MARKETING CHARGES for HEAD LETTUCE

Sold in Pittsburgh December 1949–June 1950

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INTRODUCTION

This is a report of the charges made at each step in the marketing process for lettuce. The production of this commodity has almost doubled during the last 20 years, thereby making it one of the more important vegetables marketed in the United States. The report takes into consideration the services rendered by marketing agencies, and the channels through which lettuce moved from producing areas to consumers in Pittsburgh, Pa.

This report provides specific information on marketing margins for lettuce according to size of head and producing areas. Pricing policies and margins are shown for retail stores according to their methods of buying produce. Data in sufficient detail to relate margins and services are not provided by the regular price-reporting agencies. For those interested in improving the marketing of farm products, exact information of the type given in this report is a necessary prerequisite to studies of marketing efficiency.

Facts such as these should be useful to buyers and sellers of fresh fruits and vegetables. Likewise, farmers and shippers may find that the information will help them to become better acquainted with marketing channels, pricing practices, and margins taken by the handlers and service agencies which process and move products from the farm to the consumer. It will also provide farmers and shippers a sound basis for relating services performed to charges made by handlers and service agencies.

With these needs in view, the Bureau of Agricultural Economics, during the years 1949 and 1950, obtained data on marketing margins, costs, and trade practices for the more important fresh fruits and vegetables sold in Pittsburgh, Pa. Similar studies were carried out in Denver, Colo., Cleveland, Ohio, and Charlotte, N. C. This report on lettuce is one of a series of commodity reports to be issued on the results of these studies.

SUMMARY

1. Marketing margins for California-Arizona lettuce were ascertained from f.o.b. shipping point through each step in the marketing process to consumers in Pittsburgh, Pa., from December 1949 through June 1950. For size-48 head lettuce these marketing charges averaged $4.31 per crate, or 57 percent of the consumer's dollar. For size 60, marketing charges amounted to $4.61 per crate, or 62 percent of the consumer's dollar. Charges at shipping point for shipping-point services are not included.

2. Lettuce from Arizona and California accounted for 92 percent of the almost 200,000 heads of lettuce sold in the sample stores in Pittsburgh from December 1949 through June 1950. Texas was the only other State that made any significant contribution to the total supply of lettuce in the sample stores.

3. The retail selling price for size-48 lettuce averaged 3.8 cents per head higher than the selling price for the smaller size 60 during the period of the study. Retail prices were very erratic during the 7-month period.

4. Retail margins for the sample stores in Pittsburgh averaged $1.45 a crate for size 48, and $1.82 a crate for size-60 California-Arizona lettuce. For size 48, this amounted to 19 percent of the consumer's dollar, and for size 60, approximately 25 percent. The lower retail margin taken on size-48 head lettuce was accounted for, in part, by the pricing practices of some of the chain stores.

5. Waste and spoilage at the retail level for California-Arizona lettuce handled by the sample stores amounted to 5.24 percent of the volume purchased for the period December 1949 through June 1950. This does not include waste from trimming.

6. None of the sample stores appeared to have a definite pricing policy. Retail margins varied considerably within individual stores as well as among stores.

7. Chain food stores sold 63 percent of the quantity of California-Arizona lettuce in the sample stores; independently operated stores 37 percent. The retail margin for chain stores averaged lower than that for independent stores for both sizes of lettuce during the period of the study.

8. The wholesale margin averaged 9.2 percent of the consumer's dollar for size-48 lettuce, and 8.5 percent for size 60.

9. The average total charge for transporting lettuce from points in Arizona and California to the terminal market in Pittsburgh was $2.03 a crate. This margin includes charges for freight and icing, and the Federal transportation tax.

10. The volume of California and Arizona lettuce sold in the sample stores was staggered in such a way as to provide a relatively continuous market supply during the period of the study.

11. The 30 retail stores in the study were separated into four groups depending upon method of buying lettuce. Group I, chain stores that bought predominantly in carlot lots, obtained the lowest retail margin for size-48 lettuce. The selling price for lettuce sold by this store group was consistently 2 to 4 cents a head less than the selling price of the other stores in the study. Group II, local chains that bought from initial receivers in the wholesale market, obtained the next lowest retail margin for size-48 lettuce, while group III, independent stores that bought from initial receivers and secondary handlers, obtained the highest retail margin. Group IV, stores that bought from service wholesalers and trucker jobbers, took a lower margin than group III stores. For size-60 lettuce, the retail margin was lowest in group II stores and again highest in group III stores.

SOURCE OF SUPPLY

In the 30 sample stores in Pittsburgh, 197,509 heads of lettuce were sold from December 1949 through June 1950. Western lettuce, that is, lettuce from Arizona and California combined, accounted for 91.8 percent of all lettuce sold in the sample stores. Texas was the only other State that made any significant contribution to the total supply.

Slightly more than half of the lettuce sold in the sample stores during the period of the study was size 48. 1/ Size 60 accounted for less than half, and miscellaneous sizes made up the balance (table 1).

1/ Size indicates the actual number of heads of lettuce packed in a standard crate. Size 48's are commonly known in the trade as 4's and size 60's are known as 5's, meaning 4 and 5 dozen per crate, respectively.

Table 1. - Quantity of head lettuce sold in 30 sample retail stores in Pittsburgh, Pa., by State of origin and by size, December 1949-June 1950

State of origin	Percentage of quantity sold, by size			
	48	60	Other	Total
	Percent	Percent	Percent	Percent
Arizona	14.01	11.69	---	25.70
California	35.24	29.72	1.16	66.12
Texas	.49	2.25	---	2.74
Other 1/	.42	.19	1.84	2.45
Unidentified	1.90	1.06	.03	2.99
Total	52.06	44.91	3.03	100.00

1/ Minor producing areas were represented by the following States: Florida, South Carolina, North Carolina, New Jersey, New York, Pennsylvania, Ohio, Colorado, Oregon, and Idaho.

RETAIL PRICE

The retail selling price for the larger heads, size 48, exceeded the price for size 60 by an average of 3.8 cents a head. Sizes 48 and 60 lettuce from California averaged 15.4 cents a head from December 1949 through June 1950 (table 2). This was the highest average price per head of any producing area. Lettuce from Arizona averaged 14 cents a head for the 7 months. Slightly more than 50 percent of the quantity of Arizona and California lettuce in the sample stores was size 48. One reason for the difference in the 7-month average selling prices between Arizona and California lettuce is that during periods of higher prices Arizona's quantity was relatively low. However, the selling price as between Arizona and California lettuce did not vary significantly during any given month (tables 10 and 11, Appendix).

The 7-month average selling price for lettuce from Texas was 12.5 cents a head. This selling price is significantly lower than that for Arizona and California lettuce (table 12, Appendix). Some reasons for this lower price are that Texas lettuce was sold during periods of low selling prices, and Texas also sold a predominance of the smaller size. All lots of lettuce from the sample stores were sold on a "per head" basis. 2/ No pound sales were reported.

