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Independent Grocery Stores in the Changing Landscape of the U.S. Food Retail Industry

Clare Cho and Richard Volpe





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Abstract

Independent grocery stores, or grocery stores whose owners operate fewer than four outlets, generated 11 percent of all U.S. grocery sales in 2015. These stores play an important role in their local communities, helping to ensure food access for residents, particularly in low-income and rural areas. This study uses data from Nielsen's TDLinX to examine the current (2015) performance of independent grocery stores and changes in the performance of these establishments over the last decade, a period marked by the Great Recession and large changes to the food retail industry. In 2015, independent grocery stores generated \$70 billion in sales and employed over 330,000 full-time equivalent employees. In 44 percent of U.S. counties, at least half of the food retailers were independent grocery stores, but their share of total sales was low. From 2005 to 2015, the number of total grocery stores (chain and independent) in the United States increased. However, at the onset of the recession, the number of independent grocery stores stagnated, causing the share of these grocery stores to decline through 2015.

Keywords: Independent grocery stores, food retail, food access

Acknowledgments

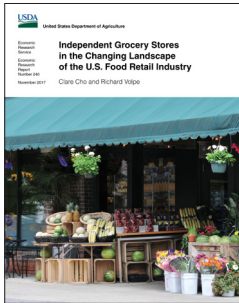
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Independent Grocery Stores in the Changing Landscape of the U.S. Food Retail Industry

Clare Cho and Richard Volpe

What Is the Issue?

Independent grocery stores are food retail establishments whose owners operate fewer than four outlets simultaneously. These stores generated 11 percent of all U.S. grocery sales in 2015, helping to ensure food access in areas that may not be served by chain grocery stores, including rural counties and counties with a high percentage of low-income households. They also provide employment opportunities and generate tax revenue for these areas. Given the ongoing transformation of the food retail industry and the continued importance of independent grocery stores to their local communities and to the U.S. economy, this study examines the current (2015) performance of independent stores and changes in their performance over 2005-15, particularly in relation to chain stores. The findings in this study lay the groundwork for future research on the economic impacts of independent grocery stores.

What Did the Study Find?

Although chain grocery stores dominate the U.S. food retail industry, independent grocery stores continue to play an essential role in the U.S. economy. Findings on the current (2015) performance of independent stores include the following:

- Independent grocery stores generated \$70 billion in sales, or 11 percent of all U.S. grocery sales. They made up at least half of all food retailers in 44 percent of U.S. counties. However, the share of food retail sales attributed to independent stores across the United States in 2015 was low—only 19 percent of all counties had at least 50 percent of total sales from independent retailers.
- Independent stores were mostly composed of superettes (58 percent) and supermarkets (33 percent), while chain stores were primarily made up of supermarkets (67 percent) and supercenters (15 percent). Superettes are grocery stores with annual sales of \$1 million to \$2 million, while supermarkets are composed of grocery stores with at least \$2 million in annual sales; supercenters are stores that consist of a full-line supermarket and discount merchandiser under the same roof.
- The shares of total sales for chain stores followed a similar pattern as the store make up, with supermarkets having the largest share; for independent stores, the relationship reverses: supermarkets accounted for 58 percent of independent store sales and superettes accounted for 27 percent.

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.

- Rural counties are split into those that are adjacent to urban counties and those that are not. On average, independent stores outnumbered chain stores (2.1 to 1.9, respectively) in nonadjacent rural counties. However, sales from independents accounted for only 18 percent of all food retail sales in these counties. The shares of independent store sales were even lower in rural counties adjacent to urban counties (16 percent) and in urban counties (10 percent).
- For every 10,000 individuals added to a county, the number of chain and independent stores increased by 2.4 percent and 1.9 percent, respectively. As the population shares of Blacks and Hispanics rose in a county, independent stores increased at a higher rate than chain stores.

Findings on changes in the performance of independent grocery stores and the overall food retail environment from 2005 to 2015 include the following:

- The total number of grocery stores over the decade increased by 7 percent. While chain stores increased in number, independent stores stagnated at the onset of the recession. As a result, by 2015, the share of independent stores had declined in 1,269 counties (41 percent of all U.S. counties).
- The number of independent and chain grocery stores increased in counties where population increased. While the number of independent stores increased in rural counties and in counties with a growing population share of Blacks, the number of chain stores decreased in these counties.
- The shares of independent stores (particularly small-format stores, or specialty food stores, limited-assortment supermarkets, and superettes) increased in counties in which the population share of Blacks increased and in rural counties not adjacent to urban counties.

How Was the Study Conducted?

This study uses data from TDLinX to calculate the number of independent and chain stores and their sales by county in the 48 contiguous States and the District of Columbia. Independent stores and their sales are mapped for each county to show changes from 2005 to 2015. The study includes empirical analyses to examine county characteristics associated with the number and share of independent stores and the share of their sales.

Independent Grocery Stores in the Changing Landscape of the U.S. Food Retail Industry

Introduction

Food retailers, including independent grocery stores, accounted for more than half of all food expenditures in the United States in 2012, although dining-out establishments had nearly doubled their share of total food sales since 1970 (USDA-ERS, 2017a). This study defines independent grocery stores as stores whose owners operate fewer than four outlets simultaneously.¹ Although other studies have varying definitions of independent stores, these stores are generally viewed to operate differently than chain stores, such as having less bargaining power or store name loyalty among customers.

Independent grocery stores play an important role for local communities, which includes improving food access. Studies find that areas with a high share of low-income households, as well as rural areas, tend to have more independent food retailers; relatively few chain stores operate in these areas (e.g., Chung and Myers, 1999; Block and Kouba, 2006; Powell et al., 2007). Stores with a higher share of total sales from USDA's Supplemental Nutrition Assistance Program (SNAP) redemptions are more likely to be independently owned, particularly in rural areas (King et al., 2004). The recent decline in rural grocery stores is attributed to the closure of independent stores (Bailey, 2010). In contrast, counties with higher median incomes have fewer independent stores and more chain stores; the average size of a food retail establishment in these areas is larger as well (Schuetz et al., 2012). Small-format grocery stores, which account for a large share of independent grocery stores, also mitigate food insecurity by improving physical access to grocery stores, particularly for individuals with limited options for transportation (Bonanno and Li, 2014) (see box "Frequently Used Terminology").

In addition to improving food access, independent stores provide job opportunities that may help attract residents and generate tax revenues that aid in development efforts. This is particularly salient in remote rural areas with fewer amenities. The retail trade industry generated about 11 percent of total U.S. employment in 2015, with grocery stores employing 18 percent of the retail share.² Independent grocery stores and their employees also generated about \$14 billion in State and local taxes and \$13 billion in Federal taxes in 2015 (NGA, 2015). Schils (1998) finds that the introduction of mega-retail chains in some U.S. cities and towns led to a large reduction in job opportunities in these areas as smaller retailers have been forced to close. Similarly, some studies find that the entry of a Wal-Mart into an area led to a decline in employment and earnings (e.g., Dube et al., 2007; Neumark et al., 2005); other studies, however, find evidence of growth in employment, particularly in the short run (e.g., Basker, 2005).

Studies also show that independent stores may be more attuned to the needs of the community than chain stores, as evidenced by offering lower prices for certain products or specializing in

¹This is the definition used by TDLinx, the primary dataset used in this study.

²These calculations were made using data from the Bureau of Labor Statistics Current Employment Statistics.

ethnic foods in high demand by the local population. In a low-income urban area with a high share of Hispanics, Emond et al. (2011) find that all of the Hispanic stores, or *tiendas*, are independent grocery stores. In addition, the authors find that, although the *tiendas* surveyed offer a limited selection of healthful dairy and meat products, the availability of fresh produce at these stores does not differ from that at larger stores, and the price per unit is lower. Block and Kouba (2005) also find that fresh items are cheaper at independent stores, although packaged items tend to be more expensive, and Cassady et al. (2007) find that independent stores have lower prices for vegetables (dark green, legumes, starchy, and other), although the difference was only statistically significant for the starchy and other vegetable categories. Some studies raise concerns about the prices and availability of healthful products at independent stores, but these studies focus on small-format independent stores and combine them with convenience stores (e.g., Jetter and Cassady, 2006; Chung and Myers, 1999). A number of studies find that consumers shopping at supermarkets purchase healthful food (e.g., fruits and vegetables) more often than consumers at other store types, even supercenters, but these studies do not differentiate independent stores from chains or are unable to control for store size simultaneously (Zenk et al., 2005; Volpe et al., 2013; Volpe et al., 2017).

