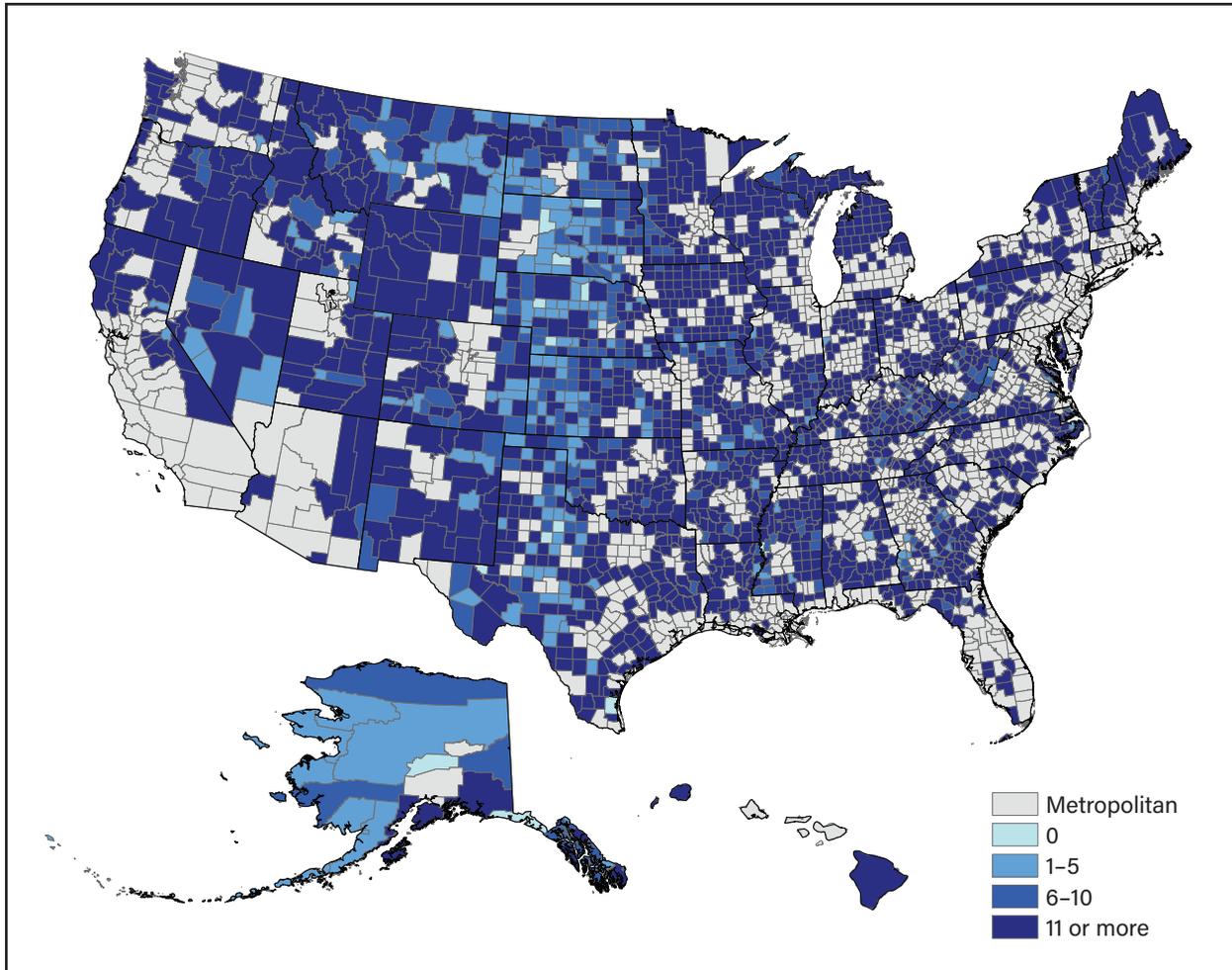
FAFH = Food away from home.

Note: Nonmetro counties are those counties classified with RUCC codes between 4–9. 2019 population estimates utilized for per-capita calculations.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; and USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC).

The largest industry in terms of expenditures and total establishments in the FAFH category was the restaurant industry (USDA, ERS, 2022). In this analysis, restaurants included full-service restaurants (NAICS 722511), limited-service restaurants, which are sometimes referred to as quick-service restaurants or fast-food restaurants (NAICS 722513), cafeterias, grill buffets, and buffets (NAICS 722514), and snack and non-alcoholic beverage bars (NAICS 722515). Of course, there were few remaining non-restaurant FAFH industries, but caterers, food trucks, and baked goods stores were omitted from the restaurant category. As in more densely populated areas, restaurants in nonmetro counties comprised the vast majority of FAFH, which largely mirrors the geographic distribution observed for the overall FAFH sector in terms of total establishments and establishments per 1,000 people (figures 2a and 2b).

Figure 2a
Number of restaurants by U.S. county in nonmetropolitan (nonmetro) counties, 2019

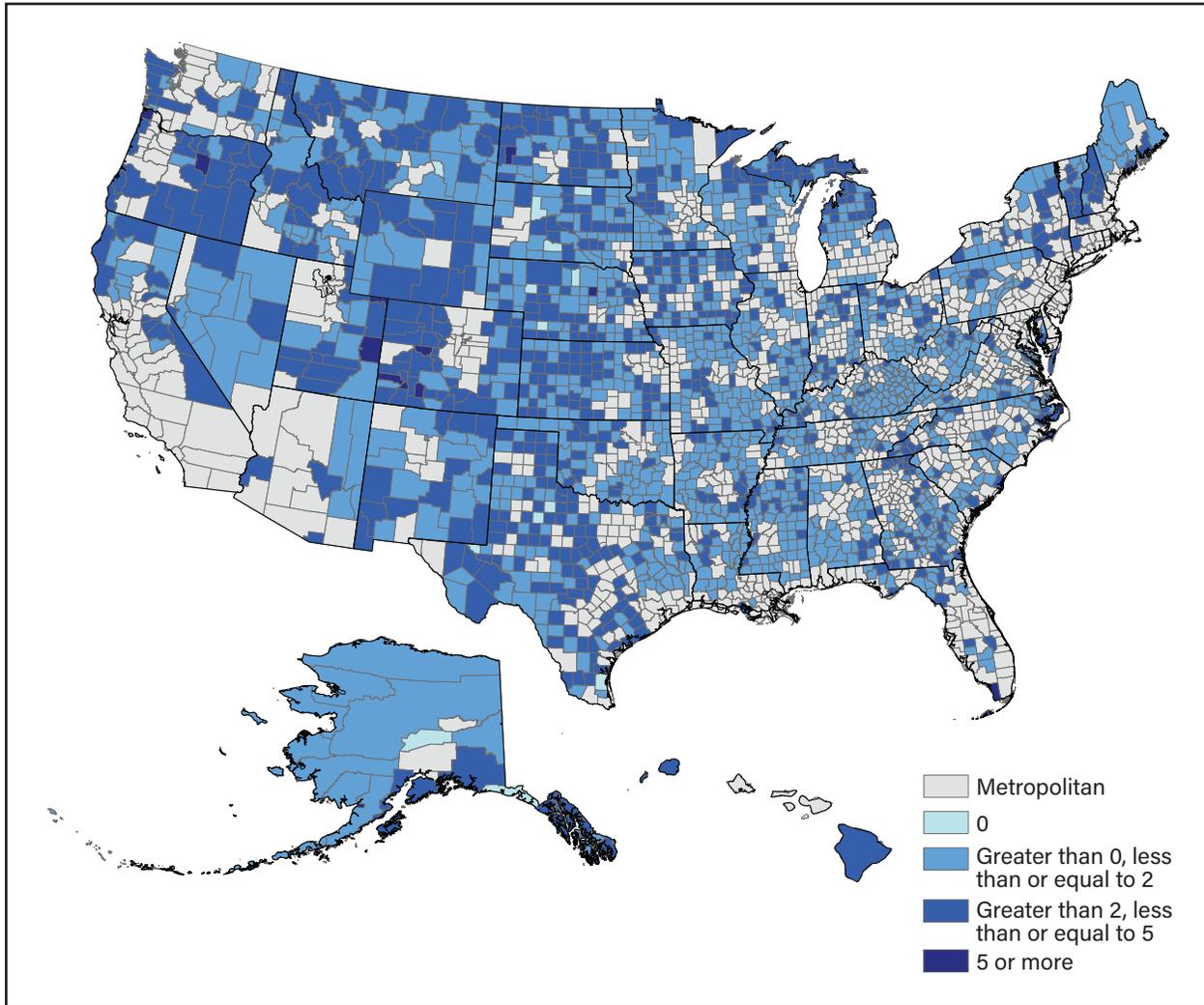


Note: Nonmetro counties are those counties classified with RUCC codes between 4–9.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; and USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC).

Figure 2b

Number of restaurants per 1,000 people by U.S. county in nonmetropolitan (nonmetro) counties, 2019



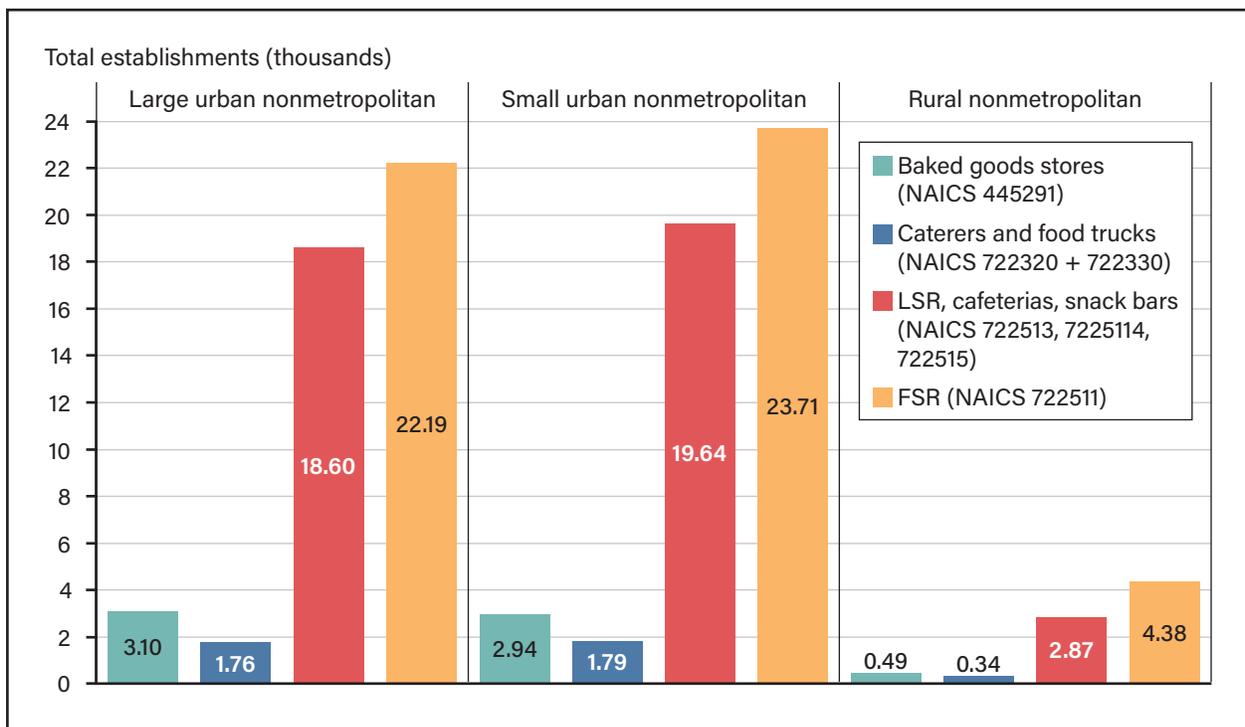
FAFH = Food away from home.

