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Where Do WIC Participants Redeem Their Food Benefits? An Analysis of WIC Food Dollar Redemption Patterns by Store Type

Laura Tiehen and Elizabeth Frazão

United States Department of Agriculture

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Abstract

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides participants with a supplemental food package redeemable at authorized food delivery systems, including retail food stores. This report provides the first look at what food delivery systems are authorized by WIC State agencies, including the types of retail food stores where participants redeem their food benefits. In FY 2012 76 percent of WIC retail food benefits were redeemed at large stores (super store, supermarket, or large grocery); this compares to 84 percent for participants of the Supplemental Nutrition Assistance Program (SNAP). Although the structure of WIC benefits may not encourage participants to be price sensitive, the sizeable share of WIC redemptions at large stores may be due to the large share of WIC retail vendors that are large stores (63 percent) and WIC participants' tendency to shop for WIC foods at the same stores where they do their regular shopping. The report also documents wide variation, across States, in the shares of authorized vendors and dollar redemption by store type.

Keywords: WIC; Special Supplemental Nutrition Program for Women, Infants, and Children; WIC stores; WIC redemptions; WIC food delivery systems.

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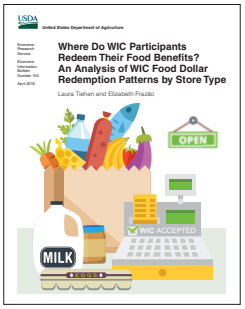
A report summary from the Economic Research Service April 2016



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Where Do WIC Participants Redeem Their Food Benefits? An Analysis of WIC Food Dollar Redemption Patterns by Store Type

Laura Tiehen and Elizabeth Frazão

What Is the Issue?

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides participants with supplemental food packages via one or more food delivery systems, which include retail food stores, direct distribution centers, and home food delivery contractors. Prior to this study, little was known regarding what food delivery systems are used where, the types of retail food stores that are authorized by WIC State agencies, or where participants redeem their food benefits. In particular, because WIC benefits specify amounts of each WIC food regardless of the price charged, participants who purchase their WIC foods at retail stores may have little incentive to shop at large stores with lower prices, which could affect WIC program costs.

The 2009 introduction of a fixed-dollar cash-value voucher (CVV) for the purchase of fruits and vegetables may have increased WIC participants' price sensitivity and the share of WIC retail dollar redemptions at large stores, which tend to have lower prices and a larger selection of fruits and vegetables. This report examines the distribution of WIC store types and dollar redemptions at the national and State level and compares the share of WIC versus SNAP retail dollar redemptions at large retail food stores in FY 2012 as a rough measure of WIC participants' price sensitivity. The report also compares the WIC share of retail dollar redemptions at large retail food stores in FY 2008 and FY 2012 to see whether the CVVs changed WIC participants' price sensitivity.

What Did the Study Find?

Retail food vendors (versus home delivery, direct distribution, or pharmacies that are authorized to redeem only infant formula or medical foods) accounted for 97 percent of all WIC dollar redemptions in FY 2012. Despite the lack of a program incentive to shop for the lowest prices and stretch benefits, 77 percent of WIC retail dollar benefits were redeemed at large stores (super stores, supermarkets, and large grocery stores) with lower food prices. (This compares with 84 percent of SNAP retail dollars.) WIC participants' affinity for large, less costly stores may be influenced by the fact that a majority (63 percent) of WIC vendors are large stores and that participants often redeem their WIC benefits at the same stores where they do their usual shopping.

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.

Between FY 2008 and FY 2012, the share of WIC retail dollar redemptions at large stores declined slightly. However, the share of redemptions at super stores, which tend to be larger and have lower prices than other large stores, grew by 23 percent, and comprised 42 percent of WIC redemptions in FY 2012. While the introduction of cash vouchers may have prompted WIC participants to shop at super stores, it is difficult to disentangle changes in price sensitivity from other factors affecting household shopping behavior, such as overall market trends (toward larger food stores) and the increased share of super stores among WIC-authorized retail stores.

Other findings include:

- WIC State agencies authorized a total of 48,230 unique vendors in FY 2012, including 3,621 nonretail vendors such as direct distribution centers, home food delivery contractors, and pharmacies (which are only authorized to redeem infant formula and WIC-eligible medical foods).
- Ninety-eight percent of WIC retail vendors were also authorized by SNAP, which makes it possible for many WIC recipients to redeem their WIC and SNAP benefits at the same retail outlet.
- Large stores comprised a much larger share of WIC than SNAP retail vendors (63 percent of WIC retail vendors were large stores whereas only 17 percent of SNAP retail vendors were large stores) in FY 2012, which is likely a major factor in the large share of WIC redemptions at large stores.
- The distribution of WIC retail vendors and dollar redemptions across store types differs considerably by State. For example, large stores accounted for as little as 30 percent of WIC retail vendors (Rhode Island) and as many as 98 percent (Nevada). Likewise, large stores captured as little as 50 percent of WIC retail redemptions (California) and as much as 99 percent (Nevada). These differences are likely explained by State differences in urbanization or in WIC State policy and could contribute to State-level differences in WIC food costs.

How Was the Study Conducted?

The study used data collected for The Integrity Profile (TIP) report on dollar redemptions at different types of WIC vendors in FY 2008 and FY 2012. The WIC TIP data classify most stores as “regular retail” but provide no additional information on type (supermarket, large grocery store, or convenience store). Since most WIC-authorized stores are also authorized for SNAP, we merged the WIC TIP data with data from the Store Tracking and Redemption Subsystem (STARS) on SNAP-authorized stores, which then made it possible to use the more detailed STARS categories such as super stores; supermarkets; small, medium, and large grocery stores; and convenience stores; in addition to TIP-specific categories such as WIC-only stores and direct distribution centers.

Where Do WIC Participants Redeem Their Food Benefits? An Analysis of WIC Food Dollar Redemption Patterns by Store Type

Introduction

The WIC program provides participants with food instruments (such as paper vouchers or EBT), which they use at authorized retail food stores to purchase specified quantities of certain foods. Because these food quantities are irrespective of price, WIC participants may have little incentive to shop for the best price. WIC retailers submit the food instruments to WIC authorities and are reimbursed for the retail price (within limits). Therefore, retail prices at the stores where participants redeem their benefits can influence WIC program costs—food accounts for about 70 percent of WIC costs—and potentially limit the number of participants (Oliveira and Frazao, 2015).

According to the National Survey of WIC Participants-II (NSWP-II) (USDA, FNS, 2012b), 85 percent of WIC participants redeemed their food instruments primarily at large retail food stores; similarly, 84 percent of participants reported buying their WIC items at the same store where they do most of their other food shopping. However, while the NSWP-II provides valuable information on the shopping patterns of WIC participants, it does not record the levels of WIC dollar redemptions at various store types.

In comparison, households that participate in the Supplemental Nutrition Assistance Program (SNAP, formerly the Food Stamp Program) receive a fixed dollar amount of benefits, which presumably makes them price sensitive. In FY 2012, 84 percent of SNAP benefits were redeemed at large retail food stores, including super stores, supermarkets, and large grocery stores (USDA, FNS, 2013). No such statistic is available for WIC benefits.

Revisions to the WIC food packages, implemented in 2009, might have changed both participants' incentives to shop at large, lower price stores and the incentives for smaller stores to seek or maintain WIC authorization. WIC revisions introduced a cash-value voucher (CVV) for the purchase of fruits and vegetables. Unlike traditional WIC food instruments, which specify a fixed quantity of food, CVVs are redeemable for a specified dollar amount. The dollar value of the CVVs has increased somewhat since the 2009 revisions, and is $8 for children and $11 for women, as of October 2015. The fixed dollar value aims to make it easier for WIC participants to purchase fresh fruits and vegetables, which are typically sold by weight and exhibit seasonal fluctuations in both availability and price. The fixed value of the CVV encourages WIC participants to redeem their CVVs at stores with lower prices, much as SNAP participants would in order to stretch their benefits.

The 2009 revisions also introduced new foods, such as whole-grain bread, and new substitution options (such as whole wheat tortillas and brown rice for bread) to the WIC package. Because WIC-authorized stores must meet minimum stocking requirements, the larger variety of foods offered in the revised WIC food packages could present a burden for small stores and discourage them from participating in the program.

This is the first study to describe the types and distribution of WIC vendors and food dollar redemptions across all food delivery systems and, in particular, across different retail store types. For example, Mississippi and parts of Chicago use direct distribution centers and, until 2016, Vermont used home delivery for most foods, but no information is publicly available regarding the use of such food delivery systems by other States, the types and distribution of retail food stores that are authorized by WIC State agencies, and, most importantly, where participants actually redeem their food benefits.

Although the price sensitivity of WIC participants is uncertain due to the absence of price data, this study provides a rough measure of price sensitivity by comparing the share of WIC food dollars redeemed at different types of WIC-authorized vendors—in particular, large stores that are known to have lower average prices—to the share of ***SNAP*** dollars redeemed at those types of stores. Comparing the distribution of store types and the patterns of WIC redemptions across store types both before and after the WIC food package revisions—FY 2008 (October 2007 through September 2008) and FY 2012—allows us to examine whether the revisions have steered WIC participants toward greater redemptions at large stores, which likely offer both lower prices and a wider variety of fruit and vegetable choices.

Overview of the WIC Program

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) was created to safeguard the health of low-income women, infants, and children up to age 5 who are at nutritional risk.[1] WIC provides nutritious foods to supplement diets, nutrition education, and referrals to health care and other social services. With Federal expenditures of nearly $6.2 billion in FY 2015, WIC is the third largest food and nutrition assistance program (behind SNAP and the National School Lunch Program), accounting for about 6 percent of total expenditures on domestic food and nutrition assistance programs by the U.S. Department of Agriculture (USDA) (Oliveira, 2015). The program serves slightly more than half of all infants born in the United States, and about a quarter of all children ages 1-4.

Administered by USDA's Food and Nutrition Service (FNS), WIC provides grants for supplemental foods, nutrition services, and administration to 90 WIC State agencies, including all 50 States, the District of Columbia, 34 Indian Tribal Organizations (ITOs), and 5 territories (Guam, the U.S. Virgin Islands, American Samoa, the Commonwealth of Puerto Rico, and the Commonwealth of the Northern Mariana Islands).

WIC applicants must be categorically eligible (e.g., be a pregnant, postpartum, or breastfeeding woman; an infant; or a child ages 1-4); live in the State in which they apply for benefits; have household income at or below 185 percent of the Federal poverty line (although families enrolled in Medicaid, TANF (Temporary Assistance for Needy Families), SNAP, SSI (Supplemental Security Income), or the free/reduced-price school lunch program automatically meet the income eligibility criteria); and be at nutritional risk.

Food benefits and food delivery systems

The WIC program provides food benefits to its participants through seven types of food packages, based on participant category. Federal regulations define specific WIC foods and the maximum quantities included in each food package (7 CFR 246.10). The food packages are intended to be supplemental, which means that they include foods that are determined to be high in nutrients that are beneficial for, but lacking in the diets of, the intended participants.[2] The food packages vary by participant category, and can include iron-fortified infant formula; iron-fortified infant and adult cereal; vitamin C-rich fruit juice and/or vegetable juice; eggs; milk; cheese; peanut butter and/or dried beans or peas; and canned fish.[3]

The 2007 interim rule expanded the list of WIC foods to include whole-wheat bread (and, at State agency option, substitutes such as brown rice and/or whole-wheat or corn tortillas), a greater variety of canned fish; baby food, fruits, vegetables, and meats; and a cash-value voucher for the purchase of fruits and vegetables (USDA, FNS, 2007). These changes were implemented in 2009. In 2014, a

[1]Most of the information for this section comes from Oliveira and Frazão (2015).

