

Item Pricing in New York State*

by

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Abstract

New York State is one of only seven states that has an item pricing law. In anticipation of the law expiring on June 30, 1991, a study was undertaken to determine the impact the law has had on the food industry and consumers alike. The study focused on: 1) the accuracy of supermarket pricing systems, 2) the public's perception of the importance of item pricing and, 3) the cost of item pricing to supermarkets.

Accuracy of Supermarket Pricing Systems

Methodology

The objective of the first phase of this three-phase study was to determine and compare the accuracy of scanning and non-scanning supermarket pricing systems. To assess the pricing accuracy, two Cornell researchers visited supermarkets throughout New York state and one

supermarket in Pennsylvania. Specifically the researchers reviewed accuracy from two perspectives:

- 1) As it pertains to subsection 5 of the New York State Item Pricing Law (which covers only scanning stores). Subsection 5 addresses whether the customer was charged more at the register than they were "told" at the point of selection. To assess the level of accuracy, a comparison of item and receipt price was made to determine the rate of overcharges. In all cases, the price at the point of purchase was assumed to be the correct price.
- 2) A general comparison was made between all available prices (item, shelf, receipt and headquarters) to determine the specific source of errors for both scanning and non-scanning stores. For this comparison, the headquarters price was assumed to be the correct price.

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Sixteen supermarkets representing ten supermarket chains were selected by Cornell University and subsequently participated in the study. Of the 16 supermarkets, 12 were scanning stores and 4 were non-scanning. Four of the scanning supermarkets operated with either partial or total price removal¹. One non-scanning store was removed from this phase of the study because of incomplete pricing information.

At each supermarket, the researchers selected a market basket of 51 products. When the shopping was completed, the market basket was passed through a checkstand as a normal order so that a register receipt was obtained. The market basket shopping list consisted of:

- 50 percent dry grocery products
- 15 percent meat products
- 10 percent dairy products
- 10 percent fresh produce products
- 6 percent health and beauty care products
- 5 percent bakery products
- 4 percent general merchandise products

Fifty-one items were purchased in each supermarket for a total of 612 items purchased in scanning supermarkets and 153 items purchased in non-scanning supermarkets. The average price (retail) of the market basket for this study was \$102.56.

To assess the pricing accuracy, four prices were noted. They were 1) item price, 2) shelf tag price, 3) receipt price and 4) headquarters price. The headquarters price may be defined as the price set by headquarters for a particular store.

Subsection 5: Overcharges and Undercharges

Since Subsection 5 of the Item Pricing Law is specifically concerned with overcharges, in order to determine pricing errors, the item price (or shelf tag price if an item price was not present), and the scan or receipt price were compared for every item that was purchased. An overcharge occurred when the scan or receipt price *exceeded* the item (or shelf) price. An undercharge occurred when the scan or receipt price was *less* than the item (or shelf) price.

Scanning supermarkets had a total of 13 pricing errors which resulted in an average of 1.08 pricing errors per store. Of the 612 items purchased in the twelve scanning stores, 2.1 percent of the items had pricing overcharges. There were 11 undercharges detected which resulted in .92 undercharges per store. This caused an overall undercharge rate of 1.8 percent (Table 1).

Comparison of Errors For Supermarkets With Different Pricing Strategies

Four scanning stores which participated in the study practiced either partial or total price removal. These four stores experienced a total of 3 errors. The average number of errors per store for our market basket was .75 errors for an error rate of 1.5 percent. On the other hand, scanning stores that price individual items had a total of 10 errors. The average number of errors per store was 1.25 giving an error rate of 2.5 percent (Table 2).

From this comparison it can be concluded that pricing format has an affect on pricing accuracy (specifically pricing overcharges). Scanning stores with total or partial price removal have the fewest number of overcharges with .75 errors per store giving them an overcharge rate of 1.5 percent. Scanning stores that price individual items had an average of 1.25 overcharges per store which resulted in an overcharge rate of 2.5 percent. When pricing and non-pricing scanning stores were reviewed together, the error rate was 2.1 percent with an average of 1.1 overcharges per store.