SEASONAL PATTERN OF LETTUCE SALES

No definite trend appeared in the quantity of lettuce sold in the 30 sample stores from December through June. However, from January to March,

2/ A lot represents a specific purchase of any quantity of lettuce by a retailer from a wholesaler during a given day. Therefore, all individual heads in a lot have a common State of origin, grade, size, and unit cost.

the quantity sold gradually increased. This relatively high level was maintained through June (table 3).

Table 2. - Average selling price of head lettuce sold in 30 sample retail stores in Pittsburgh, Pa., by State of origin and by size, December 1949-June 1950

State of origin	Price per head, by size			
	48	60	Other	Average
	Cents	Cents	Cents	Cents
Arizona	15.61	12.02	---	13.97
California	17.21	13.34	12.95	15.40
Texas	17.30	11.45	---	12.50
Other 1/	13.79	11.43	18.79	17.37
Unidentified	16.26	13.47	23.21	15.34
Average	16.72	12.90	16.59	15.00

1/ Minor producing areas were represented by the following States: Florida, South Carolina, North Carolina, New Jersey, New York, Pennsylvania, Ohio, Colorado, Oregon, and Idaho.

Table 3. - Quantity sold and selling price per head for all lettuce sold in 30 sample retail stores in Pittsburgh, Pa., by months, December 1949-June 1950

Months	Quantity sold	Selling price per head
	1,000 heads	Cents
December	25.6	14.6
January	21.6	18.5
February	27.9	12.7
March	30.6	12.5
April	30.6	13.8
May	30.6	17.7
June	30.6	16.0
Total	197.5	15.0

The average monthly retail price for all lettuce sold by the sample stores reached a peak in January. It then declined to a low in March, rising again through May, followed by a decline in June. From December through March the price pattern appeared to be in response to the supply situation, but from April through June the price could not be explained on the basis of quantity sold. A railroad strike in May may have caused the higher prices during that month. As the wholesalers were unable to replenish their inventories during the strike and as the retail supplies diminished, the price rose abnormally. Since these data are analyzed on a monthly basis the greater price fluctuations during the period of the strike are not discernible.

Arizona's quantity sold in these stores was almost an exact complement to the quantity of California lettuce sold for the same period (fig. 1). Lettuce from unknown States of origin and from minor producing States increased from December through June. This increase was caused by the appearance of Eastern-grown lettuce on the market.

The relative proportion of size-48 and size-60 head lettuce varied from month to month. However, the total number of heads for each size sold during the 7 months was approximately equal (fig. 2).

MARGINS BETWEEN SHIPPING POINT AND CONSUMER

The average marketing charge for moving a crate of lettuce from f.o.b. shipping point in California or Arizona to consumers in Pittsburgh was $4.31 for size 48 and $4.61 for size 60. These marketing charges were the equivalent of 56.6 percent of the consumer's dollar spent for size 48, and 62.3 percent spent for size-60 lettuce. It should be kept in mind that the services performed at shipping point were not included in these marketing charges. Inclusion of shipping-point charges would have been desirable in order to determine the margins from the producer through each step in the marketing process to the consumer.

Distribution of the average realized retail price from the sale of crates of size-48 and size-60 lettuce is shown, according to functions, in figure 3 and table 4. These functions include (1) retailing, (2) wholesaling, (3) brokerage, (4) transporting services from f.o.b. shipping point to terminal market, and (5) services performed by growers and shippers prior to establishing the f.o.b. shipping-point price.

Retail Margin

The retail margin for the sample stores in Pittsburgh averaged $1.45 a crate for size-48 California-Arizona lettuce and $1.82 a crate for the size 60 (fig. 3). These margins were realized from the sale of 45.5 heads of size 48 that were merchantable at retail from an original crate of 48 heads and 56.9 size 60 from an original crate of 60 heads.

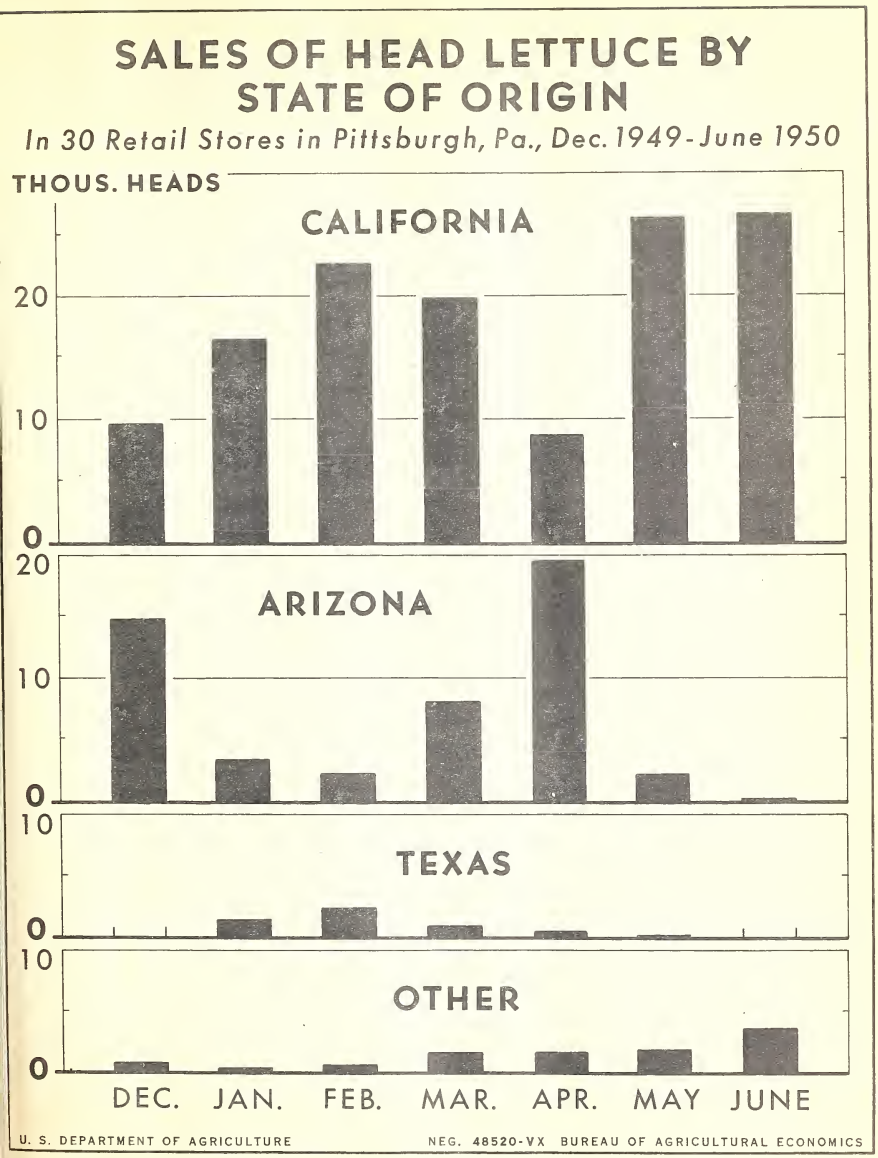

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Figure 1.