In recent decades, the food retail industry has undergone large changes. Mergers and acquisitions in the industry rose in the late 1990s and again after 2010, resulting in a higher concentration of sales among fewer chain stores (Harris et al., 2002; DePillis, 2013; Duff and Phelps, 2016). From 1996 to 2013, total annual sales among the four food retailers with the highest sales increased by about 20 percent to \$256 billion, reaching nearly 40 percent of all food retailer sales (USDA-ERS, 2016). Some studies have found that higher food retail concentration raises prices for consumers (e.g., Cotterill, 1986; Hosken et al., 2012; Hovhannisyan and Bozic, 2016).

A growing number of nontraditional food retailers—including mass merchandisers, supercenters, and drug stores—began to sell food alongside nonfood products, further increasing competition among conventional grocery stores (Harris et al., 2002; Martinez, 2007). From 2000 to 2011, the share of total retail food sales from nontraditional stores—mostly supercenters and warehouse club stores—increased from 14 to 22 percent (USDA-ERS 2016). In response, conventional supermarkets increased in average size, with some offering nonfood products as well, but declined in number (Martinez, 2007). In addition, because supercenters are able to purchase items in bulk, some are able to offer similar food products at much lower prices than conventional supermarkets (Hausman and Leibtag, 2007).

The growth in nontraditional food retailers, particularly supercenters, was partially driven by consumer demand for one-stop shopping, or households purchasing both food and nonfood products from the same retailer. Seminal studies, such as Hotelling (1929) and Losch (1938), show that stores locate in a given market area to maximize the potential number of consumers.³ These models have been expanded to account for the clustering of different types of retailers (e.g., Huff, 1963), which enables consumers to visit multiple stores in close proximity to each other. Other retailers—particularly large-format stores—have responded by providing amenities, such as eating areas to consume foods prepared and sold onsite, and expanding their assortment of products to provide a one-stop experience (e.g., Leszczyc et al., 2004). These large-format stores tend to have higher overhead costs and require greater areas of land, resulting in a higher minimum consumer threshold and making it less likely that these establishments will locate in the center of a city.

³See Craig et al. (1984) for a review of these studies.

Although some independent grocers, particularly small-format ones, strengthened themselves by aligning with wholesalers (Martinez, 2007), others may have found it difficult to remain open, particularly during the Great Recession. Some independent grocery stores may have continued to thrive by locating in areas with fewer large-format chains. Hanner et al. (2015) find that smaller, independent retailers exhibit the greatest churn among firms in terms of entry and exit, highlighting the uncertainty of the performance and status of independent grocers.

Given these transformations in the food retail industry, and the importance of independent grocery stores in local communities, this study assesses independent grocery stores' current state and how they have changed over the last decade. It looks at the number of chain and independent grocery stores, the share of all food retailers that are independent stores, and the share of overall food retail sales from independent grocery stores, separated by small and large format. By examining both the number and share of independent grocery stores, it is possible to examine which county characteristics are associated with a higher number of independent stores, as well as those characteristics that attract more independent stores than chain stores.

Frequently Used Terminology

Listed below are terms frequently used throughout this study:

Independent stores: stores where the owner operates fewer than four outlets simultaneously.

Chain stores: stores where the owner operates four or more outlets simultaneously.

Nontraditional food retailers: nongrocery stores whose primary sales are from nonfood products and that also sell a limited selection of food products (e.g., drug stores that sell food).

Large-format grocery stores: supermarkets, warehouse stores, and supercenters.

Supermarkets: grocery stores with annual sales of \$2 million or more.

Warehouse stores: grocery stores that offer limited services, sell bulk food, and frequently act as a supplier to small-format stores.

Supercenters: stores that consist of a full-line supermarket and a full-line discount merchandiser under the same roof.

Small-format grocery stores: specialty food stores, limited-assortment supermarkets, and superettes.

Specialty food stores: grocery stores that primarily offer organic or gourmet food and typically have an expanded fresh and/or prepared food department.⁴

Limited-assortment supermarkets: grocery stores with a limited selection of items among fewer categories.

Superettes: grocery stores with annual sales of \$1 million to \$2 million.

⁴In TDLinx, this category is classified as "natural/gourmet food supermarkets." However, because of recent discussions on which foods should be labeled as "natural" (e.g., foods containing ingredients using genetic engineering), we chose to refer to the category as "specialty food stores" instead (FDA, 2016; Rock, 2016).

Data

This study uses Nielsen’s TDLinX data to examine independent grocery stores across the United States. The dataset provides a comprehensive list of food retailers, distinguishing between independent and chain stores, and estimates of annual sales for each store.⁵ TDLinX classifies stores as independent if the owner is operating fewer than four outlets simultaneously. It is important to note that stores that are part of a franchise, such as Giant Eagle Market, are categorized as independent if the owner is operating only one store.⁶ Thus, if a franchise is considered to operate more similarly to a chain store than to an independent store, this analysis would overstate the total number of independent stores and their sales and understate the number of chain stores.

We limit our analysis to the 3,108 counties in the 48 contiguous States in 2015 and the District of Columbia.⁷ In addition, we restrict our analysis to stores identified as grocery stores, excluding other store types that may sell food, such as convenience or drug stores. TDLinX separates grocery stores into six categories: supermarkets, limited-assortment supermarkets, specialty food stores, supercenters, warehouse stores, and superettes (for more information on the store types, see box “Frequently Used Terms”).

To examine county characteristics associated with our main variables of interest, we incorporate data from the U.S. Census Bureau’s Population Estimates Program (PEP), Small Area Income and Poverty Estimates (SAIPE), and Gazetteer files, and from ERS’ Rural-Urban Continuum Codes. These datasets provide annual estimates of county characteristics that could influence the number of independent stores in the county, such as population and median income, which reflect market size and purchasing power, respectively. We also include data on demographics, specifically the county population shares of Whites, Blacks, Hispanics, and other racial groups.⁸ We classify counties with an ERS Rural-Urban Continuum Code of 1, 2, and 3 as urban; 4, 6, and 8 as rural adjacent to urban; and 5, 7, and 9 as rural not adjacent to urban.⁹ We distinguish between rural counties adjacent to and not adjacent to urban counties because stores in adjacent rural counties may be able to benefit from their proximity to urban counties (i.e., spillover effects, particularly along a border); nonadjacent

⁵The dataset contains this information for all open stores with more than \$1 million in sales in June of each year. Thus, the total number might not be consistent for the entire year. As the information is gathered at the same time each year, we believe it provides an accurate depiction of the overall annual trend. Because TDLinX provides an estimated range of annual sales for each store, we take the median of each bracket for our sales analyses.

⁶In 2016, 5 percent of all grocery stores were independent and part of a franchise. Thus, given that 43 percent of all grocery stores were independent that year, this suggests about 12 percent of the independent stores were part of a franchise.

⁷There were 3,109 counties in the study area in the years 2005 to 2013. Starting in 2014, the U.S. Census Bureau combined Federal Information Processing Standards (FIPS) code 51515 under 51019, resulting in a total of 3,108 counties in 2014 and 2015.

⁸Although the U.S. Census Bureau’s Population Estimates Program (PEP) provides estimates for the number of American Indians and Alaska Natives, Asians, and Two or More Races, we combine these categories as “other racial groups” because their average percentages by county were low (between 1 and 2 percent), while there were at least 8 percent in the other three categories. The low percentages resulted in some of the models not converging when all estimated separately.

⁹The ERS Rural-Urban Continuum Codes follow the metro and nonmetro definitions issued by the Office of Management and Budget in 2013. For more information, see the Rural-Urban Continuum Codes on the ERS website.

rural counties are more likely to be remote.¹⁰ Finally, we include each county's land area in square miles in 2010 to address the amount of land available and the distances that residents may have to travel to purchase food.¹¹

¹⁰Although we recognize that other demographic characteristics may also affect a store's location decision, we wanted to keep the explanatory variables consistent throughout this study. Thus, we limited our explanatory variables to those that would be available for every year from 2005 to 2015.

¹¹We conducted the regressions without this variable and using population density (by dividing population by land area) and obtained similar results with slight changes in magnitudes with our first model—the negative binomial model. However, the model would not converge for large-format independent stores.

