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Some Facts on Unit Pricing in New York City
and Upstate New York Supermarkets

By

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Introduction

Consumerism has played an expanding role in the environment of business decision makers. The past decade has seen the passage of considerable legislation designed to protect the consumer interest. In the process there has been a substantial broadening of the concepts involved in consumer protection. Businessmen have suffered from a myopia that comes from perceiving consumerism primarily in terms of traditional market practices. Their emphasis on the peculiarities of these practices often leads them to overlook problems in other contexts and, thus, discount the seriousness of some problem that may be quite meaningful to the consumer. Legislators and active members of the consumer movement are more sensitive to some of the problems facing consumers, but their lack of understanding of specific market situations often leads to inappropriate diagnosis or solution.

This study is directed at one consumer issue: Unit Pricing. Its purpose is to establish some facts on the issue which may be useful to both the advocates and adversaries of unit pricing.

Seriousness of the Problem

Dr. Brunk in a recent talk said, "When pressures for mandatory unit pricing first began to build up, the consumer activist on the one hand and the affected retailers on the other began to rationalize costs and benefits. In the absence of facts and experience both came forth in a battle of gross exaggeration and both failed to identify some of the practicalities." ^{1/}

Many retailers have instituted unit pricing under both mandatory and voluntary circumstances. To date, research as to the effectiveness and performance of such programs has been limited and the objectivity of the research in some instances may be questionable. In general, surveys of shopper opinion reveal a very favorable attitude toward the unit pricing idea -- but that attitude almost invariably has been expressed as a benefit for someone else. Accurate conclusions on the appropriateness or usefulness of unit pricing should not be based strictly on opinion criteria. Actual shopper performance and reaction to the practice also should be considered and this is now possible because there has been experience with it under both voluntary and mandated circumstances.

Purpose of the Study

The purpose of the study was to observe the application and performance of unit pricing. The specific object of this study was to answer the following questions:

^{1/} Brunk, Max E., "Consumerism and Pricing Performance by the Food Retailer," Talk before the New York State Food Merchants Association at Grossinger, New York on October 20, 1971, p. 5.

1. How are different chain stores complying with mandatory unit pricing regulation, and how accurate is the presentation and performance of these programs?
2. What is the use and scope of interpretation of unit pricing by the shopper?
3. Is there a difference in store performance and shopper reaction when unit pricing is voluntary or mandatory?

Standardization Dilemma

Many people feel that unit pricing wouldn't be necessary if manufacturers would standardize their containers. Dermot P. Shea, Executive Secretary to the State Consumers Council in Massachusetts has charged that manufacturers in order to confound the consumer, have used "a proliferation of package sizes along with the resulting variation in measurement of contents, whether it be by fraction of ounces or what have you."^{2/} If the manufacturer packaged in units of simple division or multiples of pound units many feel there would be no need for unit pricing.

The current thrust of unit pricing is directed at alleged abuses of package proliferation, meaning, too many sizes and fractional weights. But what is meant by standardization? If weights are made comparable the variation in package size, number of servings, etc. vary. If package size is standardized then weights or the fullness of the package varies. In many instances neither weights nor volume provide an accurate means of comparing two products. At the same time when a shopper makes a purchase decision some degree of comparison is implied and desired by the shopper.

Scope of the Study

The data for the study were collected in the stores of New York City and in the stores of several Upstate New York food chains. Two stores were selected from each chain in New York City. These stores were all located within the prescribed boundary limits outlined in the text of the New York City unit pricing regulation which became effective June 1, 1971. Seven stores were selected in Upstate New York, five representing a chain in Rochester and the other two representing a chain located in Syracuse.

The study covered a period of approximately one month, beginning September 13, 1971 and lasting to October 9, 1971. During this time, 1573 unit pricing observations were made and 350 randomly selected shopper interviews taken in the New York City market. In Upstate New York, 293 unit pricing observations were made and 530 shopper interviews completed.

^{2/} Supermarket News, "Standard Containers Would Steal Dual-Pricing Thunder," November 2, 1970, p. 13.

Description of Unit Pricing Labels Used By Chains

The unit price labels were all made of paper. Some were glued to the shelf molding while others slipped into metal grooves already on the facing. The information on the label was printed directly by computer, listing the name of the product and its weight, as well as the price of the product and price per unit.

There were a number of variations among firms in the way unit price information was presented. These differences were:

1. Size of characters
2. Location of data on the label
3. Color

The examples below represent unit price shelf labels used by three different chains.