[2]A 2006 report by the Institute of Medicine Committee to Review the WIC Food Packages provides a detailed description of the evolution of the definition of supplemental foods in WIC (IOM, 2006).

[3]Some WIC participants may also receive additional benefits through the Farmers' Market Nutrition Program (FMNP) that they can use to purchase fresh unprepared fruits, vegetables, and herbs from authorized farmers, farmers' markets, or roadside stands. However, FMNP benefits are not counted as WIC redemptions and are therefore not included in this study.

final rule increased the dollar amount of the cash-value voucher for children and expanded the food list to include additional substitutes (such as yogurt and whole-wheat pasta) (USDA, FNS, 2014).

WIC State agencies provide participants with their food benefits by using one or more of three types of food delivery systems:

- ***Retail***—participants obtain supplemental food by using a food instrument (such as a paper voucher or an electronic benefit transfer (EBT) card) at authorized retail outlets.
- ***Home delivery***—supplemental food is delivered to the participant's home. Vermont once relied exclusively on home food delivery for distributing WIC supplemental foods; in 2009, the State added the retail food system for redemptions of CVVs for fruits and vegetables, and is expected to switch entirely to the retail food system in 2016. Anecdotal evidence suggests that other State agencies may also use home delivery for special infant formula and medical foods (Oliveira and Frazão, 2015).
- ***Direct distribution***—participants pick up supplemental food from storage facilities operated by the State or local agency. Mississippi uses direct distribution exclusively; direct distribution is also used in parts of Chicago. Anecdotal evidence suggests that other State agencies may use direct distribution for special infant formula and medical foods (Oliveira and Frazão, 2015).

Most WIC participants pick up their food instruments in person at the local agency or clinic and exchange them for the prescribed quantities and types of foods at WIC-authorized retail vendors. There is no out-of-pocket cost to the WIC participant, regardless of what price the store charges for the WIC-allowed food.

WIC State agencies are switching from paper food instruments to electronic benefit transfer (EBT), which allocates WIC food allotments to a participant account that can be accessed electronically during checkout. All WIC State agencies are required to implement EBT statewide by October 1, 2020. As of February 2016, 12 States and 4 ITOs had implemented statewide EBT systems (USDA, FNS, 2016).

WIC vendors

Vendors must be authorized by the WIC State agency in order to accept WIC food instruments. WIC State agencies are not required to authorize all qualified stores that apply for authorization, but they must authorize enough stores within a distribution area to ensure the lowest practicable food prices, consistent with adequate participant access and effective WIC State agency oversight. At a minimum, the State will consider prevailing store prices, the business integrity of the store's owner (including if the owner has been disqualified from SNAP), and the variety and quantity of foods available in the store (USDA, FNS, 2012). Vendors are authorized for a maximum of 3 years, at which time they must reapply.

To ensure that vendors charge competitive prices for WIC foods, WIC State agencies establish a vendor peer group system with distinct competitive price criteria and allowable reimbursement levels (USDA, FNS, 2006). WIC-only stores and other vendors that derive more than 50 percent of their annual food sales revenue from WIC (known as Above-50 percent or A-50 stores) are subject to special regulations whereby their allowable reimbursements are capped at the State average to ensure they are cost-neutral to the program. State agencies that choose to authorize WIC-only and A-50 stores must comply with additional certification requirements and obtain FNS approval (USDA, FNS, 2009).

Data and Methods

The Integrity Profile (TIP) data are collected by FNS from WIC State agencies in order to monitor vendors (to ensure program integrity) and to provide information on vendor characteristics. TIP data provide information on the amount of WIC dollars redeemed at all WIC-authorized vendors in the United States, which are classified as direct distribution centers, home food delivery contractors, or one of five retail store types:

- ***Regular retail*** vendors are retail food stores such as super stores, supermarkets, grocery stores, and convenience stores;
- ***A-50*** vendors are retail food stores that derive more than 50 percent of annual food sales revenue from WIC;
- ***WIC-only*** vendors (a subset of A-50) are stores that derive all or nearly all of their annual food sales revenue from WIC;
- ***Commissaries*** are stores that are operated by the military;
- ***Pharmacies*** are retail stores that are only authorized to provide infant formula or other WIC-eligible medical foods. In recent years, many drug stores have increased their food inventory, and now meet WIC minimum stocking requirements. Drug stores that are certified to provide all WIC-approved foods are considered regular retail vendors for TIP reporting purposes (USDA, FNS, 2008).

We use FY 2012 data, which provide information on dollars redeemed at each WIC vendor between October 1, 2011 and September 30, 2012, to capture redemption patterns after implementation of the revised food package and CVVs; and FY 2008 data (October 1, 2007 to September 30, 2008) to capture redemption patterns before.

Vendors classified as "regular retail" accounted for roughly 90 percent of all WIC vendors and total WIC dollars redeemed in both 2008 and 2012 (table 1).[4] Unfortunately, the TIP data do not distinguish among different types of "regular retail" vendors, which is important here because both prices and variety of foods may differ across store types. In particular, research has shown that larger retail food outlets—such as super stores, supermarkets, and large grocery stores—offer lower prices, on average, than smaller outlets (Andrews et al., 2001; Chung and Myers, 1999; Kaufman et al., 1997; Nayga and Weinberg, 1999; Neckerman et al., 2009; Saitone et al., 2014) and are also more likely to offer a wide array of produce (Ver Ploeg et al., 2009). There is also evidence that supercenters—which are the primary component of the super store category used in this analysis and account for an increasing share of the retail food market—have lower average prices than supermarkets. For example, Leibtag and colleagues (2010) showed that nontraditional retailers (mostly supercenters) have lower prices than traditional retailers (supermarkets, grocery stores, and combination grocery/other retailers). Similarly, Volpe and Lavoie (2008) found lower average prices at Walmart supercenters than at supermarkets in the New England region.

[4]Total dollars redeemed represent the dollar amounts that WIC-authorized stores received in WIC payments; they exceed the program's food cost because they do not account for the rebates the program receives from infant formula and other food manufacturers.

Table 1
Distribution of WIC vendors and WIC food dollar redemptions based on TIP data

TIP vendor classification	Percent of all vendors		Percent of total dollar redemptions	
	FY 2008	FY 2012	FY 2008	FY 2012
Regular retail vendor	90.4	89.5	87.7	87.6
WIC-only store	1.8	1.8	8.2	7.4
A-50 vendor	0.6	0.9	0.8	1.5
Commissary	0.3	0.3	0.3	0.3
Pharmacy	6.9	7.4	1.3	1.4
Direct distribution	0.1	0.1	1.7	1.8
Home food delivery contractor	< 0.1	< 0.1	0.1	0.1

Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; TIP = The Integrity Profile; A-50 = Above-50 percent.

Source: USDA, Economic Research Service analysis of FY 2008 and FY 2012 TIP data.

In order to classify WIC retail vendors into more detailed store types, we merged the TIP data with data from a secondary data source, the SNAP *Store Tracking and Redemption Subsystem (STARS)*, which contains a record for each retailer authorized to accept SNAP benefits and classifies each retail store into more detailed store types (table 2). This allowed us to assign the more detailed STARS store type to approximately 98 percent of WIC vendors classified as "regular retail" in the TIP data. For the remaining six TIP store types we retained the TIP store classification (WIC-only stores, A-50s, commissaries, pharmacies, direct distribution centers, and home food delivery contractors). For additional details on the data, see Appendix A.

The use of STARS store types allows us to differentiate retail types that are expected to charge lower prices (super stores, supermarkets, and large grocery stores) from other retail store types. We aggregate these three largest store types into a category of "large stores."[5] This is consistent with recent research on food access (Ver Ploeg et al., 2009; Dutko et al., 2012).

For each WIC vendor, we have information on the total dollars of WIC food benefits redeemed during the fiscal year and the authorizing WIC State agency, but not on the prices and quantities of WIC foods redeemed at each vendor. Since average prices are lower at larger stores, total dollar amounts for a given quantity of WIC food redemptions are likely lower at larger stores than at smaller stores. Thus, the measure of total WIC dollar redemptions will understate the relative quantities of WIC foods purchased at lower price stores. This should not affect our comparisons with SNAP redemption patterns, which are also based on total redemption dollars.

Also, a WIC vendor can be authorized by more than one WIC State agency and can therefore appear in the TIP data as a separate entry for each authorizing State agency. For example, a vendor located near a State border may be authorized by both State agencies, or a vendor could be authorized by a State as well as one or more Indian Tribal Organizations. Thus, although each vendor is unique to

[5]Although research suggests that prices at super stores are lower than at the two other large store types, we are reluctant to treat super centers as a separate category. There is a potential for inconsistencies in how stores are classified in STARS, particularly given the rapid and widespread changes in the retail food market over the past two decades (Leibtag et al., 2010). Thus, it is possible that one store could be classified as a super store while a similar store could be classified as a supermarket, especially since the STARS definition for a "super store" includes "very large supermarkets."

each State agency, the same vendor can appear more than once when summed across State agencies. In our national analyses, we count each unique vendor only once; however, each vendor is counted as a vendor in each State in which it is authorized. As a result, the sum of State-level vendors is greater than the number of unique vendors at the national level.

Table 2
STARS retail store types

Retail Store types	STARS definition
Super stores	Very large supermarkets, "big box" stores, super stores and food warehouses primarily engaged in the retail sale of a wide variety of grocery and other store merchandise. Includes stores that are large food/drug combo stores and mass merchandisers under a single roof, and membership retail/wholesale hybrids offering a limited variety of products in a warehouse-type environment.
Supermarkets	Establishments commonly known as supermarkets, food stores, grocery stores, and food warehouses primarily engaged in the retail sale of an extensive variety of grocery and other store merchandise. This store typically has 10 or more checkout lanes with registers, bar code scanners, and conveyor belts.
Large grocery stores	A store that carries a ***wide*** selection of all four staple food categories.[1] They may sell ineligible items as well, but their primary stock is food items.
Medium grocery stores	A store that carries a ***moderate*** selection of all four staple food categories.[1] They may sell ineligible items as well, but their primary stock is food items.
Small grocery stores	A store that carries a ***small*** selection of all four staple food categories.[1] They may sell ineligible items as well, but their primary stock is food items.
Convenience stores	Self-service stores that offer a limited line of convenience items and are typically open long hours to provide easy access for customers. Primarily engaged in retail sale of a variety of canned goods, dairy products, pre-packaged meats, and other grocery items in limited amounts. Usually sell a large variety of ineligible products such as hot coffee, alcohol, or tobacco products.
Combination grocery/other stores	Primary business is sale of general merchandise but also sell a variety of food products. Such stores include independent drug stores, dollar stores, and general stores.
Other retail stores	Includes specialty food stores (such as bakeries and bread stores, fruit and vegetable markets, meat and poultry markets, and seafood markets), direct marketing farmers, delivery routes, farmers' markets, nonprofit food buying cooperatives, and wholesalers.

[1]Bread/grains, dairy, fruits and vegetables, and meat/poultry/fish.
Note: STARS = Store Tracking and Redemption Subsystem.
Source: USDA, Food and Nutrition Service.

