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Abstract

Whether the poor pay more for food than other income groups is an important question in food price policy research. Stores serving low-income shoppers differ in important ways from stores that receive less of their revenues from Food Stamp redemptions. Stores with more revenues from Food Stamps are generally smaller and older, and offer relatively fewer convenience services for shoppers. They also offer a different mix of products, with a relatively high portion of sales coming from meat and private-label products. Metro stores with high Food Stamp redemption rates lag behind other stores in the adoption of progressive supply chain and human resource practices. Finally, stores with the highest Food Stamp redemption rates have lower sales margins relative to other stores, but have significantly lower payroll costs as a percentage of sales. Overall, operating costs for stores with high Food Stamp redemption rates are not significantly different from those for stores with moderate Food Stamp redemption rates. If the poor do pay more, factors other than operating costs are likely to be the reason.

Keywords: Food prices, supermarkets, low-income consumers, Food Stamps, metro, nonmetro

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Summary

Whether the poor pay more for food than other income groups is an important question in food price policy research. Much of the evidence indicates that shopping opportunities for the poor are more limited than they are for higher income consumers and that prices are slightly higher in stores where low-income consumers shop.

Higher prices are often attributed to higher operating costs for stores that serve low-income households. Higher costs could be due to older, less efficient store designs, outdated operating practices, weak organizational linkages with suppliers, high rates of labor turnover, and/or greater losses due to theft. If store operating costs are higher in low-income areas, and if the reasons for these higher costs can be better understood, it may be possible to improve operating efficiency.

This analysis shows that stores serving low-income shoppers—stores with high Food Stamp redemption rates—differ in important ways from other stores. Stores with a greater share of revenues derived from Food Stamps are generally smaller and older than stores serving moderate-income consumers, and are less likely to offer conveniences for shoppers such as bagging, carryout, or pharmacy services. Stores serving low-income customers generally have a higher rate of employee turnover, pay lower wages, are less likely to have a unionized workforce, are open for fewer hours, and are more likely to face competition from supercenters.

There are similarities, however. Nonmetro stores serving the poor do not differ significantly from other stores in the adoption of progressive supply chain and human resource practices. In metro locations, stores serving the lowest and highest income customers are more likely than other stores to be wholesaler supplied and less likely to be part of a large chain. Finally, stores with the highest Food Stamp redemption rates have a higher median cost of goods sold (lower sales margin) than stores serving higher income customers, but also have significantly lower payroll costs as a percentage of sales. Sales margins and payroll account for a major share of total store operating costs.

Overall, our results do not support the hypothesis that it costs more to operate supermarkets that serve low-income consumers. While stores with different rates of Food Stamp redemption have significantly different cost structures, their overall operating costs are essentially the same. If the poor do pay more, factors other than operating costs are likely to be the reason.

Do the Poor Pay More?

Whether the poor pay more than higher income groups for food has been a focus of research for more than three decades. Findings have been mixed, but much of the available evidence indicates that shopping opportunities for the poor are more limited than for higher income consumers and that prices are slightly higher in stores whose patrons are chiefly low-income consumers.

Store or household survey data can be used to determine whether the poor pay more for food (Kaufman et al.). Store surveys indicate whether prices for a particular market basket of items differ from store to store. Household surveys offer insight into how households with different characteristics spend food dollars and into the strategies they use in making tradeoffs among cost, quality, and convenience.

A review of 14 store surveys conducted between 1966 and 1996 indicates that food prices are generally higher in smaller grocery stores than in larger supermarkets and also higher in inner city and rural locations than in suburban locations. Since the poor are more likely to shop in small grocery stores and to live in inner city or rural locations, they often face higher food prices. After controlling for store type and location, however, there is little evidence of a significant relationship between neighborhood income and food prices (Kaufman et al.).