Methodology

We first examine descriptive statistics of independent grocery stores, specifically data on the distribution across counties, store types, and general trends. In addition, we conduct a closer examination of the relationship between county characteristics and (1) the number of independent and chain grocery stores, (2) the share of grocery stores that are independent, and (3) the share of total food retail sales from independent grocery stores. To address (1), we use a negative binomial model. The model is structured to evaluate counts of events that are overdispersed, making it ideally suited to examine the number of independent and chain retailers.¹² For (2) and (3), we use a generalized linear model with a logit transformation of the response variable and a binomial distribution. This method is ideal for fractional dependent variables that include a large portion of zeros and ones.¹³ To examine the annual changes for each of these variables from 2005 to 2015, we run a pooled ordinary least squares (OLS) regression.¹⁴

For each of the three variables of interest, we examine its relationship to the following county characteristics: population, household median income, race and ethnicity, and whether the county is urban or rural (adjacent or not adjacent to an urban county). Population indicates the overall market size, or all potential consumers, while median income reflects their purchasing power. We also include an indicator for the county's rurality, as past studies have found a greater number of independent stores in rural areas (e.g., Powell et al., 2007). Finally, we include the percentage of other racial groups to address the mixed findings on food access for areas with a higher percentage of other racial groups, depending on the area examined and its size (e.g., USDA, 2009).

¹²See Greene (2011) for more details.

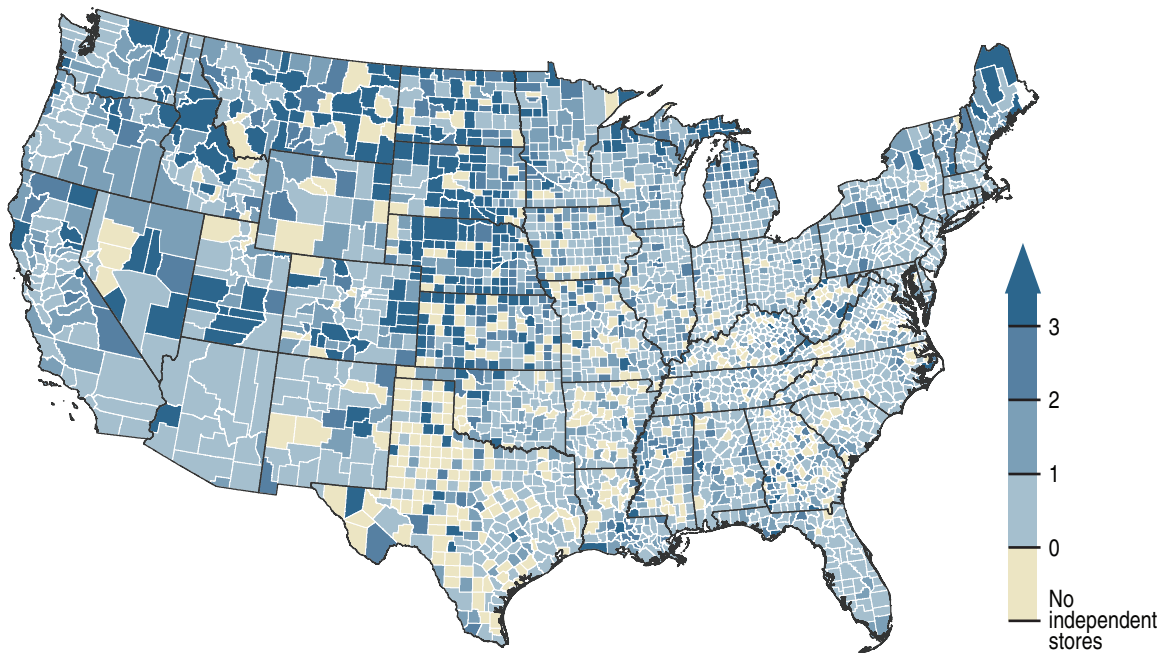
¹³See Papke and Wooldridge (1996) and Baum (2008) for details on this methodology.

¹⁴A large portion of the share of independent stores were clustered at 0 and 100. Thus, as a robustness check, we also conducted the estimations with a tobit model with a lower bound of -100 and an upper bound of 100. The magnitudes are similar, and the sign and significance remain the same.

Independent Grocery Stores Across the United States

Independent grocery stores are a large part of the U.S. food retail industry. According to TDLinx, independent stores generated \$70 billion in sales in 2015, or 11 percent of all U.S. grocery sales, and employed over 330,000 full-time equivalent employees, where a full-time employee is counted as 1 and a part-time employee is counted as one-half.¹⁵ However, independent grocery stores are not evenly distributed across the United States. The majority of U.S. counties (55 percent) had less than 1 independent grocery store for every 10,000 people in 2015 (fig. 1).¹⁶ Although counties without any independent grocery stores are scattered throughout the United States, a large portion are located in the South and East. In contrast, among counties with at least 1 independent store, about 21 percent had at least 2 stores for every 10,000 people.

Figure 1
Number of independent grocery stores by county across the United States, per capita, 2015



Note: TDLinx classifies stores as independent if there are fewer than four outlets in a given year; all other stores are classified as chain stores.

Source: USDA, Economic Research Service using data from Nielsen TDLinx.

In 44 percent of U.S. counties, which contained 28 percent of the total U.S. population, at least half of the food retailers were independent; these counties are largely located in the West, Great Plains, and Northeast (fig. 2). Additionally, in 19 percent (589) of all counties containing 6 percent of the total U.S. population, at least 75 percent of grocery stores were independent. Many counties with a large share of independent grocery stores were in counties with low-income low-access (LILA)

¹⁵This value is slightly lower than the amount reported by the National Grocers Association. Part of the reason may be because we only have stores with at least \$1 million in sales or there may be differences in classifications.

¹⁶This excludes counties with no independent stores (15 percent of all counties).

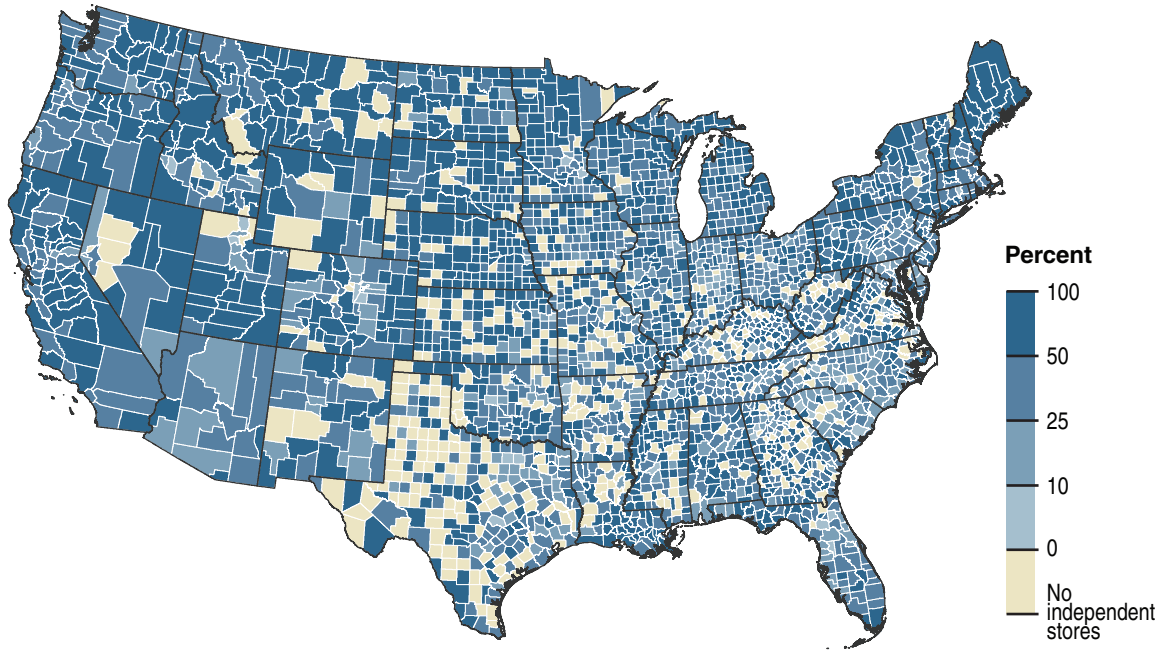
tracts, particularly in the West and Great Plains (USDA-ERS, 2017b).¹⁷ Given that the low-access measure examines accessibility to large-format stores and limited-assortment supermarkets, the large share of independent grocery stores in counties with LILA tracts suggests that independent superettes and specialty stores are located in these areas. Counties with LILA tracts and a low share of independent stores (e.g., in Texas and Missouri) may be primarily served by chain superettes and specialty stores operating in these counties. It could also be that residents in these counties travel far to purchase food from a retailer or only shop at convenience stores in the county.