Note: Nonmetro counties are those counties classified with RUCC codes between 4–9. 2019 population estimates utilized for per-capita calculations.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; and USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC).

There has been a large increase in the number of FAFH retailers since 1990 (the earliest year in the NETS data used for this analysis), with restaurants driving most of this increase in total numbers. As of 2019, there remained differences in establishment counts both across the rural-urban continuum and between the different types of establishments (figure 3a). Regardless of nonmetro sub-classification (i.e., large urban, small urban, or rural), full-service restaurants were the predominant FAFH retailer, and caterers and food trucks were the most infrequent types of retailers. Although the number of establishments across all FAFH sectors was much greater in more heavily populated areas (e.g., large urban nonmetro and small urban nonmetro), establishment counts per 1,000 people were more similar across all nonmetro counties except for limited-service restaurants, cafeterias, and snack bars, which were available at notably lower rates (per 1,000 people) in rural, nonmetro areas than in other nonmetro areas (figure 3b).

Figure 3a
Total establishments by sector, in nonmetropolitan (nonmetro) counties, 2019



LSR = Limited-service restaurant. FSR = Full-service restaurant.

Note: Nonmetro counties are those counties classified with RUCC codes between 4–9 (4 and 5 are large urban nonmetro, 6 and 7 are small urban nonmetro, and 8 and 9 are rural counties).

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) Data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and U.S. Department of Commerce, Bureau of the Census, North American Industry Classification System (NAICS) code definitions.

Figure 3b

Average establishments per 1,000 people by sector, in nonmetropolitan (nonmetro) counties, 2019



LSR = Limited-service restaurant. FSR = Full-service restaurant.

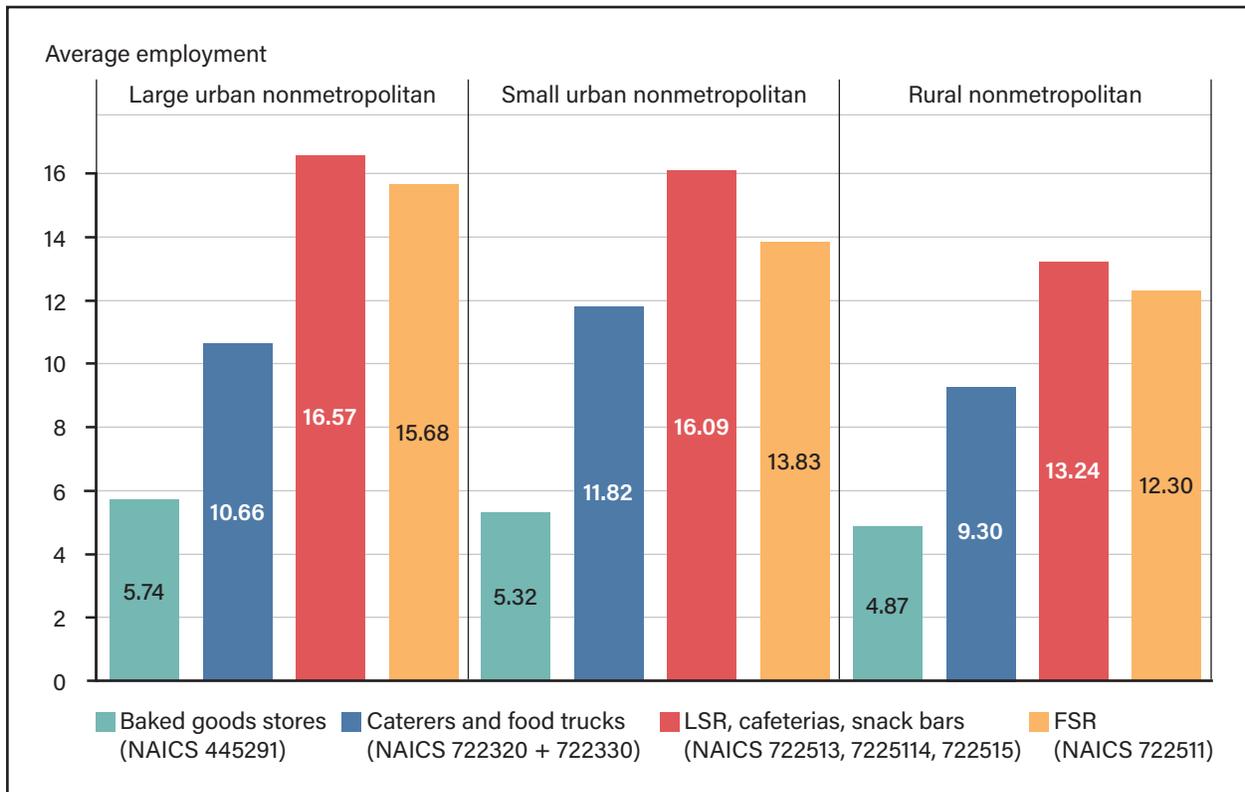
Note: Nonmetro counties are those counties classified with RUCC codes between 4–9, 4 and 5 are large urban nonmetro, 6 and 7 are small urban nonmetro, and 8 and 9 are rural counties. 2019 population estimates were used.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and U.S. Department of Commerce, Bureau of the Census, North American Industry Classification System (NAICS) code definitions.

To consider establishment size, as measured by average employment per establishment, we disaggregated average establishment size across the rural-urban continuum in figure 4. On average, full-service restaurants and limited-service restaurants tended to have similar employment numbers than other FAFH retailers, though limited-service restaurants tended to have at least one more employee on average than full-service restaurants. This statistic can be considered in conjunction with the average sales per establishment across each sector (figure 5), where limited-service restaurants typically have had the highest average sales. Together, employment and sales estimates across establishment types highlighted the larger presence of limited-service restaurants in the FAFH environment. Limited-service restaurants in more populated nonmetro areas tended to generate higher average sales by sector across the rural-urban continuum (figure 6). These higher average sales could be attributed to the affordability typically associated with these stores and their relative abundance as compared with full-service restaurants, both of which may make them more accessible for households with limited resources. Caterers and baked goods were the smallest sector, on average, for sales across all nonmetropolitan classifications.

Figure 4

Average employment per establishment by sector in nonmetropolitan (nonmetro) counties, 2019



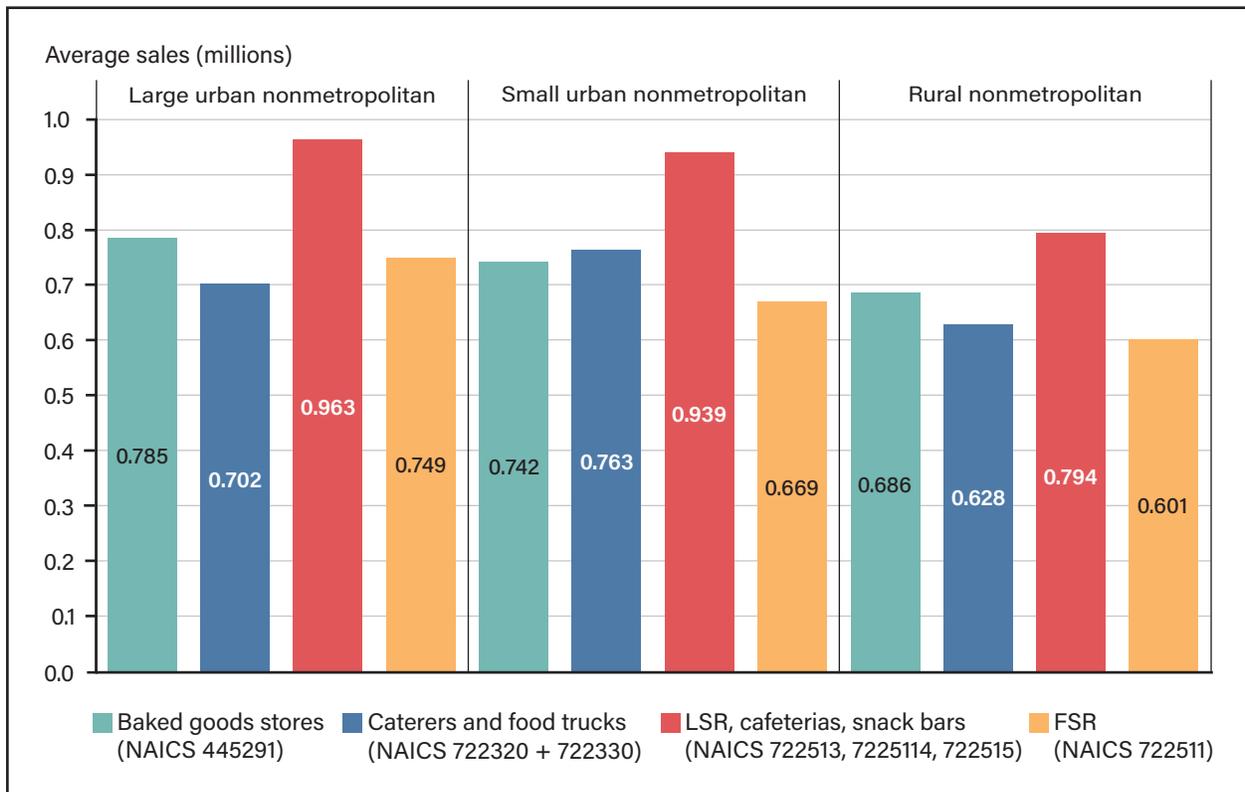
LSR = Limited-service restaurant. FSR = Full-service restaurant.

Note: Nonmetro counties are those counties classified with RUCC codes between 4–9, 4 and 5 are large urban nonmetro, 6 and 7 are small urban nonmetro, and 8 and 9 are rural counties.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and U.S. Department of Commerce, Bureau of the Census, North American Industry Classification System (NAICS) code definitions.

Figure 5

Average sales per establishment by sector, in nonmetropolitan (nonmetro) counties, 2019



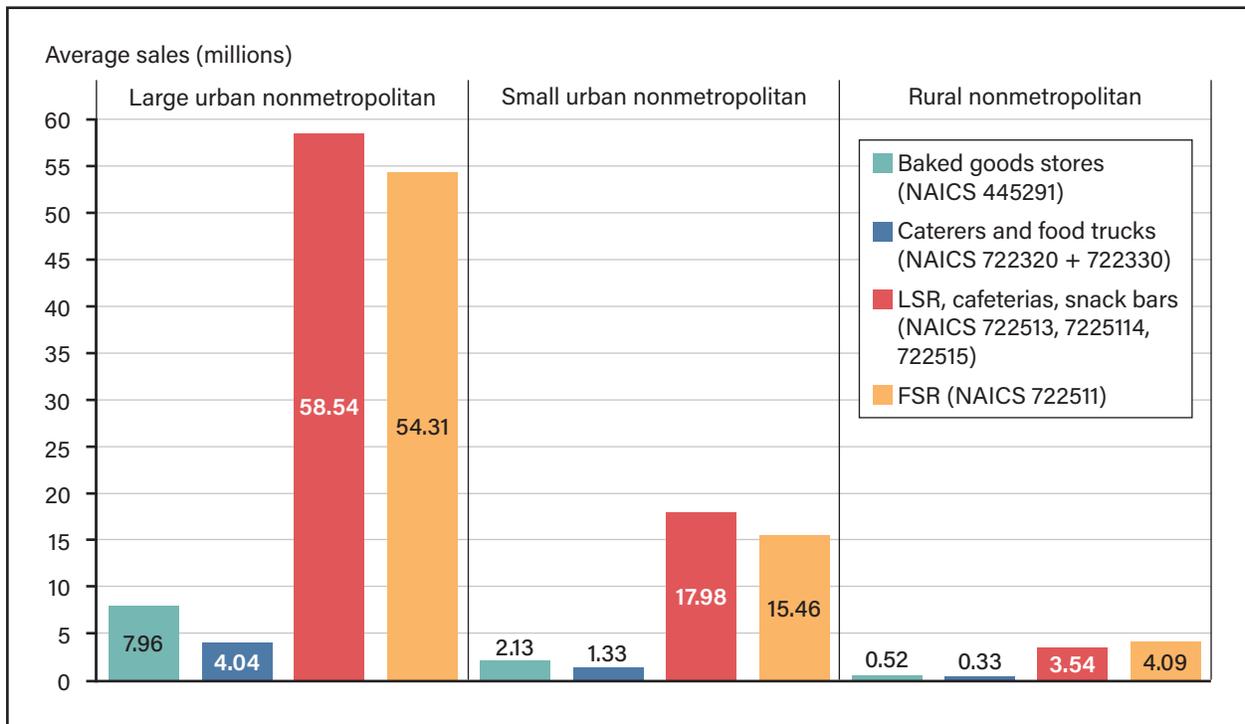
LSR = Limited-service restaurant. FSR = Full-service restaurant.