Findings

WIC State agencies authorized 48,230 unique vendors in FY 2012. Retail food stores—including WIC-only and A-50 stores, plus commissaries—accounted for 92.5 percent of all WIC vendors and 96.7 percent of WIC dollar redemptions (table 3). Pharmacies, which are not considered a retail vendor in this study since they are only authorized to redeem WIC infant formula and WIC-eligible medical foods, accounted for an additional 7.4 percent of all WIC vendors and 1.4 percent of dollar redemptions.[6] Direct distribution centers and home food delivery contractors together accounted for 0.1 percent of all WIC vendors and less than 2 percent of WIC dollar redemptions. Nearly 98 percent of all retail vendors were also SNAP-authorized, as were 79 percent of pharmacies.

Table 3
Number and share of retail and non-retail WIC-authorized vendors, FY 2012

Store category	Number of WIC vendors	% of all WIC vendors	% SNAP-authorized	% of all WIC redemptions
All retail vendors[1]	44,609	92.5	97.5	96.7
Non-retail vendors	3,621	7.5	78.0	3.3
› Pharmacies	3,566	7.4	79.1	1.4
› Direct distribution centers	38	0.1	0	1.8
› Home food delivery contractors	17	0.0	5.9	0.1
Total WIC vendors	**48,230**	**100**	**96.0**	**100**

[1]For this study, WIC retail vendors exclude pharmacies, direct distribution centers, and home food delivery contractors.
Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; SNAP = Supplemental Nutrition Assistance Program; STARS = Store Tracking and Redemption Subsystem; TIP = The Integrity Profile.
Source: USDA, Economic Research Service analysis of TIP and STARS data.

WIC retail vendors

In FY 2012, supermarkets were the most common retail store type, accounting for nearly a third of all WIC retail vendors (table 4). Super stores were the next most common store type (27 percent), followed by convenience stores (13 percent). Medium and small grocery stores each accounted for 6-7 percent of all retail stores, and combination grocery/other and large grocery stores accounted for approximately 4 percent each. WIC-only stores accounted for less than 2 percent of all WIC vendors in FY 2012, and A-50 stores for 1 percent. Commissaries and other retail (such as specialty stores and farmers' markets) accounted for less than 1 percent of all retail stores accepting WIC. Slightly more than 2 percent of retail stores could not be classified into a particular store type and are labeled as "missing retail."[7]

Except for WIC-only stores, A-50 stores, and commissaries, all other retail stores were assigned a store type based on their classification in the SNAP STARS data. Therefore, by definition, these

[6]For TIP reporting purposes, drug stores that sell WIC foods are considered "regular retail." However, Illinois classified drug stores authorized to sell WIC foods as pharmacies. Our primary research findings are not affected by the inclusion of Illinois data.

[7]Because we do not know how many of the vendors with missing retail classification may be super stores, supermarkets, large/medium/small grocery stores, convenience stores, combination grocery, or other retail, the shares for some of those store types may be underestimated.

stores are all SNAP-authorized. More than a third of WIC-only stores were also SNAP-authorized in FY 2012, as were nearly four out of five A-50 stores and all the commissaries (table 4). Over half of stores classified as "missing retail" were SNAP-authorized, although their store type was missing in the STARS data.

Although WIC-only stores accounted for just 7.7 percent of food dollars redeemed at retail, this represents more than four times their share of WIC retail vendors. Super stores and A-50 stores also accounted for a larger share of WIC retail dollar redemptions than their share of WIC retail vendors, whereas supermarkets' share of retail dollar redemptions was the same as their share of WIC retail vendors (32 percent). For the remaining store types, their share of WIC dollar redemptions was smaller than their share of vendors. The difference was particularly notable for convenience stores, which accounted for 13 percent of all retail vendors but less than 4 percent of retail dollar redemptions in FY 2012.

Table 4
Number and share of WIC retail vendors by store type, FY 2012

Store type	Number of WIC retail vendors	% of WIC retail vendors	% SNAP-authorized[1]	% of WIC retail redemptions
Super stores	12,068	27.1	100	41.5
Supermarkets	14,436	32.4	100	32.4
Large grocery stores	1,730	3.9	100	1.9
Medium grocery stores	3,156	7.1	100	3.5
Small grocery stores	2,822	6.3	100	2.9
WIC-only stores	858	1.9	35.9	7.7
A-50 stores	452	1.0	78.5	1.5
Convenience stores	5,939	13.3	100	3.8
Combination grocery/other	1,882	4.2	100	2.9
Other retail[2]	113	0.3	100	0.1
Commissaries	172	0.4	100	0.3
Missing retail[3]	971	2.2	52.4	1.6
Total retail vendors	**44,609**	**100**	**97.5**	**100**

[1]Except for WIC-only/A-50 stores and commissaries, store types for retail WIC vendors were based on their classification in the STARS data. Therefore, by definition, they were all SNAP-authorized.

[2]Other retail includes specialty stores and farmers' markets.

[3]The missing retail category is comprised of WIC vendors that are classified as "regular retail vendor" in the TIP data, but could not be classified via the STARS data, either because they were not SNAP-authorized or because the store type information was missing in the STARS data.

Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; SNAP = Supplemental Nutrition Assistance Program; STARS = Store Tracking and Redemption Subsystem; TIP = The Integrity Profile; A-50 = Above-50 percent.

Source: USDA, Economic Research Service analysis of TIP and STARS data.

Are WIC participants less price sensitive than SNAP participants?

Because WIC participants receive fixed quantities of foods, regardless of the price charged, they may have little incentive to redeem their WIC benefits at less costly stores. SNAP participants, on the other hand, have an incentive to use their SNAP benefits at less costly stores because that allows them to stretch their SNAP benefits. To fully understand the price sensitivity of WIC shoppers would require household-level information on store choice and shopping behavior, along with detailed data on the local retail food environment. However, data on the detailed shopping behavior of WIC participants are limited. Therefore, we estimate a rough measure of the price sensitivity of WIC participants by comparing WIC and SNAP dollar redemption patterns across store types.

An important consideration in comparing WIC and SNAP redemption patterns is the treatment of WIC-only and A-50 stores, since many of these stores are available to WIC participants but not to SNAP participants. Therefore, it may be inappropriate to treat them as separate retail vendor types when comparing the two programs. Given that about half of these stores are SNAP-authorized, we assign the STARS classification to them; WIC-only and A-50 stores that are not SNAP-authorized are grouped with the "missing retail" category. For additional details on how WIC-only and A-50 stores were reclassified, see Appendix B.

Super stores, supermarkets, and large grocery stores accounted for 77 percent of WIC retail food dollar redemptions in FY 2012.[8] This compares with 84 percent for SNAP. Super stores alone accounted for nearly 42 percent of WIC retail dollar redemptions versus 49 percent for SNAP; supermarkets accounted for 33 percent of WIC and 34 percent of SNAP retail dollar redemptions, and large grocery stores accounted for about 2 percent of both WIC and SNAP retail dollar redemptions (fig. 1). The finding that WIC participants redeem a smaller share of their benefit dollars at large stores than SNAP participants supports the hypothesis that WIC participants are less price sensitive than SNAP participants. However, the 77 percent of WIC's dollar redemption share at large stores also suggests that WIC participants may be more price sensitive than would be expected given the structure of WIC benefits.

Recall that 85 percent of WIC participants report doing their primary WIC shopping at the same store where they do their usual shopping (USDA, FNS, 2012b). While WIC participants might not have an incentive to get the lowest price for their WIC food benefits, they are likely to seek out less costly stores for their usual shopping. For example, 52 percent of WIC households reported using a supercenter as their primary store and 39 percent reported using supermarkets as their primary store (Ver Ploeg et al., 2015). This joint shopping pattern—where WIC benefits are redeemed along with usual shopping—may help explain the sizeable share of WIC dollar redemptions at large stores.

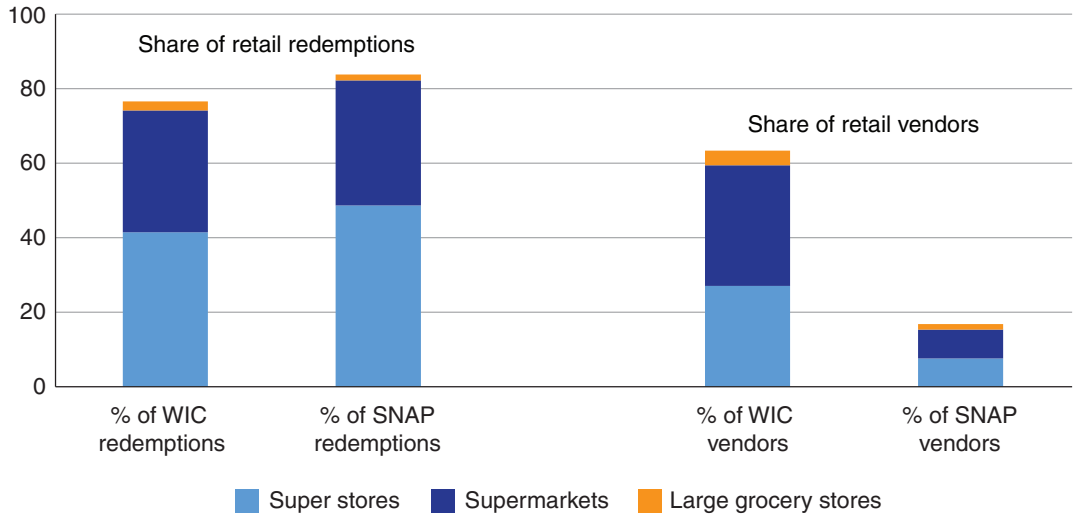
WIC and SNAP differ considerably in the distribution of store types. Although WIC is a much smaller program than SNAP and authorizes far fewer stores overall, large stores accounted for 63 percent of WIC retail vendors, nearly four times their 17-percent share of SNAP vendors (fig. 1, table 5).[9] Conversely, convenience stores accounted for 14 percent of WIC retail vendors,

[8]These numbers differ slightly from numbers in table 4 because SNAP-authorized WIC-only and A-50 stores are included with the other store types. We also conducted a sensitivity analysis, whereby we removed WIC-only and A-50 stores that were not SNAP-authorized from the analysis sample. This increased the share of WIC dollar redemptions at large stores to 80 percent.

[9]Since 3.7 percent of all WIC retail vendors and 5.6 percent of WIC dollar redemptions could not be assigned to a particular STARS store type, the WIC shares listed in table 5 underestimate the true shares of some store types.

Figure 1

Large stores: share of WIC and SNAP retail redemptions and vendors, FY 2012



Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; SNAP = Supplemental Nutrition Assistance Program; TIP = The Integrity Profile; STARS = Store Tracking and Redemption Subsystem.
Source: USDA, Economic Research Service analysis of TIP and STARS data.

Table 5

Comparisons between WIC and SNAP retail vendors and dollar redemptions, FY 2012[1]

Store type	Number of retail vendors		% of retail vendors		% of retail redemptions	
	WIC	SNAP	WIC	SNAP	WIC	SNAP
Large Stores	*28,273*	*40,744*	*63.4*	*16.8*	*76.5*	*83.8*
Super stores	12,068	18,386	27.1	7.6	41.5	48.7
Supermarkets	14,448	18,792	32.4	7.8	32.7	33.6
Large grocery stores	1,757	3,566	3.9	1.5	2.4	1.6
Other stores						
Medium grocery stores	3,317	11,394	7.4	4.7	5.0	2.1
Small grocery stores	2,959	16,729	6.6	6.9	3.3	1.7
Convenience stores	6,108	96,769	13.7	39.9	4.1	5.0
Combination grocery/other	2,019	59,613	4.5	24.6	5.1	5.5
Other retail[2]	119	16,887	0.3	7.0	0.1	1.8
Commissaries	172	189	0.4	0.1	0.3	0.1
Missing retail[3]	1,642	n/a	3.7	n/a	5.6	n/a
Total retail vendors	**44,609**	**242,325**	**100**	**100**	**100**	**100**

[1]For this comparison, WIC-only and A-50 stores are reclassified using the STARS definitions and incorporated into the relevant store type, including "missing retail." Thus, the WIC shares listed here may differ slightly from the WIC shares listed in other tables.