General Pricing Errors

Pricing errors can be defined in many different ways. Over- and undercharges were calculated with respect to both the consumer and the supermarket. For the purpose of determining general pricing errors, they were characterized in the following ways:

- A. Average number of pricing errors per store. An error occurred if either the item, shelf or receipt price did not match the headquarters price.

Table 1**Summary of General Pricing Errors in Scanning Stores.**

	Number of items purchased	Number of errors	Range of errors per store	Error percent
Overcharges	612	13	0-3	2.1
Undercharges	612	11	0-3	1.8

Table 2**Comparison of Overcharges in Supermarkets with Item Pricing vs Supermarkets with Partial or Total Price Removal.**

	Scanning with item pricing	Scanning with partial or total price removal	Total
Number of stores	8	4	12
Number of items purchased	408	204	612
Number of errors	10	3	13
Avg. number of errors/store	1.25	.75	1.1
Percent of total items purchased with pricing errors	2.5%	1.5%	2.1%

B. Specific types of errors. Specific types of errors were determined by comparing the item, the shelf, and the receipt price to the headquarters price. The headquarters price was always assumed to be correct.

In all cases, the consumer experienced an overcharge (loss) if the receipt price was higher than the headquarters price. Likewise, the consumer experienced an undercharge (gain) if the receipt price was lower than the headquarters price. The supermarket experienced a loss or gain if the headquarters price was lower or higher than the receipt price, respectively.

Scanning supermarkets had a total of 42 pricing errors which resulted in an average of 3.5 pricing errors per store. Non-scanning supermarkets had a total of 17 errors for an average of 5.7 per store. On average, of the 51 items which were purchased in each store, 7 percent had pricing errors in scanning stores and 11 percent had pricing errors in non-scanning stores (Table 3.)

A review was done of all errors to determine which of the possible prices (item, shelf tag, receipt) caused a pricing error when compared to the headquarters price (Table 4).

Pricing errors are a result of either, 1) human error, 2) mechanical error, or 3) a combination of one and two. Errors in item and shelf prices are an indication of human error in marking individual items and maintaining current shelf tags. Combined, these two types of "human" errors accounted for 43 percent of the pricing errors in scanning stores. The remaining errors (57%) could be characterized as scanning system errors. The most common cause for an inconsistency in headquarters price when compared with other prices occurs when the store manager holds "manager's specials," adds or deletes an item from the scan file, or does not synchronize the alteration of the scan file with sales dates. Other possible causes of errors in scanning systems include; keying errors when checking out non-scannable items (such as produce), misidentification of produce items, and incorrect store level micro fiches.

Pricing errors in non-scanning stores are a result of human error, mechanical error or a combination of the two. Thirty-five percent of all the errors which occurred in non-scanning stores involved human error (Table 5). Specifically, item and shelf tag errors are an indication of incorrectly priced individual items and poor maintenance of shelf tags.

The remainder of the errors, or 65 percent can be attributed to headquarters errors in maintaining correct, up-to-date master price files such as fiches or price books (Table 5).

Four scanning stores which participated in the study practiced either partial or total price removal. These four stores experienced a total of 8 errors, with a range from 0 to a high of 5 errors per store. The average number of errors per store for our market basket was 2 errors for an error rate of 4 percent. Scanning stores that price individual items had over twice as many errors (4.3) while non-scanning stores had almost three times as many errors (5.7) as scanning stores that practice partial or total price removal.

When the sample of stores which participated in the study were divided into three subsets, that is 1) scanning with item pricing, 2) scanning with partial or total price removal, and 3) non-scanning stores, stores with partial or total price removal were found to be the most accurate (Table 6).

From this comparison, it can be concluded that partial or total elimination of individually priced items is a more accurate pricing format for the store and consumer. There were over twice as many pricing errors in scanning stores that price individual items and almost three times as many errors in non-scanning stores than in stores that practice some degree of price removal. Therefore, by eliminating item pricing, these stores increased their pricing accuracy two and threefold by eliminating the human error associated with pricing individual items. Furthermore, price removal also resulted in the smallest discrepancy in gain or loss to the consumer (\$.03) compared with the other two store types.