Results from research by Chung and Myers—using data on store availability, price disparities, and item availability in the Minneapolis-St. Paul metropolitan area—are similar. They report that chain stores are much more likely to be located in ZIP Codes where fewer than 10 percent of households have incomes below the poverty level, that prices are significantly lower in chain stores than in nonchain grocery stores, and that individual items in the USDA Thrifty Food Plan market basket are much less likely to be available in inner city and nonchain grocery stores. After controlling for store type and item availability, however, they found no statistically significant relationship between food prices and the percentage of households below the poverty level. In another recent study, Hayes found that food prices are significantly lower in poor neighborhoods. However, this analysis is based on only five homogeneous products and fails to account for item availability, which may bias price differentials upward (Hayes, p. 2).

Kaufman et al. present findings related to low-income household food costs from two large household surveys conducted by the Federal Government: the Bureau of Labor and Statistics' Consumer Expenditure Survey (CES) and the U.S. Department of Agriculture's Nationwide Food Consumption Survey (NFCS). The CES data show that food expenditure patterns differ significantly with household income, but it is not possible to determine unit costs from these data. The NFCS data can be used to calculate unit costs for a wide range of food categories, and Kaufman et al. (pp. 12-13) report that low-income households have lower unit costs for almost every major food group. They attribute this to economizing strategies that low-income households use to keep food costs low.

A recent study by Leibtag and Kaufman using ACNielsen Homescan data for a national sample of 40,000 households confirms the importance of these economizing strategies.

> … the poor economize on their food purchases to limit spending. They accomplish this by purchasing random-weight products on sale, purchasing a greater proportion of private-label (fixed-weight) products, and purchasing less expensive meats, fruits, and vegetables. By selecting less expensive meat, poultry, and fresh fruits and vegetables, low-income households are able to spend less for food, despite facing the slightly higher prices that other studies have shown to exist.
>
> (Leibtag and Kaufman, p. 7)

These positive findings are offset somewhat by conclusions from a 1997 study by Finke et al. that used NFCS data to analyze differences in unit food costs for households categorized by income, location, and race. They report that Black households have significantly higher unit costs than White households and that unit costs are significantly higher for urban households than for suburban households. This suggests that economizing strategies cannot always offset the effect of higher prices charged in stores where many low-income households purchase their food.

Data

The Supermarket Panel is an annual survey of randomly selected supermarkets drawn from the population of approximately 32,000 supermarkets that accept Food Stamps in the United States. In 2002, the study year for this analysis, 866 stores participated in the Supermarket Panel. These stores—located in 49 States—are generally representative of the diversity of formats and ownership structures found in the overall population of U.S. supermarkets.

King et al. describe data collection for the 2002 Supermarket Panel in Appendix A of The 2002 Supermarket Panel Annual Report. They also explain how statistical weights were constructed to adjust for imbalances in sampling intensities and for differences in response rates by region and ownership group size.[1] In effect, these weights indicate the number of stores in the overall population represented by each store in the sample.

For this study, data from the 2002 Supermarket Panel were merged with ZIP-Code-specific data from the U.S. Census, including data on population, spatial area, median household income, and the racial composition of the population. We also merged the Supermarket Panel data with store-level data on Food Stamp redemptions from the STARS database maintained by the Benefits Redemption Division of the U.S. Department of Agriculture's Food and Nutrition Service. This made it possible to assess the degree to which each store in the Supermarket Panel serves low-income consumers.

[1] A store's ownership group size is the number of stores owned and operated by its parent company. Not all stores in an ownership group have the same name. For example, many of the largest food retailers own and operate stores under several distinct names.

A Descriptive Profile of Supermarkets Grouped by Food Stamp Redemption Rates

In this study, the percentage of store sales attributable to Food Stamp redemptions is used as a measure of the degree to which a store serves low-income shoppers. Average weekly store sales data are part of the Supermarket Panel database. Store-level data on Food Stamp redemptions in 2001, the reference period for respondents to the 2002 Supermarket Panel, were extracted from the STARS database and converted to a weekly basis. The share of sales from Food Stamp redemptions ranged from 0 in about 5 percent of stores to over 30 percent, with a weighted mean of 3.4 percent and a weighted median of 2.1 percent.

Census-based measures for the ZIP Code where a store is located, such as median household income or the percentage of households below the poverty level, could also have been used to identify stores that serve low-income shoppers. A store's market area often extends beyond a single ZIP Code, however, especially in urban areas. This makes the Food Stamp redemption rate a better indicator of poverty among a store's customers.