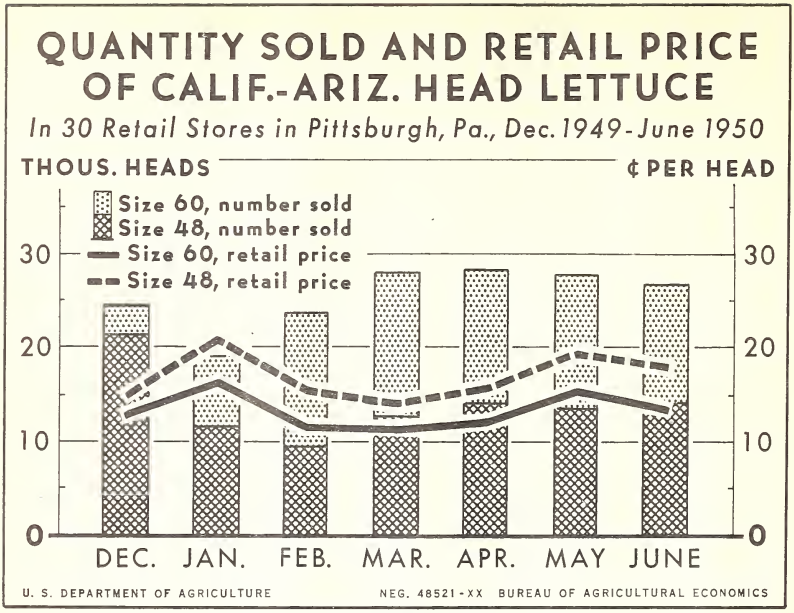


Figure 2.

Waste and spoilage as reported here represent the throw-out loss occurring at the retail level. This does not include waste from trimming. The retailer bought the full crate but received payment only for the salable lettuce. The average retail margin taken by the stores for size-48 lettuce amounted to 19 percent of the consumer's dollar and size 60 25 percent. This represented a gross retail margin of 3.2 cents per head for the 7 months from December 1949 through June 1950 for both sizes 48 and 60. Whether measured in terms of cents per head or percentage of retail selling price, the average retail margin was not typical of the margins for individual store groups for any one month (table 5). Margins taken by the individual store groups differed as did those between months and between size of head (tables 13 and 14, Appendix).

Retail stores in the sample were grouped according to their methods of buying lettuce. Group I consisted of those stores whose purchases were predominantly made in carload lots. This included five national chain-store

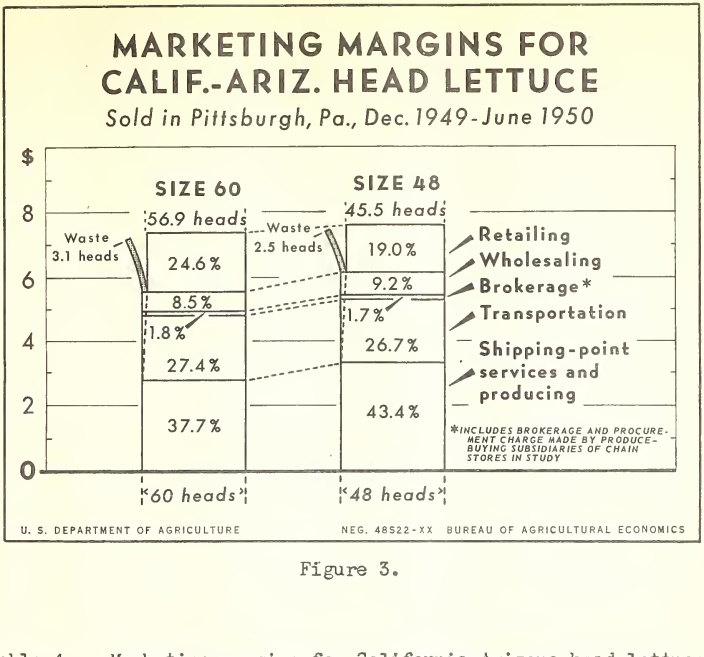


Figure 3.

Table 4. - Marketing margins for California-Arizona head lettuce sold in Pittsburgh, Pa., average December 1949-June 1950

Item	Price or margin			
	Size 48		Size 60	
	Actual	Percentage of retail price	Actual	Percentage of retail price
	Dollars	Percent	Dollars	Percent
Retail price	1/ 7.62	100.0	2/ 7.40	100.0
Retail margin	1.45	19.0	1.82	24.6
Price delivered retail store	6.17	81.0	5.58	75.4
Wholesale margin	.70	9.2	.63	8.5
Price f.o.b. car, Pittsburgh	5.47	71.8	4.95	66.9
Brokerage charge	.13	1.7	.13	1.8
Transportation charge	2.03	26.7	2.03	27.4
Price f.o.b., shipping point	3.31	43.4	2.79	37.7

1/ Retail price for 45.5 heads (48 heads - 2.5 heads waste).
2/ Retail price for 56.9 heads (60 heads - 3.1 heads waste).

Table 5. - Lettuce, California-Arizona: Percentage and actual retail margin per head, in 30 retail stores grouped according to method of buying lettuce, Pittsburgh, Pa., by months December 1949-June 1950 1/

Size 48

Store group	Retail margin per head 2/															
	December		January		February		March		April		May		June		Average	
	Pct.	Cents	Pct.	Cents	Pct.	Cents	Pct.	Cents	Pct.	Cents	Pct.	Cents	Pct.	Cents	Pct.	Cents
Group I	11	1.5	13	2.5	10	1.3	4	0.5	10	1.4	1	0.1	17	2.8	10	1.4
Group II	20	2.9	25	5.6	23	4.3	21	2.9	16	2.5	15	2.7	23	4.2	20	3.4
Group III	31	5.2	22	4.8	28	5.0	30	4.8	27	4.5	20	4.4	28	5.2	26	4.8
Group IV	22	3.7	17	3.8	24	4.1	22	3.4	25	4.2	21	4.5	26	5.0	23	4.1
All stores	19	2.9	19	3.8	20	3.1	18	2.6	20	3.2	14	2.8	23	4.2	19	3.2

Size 60

Group I	3/	3/	3/	3/	18	2.0	20	2.2	20	2.2	33	4.9	28	3.7	24	2.9
Group II	26	3.1	22	3.8	19	2.0	24	2.7	28	3.5	18	2.8	21	2.6	22	2.8
Group III	33	4.0	24	3.8	32	3.7	30	3.5	28	3.4	28	4.4	34	4.8	29	3.9
Group IV	31	4.6	21	3.6	29	4.0	36	4.5	31	4.7	19	3.3	25	3.9	27	4.0
All stores	30	3.8	21	3.4	21	2.4	26	2.9	24	2.8	26	4.0	28	3.7	25	3.2

1/ Allowance made for waste and spoilage.

2/ Percentage margin shown as a percentage of the retail selling price.