Note: Nonmetro counties are those counties classified with RUCC codes between 4–9, 4 and 5 are large urban nonmetro, 6 and 7 are small urban nonmetro, and 8 and 9 are rural counties.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and U.S. Department of Commerce, Bureau of the Census, North American Industry Classification System (NAICS) code definitions.

Figure 6

Average sales by sector in nonmetropolitan (nonmetro) counties, 2019



LSR = Limited-service restaurant. FSR = Full-service restaurant.

Note: Nonmetro counties are those counties classified with RUCC codes between 4–9, 4 and 5 are large urban nonmetro, 6 and 7 are small urban nonmetro, and 8 and 9 are rural counties.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and U.S. Department of Commerce, Bureau of the Census, North American Industry Classification System (NAICS) code definitions.

Differences in the Food-Away-From-Home Environment Across the Rural-Urban Continuum and Economic Typology

We have consistently found the number of restaurants per county is related to population density. We found some differences across and between metro and nonmetro counties (table 2). Additionally, we observed heterogeneity after classifying counties by economic typology. This heterogeneity reveals how population density is only one factor that may impact geographic differences in food landscapes. Indeed, differences in the industries that drive local rural economies correlate with differences in food landscapes and FAFH availability. Interestingly, although we noticed a decrease in establishments per 1,000 people between the more populated large nonmetro urban counties relative to less populated rural, nonmetro counties, this relationship was more pronounced in nonmetropolitan areas that were adjacent to metropolitan counties (e.g., RUCC 4 relative to 8) compared with those nonmetropolitan areas that were not adjacent to metro areas (e.g., RUCC 5 relative to 9). This pattern of fewer establishments per 1,000 people as population decreased generally held true across all nonmetro areas and across most economic typologies. This difference in FAFH density as it relates to adjacency to a metropolitan area suggests population density is not the only factor affecting FAFH access, and surrounding geographies may play a role. This could be the case due to retail leakage from metro-adjacent nonmetro county commuters doing their shopping in the metro-adjacent counties after work before returning home, subsequently leading these adjacent counties to have fewer FAFH establishments within the county given the metro-adjacent options.¹⁶

¹⁶ Thank you to the anonymous reviewer that provided us with this incredibly useful insight.

Numbers of FAFH establishments per 1,000 people were greatest in counties where recreation has been the primary industry across multiple RUCCs. However, results presented in table 2 should be read in conjunction with appendix table A.4, which shows the number of counties that fit into each RUCC-county economic typology group. Notably, some combinations have very few counties that meet that particular RUCC and economic typology criteria combination.

Table 2
FAFH establishments per 1,000 population by RUCC and economic typology

			County typology						National
			Farming	Mining	Manu- facturing	Govern- ment	Recrea- tion	No specialization	
RUCC	Metropolitan (metro)	1	1.4	2.3	2.1	2.7	2.7	2.7	2.6
		2	1.8	2.0	1.8	2.4	3.0	2.3	2.3
		3	1.4	1.9	1.9	2.4	3.1	2.2	2.2
	Nonmetropolitan (nonmetro), metro adjacent	4	2.1	2.4	2.1	2.4	3.7	2.2	2.4
		6	2.2	2.2	1.9	2.0	2.7	1.9	2.0
		8	1.6	1.6	1.5	1.2	2.3	1.5	1.6
	Nonmetro, not metro adjacent	5	1.8	2.6	2.5	2.4	3.9	2.5	2.6
		7	2.1	2.3	2.0	2.2	3.4	2.2	2.3
		9	1.9	1.7	1.7	1.5	2.8	1.4	1.9
National			1.9	2.1	1.9	2.2	3.0	2.2	2.2

FAFH = Food away from home. RUCC = Rural-Urban Continuum Codes.

Note: This table uses 2019 county-level population estimates to calculate establishment counts per 1,000 people. The coloring is used to denote densities of establishments where the darker the color, the higher the level of FAFH establishments per 1,000 people.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and USDA, ERS, 2015 County Typology Codes, Nonoverlapping.

There are likely to be substantial differences in establishment size. To explore these differences, we utilized the average number of employees per FAFH establishment to serve as a proxy for the relative size of these FAFH establishments and examined these estimates by county and aggregated to the RUCC code (table 3). We observed that as the populations decreased in metropolitan areas, the average employment per establishment increased. Rural, nonmetro areas had the lowest employment per establishment—which was similar to other county classifications—and there was little variation in the average number of employees per establishment regardless of whether a rural, nonmetro county was adjacent to a metro county (RUCC 8 and 9). Coupled with fewer overall establishments and a lower number of establishments per 1,000 people, smaller establishment sizes may reflect diminished access to FAFH in rural, nonmetro areas.

Table 3

Average number of employees per establishment (all FAFH) by RUCC, 2019

Code	General classifications	Description	Average employment per establishment
1	Metropolitan (metro)	Counties in metro areas of 1 million population or more.	14.3
2		Counties in metro areas of 250,000 to 1 million population.	14.6
3		Counties in metro areas of fewer than 250,000 population.	14.8
4	Nonmetropolitan, metro adjacent	Urban population of 20,000 or more, adjacent to a metro area.	15.1
6		Urban population of 2,500 to 19,999, adjacent to a metro area.	13.8
8		Completely rural or less than 2,500 urban population, adjacent to a metro area.	11.1
5	Nonmetropolitan, not metro adjacent	Urban population of 20,000 or more, not adjacent to a metro area.	16.4
7		Urban population of 2,500 to 19,999, not adjacent to a metro area.	13.9
9		Completely rural or less than 2,500 urban population, not adjacent to a metro area.	11.3

FAFH = Food away from home. RUCC = Rural-Urban Continuum Codes.

Note: This table uses 2019 county-level population estimates to calculate establishment counts per 1,000 people.

Sources: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and USDA, ERS, 2015 County Typology Codes, Nonoverlapping.

Food-Away-From-Home Versus Food-at-Home Concentration

Although understanding the FAFH environment can provide a necessary facet for understanding overall food access, it is also important to understand FAFH in relation to the FAH environment. We found the balance of FAFH and FAH was higher from metro, urban counties to rural, nonmetro counties with a higher concentration of FAFH establishments per FAH establishment in more metro and more heavily populated urban areas (table 4). Generally, the ratio of FAFH to FAH establishments was closer to 1.5:1 in rural, nonmetro areas, whereas in more densely populated areas, there tended to be between 2 to 3 FAFH establishments for each FAH establishment (2–3:1). However, in terms of employment—regardless of nonmetro sub-classification—the ratio of FAFH employment to FAH employment was generally between 2 to 2.5 FAFH employees per FAH employee. We observed—despite the average ratio of FAFH to FAH establishments favoring a predominance of FAFH outlets—there were approximately 251 nonmetro counties where FAH establishments dominated with a ratio of less than 1 (figure 7).

Table 4

Ratio of FAFH to FAH establishments and employees by RUCC, 2019

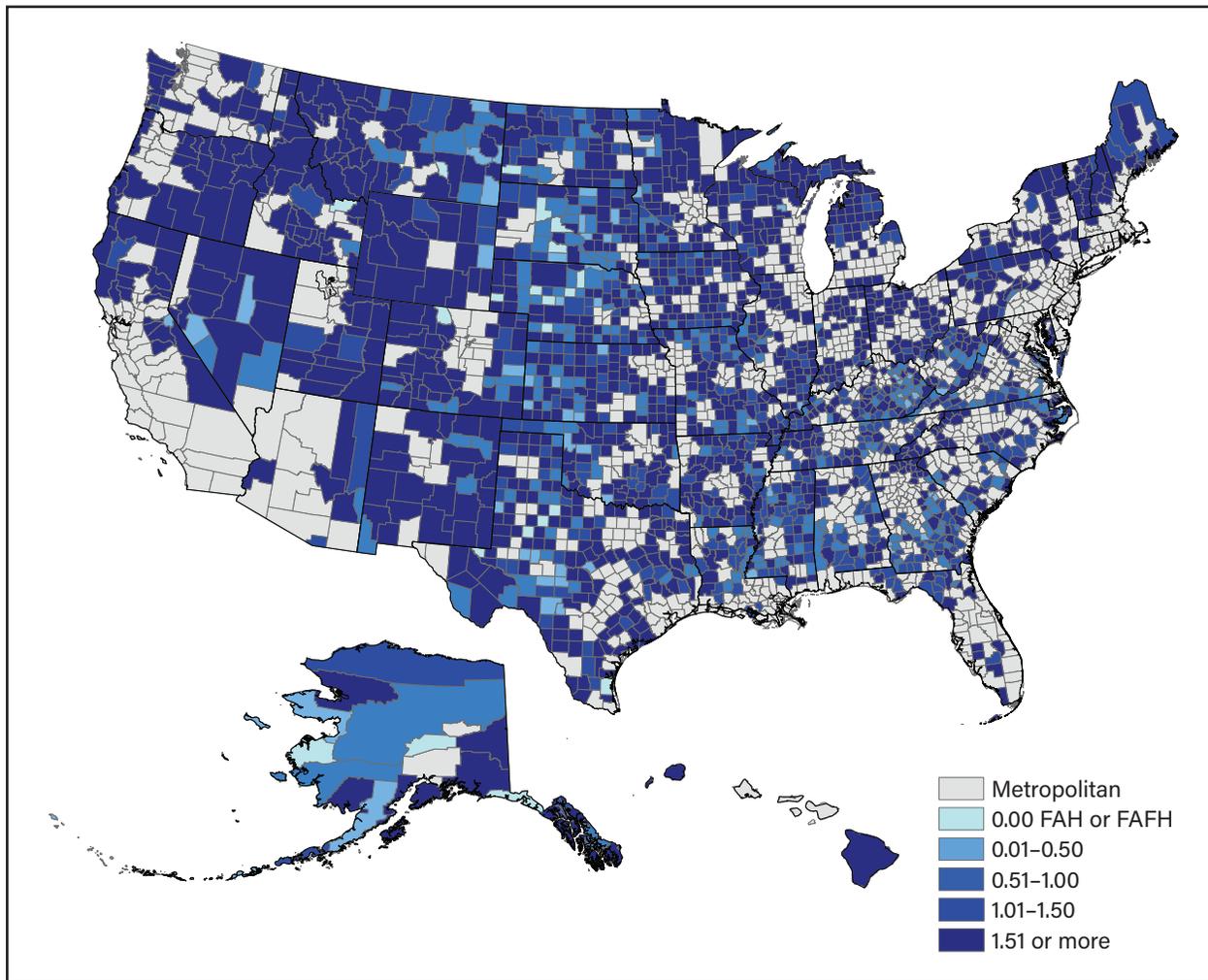
Code	General classifications	Description	$\frac{FAFH}{FAH}$ establishments	$\frac{FAFH}{FAH}$ employees
1	Metropolitan (metro)	Counties in metro areas of 1 million population or more.	3.2	2.6
2		Counties in metro areas of 250,000 to 1 million population.	2.6	2.2
3		Counties in metro areas of fewer than 250,000 population.	2.4	2.2
4	Nonmetropolitan, metro adjacent	Urban population of 20,000 or more, adjacent to a metro area.	2.5	2.0
6		Urban population of 2,500 to 19,999, adjacent to a metro area.	2.0	1.9
8		Completely rural or less than 2,500 urban population, adjacent to a metro area.	1.5	2.1
5	Nonmetropolitan, not metro adjacent	Urban population of 20,000 or more, not adjacent to a metro area.	2.8	2.3
7		Urban population of 2,500 to 19,999, not adjacent to a metro area.	2.2	2.0
9		Completely rural or less than 2,500 urban population, not adjacent to a metro area.	1.5	2.5

FAFH = Food away from home. FAH = Food at home. RUCC = Rural-Urban Continuum Codes.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; and USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC).