Table 3**Summary of General Pricing Errors.**

SUPERMARKET TYPE	Total items purchased	Total number of pricing errors	Percent of items purchased with pricing errors
Scanning supermarkets	612	42	7%
Non-scanning supermarkets	153	17	11%

Table 4**Comparison of Specific Pricing Errors - Scanning Stores.**

TYPE OF ERROR	Number of errors	Percent of total
Item price incorrect when compared to the headquarters price	13	31%
Shelf tag incorrect when compared to the headquarters price	5	12%
Receipt price incorrect when compared to the headquarters price	6	14%
Item and receipt price were the same but different from the headquarters price ^a	5	12%
Shelf and receipt price were the same but different from headquarters price ^b	3	7%
Item, shelf, and receipt price were the same but different from the headquarters price ^c	5	12%
Shelf and receipt price were different from each other and also different from headquarters price	2	5%
Only two prices available for comparison	3	7%

^a The items identified in this category had no shelf tags available.

^b The items in this category had no item prices available.

^c The most frequent cause of this type of error is a "manager's special."

Table 5**Comparison of Specific Pricing Errors - Non-Scanning Store.**

TYPE OF ERROR	Number of errors	Percent of total
Item price incorrect when compared to the headquarters price	0	0%
Shelf tag incorrect when compared to the headquarters price	1	6%
Receipt price incorrect when compared to the headquarters price ^a	5	29%
Item and receipt price were the same but different from headquarters price ^b	6	35%
Shelf and receipt price were the same but different from headquarters price ^c	2	12%
Item, shelf and receipt price were the same but different from the headquarters price	2	12%
Shelf and receipt price were different from each other and also different from headquarters price	0	0%
Headquarters price not available	1	6%

^a The most probable cause of this type of error is checker error.

^b The items identified in this category had no shelf tags available.

^c The items identified in this category had no item prices available.

Table 6

Comparison of Errors in Supermarkets with Three Pricing Strategies.

PRICING ERRORS	STORE TYPE			Total
	Scanning with item pricing	Scanning with partial or total price removal	Non-scanning	
Number of stores	8	4	3	15
Number of items purchased	408	204	153	765
Number of errors	34	8	17	59
Avg. number of errors per store	4.3	2	5.7	3.9
Percent of items purchased with pricing errors	8%	4%	11%	7.7%
Net result of comparison of shelf price and headquarters price	\$0.10 consumer LOSS/store/market basket	\$0.03 consumer GAIN/store/market basket	\$0.05 consumer GAIN/store/market basket	

Table 7

Missing Shelf Tags - Scanning Stores.

DEPARTMENT	Total number of items purchased	Total number of missing tags	Percent of missing shelf tags
Dairy	60	3	5%
HBC	36	6	17%
Dry Grocery	300	12	4%

Status of Shelf Tags

During the accuracy check, the researchers discovered missing shelf tags while shopping in the participating stores. It should be noted that in general meat, bakery, fresh produce and general merchandise are exempt from unit pricing and therefore one would generally not expect to find shelf tags in these departments. In scanning stores, the dairy and dry grocery department had very few missing shelf tags while health and beauty care department had slightly more with 17 percent of the shelf tags missing (Table 7).

For non-scanning stores, over half items purchased in the Health and Beauty Care Department had missing shelf tags and almost half of the shelf tags were missing from the Dairy Department in non-scanning stores. The Dry Grocery Department had 11 percent of its shelf tags missing in these stores (Table 8).

The absence of shelf tags was high in the non-scanning stores included in this study (Table 9). However, it could also be concluded that the number of shelf tags missing from scanning stores was also at a level far above that which consumers would find acceptable.

Consumers' Perception of the Importance Of Item Pricing

Purpose and Methodology

The objective of the second phase of research was to determine the relevance of item pricing to consumers.

Over 1000 supermarket shoppers were surveyed in New York State and Pennsylvania. Since Pennsylvania does not have an item pricing law, supermarket shoppers were surveyed there to measure and compare their attitudes towards price removal with shoppers in New York State (no difference was detected). Seven hundred ninety seven consumers were initially surveyed to gauge their perceptions regarding the importance of item pricing in supermarkets. Two hundred fifty additional consumers were later surveyed using a follow-up survey to gather additional insight into shoppers' perceptions regarding item pricing.