NOODLES		RETAIL
12	8 Z	.33
		P.P.M.
		.66 PER POUND

25	024	7 3/4
PINEAPPLE PIE JR.		
.185 PER LB	PRICE	.09

PRICE PER POUND	DESCRIPTION	2/ .37
.37	PEAS	SELLING PRICE
	COBS	▲
	BACK SIZE	STORE
	46 804	ZONE
	(UNIT PRICE	

Consumer Commodities Regulated in New York City

The following commodities were subjected to unit price labeling in New York City, effective June 1, 1971. This was in accordance with the "Display of Price Per Measure" rule, and of the regulations governing "Truth-in-Pricing."

1. Canned and bottled vegetables which do not require refrigerated storage.

2. Canned and bottled fruits which do not require refrigerated storage.
3. Canned and bottled real and imitation vegetable and fruit juices which do not require refrigerated storage.
4. Canned and bottled tomatoes, tomato sauce, tomato paste, tomato puree and other related tomato products which do not require refrigerated storage.
5. Canned and bottled baby foods which do not require refrigerated storage.
6. Cooking and salad oils.
7. Canned and bottled salmon, tuna, and sardines which do not require refrigerated storage.
8. Jams, jellies and preserves.
9. Peanut butter.
10. Carbonated beverages.
11. Coffee, instant and regular.
12. Dog and cat foods.
13. Breakfast cereals (does not include corn meal, rice, maize).
14. Cake, pie crust and other pastry mixes.
15. Macaroni, spaghetti and other dry pasta products (does not include prepared or pre-flavored convenience pasta foods).
16. Paper towels, napkins, facial tissues, plates, cups, and toilet paper.
17. Dishwashing and laundry soaps and detergents.
18. Scouring powders.

Method of Study

The study was made by observing and recording unit prices posted in the store. Information was collected from randomly selected unit priced items and recorded on a prepared form. This form was divided into the store commodity product groups subject to unit pricing. New York City stores complied to city-wide mandatory regulation whereas Upstate New York stores adhered to voluntary unit pricing policy set by the particular chain.

In total, 50 observations were taken from each store in New York City, unless of course the store had not yet unit priced all required categories. Of the five stores studied in Rochester, 39 observations were taken from each, whereas 49 observations were taken from each of the two stores in Syracuse. Limiting the number of observations taken from each store enabled the observer to revisit the store to recheck the observations taken during the initial visit. Any corrections in accuracy of data copying were made during this period.

At the same time a limited number of very brief shopper interviews were taken in the stores. This was achieved by having the interviewer assume the role of a shopper. A partially filled shopping cart and inquisitive mannerism served as his disguise. Shoppers were stopped randomly and questioned as to the interpretation and use of a particular unit price label. The precise questions asked were:

1. What does this label mean?
2. Do you use it?
3. How often do you use it?

Interviews were made as informal as possible. Considerable time was spent between individual questioning so that the next interviewee was unaware of the previous encounter and conversation. This space of time supplied the opportunity for the interviewer to record the consumer response.

Observations and interviews were carried out with the manager's knowledge that an observer was making a study on unit pricing, but without the manager knowing what was being observed. In this way, the observer was allowed free access in the store without arousing suspicion on the part of any in-store personnel or supervisors as to the purpose of the study.

Description of Observational Errors Identified in the Study

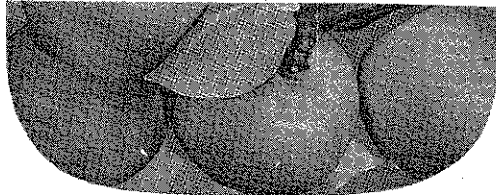
1. Accuracy in the location of unit price labels.

In regard to the location of the unit price label the "Truth-in Pricing" regulation states that all required price information must be found directly above, below, adjacent to, or on the consumer commodity to which it relates. All discrepancies of this nature found evident in the selected sample labels were recorded.

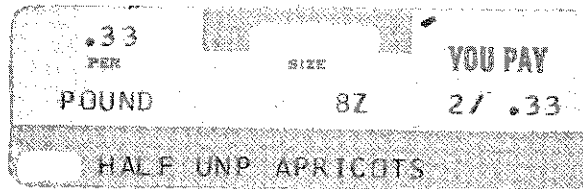
2. Discrepancies between net weight or content indicated on the unit price label and on the product.

This error occurred whenever a difference was observed between the net weight or content quotation of the unit price label and the actual net weight or content quotation on the commodity to which the label related. The example below clearly defines this type of error.

UNPEELED
HALVES APRICOTS
 IN HEAVY SYRUP



NET WT. 8¾ OZ.