Despite the large share of counties with at least half of the grocery stores being independent, the independent store share of food retail sales is relatively low across the United States (fig. 3). In 2015, only 576 counties (19 percent of all U.S. counties containing 4 percent of the total U.S. population) had at least 50 percent of sales from independent retailers, and 463 counties (15 percent containing 1 percent of the total U.S. population) had at least 75 percent of sales. Most of the counties where at least 50 percent of food retail sales were from independent grocery stores are located in the Great Plains, and the remainder are largely rural counties across the Nation. The only counties with LILA tracts in which independent grocery stores accounted for a large share of food retail sales in 2015 are in the Great Plains region and, to a lesser degree, Southeastern States. The contrast of high shares of independent grocery stores but low shares of sales in counties with LILA tracts may indicate that, even if there are more independent stores nearby, residents continue to commute to large-format stores further away for most of their shopping. Ver Ploeg et al. (2015) find that, on average, households do not conduct their primary shopping at the store closest to them, suggesting that factors other than convenient location drive decisions on where to purchase food. It may also be that there are numerous small-format independent stores in these areas and one large-format chain store that has higher sales on average.

¹⁷Low access is defined as being more than 1 mile (10 miles) from the nearest supermarket (including limited-assortment supermarkets), supercenter, or large grocery store in an urban (rural) tract.

Figure 2

Share of independent grocery stores across the United States, by county, 2015

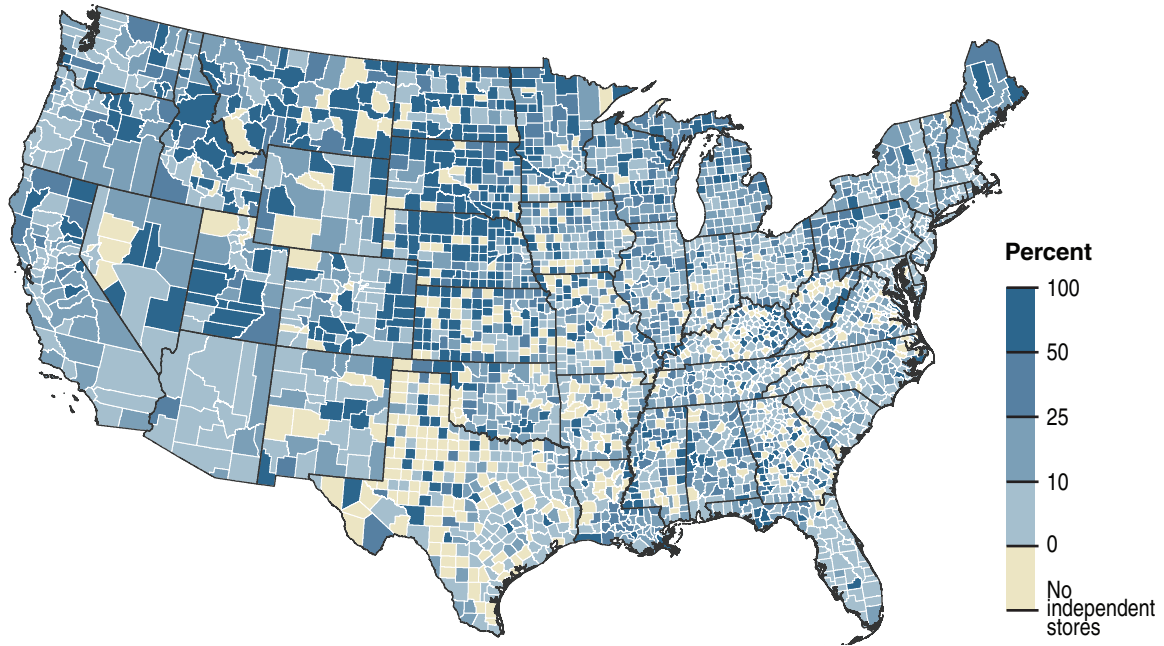


Note: TDLinX classifies stores as independent if there are fewer than four outlets in a given year; all other stores are classified as chain stores.

Source: USDA, Economic Research Service using data from Nielsen TDLinX.

Figure 3

Share of sales from independent grocery stores across the United States, by county, 2015



Note: TDLinX classifies stores as independent if there are fewer than four outlets in a given year; all other stores are classified as chain stores.

Source: USDA, Economic Research Service using data from Nielsen TDLinX.

Store Composition and Descriptive Statistics

In 2015, supermarkets accounted for 67 percent of all chain grocery stores but only 33 percent of independent grocery stores (figs. 4 and 5). In contrast, superettes (grocery stores with sales of \$1 million to \$2 million annually) were the second largest category for independent stores, making up 58 percent of all stores but only 1 percent of chain stores. The second largest category (15 percent) for chain stores was supercenters. Based on the shares of independent and chain stores by type, the analyses conducted in this study categorize supermarkets, warehouse stores, and supercenters as “large-format stores” and specialty food stores, limited-assortment supermarkets, and superettes as “small-format stores.”

The share of sales from each store type was similar to the distribution of stores. For independent grocery stores, about 85 percent of sales in 2015 were attributed to superettes and supermarkets; for chain stores, 91 percent of sales were from supercenters and supermarkets (figs. 6 and 7). Among independent grocery stores, superettes accounted for almost twice the share of supermarkets, but their share of sales was about half that from supermarkets (27 percent versus 58 percent). For chain stores, the share of sales from supermarkets (63 percent) was nearly twice that from supercenters (28 percent). The share of sales from supercenters in the chain store category was larger than its share of stores, primarily because the share of sales from limited-assortment supermarkets is much smaller.

Large-format chain stores dominate the food retail market. For this store format, counties averaged 7.7 chain stores in 2015 and only 2.3 independent stores (table 1). However, for the small-format stores, counties averaged 4.7 independent stores and 1.5 chain stores. In counties with a poverty rate greater than 20 percent, the average number of large-format chain stores (4.1) was more than double that of large-format independent stores (2.0). However, in counties with a poverty rate greater than 30 percent, the number of large-format chain stores dropped to 2.8, whereas independent stores increased slightly to 2.1. On average, these low-income counties had the greatest number of small-format independent stores in 2015. This suggests that large-format chain stores generally do not locate in counties with very high poverty rates, with more small-format independent stores locating in these communities, which corresponds with findings in previous studies (e.g., Block and Kouba, 2006; Powell et al., 2007). Separating counties by median income generates similar results, although the number of independent stores falls in counties with a lower median income.

As expected, urban counties had a higher average number of independent and chain grocery stores than rural counties. Among rural counties, those not adjacent to urban counties had fewer stores of both types than counties adjacent to urban counties. In the large-format category, urban counties had four times the number of chain stores than independent stores; in the small-format category in urban counties, independent stores outnumbered chain stores three to one. This general relationship is maintained for rural counties as well, although the magnitude of the differences are smaller. Nonadjacent rural counties had slightly more independent stores, on average, than chain stores (2.1 versus 1.9). In addition, in 2015, sales from independent grocery stores made up 18 percent (\$6 billion) of total food retail sales in these remote rural counties. Although independent stores had higher sales in rural counties adjacent to urban counties and in urban counties (about \$7 billion and \$43 billion, respectively), these sales made up a smaller percentage of total food retail sales – 16 percent and 10 percent, respectively.