Figure 7

Ratio of FAFH to FAH establishments in U.S. nonmetropolitan (nonmetro) counties, 2019



FAFH = Food away from home. FAH = Food at home.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; and USDA, ERS, 2013 Rural-Urban Continuum Codes.

We examined the ratio of FAFH establishments to FAH establishments by RUCC and county economic typology (table 5). This examination provided insight into the balance between FAFH and FAH options. We saw the FAFH to FAH ratio was highest in counties where recreation remained the core industry, which means these areas have had a higher proportion of FAFH options than other counties. Outside of recreational counties, the balance between FAFH and FAH establishments was closer to 2:1 in more rural counties, regardless of economic typology.¹⁷

¹⁷ Again, these results should be read in conjunction with appendix table A.4 because some combinations of RUCC-county typology were represented by a very low number of counties.

Table 5

Ratio of FAFH establishments to FAH establishments by RUCC and county typology, 2019

		County typology						National	
		Farming	Mining	Manu- facturing	Govern- ment	Recrea- tion	No specialization		
RUCC	Metropolitan (metro)	1	1.8	2.9	2.6	3.2	3.4	3.3	3.2
		2	1.7	2.0	2.3	2.8	3.0	2.6	2.6
		3	1.5	2.1	2.2	3.0	2.9	2.4	2.4
	Nonmetropoli- tan (nonmetro), metro-adjacent	4	1.5	2.2	2.3	2.9	3.2	2.3	2.5
		6	2.0	2.0	1.9	2.0	2.4	1.9	2.0
		8	1.4	1.2	1.3	1.2	2.5	1.4	1.5
	Nonmetro, not metro adjacent	5	2.3	3.1	2.7	2.8	3.7	2.5	2.8
		7	1.8	2.3	1.7	2.3	3.1	2.0	2.2
		9	1.4	1.7	1.2	1.4	2.1	1.2	1.5
National		1.5	2.1	1.9	2.4	2.8	2.4	2.2	

FAFH = Food away from home. FAH = Food at home. RUCC = Rural-Urban Continuum Codes.

Note: The coloring is used to denote densities of establishments where the darker the color, the higher ratio of FAFH and FAH establishments. This analysis excludes counties where the number of FAH is equal to 0.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and USDA, ERS, 2015 County Typology Codes, Nonoverlapping.

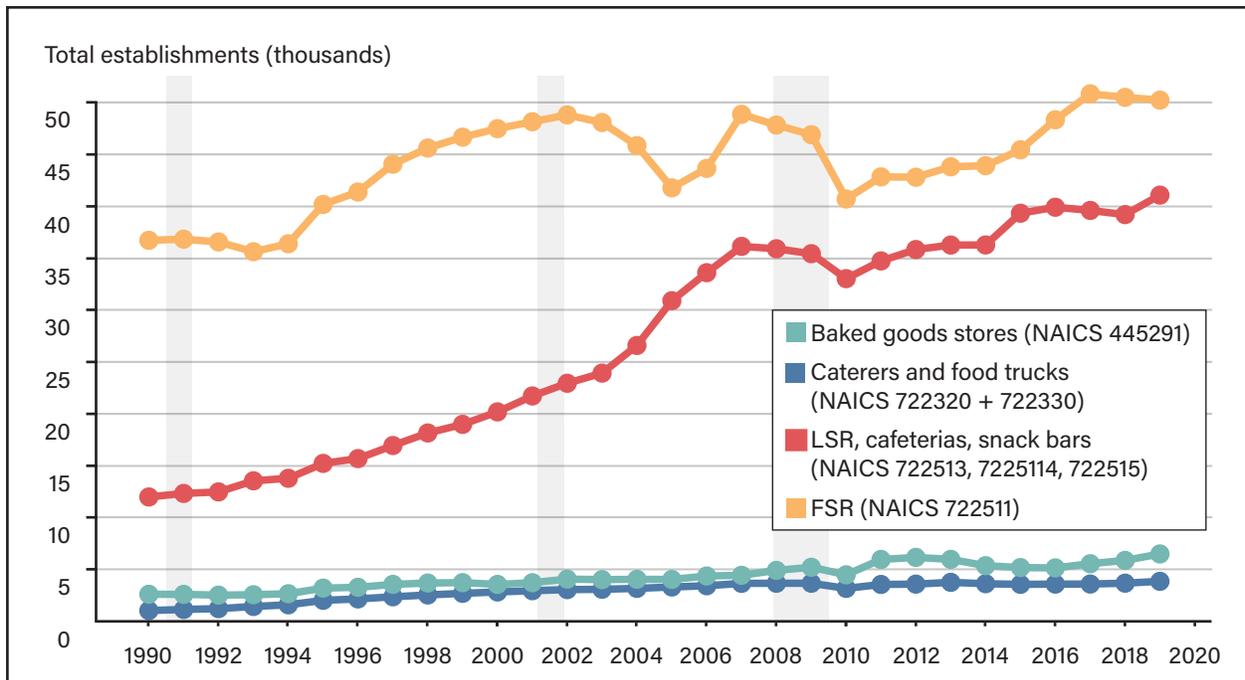
Findings: The Food-Away-From-Home Environment Over Time

As consumer spending on FAFH has grown in recent years, so has the total number of restaurants—which has increased notably since 1990—despite economic downturns during recessions (figure 8).¹⁸ For example, there were about 36,000 full-service restaurants and about 12,000 limited-service restaurants across all nonmetro areas in 1990. By 2019, these numbers had grown to about 50,000 and 41,000, respectively. This growth in FAFH establishments highlights the demand for FAFH in rural communities, which is especially significant given that the overall rural population has remained essentially unchanged (Cromartie et al., 2020; Sanders, 2021).

¹⁸ For more information about recession dates utilized, please see National Bureau of Economic Research's web page for U.S. business cycle dates.

Figure 8

Total number of establishments in all nonmetropolitan (nonmetro) counties by sector, 1990–2019



LSR = Limited-service restaurant. FSR = Full-service restaurant.

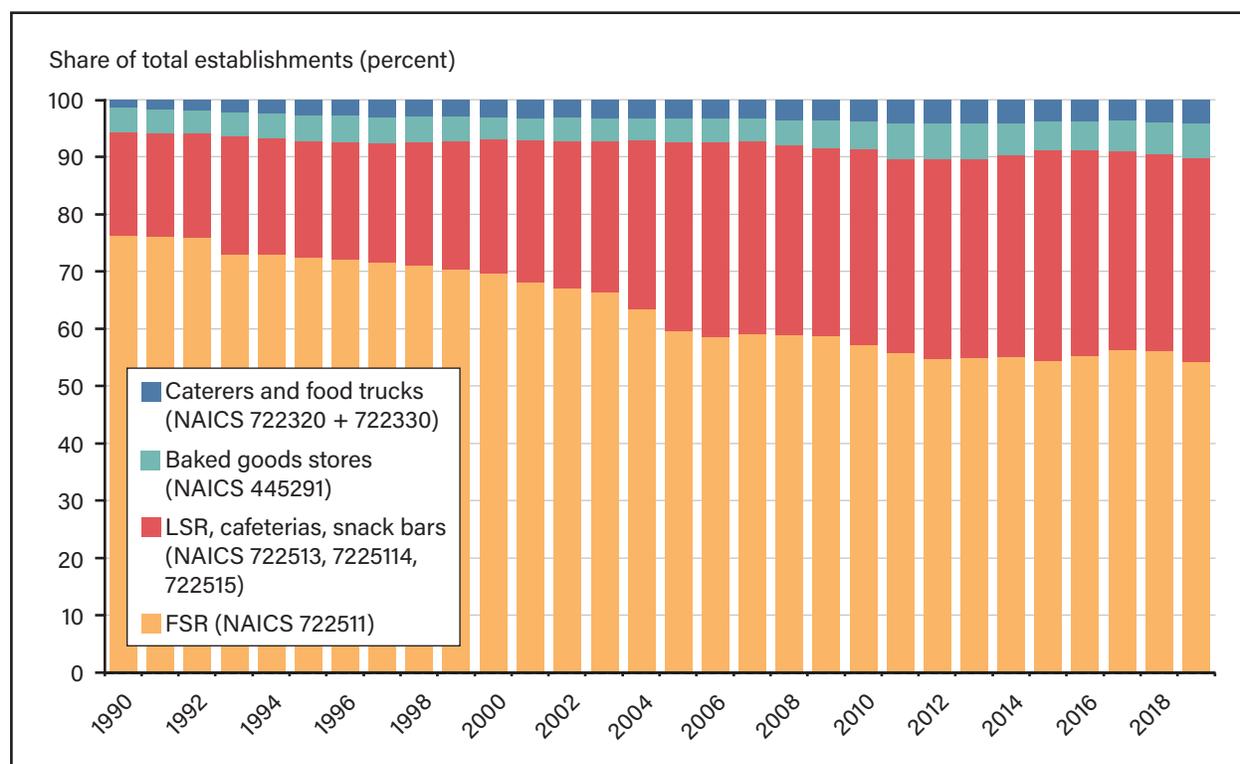
Note: Grey bars correspond to recessionary periods. Nonmetro counties are those counties classified with RUCC codes between 4–9, 4 and 5 are large urban nonmetro, 6 and 7 are small urban nonmetro, and 8 and 9 are rural counties.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and U.S. Department of Commerce, Bureau of the Census, North American Industry Classification System (NAICS) code definitions.