[2]Other retail includes specialty stores and farmers' markets.

[3]The missing retail category is comprised of WIC vendors that are classified as "regular retail vendor" in the TIP data, but could not be classified via the STARS data, either because they were not SNAP-authorized or because the store type information was missing in the STARS data.

Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; SNAP = Supplemental Nutrition Assistance Program; TIP = The Integrity Profile; STARS = Store Tracking and Redemption Subsystem; A-50 = Above-50 percent.

Source: USDA, Economic Research Service. SNAP data come from USDA, Food and Nutrition Service SNAP Retailer Policy and Management Division 2012 Annual Report; WIC data come from ERS analysis of TIP and STARS data.

about one-third their 40-percent share of SNAP vendors, yet convenience stores accounted for similar shares of WIC dollar redemptions (4.1 percent) as SNAP (5.0 percent).[10] This suggests that WIC participants—in shopping comparatively more at costly convenience stores—exhibit less price sensitivity than SNAP participants, although the share of retail dollar redemptions at convenience stores is low in both programs. Combination grocery/other stores and "other retail" vendors such as specialty food stores and farmers' markets also accounted for smaller shares of WIC than SNAP retail vendors and very small shares of retail dollar redemptions in either program. Overall, dollar redemption patterns are surprisingly similar across WIC and SNAP despite considerable differences in the distribution of store types.

It is perhaps not surprising that large stores account for a much larger share of WIC vendors than of SNAP vendors, given that WIC State agencies consider store prices when deciding whether to authorize a specific store (although they also authorize stores with higher prices in order to increase participant access). WIC's specific food stocking requirements and maximum allowable reimbursement levels may make it more difficult for some of the smaller vendors such as convenience stores to establish or maintain their WIC authorization. Regardless, the large share of WIC vendors that are large stores may make it easier for WIC participants to shop at these stores.

Considering that large stores account for 63 percent of all WIC retail vendors and only 17 percent of SNAP retail vendors, what does the similar share of program benefits spent (77 percent for WIC, 84 percent for SNAP) indicate about the price sensitivity of WIC participants? The answer is complicated by the fact that the two programs differ not only in the number and distribution of vendors they authorize, but also in total dollar benefits. For example, in FY 2012, SNAP authorized more than 5 times the number of retail vendors as WIC, and SNAP total retail dollar redemptions were about 12 times those of WIC. Despite these large differences, both programs authorized a similar 5 stores per 1,000 participants, or approximately 200 participants per store (table 6).

Table 6
WIC and SNAP program characteristics, FY 2012

Program characteristics	WIC	SNAP
Average number of participants per month	8.9 million	46.6 million
Average monthly food benefit per person	$45.00	$133.41
Number of retail vendors	44,609	242,325
Food benefit dollars redeemed at retail stores[1]	$6.0 billion	$74.4 billion
Number of stores per 1,000 participants	5.0	5.2
Average number of participants per store	200	192
Average annual food dollars redeemed per store	$133,390	$306,965

[1]Food dollars redeemed at retail exceed total food costs for WIC since they do not account for the rebates the WIC program receives from manufacturers of infant formula and other foods.

Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; TIP = The Integrity Profile; SNAP = Supplemental Nutrition Assistance Program.

Source: USDA, Economic Research Service, using FNS administrative data; data on SNAP retail vendors and dollar redemptions come from SNAP Retailer Policy and Management Division 2012 Annual Report; WIC data come from ERS analysis of TIP data.

[10]A small percentage of WIC-only/A-50 stores are classified as convenience stores in the STARS data, which accounts for the higher percentage of convenience stores in table 5 (13.7 percent) than in table 4 (13.3 percent).

Program differences in total dollar benefits, as well as the distribution of store types, can affect dollar redemption shares across store types. Therefore, we control for differences between WIC and SNAP by standardizing dollar redemptions on a per-store basis for each program. Across all store types, average annual dollars redeemed per store are twice as high for SNAP as for WIC, $307,000 versus $133,000 (table 7). If WIC participants redeemed their WIC benefits similarly to SNAP participants across store types, average SNAP dollars redeemed per store would be twice as high as WIC across all store types. Ratios larger than 2.3 indicate that SNAP participants redeem more of their benefits at those store types than do WIC participants, whereas ratios under 2.3 indicate the opposite (that SNAP participants redeem fewer of their benefits at those store types than do WIC participants). Among large stores in general, and particularly among super stores and supermarkets, the ratio is nearly 10. That is, super stores and supermarkets redeemed nearly 10 times as much in SNAP as in WIC food dollars per store. Commissaries—which are presumed to charge the lowest prices of all, and which account for a slightly larger share of WIC than SNAP retail vendors—also average more than four times as much in SNAP as in WIC dollar redemptions per store. In contrast, the remaining store types—which tend to be smaller stores and are presumed to charge higher prices than super stores, supermarkets, and large grocery stores—have ratios that are smaller than the overall average of 2.3. This comparison of per-store dollar redemptions across the two programs is further indication that large stores account for such a large share of WIC dollar redemptions because they account for a large share of WIC vendors.

Table 7

Average annual dollar redemptions per store by retail store type, FY 2012[1]

Store type	Annual dollar redemption per store, $1,000		Ratio of SNAP to WIC
	WIC	SNAP	
Large stores	*161*	*1,530*	*9.5*
Super stores	205	1,969	9.6
Supermarkets	135	1,328	9.9
Large grocery stores	81	330	4.1
Other stores			
Medium grocery stores	90	139	1.5
Small grocery stores	66	76	1.1
Convenience stores	40	38	0.9
Combination grocery/other	150	68	0.5
Other retail[2]	46	80	1.8
Commissaries	116	523	4.5
Missing retail[3]	201	n/a	n/a
All retail stores	133	307	2.3

[1]WIC-only and A-50 stores have been incorporated into the other store types.

[2]Other retail includes specialty stores and farmers' markets.

[3] The missing retail category is comprised of WIC vendors that are classified as "regular retail vendor" in the TIP data, but could not be classified via the STARS data, either because they were not SNAP-authorized or because the store type information was missing in the STARS data.

Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; SNAP = Supplemental Nutrition Assistance Program; TIP = The Integrity Profile; STARS = Store Tracking and Redemption Subsystem; A-50 = Above-50 percent.

Source: USDA, Economic Research Service tabulations of data from SNAP Retailer Policy and Management Division 2012 Annual Report and from ERS analysis of TIP and STARS data.

Did the WIC food package revisions affect WIC dollar redemption patterns?

Contrary to our expectation that the introduction of the cash-value vouchers would increase the share of WIC retail dollar redemptions at large stores, their 76-percent share in FY 2012 is a decrease from the 79-percent share in FY 2008 (table 8)[11]. However, this overall decline masks some important changes within the category. The share of WIC retail dollar redemptions at super stores actually increased by 7.8 percentage points, while the share at supermarkets decreased by 11.1 percentage points. The increased share of WIC redemptions at super stores—the store format with the lowest food prices—suggests that WIC participants exhibited greater price sensitivity after the introduction of the CVV. This result should be interpreted with caution, however, since it may simply reflect the general trend toward increased food expenditures at super stores and warehouse clubs, which accounted for 3.4 percent of all food-at-home expenditures in 1997 and 16.2 percent in 2012 (USDA, ERS, 2016). Among WIC retail vendors, both the number of super stores and their share of WIC retail vendors increased between FY 2008 and FY 2012, whereas the numbers and shares of supermarkets and large grocery stores declined. Overall, large stores accounted for a smaller share of WIC retail vendors in FY 2012 (63 percent) compared with FY 2008 (65 percent). The uncertainty in distinguishing super stores from other large stores in the STARS data warrants further caution in interpreting trends.

Table 8

Share of retail vendors and dollar redemptions by store type, FY 2008 and FY 2012

Store category and type	Number of WIC retail vendors		% of WIC retail vendors		% of WIC retail dollar redemptions	
	FY 2008	FY 2012	FY 2008	FY 2012	FY 2008	FY 2012
Large stores	*27,850*	*28,234*	*65.0*	*63.3*	*79.2*	*75.7*
Super stores	10,025	12,068	23.4	27.1	33.7	41.5
Supermarkets	15,919	14,436	37.1	32.4	43.5	32.4
Large grocery stores	1,906	1,730	4.4	3.9	2.0	1.9
Other stores						
Medium grocery stores	2,933	3,156	6.8	7.1	2.9	3.5
Small grocery stores	3,580	2,822	8.4	6.3	2.9	2.9
WIC-only stores	808	868	1.9	1.9	8.4	7.7
A-50 stores	256	452	0.6	1.0	0.8	1.5
Convenience stores	5,079	5,939	11.8	13.3	3.2	3.8
Combination grocery	546	1,882	1.3	4.2	0.6	2.9
Other retail[1]	169	113	0.4	0.3	0.2	0.1
Commissaries	176	172	0.4	0.4	0.3	0.3
Missing retail[2]	1,466	971	3.4	2.2	1.6	1.6
Total WIC retail vendors	42,863	44,609	100	100	100	100

[1]Other retail includes specialty food stores and farmers' markets.

[2]The missing retail category is comprised of WIC vendors that are classified as "regular retail vendor" in the TIP data, but could not be classified via the STARS data, either because they were not SNAP-authorized or because the store type information was missing in the STARS data.

Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; SNAP = Supplemental Nutrition Assistance Program; TIP = The Integrity Profile; STARS = Store Tracking and Redemption Subsystem; A-50 = Above-50 percent.

Source: USDA, Economic Research Service analysis of TIP and STARS data.

[11]For this analysis, we consider WIC-only and A-50 stores as separate retail store types. This affects vendor and redemption shares for the remaining store types, so the numbers presented here differ slightly from those in table 5.

Among other store types, WIC-only stores were the only type to undergo a decline in their share of WIC retail dollar redemptions (even though the number of WIC-only stores increased) from FY 2008 to FY 2012. In contrast, medium grocery stores, A-50 stores, convenience stores, and combination grocery/other stores experienced an increase in their share of WIC retail dollar redemptions, likely the result of large increases in store numbers. Combination grocery/other stores more than tripled in number and share between FY 2008 and FY 2012. Without more detail on the prices charged by combination grocery/other retailers, which may include dollar stores as well as drug stores that sell WIC foods, the implications of this gain are not clear.

For some store types, the increased percentage of WIC vendors that were matched to a store in the STARS data in FY 2012 (as evidenced by fewer stores with missing retail classification) might explain some of the increase in both their numbers and dollar redemptions. For some store types, some of the gain in numbers may also be associated with the WIC food package revisions. For example, Vermont added 144 retail food vendors in FY 2012 when it introduced the retail food distribution system to redeem the cash-value voucher for fruits and vegetables. However, it is not possible to attribute specific patterns—such as the increase in number of super stores and combination grocery/other stores or the decrease in number of supermarkets—to the WIC food package revisions.

