Assessing Residential Market Transformation Programs Through Retail Sales Analysis

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ABSTRACT

Residential lighting and appliance market transformation programs often focus their efforts on the retail market for Energy Star® qualifying products. Because of the emphasis on increasing retail sales, the measurement of program effects on sales of qualified products at participating stores is a key indicator of program success. This paper discusses recent efforts to collect and analyze appliance and lighting sales records from stores in the northeastern U.S. This analysis provides insight on the impact of programs on the rebated and un-rebated sales of qualified products at retail stores.

Introduction

Residential lighting and appliance market transformation programs often focus their efforts on the retail market for Energy Star qualifying products. These programs seek to improve the stocking, promotional, and pricing practices for Energy Star qualified products at retail stores through a variety of means, including the provision of rebates for Energy Star models, point-of-purchase materials, and staff training. The overarching goal of all these program activities is to increase sales of Energy Star products at participating stores.

Because of this emphasis on the retail sector, measurement of program effects on sales of qualified products at participating stores is a key indicator of program performance (Titus et al 2002). However, collecting and analyzing such sales records has been a challenge for many reasons. The retail sector is a highly competitive market, therefore stores consider sales information to be sensitive and often will not share it with program partners, even in aggregate fashion. While there has been some success in gathering aggregate appliance sales data from national chains, many of the independent and regional chain stores who participate in programs often do not maintain sales records in a manner that can be easily analyzed.

This paper discusses recent efforts to collect and analyze appliance and lighting sales records from stores in Vermont, Maine, New York, and Pennsylvania as part of the assessment of market transformation programs operated by Efficiency Vermont and the Long Island Power Authority. This analysis provides insight on the impact of programs on the rebated and un-rebated sales of qualified products at retail stores. This information is a valuable component in the assessment of appliance and lighting market transformation programs.

Background

This paper draws information from two studies. The first study is the Phase I Evaluation of Efficiency Vermont's (EVT) Efficient Products Program conducted for the Vermont Department of Public Service in 2001-2002 (KEMA-XENERGY 2003a). This project included the collection and analysis of sales records from 10 hardware stores and 10 appliance stores in Vermont and Maine. The second study is the Evaluation of the Long Island Power Authority's (LIPA) Clean Energy Initiative

Residential Lighting and Appliance Programs conducted during 2002-2003 (KEMA-XENERGY 2003b). This project included the collection and analysis of CFL product sales records from 10 home center stores on Long Island and in Pennsylvania.

Both the EVT and LIPA lighting and appliance programs provide Energy Star point-of-purchase materials and training for sales staff at participating retail stores and instant coupons to customers who purchase Energy Star CFL bulbs, fixtures, and clothes washers. The EVT program began operation in March 2000; the LIPA program started in Fall 1999. Both Vermont and Long Island had predecessor programs that promoted energy-efficient products.

Objectives

The sales analysis efforts were designed to support three objectives in the assessment of program effects:

- Comparison of ENERGY STAR product sales at stores participating in the program with sales at stores in neighboring regions that have hosted no significant ENERGY STAR promotions;
- Comparison of the volume of incentives processed through sampled stores with sales volumes for qualifying products at those stores in order to assess the extent of qualifying products sold that do not receive program incentives;
- Assess trends in sales of ENERGY STAR products over time from participating stores, with an emphasis on comparing pre-program versus post-program sales.

Research Plan

Comparison regions were selected which had no history of consistent lighting or appliance programs, were relatively similar in terms of demographics and retail channels, and located nearby in order to facilitate the physical collection of sales records, if necessary. Thus, Maine was selected as the comparison region for Vermont and the Philadelphia area was selected as the comparison region for Long Island.

Given the significant effort required to obtain, prepare, and validate sales data on a large number of items as well as the high level of cooperation required from retailers, the development of a probability-based sampling approach to represent the population of retail establishments was not feasible. Rather, the guiding principle was to select stores that were thought to be representative of stores within each region and comparable to stores in the comparison region.

Thus retail locations in program areas were matched to locations in non-program areas that were similar in terms of estimated sales volumes (or store size, if sales volume was unavailable) and population of the town in which the store was located. This latter served as a proxy measure for the size of the market for the individual retail locations. In addition, for the Long Island study, stores were matched according to measures of wealth, including household income and home values.