While the number of FAFH retailers has increased, the original market composition has experienced shifts since 1990 (figure 9). For example, although the overall number of full-service restaurants has grown in rural, nonmetro counties, their share as a proportion of FAFH establishments has decreased over time. Full-service restaurants once represented more than 76 percent of FAFH establishments in these areas as of 1990 but only comprised approximately 54 percent of the market as of 2019. This number may suggest the overall food landscape in these areas has shifted to a preference for quick-service options. The shift to more quick-service options may impact consumers’ nutritional quality. Although both full- and limited-service restaurants are associated with greater caloric intake than FAH, they differ slightly from one another, where full-service restaurant meals have tended to be associated with slightly fewer calories but far more sodium than limited-service restaurant meals (An, 2016). If this shift in market composition is evidence of increased consumption of growing options, then changes in the portfolio of food establishments could have longer term nutritional consequences. Furthermore, Marchesi and McLaughlin (2022) found that consumer spending at quick-service (or limited-service) restaurants declined less than full-service restaurants during the impacts of the Coronavirus (COVID-19) pandemic. While this report does not detail data beyond 2019, details of the abundance and variety of limited-service and full-service restaurants may provide useful baseline information for understanding the differentiated impacts of the pandemic across geographies.

Figure 9

Share of establishments by sectors in rural, nonmetropolitan (nonmetro) counties, 1990–2019



LSR = Limited-service restaurant. FSR = Full-service restaurant.

Note: Nonmetro counties are those counties classified with RUCC codes between 4–9, 4 and 5 are large urban nonmetro, 6 and 7 are small urban nonmetro, and 8 and 9 are rural counties.

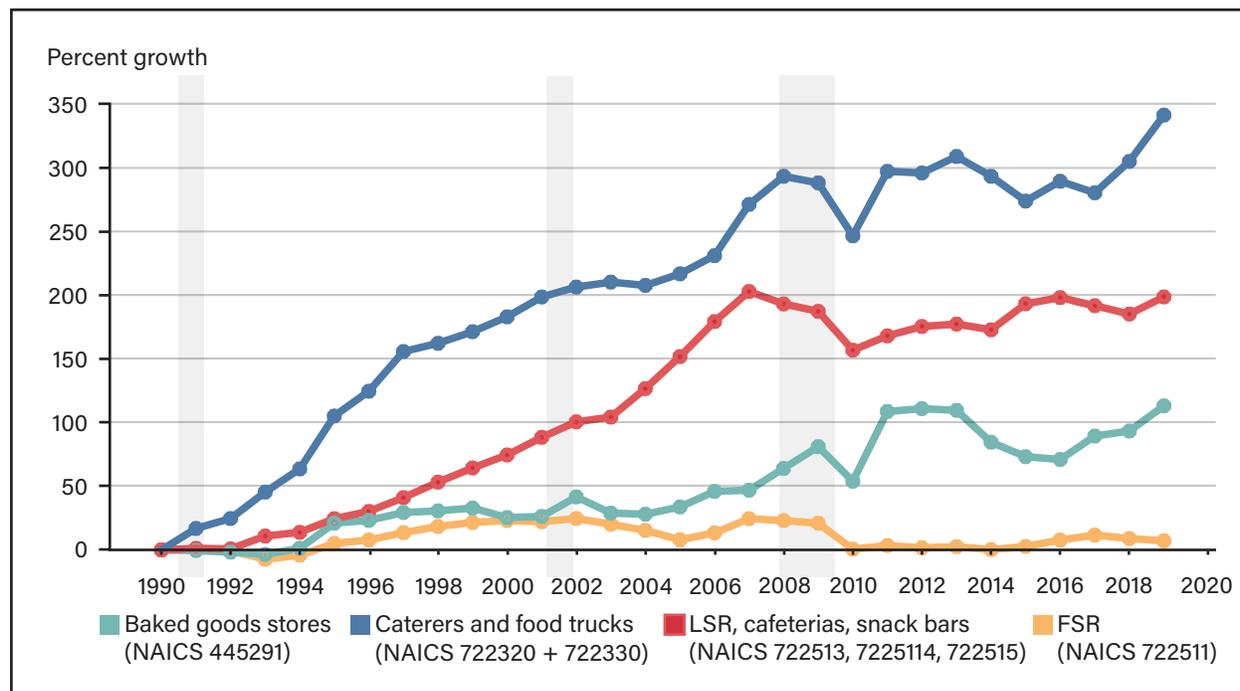
Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and U.S. Department of Commerce, Bureau of the Census, North American Industry Classification System (NAICS) code definitions.

Growth of Food-Away-From-Home Establishments

Given the rise in overall restaurant availability, the growth of these establishments in rural, nonmetro areas since 1990 has been expectedly large (figure 10). For instance, caterers and food trucks—the smallest sector by overall establishment count—have seen the largest restaurant growth since 1990, with the number of establishments in rural, nonmetro counties having grown by about 340 percent by 2019. This increase was likely due to the increased popularity of food trucks in recent years. Despite the typical association with more urbanized areas, this segment has grown much more than other FAFH establishments in nonmetro counties. Full-service restaurants, which make up the largest sector of FAFH in nonmetro counties, have grown the least since 1990, with only a 7-percent increase.

Trends in the number of employees also trend upward but tend to be larger in magnitude (figure 11). For instance, whereas the number of food trucks and caterers grew about 340 percent, the number of employees rose about 660 percent, though these establishments appear to have been notably affected by the most recent recession. The growth in the number of limited-service restaurant employees trended closely to the growth in employees at caterers and food trucks for most of the sample period but was not as large, with this sector employing about 350 percent more individuals than they did in rural, nonmetro counties in 1990.¹⁹

Figure 10
Percent growth in FAFH establishments by sector in rural, nonmetro counties since 1990



FAFH = Food away from home. LSR = Limited-service restaurant. FSR = Full-service restaurant.

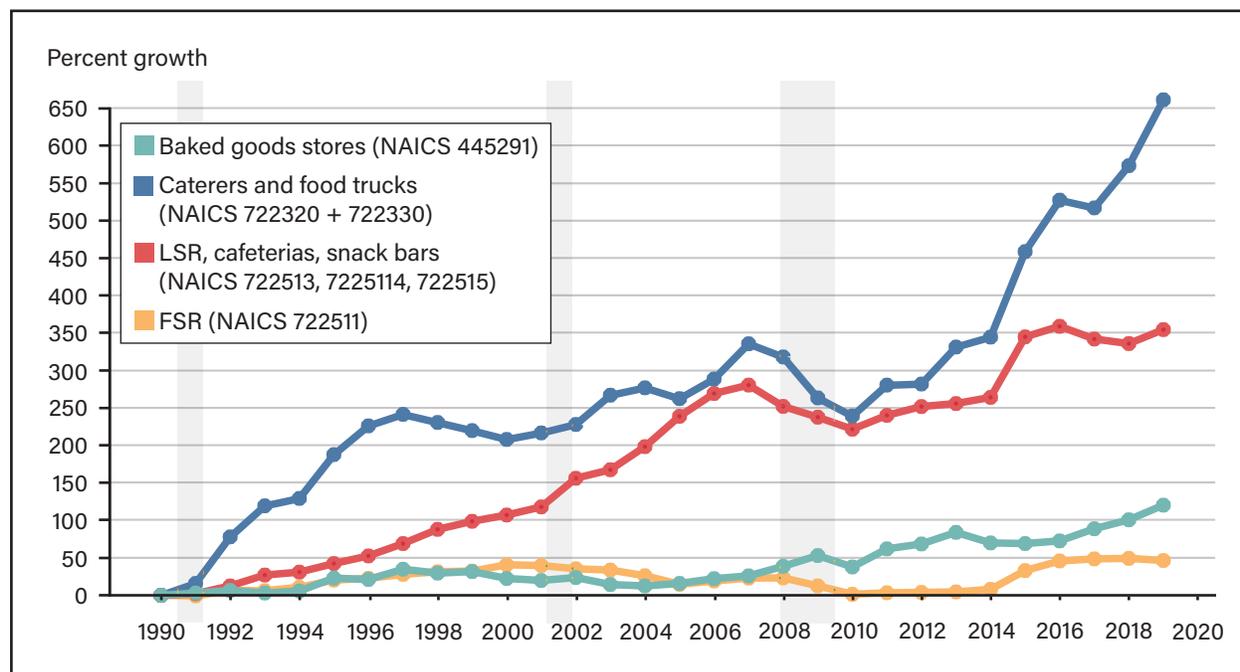
Note: Rural, nonmetropolitan counties are those counties classified with RUCC codes 8 and 9. Grey bars correspond to recessionary periods.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and U.S. Department of Commerce, Bureau of the Census, North American Industry Classification System (NAICS) code definitions.

¹⁹ Generally, when we examine the growth per 1,000 people in establishments (appendix figure A.1) and employee growth (appendix figure A.2) they trended similarly to the growth of establishments (figure 9) and employees (figure 10). This finding suggests the growth of these establishments typically grew alongside the population, and this was more so the case for the caterers and food trucks. Further, the population-adjusted growth observed for full-service restaurants in rural counties further supports the idea that demand has fallen for these restaurants, which reflects similar findings that rural regions with population declines experienced a high number of full-service restaurant closures (McLaughlin and Dicken, 2018).

Figure 11

Percent growth in FAFH employment by sector in rural, nonmetropolitan (nonmetro) counties since 1990



FAFH = Food away from home. LSR = Limited-service restaurant. FSR = Full-service restaurant.

Note: Rural, nonmetro counties are those counties classified with RUCC codes 8 and 9. Grey bars correspond to recessionary periods.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and U.S. Department of Commerce, Bureau of the Census, North American Industry Classification System (NAICS) code definitions.

Findings: Food-Away-From-Home Chain Prevalence and Store Types

We examined the prevalence of branded FAFH establishments to highlight the geographic variation in FAFH options. Indeed, counties that have a similarly high prevalence of the most frequent brands may have more similar FAFH options. We calculated the percentage of establishments in each county that represented the top 10 most frequent national FAFH brands (table 6). We used this metric to gauge the variety and uniqueness of FAFH offerings across counties. Variety may be an indicator of the breadth of nutritional offerings, while uniqueness can inform readers about how similar the FAFH landscape is from one nonmetropolitan county to another. The most frequent brands were determined by establishment counts—i.e., the brands with the greatest number of stores in the country. This finding provided a proxy for the degree to which the FAFH landscape has been dominated by chain brands as opposed to local operations. We determined the most frequent brands by counting the number of establishments in the United States represented by each brand and selecting the brands with the highest establishment count in 2019.

Table 6

Percent of establishments represented by most frequent FAFH brands, 2019

			County typology					National	
			Farming	Mining	Manu- facturing	Govern- ment	Recrea- tion		No specialization
RUCC	Metropolitan (metro)	1	11.2	10.9	13.2	11.0	9.0	10.5	10.7
		2	6.2	17.0	13.8	11.2	8.7	12.6	12.2
		3	9.9	12.6	13.7	11.2	7.5	11.9	11.5
	Nonmetropoli- tan (nonmetro), metro-adjacent	4	14.8	12.0	13.9	12.9	9.0	13.4	12.8
		6	12.5	14.4	15.4	14.8	10.6	15.5	14.6
		8	8.1	6.8	10.2	11.4	5.4	10.0	8.7
	Nonmetro, not metro adjacent	5	12.3	12.8	14.2	12.0	8.2	13.3	12.7
		7	14.9	13.1	15.1	12.9	8.9	14.9	13.6
		9	5.9	12.1	9.3	7.6	4.6	13.2	7.7
		National	8.5	12.7	14.0	11.9	8.1	12.8	11.8

FAFH = Food away from home.

Note: The coloring is used to denote densities of establishments where the darker the color, the higher the percent of the most frequent branded establishments in a given county type.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and USDA, ERS, 2015 County Typology Codes, Nonoverlapping.