Figure 4
Independent grocery stores by type, 2015

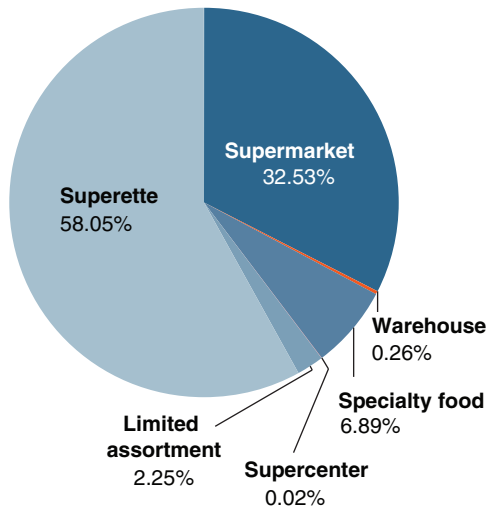


Figure 5
Chain grocery stores by type, 2015

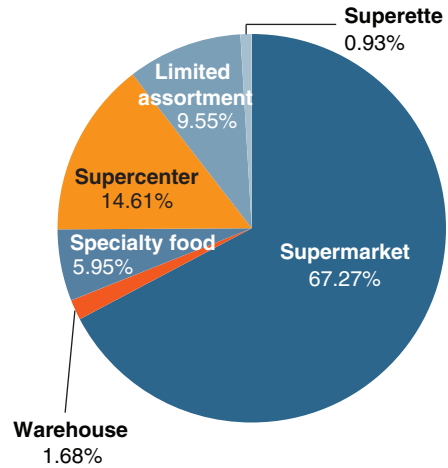


Figure 6
Share of sales from independent grocery stores by type, 2015

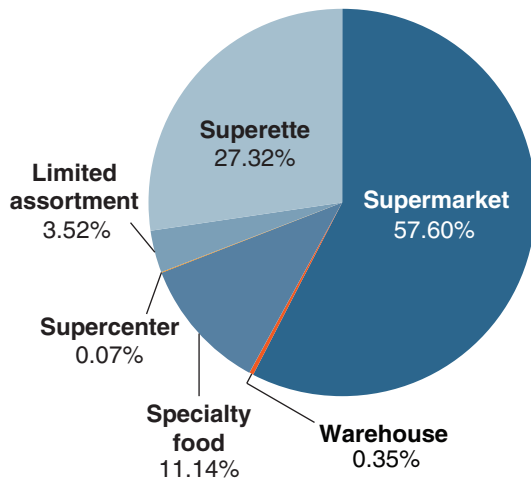
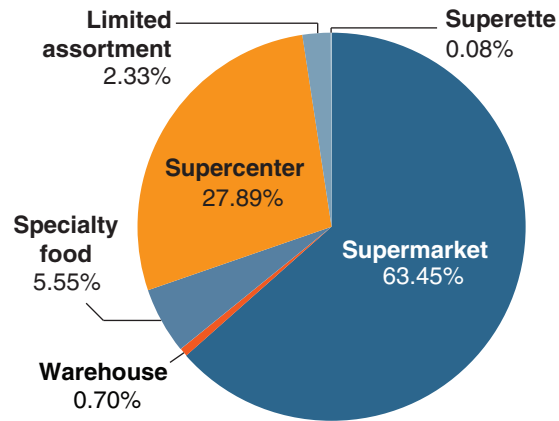


Figure 7
Share of sales from chain grocery stores by type, 2015



Note: Supermarkets are grocery stores with at least \$2 million in annual sales. Superettes are grocery stores with annual sales of \$1 million to \$2 million. Supercenters are stores that consist of a full-line supermarket and discount merchandiser under the same roof. Warehouse stores are grocery stores that offer limited services, sell bulk food, and frequently act as a supplier to small-format stores. Limited-assortment supermarkets are grocery stores with a limited selection of items among fewer categories. Specialty food stores are grocery stores that primarily offer organic or gourmet food and typically have an expanded fresh and/or prepared food department.

Source: USDA, Economic Research Service using data from Nielsen TDLinx.

Table 1

Average number of grocery stores by county characteristics, 2015

	Independent stores		Chain stores		Total counties
	Large format	Small format	Large format	Small format	Number
	Average number				
All counties	2.27	4.65	7.68	1.51	3,108
Poverty rate > 20%	1.99	4.49	4.14	0.72	731
Poverty rate > 30%	2.07	4.69	2.81	0.40	113
Median income < \$30,000	0.85	1.39	1.20	0.33	66
Median income < \$40,000	1.10	2.01	2.74	0.37	735
Urban	4.41	10.06	16.75	3.53	1,160
Rural adjacent to urban	1.14	1.61	2.78	0.38	1,026
Rural not adjacent to urban	0.83	1.23	1.70	0.22	922

Note: We combine supermarkets, warehouse stores, and supercenters as “large-format stores” and specialty food, limited-assortment supermarkets, and superettes as “small-format stores.” TDLinx classifies stores as independent if there are fewer than four outlets in a given year; all other stores are classified as chain stores.

Source: USDA, Economic Research Service using data from TDLinx.

Results from Regression Analyses

The results from the negative binomial model indicate that the number of independent and chain stores was higher in counties with a larger population, regardless of store format (table 2).¹⁸ However, counties with 10,000 additional people had 2.4 percent more chain stores, compared with 1.9 percent more independent stores. In addition, a county with \$10,000 higher median income had 13.2 percent more chain stores but 0.5 percent fewer independent stores, although the result for independents was not statistically significant. However, the higher county median income did trigger a 3.4-percent rise in the number of large-format independent stores. It may be that these stores are similar to chain stores, although the magnitude of the increase is much lower. This suggests that counties with a low median income have fewer chain stores and large-format independent stores than other counties, which may be an indication that these communities are served primarily by small-format independent stores or have fewer options available for food shopping. These results are consistent with findings in previous studies that consistently show that low-income areas tend to have fewer chain supermarkets (e.g., Powell et al., 2007).

For each percentage-point increase of the share of Blacks in a county population, the number of independent grocery stores increased 1.5 percent, compared with only 0.4 percent for chain stores. Similarly, for each percentage-point increase of Hispanics in a county, independent stores increased in number by 1.1 percent, compared with 0.4 percent for chain stores. The relationship is reversed for other racial groups: for every percentage-point increase in the county population, independent grocery stores increased in number by 0.8 percent, but chain stores grew by 1.2 percent.

¹⁸To interpret the results of the negative binomial regression, we calculate the incident rate ratio by subtracting one from the exponent of the coefficient.

Table 2

County characteristics' association with the number of independent and chain stores (negative binomial model, incident rate ratio), 2015

	Independent stores			Chain stores		
	All	Small format	Large format	All	Small format	Large format
Population	1.85***	1.90***	1.38***	2.44***	2.22***	2.23***
Percent Black	1.54***	1.93***	1.39***	0.44**	1.93***	0.36**
Percent other racial groups	0.79***	0.88***	0.92***	1.24***	1.91***	1.24***
Percent Hispanic	1.13***	1.33***	1.19***	0.41**	0.49	0.45***
Median income	-0.52	-0.17	3.43*	13.17***	14.51***	14.00***
Rural adjacent to urban	-33.53***	-35.73***	-34.53***	-49.77***	-59.17***	-50.32***
Rural not adjacent to urban	-42.45***	-42.11***	-45.47***	-61.37***	-68.65***	-62.10***
Land area in square miles	5.87***	2.54	8.81***	4.77***	-6.05*	5.84***
Observations (number)	3,108	3,108	3,108	3,108	3,108	3,108
State fixed effects	yes	yes	yes	yes	yes	yes

Note: These results are percentages. To make the results more legible, population and median income are divided by 10,000, and area is divided by 1,000. We combine supermarkets, warehouse stores, and supercenters as “large-format stores” and specialty food, limited-assortment, and superettes as “small-format stores.” TDLinx classifies stores as independent if there are fewer than four outlets in a given year; all other stores are classified as chain stores. *** p<0.01, ** p<0.05, * p<0.1.

Source: USDA, Economic Research Service using data from TD Linx.

The results from the negative binomial model also indicate that chain stores and independent stores were more likely to be located in urban counties in 2015. Compared to urban counties, rural counties adjacent and not adjacent to urban counties had 33.5 percent and 42.5 percent, respectively, fewer independent grocery stores. The differences were greater for chain stores: rural counties adjacent and not adjacent to urban counties had 49.8 percent and 61.3 percent fewer chain stores than urban counties. These results suggest that independent stores are more likely to enter rural counties. However, it could also be that chain stores and independent stores are similar in number in rural counties, and that chain stores outnumber independent stores in urban counties. In addition, as counties increase by 1,000 square miles, the numbers of independent stores and chain stores increase by 5.9 percent and 4.8 percent, respectively.

To determine which county characteristics are associated with a greater number of independent or chain stores, we examine the share of all grocery stores that are independent in a county, or the share of independent grocery stores. The share of large-format independent stores is smaller in more populous counties (table 3). In a county with 10,000 more individuals, it is 0.22 percent less likely that a randomly selected large-format store would be independent. The share of independent stores was higher in counties with a large percentage of Blacks and a low median income, highlighting the importance of independent stores in these counties. Although both independent stores and chain stores increase in number in a county with a higher share of Blacks (see table 2), there are more independent stores in these counties. However, race has a much smaller effect on store type in a county than some of the other factors, specifically median income and rurality.

Compared to urban counties, stores in rural counties adjacent to urban counties are 20.7 percent more likely to be independent stores than chain stores; the likelihood increases to 31.6 percent for nonadjacent rural counties. However, when analyzed by store format, the trend holds only for large-format stores, which are 14.9 percent more likely to be independent in rural counties adjacent to urban counties than in urban counties; the remaining results by store format are not statistically significant. In fact, for small-format stores, the only statistically significant results are for median income and land area. Counties that are 1,000 square miles larger are 12.9 and 5.9 percent more likely to be independent for small-format and large-format stores, respectively. Therefore, across counties, a larger county has more independent stores than chain stores.

The share of sales from independent stores shows some similar patterns to the share of independent stores: they are higher in counties with a smaller population, share of Hispanics and other ethnic groups, and median income. Counties with a higher share of independent sales are also associated with a higher share of Blacks and rural counties. This suggests that the higher share of sales from independent stores in these counties reflects the overall greater number of independent stores. As with the share of independent stores, the share of sales from large-format stores more closely resembles the results for all stores. Among small-format stores, fewer coefficients are statistically significant: population, median income, and land area.