Most recent studies of food prices paid by low-income consumers have been conducted in major metropolitan areas, but a significant segment of the Nation's poor live in nonmetropolitan areas. Therefore, throughout this report we present descriptive information on store characteristics and performance for stores located within and outside of a Metropolitan Statistical Area (metro area).[2] For descriptive purposes, metro and nonmetro stores were assigned to groups defined by the Food Stamp redemption rate. Group 1 includes the 10 percent of stores with the highest Food Stamp redemption rates. Group 2 includes the remaining stores in the highest Food Stamp redemption quartile. Stores in these two groups have the greatest concentrations of low-income shoppers. Group 3 stores are in the two middle Food Stamp redemption quartiles. This large group of stores can be characterized as serving moderate-income consumers. Finally, Groups 5 and 4 include, respectively, the 10 percent of stores with the lowest Food Stamp redemption rates and the remaining stores in the lowest Food Stamp redemption quartile; stores in these two groups can be characterized as serving higher income consumers. For each store group, the Food Stamp redemption rate range is higher for nonmetro stores than for metro stores (table 1).

Table 1—Food Stamp redemption rate ranges for metro and nonmetro store groups

Group	Metro	Nonmetro
	Percent	
1	≥7.994	≥9.576
2	3.519-7.993	4.736-9.575
3	0.550-3.518	1.648-4.735
4	0.136-0.549	0.721-1.647
5	<0.549	<0.720

Source: Economic Research Service/USDA.

Store and Organizational Characteristics

Stores serving the poor, particularly stores in nonmetro areas, typically are smaller and older than other stores and are more likely to be

[2] Under U.S. Census Bureau standards (p. 892), an MSA (metro area) "…must include at least: one city with 50,000 or more inhabitants, or a Census Bureau-defined urbanized area (of at least 50,000 inhabitants) and a total metropolitan population of at least 100,000 (75,000 in New England). Under the standards, the county (or counties) that contains the largest city becomes the 'central county' (counties), along with any adjacent counties that have at least 50 percent of their population in the urbanized area surrounding the largest city."

Table 2—Store and organizational characteristics for stores grouped by Food Stamp redemption rate and location

	Metro group					Nonmetro group				
	1	2	3	4	5	1	2	3	4	5
Store characteristiscs										
Median selling area (sq. ft.)	17,000	33,000	35,000	34,000	23,000	12,000	28,000	22,000	21,000	13,000
Median store age (years)	37	22	18	17	27	31	23	23	24	24
Median remodeling-adjusted store age (years)	10	6	6	5	5	7	8	7	5	5
Median hours open per week	98	126	119	126	103	98	112	112	105	105
Median number of checkout lanes	5	8	9	10	10	4	6	7	6	6
Median number of parking spaces	140	200	300	250	300	100	200	150	100	120
Percent of store by format										
Conventional/superstore	77	58	51	42	75	99	75	75	58	81
Food/drug combination	12	23	40	55	19	1	19	21	34	19
Warehouse/supercenter/ hypermarket	11	19	9	3	6	0	6	4	8	0
Organizational characteristics										
Percent wholesaler supplied	64	51	34	38	72	79	56	55	58	57
Median ownership group size (number of stores)	5	26	187	140	6	12	44	15	4	2
Percent of stores by ownership group size										
Single store	34	10	11	11	16	23	15	26	35	48
2-10 stores	26	18	11	11	37	21	25	15	16	13
11-50 stores	11	32	14	10	17	36	24	16	7	9
51-750 stores	18	26	29	40	19	11	14	10	20	18
More than 750 stores	12	14	35	28	11	10	23	33	22	11

Source: Economic Research Service/USDA.

independently operated rather than part of a larger self-distributing chain (table 2).

The typical Group 1 store in a metro area is significantly smaller and open fewer hours than stores in Groups 2, 3, and 4.[3] The median Group 1 store is also older and has fewer checkout lanes and fewer parking spaces than stores in all other groups. The distribution of store formats within Groups 1 and 5 is similar, with approximately three-quarters of stores in the conventional/superstore format in both groups. In contrast, Group 2 stores, which also serve low-income consumers, have a relatively high percentage of stores in the warehouse/supercenter/hypermarket format, and stores in Groups 3 and 4 have higher percentages of Food/Drug combination stores.

