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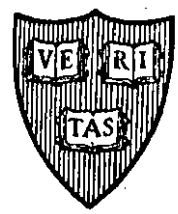
EXPENSES AND PROFITS OF FOOD CHAINS IN 1934

BY
CARL N. SCHMALZ



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BY

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FOREWORD

In 1930 the Bureau of Business Research of the Harvard Business School began a series of studies of the margins, expenses, and profits of chain store companies. This research has covered food, drug, shoe, limited-price variety, department store, and women's apparel chains for one or more of the years beginning with 1929, and has contributed new information of important help to business men as well as to teachers and students of retail distribution.

The current report is the second dealing exclusively with food chains, and it presents figures for the fourth and fifth years for which data regarding the typical operating performance of food chains now are available from the Harvard studies.

Distribution cost surveys of this type increase in value as the period which they cover grows longer. The Bureau's work in the food chain field was originally financed out of the School's own research funds, but lack of adequate resources made it necessary to interrupt the work in 1930 and to carry forward on a restricted basis for 1931 and 1932. It is gratifying, therefore, that the Food and Grocery Chain Stores of America, Inc., has found it possible to finance the present study, which covers the years 1933 and 1934, through voluntary subscriptions from a number of its members. The Bureau appreciates very much not only the financial aid of this Association, but also the help which its executives and members have given in other ways. Among those who have been especially helpful are Mr. John A. Logan, Executive Vice-President of the Association, and Mr. Ralph F. Burkard, First National Stores, Inc., Somerville, Massachusetts, who was designated by the Association to consult with the Bureau on problems connected with the study.

Like most other studies of the Bureau of Business Research, this survey is based upon the actual profit and loss statements and balance sheets of a substantial number of business firms. These underlying data were gathered directly from the individual companies on standard forms which had been prepared by the Bureau out of its experience in earlier studies of food chains and after conferences with food chain executives. The reports as received from the individual chains were examined by the Bureau for arithmetical accuracy and for comparability, adjusted wherever adjustment was necessary to make them comparable, and then classified into significant groups, as will be described in detail later. For each of these various groups average or typical figures were determined; and these figures constitute the data from which the conclusions of the study are drawn.

The Bureau and the School cordially acknowledge the interest and co-operation of the individual companies which submitted their figures for use in this study. All statements for individual firms were handled on a strictly confidential basis; under no circumstances did members of the trade, students in the School, or any other persons outside the Bureau staff have access to the figures for individual firms. As soon as the profit and loss statements were received, all identifying data were removed and the statements went through the various stages of statistical work under a code number. Under the circumstances, it is not possible to mention the several co-operating firms by name here; but, nevertheless, their assistance is deeply appreciated.

This bulletin was written by Assistant Professor Carl N. Schmalz, Manager of the Bureau of Business Research, who directed the study upon which it reports. The statistical and accounting phases of the work were supervised by Miss Elizabeth A. Burnham, and the field work was done by Mr. Martin Canavan, who also assisted materially in the analysis of the data.

MALCOLM P. MCNAIR,
Director of Research

Boston, Massachusetts
April, 1936.

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EXPENSES AND PROFITS OF FOOD CHAINS IN 1934

INTRODUCTION AND SUMMARY

In recent years approximately one dollar out of every three spent for groceries and food products by the American consumer has gone into the cash register of a chain food store.

This study undertakes to show for the year 1934 what happened to those chain store dollars. In doing so, it summarizes the experiences of over 21,000 stores operated by 66 chains. During 1934 consumers spent $960,000,000 in these stores, more than 40% of the total expenditures in chain food stores in the United States.

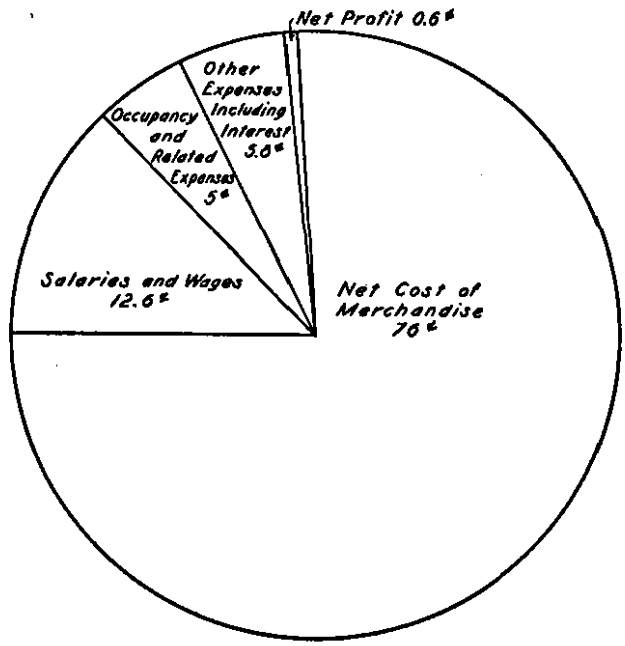
Each of these chain store dollars contained three elements: (1) the cost of the merchandise itself as purchased from producers, growers, or manufacturers, or as manufactured by the chains themselves; (2) the chains' expense of doing business; and (3) the final net profit. By far the largest slice of the consumer dollar, 76 cents, was required to cover the cost of the merchandise. This was the net cost after deducting all discounts and allowances[1]. Hence, there was left as the chains' gross margin, 24 cents, the difference between sales and the net cost of the merchandise sold. Out of this 24 cents had to come the chains' expenses of doing business, including the costs for wages, rent, depreciation, light, transportation from warehouse to stores, supplies, advertising, interest, insurance, taxes, and so forth. These expenses include interest at 6% on owned capital, which should be added in order to approximate the true long-run economic cost of doing business. They required 23.4 cents out of the consumer's dollar, leaving only 0.6 cents for the chains as pure profit.