Table 3
County characteristics' association with the share of independent grocery stores and sales (generalized linear model, odds ratio), 2015

	Share of independent stores			Share of sales from independent stores		
	All	Small format	Large format	All	Small format	Large format
Population	-0.11	0.02	-0.22*	-0.85*	-0.60***	-1.01*
Percent Black	0.79***	0.36	0.60*	0.77**	-0.03	0.74*
Percent other racial groups	-0.81**	-0.2	-0.59	-1.51***	-0.6	-1.07*
Percent Hispanic	-0.38	-0.1	-0.51	-1.34***	-0.28	-1.26**
Median income	-16.31***	-7.85**	-16.64***	-25.47***	-12.1***	-26.29***
Rural adjacent to urban	20.68***	-3.56	14.91*	24.73**	9.87	15.03
Rural not adjacent to urban	31.52***	-11.4	11.74	59.68***	2.18	26.24*
Land area in square miles	0.05	12.86**	5.91**	-4.23	10.96**	3.37
Observations (number)	3,108	3,108	3,108	3,108	3,108	3,108
State fixed effects	yes	yes	yes	yes	yes	yes

Note: These results are percentages. To make the results more legible, population and median income are divided by 10,000, and area is divided by 1,000. We combine supermarkets, warehouse stores, and supercenters as “large-format stores” and specialty food, limited-assortment, and superettes as “small-format stores.” TDLinx classifies stores as independent if there are fewer than four outlets in a given year; all other stores are classified as chain stores. *** p<0.01, ** p<0.05, * p<0.1.

Source: USDA, Economic Research Service using data from TDLinx.

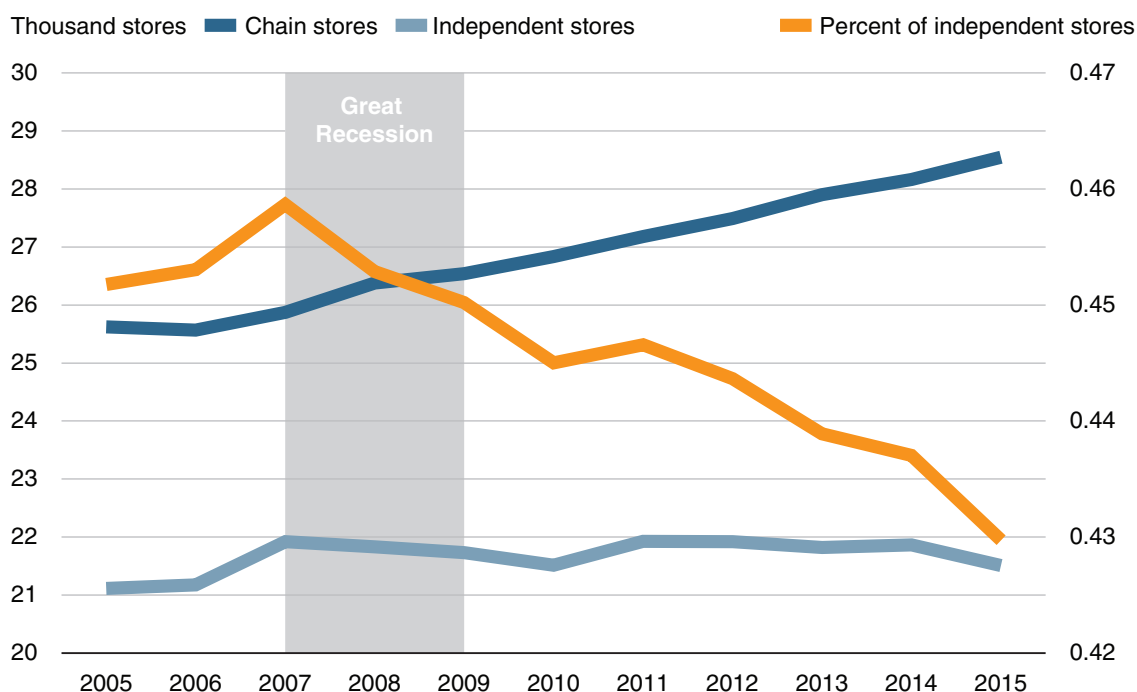
Change Over the Last Decade: 2005 to 2015

The Great Recession (December 2007 to June 2009) was the worst economic downturn in the United States since the Great Depression. In addition, the recovery was lengthy, with employment returning to pre-recession levels in May 2014.¹⁹ Combined with growing concentration in the food retail industry, the economic downturn led to independent grocery stores struggling over the last decade. Market-level concentration in the United States today greatly exceeds national concentration, and many geographic markets are dominated by a small number of food retailers. Rahkovsky and Volpe (2017) show that the average 4-firm concentration ratio across 27 large U.S. metropolitan areas is 63 percent, and the average 8-firm concentration ratio is 84 percent.

From 2005 to 2015, the total number of grocery stores across the 48 contiguous States and the District of Columbia increased by 7 percent (from 47,000 to 51,000), while the population increased by 8.5 percent (from 294 million to 319 million). Over the same period, the share of independent grocery stores declined (fig. 8). Although the number of chain and independent stores began increasing in 2006, chain stores continued to increase rapidly while independent stores stagnated at the onset of the Great Recession. As a result, the share of independent stores fell by about 3 percent from 2007 to 2015. The number of small-format chain stores more than doubled from 2006 to 2015, while the number of small-format independent stores increased by only 6 percent (app. table 1). In addition, large-format chain stores increased by 5 percent while large-format independent stores decreased by 6 percent.

Figure 8

Total number of independent and chain grocery stores in the United States



Note: TDLinx classifies stores as independent if there are fewer than four outlets in a given year; all other stores are classified as chain stores.

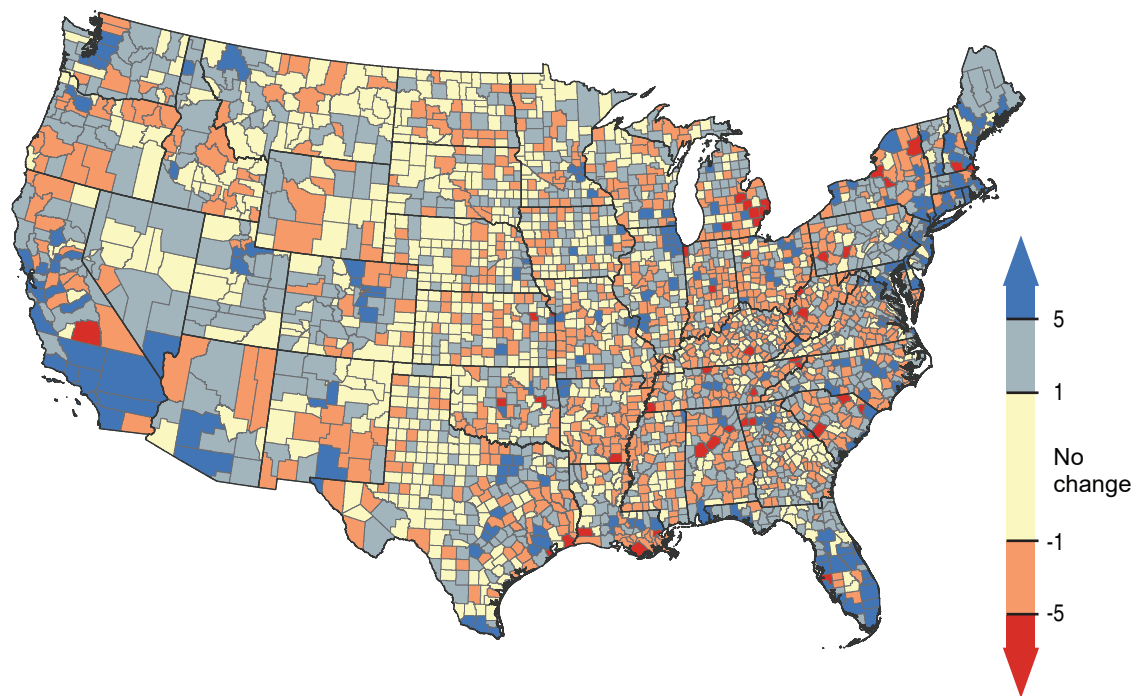
Source: USDA, Economic Research Service using data from Nielsen TDLinx.

¹⁹This is based on total nonfarm employment from the Bureau of Labor Statistics Current Employment Statistics.