3/ Data from December and January were excluded, as it was felt that these data were not sufficient to represent this group of stores.

units. Group II comprised those stores whose purchases were made directly from the initial receiver 3/ in the terminal market; this group included 7 local chain-store units. Group III consisted of stores that bought lettuce from both initial receivers and secondary handlers 4/, but which have their own trucks to pick up purchases of fresh produce. This included 12 medium-sized and large independently operated stores. Group IV included the five independently operated stores that bought lettuce delivered-at-store from service wholesalers 5/ or trucker-jobbers. 6/

The group I stores - five national chain-store units - averaged a 9.8 percent retail margin for size-48 Western lettuce after considering waste and spoilage (table 5). This was equivalent to an actual margin of 1.4 cents a head. For this size the margin ranged from less than 1 to 17 percent of the consumer's dollar from December 1949 through June 1950. Size-60 Western lettuce in the same group of stores averaged a 24.3 percent 7/ margin, with a monthly range from 17.7 to 32.6 percent of the consumer's dollar. This was equivalent to an actual margin of 2.9 cents a head. Group I stores accounted for 38 percent of the quantity of California-Arizona lettuce, sizes 48 and 60, sold in the sample stores. Of this total, approximately 53 percent was size 48. The wide variation in retail margins between the two sizes that existed in group I stores is illustrated in figure 4. The average selling price in group I stores for size-48 lettuce was from 2 to 4 cents a head less than the average selling price in the other groups of stores. The average selling price of size-60 lettuce in group I stores averaged less than 1 cent below the average selling price for the other groups of stores during the period of the study.

3/ Initial receivers represent those wholesalers who receive fresh produce in carload lots. They break down the carlots into smaller units for sale to secondary handlers and to the larger stores, - either local chains or independents.

4/ Secondary handlers represent those wholesalers who buy fresh produce from initial carlot receivers. They break down these purchases into smaller units for sale to retail stores. Secondary handlers may sell in less than crate lots to the smaller retail stores.

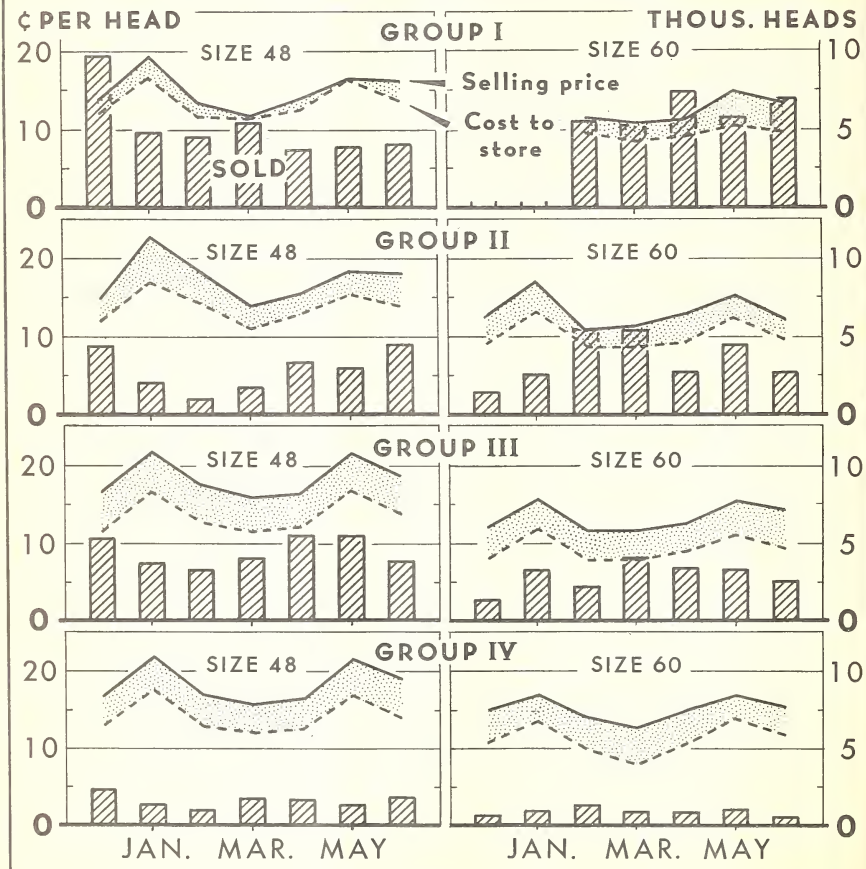
5/ Service wholesalers may include initial receivers and secondary handlers who make deliveries to retail stores.

6/ Trucker-jobbers represent wholesalers who sell only from their trucks making deliveries direct to retail stores. They have no central business office; they combine selling, delivery, and collection in one operation.

7/ Data from December and January were excluded as it was felt that these data were not sufficient to represent this group of stores.

RETAIL MARGIN AND SALES FOR CALIF.-ARIZ. HEAD LETTUCE

Sold in 30 Sample Stores Grouped According to Method of Buying Lettuce in Pittsburgh, Pa., Dec. 1949-June 1950



GROUP I, PURCHASE IN CARLOAD LOTS (CHAIN STORES); GROUP II, PURCHASE IN LCL, FROM INITIAL RECEIVERS (CHAIN STORES); GROUP III, PURCHASE IN LCL, FROM INITIAL RECEIVERS AND SECONDARY HANDLERS (INDEPENDENT STORES); GROUP IV, PURCHASE IN LCL, FROM SERVICE WHOLESALERS AND TRUCKER-JOBBERS (INDEPENDENT STORES)

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Figure 4.

After allowance for waste and spoilage, group II stores, - seven local chain-store units - averaged a gross margin of 20.2 percent of the consumer's dollar for size-48 Western lettuce and 21.7 percent for size-60 lettuce. This was equivalent to an actual margin of 3.4 cents a head for size 48 and 2.8 cents a head for size-60 lettuce. Group II retail margins by months for size-48 head lettuce ranged from a low of 14.8 percent to a high of 24.7 percent of the consumer's dollar, while the margins for size 60 ranged from 18.2 percent to 27.5 percent of the consumer's dollar. Group II stores sold a fourth of the quantity of Western lettuce sold by the sample stores.

The retail margin for group III stores, medium to large independents, averaged 26.1 and 29.1 percent of the consumer's dollar for sizes 48 and 60 respectively. This was equivalent to an actual margin of 4.8 cents a head for size 48 and 3.9 cents a head for size 60. The retail margin for size-48 lettuce ranged from 20.5 to 31.3 percent of the consumer's dollar. For size 60 the range was from 24.1 to 33.7 percent. This group handled about 28 percent of the quantity sold in the sample stores. Although the margin is slightly lower the average retail margin for group IV stores - the smaller independent stores - follows almost identically the pattern for group III stores. Group IV stores averaged 23 percent of the consumer's dollar for the period of the study for size 48 and 26.5 percent for size-60 lettuce. This was equivalent to 4.1 and 4.0 cents per head for sizes 48 and 60 respectively. The average margin by months for size-48 lettuce ranged from 17.5 to 25.9 percent. For size 60 it ranged from 19.2 to 36 percent of the consumer's dollar. Group IV stores accounted for 9 percent of the quantity of Western lettuce sold by the sample stores.