Consumer Survey

Two customer surveys were conducted. For both surveys, the first portion of the questionnaire was designed to provide shoppers with an opportunity to express concern or satisfaction with the store's item pricing policy without prompting. If they did not mention item pricing during the first portion of the interview, shoppers were explicitly asked to address the issue.

Shoppers were then asked to describe any problems they had or believed they would have if the supermarket in question did not mark individual items with price tags. Other questions designed to determine the shoppers price sensitivity and preferred form of pricing were also asked.

During the final portion of both surveys, shoppers were asked to complete demographic information about themselves.

The follow-up survey focused on two related areas. First, the relative importance of item pricing when compared to other store characteristics such as low prices and cleanliness was examined. The store characteristics used in the survey were taken from a national survey conducted by an independent agency for Progressive Grocer magazine.² For the Progressive Grocer Survey, consumers ranked a list of twenty store characteristics in order of importance. The top five characteristics ranked by consumers for the Progressive Grocer study were used in the Cornell Study.

The relative concerns shoppers had regarding the absence of individual price tags on items which by law are exempt from item pricing was then examined. These items traditionally do not have an individual price tag on them. Such items might include milk or a small box of jello.

If a shopper felt concerned about the possibility of price removal, a follow-up question was asked to the consumer which focused on the possible actions a store could take to overcome customer concerns regarding price removal.

Frequency tabulation was used to determine the respondents' demographics and the proportion

Table 8

Missing Shelf Tags - Non-Scanning Stores.

DEPARTMENT	Total number of items purchased	Total number of missing shelf tags	Percent of missing shelf tags
Dairy	15	7	47%
HBC	9	5	56%
Dry Grocery	75	8	11%

Table 9

Survey Demographics (n=1047).

		Percent of shoppers surveyed
AGE	18-34 years old	17%
	35-54 years old	35%
	55 years and older	48%
SEX	Female	81%
	Male	19%
ANNUAL TOTAL HOUSEHOLD INCOME	UNDER \$24,999	29%
	\$25,000-54,999	43%
	\$55,000-84,999	20%
	\$85,000 and over	8%

of respondents who were concerned about the supermarket's item pricing policy. Crosstabulation was used to determine what factors were associated with concern or satisfaction with the store's item pricing policy, as well as other associations concerning consumers' behavior.

Results

Respondent Profile

The majority of respondents were female (81%). Income levels were fairly evenly spread; the majority of incomes were in the under \$55,000 per year range. Consumers 55 years and older made up 48 percent of the respondents. Consumers between 35 and 54 years old made up 35 percent of the respondents and shoppers between the age of 18-34 accounted for 17 percent of survey respondents (Table 9).

Shoppers Responses

The first three questions which were asked to supermarket shoppers included:

1. What do you enjoy about shopping in this store?
2. What don't you like about shopping in this store?
3. What can this store do to improve your shopping experience?

Out of over 1000 supermarket shoppers, 20 (2%) mentioned not having individual items marked with a price tag as something that they didn't like about the store where they were shopping. One shopper mentioned it as a positive store attribute.

In order to gauge what characteristics were most important to supermarket shoppers, the surveyor asked shoppers; "I'm going to list 5 store characteristics. Please tell me which are the two most important to you"

Accurate, pleasant checkout clerks
Cleanliness
Price tag on every item

Freshness date marked on products
Low prices

Shoppers felt that cleanliness was the most important followed closely by low prices. "Price tag on every item" was fourth in importance to supermarket shoppers.

Following these general questions a series of questions was asked specifically about the presence or absence of individual price tags on exempt items³. Shoppers in pricing stores were asked one set of questions while shoppers in non-pricing stores were asked another set of questions. Shoppers who were surveyed in *pricing* stores were asked:

In this store there are some items that have never had a price tag on them like milk or a small box of jello. Does this present any problems for you when you shop?

If they answered yes a card was held up and the surveyor asked:

Which of these describes the problems you are concerned with?

- A. Shelf tags are sometimes hard to read
- B. I have nothing to compare receipt prices with
- C. Sometimes shelf tags are mixed up
- D. I don't have anything to compare shelf-tag prices with
- E. Other

Sixty-four percent of shoppers surveyed indicated that this has never been a problem for them while 36 percent indicated that it had caused them problems. Over half of those shoppers who were concerned about this mentioned hard to read or mixed up shelf tags as a reason. Shoppers were then asked a very specific question about item pricing.