The number of small-vendor store types, such as convenience stores, increased between FY 2008 and FY 2012, allaying concerns that the WIC food package revisions might make it difficult for small vendors to meet stocking requirements for the new foods. This finding is consistent with research suggesting that the WIC food package revisions had little impact on the ability of small vendors to remain in the program (Andreyeva et al., 2011; Gleason et al., 2011).[12]

State comparisons: vendor categories

A comparison across 85 State agencies (50 States, the District of Columbia, and 34 ITOs) revealed wide differences in both store types and dollar redemption patterns across them.[13] This is not surprising—Mississippi uses direct distribution centers solely (does not authorize any retail food stores) and Vermont relied solely on home food delivery contractors in FY 2008, introducing the retail food distribution system in 2009 for the redemption of the cash-value vouchers.[14] Since information on some vendor types—such as direct distribution or home food delivery—is scarce, this section describes some State differences in both vendor types and dollar redemption patterns.

In FY 2012, all States except Mississippi and two-thirds of the ITOs authorized super stores and supermarkets (table 9).[15] In addition, all but a handful of States also authorized grocery stores (of all sizes), convenience stores, and combination grocery/other stores; these store types— especially medium and small grocery stores—were less frequently authorized by ITOs. Only six States authorized WIC-only stores in FY 2012, about half as many as in FY 2008; similarly, the number of

[12]Gleason et al. (2011) hypothesize that the decline in the number of very small stores in New Hampshire may be related to the temporary moratorium on new store authorization during the period of our study or to a redesign in food vouchers aimed at encouraging WIC participants to be economical and redeem most of their WIC foods at large stores.

[13]We did not examine WIC vendors in the five U.S. territories.

[14]Vermont is switching entirely to the retail food distribution as it implements EBT statewide in 2016. Mississippi expects to switch to the retail food system when it converts to EBT (Oliveira and Frazão, 2015).

[15]In some cases, WIC State agencies may not authorize some store types because they are not conveniently located.

Table 9

Number of States and Indian Tribal Organizations (ITOs) authorizing specific types of stores in FY 2012

Store type	Number of States (including Washington, DC) that authorize store type	Number of ITOs (of 34) that authorize store type
Super stores	50	26
Supermarkets	50	25
Large grocery stores	49	15
Medium grocery stores	49	7
Small grocery stores	45	5
WIC-only stores	6	0
A-50 stores	12	1
Convenience stores	49	17
Combination grocery/other stores	48	14
Other retail[1]	25	0
Commissaries	45	0
Missing retail[2]	47	8
Pharmacies	29	7
Direct distribution centers	7	3
Home food delivery contractors	2	0
No retail vendors (only direct distribution or home food delivery)	1	2

[1]Other retail includes specialty stores and farmers' markets.

[2]The missing retail category is comprised of WIC vendors that are classified as "regular retail vendor" in the TIP data, but could not be classified via the STARS data, either because they were not SNAP-authorized or because the store type information was missing in the STARS data.

Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; SNAP = Supplemental Nutrition Assistance Program; TIP = The Integrity Profile; STARS = Store Tracking and Redemption Subsystem; A-50 = Above-50 percent.

Source: USDA, Economic Research Service analysis of TIP and STARS data.

States that authorized A-50s in FY 2012 was approximately half as many as in FY 2008. Among ITOs, none authorized WIC-only stores in FY 2012, and only one authorized an A-50 store.

Seven States (Mississippi, Delaware, Illinois, Maryland, Pennsylvania, Virginia, and West Virginia) and three ITOs authorized at least one direct distribution center in FY 2012, although only Mississippi and two ITOs authorized direct distribution centers exclusively, with no other retail food stores.[16] In addition to Vermont, Alaska also used home food delivery contractors in FY 2012, but none of the ITOs authorized any home food delivery contractors.[17]

[16]Some direct distribution centers—such as the Special Formula Distribution Center in Pennsylvania—appear to be used mainly for special formula, which is delivered (in Pennsylvania's case) using the U.S. Postal Service rather than a home food delivery contractor.

[17]Alaska did not use a home food delivery contractor in FY 2008, but North Dakota did.

States differ considerably in the number and distribution of stores and dollar redemptions by store type, likely due to different levels of urbanization (which could affect the number of common store types available) and policies regarding WIC-vendor authorization. For State comparisons, we exclude Mississippi, Vermont, and ITOs, and include the District of Columbia.[18] Aggregated retail store types include (1) large stores (which include super stores, supermarkets, and large grocery stores, (2) medium and small grocery stores, (3) WIC-only and A-50 stores, and (4) all other retail stores (including convenience stores, combination grocery/other, other retail, commissaries, and stores with missing retail classification).

In FY 2012, 44,354 WIC retail vendors were authorized by the 49 States.[19] Large stores accounted for an average of 64 percent of all WIC retail vendors in FY 2012, ranging from 30 percent in Rhode Island to 98 percent in Nevada; they accounted for at least half of all WIC retail vendors in all but 8 States, and for at least 80 percent of all retail vendors in 14 States (fig. 2).[20] (See Appendix Table C1 for State-level data on the percentage of WIC vendors of each store type represented in figures 2 and 3.) Most large stores authorized were super stores and supermarkets, with considerable differences across States in the prevalence of those two store types. In some States, such as Illinois and Indiana, super stores and supermarkets were similarly prevalent; in other States such as Colorado and Missouri, super stores were more prevalent than supermarkets, while in States like Florida and Georgia the reverse was true. Large grocery stores typically comprised only a small proportion of the large stores authorized by WIC, but in a few States such as Nebraska, North Dakota, and South Dakota, they accounted for a larger share of vendors than did supermarkets.

"All other retail" (mostly convenience and/or combination grocery/other stores) accounted for the next largest average share (20 percent) of WIC retail vendors in FY 2012; medium and small grocery stores accounted for 13 percent and WIC-only/A-50s for 3 percent. However, as with large stores, the distribution of these three store categories varied considerably across States (fig. 3). For example, among the States authorizing such stores, the share of WIC retail vendors that were medium and small grocery stores ranged from less than 1 percent (Hawaii and Nevada) to 42 percent in New York, while the share of WIC vendors that were "all other retail" ranged from 2 percent in Nevada to 46 percent in Alaska.[21] Among the 15 States that authorized any WIC-only or A-50s in FY 2012, such stores typically accounted for less than 3 percent of WIC retail vendors, except for Texas (6 percent) and California (17 percent).

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[18]We exclude Mississippi because it does not use any retail food stores; we exclude Vermont because retail dollar redemptions accounted for only 7 percent of total dollar redemptions in FY 2012, and we exclude ITOs because of their small size.

[19]The total number of WIC retail vendors at the State level is larger than at the national level because some stores are authorized by more than one WIC State agency. Note that this number is an underestimate because Illinois classified drug stores selling the full WIC food basket as "pharmacies" in the FY 2012 TIP data and we do not include WIC pharmacies in this analysis (Sheffey, 2015).

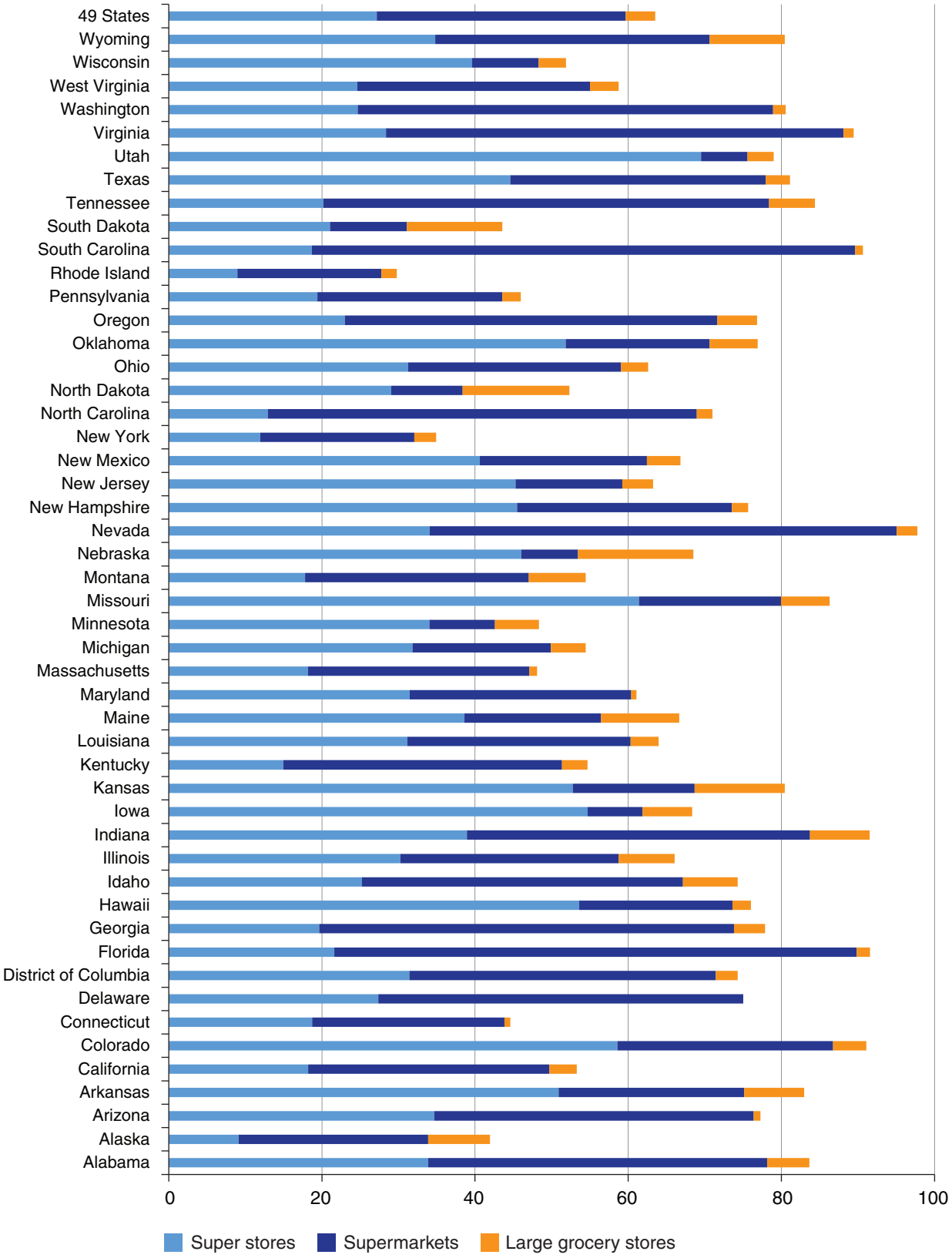
[20]Large stores accounted for 59 percent of WIC retail vendors in Vermont in FY 2012.

[21]Among the 49 States, 1 did not authorize any medium or small grocery stores and 34 did not authorize any WIC-only or A-50s in FY 2012.