Retail margins for group I stores for size-48 lettuce averaged 2 cents a head lower than the margin for group II stores. For size 60, groups I and II averaged a margin of about 1 cent a head below the average for the other store groups. Group III stores averaged the highest retail margin a head for size 48 and group IV averaged the highest retail margin a head for size-60 lettuce. The retail margin for size 48 as a percentage of the consumer's dollar was lowest in group I stores and highest in group III stores. For size 60, the retail margin was lowest in group II stores and again highest in group III stores.

Wholesale Margin

The average wholesale margin for size-48 Western lettuce was 70 cents a crate, or 9.2 percent of the consumer's dollar. For size-60 Western lettuce the wholesale margin averaged 63 cents a crate or 8.5 percent of the consumer's dollar (fig. 3).

Of the 265 lots of Western lettuce traced through the wholesale market, 152 lots were sold directly to retailers by initial carlot receivers and 113 lots were sold to secondary handlers who in turn sold to the retail stores included in the study. Wholesale margins varied according to the number of handlers involved.

Initial receivers charged an average of 49 cents a crate for the 265 lots sold to both secondary handlers and retail stores. On a monthly basis, this margin ranged from a low of 25 cents to a high of 75 cents a crate during the study. Secondary handlers took an additional margin of 52 cents a crate for the 113 lots that were sold through them. This amounted to a weighted average wholesale margin of 71 cents a crate for the 265 lots. This was the equivalent of 11.32 percent of the average wholesale selling price or the delivered-at-store price to the retailer for lots traced to shipping point. When the 11.32 percent was applied to the delivered-at-store price for all lots of lettuce handled by the 30 stores during the 7 months for sizes 48 and 60 separately, it resulted in an average wholesale margin of 70 cents a crate for size 48 and 63 cents a crate for size 60.

Of the 265 lots traced back to shipping point, 164 were bought by the initial receivers on an f.o.b. shipping-point basis. Commission sales amounted to 98 lots, with only 3 lots sold on a delivered-Pittsburgh basis. Percentagewise, 62 percent of the lots traced back to shipping point were sold f.o.b. shipping point, 37 percent on a commission basis, and 1 percent on a delivered-Pittsburgh basis. Although it is thought that a fairly representative sample of lots was selected for tracing back to shipping point, proportions listed are not necessarily representative of the Pittsburgh wholesale market as a whole. Many factors were beyond the control of the enumerators in the field which made it impossible to obtain these data for certain of the lots which were chosen for tracing through the wholesale market.

In general, initial receivers made their sales in no less than 1-crate units. This was not true of secondary handlers and trucker-jobbers. They sometimes sold as few as a half dozen heads to the smaller retail stores.

Brokerage Charge

The brokerage charge for California and Arizona lettuce averaged 1.7 percent of the consumer's dollar for size 48 and 1.8 percent for size 60. This is equivalent to an average of 13 cents a crate for both sizes on all lots traced back to shipping point.

Of the 265 lots of Arizona and California lettuce traced back to shipping point, 120 lots reported a brokerage charge. This charge averaged 28 cents a crate for the 120 lots. Included in it was the procurement charge made by the produce-buying subsidiaries of the chain stores studied.

Transportation Charge

The total charge for transporting Western lettuce from its shipping point in Arizona and California to the terminal market in Pittsburgh, was $2.03 a crate. This represents 26.7 percent of the consumer's dollar for size-48 lettuce and 27.4 percent for size 60. A break-down of this margin into its component parts of freight, icing, and Federal transportation tax is shown in table 6.

Table 6. - Charge per crate for transporting Western lettuce from shipping point in California or Arizona to Pittsburgh, Pa., December 1949-June 1950 1/

Item	Charge per crate	
	Actual	Percentage of total
	Dollars	Percent
Freight	1.74	85.7
Icing	.23	11.3
Federal transportation tax	.06	3.0
Total	2.03	100.0

1/ Based on 265 lots followed from retail store to shipping point

Shipping-point Services and Producer's Returns

As marketing charges for shipping-point services for lettuce 8/ were not available, margins for grower and shipping-point services cannot be separated in this study. The gross margin for both of these functions amounts to 43 percent of the consumer's dollar for size 48 and 38 percent of the consumer's dollar for size-60 lettuce. This is the equivalent of $3.31 a crate for size 48 and $2.79 a crate for size 60.

RETAIL PRICING POLICY

Pricing policies of the retailers studied appeared to be the chief factor affecting retail margins. Retail margins fluctuated considerably within individual stores as well as among stores. The decision as to whether to maintain a fixed selling price over a period of time, to adjust the selling price each time the wholesale price changed, or to adjust the selling price to meet competition, are decisions of pricing policy. These decisions cannot be determined by measuring the margins taken, or by the flexibility of the selling price. It is possible, however, to learn the results of such pricing practices as they are reflected in the margins taken by the retailer for his services.

In general, the retail stores did not maintain a fixed selling price on California-Arizona head lettuce. They did not maintain a uniform percentage margin or a fixed dollars and cents margin. Groups of stores differed with respect to selling prices and margins taken (tables 13 and 14, Appendix).

8/ Shipping-point services include trimming, grading, sizing, packing, icing, package materials, selling, etc.

Group I - stores that buy in carload lots - sold size-48 California-Arizona head lettuce at an average price of 14.8 cents a head from December 1949 through June 1950. This was lower than the prices charged by group II, III, and IV stores (table 7). The selling price for size-48 California-Arizona lettuce in group II - local chain stores - averaged 17.1 cents a head. Again this was lower than the average for group III and IV stores. The selling price of the independently operated stores - groups III and IV - averaged 18.4 and 18.0 cents a head, respectively, for size-48 California-Arizona lettuce. A similar pattern existed for size-60 California-Arizona lettuce, with the exception that group IV stores averaged a higher selling price than group III stores. There appeared to be a smaller differential between the selling prices of groups I, II, and III for size-60 lettuce than for size 48.

Table 7. - Average retail price per head for sizes 48 and 60 California-Arizona lettuce, by stores grouped according to method of buying lettuce, Pittsburgh, Pa., December 1949-June 1950

Item	Average retail price per head	
	Size 48	Size 60
	Cents	Cents
Group I	14.8	12.4
Group II	17.1	12.8
Group III	18.4	13.4
Group IV	18.0	15.2
All stores	16.8	13.0

Percentage retail margins varied considerably between the store groups. Group I stores sold about 62 percent of their volume at a margin of less than 25 percent of the consumer's dollar. However, the local chains - group II stores - sold about half of their volume at that margin. Group III stores - those that buy from initial receivers and secondary handlers - sold about a fourth of their volume at a margin of less than 25 percent of the consumer's dollar; while group IV stores - those that deal with service wholesalers and trucker-jobbers - sold about 44 percent of their volume at this margin. The relative volume of California-Arizona lettuce that each store group sold at a specified percentage margin is shown in table 8.