There were differences in the research plan for the two products - compact fluorescent lighting products and appliances - as described below.

CFL Bulbs and Fixtures. The strategy here was to collect and analyze sales data from stores that represented a large portion of the CFL sales in the respective program areas. In Vermont, this included hardware stores and home centers, which process a combined 70% of program rebates for Energy Star CFL products and thus were targeted for data collection. On Long Island, the major

channel is home centers which process over 80% of program rebates for qualifying CFL products. Store names are not presented in order to preserve confidentiality.

Appliances. Because D&R International already provides aggregate Energy Star appliance market share for Energy Star partners (mostly national chains) our research efforts focused on independent stores that are generally not represented in the D&R data. These independent stores represent a substantial portion of the appliance market, particularly in Vermont where they process roughly 40% of program rebates for Energy Star clothes washers. Stores were selected in Vermont and Maine whose locations covered the major market areas and were similarly sized. Stores that were obviously unusual in terms of location, products sold, store size, or sales volume were screened out.

Data Collection

XENERGY worked with Applied Proactive Technologies (APT), the implementation contractor for the retail support components of both the EVT and LIPA programs, to obtain the sales data needed to carry out the analysis. The data collection process differed for lighting products and appliances as follows.

Lighting

Because of APT's relationships with store management at the hardware and home center chains, we were able to obtain electronic sales records. Incentives of $200 per store were offered in order to encourage cooperation. However, the management overseeing the New England home centers were unable to cooperate with this effort, thus no sales records were provided for the Vermont or Maine locations. In addition, one of the targeted New England hardware chains provided sales records of poor, inconsistent quality that were not analyzed for this paper (KEMA-XENERGY 2003a).

In the end, sales records were obtained from five hardware stores in Vermont and five in Maine as well as five home center stores on Long Island and five near Philadelphia (Table 1). The quality and comprehensiveness of the data varied considerably among these stores. Data was requested from the hardware stores that dated back prior to the start of the EVT program, although management was only able to supply sales data from March 2000 when they first implemented a Point-of-Sale tracking system. This quarterly data included unit sales for up to 18 models at each store location; the product information included manufacturer, manufacturer product code, and product description. The product codes were cross-referenced against lists of Energy Star qualifying models in order to validate their qualification status.

Sales records dating back to 1999 were requested from the home center chain, however only records from October 2001 through September 2002 were received. Monthly unit sales for six fixture models included SKU numbers and product description by store location; however, the bulb sales were aggregated into one annual figure for each store, without any model information. Therefore, while we were able to validate the Energy Star qualification of fixtures, we were unable to do so for bulbs.

Appliances

The following steps were undertaken for the appliance sales data effort in Vermont and Maine:

- *Negotiations to obtain data.* Based on the program implementer's relationships with buying groups that serve independent appliance stores in northern New England, evaluators initially hoped to collect sales data for multiple stores from a buying group, thereby accelerating the data

collection process and reducing expenditures. Unfortunately, the buying groups were unable to deliver the necessary information therefore we adopted a different approach.

- *Collection of individual store data.* The alternative approach was to request sales records from individual appliance stores. APT was able to garner preliminary approval for this effort from stores in Vermont; each store was offered an incentive of $200 to participate. APT then contacted appliance stores in Maine in order to locate ones that appeared to be representative of stores within the state and were comparable to Vermont stores. These stores were screened to find ones that maintained adequate sales records and were interested in cooperating in the effort. APT staff scheduled the visits and recorded the following information on appliances sold between 1999 and 2001: sales date, appliance type, manufacturer, and model number. This effort required sorting through large volumes of paper records and/or computer printouts and sometimes took several days at each location.
- *Data preparation.* Over 24,000 sale records were collected and entered into an electronic database. The appliance model numbers were then categorized as ENERGY STAR qualified or not by matching them with model numbers from Energy Star qualifying lists. Clothes washer sales estimates at the five Vermont stores were cross-referenced with sales figures reported separately to the EVT program and found to be reasonably accurate. There was no method available to validate sales for the other three appliances in Vermont or any appliances in Maine.

Table 1 summarizes the number and type of stores from which sales data was collected as well as the time periods covered by the sales data.