This figure, however, does not tell the whole story. After crediting interest on owned capital, as well as miscellaneous net income from real estate and other non-merchandising operations, the total net gain or net "business profit" of these 66 food chains, as ordinarily shown in corporate statements, amounted to approximately 2.2% of sales in 1934, or a little over 2 cents out of each consumer's dollar. Viewed from the standpoint of its relation to the capital invested by these 66 companies in goods, stores, fixtures, warehouses, and the like, this business profit of a little over 2 cents per dollar of sales amounted to slightly more than 9.5% of the chains' net worth.

All these figures are shown, with other details, in Table 1. These data, of course, are general averages for the chain food business as a whole, including large chains and small chains, grocery-store chains and combination-store chains, chains in different parts of the country, and chains operating in cities of different sizes; but, since the individual chains influenced the percentages according to their dollar volumes, these figures reflect for the most part the results of the regular chains.

Figures for the individual expense items covered in Table 1 show that salaries and wages, which amounted

Chart 1. Disposition of the Consumer's Dollar Spent in Chain Food Stores: 1934.



[1] Including advertising allowances, except those received in payment for space used, which were deducted from advertising expense.

to 12.56% of sales, constituted the largest single item of expense and accounted for more than half (54%) of total expense. Next in order of importance was the expenditure for tenancy, which absorbed 3.19% of sales. If expense for this item is combined with the expense for the related items of depreciation on fixtures and equipment, and light, heat, water, power, and refrigeration expense, the total costs for occupancy are seen to have absorbed 5.01% of sales, or 21% of total expense. Thus personnel and occupancy together accounted for 17.57% of sales and 75% of total expense. Among the other items listed in the table, supplies and advertising are the only ones of importance, other than interest, which do not represent combinations of miscellaneous accounts. These two items, supplies and advertising, absorbed about 5% of total expense each.

If one assumes that the percentages in Table 1 are representative of the chain food business as a whole in 1934, and if the total sales of food chains in 1934 were approximately $2,360,000,000, as estimated below, it follows that, in that year:

1. The chains must have paid out for merchandise purchased and manufactured roughly $1,794,000,000.

2. Their total bill for salaries and wages must have been approximately $296,000,000.

3. Other expenses, not including interest, must have absorbed about $231,000,000.

Character of Reports Received

The figures upon which the conclusions of this study were based summarize the profit and loss statements and balance sheets for 1934 received by the Bureau of Business Research from a total of 67 chains. The 67 reports represented the entire operations of 66 chains and the business of one of The Great Atlantic & Pacific Tea Company's six retail divisions. Certain accounting practices of this latter company would have made it difficult for it to file a report giving the desired degree of detail for its entire chain; and even the figures for the one division were not comparable in all respects with those for the other companies.

The 66 chains had a total of 21,021 stores and aggregate sales in 1934 amounting to more than $960,625,000. These chains, when classified roughly by type of goods carried and by size, fell into major groups and sub-groups as shown in tabular form at the right.

The first classification of the reports was that into the four major groups just mentioned. This classification was adhered to throughout the study, except in the preparation of the general averages reproduced in Table 1 and the trend figures presented in Table 20 on page 41.

Size of Sample

According to the Census of American Business taken by the United States Department of Commerce, Bureau of the Census, there were in the United States,[1] in 1933, 50,166 chain grocery and combination stores, and these stores had sales in that year of $2,230,566,000.[2] In 1934, chain grocery sales, without allowance for new stores added or stores dropped, were 4% greater than in 1933;[3] and from Table 1 it appears that the 66 chains for which data were used in the major tables of this study experienced an increase in sales of 5.8%. Presumably the total sales of food chains in 1934 were not more than about 105.8% of the sales in 1933, or roughly $2,360,000,000; and if so, the sales represented in this study, not including the sales of the one A & P division, amounted to more than 40% of the total chain food sales for the United States.

There are no published data indicating the total number of food chain units in 1934 as compared with 1933, but the 66 chains just mentioned experienced a decrease in number of stores of about 3.2%. If this decrease was typical of all chains, the number of chain food stores in operation in 1934 must have been about 48,561. This study, therefore, covers the results of over 43% of the total chain food stores.