Although the total number of food retailers in the United States increased over the last decade, there was significant county-level variation (fig. 9). The total number of food retailers declined in 969 counties (31 percent), among which 30 counties (1 percent of all counties) had a decrease of more than 5 stores. In contrast, food retailers increased in 1,146 counties (37 percent); 211 counties (7 percent) had an increase of more than 5 stores.²⁰ On average, urban counties had an increase in the total number of grocery stores, particularly small-format stores. On average, rural counties had an increase in small-format stores but a decrease in large-format stores.

The number of independent food retailers declined in 1,116 counties (36 percent) and increased in only 915 counties (29 percent), resulting in a decreasing share of independent retailers in most counties (fig. 10). The share of independent grocery stores declined in 1,269 counties (41 percent of all counties) and declined by more than 25 percent in 274 counties (9 percent); it increased in 897 counties (29 percent) and increased by more than 25 percent in 166 counties (5 percent). There was no change in shares among the remaining counties, which are located mostly in the Great Plains region. The decline in the share of independent stores was driven by large-format stores, which decreased on average in both urban and rural counties while small-format independent stores increased. Nevertheless, the decline partly stemmed from the number of chain stores decreasing in only 600 counties (19 percent of all counties).

Figure 9
Changes in number of total grocery stores across the United States, by county, 2005-15

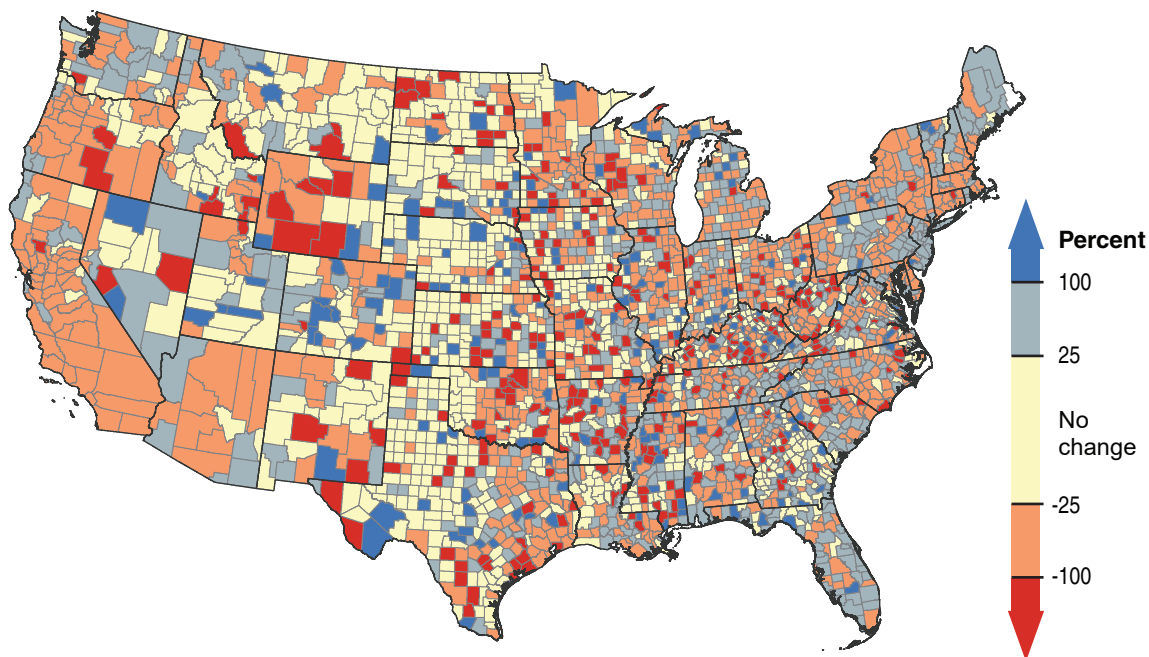


Source: USDA, Economic Research Service using data from Nielsen TDLinX.

²⁰The total number of counties (3,108) includes the 40 counties that never had a grocery store. Without these stores, the percentage of counties that had a decline in food retailers increases to 32 percent, while the percentage increase remains the same at 37 percent.

Figure 10

Changes in share of independent grocery retailers across the United States, by county, 2005-15



Note: TDLinX classifies stores as independent if there are fewer than four outlets in a given year; all other stores are classified as chain stores.

Source: USDA, Economic Research Service using data from Nielsen TDLinX.

Results From Regression Analyses

The number of independent and chain stores increased in counties with population growth, regardless of store format (table 4). Chain stores were more responsive to population growth: if population increased by 1,000 individuals, chain stores increased by 0.07 but independent stores increased by 0.06. Alternatively, if population increased by 100,000, chain stores increased by about 7 while independent stores increased by about 6. Counties with a 10-percentage-point increase in the share of Blacks in the population had an increase of about 5 independent stores (5.3) but a decrease of about 1 chain store (1.1). Most of these changes were driven by changes in small-format stores; the magnitude of changes for large-format stores were small and statistically insignificant. Conversely, in counties where the share of other racial groups increased by 10 percentage points, large-format independent stores decreased in number by 0.5 while small-format chain stores increased by 1.1. Considering the large increase of small-format chain stores throughout the decade, this could be an indication that small-format chain stores were replacing large-format independent stores. The results corresponding with changes in the share of Hispanics in the population were statistically insignificant for all store types.

Compared to urban counties, rural counties were more likely to have an increase of independent stores over the decade and less likely to have an increase of chain stores, which indicates the continued importance of independent grocery stores in rural communities. The results are statistically significant across all store types except large-format chain stores, although the overall relationship remains the same (i.e., the magnitude for rural counties remains negative). Small-format chain

stores increased slightly in counties where median income decreased; the results were not statistically significant for the remaining store types.

Although examining changes in the number of retailers provides insight on where stores entered from 2005 to 2015, it does not take into account the initial number of stores in the county. For example, a store entering a county with only 1 store would be considered the same as entering a county with 100 stores, although the effect on the county would be vastly different. Thus, we also examine the annual percent change in the number of retailers.

The results for the percent change in retailers resemble those for changes in the number of stores: both independent and chain grocery stores increased in counties with increasing populations, independent stores increased in counties with an increasing share of Blacks, and chain stores were less likely to increase in rural counties (table 5). As counties increased in population by 1,000, small-format chain stores increased by 0.40 percent. In contrast, small-format and large-format independent stores increased by about 0.14 and 0.11 percent, respectively, and large-format chain stores increased by 0.07 percent. In addition, every percentage-point increase of Blacks and Hispanics was associated with 1.44- and 1.50-percent increases of small-format independent stores. In contrast, a 1-percent increase among other racial groups was associated with a 1.30-percent decrease in large-format chain stores.

Most of the results were not statistically significant for changes in the share of independent stores from 2005 to 2015 (table 6). Every percentage-point increase in the share of Blacks was associated with a 0.5-percentage-point increase in the share of independent stores. Compared to urban areas, remote rural areas had growing shares of independent stores, particularly among small-format independent stores. Counties with an increasing share of Hispanics had a 0.4-percentage-point decline in the share of large-format independent stores. Population and median income had no discernible effect on these changes.

Table 4

County characteristics' association with changes in the number of independent and chain grocery stores (pooled ordinary least squares model), 2005-15

	Δ in independent stores			Δ in chain stores		
	All	Small format	Large format	All	Small format	Large format
Δ in population	0.055*** (0.002)	0.040*** (0.002)	0.016*** (0.001)	0.074*** (0.001)	0.048*** (0.001)	0.026*** (0.001)
Δ in % Black	0.527*** (0.041)	0.512*** (0.037)	0.015 (0.018)	-0.114*** (0.027)	-0.086*** (0.015)	-0.028 (0.023)
Δ in % other racial groups	-0.071 (0.054)	-0.020 (0.049)	-0.052** (0.023)	0.061* (0.036)	0.106*** (0.020)	-0.045 (0.030)
Δ in % Hispanic	-0.024 (0.031)	-0.012 (0.028)	-0.012 (0.013)	0.005 (0.020)	0.002 (0.011)	0.003 (0.017)
Δ in median income	-0.005 (0.004)	-0.003 (0.004)	-0.002 (0.002)	-0.005* (0.003)	-0.003** (0.001)	-0.002 (0.002)
Rural adjacent to urban	0.089*** (0.022)	0.058*** (0.019)	0.031*** (0.009)	-0.067*** (0.014)	-0.050*** (0.008)	-0.018 (0.012)
Rural not adjacent to urban	0.121*** (0.024)	0.071*** (0.022)	0.051*** (0.010)	-0.070*** (0.016)	-0.048*** (0.009)	-0.022 (0.014)
Land area in square miles	-0.024** (0.009)	-0.014 (0.009)	-0.011*** (0.004)	0.009 (0.006)	-0.003 (0.003)	0.012** (0.005)
Constant	-0.046 (0.066)	-0.021 (0.059)	-0.025 (0.028)	-0.130*** (0.044)	0.017 (0.024)	-0.146*** (0.037)
Observations (number)	31,088	31,088	31,088	31,088	31,088	31,088
State fixed effects	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes

Note: Standard error in parentheses. To make the results legible, population, median income, and area are in thousands. We combine supermarkets, warehouse stores, and supercenters as "large-format stores" and specialty food, limited-assortment, and superettes as "small-format stores." TDLinx classifies stores as independent if there are fewer than four outlets in a given year; all other stores are classified as chain stores.