Table 1: Summary of Sales Data Collection Efforts

Product	Project	Periods covered by Sales Data	Stores	Location	Number of Stores
CFL bulbs & fixtures	Vermont	3/00 - 12/01	Hardware chain	Vermont	5
				Maine	5
	LIPA	10/01 – 9/02	Home centers	Long Island	5
				Philadelphia area	5
Appliances	Vermont	1/99 - 12/01	Various independent appliance stores	Vermont	5
				Maine	5

Results

Lighting

Given the different strategies taken for the Vermont and Long Island projects, the results are presented separately. For each project, we discuss how stores from program areas and non-program areas were matched, the comparison of sales volumes between these stores, and the un-rebated sales of qualifying products at participating stores.

Vermont. The hardware chain corporate office provided sales records that contained quarterly data on 18 CFL products from five stores in Vermont and five stores in Maine between the 2nd quarter of 2000 through the 4th quarter of 2001 (KEMA-XENERGY 2003a).

- *Store Matching.* The five hardware stores in Vermont were matched with comparable stores in Maine as shown in Table 2. Stores were matched primarily by population in the surrounding

area but also considering store size. In all cases, the populations are relatively small (between 2,000 and 20,000 people) and store sizes are similar (between 4,000 and 6,000 square feet of retail space). While the Maine towns have slightly larger populations than the Vermont towns, it is reasonable to assume that there are more competing hardware stores present in these larger areas. Thus the matched stores in Vermont and Maine are likely to serve similarly-sized customer bases (KEMA-XENERGY 2003a).

Sales of ENERGY STAR CFL products were vastly greater at each of the Vermont locations than at the comparable Maine locations. Note that individual store locations are masked in order to preserve confidentiality.

Table 2: Store Characteristics and Annual Sales of ENERGY STAR CFL Products Among Comparable Hardware Stores in Vermont and Maine, 2000 and 2001**

Store Identifier	Population*	Store Size (Ft^2 Retail Space)	Annual Sales, ENERGY STAR Qualifying CFL Products	
			2000 **	2001
VT #1	2,610	4,828	447	1,028
ME #1	7,410	4,800	1	33
VT #2	4,180	4,111	217	608
ME #2	14,904	4,000	3	2
VT #3	6,252	5,080	188	563
ME #3	15,605	6,000	10	64
VT #4	2,098	6,025	1,677	1,905
ME #4	6,472	5,000	5	44
VT #5	18,107	4,387	1,229	1,624
ME #5	20,806	4,780	2	17

* Town population, US Census 2000. ** From Q2 2000.

- *Sales Comparison.* ENERGY STAR products represented the vast majority of CFL product sales in the hardware stores (Table 3). Of these ENERGY STAR products, bulbs represented the vast majority of sales: between 86% and 89% across all ten stores.

  Annual sales of ENERGY STAR CFL products in the five Vermont hardware stores increased by approximately 51% between 2000 and 2001: from 3,778 to 5,728. In order to provide some perspective, national sales of all screw-in CFL bulbs were estimated to approximately double between 2000 and 2001 (KEMA-XENERGY 2003a, RER 2001). A confluence of factors spurred this trend, including the California energy crisis, the combined efforts of numerous market transformation programs, and competition among manufacturers (Calwell et al 2002).

  Among the five stores in each state, sales of ENERGY STAR CFL products in Maine were less than one percent of those sold in Vermont in 2000 and about two percent of those sold in 2001 (Table 3). Sales at the five Vermont stores skyrocketed from less than 100 during the first three months of program operation (2nd quarter 2000) to over 1,000 units in each of the subsequent quarters (KEMA-XENERGY 2003a). Quarterly data is not presented here due to space limitations.

Table 3: CFL Product Sales by ENERGY STAR Qualification at Selected Hardware Stores, Vermont and Maine, 2000 and 2001**

	2000		2001	
	VT	ME	VT	ME
Number of Products Sold	4,245	25	6,294	144
Number ENERGY STAR Qualifying Products Sold	3,778	21	5,728	134
% ENERGY STAR Qualifying	**89%**	**84%**	**91%**	**93%**

** From Q2 2000

- *Sales outside program.* Table 4 displays the number of coupons redeemed and the number of ENERGY STAR products sold at the five Vermont stores. In 2000, 83% of the CFL products sold by the sample hardware sales were purchased without coupons. Forty-two percent of CFL products were sold outside the program in 2001. Part of the apparent sharp decrease in the percentage of sales outside the program may be due to a lag in adjusting to rebate processing procedures (KEMA-XENERGY 2003a).