Groups I and II - chain stores - handled almost two-thirds of their volumes at a margin of less than 4 cents a head. Groups III and IV - the independent stores - sold about a third of their volume at a margin of less than 4 cents a head. The chain stores handled 63 percent of the

Table 8. - Lettuce, California-Arizona: Percentage volume sold at specified percentage margins, in 30 retail stores grouped according to method of buying lettice, Pittsburgh, Pa., December 1949-June 1950

Gross margin as a percentage of retail price 1/	Percentage sold by store groups				
	I	II	III	IV	All stores
Percent	Percent	Percent	Percent	Percent	Percent
Less than 5	12.3	3.3	1.1	1.5	5.9
5 - 9.9	14.7	1.3	0.6	4.0	6.4
10 - 14.9	9.3	8.7	2.4	2.7	6.6
15 - 19.9	11.4	11.8	5.8	8.1	9.6
20 - 24.9	14.1	25.6	15.9	27.7	18.6
25 - 29.9	11.2	22.9	18.9	23.4	17.4
30 - 34.9	15.7	16.3	24.1	16.0	18.3
35 - 39.9	5.0	8.0	16.2	9.9	9.4
More than 39.9	6.3	2.1	15.0	6.7	7.8
Total	100.0	100.0	100.0	100.0	100.0

1/ No allowance for waste and spoilage.

volume of California-Arizona lettuce sold by the sample stores. The remaining 37 percent was sold by groups III and IV - the independently operated stores. The relative volume of California-Arizona lettuce that each store group sold at a specified margin per head is shown in table 9.

All stores changed their price of lettuce during the period of the study. However, most of the stores appeared to have no consistent policy with respect to flexibility of price. In general, as the wholesale price of head lettuce changed from week to week, most of the stores responded by adjusting their selling price accordingly (fig. 5). However, most retailers appeared to be reluctant to reflect the change immediately. Several stores maintained a constant selling price for a time, disregarding the change in wholesale price (fig. 6). Each bar in figures 5 and 6 represents an individual lot or lots on sale in a retail store with a common selling price and cost price per head. The length of time the lot or lots were on sale governs the width of each bar.

Many stores tried to maintain a constant percentage mark-up on most of their fresh produce; others used the fixed dollar and cents mark-up method. Several of the same stores were compelled by competition to disregard their preferred pricing policies and to set their prices in line with neighboring stores.

Table 9. - Lettuce, California-Arizona: Percentage volume sold at actual dollar and cents margins, in 30 retail stores grouped according to method of buying lettuce, Pittsburgh, Pa., December 1949-June 1950

Gross retail margin per head 1/	Percentage sold by store groups				
	I	II	III	IV	All stores
Cents	Percent	Percent	Percent	Percent	Percent
Less than 1	20.2	4.4	1.5	3.1	9.4
1 - 1.9	16.7	8.8	2.2	3.7	9.5
2 - 2.9	15.1	25.0	10.2	6.9	15.4
3 - 3.9	16.1	24.2	18.6	23.9	19.5
4 - 4.9	13.1	16.8	15.7	27.9	16.0
5 - 5.9	13.0	10.8	18.4	17.5	14.4
6 - 6.9	3.3	5.9	15.9	7.1	7.9
7 - 7.9	.5	1.9	10.4	4.0	4.0
More than 7.9	2.0	2.2	7.1	5.9	3.9
Total	100.0	100.0	100.0	100.0	100.0

1/ No allowance for waste and spoilage.

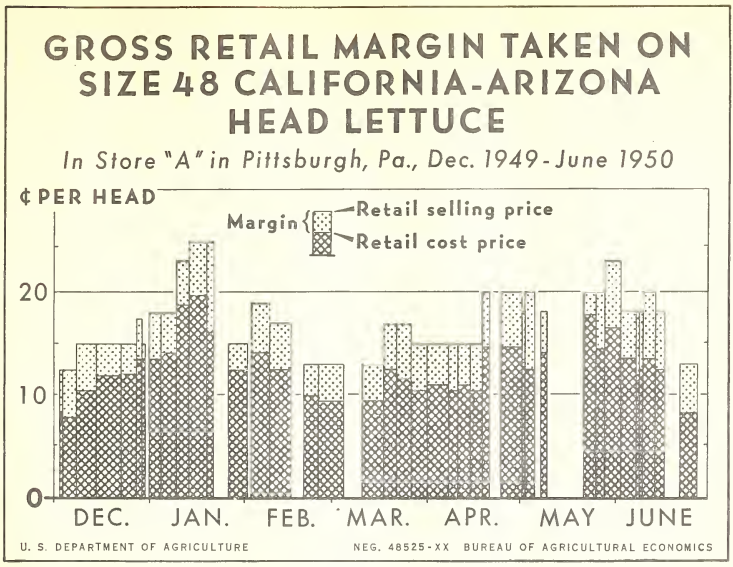

Figure 5.

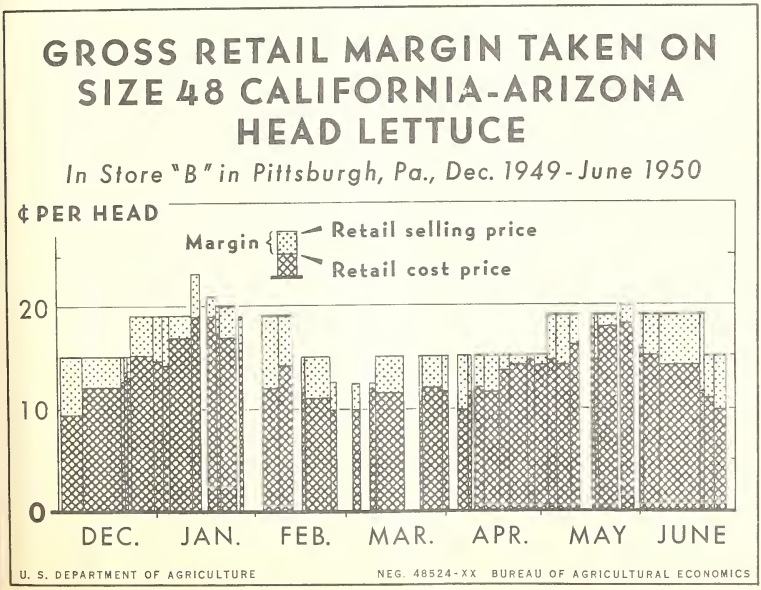

Figure 6.

APPENDIX

Scope and Method of Study

A sample of retail stores within the corporate limits of Pittsburgh, Pa., was selected to provide representative retail prices for all stores having yearly sales of $35,000 or more. 9/ Trade reports have estimated that stores with a sales volume of less than $35,000 handled 12 percent or less of the fresh produce sold in the city.

Complete information was obtained on each lot of lettuce delivered to each store in the sample from December 1949 through June 1950. This information included size, State of origin, brand, method of selling, type of container, cost price, from whom purchased, selling price, waste, and quantity sold.