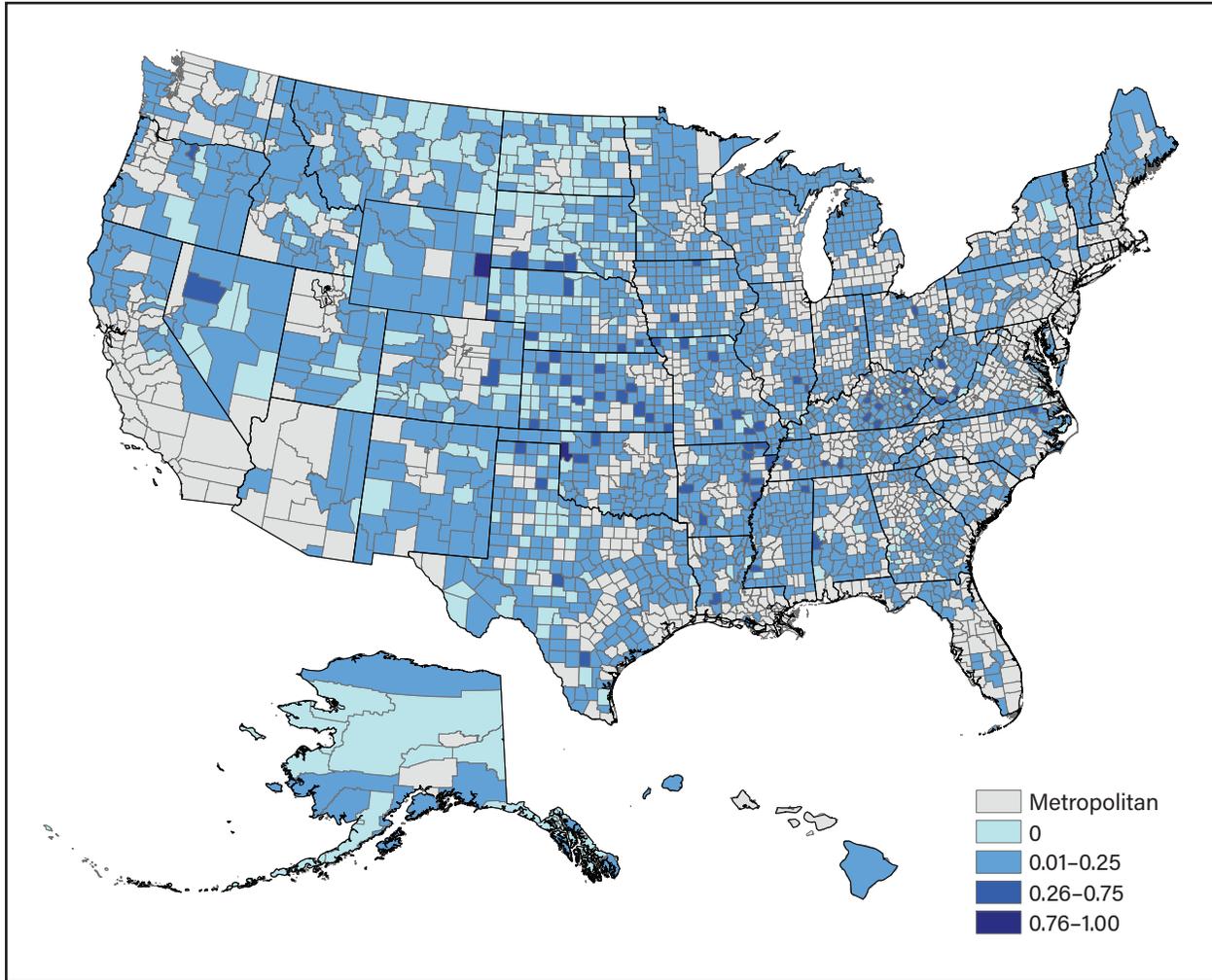
In general, the most rural (RUCC of 8 or 9) and the most urban (RUCC of 1) had the lowest rates of most frequent branded restaurants. This finding suggests there is a higher prevalence of smaller or regional chains and perhaps more local establishments in these areas or perhaps that large chains target more suburban areas (typically defined as urban areas adjacent to metropolitan areas that align with RUCC 4 or 6).

There were stark differences in the representation of the most frequent brands among all counties where recreation was the primary industry, particularly in rural, nonmetro counties (RUCC 8 and 9). For instance, the national average percentage of these most frequent branded restaurants (out of total FAFH establishments) was approximately 12 percent. Recreation-dependent counties with RUCC 8 or 9 (i.e., the most rural) have less than half that rate of the most frequent brands in their FAFH landscape.²⁰ There was a higher concentration of counties with a high concentration of the most frequent brands in the Midwest and South regions of the United States (figure 12a). We can compare figure 12a with 12b to see the growth of the 2019 most frequent branded restaurants since 1990.

²⁰ Again, these results should be read alongside appendix table A.4, which identifies the number of counties in each RUCC-county typology category.

Figure 12a

Concentration of 10 most frequent restaurants by U.S. county in nonmetropolitan (nonmetro) counties, 2019

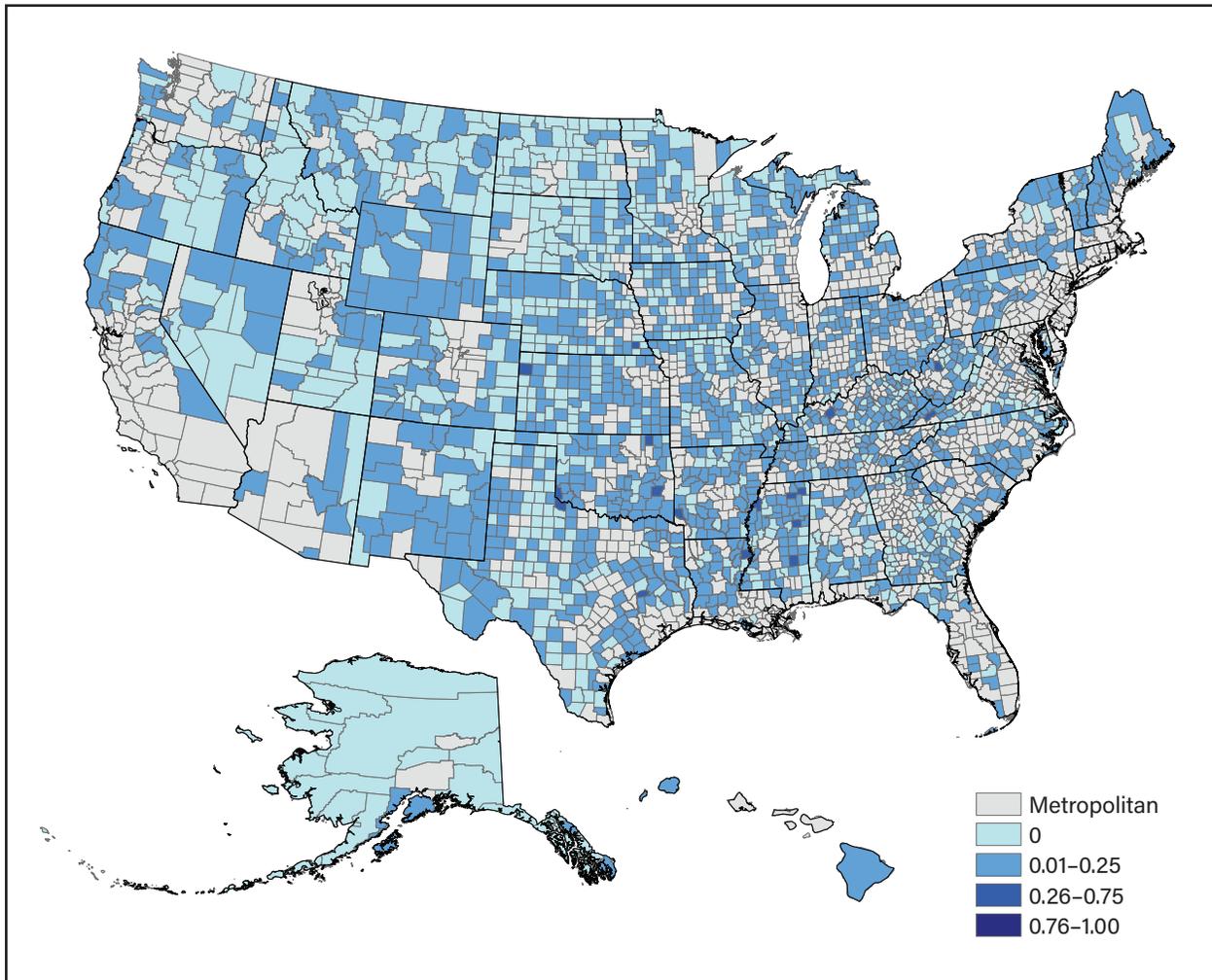


Note: Nonmetro counties are those counties classified with RUCC codes between 4–9, 4 and 5 are large urban nonmetro, 6 and 7 are small urban nonmetro, and 8 and 9 are rural counties. Calculated as share of most frequent restaurants out of total food-away-from-home establishments.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; and USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC).

Figure 12b

Concentration of 10 most frequent restaurants by U.S. county in nonmetropolitan (nonmetro) counties, 1990



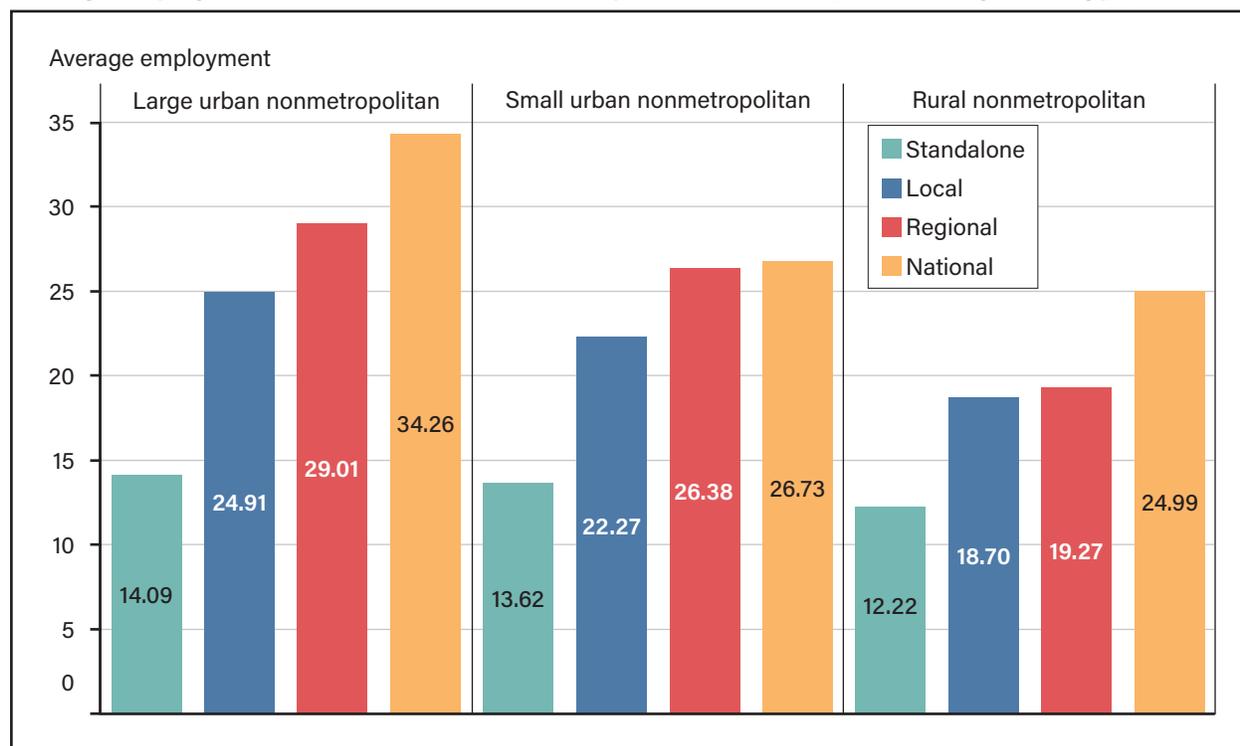
Note: Nonmetro counties are those counties classified with RUCC codes between 4–9, 4 and 5 are large urban nonmetro, 6 and 7 are small urban nonmetro, and 8 and 9 are rural counties. This map utilizes the same ranges as figure 12a to provide an over-time look at the changes in restaurant frequency, even if some counties do not fall into any of the provided ranges.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; and USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC).