Shoppers in *pricing* stores were asked;

There are some stores that don't put price tags on any of their items. If this store did not put price tags on any of its items, would this present any particular problems for you?

Consumers who were surveyed in *non-pricing* stores were asked:

Most of the items in this store are not marked with an individual price tag. Does this present any particular problems for you?

If the shopper indicated yes they were shown the card which listed the same options as in the question above. Over half of these shoppers expressed concern about hard to read or mixed up shelf tags as the reason they were concerned about price removal.

For the combined response of shoppers to these questions, 32 percent indicated that price removal was not a problem to them while 68 percent said, yes it was a problem for them while they shop (Table 10).

Shoppers in non-pricing stores were almost split in their feelings about price removal. Forty-eight percent said yes, it was a problem for them, while 52 percent said no, that price removal was not a problem for them while they shopped (Table 10).

Seventy-two percent of shoppers in pricing stores felt that price removal would be a problem to them, while 28 percent were not concerned about price removal (Table 10).

Again, over half of those shoppers expressed concern about hard to read or mixed up shelf tags as the reason they were concerned about price removal.

During the interview, shoppers were asked the following question:

When deciding where to shop, how important is it that the store has low prices?

Possible answers included:

a) Very important

- b) Somewhat important
- c) Not important

Of respondents who said prices were very important, a significantly higher percentage indicated that not having every item marked with a price tag would be a problem. The difference between the responses of shoppers who said prices were not important was much less marked. Therefore, although there was no relationship between income and price sensitivity, a significant association was found between the respondent's price sensitivity and their concern about item price removal (see Table 11).

From these results, it can be concluded that shoppers who are very price conscience, also felt that removing individual price tags would present a problem for them while they were shopping.

If a shopper of either a pricing or non-pricing store indicated yes to any of the questions which specifically regarded the possible or existing policy of price removal, they were asked:

Besides pricing individual items, which of these best describes the actions this store could take to overcome the concerns you just mentioned?

A card was held up with the following possibilities:

- A. Make shelf tags easier to read
- B. Receive an item free if charged the wrong price
- C. Reduce my food bill by \$50-\$100 per year by not pricing items
- D. Make sure shelf tags are in the correct place
- E. Other

Seventy percent of the shoppers asked this question were concerned about shelf tags. They either wanted the store to make them easier to read or make sure they are kept in the correct place.

Table 10

Responses of Shoppers to a Possible or Existing Price Removal Situation
By Store Pricing Format (percent)

RESPONSES	Pricing store	Non-pricing store	Total
<i>NO</i> , it is not a problem for me while I shop	28%	52%	32%
<i>YES</i> , it is a problem for me when I shop	72%	48%	68%
TOTAL	100%	100%	100%

Table 11

Percent Comparison Between Price Sensitivity and Consumer Concern Over Price Removal (n=797).

PROMPTED RESPONSE	Prices are NOT important	Prices are SOMEWHAT important	Prices are VERY important
The removal of individual item price tags WOULD be of concern	60.3%	63.3%	70.8%
The removal of individual item price tags WOULD NOT be of concern	39.7%	36.8%	29.2%
TOTAL	100%	100%	100%

During the interview, shoppers were asked what form of pricing is most useful to them. That is, did they rely on 1) shelf tags, 2) individual price tags, 3) special in-store signs, 4) in-store flyers, or 5) they had no preferred form of product pricing.

Almost two-thirds (64.5%) of the shoppers surveyed indicated that they found individual price tags to be the most useful form of pricing products. The second most useful form of pricing mentioned by almost 20 percent of the respondents indicated that they feel shelf tags are the most useful form of pricing (Table 12).

A comparison was made between the form of price shoppers found most useful and how sensitive they were regarding price removal. Results indicate that consumers who found individual price tags to be the most useful form of product pricing were also the most concerned about price removal.

Shoppers who expressed no concern regarding the presence or absence of individual price tags tended to be those who stated that the form of pricing did not matter or found shelf tags most useful (Table 13).