A sample of the lots of lettuce for which this information was obtained was selected for tracing back through wholesale handlers to f.o.b. shipping point. Information was obtained from each handler on the specific sample lot with respect to price paid for the lot, quantity purchased, date of purchase, services performed, selling price, and name of seller from whom the lot was bought. In this way a complete picture of the marketing channel was obtained for each lot in the sample and the price and margin were obtained at each point in the marketing process.

An attempt was made to obtain prices at uniform points in the market level. This is particularly important with respect to retail margins. The point in the marketing process at which retail stores take title to lettuce may range all the way from the car door at the terminal market to the time the lettuce is delivered at retail stores. When retail stores take title at the car door their reported margin includes some of the expenses of the wholesale service, such as loading the truck, warehousing, delivery to retail stores, and unloading at retail stores. The retail margin, as used in this report, includes only the services provided after the lettuce has been delivered to the store. To make retail margins on lettuce comparable between the various stores, the costs per crate reported by the stores were adjusted to a delivered-at-store basis. An adjustment in cost was required only in the case of the local and national chain stores. Individual chains supplied the necessary cost data to make the adjustment to a delivered-at-store basis.

The retail stores were separated into four groups depending upon the method of buying lettuce. Group I consisted of those stores whose purchases were made predominantly in carload lots. Group II comprised those stores whose purchases were made directly from initial receivers in the terminal market. This grouping included only local chain stores. Group III represented

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9/ The data on volume may not necessarily be representative for the city. A larger number of stores would have been required to insure representativeness for volume data than for price data, because the variation found in store prices is less than the variation in volume sold between stores.

stores that bought their lettuce from both initial receivers and secondary handlers, but had their own trucks for picking up the produce. 10/ These were the medium-sized and larger independently operated stores. Group IV included those independently operated stores that bought their lettuce delivered-at-store from service wholesalers and trucker-jobbers. This group was predominantly composed of small-volume stores.

In this study the retail margin represents the difference between the realized retail selling price per crate (after allowing for loss from waste and spoilage) and the cost per crate to the retailer delivered-at-store. The wholesale margin represents the difference between the delivered-at-store price per crate and the cost per crate to the initial carlot receiver based on a full car or truck load laid down at the terminal market in Pittsburgh. The transportation margin represents the difference between the price per crate laid down at Pittsburgh and the f.o.b. shipping-point price per crate excluding any brokerage charges. The margin for shipping-point services and grower's returns is a residual figure obtained by subtracting the average marketing charges from the retail selling price obtained in Pittsburgh. The retail prices were weighted by the relative sales volume obtained from the sample stores.

10/ The independently operated stores in group III obtain no price reduction from wholesalers as a result of hauling the produce to their stores, but they may receive some price concession on the basis of volume purchased. These stores may gain some advantage in quality of purchases as a result of picking up their produce in the terminal market. In the Pittsburgh study there was no practical way to make such a quality comparison.

Tables

Table 10. - Test of significant difference between monthly selling prices for California and Arizona head lettuce, size 48, sold in 30 sample retail stores in Pittsburgh, Pa., December 1949-May 1950

Month	Retail price per head 1/		Difference d	d^2
	California	Arizona		
	Cents	Cents	Cents	
December	15.5	15.1	0.4	0.16
January	20.6	20.6	.0	.00
February	15.9	13.6	2.3	5.29
March	13.9	15.6	- 1.7	2.89
April	16.1	15.4	.7	.49
May	19.4	20.0	- .6	.36
Total	101.4	100.3	1.1	9.19
Mean	16.9	16.7	.2	

$$ss = \Sigma d^2 - \frac{(\Sigma d)^2}{n} = 9.19 - \frac{(1.1)^2}{6} = 8.99$$

$$s^2 = \frac{ss}{5} = \frac{8.99}{5} = 1.80$$

$$s = \sqrt{s^2} = \sqrt{1.80} = 1.342$$

$$s_{\bar{x}} = \frac{s}{\sqrt{n}} = \frac{1.342}{\sqrt{6}} = .548$$

$$t = \frac{\bar{x} - o}{s_{\bar{x}}} = \frac{.2}{.548} = .36 \quad 2/$$

Entering table of "t" at 5 degrees of freedom,
5 percent level, t = 2.57
1 percent level, t = 4.03

1/ Simple average of the weighted average selling price of each store group used to eliminate the effect of differences in volume between store groups.

2/ No significant difference was found between retail prices of California and Arizona head lettuce, size 48.

Table 11. - Test of significant difference between monthly selling price for California and Arizona head lettuce, size 60, sold in 30 sample retail stores in Pittsburgh, Pa., December 1949-May 1950

Month	Retail price per head 1/		Difference d	d^2
	California	Arizona		
	Cents	Cents	Cents	
December	12.7	13.6	- 0.9	0.81
January	16.7	16.3	.4	.16
February	12.3	11.1	1.2	1.44
March	11.8	11.6	.2	.04
April	12.6	12.9	- .3	.09
May	15.8	14.7	1.1	1.21
Total	81.9	80.2	1.7	3.75
Mean	13.7	13.4	.3	

$$ss = \Sigma d^2 - \frac{(\Sigma d)^2}{n} = 3.75 - \frac{(1.7)^2}{6} = 3.27$$

$$s^2 = \frac{ss}{5} = \frac{3.27}{5} = .654$$

$$s = \sqrt{s^2} = \sqrt{.654} = .8087$$

$$s_{\bar{x}} = \frac{s}{\sqrt{n}} = \frac{.8087}{\sqrt{6}} = .330$$

$$t = \frac{\bar{x}-o}{s_{\bar{x}}} = \frac{.2}{.330} = .61 \quad 2/$$

Entering table of "t" at 5 degrees of freedom,
5 percent level, t = 2.57
1 percent level, t = 4.03

1/ Simple average of the weighted average selling price of each store group used to eliminate the effect of differences in volume between store groups.

2/ No significant difference was found between retail prices of California and Arizona head lettuce, size 60.

Table 12. - Test of significant difference between monthly selling price for California and Texas head lettuce, size 60, sold in 30 sample retail stores in Pittsburgh, Pa., January-May 1950

Month	Retail price per head 1/		Difference d	d^2
	California	Texas		
	Cents	Cents	Cents	
January	16.7	16.5	0.2	0.04
February	12.3	10.9	1.4	1.96
March	11.8	11.2	.6	.36
April	12.6	12.1	.5	.25
May	15.8	15.0	.8	.64
Total	69.2	65.7	3.5	3.25
Mean	13.8	13.1	.7	

$$ss = \Sigma d^2 - \frac{(\Sigma d)^2}{n} = 3.25 - \frac{(3.5)^2}{5} = .80$$

$$s^2 = \frac{ss}{4} = \frac{.80}{4} = .20$$

$$s = \sqrt{s^2} = \sqrt{.20} = .4472$$

$$s_{\bar{x}} = \frac{s}{\sqrt{n}} = \frac{.4472}{\sqrt{5}} = .200$$

$$t = \frac{\bar{x}-o}{s_{\bar{x}}} = \frac{.7}{.200} = 3.50 \quad 2/$$

Entering table of "t" at 4 degrees of freedom,
5 percent level, t = 2.78
1 percent level, t = 4.60

1/ Simple average of the weighted average selling price of each store group used to eliminate the effect of differences in volume between store groups.