While understanding the growth of the most frequent restaurant brands provided one dimension of the FAFH industry, we also used the NETS feature to link establishments within the database to explore more general chain growth. Specifically, we explored the characteristics of stores identified as standalone and local establishments relative to regional and national chain growth in nonmetropolitan areas.²¹ We focused on the largest share of FAFH, full- and limited-service restaurants in nonmetro areas in 2019.

Again, we used employment as a proxy for size. National restaurants employed the most individuals within the set of nonmetro counties (figure 13). National restaurants in rural, nonmetro areas tended to employ about nine fewer employees each than national chains in large urban nonmetro areas. Standalone restaurants were the smallest average employer with little variation between large urban and rural areas having about two employees each. These findings across store types could be related to the higher number of part-time employees typically associated with national chains, which were included in the employee count in NETS. We also examined sales and found average sales were typically higher for national chains. However, in small urban nonmetro counties, regional restaurants typically performed better on average (figure 14). Like with average employees, sales at standalone restaurants were, on average, at least half that of national restaurants across all urban classifications.

Figure 13
Average employment at restaurants in nonmetropolitan (nonmetro) counties by chain type, 2019



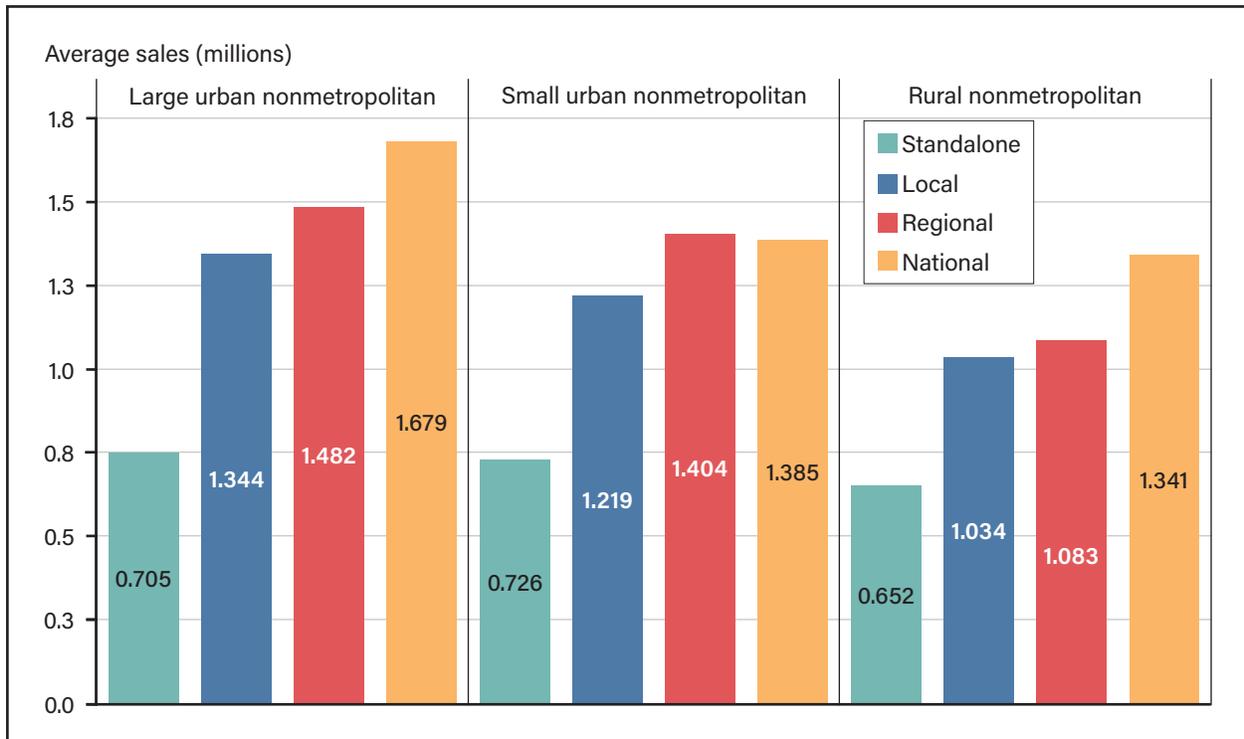
Note: Restaurants are all those whose North American Industry Classification System (NAICS) are 722511, 722513, 722514, and 722515. Nonmetro counties are those counties classified with RUCC codes between 4–9, 4 and 5 are Large urban nonmetro, 6 and 7 are small urban nonmetro, and 8 and 9 are rural, nonmetro counties.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) 2019 data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and U.S. Department of Commerce, Bureau of the Census, NAICS code definitions.

²¹ As mentioned earlier, we defined food establishments similarly to Stevens et al. (2021), and an explanation of these definitions can be found in table A.1. While other reports define changes utilizing criteria established by the U.S. Food and Drug Administration on menu calorie labeling (McLaughlin and Dicken, 2018), we focus on the definitions used in Stevens et al. (2021), as we are aiming to capture more localized store growth, which the Stevens et al. (2021) definitions allow us to do, and understand the structure in a way that mirrors the FAH sector.

Figure 14

Average sales at restaurants in nonmetropolitan (nonmetro) counties by chain type, 2019



Note: Restaurants are all those whose North American Industry Classification System (NAICS) are 722511, 722513, 722514, and 722515. Nonmetro counties are those counties classified with RUCC codes between 4–9 (4 and 5 are large urban nonmetro, 6 and 7 are small urban nonmetro, and 8 and 9 are rural, nonmetro counties).

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and U.S. Department of Commerce, Bureau of the Census, NAICS code definitions.

Discussion and Conclusion

This report provides an overview of the FAFH environment across the rural United States from 1990 to 2019. Areas with sparse populations have the most limited access to FAFH establishments, though the relative abundance of FAFH grew in these areas from 1990 to 2019. Stevens et al. (2021) reported that from 1990 to 2015, there was an overall increase in the number of grocery stores among nonmetro counties, tempered by decreases after the Great Recession. While this report similarly sees a dip in FAFH establishments in nonmetro counties, the growth in FAFH has persisted. It is driven largely by increases in limited-service restaurants such as fast food, though the small sector of caterers and food trucks has experienced large growth in establishment counts and in size as proxied by employment totals.

Despite recent growth, these nonmetro rural areas are more likely to lack FAH and FAFH access, creating notably constrained food landscapes compared with their urban and suburban counterparts. Furthermore, food access may not be a direct function of rurality. Being adjacent to a metropolitan county could make entry more difficult than in nonmetro-adjacent counties. Consequently, FAFH establishments may not just be competing across their own county, they may be competing with other establishments across their entire region or metro area. Depending on the nature of that market size, FAFH establishment entry may be more difficult in some places, making changes in access more stagnant. Although outside the scope of this work, future work could explore how adjacency to metro areas, through proximity or transportation channels, relates to the distribution of these establishments.

The highlighted trends in these nonmetropolitan areas are particularly important as consumer preferences have notably shifted toward food products with shorter preparation times (Smith et al., 2013). Indeed, we observed a growth in limited-service and other non-full-service FAFH options since 1990, as well as a representation of the most common or frequent brands in the FAFH category. The prominent exceptions to these trends are in rural communities with a recreation economic typology, which have substantially more robust FAFH offerings compared with nonmetro counties that have other economic typologies. The convenience of FAFH may have impacts on household well-being because the reduction in preparation time may free up time for other tasks (for discussion of food time costs, see Anekwe and Zeballos, 2019 and/or Hamermesh, 2007). Furthermore, while many FAFH options may be less healthy than FAH options, there are healthy FAFH options that exist, and accessing them may be especially beneficial to busy households. While a handful of studies have examined the healthfulness of FAFH, this literature is somewhat limited. More research on FAFH in general and in rural areas could shed light on how this source of food impacts health.

This work provides nationwide statistics for food access research in rural areas. Few studies have focused on rural FAFH distribution channels. This reporting offers insights into an important, underexplored research area and provides historical context as well as an overview of the FAFH sector just prior to the Coronavirus (COVID-19) pandemic. Insights into the FAFH sector across different types of nonmetropolitan counties may provide a foundation for future research that considers the impacts of the pandemic on different types of communities and compare current conditions to pre-pandemic baselines.

The information presented here feeds into the broad and growing literature on food landscapes and food access. Indeed, efforts to improve nutrition and health outcomes hinge on the portfolio of food options that are accessible and affordable to households. As detailed in this report, that choice set may vary dramatically depending on the rurality of an area.

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Appendix

Classification Systems

We classified counties in two ways: (1) the Rural-Urban Continuum Code (RUCC) system and (2) the County Typology Codes. The 2013 RUCC provides a classification system to distinguish between metropolitan (metro) counties by population and by the population of their Metropolitan Statistical Area,²² and nonmetropolitan (nonmetro) counties by population and adjacency to a metro area (appendix table A.2).²³ Although RUCC identifies nine unique designations for counties based on population and metropolitan adjacency, existing literature often simply uses the terms “urban” and “rural” to define areas that are more or less populated. We also used the terms “include metropolitan” and “nonmetropolitan” to refer to specific RUCC designations (metropolitan designations are RUCC 1–3, nonmetropolitan is RUCC 4–9). When examining differences within nonmetropolitan areas, we referred to “large urban nonmetro” (RUCC 4 and 5), “small urban nonmetro” (RUCC 6 and 7), and “rural, nonmetro” (RUCC 8 and 9). RUCC defined counties as “rural, nonmetro” if the counties had fewer than 2,500 residents, but the broader set of nonmetropolitan counties may have faced similar food landscapes because of their smaller populations. To that end, we provided analysis in the broader nonmetropolitan scope and often highlighted changes in all these rural areas. These terms are sometimes used interchangeably with “by the metropolitan” and “nonmetropolitan.” We used the terms “rural-urban continuum” and “rurality” to refer to the relative sparseness of populations in the narrative of this report. Throughout this report, we primarily presented results in two ways: (1) by grouping counties based on metropolitan status and population to create broader categories of the RUCC codes²⁴ and (2) by adjacency to metropolitan areas.

Statistical County Economic Typology codes indicate categories of economic dependence. We used the nonoverlapping version of these codes, which identified each county with one primary economic dependency (appendix table A.3). We merged these characteristics with the county-level establishment, employment, and sales data calculated from NETS.²⁵

²² Metropolitan Statistical Areas are federally designated areas (for statistical purposes) that have large, established populations.

²³ This report utilizes the 2010 county codes, as well as the 2013 RUCC code designation and applies these values historically. This utilization is done for several reasons. NETS provides the most current county-classification system (2010 at the time of this report) for each year an establishment is present in their database. Subsequently, we analyzed this trend backwards.