Figure 2

Large stores: share of WIC retail vendors by State, FY 2012

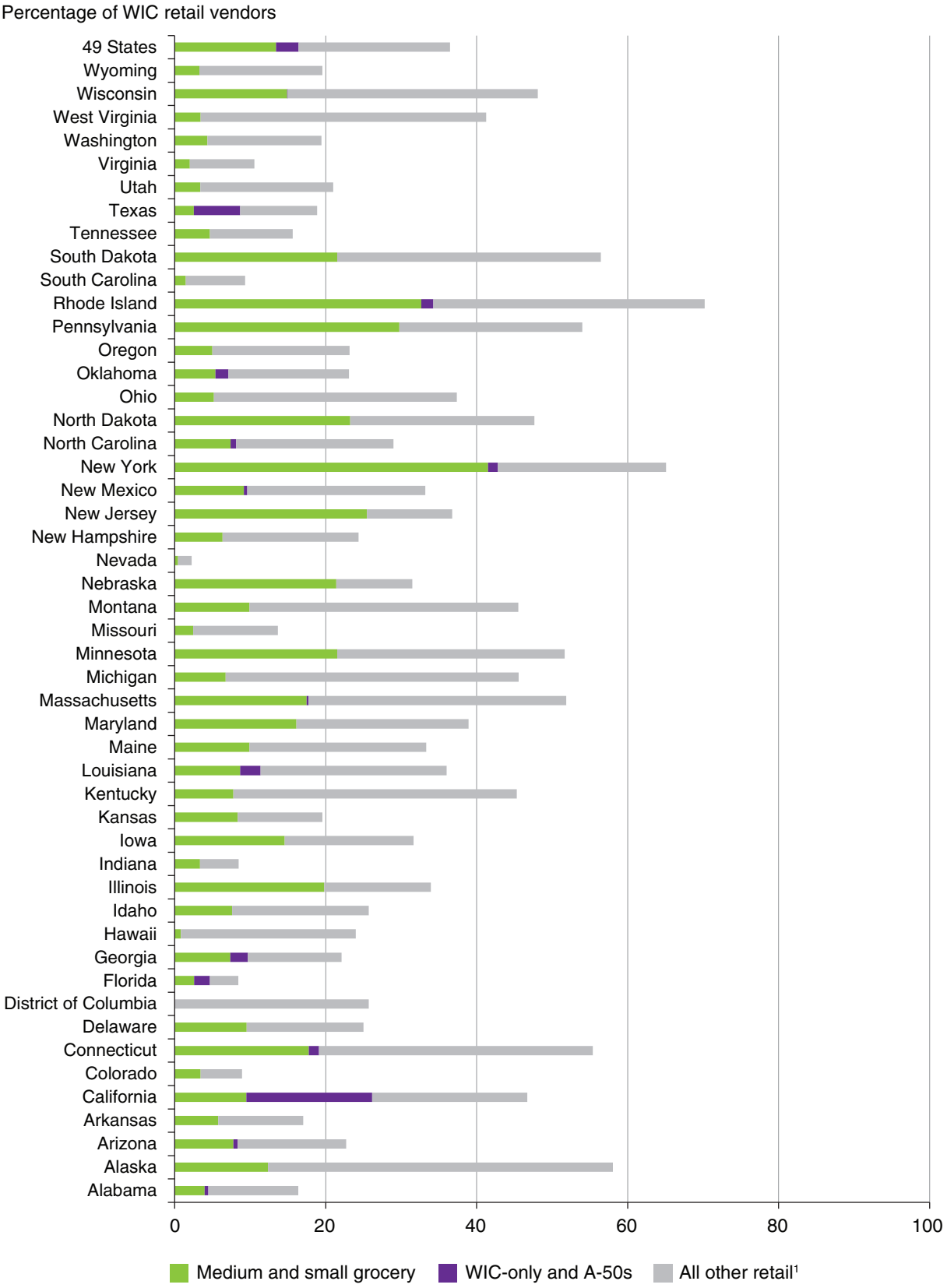
Percentage of WIC retail vendors



Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; TIP = The Integrity Profile; STARS = Store Tracking and Redemption Subsystem.
Source: USDA, Economic Research Service analysis of TIP and STARS data.

Figure 3

Non-large stores: share of WIC retail vendors by State, FY 2012



[1]All other retail includes convenience stores, combination grocery/other stores, commissaries, specialty stores and farmers' markets.
Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; TIP = The Integrity Profile; STARS = Store Tracking and Redemption Subsystem.
Source: USDA, Economic Research Service analysis of TIP and STARS data.

State comparisons: dollar redemption patterns

In FY 2012, WIC retail stores in the 49 States redeemed a total of $5.9 billion in WIC food dollars. WIC retail dollar redemption shares at large stores averaged 76 percent, ranging from 50 percent in California to 99 percent in Nevada (fig. 4). Large stores accounted for 90 (95) percent or more of WIC retail dollar redemptions in 18 (5) States. (See appendix table C2 for State-level data on the percentage of WIC vendors of each store type represented in figures 4 and 5.)

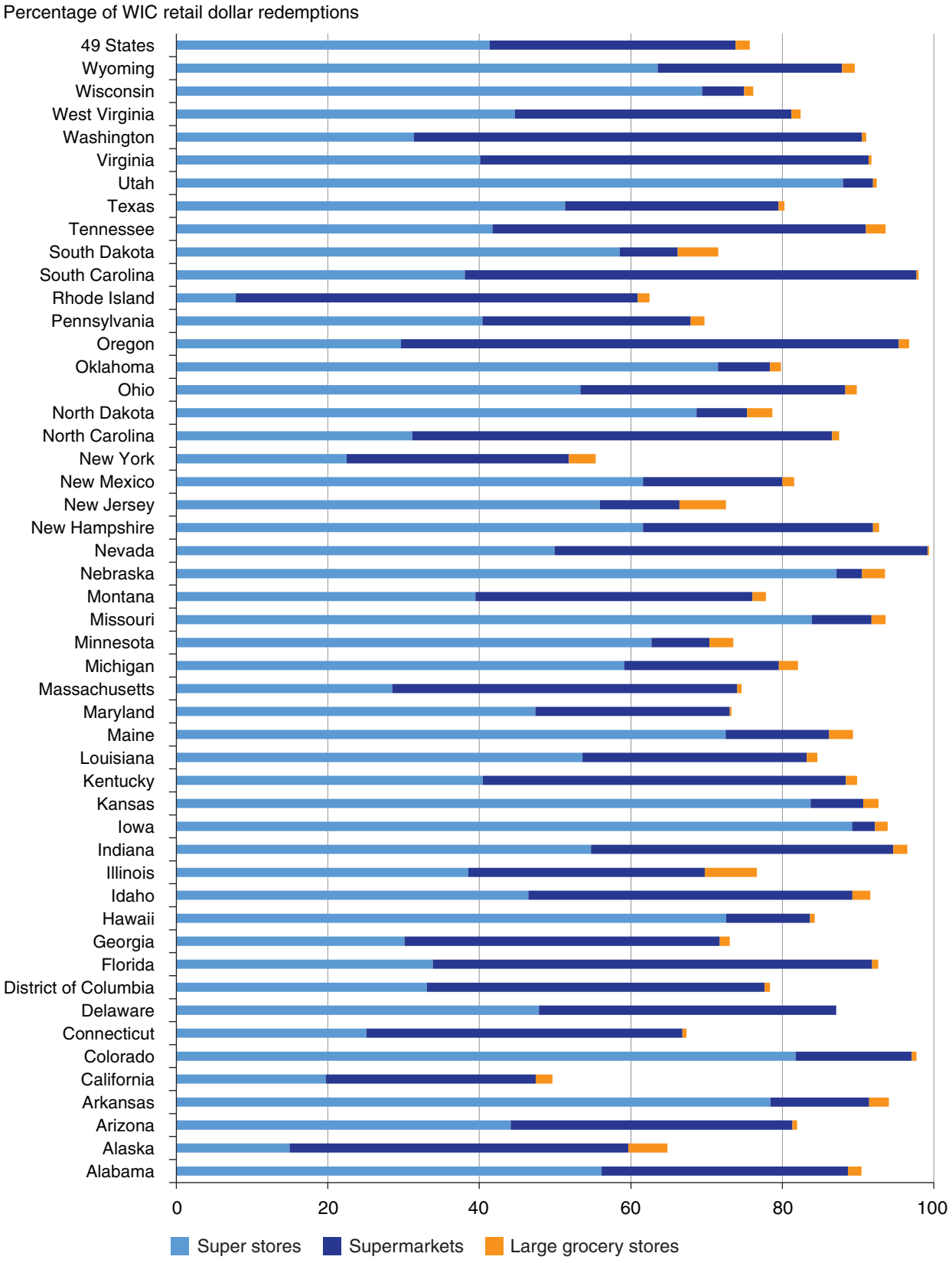
Retail dollar redemptions at large stores were dominated by super stores and supermarkets, with only minor contributions from large grocery stores (table 8), but the relative contributions of super stores and supermarkets differed across States. In Iowa and Kansas, WIC dollar redemptions at super stores were more than 10 times those at supermarkets; in Alaska, dollar redemptions at super stores were about one-third those at supermarkets, while in Nevada both vendor types accounted for similar shares of dollar redemptions.

In some States, the other three store categories accounted for considerable shares of dollar redemptions (fig. 5). For example, medium and small grocery stores accounted for 30 percent of retail dollar redemptions in New York; WIC-only and A-50s (mostly WIC-only stores) accounted for 37 percent of retail dollar redemptions in California, and "all other retail" accounted for 30 percent of retail dollar redemptions in Alaska (half of which came from combination grocery/other stores).

The average share of retail dollar redemptions among large stores was more than their 63-percent share of retail WIC vendors. In some States, large stores' share of retail dollar redemptions was considerably larger than their share of retail WIC vendors. In Kentucky, for example, large stores accounted for 90 percent of retail dollar redemptions, 35 percentage points more than their 55-percent share of retail WIC vendors. In some States (such as Virginia, Oklahoma, Nevada, and Florida), large stores' share of retail dollar redemptions was only slightly larger than their share of WIC vendors. In California, Georgia, and Texas, however, large stores accounted for a slightly smaller share of dollar redemptions than their share of retail vendors (fig. 6). Some of these differences may be related to WIC State agency decisions on how many vendors and types of vendors they authorize to serve their WIC populations; they may also be related to whether the WIC State agency has transitioned to EBT (Phillips et al., 2014).