This pattern continues for the organizational characteristics of metro stores. Stores in Groups 1 and 5, with the highest and lowest concentrations of low-income consumers, are significantly more likely than stores serving

[3] Throughout this report we use a one-tailed significance level of 0.05 as the cutoff point for statistical significance. Details on statistical significance tests are available on request from the authors.

moderate-income consumers to be wholesaler supplied and to be operated by a company that owns fewer than 10 stores.

As expected then, stores serving low-income consumers in urban areas are physically smaller and are owned and operated by smaller, less vertically integrated companies than stores serving moderate-income consumers. Surprisingly, however, store and organizational characteristics for the Group 1 stores are remarkably similar to those for Group 5 stores.

In nonmetro areas, stores in all five Food Stamp redemption groups are smaller than stores in metro areas, more likely to have a conventional format, and more likely to be operated by a small company without its own distribution system. Differences across groups are generally less pronounced for nonmetro stores. Once again, stores in Groups 1 and 5 are similar in size, but Group 1 stores are significantly older and much more likely to be wholesaler supplied than stores in the other groups. For nonmetro stores, then, stores with the highest concentration of low-income consumers are older and are operated by smaller companies.

Market Characteristics and Competitive Situation

For stores located in a metro area, median household income in the store's ZIP Code increases sharply as the Food Stamp redemption rate falls (table 3). This general pattern also holds for nonmetro stores, but differences in median household income across groups are less pronounced, and income levels are considerably lower, than in metro locations. In both metro and nonmetro locations, Group 1 stores, which have the highest concentration of low-income shoppers, face the greatest racial diversity. Differences in racial diversity are relatively small across Groups 3 through 5 in both locations.

In metro locations, Group 1 stores are significantly less likely than stores with lower Food Stamp redemption rates to have a unionized workforce. Typical Group 1 and 2 stores also pay significantly lower wages than other stores in metro locations. These patterns are not evident for stores in nonmetro locations, where unionization is less prevalent and wage rates are generally lower than in metro locations. In both metro and nonmetro locations, however, employee turnover rates are significantly higher for stores in Groups 1 and 2. These stores, which serve low-income consumers, may be more likely than other stores to hire low-income employees who are transitioning from welfare to work. Jobs in food retailing are often a stepping stone to higher paid jobs in other sectors, making turnover in supermarkets high. This, in turn, can lower operating efficiency and increase training costs.

In both metro and nonmetro locations, stores in Groups 1 and 2, which serve more low-income consumers, are significantly more likely to face supercenter competition than stores in Groups 4 and 5, which have the lowest Food Stamp redemption rates. In addition, in metro areas, Group 1 stores are farthest from their nearest competitor, while in nonmetro areas stores in Groups 4 and 5 are, on average, farthest from their nearest competitor.

Table 3—Store market and competitive characteristics by Food Stamp redemption rate and location

	Metro group					Nonmetro group				
	1	2	3	4	5	1	2	3	4	5
Market demographics										
Median population density (people/sq. mi)	1,587	953	821	1,453	2,014	43	108	74	68	55
Median household income ($/year)	41,627	44,200	49,974	59,560	70,788	28,314	35,943	38,242	37,436	45,018
Percent of sales from Food Stamps	13.3	5.1	1.4	0.3	0	15.8	6.4	2.9	1.1	0.4
Percent of population (White)	63	80	88	85	81	63	81	92	96	96
Percent of population (Black)	24	3	3	2	3	23	6	1	0	0
Percent of population (Hispanic)	5	5	3	3	5	1	3	2	2	1
Labor market characteristics										
Percent of stores with union workforce	16	53	37	45	31	0	18	24	8	2
Median hourly wage	$9.63	$10.56	$11.60	$12.77	$13.64	$9.34	$8.75	$10.07	$11.03	$9.89
Median percentage employee turnover	56	53	40	34	32	60	62	33	40	44
Competitive pressure										
Median distance to nearest competitor (miles)	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0
Percent facing supercenter competition	52	56	47	37	40	53	58	50	38	29
Competitive position (percent of stores)										
Price leader	25	36	32	29	22	19	32	33	26	32
Service leader	45	62	59	79	75	69	75	72	74	80
Quality leader	55	77	68	68	73	73	76	73	90	81
Variety leader	23	46	41	28	34	24	24	31	39	29

Source: Economic Research Service/USDA.