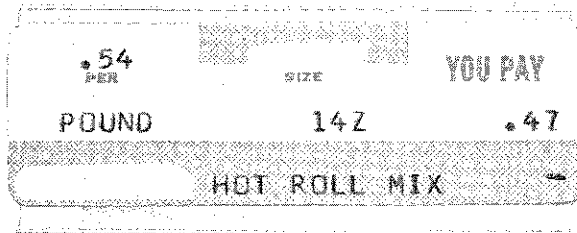
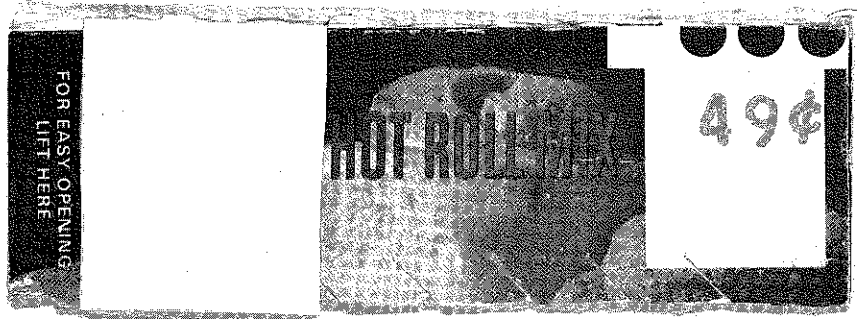
Note: The above unit price label in characterizing size does not correspond with the actual commodity label quotation to which it relates.

Unit Price Shelf Label - 8 ounces

Commodity Label - 8 3/4 ounces

3. Discrepancies between retail price indicated on the unit price label and on the product.

This error occurred whenever a difference was observed between the retail price quotation printed on the unit price label and the actual price stamped on the commodity to which the label related. An example is cited below.



Note: The above unit price label's quotation of retail price (you pay) differs from the retail price stamped on the commodity to which it relates.

Unit Price Shelf Label Retail Price	47¢
Commodity Retail Price	49¢

4. Accuracy of the unit price computation on the label.

Data necessary for computing unit price can be found on the unit price shelf label. Having record of such information on the unit price, a recalculation was performed. In some instances it was found that the unit prices quoted on the labels were in fact an incorrect representation of unit price. Examine the example below.



Information on Label

(incorrect)	Size 8 1/4 ounces	
	Selling Price	.20
	Unit Price	.37 per pound

Recalculation

	Size 8 1/4 ounces	
	Selling Price	.20

$$\text{Unit Price} = \frac{8.25}{16.00} = .516$$

$$\frac{.516}{.20} = .387 \text{ or } .39 \text{ per pound}$$

Results on Unit Pricing in New York City Supermarkets

Table 1: Variation Among Chains in Accuracy of the Location of Unit Price Labels - New York City Stores 1971

Chain	Number of Observations	Properly Located		Improperly Located	
		#	%	#	%
A	100	53	53	47	47
B	100	80	80	20	20
C	100	85	85	15	15
D	100	70	70	30	30
E	100	81	81	19	19
F	99*	88	89	11	11
G	100	60	60	40	40
H	100	84	84	16	16
I	100	64	64	36	36
J	98*	47	48	51	52
K	100	95	95	5	5
L	98*	66	67	32	33
M	92*	74	80	18	20
N	100	72	72	28	28
O	86*	51	59	35	41
P	<u>100</u>	<u>75</u>	<u>75</u>	<u>25</u>	<u>25</u>
Total	1573	1145	73	428	27

* Unable to obtain full sampling because store had not unit priced all required categories.

Table 2: Distance Improperly Located Unit Price Labels Were Removed from Related Product - New York City Stores - 1971

Distance Removed	Labels and Products Appearing on Same Shelf		Labels and Products Appearing on Different Shelf		Total	
	#	%	#	%	#	%
	1 Facing	179	46	5	14	184
2 Facings	115	29	14	39	129	30
3-5 Facings	87	22	10	28	97	23
Greater than 5 Facings	<u>11</u>	<u>3</u>	<u>7</u>	<u>19</u>	<u>18</u>	<u>4</u>
Total	392	100	36	100	428	100

Table 3: Variation Among Chains by Discrepancies Between Net Weight or Content Indicated on the Unit Price Label and on the Product - New York City Stores - 1971

Chain	Number of Observations	Observations without Discrepancies		Observations with Discrepancies	
		#	%	#	%
A	100	86	86	14	14
B	100	82	82	18	18
C	100	82	82	18	18
D	100	98	98	2	2
E	100	78	78	22	22
F	99*	95	96	4	4
G	100	96	96	4	4
H	100	94	94	6	6
I	100	77	77	23	23
J	98*	94	96	4	4
K	100	100	100	0	0
L	98*	93	95	5	5
M	92*	74	80	18	20
N	100	97	97	3	3
O	86*	76	88	10	12
P	<u>100</u>	<u>88</u>	<u>88</u>	<u>12</u>	<u>12</u>
Total	1573	1410	90	163	10

*Unable to obtain full sampling because store had not unit priced all required categories.