Figure 4

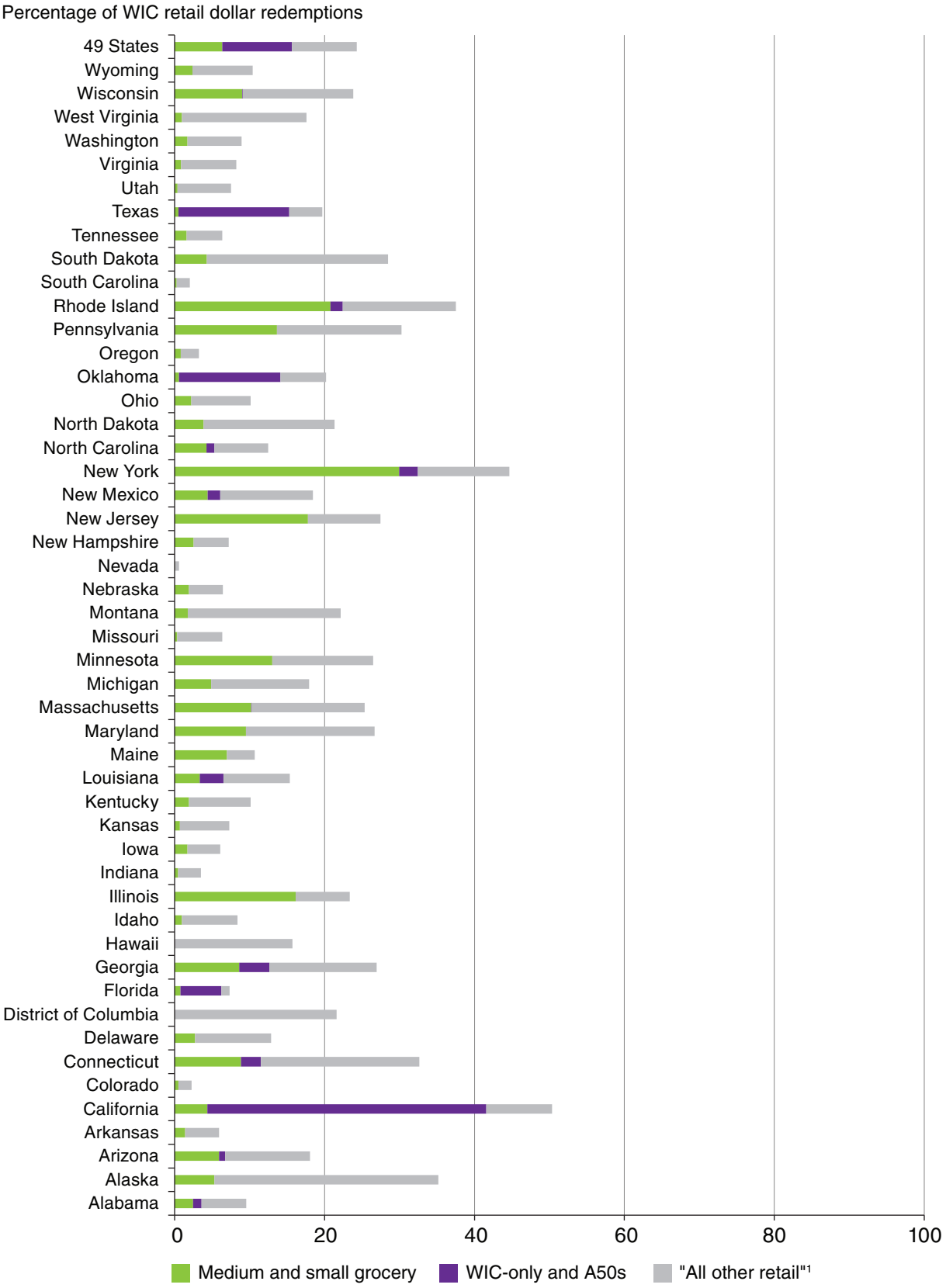
Large stores: share of WIC retail dollar redemptions by State, FY 2012



Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; TIP = The Integrity Profile; STARS = Store Tracking and Redemption Subsystem.
Source: USDA, Economic Research Service analysis of TIP and STARS data.

Figure 5

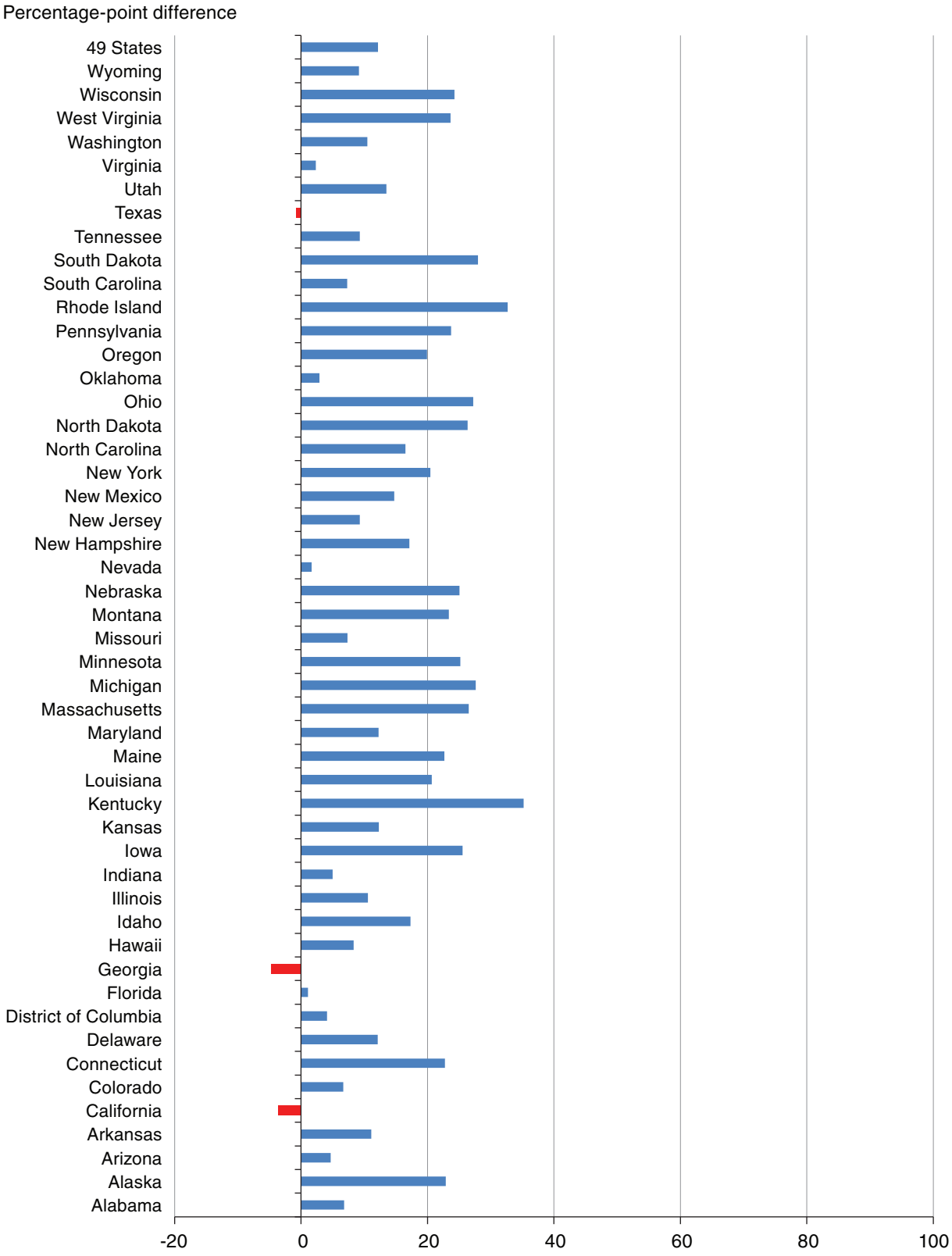
Non-large stores: share of WIC retail dollar redemptions by State, FY 2012



[1]All other retail" includes convenience stores, combination grocery/other stores, commissaries, specialty stores and farmers' markets.
Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; TIP = The Integrity Profile; STARS = Store Tracking and Redemption Subsystem.
Source: USDA, Economic Research Service analysis of TIP and STARS data.

Figure 6

Large stores: difference between their dollar redemption share and vendor share by State, FY 2012



Note: TIP = The Integrity Profile; STARS = Store Tracking and Redemption Subsystem.
Source: USDA, Economic Research Service analysis of TIP and STARS data.

Conclusions

WIC State agencies in the United States authorized 48,230 unique vendors—including pharmacies, direct distribution centers, and home food delivery contractors—in FY 2012, up from 46,088 vendors in FY 2008. Several WIC vendors were authorized by more than one State agency (such as by State agencies in neighboring States, or by one or more ITOs and the State agency), so the sum of State-level WIC vendors is larger than the number of unique vendors. This does not affect dollar redemptions. Almost all retail WIC vendors (98 percent) were also authorized to redeem SNAP benefits, as were nearly 80 percent of WIC-authorized pharmacies.

Large stores with lower prices (super stores, supermarkets, and large grocery stores) accounted for 77 percent of WIC retail food dollar redemptions in FY 2012. This compares with 84 percent of SNAP benefits redeemed at such stores, which is consistent with a lower degree of price sensitivity in the redemption of WIC benefits relative to SNAP benefits. Yet the finding that more than three-quarters of WIC benefits are redeemed at less costly stores is impressive given that WIC benefits are not structured to encourage price sensitivity. Large stores account for a much greater share of WIC retail vendors (63 percent) than of SNAP retail vendors (17 percent). This suggests that WIC tries to focus on authorizing more affordable stores, which then makes it easier for participants to redeem their benefits at such stores.

In addition, most WIC participants report doing their primary WIC shopping at the store where they usually shop (which is likely to be a larger format store with lower prices). This provides an additional motivation for WIC participants to redeem their WIC benefits at larger stores. In contrast, convenience stores—which represent 13 percent of all WIC retail stores—accounted for only 4 percent of retail WIC dollar redemptions in FY 2012.

Although the introduction in 2009 of the cash-value vouchers (CVVs) for fruits and vegetables was hypothesized to increase the share of WIC dollar redemptions at large stores, the share of retail dollar redemptions at large stores actually declined slightly between FY 2008 and FY 2012. However, the observed decline in the share of WIC dollar redemptions at large stores masks an increase in the share (from 34 percent to 42 percent) of WIC redemptions at super stores, which tend to be larger and have lower prices than supermarkets and large grocery stores. The shift to a larger share of WIC spending at super stores may reflect an increased price sensitivity or the overall food market trend toward larger store sizes (Leibtag et al., 2010).

The share of WIC retail dollar redemptions at WIC-only stores also declined between FY 2008 and FY 2012, even though the number of WIC-only stores increased slightly. In contrast, combination grocery/other stores more than tripled in number as well as in their share of WIC vendors and WIC dollar redemptions. Although combination grocery/other stores accounted for only 3 percent of WIC retail dollar redemptions in FY 2012, they more than tripled their share of overall WIC dollar redemptions between FY 2008 and FY 2012. Given their growing importance among WIC-authorized retailers, it would be useful to gain a better understanding of the types of retailers within this category and the prices they charge.

Changes in both vendor composition and WIC dollar redemption patterns are likely to continue as more States shift from paper vouchers to EBT. Receiving WIC benefits via EBT allows participants to purchase WIC foods individually rather than having to purchase all foods listed on a WIC voucher in a single visit, and future research on the effect of EBT on WIC redemption patterns is

warranted. Implementation of WIC EBT in Kentucky may have had the unintended consequence of losing some smaller vendors, who cited not wanting to pay for the cost of Internet service (which would be required to process EBT sales) and lower total WIC sales (since participants no longer had to purchase all the foods previously listed on the voucher) as reasons for leaving the program (Phillips et al., 2014).

This report also provides a detailed description of the food delivery systems used by WIC State agencies in the 50 States and the District of Columbia. State agencies differ considerably in the distribution of retail vendors and dollar redemptions across store types. For example, large stores accounted for as little as 30 percent of WIC retail ***vendors*** (Rhode Island) and as much as 98 percent (Nevada). Large stores took in as little as 50 percent of WIC retail ***redemptions*** (California) and as much as 99 percent (also Nevada). These differences may be explained by State differences in urbanization or in WIC State policy. For example, some WIC State agencies only authorize a fixed number of vendors, whereas others do not set a limit. Future research could examine how these State-level differences in store types and redemption patterns influence the food costs incurred by State WIC programs.