The forms of pricing found most useful by shoppers in stores which item price did not significantly differ from those indicated by shoppers in supermarkets which do not item price. However, a higher percentage of shoppers in supermarkets which do not price individual items stated the form of pricing does not matter. This may be because shoppers have adjusted to a non-pricing format and no longer regard individual item prices as important. Results indicate shoppers over 55 years old found individual prices most useful.

Analysis shows that shoppers of stores which do not mark individual items with price tags have learned to use shelf tags for identification of individual item prices. However, it should be noted that senior citizens still rely heavily on item prices and if individual prices are removed, special care should be taken to design shelf tags that are easily read and understandable for senior citizens.

The Cost of Item Pricing to Supermarkets

Purpose and Methodology

The typical supermarket stocks over 15,000 individual items⁴. The placing of individual price tags represents a substantial cost to the supermarket - a cost that is passed directly to the consumer. The purpose of this section was to determine the magnitude of this cost, by measuring several inputs related to pricing individual items.

To determine the cost of item pricing to supermarkets, information was gathered from four supermarket chains specifically for the grocery, dairy and frozen foods departments (Table 14). Other store departments were not included because of varying pricing policies and item pricing exemptions practiced within those departments⁵.

Results

Average weekly volume and costs

The grocery department would have weekly sales volume of \$195,717 and the dairy/frozen food departments would have combined weekly sales volume of \$73,920.

Initial Shelf Stocking:

Pricing and Non-Pricing Situation

For one store, stocking 14,174 cases of grocery, frozen and dairy products per week, at a rate of 43 cases per hour, requires 330 hours per week to complete. Annualized, this amounts to \$180,008 per store. Stores which do not price individual items simply have to place them directly on the shelf from the case when initially stocking the product. This results in a significant time savings since an individual price tag does not have to be put on every item. Stocking the same number of cases (14,174) at the increased rate of 51 cases per hour, requires 278 hours per week. Annualized this amounts to \$151,643 per store.

Table 12

Comparison Between the Most Useful Forms of Product Pricing Mentioned by Consumers

FORM OF PRICING	Percent Response
Individual price tag	64.5%
Shelf tag	19.2%
Special store sign	.6%
In-store flyer	2.4%
Other	4.7%
No preference	8.5%

Table 13

Percent Comparison Between Item Pricing Sensitivity and Form of Pricing

FORM OF PRICING PREFERRED BY CONSUMERS	Price removal WOULD be a problem	Price removal WOULD NOT be a problem
Shelf tags	40.8%	59.2%
Individual price tags	82.4%	17.6%
No preferred form of price	25.0%	75.0%

Table 14

Average Weekly Figures Used to Determine the Cost of Item Pricing.

Grocery department: stocked per week	9,950 cases
Dairy/frozen department: stocked per week	4,224 cases
Average cost per case:	
Grocery	\$19.67
Dairy & Frozen	\$17.50
Percent of total weekly store sales attributable to grocery, dairy and frozen food sales ^a	40.1%
Average hourly wage rate (including benefits) ^b	\$10.49
Average number of cases which can be priced and stocked on shelves per hour-PRICING STORES	43
Average number of cases which can be priced and stocked on shelves per hour-NON-PRICING STORES	51
Average time needed for price changes	3.5 minutes per item
Average cost of a price gun	\$33.11
Average number of price guns necessary in a PRICING STORE	35
Average number of price guns necessary in a NON-PRICING STORE	6
Average cost of price labels	\$5.10 per 10,000

*Price Changes:
Pricing and Non-Pricing Situation*

During a one week period, on average there are 675 price changes in the grocery, frozen and dairy departments. Each price change takes 3.5 minutes to complete. Annualized this totals \$21,478. A store that does not price individual items is able to make price changes much faster than a pricing store (.5 minutes per change compared to 3.5 minutes per change in a pricing store). Based on the same 675 price changes this represents an annual cost to a non-pricing supermarket of \$3,068.

Cost of Supplies

Assuming an average of 18 labels per case and 14,174 cases priced per week, the annual cost of labels for just initial shelf stocking is \$6,766 per store for stores which price individual items.