Table 4: Coupons Redeemed and Qualifying CFL Products Sold at Selected Vermont Hardware Stores, 2000 and 2001**

	2000**			2001		
Store Identifier	Coupons Redeemed	Total ENERGY STAR Qualifying CFL Products Sold	Percent of Sales Outside Program	Coupons Redeemed	Total ENERGY STAR Qualifying CFL Products Sold	Percent of Sales Outside Program
VT #1	74	447	83%	479	1,028	53%
VT #2	65	217	70%	240	608	61%
VT #3	6	188	97%	258	563	54%
VT #4	289	1,677	83%	1,229	1,905	35%
VT #5	192	1,229	84%	1,116	1,624	31%
Total	**626**	**3,759**	**83%**	**3,322**	**5,728**	**42%**

** From Q2 2000

Long Island. Sales records received from the home center chain contained data on seven Energy Star qualifying CFL fixtures from five stores on Long Island and five stores in Philadelphia[1]. Sales data was listed monthly from October 2001 through September 2002. Additional data was provided on the total number of Energy Star qualifying bulbs sold at each of the stores during this time period (KEMA-XENERGY 2003b).

- *Store Matching.* The original research plan matched five home center stores on Long Island, NY with comparable stores in the Philadelphia, PA area based on household income and median home values. Town population was not considered to be important because home center stores typically serve a regional market.

[1] No information was available on how these fixture models were selected by the home center.

Unfortunately, the 10 stores for which data was requested were not the same stores for which data was received, thus store matching was possible to a lesser extent than initially expected. Table 5 lists the median household incomes and home values, sorted from highest to lowest in each state, for the New York and Pennsylvania stores from which data was eventually received. Home values and incomes are on the whole higher for the locations on Long Island than in the Philadelphia region. In addition, there was no information available on overall sales volumes or store size by which the CFL sales figures could be normalized (KEMA-XENERGY 2003b).

Table 5: Median Household Income and Home Value for Selected Home Center Store Locations in New York and Pennsylvania

New York (Long Island)			Pennsylvania (Philadelphia Area)		
Store Identifier	Median Household Income (Census 1999)	Median Home Value (Census 2000)	Store Identifier	Median Household Income (Census 1999)	Median Home Value (Census 2000)
NY #1	$101,477	$386,300	PA #1	$62,102	$157,800
NY #2	$84,009	$253,700	PA #2	$41,489	$93,700
NY #3	$67,185	$214,300	PA #3	$35,815	$97,400
NY #4	$58,411	$212,000	PA #4	$30,746	$59,700
NY #5	$47,027	$143,000	PA #5	$30,746	$59,700

- *Sales Comparison.* For Energy Star qualifying CFL bulbs, the five Long Island stores in our sample sold nearly twice as many units as sample stores in the Philadelphia area – 61,891 vs. 30,381 (Table 6). Sales volumes for seven selected models of Energy Star fixtures were over four times greater at the Long Island stores than the Philadelphia stores – 4,637 vs. 1,012. Note that the NY#1 store sold nearly twice as many CFL bulbs and fixtures as did other Long Island locations (KEMA-XENERGY 2003b).

Table 6: Location and Sales of Energy Star Bulbs and Selected Energy Star CFL Fixtures for Home Center Stores in New York and Pennsylvania, Oct. 2001 – Sept. 2002

New York (Long Island)			Pennsylvania (Philadelphia Area)		
Store Identifier	Sales of ENERGY STAR Qualifying CFL Bulbs	Sales of Selected ENERGY STAR Qualifying CFL Fixtures	Store Identifier	Sales of ENERGY STAR Qualifying CFL Bulbs	Sales of Selected ENERGY STAR Qualifying CFL Fixtures
NY #1	20,875	1,725	PA #1	4,103	184
NY #2	11,455	843	PA #2	7,313	306
NY #3	11,649	650	PA #3	2,893	146
NY #4	10,409	777	PA #4	7,537	125
NY #5	7,503	642	PA #5	8,535	252
Overall	**61,891**	**4,637**	**Overall**	**30,381**	**1,012**

- *Sales outside program.* Table 7 displays the number of coupons redeemed and the number of Energy Star CFL bulbs sold between October 2001 and September 2002 in the five Long Island

home center stores. During this time period, 42 percent of the compact fluorescent bulbs sold by the sample home center stores were purchased without coupons (KEMA-XENERGY 2003b).