*** p<0.01, ** p<0.05, * p<0.1.

Source: USDA, Economic Research Service using data from TDLinx.

Table 5

County characteristics' association with the percent change in number of independent and chain grocery stores (pooled ordinary least squares model), 2005-15

	Δ in independent stores			Δ in chain stores		
	All	Small format	Large format	All	Small format	Large format
Δ in population	0.089** (0.037)	0.137*** (0.039)	0.108*** (0.030)	0.086*** (0.020)	0.389*** (0.024)	0.066*** (0.020)
Δ in % Black	-0.116 (0.695)	1.435* (0.739)	0.099 (0.571)	0.151 (0.387)	-0.022 (0.461)	-0.164 (0.386)
Δ in % other racial groups	0.191 (0.909)	-0.401 (0.966)	0.063 (0.747)	-1.364*** (0.506)	0.966 (0.603)	-1.296** (0.505)
Δ in % Hispanic	0.549 (0.513)	1.501*** (0.546)	-0.193 (0.422)	-0.027 (0.286)	0.471 (0.341)	-0.146 (0.285)
Δ in median income	-0.013 (0.066)	-0.040 (0.070)	0.020 (0.054)	-0.016 (0.037)	-0.044 (0.044)	0.017 (0.037)
Rural adjacent to urban	-0.589 (0.361)	-0.709* (0.384)	-0.560* (0.297)	-0.497** (0.201)	-2.462*** (0.240)	-0.242 (0.201)
Rural not adjacent to urban	-0.196 (0.403)	-0.524 (0.428)	-0.140 (0.331)	-0.988*** (0.224)	-2.562*** (0.268)	-0.643*** (0.224)
Land area in square miles	0.119 (0.159)	-0.004 (0.169)	0.130 (0.131)	-0.026 (0.088)	-0.093 (0.105)	0.001 (0.088)
Constant	2.126* (1.107)	-1.205 (1.177)	-0.780 (0.910)	0.352 (0.616)	1.099 (0.735)	0.097 (0.616)
Observations (number)	31,088	31,088	31,088	31,088	31,088	31,088
State fixed effects	yes	yes	yes	yes	yes	Yes
Year fixed effects	yes	yes	yes	yes	yes	Yes

Note: Standard error in parentheses. To make the results legible, population, median income, and area are in thousands. We combine supermarkets, warehouse stores, and supercenters as “large-format stores” and specialty food, limited-assortment, and superettes as “small-format stores.” TDLinx classifies stores as independent if there are fewer than four outlets in a given year; all other stores are classified as chain stores.

*** p<0.01, ** p<0.05, * p<0.1.

Source: USDA, Economic Research Service using data from TDLinx.

Table 6

County characteristics' association with the change in share of independent grocery stores (pooled ordinary least squares model), 2005-15

	All	Small format	Large format
Δ in population	-0.002 (0.014)	-0.026 (0.027)	0.005 (0.014)
Δ in % Black	0.476* (0.259)	-0.580 (0.519)	0.222 (0.259)
Δ in % other racial groups	-0.087 (0.339)	-0.972 (0.679)	0.430 (0.339)
Δ in % Hispanic	-0.093 (0.192)	0.533 (0.384)	-0.351* (0.191)
Δ in median income	-0.011 (0.025)	-0.015 (0.049)	0.026 (0.025)
Rural adjacent to urban	0.042 (0.135)	0.174 (0.270)	0.052 (0.135)
Rural not adjacent to urban	0.260* (0.151)	0.803*** (0.301)	-0.002 (0.150)
Land area in square miles	-0.022 (0.059)	0.005 (0.119)	0.0134 (0.059)
Constant	0.337 (0.413)	0.217 (0.827)	-0.190 (0.413)
Observations (number)	31,088	31,088	31,088
State fixed effects	yes	yes	yes
Year fixed effects	yes	yes	yes

Note: Standard error in parentheses. To make the results legible, population, median income, and area are in thousands. We combine supermarkets, warehouse stores, and supercenters as "large-format stores" and specialty food, limited-assortment, and superettes as "small-format stores." TDLinx classifies stores as independent if there are fewer than four outlets in a given year; all other stores are classified as chain stores.

*** p<0.01, ** p<0.05, * p<0.1.

Source: USDA, Economic Research Service using data from TDLinx.

Conclusion

Despite their declining numbers since the onset of the Great Recession, independent grocery stores continue to be a key part of the food retail industry. These stores grew in number over the last decade in counties with a growing population and a growing percentage of Blacks, resulting in a higher share of independent stores in these areas. Independent stores play a vital role in rural communities, particularly those not adjacent to urban counties, or remote rural counties.

Although most chain stores are in the large-format category, small-format chain stores had the greatest growth over the last decade, particularly among specialty food stores. The growth of these stores may stem from growing consumer demand for organic “fresh” food and small-format chain stores specializing in these products (Dunson, 2015). In contrast, small-format independent stores mostly comprise superettes, which may not be as attractive to consumers. Furthermore, small-format chain stores may be able to operate similarly to large-format retailers if the chain is large enough. They may have more bargaining power or their own private label, for example, allowing them to set lower prices and maintain profit margins.

Large-format independent stores declined in number over the last decade, while large-format chain stores continued to grow. In 45 percent of the counties where the number of large-format independent stores declined, the number of chain stores increased. Although large-format chain stores increased in 43 percent of the counties where large-format independent stores declined, this suggests that food access became more limited in over half of the counties. The decline in large-format independent stores began with the Great Recession and peaked between 2014 and 2015, suggesting that this independent grocery store format continues to face difficulties. More research is needed to understand the reason for this decline and its potential effects.

It remains unclear how the food retail industry will be affected if the share of independent stores continues to decline. Market concentration could increase further, particularly if mergers and acquisitions among chain stores continue. Food access may become a greater concern, particularly in remote rural areas. The continued decline of large-format independent retailers may increase food access concerns in areas where population is declining. However, this might not be a problem if small-format chain stores continue to grow—assuming they offer a wider selection and lower prices—and if grocery delivery services expand, particularly through online sites. Although these grocery delivery services currently operate mostly in large cities, technological advancements could make it more feasible to reach a broader area, which could improve access to healthful foods, particularly in remote rural areas. However, growth in this service could also have a negative effect on traditional brick-and-mortar grocery stores.

It will be important for future studies to examine further changes in the food retail industry and how they affect consumers. In addition to overall accessibility, these changes may affect consumers’ overall diet quality through their effect on food prices and product availability. It is unclear if some independent grocery stores have been able to distinguish themselves from chain stores while others have closed from competition from small- or large-format chain stores entering nearby. Overall shopping behavior may also change if grocery delivery services continue to expand, which may force grocery stores to offer more products or specialize in certain areas, particularly among independent stores.

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Appendix

Appendix table 1

Total number of independent and chain grocery stores by format

	Total independent stores		Total chain stores		Share of independent stores	
	Small	Large	Small	Large	Small	Large
	Number		Number		Percent	
2005	13,475	7,638	2,653	22,969	83.55	24.96
2006	13,695	7,484	2,799	22,769	83.03	24.74
2007	14,711	7,212	3,052	22,823	82.82	24.01
2008	14,696	7,138	3,252	23,124	81.88	23.59
2009	14,629	7,105	3,377	23,165	81.25	23.47
2010	14,400	7,115	3,548	23,285	80.23	23.40
2011	14,668	7,261	3,745	23,432	79.66	23.66
2012	14,689	7,232	3,933	23,556	78.88	23.49
2013	14,528	7,295	4,332	23,568	77.03	23.64
2014	14,705	7,158	4,553	23,610	76.36	23.26
2015	14,452	7,058	4,691	23,855	75.49	22.83

Note: We combine supermarkets, warehouse stores, and supercenters as “large-format stores” and specialty food, limited-assortment, and superettes as “small-format stores.” TDLinX classifies stores as independent if there are fewer than four outlets in a given year; all other stores are classified as chain stores.

Source: USDA, Economic Research Service using data from Nielsen TDLinX.