²⁴ We defined RUCC 4 and 5 to be large urban nonmetro counties, 6 and 7 to be small urban nonmetro counties, and 8 and 9 to be rural counties.

²⁵ For completeness, we included a count of counties by county typology and RUCC code in appendix table A.4.

Table A.1

Store type classifications

Classification	Number of associated stores	Number of States with an associated store	Description
Standalone (single location)	1	1	These stores are those whose headquarters DUNS is the same as the individual store DUNS and are not classified as a headquarters within NETS.
Local chain	More than 1	1	There is more than one store associated with a particular headquarter DUNS, but all of the stores are located within the same State.
Regional chain	More than 1	2-10	There is more than one store associated with a particular headquarter DUNS, and the stores are located in fewer than 10 but more than 1 State.
National chain	More than 1	More than 10	There is more than one store associated with a particular headquarter DUNS, and the stores are located in at least 10 different States.

DUNS = Data Universal Numbering System.

Note: Associated stores are those stores that identify the same headquarters within the NETS database.

Source: USDA, Economic Research Service classifications using 2019 National Establishment Time Series (NETS) data.

Table A.2

Rural-Urban Continuum Code (RUCC) definitions

Code	Description	Number of counties	General classifications
1	Counties in metro areas of 1 million population or more	432	Urban, metro counties
2	Counties in metro areas of 250,000 to 1 million population	378	
3	Counties in metro areas of fewer than 250,000 population	356	
4	Urban population of 20,000 or more, adjacent to a metro area	214	Large urban, nonmetro counties
5	Urban population of 20,000 or more, not adjacent to a metro area	92	
6	Urban population of 2,500 to 19,999, adjacent to a metro area	593	Small urban, nonmetro counties
7	Urban population of 2,500 to 19,999, not adjacent to a metro area	433	
8	Completely rural or less than 2,500 urban population, adjacent to a metro area	220	Rural, nonmetro counties
9	Completely rural or less than 2,500 urban population, not adjacent to a metro area	424	

Metro = Metropolitan. Nonmetro = Nonmetropolitan.

Source: USDA, Economic Research Service, 2013 Rural-Urban Continuum Codes (RUCC).

Table A.3

County Typology Codes

Type	Description	Number of counties
Farming (code 1)	Farm-dependent county indicator. 0=no 1=yes. Farming accounted for 25 percent or more of the county's earnings or 16 percent or more of the employment averaged over 2010–2012.	444
Mining (code 2)	Mining-dependent county indicator. 0=no 1=yes. Mining accounted for 13 percent or more of the county's earnings or 8 percent of the employment averaged over 2010–2012.	221
Manufacturing (code 3)	Manufacturing-dependent county indicator. 0=no 1=yes. Manufacturing accounted for 23 percent or more of the county's earnings or 16 percent of the employment averaged over 2010–2012.	501
Government (code 4)	Federal/State Government-dependent county indicator. 0=no 1=yes. Federal and State Government accounted for 14 percent or more of the county's earnings or 9 percent or more of the employment averaged over 2010–2012.	407
Recreation (code 5)	Recreation county indicator 0=no, 1=yes. Calculated using the percentage of wage and employment in entertainment and recreation, accommodations, eating and drinking places, and real estate as a percentage of all employment reported by the U.S. Department of Commerce, Bureau of Economic Analysis; the percentage of total personal income reported for these same categories by the bureau of economic analysis; and percentage of vacant housing units intended for seasonal or occupational use reported in the 2010 Census.	333
Nonspecialized (code 6)	Nonspecialized indicator 0=no 1=yes. The county was not a farming-, mining-, manufacturing-, Government-dependent, or recreation county.	1,236

Note: For more information about the Recreation category calculations, see USDA, Economic Research Service's County Typology Codes documentation web page.

Source: USDA, Economic Research Service, 2015 County Typology Codes, Nonoverlapping.

Table A.4

County counts across County Typology Code and RUCC classifications

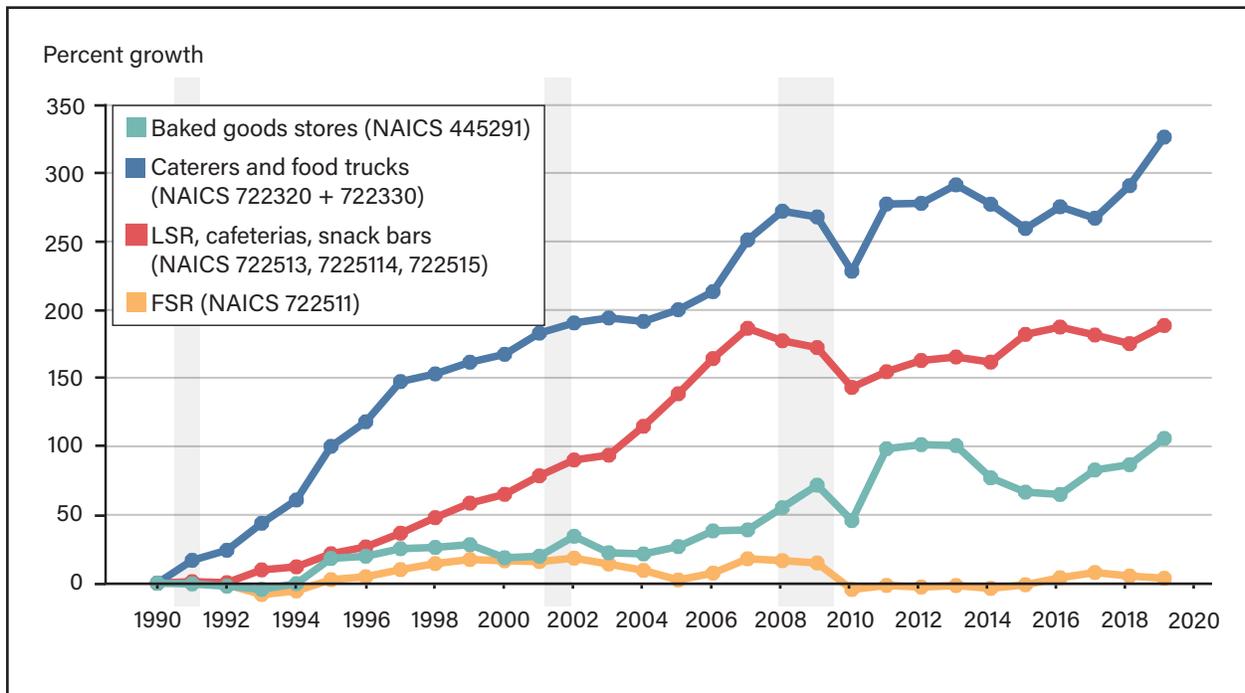
			County Typology Code						National
			Farming	Mining	Manu- facturing	Govern- ment	Recrea- tion	No specialization	
RUCC	Metropolitan (metro)	1	11	9	43	40	39	290	432
		2	10	9	58	53	35	213	378
		3	32	19	52	75	30	148	356
	Nonmetropoli- tan (nonmetro), metro-adjacent	4	1	8	56	36	27	86	214
		6	53	45	158	74	53	210	593
		8	73	16	24	23	31	53	220
	Nonmetro, not metro adjacent	5	1	9	15	19	8	40	92
		7	51	64	66	49	61	142	433
		9	212	42	29	38	49	54	424
National			444	221	501	407	333	1,236	3,142

Metro = Metropolitan. Nonmetro = Nonmetropolitan.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and USDA, ERS, 2015 County Typology Codes, Nonoverlapping.

Figure A.1

Percent growth in FAFH establishments per 1,000 people by sector in rural, nonmetropolitan (nonmetro) counties since 1990



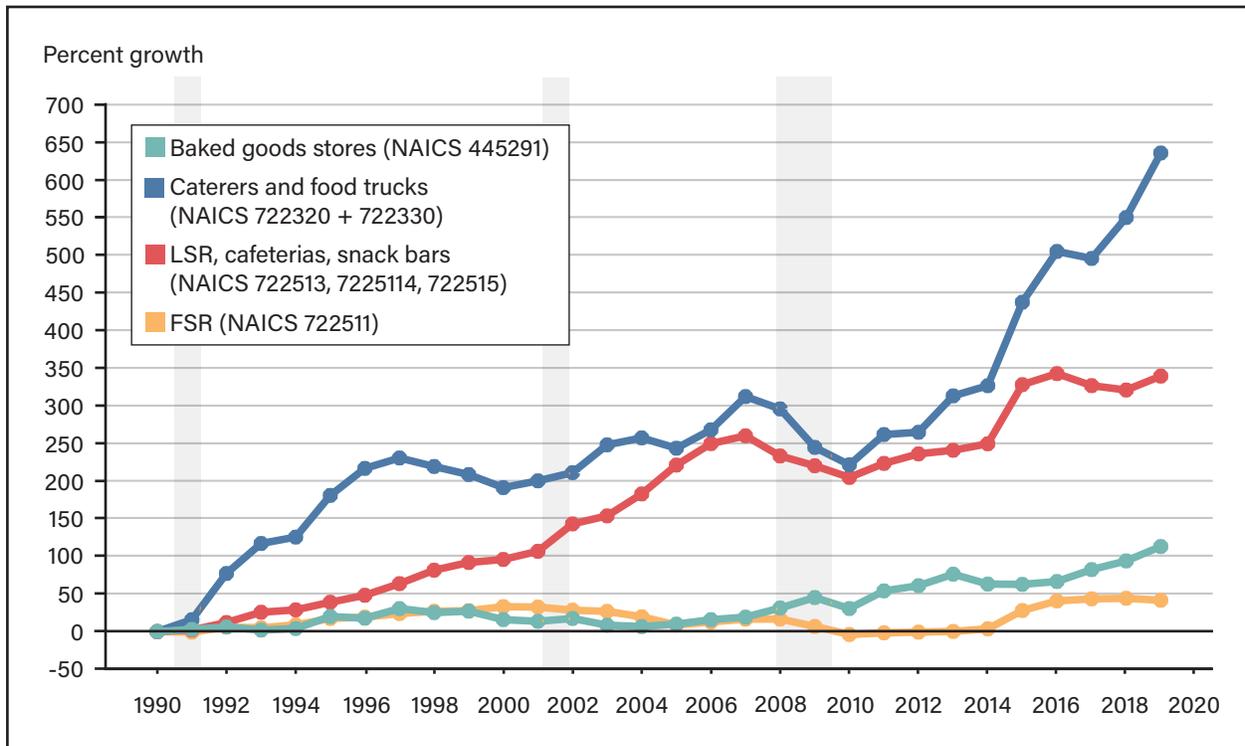
FAFH = Food away from home. LSR = Limited-service restaurant. FSR = Full-service restaurant.

Note: Rural, nonmetro counties are those counties classified with RUCC codes 8 and 9. Grey bars correspond to recessionary periods.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) 2019 data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and U.S. Department of Commerce, Bureau of the Census, North American Industry Classification System (NAICS) code definitions.

Figure A.2

Percent growth in FAFH employment per 1,000 people by sector in rural, nonmetropolitan (nonmetro) counties since 1990



FAFH = Food away from home. LSR = Limited-service restaurant. FSR = Full-service restaurant.

Note: Rural, nonmetro counties are those counties classified with RUCC codes 8 and 9. Grey bars correspond to recessionary periods.

Source: USDA, Economic Research Service (ERS) calculations using 2019 National Establishment Time Series (NETS) 2019 data; USDA, ERS, 2013 Rural-Urban Continuum Codes (RUCC); and U.S. Department of Commerce, Bureau of the Census, North American Industry Classification System (NAICS) code definitions.