Table 7: Energy Star CFL Bulb Sales and Coupons Redeemed at Selected Long Island Home Center Stores, Oct. 2001 – Sept. 2002

Store Identifier	Energy Star CFL Bulb Coupons Redeemed	Energy Star CFL Bulbs Sold	Percent of Sales Outside Program
NY #1	9,395	20,875	55%
NY #2	6,732	11,649	42%
NY #3	8,770	11,455	23%
NY #4	6,367	10,409	39%
NY #5	4,418	7,503	41%
Total	**35,682**	**61,891**	**42%**

Appliances

Over 24,000 sales records on clothes washers, dishwashers, refrigerators, and room air conditioners were collected and analyzed from 10 independent appliance stores located in Vermont and Maine (KEMA-XENERGY 2003a).

- *Store Matching.* Appliance stores were matched based on store type, estimated monthly sales of clothes washers, and town population. Based on market knowledge and discussions with store managers, the stores listed in Table 8 were pre-classified as 'small' appliance stores and therefore deemed to be comparable. After processing the sales data, all stores, with the exception of one store in Maine (ME #1), were found to average between 15 and 19 clothes washer sales per month.

Table 8: Appliance Store Characteristics in Vermont & Maine

Store Identifier	Town Population	Average Monthly Sales of Clothes washers (1999-2001)	Average Annual Appliance* Sales (1999-2001)
VT #1	16,451	19	862
ME #1	15,181	48	1,927
VT #2	2,572	16	740
ME #2	2,918	19	870
VT #3	12,241	15	563
ME #3	4,657	19	692
VT #4	17,605	19	730
ME #4	39,757	16	660
VT #5	13,555	15	471
ME #5	9,021	16	593

*Includes clothes washers, dishwashers, refrigerators, and room air conditioners

- *Sales Comparison.* Table 9 displays the annual number of appliances sold by the five stores in Vermont and Maine, and the number and percentage which are Energy Star models. It reveals that, while the Maine stores sold over one thousand more appliances each year, the five Vermont stores sold almost twice as many Energy Star models. This results in proportional sales of Energy Star models that are two to three times higher in Vermont than in Maine. The table also shows that, between 1999 and 2001, proportional Energy Star sales increased from 25% to 28% in Vermont and from 9% to 12% in Maine. Interestingly, sales trends in Maine generally parallel those in Vermont but at lower levels (KEMA-XENERGY 2003a).

Table 9: Annual Appliance Sales at Vermont and Maine Stores

	1999		2000		2001	
Item	**VT**	**ME**	**VT**	**ME**	**VT**	**ME**
Total Number of Appliances Sold	3,269	4,856	3,273	4,214	3,557	5,154
Number of ENERGY STAR Models Sold	832	441	935	404	985	634
% ENERGY STAR Qualifying	**25%**	**9%**	**29%**	**10%**	**28%**	**12%**

Table 10 displays the annual proportion of Energy Star appliances sold, by appliance type, for the Vermont and Maine stores. Sales of Energy Star clothes washers and dishwashers have consistently been much greater in Vermont than in Maine. This difference is less evident for room air conditioners and refrigerators though. In both states, annual sales of Energy Star clothes washers and dishwashers have risen over the past three years. In contrast, sales of Energy Star room air conditioners and refrigerators were steady during 1999 & 2000, but declined in 2001, likely due to changes in the Energy Star standards (KEMA-XENERGY 2003a). Stocking of Energy Star models at independent appliance stores in Vermont generally paralleled these sales trends: gradual increases for clothes washers and dishwashers and slight decreases for refrigerators and room air conditioners.

Table 10: Proportional ENERGY STAR Appliance Sales at Vermont and Maine Stores

	1999		2000		2001	
Appliance	**VT**	**ME**	**VT**	**ME**	**VT**	**ME**
Room Air Conditioner	12%	10%	13%	11%	3%	1%
Clothes Washer	31%	7%	34%	8%	38%	12%
Dishwasher	51%	21%	58%	25%	64%	39%
Refrigerator	12%	5%	13%	4%	8%	6%

- *Sales outside program.* For each of the five Vermont stores, Table 11 summarizes the number of Efficiency Vermont rebates issued for Energy Star clothes washers, the number of Energy Star clothes washers sold, and the percent of units sold that were not rebated. During 2000, 31% of the Energy Star clothes washers sold by these five stores did not receive rebates; during 2001, this figure increased to 45% (KEMA-XENERGY 2003a).