Table 4: Variation Among Chains by Discrepancies Between Retail Price Indicated on the Unit Price Label and on the Product - New York City Stores - 1971

Chain	Number of Observations	Observations without Discrepancies		Observations with Discrepancies	
		#	%	#	%
A	100	80	80	20	20
B	100	88	88	12	12
C	100	82	82	18	18
D	100	80	80	20	20
E	100	93	93	7	7
F	99*	81	82	18	18
G	100	78	78	22	22
H	100	82	82	18	18
I	100	81	81	19	19
J	98*	64	65	34	35
K	100	88	88	12	12
L	98*	86	88	12	12
M	92*	65	71	27	29
N	100	81	81	19	19
O	86*	69	80	17	20
P	<u>100</u>	<u>69</u>	<u>69</u>	<u>31</u>	<u>31</u>
Total	1573	1267	81	306	19

*Unable to obtain full sampling because store had not unit priced all required categories.

ins Between Price Indicated on Unit Price Label
 ted Product - New York City Stores - 1971

	Greater Retail Price Indicated on Label		Greater Retail Price Indicated on Product	
	Sum of Differences	Average Difference	Sum of Differences	Average Difference
Observations	\$	\$	\$	\$
10	.41	.04	.54	.05
8	.34	.04	.11	.03
14	1.82	.13	.13	.03
10	.68	.07	.25	.03
6	.45	.08	.02	.02
12	.83	.07	.22	.04
13	1.33	.10	.39	.04
14	.75	.05	.21	.05
14	1.00	.07	.32	.06
19	.92	.05	.91	.06
11	.79	.07	.04	.04
8	.80	.04	.10	.03
15	1.10	.07	.32	.03
16	1.05	.07	.11	.04
11	.57	.05	.33	.06
<u>27</u>	<u>1.33</u>	<u>.05</u>	<u>.11</u>	<u>.03</u>
208	14.17	.07	4.11	.04

Table 6: Variation Among Chains in Accuracy of Unit Price
Computation on Label - New York City Stores 1971

Chain	Number of Observations	Correct		Incorrect	
		#	%	#	%
A	100	91	91	9	9
B	100	81	81	19	19
C	100	60	60	40	40
D	100	69	69	31	31
E	100	55	55	45	45
F	99*	94	95	5	5
G	100	97	97	3	3
H	100	91	91	9	9
I	100	86	86	14	14
J	98*	75	77	23	23
K	100	93	93	7	7
L	98*	95	97	3	3
M	92*	82	89	10	11
N	100	88	88	12	12
O	86*	73	85	13	15
P	<u>100</u>	<u>88</u>	<u>88</u>	<u>12</u>	<u>12</u>
Total	1573	1318	84	255	16

* Unable to obtain full sampling because store had not unit priced all required categories.

Table 7: Variation Between Incorrect Computation of Unit
Price on Label and Actual Unit Price - New York
City Stores - 1971

Difference (cents)	Number of Observations	Percent of Total Observations
1 or less	135	53
2 - 5	55	21
6 - 10	20	8
Greater than 10	<u>45</u>	<u>18</u>
Total	255	100

Performance Among Chains - New York City Stores - 1971

ERRORS									
per Location of Label	Net Weight or Content Discrepancies		Retail Price Discrepancies		Computation of Unit Price on Label		Total Errors	#	%
	#	% of total	#	% of total	#	% of total			
52	14	16	20	22	9	10	90	100	
29	18	26	12	17	19	28	69	100	
16	18	20	18	20	40	44	91	100	
36	2	3	20	24	31	37	83	100	
20	22	24	7	8	45	48	93	100	
29	4	11	18	47	5	13	38	100	
58	4	6	22	32	3	4	69	100	
33	6	12	18	37	9	18	49	100	
39	23	25	19	21	14	15	92	100	
46	4	4	34	30	23	21	112	100	
21	0	0	12	50	7	29	24	100	
62	5	10	12	23	3	6	52	100	
25	18	25	27	37	10	14	73	100	
45	3	5	19	31	12	19	62	100	
47	10	13	17	23	13	17	75	100	
<u>31</u>	<u>12</u>	<u>15</u>	<u>31</u>	<u>39</u>	<u>12</u>	<u>15</u>	<u>80</u>	<u>100</u>	
37	163	14	306	27	255	22	1152	100	

not unit priced all required categories.