Finally, in both metro and nonmetro locations, stores in Group 1, which derive the greatest portion of their sales from low-income consumers, are the least likely to be a local market leader in each category. This conclusion is derived from the competitive position indicators in the lower portion of table 3, which are based on store managers' identification of the price, service, quality, and variety leader in their local market. This is consistent with findings from store surveys and household studies that the poor pay slightly more for food and that they have more limited shopping opportunities.

Service Offerings and Product Mix

Betancourt and Gautschi note that retail firms deliver a mix of explicitly priced products and services and a set of implicitly priced "distribution services" that reduce the time and effort customers need to devote to shopping. For example, bagging and carryout distribution services make checkout easier for supermarket shoppers. Of course, offering a wider range of distribution services generally increases a store's labor costs and prices charged. Kaufman et al. and Leibtag and Kaufman suggest that low-income shoppers adopt economizing strategies to keep food costs as low as possible. Because low-income shoppers may be willing to sacrifice service and convenience for lower prices, stores serving them would be expected to offer fewer distribution services. Similarly, the poor may also purchase a different mix of food products, and may be more likely to buy lower cost private-label products.

Group 1 stores located in a metro area are generally much less likely than other stores to offer distribution services that save time and add convenience for shoppers (table 4). For example, bagging and carryout services are

Table 4—Store service offerings and product mix by Food Stamp redemption rate and location

	Metro group					Nonmetro group				
	1	2	3	4	5	1	2	3	4	5
Distribution service offerings (percent of stores)										
Self-scanning	6	4	12	10	11	0	8	7	7	9
Bagging	62	76	91	98	95	96	88	96	97	100
Carryout	50	72	82	88	81	73	87	88	94	96
Service meat	70	71	76	86	86	84	93	93	95	87
Fax ordering	13	23	30	19	33	4	19	26	34	14
Home delivery	18	12	12	18	34	2	13	24	47	26
Home meal replacement	31	64	66	77	83	38	65	67	63	70
In-store bakery	48	85	88	80	70	46	83	79	86	59
Internet ordering	7	6	8	30	24	11	1	6	20	0
Post office/mailing services	23	20	22	17	0	5	23	36	41	44
In-store banking	16	18	39	28	35	14	24	13	18	5
Pharmacy	12	32	46	58	25	1	19	25	42	19
Product mix										
Median percentage of sales from produce	8	8	8	10	10	7	7	8	8	7
Median percentage of sales from meat	23	15	13	11	10	18	17	15	14	15
Median percentage of sales from dry groceries	50	54	49	50	45	62	63	54	45	45
Median percentage of sales from private labels	23	15	15	15	10	35	18	20	19	15
Median number of stock-keeping units (SKUs)	14,000	35,000	30,000	35,000	37,000	26,000	25,000	20,000	20,000	28,000

Source: Economic Research Service/USDA.

offered by 80-90 percent of Group 3 stores versus 50-60 percent of Group 1 stores. Differences in distribution service offerings are less pronounced and trends across groups are less consistent for stores located in nonmetro areas, but Group 1 stores are the least likely to offer almost every service. In both metro and nonmetro areas, low distribution service offerings by Group 1 stores suggest that, with a lower opportunity cost for their time and more stringent budget constraints, the poor are willing to substitute their own time and effort for distribution services. Retailers respond accordingly, tailoring the distribution services they provide in a given store location to customer characteristics.