2/ A significant difference was found between retail prices of California and Texas head lettuce.

Table 13. - Lettuce, California-Arizona, Size 48: Quantity sold, retail price, and gross margin per crate, in 30 retail stores grouped according to method of buying lettuce, Pittsburgh, Pa., by months, December 1949-June 1950.

Item	Sales		Price per crate			Gross margin
	Quantity	Percentage of total	Retail 1/	Cost 2/	Gross margin	as a percentage of retail price
	Heads	Percent	Dollars	Dollars	Dollars	Percent
December						
Group I	9,638	45.0	6.21	5.54	0.67	10.79
Group II	4,373	20.4	6.75	5.41	1.34	19.85
Group III	5,239	24.4	7.50	5.15	2.35	31.33
Group IV	2,194	10.2	7.59	5.90	1.69	22.27
All stores	21,444	100.0	6.77	5.45	1.32	19.50
January						
Group I	4,860	41.8	8.80	7.67	1.13	12.84
Group II	1,903	16.4	10.31	7.76	2.55	24.73
Group III	3,694	31.8	9.72	7.55	2.17	22.33
Group IV	1,161	10.0	9.76	8.05	1.71	17.52
All stores	11,618	100.0	9.43	7.68	1.75	18.56
February						
Group I	4,539	47.6	6.03	5.45	.58	9.62
Group II	865	9.1	8.43	6.47	1.96	23.25
Group III	3,286	34.5	8.03	5.76	2.27	28.27
Group IV	844	8.8	7.76	5.88	1.88	24.23
All stores	9,534	100.0	7.09	5.69	1.40	19.74
March						
Group I	5,320	41.6	5.47	5.24	.23	4.20
Group II	1,686	13.2	6.37	5.06	1.31	20.57
Group III	4,110	32.2	7.33	5.16	2.17	29.60
Group IV	1,657	13.0	7.13	5.56	1.57	22.02
All stores	12,773	100.0	6.40	5.23	1.17	18.28
April						
Group I	3,669	26.0	6.40	5.76	.64	10.00
Group II	3,332	23.7	7.07	5.91	1.16	16.41
Group III	5,431	38.6	7.57	5.53	2.04	26.95
Group IV	1,653	11.7	7.57	5.65	1.92	25.36
All stores	14,085	100.0	7.15	5.70	1.45	20.28
May						
Group I	3,980	29.2	7.53	7.47	.06	.80
Group II	3,009	22.0	8.34	7.11	1.23	14.75
Group III	5,431	39.8	9.81	7.80	2.01	20.49
Group IV	1,229	9.0	9.74	7.70	2.04	20.94
All stores	13,649	100.0	8.82	7.55	1.27	14.40
June						
Group I	4,095	28.9	7.49	6.21	1.28	17.09
Group II	4,519	31.9	8.30	6.37	1.93	23.25
Group III	3,814	26.9	8.60	6.23	2.37	27.56
Group IV	1,745	12.3	8.74	6.48	2.26	25.86
All stores	14,173	100.0	8.20	6.30	1.90	23.17
Dec. - June						
Group I	36,101	37.1	6.74	6.08	.66	9.79
Group II	19,687	20.2	7.79	6.22	1.57	20.15
Group III	31,005	31.9	8.35	6.17	2.18	26.11
Group IV	10,483	10.8	8.21	6.35	1.86	22.66
All stores	97,276	100.0	7.62	6.17	1.45	19.03

1/ Amount retailer realized after allowing for waste and spoilage.
2/ Cost delivered at store.

Table 14. - Lettuce, California-Arizona, Size 60: Quantity sold, retail price and gross margin per crate, in 30 retail stores grouped according to method of buying lettuce, Pittsburgh, Pa., by months, December 1949-June 1950.

Item	Sales		Price per crate			Gross margin as a percentage of retail price
	Quantity	Percentage of total	Retail 1/	Cost 2/	Gross margin	
	Heads	Percent	Dollars	Dollars	Dollars	Percent
December						
Group I	114	3.5	9.96	6.00	3.96	39.8
Group II	1,368	41.8	6.94	5.16	1.78	25.6
Group III	1,280	39.1	6.88	4.62	2.26	32.8
Group IV	511	15.6	8.48	5.88	2.60	30.7
All stores	3,273	100.0	7.28	5.10	2.18	29.9
January						
Group I	877	11.6	8.19	8.16	.03	.4
Group II	2,584	34.2	9.67	7.50	2.17	22.4
Group III	3,214	42.6	8.93	6.78	2.15	24.1
Group IV	875	11.6	9.73	7.68	2.05	21.1
All stores	7,550	100.0	9.22	7.26	1.96	21.3
February						
Group I	5,552	38.8	6.49	5.34	1.15	17.7
Group II	5,455	38.1	6.20	5.04	1.16	18.7
Group III	2,102	14.7	6.66	4.56	2.10	31.5
Group IV	1,200	8.4	7.91	5.64	2.27	28.7
All stores	14,309	100.0	6.49	5.10	1.39	21.4
March						
Group I	5,222	33.9	6.09	4.86	1.23	20.2
Group II	5,385	35.0	6.37	4.86	1.51	23.7
Group III	4,070	26.5	6.54	4.56	1.98	30.3
Group IV	712	4.6	7.11	4.56	2.55	35.9
All stores	15,389	100.0	6.37	4.74	1.63	25.6
April						
Group I	7,415	52.0	6.43	5.16	1.27	19.8
Group II	2,705	18.9	7.28	5.28	2.00	27.5
Group III	3,444	24.1	7.06	5.10	1.96	27.8
Group IV	707	5.0	8.54	5.88	2.66	31.1
All stores	14,274	100.0	6.83	5.22	1.61	23.6
May						
Group I	5,690	39.8	8.54	5.76	2.78	32.6
Group II	4,415	30.8	8.65	7.08	1.57	18.2
Group III	3,332	23.3	8.88	6.36	2.52	28.4
Group IV	879	6.1	9.73	7.86	1.87	19.2
All stores	14,316	100.0	8.71	6.42	2.29	26.3
June						
Group I	6,942	54.8	7.62	5.52	2.10	27.6
Group II	2,702	21.3	7.00	5.52	1.48	21.1
Group III	2,560	20.2	8.14	5.40	2.74	33.7
Group IV	472	3.7	8.88	6.66	2.22	25.0
All stores	12,676	100.0	7.62	5.52	2.10	27.6
Dec. - June						
Group I	31,815	38.9	7.06	5.40	1.66	23.5
Group II	24,614	30.1	7.28	5.70	1.58	21.7
Group III	20,002	24.5	7.62	5.40	2.22	29.1
Group IV	5,356	6.5	8.65	6.36	2.29	26.5
All stores	81,787	100.0	7.40	5.58	1.82	24.6

1/ Amount retailer realized after allowing for waste and spoilage.
2/ Cost delivered at store.

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