The average item pricing store requires 35 price guns at an average cost of \$33.11 per gun for a total annual cost of \$1,159. A non-pricing store requires 6 price guns for a total cost of \$199.

Costs Associated with Item Pricing

The average annual cost to one store for pricing the grocery, dairy and frozen food departments is \$209,411. A non-pricing store could expect an annual cost of \$154,910. Therefore, pricing individual items in the grocery, dairy and frozen food department represents an additional cost of \$54,501 per year (Table 15). This is a conservative estimate since it is for only three departments, it does not include the costs associated with changing prices when items go on or off sale, nor does it include the personal costs associated with hiring and training the extra personnel needed in a pricing store.

Although the grocery, dairy and frozen food departments are three major departments in a grocery store, most grocery stores may have a dozen or more departments and may item price the majority of items in all departments. Depending on the item pricing policy of various chains, the cost of item pricing could be considerably

higher if they are item pricing in the majority of other departments.

Extending the cost to the entire store

Beyond the three departments discussed above, extending the cost of item pricing to the entire store is very difficult. This is because by law, statutory exemptions are permissible on:

- specific items (such as eggs and milk)
- certain packaging sizes and forms (multi-item package)
- bulk or fresh produce
- items sold in vending machines
- food sold for consumption on the premises
- sale items
- snack foods
- cigarettes, cigars, tobacco and tobacco products

In addition, food retailers are permitted to refrain from placing item prices on up to 4.5 percent of the non-exempt commodities offered for sale. As a result of these exemptions (particularly the 4½% exemption) it is difficult to determine the level of exemptions for an individual store because of differing store policies on how they exercise the 4½ percent exemption.

However, one way to extend this to an entire store is to remove all statutory exemptions on fixed weight prepackaged products included in the Item Pricing Law. Based on the figures gathered for this study, a store with average weekly sales of \$672,411 would incur an additional annual cost of \$134,482 which would be directly attributed to item pricing assuming no statutory exemptions (Table 16).

If \$54,501 is the cost to item price the three departments, and they have weekly sales of \$269,637, this represents 20 percent (\$54,501 / \$269,637) of sales. Therefore, 20 percent of total

Table 15

Annualized Costs Associated With Pricing Individual Items in the Grocery, Dairy and Frozen Food Departments of a Typical New York State Supermarket.

	PRICING	NON-PRICING
Initial shelf stocking	\$180,008	\$153,643
Price changes	21,478	3,068
Cost of labels	6,766	0
Cost of price guns	1,159	199
TOTAL COST PER STORE	\$209,411	\$154,910
ADDITIONAL COST TO PRICING STORES	\$54,501 per year	

^a 1990 Supermarket Business-Consumer Expenditures Study

^b This average hourly wage rate represents the average wage rate including benefits for a person who would typically be doing the job of stocking shelves and pricing items.

^c The items identified in this category had no item prices available.

Table 16

Calculation to Determine the Cost of Item Pricing if There are No Statutory Exemptions.

Cases stocked per week	x	Average retail cost/case		
Grocery: 9950	x	\$ 19.67	=	\$195,717
Dairy/Frozen: 4224	x	\$ 17.50	=	<u>\$ 73,920</u>
		Weekly sales volume of grocery, dairy/frozen food departments		\$269,637
<p>If grocery, dairy/frozen foods represent 40.1% of total store sales than (\$269,637 / 40.1%) \$672,411 represents total weekly store sales for a store with \$269,637 sales in the grocery, dairy/frozen departments.</p>				
<p>If \$54,501 is the cost to item price the three departments, and they have weekly sales of \$269,637, this represents 20% (\$54,501/\$269,637) of sales. Therefore, 20% of total store sales of \$672,411 equals a cost of \$134,482 per year or \$2,586 per week for one store to item price.</p>				

store sales of \$672,411 equals a cost of \$134,482 per year or \$2,586 per week for one store to item price.

Conclusions

For several years the item pricing issue in New York State has been clouded by many misconceptions. Most have focused on the level of accuracy in supermarket pricing systems and consumer perceptions centered around the importance of having individually priced items on supermarket shelves. This three phase study is an attempt to clarify this emotional and important issue. Specifically, this study focused on three related concerns:

- 1) The accuracy of supermarket pricing systems.
- 2) Consumer perception of the importance of item pricing.
- 3) The related costs to supermarkets associated with item pricing.