Percentages of store sales coming from produce, meat, and dry groceries exhibit similar patterns across quartiles for stores located in and outside of a metro area. Group 1 and 2 stores that serve low-income shoppers derive a greater share of sales from meat and dry groceries. Group 1 stores, both metro and nonmetro, are much less likely to have a pharmacy with a full-time pharmacist. These stores also derive a significantly greater share of sales from private-label products. Group 1 stores in metro areas also offer much less product variety than other metro stores, as indicated by the lower number of stock-keeping units (SKUs). This pattern does not hold for nonmetro areas, where the median number of SKUs is highest for stores in Groups 1 and 5. While the urban poor shop in stores with the most limited assortment of products, the poor in nonurban areas shop in stores with a relatively broad assortment of product offerings.

Operating Practices

Supermarket Panel data on store operating practices are summarized in a series of management practice indices (table 5).[4] The supply chain index indicates the extent to which a store has adopted new technologies and business practices that support supply chain initiatives in the food industry. The human resources index measures adoption of progressive training and compensation practices. The food-handling index measures compliance with accepted practices for ensuring food safety and quality. The environmental practices index indicates the degree to which a store offers environmentally friendly products and services to its customer and uses energy-efficient practices and store waste recycling in its own operations. Finally, the quality assurance index measures adoption of objective practices for assessing customer satisfaction.

For stores located in metro areas, there are significant differences across groups for all except the food-handling index. For the supply chain, human resources, and quality assurance indices, stores in Groups 1 and 5—those with the highest and lowest rates of Food Stamp redemptions—have significantly lower scores than other stores. This is not surprising, since operating practices in these areas are closely related to ownership group size, and typical stores in these groups are operated by companies that own fewer than 10 stores. The environmental practices score generally trends upward across groups, perhaps reflecting greater demand by higher income consumers for environmentally friendly products, services, and operating practices.

[4] See King et al. (2002) for a complete definition of each index. All index scores are on a 100-point scale, with a score of 100 indicating the highest level of adoption.

Table 5—Store management practice index scores, by Food Stamp redemption rate and location

	Metro group					Nonmetro group				
	1	2	3	4	5	1	2	3	4	5
Operating practices										
Mean supply chain score	49	60	66	66	55	52	59	56	48	43
Mean human resource score	33	37	40	46	35	34	39	40	39	40
Mean food-handling score	81	82	81	81	80	65	69	84	83	77
Mean environmental practices score	47	69	77	85	78	51	56	66	66	75
Mean quality assurance score	62	70	69	72	59	50	60	68	59	58

Source: Economic Research Service/USDA.

For nonmetro stores, differences in the supply chain and human resource scores are not significant across Food Stamp redemption rate groups. Both the food-handling and environmental practices scores trend upward, however, as the Food Stamp redemption rate falls, and there is no clear trend for the quality assurance score.

Though there are some significant differences in operating practices across Food Stamp redemption rate groups in both metro and nonmetro locations, such differences do not seem to indicate that stores serving low-income consumers consistently lag in adopting progressive operating practices. If there are significant operating cost differences across groups, they are more likely due to differences in store and organizational characteristics and service offerings.

Operating Performance

Weekly sales per square foot of selling area, sales per labor hour, and annual inventory turns are commonly used measures of operating efficiency. In metro locations, the typical Group 1 store has significantly lower sales per labor hour and annual inventory turns than stores with lower Food Stamp redemption rates, but Group 1 stores only differ significantly from Group 4 stores in weekly sales per square foot of selling area (table 6). The low level of sales per labor hour for stores that serve low-income consumers is somewhat surprising. These stores generally provide fewer labor-intensive services and so are less labor-intensive than stores in moderate- and high-income areas. Poor labor efficiency may be due, in part, to the significantly higher rate of labor turnover for these stores (discussed earlier). Mean supply chain and human resource scores for Group 1 stores in metro locations are also low, and this may contribute to inefficiencies in labor use. In nonmetro locations, stores in Groups 1 and 2 have significantly lower weekly sales per square foot than stores in Groups 4 and 5 that serve higher income consumers. Otherwise, there are no clear trends in operating efficiency across Food Stamp redemption rate groups.