Table 11: Energy Star Clothes Washer Rebates Issued and Units Sold by Store

	2000			2001		
Store Identifier	CW Rebates	Energy Star CW Sales	Percent Unrebated	CW Rebates	Energy Star CW Sales	Percent Unrebated
VT #1	56	85	34%	45	88	49%
VT #2	21	48	56%	23	59	61%
VT #3	31	42	26%	34	51	33%
VT #4	78	114	32%	70	131	47%
VT #5	57	65	12%	47	69	32%
Overall	243	354	31%	219	398	45%

Conclusions

The results suggest several findings regarding the impacts of the EVT and LIPA programs on sales of qualifying products. Note, however, that these findings are based on a small sample of five stores in each region.

- *Sales at participating stores appear to be much higher than at comparable stores in non-program areas.* Sales of Energy Star CFL bulbs at five participating hardware stores in Vermont were found to be 50 times greater than in five comparable Maine stores. Similarly, sales of Energy Star CFL products at five participating Long Island stores were found to be double the level found at five home center locations near Philadelphia. Lastly, proportional sales of Energy Star appliances were found to be two to three times greater at five participating Vermont independent stores than at five Maine stores. These findings suggest that the programs have had a substantial impact on the volume of qualifying product sales at participating stores.
- *Participating stores appear to exhibit increasing sales trends.* Sales of Energy Star CFL products at the five Vermont hardware stores increased by 51% between the first and second year of program operations. Sales of Energy Star appliances at participating independent stores in Vermont also increased, by roughly 15%, after the second year of operations. However, because there are no projected baseline sales for comparison, and national sales have increased as well, program impacts are difficult to discern.
- *Sales outside the program may be substantial.* At the five Vermont hardware stores, 83% of qualifying CFL products were sold without rebates during the first year of operation; this figure was 42% during the second year. Similarly, at five home center stores on Long Island, outside program sales for Energy Star CFL products were found to be 42% during the third year of program operation. The five independent appliance stores in Vermont sold 31% of Energy Star clothes washers without rebates during the first year of operation and 45% during the second year. While attribution of these sales to the programs is not possible without further research on customer behavior, the results do suggest that these programs may be influencing a much broader market than indicated solely by the volume of program incentives.

In addition to the program findings listed above, the following bullets summarize the strengths, weaknesses, and recommendations on the use of retail sales analysis in assessing residential market transformation programs.

- *Strengths.* Given the emphasis of residential programs on increasing sales of qualifying products, retail sales analysis provides "hard" information on this key metric. In conjunction with information on incentive volumes and other measures of market penetration, such as publicly available sales data, these results can be used to estimate overall sales volumes and therefore measure program effects. In addition, this approach can be used to assess program effects in two ways: by comparing current sales volumes to pre-program sales volumes at participating stores or by comparing sales volumes at participating stores with sales volumes at similar stores in non-program areas.

- *Weaknesses.* The major drawback to this approach is the reliance on cooperation from store management. Personal relationships with key management staff are essential to alleviating confidentiality concerns about providing proprietary sales data. In addition, a flexible approach allows for the collection and analysis of data that may not meet original expectations due to resource constraints on the part of store management (Titus et al 2002). Different stores also require different tactics; for example, independent and regional chain stores responded favorably to the offer of financial incentives which national chains were unable to accept. However, independent stores may not maintain sales records in an electronic format, while most chain stores do. Thus, independent stores may require labor-intensive data collection methods.

  The second major drawback of this approach is the availability of sales data from only a few store locations. While efforts were made to ensure that selected stores were representative and comparable, the results are nonetheless dependent upon a small sample.

- *Recommendations.* Based on our experience, we recommend targeting small or regional chain stores that are key program partners. These stores are typically invested in the program and therefore are more likely to be interested in cooperating with sales data collection efforts. In addition, chain stores are more likely to have established electronic data management systems and may operate store in non-program areas, both of which simplify the data collection process. Lastly, with cooperation from management at chain stores, it may be possible to cost-effectively obtain sales data from a larger sampling of store locations.

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