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Appendix A: Detailed Information on Data Sources

Primary data source: WIC TIP data

The Integrity Profile (TIP) data provide information on all WIC-authorized vendors in the United States, including 34 Indian Tribal Organizations and 5 U.S. territories. Appendix table A1 provides information on vendor records that were dropped or combined to construct our final data analysis files. We first dropped WIC vendors in the U.S. territories. We then combined any duplicate records for a single vendor within the same State agency, which typically occurred when a vendor changed ownership during the fiscal year and therefore received a new WIC authorization. The resulting data files for State-level analysis contained a total of 46,809 vendor records in 2008 and 49,071 vendor records in 2012. WIC vendors can be authorized by more than one WIC State agency, and would therefore appear in the TIP data as a separate record for each authorizing State agency. For the national analysis, we combine the records for a single vendor with multiple authorizations, which results in 46,088 unique WIC vendors in 2008 and 48,230 unique WIC vendors in 2012.

The TIP data provide information on the type of WIC vendor (such as retail, WIC-only, or pharmacy), the vendor location, and the dollar value of annual WIC redemptions. All WIC vendors have a unique WIC vendor ID assigned by the authorizing WIC State agency. Each WIC vendor that is also authorized for SNAP has an additional store identification number assigned by USDA's Food and Nutrition Service.

Secondary data source: SNAP STARS data

The SNAP Store Tracking and Redemption Subsystem (STARS) data contain a record of each retailer authorized to accept SNAP benefits. The data provide information on the store identification number assigned by USDA's Food and Nutrition Service, the store location information, and the type of food retailer (such as supermarket, grocery store, or convenience store).

We used the store identification number to match each SNAP-authorized WIC vendor in the TIP data to the record for that vendor in the SNAP STARS data. Some WIC vendors, we found, had been assigned an incorrect FNS store identification number in the TIP data. This was often the result of

Appendix table A1

	Number of observations	
	FY 2008	**FY 2012**
Observations in original TIP data file of WIC vendors[1]	47,718	49,977
Vendors authorized in U.S. territories	604	906
Vendor listings combined due to duplicate listings within same State authorizing agency	305	95
Observations used in State-level analyses	46,809	48,976
Vendor listings combined due to authorizations across multiple State agencies	721	841
Observations used in national-level analyses	46.088	48,230

[1]A single "example" entry that does not represent an actual WIC vendor is dropped from the original raw TIP data file in each year.
Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; TIP = The Integrity Profile; STARS = Store Tracking and Redemption Subsystem.
Source: USDA, Economic Research Service analysis of TIP and STARS data.

being assigned the FNS store identification number from a store with a similar name or the same retail chain store name. The store location information was used to correct the FNS store identification number so that the WIC vendor could be matched with the correct SNAP retailer in the STARS data. We were able to match 98 percent of WIC "regular retail" vendors, and identify a store type for 98.4 percent of WIC retail dollars redeemed.

Appendix B

Appendix table B1

STARS classification of WIC-only and A-50 stores, FY 2012

STARS classification	WIC-only stores	A-50 stores	Total
Super stores	0	0	0
Supermarkets	7	5	12
Large grocery stores	18	9	27
Medium grocery stores	107	54	161
Small grocery stores	37	100	137
Convenience stores	11	158	169
Combination grocery/other	120	17	137
Other retail	3	3	6
Commissaries	0	0	0
Missing retail	565	106	671
Total	868	452	1320
% not classified	65.1%	23.5%	50.8%

Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; TIP = The Integrity Profile; STARS = Store Tracking and Redemption Subsystem; A-50 = Above-50 percent.
Source: USDA, Economic Research Service analysis of TIP and STARS data.

Appendix C

Appendix table C1

Share of WIC retail vendors by store type, by State, FY 2012

State agency	Super store	Supermarket	Large grocery	Medium and small grocery	WIC-only and A-50	"All other retail"[1]
Alabama	33.9	44.2	5.5	4.0	0.5	11.9
Alaska	9.1	24.7	8.1	12.4	0.0	45.7
Arizona	34.7	41.7	0.9	7.8	0.6	14.3
Arkansas	50.9	24.2	7.8	5.8	0.0	11.3
California	18.2	31.5	3.6	9.5	16.7	20.6
Colorado	58.6	28.1	4.3	3.4	0.0	5.5
Connecticut	18.7	25.1	0.8	17.8	1.4	36.3
Delaware	27.4	47.6	0.0	9.5	0.0	15.5
District of Columbia	31.4	40.0	2.9	0.0	0.0	25.7
Florida	21.6	68.2	1.7	2.6	2.1	3.8
Georgia	19.7	54.2	4.0	7.4	2.3	12.4
Hawaii	53.6	20.0	2.4	0.8	0.0	23.2
Idaho	25.2	41.9	7.1	7.6	0.0	18.1
Illinois	30.2	28.5	7.3	19.8	0.0	14.1
Indiana	38.9	44.8	7.8	3.4	0.0	5.1
Iowa	54.7	7.2	6.5	14.6	0.0	17.1
Kansas	52.7	15.9	11.7	8.4	0.0	11.2
Kentucky	15.0	36.4	3.3	7.8	0.0	37.5
Louisiana	31.1	29.2	3.6	8.7	2.7	24.7
Maine	38.6	17.8	10.2	9.9	0.0	23.4
Maryland	31.5	28.9	0.7	16.1	0.0	22.8
Massachusetts	18.2	28.9	1.0	17.5	0.2	34.2
Michigan	31.8	18.1	4.5	6.7	0.0	38.8
Minnesota	34.0	8.5	5.8	21.5	0.0	30.1
Missouri	61.4	18.6	6.3	2.4	0.0	11.2
Montana	17.8	29.2	7.4	9.9	0.0	35.6
Nebraska	46.0	7.4	15.1	21.4	0.0	10.1
Nevada	34.1	61.0	2.7	0.4	0.0	1.8
New Hampshire	45.5	28.0	2.1	6.3	0.0	18.0
New Jersey	45.3	13.9	4.0	25.5	0.0	11.3
New Mexico	40.6	21.8	4.4	9.2	0.4	23.6
New York	11.9	20.1	2.8	41.5	1.3	22.3
North Carolina	12.9	56.0	2.0	7.4	0.7	20.9
North Dakota	29.1	9.3	14.0	23.3	0.0	24.4
Ohio	31.2	27.8	3.5	5.2	0.0	32.2
Oklahoma	51.8	18.8	6.3	5.4	1.7	16.0
Oregon	23.0	48.7	5.2	5.0	0.0	18.2
Pennsylvania	19.4	24.2	2.4	29.8	0.0	24.2
Rhode Island	9.0	18.8	2.0	32.7	1.6	35.9
South Carolina	18.7	70.9	1.0	1.5	0.0	7.9
South Dakota	21.1	10.0	12.4	21.5	0.0	34.9
Tennessee	20.2	58.2	6.0	4.7	0.0	11.0
Texas	44.6	33.3	3.2	2.6	6.1	10.2
Utah	69.5	6.1	3.4	3.4	0.0	17.6
Virginia	28.4	59.7	1.3	2.0	0.0	8.6
Washington	24.7	54.2	1.7	4.3	0.0	15.1
West Virginia	24.6	30.4	3.7	3.4	0.0	37.8
Wisconsin	39.6	8.7	3.6	14.9	0.1	33.1
Wyoming	34.8	35.9	9.8	3.3	0.0	16.3
49 States	27.2	32.5	3.9	13.4	3.0	20.1

[1]"All other retail" includes convenience stores, combination grocery/other stores, commissaries, specialty stores, and farmers' markets.

Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; TIP = The Integrity Profile; STARS = Store Tracking and Redemption Subsystem; A-50 = Above-50 percent.

Source: USDA, Economic Research Service analysis of TIP and STARS data.

Appendix table C2

Share of WIC retail redemptions by store type, by State, FY 2012

State agency	Super store	Supermarket	Large grocery	Medium and small grocery	WIC-only and A-50	"All other retail"[1]
Alabama	56.1	32.5	1.7	2.4	1.1	6.0
Alaska	15.0	44.7	5.2	5.3	0.0	29.9
Arizona	44.1	37.2	0.6	5.9	0.8	11.3
Arkansas	78.4	13.0	2.6	1.4	0.0	4.5
California	19.7	27.7	2.2	4.4	37.2	8.8
Colorado	81.8	15.3	0.6	0.5	0.0	1.7
Connecticut	25.1	41.8	0.5	8.9	2.7	21.1
Delaware	47.9	39.2	0.0	2.7	0.0	10.1
District of Columbia	33.1	44.6	0.8	0.0	0.0	21.6
Florida	33.8	58.0	0.8	0.8	5.5	1.1
Georgia	30.1	41.6	1.3	8.6	4.0	14.3
Hawaii	72.6	11.1	0.6	0.0	0.0	15.7
Idaho	46.5	42.8	2.3	1.0	0.0	7.4
Illinois	38.6	31.2	6.9	16.2	0.0	7.2
Indiana	54.7	39.9	1.9	0.5	0.0	3.0
Iowa	89.2	3.0	1.7	1.7	0.0	4.4
Kansas	83.8	6.9	2.0	0.7	0.0	6.6
Kentucky	40.5	47.9	1.5	1.9	0.0	8.2
Louisiana	53.6	29.6	1.4	3.4	3.2	8.8
Maine	72.5	13.7	3.1	7.0	0.0	3.7
Maryland	47.4	25.7	0.3	9.5	0.0	17.2
Massachusetts	28.5	45.5	0.6	10.2	0.1	15.1
Michigan	59.1	20.4	2.5	4.9	0.0	13.1
Minnesota	62.7	7.6	3.1	13.0	0.0	13.5
Missouri	83.9	7.9	1.9	0.4	0.0	6.0
Montana	39.5	36.6	1.8	1.8	0.0	20.4
Nebraska	87.2	3.4	3.0	1.9	0.0	4.5
Nevada	49.9	49.3	0.2	0.0	0.0	0.6
New Hampshire	61.6	30.3	0.8	2.6	0.0	4.7
New Jersey	55.9	10.5	6.1	17.8	0.0	9.7
New Mexico	61.6	18.4	1.6	4.4	1.7	12.3
New York	22.5	29.3	3.5	30.0	2.5	12.2
North Carolina	31.1	55.4	0.9	4.3	1.0	7.2
North Dakota	68.7	6.7	3.3	3.9	0.0	17.4
Ohio	53.3	35.0	1.5	2.2	0.0	7.9
Oklahoma	71.5	6.9	1.4	0.6	13.6	6.1
Oregon	29.7	65.7	1.4	0.8	0.0	2.4
Pennsylvania	40.4	27.5	1.8	13.7	0.0	16.6
Rhode Island	7.9	53.1	1.5	20.8	1.6	15.1
South Carolina	38.1	59.6	0.3	0.3	0.0	1.7
South Dakota	58.5	7.6	5.4	4.3	0.0	24.2
Tennessee	41.7	49.3	2.6	1.6	0.0	4.7
Texas	51.3	28.2	0.8	0.5	14.8	4.4
Utah	88.0	4.0	0.5	0.4	0.0	7.2
Virginia	40.1	51.3	0.4	0.9	0.0	7.4
Washington	31.4	59.2	0.5	1.7	0.0	7.2
West Virginia	44.7	36.5	1.2	1.0	0.0	16.6
Wisconsin	69.4	5.5	1.2	9.0	0.1	14.8
Wyoming	63.5	24.3	1.7	2.4	0.0	8.1
49 States	41.3	32.5	1.9	6.4	9.3	8.7

[1]"All other retail" includes convenience stores, combination grocery/other stores, commissaries, specialty stores, and farmers' markets.

Note: WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; TIP = The Integrity Profile; STARS = Store Tracking and Redemption Subsystem; A-50 = Above-50 percent.

Source: USDA, Economic Research Service analysis of TIP and STARS data.