The Supermarket Panel provides data on cost of goods sold (COGS) and payroll costs as a percentage of sales. Together, these account for a major share of total store operating costs, totaling 85.8 percent of sales for the median store in the Panel, and they are the only measures of cost available

Table 6—Store performance measures, by Food Stamp redemption rate and location

	Metro group					Nonmetro group				
	1	2	3	4	5	1	2	3	4	5
Operating efficiency										
Median sales per square foot	$7.50	$6.54	$7.75	$9.33	$8.75	$6.88	$6.45	$7.14	$8.06	$7.50
Median sales per labor hour	$101.32	$128.57	$123.86	$133.70	$123.60	$100.00	$98.48	$116.95	$92.49	$97.50
Median annual inventory turns	12	16	17	20	20	14	15	16	15	18
Operating costs										
Median cost of goods sold (COGS) as a percent of sales	76.0	77.0	75.0	72.5	73.0	78.0	78.1	77.0	76.0	76.0
Median payroll as a percent of sales	8.5	10.0	10.0	10.5	12.0	9.0	9.2	10.0	11.1	9.8
Median COGS and payroll as a percent of sales	84.5	87.0	85.0	83.0	85.0	87.0	87.3	87.0	87.1	85.8

Source: Economic Research Service/USDA.

for this analysis.[5] The median cost of goods sold differs little for stores in Groups 1 through 3 in metro locations, but is significantly lower for the Group 4 and 5 stores that serve higher income consumers. In contrast, median payroll cost as a percentage of sales is significantly lower in the Group 1 stores that have the highest Food Stamp redemption rate. The fact that stores serving higher income consumers offer more distribution services helps to explain both patterns. These services require labor, not reflected in the cost of goods sold. Therefore, stores in Groups 4 and 5 have higher labor costs, which they pay for by adding higher markups on the cost of goods for the products they sell. Trends across groups in nonmetro locations for cost of goods sold and payroll as a percentage of sales are similar but less pronounced.

For both metro and nonmetro locations, there is no clear trend across groups in combined operating costs for cost of goods sold and payroll. While stores with different rates of Food Stamp redemption have significantly different cost structures, their overall operating costs are essentially the same.

[5] According to Food Marketing Institute (p. 13) estimates, the cost of sales plus all other operating expenses averaged 95.08 percent of sales for supermarket companies in 2000/2001. These costs were calculated at the company level and include expenses for operation of distribution facilities and corporate offices. Building occupancy costs and energy costs are important store-level operating expenses for which data are not available. Results from an energy management study conducted in 2001 (King, et al., 2003) indicate that energy costs are 1.1 percent of sales for the median store. Therefore, energy costs are small relative to cost of goods sold and payroll expenses.

Conclusions

This analysis provides evidence that stores serving low-income shoppers differ in some important ways from other stores that receive less of their revenues from Food Stamp redemptions. Stores with more revenues from Food Stamps are generally smaller and older than stores serving moderate-income consumers, but stores with the highest rates of Food Stamp redemption are also remarkably similar to stores with the lowest rates of Food Stamp redemption. Stores that serve the poor offer relatively few distribution services that save time and add convenience for shoppers. They also offer a different mix of products, with a relatively high portion of sales coming from meat and private-label products. In metro locations, stores with high Food Stamp redemption rates lag behind other stores in the use of progressive supply chain and human resource practices, but this pattern does not hold in nonmetro locations. Finally, stores with the highest Food Stamp redemption rates have high cost of goods sold per dollar of sales relative to other stores, but stores serving the poor also have significantly lower payroll costs as a percentage of sales.

Overall, the results do not provide strong evidence that it costs more to operate supermarkets that serve low-income consumers. Median cost of goods sold plus payroll as a percentage of sales for stores with high Food Stamp redemption rates is not significantly different from that for stores with moderate Food Stamp redemption rates. If the poor do pay more for food, factors other than operating costs are likely to be the reason.

Finally, our findings raise several questions for future research. As suburban markets where moderate- and high-income consumers predominate become saturated, some major retail chains are investigating opportunities for new store development in low-income urban areas. If larger chains do expand into these previously underserved areas, how will they need to adapt existing store designs to effectively serve low-income consumers? Will existing stores in low-income areas be able to remain cost-competitive? Outside of major metropolitan areas, stores are generally smaller and less efficient in their operations. With supercenter competition growing in these areas, how can existing stores lower their operating costs and how will access to shopping opportunities for the poor evolve?

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