Performance by Regulated Category - New York City Stores - 1971

ERRORS									
Improper Location of Label	Net Weight or Content Discrepancies		Retail Price Discrepancies		Computation of Unit Price on Label		Total Errors	#	%
	#	% of total errors	#	% of total errors	#	% of total errors			
15	25	24	40	5	8	16	27	60	100
16	25	27	43	11	17	9	14	63	100
32	52	3	5	15	24	12	19	62	100
11	42	11	42	2	8	2	8	26	100
29	42	5	7	14	20	21	30	69	100
24	30	17	21	12	15	28	35	81	100
27	59	1	2	9	20	9	20	46	100
10	53	0	0	6	32	3	16	19	100
15	37	2	5	14	34	10	24	41	100
26	49	3	6	8	15	16	30	53	100
25	53	0	0	13	28	9	19	47	100
23	29	25	32	8	10	22	28	78	100
26	46	10	18	8	14	12	21	56	100
26	28	23	25	26	28	18	19	93	100
2	20	1	10	5	50	2	20	10	100
55	37	5	3	54	36	35	23	149	100
10	37	2	7	11	41	4	15	27	100
56	33	4	2	85	49	27	16	172	100
428	37	163	14	306	27	255	22	1152	100

Table 10: Results of Store Interviews - New York City Stores - 1971

Response to Unit Price Labels	Number of Shoppers	Percent of Total Shoppers
Indicated an understanding	72	20.6
Did not indicate an understanding	<u>278</u>	<u>79.4</u>
Total	350	100.0

Table 11: Use of Unit Price Labels by Those Shoppers Indicating An Understanding - New York City Stores - 1971

Use	Number of Shoppers	Percent of Total Shoppers
Never	37	51
Sometimes	23	32
Always	<u>12</u>	<u>17</u>
Total	72	100

Results on Unit Pricing in Upstate New York Supermarkets

Table 1: Variation Among Chains By Discrepancies Between Retail Price Indicated on the Unit Price Label and on the Product - Upstate New York States - 1971

Chain	Number of Observations	Observations without Discrepancies		Observations with Discrepancies	
		#	%	#	%
A	195	150	77	44	23
B	<u>98</u>	<u>80</u>	<u>82</u>	<u>18</u>	<u>18</u>
Total	293	230	79	62	21

Ins Between Retail Price Indicated on Unit Price Label
on Related Product - Upstate New York Stores - 1971

	Greater Retail Price Indicated on Label		Greater Retail Price Indicated on Product	
	Sum of	Average	Sum of	Average
Observations	Differences	Difference	Differences	Difference
	\$	\$	\$	\$
16	.95	.06	1.09	.04
<u>6</u>	<u>.58</u>	<u>.10</u>	<u>.43</u>	<u>.04</u>
22	1.53	.07	1.52	.04

Table 3: Variation Among Chains in Accuracy of Unit Price
Computation on Label - Upstate New York Stores -
1971

Chain	Number of Observations	Correct		Incorrect	
		#	%	#	%
A	195	182	93	13	7
B	<u>98</u>	<u>97</u>	<u>99</u>	<u>1</u>	<u>1</u>
Total	293	279	95	14	5

Table 4: Variation Between Incorrect Computation of Unit
Price on Label and Actual Unit Price - Upstate
New York Stores - 1971

Difference (cents)	Number of Observations	Percent of Total Observations
1 or less	3	21
2 - 5	6	43
6 - 10	1	7
Greater than 10	<u>4</u>	<u>29</u>
Total	14	100

Table 5: Results of Store Interviews - Upstate New York Stores - 1971

Response to Unit Price Labels	Number of Shoppers	Percent of Total Shoppers
Indicated an understanding	108	20.4
Did not indicate an understanding	<u>422</u>	<u>79.6</u>
Total	530	100.0

Table 6: Use of Unit Price Labels by Those Shoppers Indicating an Understanding - Upstate New York Stores - 1971

Use	Number of Shoppers	Percent of Total Shoppers
Never	58	53.7
Sometimes	39	36.1
Always	<u>11</u>	<u>10.2</u>
Total	108	100.0