Study results indicate that supermarkets which use scanning technology along with partial or total price removal had the most accurate pricing systems of the three pricing formats that were reviewed. Supermarkets which still use manual cash registers and price all items had the greatest number of pricing errors. Scanning supermarkets which item price ranked second in the number of pricing errors which were detected by the researchers.

The issue of item pricing was not seen as a major concern to supermarket shoppers when asked general questions about what they like and dislike about the particular supermarket(s) where they shop. Out of over 1000 supermarket shoppers, 98 percent of the consumers surveyed showed no concern about item pricing when asked general questions regarding what they like and dislike about the store where they were shopping. Only 2 percent mentioned not having individual items marked with a price tag as something that they didn't like about the store where they were shopping.

When 250 supermarket shoppers were asked to identify two store characteristics which were the most important to them out of a list of five possibilities they chose cleanliness as most important followed by low prices. Accurate pleasant checkout clerks was third, price tag on every item fourth and freshness date marked on products was the least important.

Sixty-four percent of shoppers who were surveyed in pricing stores felt that the absence of price tags on exempt items had never been a problem for them while they shopped. Thirty-six percent said that this had been a problem for them. Over half of those shoppers who were concerned about this mentioned hard to read or mixed up shelf tags as the reason they were concerned.

However, when specifically asked, two-thirds of the shoppers interviewed felt that the absence of individual price tags on all items in the store would make it difficult for them while shopping. Shoppers of scanning stores with partial or total price removal, were much less concerned with the item pricing issue.

Shoppers in non-pricing stores were less dependent on item pricing for product price information and relied more on shelf tags than shoppers from other types of stores. It seems as though these shoppers appear to have adjusted to a price removal format. Furthermore, it appears that price removal alone is not an important factor in why a consumer chooses to shop (or not to shop) at a particular store.

Study results indicate that shoppers adjust to non-pricing situations by learning to use the information provided on shelf tags. However, when shelf tags are not available or are difficult to read, it presents a significant problem for consumers. Inadequate shelf tags was also a problem frequently encountered by the researchers in this study.

The annual costs associated with item pricing are substantial. Based on conservative averages from four major supermarket chains, for eleven variables associated with pricing items, it is estimated that a scanning supermarket which

prices individual items has an additional cost of \$54,501 per year for the grocery, dairy and frozen food departments. In an industry which typically operates on a very small profit margin, stores which do not item price may have a competitive advantage over supermarkets which price each item.

Pricing individual items is a practice which is surrounded by many perceptions which have placed an inordinate amount of importance on a practice which is characterized by high costs, high rates of human error, and variable consumer sentiment. If a common goal of all involved is to provide the consumer with accurate price information, and a visible and understandable means of product pricing information, perhaps the focus of public interest groups, state government, and the food industry should be on the development of a comprehensive educational program focused on improving shelf tags in food stores.

Retailers and consumers need further education about shelf tags. Retailers should concentrate their efforts on: 1) the development of clearly understandable and readable tags, 2) maintenance of current shelf tags, 3) accurate placement of shelf tags, and 4) the development of an educational program for consumers focused on "how to read" shelf tags. Consumers should learn how to use shelf tags not only for specific product price information but also for use in comparison shopping by using unit pricing information contained on the tag.

Endnotes

¹The supermarkets with "partial" price removal had removed prices from the grocery department and had partial removal in other departments.

²*Progressive Grocer*, 57th Annual Report, Mid April 1990, p. 57.

³Exempt items are exempt from individual pricing by the item pricing law in New York State either by virtue of the general 4½ percent exclusion, by their package size, or by a specific product exemption.

⁴*Progressive Grocer*, 58th Annual Report, April 1991. p. 48. The average chain supermarket in the North Atlantic states stocks 15,861 items.

⁵Average figures were not included for the number of cases which can be re-priced and restocked per hour before and/or after a sale because the participating stores had different pricing policies regarding pricing specials and sale items. The cost of shelf tags was also not included in the calculation because they were assumed to be the same in pricing and non-pricing stores.