[1] Only one of the 66 chains, a chain of 35 stores, was located outside the United States.
[2] Census of American Business: 1933, Retail Distribution, Volume 1, United States Summary: 1933, page 30.
[3] United States Department of Commerce, Bureau of Foreign and Domestic Commerce, mimeographed press release dated January 15, 1935.

Classifications	No. of Chains	No. of Stores	Sales
Straight Grocery Chains:[1]			
Less than 25 stores	3	35	$1,465,565
25–100 stores	8	390	13,122,970
100–500 stores	2	314	10,879,832
Total	13	739	$25,468,367
Regular Chains:[2]			
Less than 25 stores	2	19	$638,417
25–100 stores	9	566	22,233,448
100–500 stores	15	3,532	142,010,760
500 or more stores	8	15,786	746,578,416
Total	34	19,903	$911,461,041
Combination Chains:[3]			
Less than 25 stores	7	50	$5,527,845
25–100 stores	6	202	11,908,064
Total	13	252	$17,435,909
Meat Chains:			
Less than 25 stores	4	55	$3,005,796
25–100 stores	2	72	3,255,328
Total	6	127	$6,261,124
Grand Total	66	21,021	$960,626,441

[1] Grocery stores only: no combination stores.
[2] Grocery stores and combination stores.
[3] Combination stores only.

Contrast Between Grocery Operations and Meat Operations

The considerably increased sale of meat in food chains constitutes one of the important developments of recent years.

The meat business has a number of characteristics which differentiate it from the grocery business. Waste and perishability are serious problems; a skilled and highly-paid personnel is required, as well as more elaborate fixtures; meat does not lend itself to the

Table 1. Operating Results of 66 Food Chains: 1934

Items	Aggregate Figures	
	Amount (Dollars given in thousands)	(Net Sales = 100%) Average Percentages[1] Computed for the 66 Chains as a Group
Number of Chains	66	....
Aggregate Number of Stores	21,021	....
Aggregate Net Sales	$960,626	....
Average Sales per Store	$46	....
Index of Change (1934/1933):		
Number of Stores	....	96.84†
Net Sales	....	105.82†
Average Sales per Store	....	109.36†
Net Cost of Merchandise Sold	$730,583	76.05%
GROSS MARGIN	230,043	23.95
Salaries and Wages	$120,638	12.56%
Tenancy Costs (including depreciation of major improvements)	30,610	3.19
Depreciation of Fixtures and Equipment	7,581	0.79
Light, Heat, Water, Power, and Refrigeration	9,950	1.03
Transportation Purchased	3,487†	0.36†
Supplies	11,118	1.16
Advertising	10,292	1.07
Insurance (except on real estate)	2,710	0.28
Taxes (except on real estate and federal tax on income)	5,195	0.54
Miscellaneous Expense	13,246	1.38
Total Expense before Interest	$214,827	22.36%
Total Interest (including interest on net worth)	9,584	1.00
TOTAL EXPENSE including Interest	$224,411	23.36%
NET PROFIT OR LOSS	$5,632	0.59%
Net Profit or Loss from Real Estate Operations	$2,487†	0.26%†
Interest on Net Worth (except real estate, leaseholds, and goodwill)	10,203	1.06
Other Revenue, Net	2,915†	0.30†
Total Net Other Income	$15,605	1.62%
NET GAIN: Percentage of Net Sales	$21,237	2.21%
Percentage of Net Worth	....	9.62‡
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	....	8.41
Distribution of Stores by Type[2]:		
Straight Grocery	12,258	58.31%
Meat	164	0.78
Combination	8,599	40.91
Self Service Grocery Units	3,377†	16.06%†

† Figures for this item were not reported by all the firms in the group.
‡ Because of inadequate balance sheet data in the case of four chains, the figure for net gain as a percentage of net worth was based on the reports of 62 chains.
[1] See explanation of types of average used, page 49.
[2] Total Stores = 100%.

routine systems of control applicable to dry groceries. There is, for these reasons, a widespread impression that meat division business yields higher gross margin rates, and requires higher percentages of store expense (if not of total expense), than does grocery business; and hense it was deemed important in this study to obtain separate figures, wherever possible, covering meat operations.

A few of the reporting chains specialized entirely in the sale of meat; and there also were reports from a small number of straight grocery chains. Most of the chains operated both straight grocery and combination stores, but for some of these companies separate figures were obtained for the grocery and meat operations. Figures for these several groups and sub-groups, shown in Table 2, give ample confirmation of the impression just mentioned. Gross margin percentages for meats were higher by about 4% of sales than the corresponding

Table 2. Operating Results for Straight Grocery Stores, Grocery Stores and Grocery Sides of Combination Chains, Meat Sides of Combination Chains, and Meat Chains: 1934

(Median Figures[1]; Net Sales = 100%)

Items	Straight Grocery Stores		Grocery Stores and Sides	Grocery Sides	Meat Sides	Meat Stores
	Units of 100% Straight Grocery Chains	Units of Regular Chains	Units of Regular Chains	Units of Regular Chains	Units of Regular Chains	Units of Meat Chains
Number of Chains	8	6‡	21#	6‡	21#	6
Number of Units	594	4,423	13,249	1,573	4,943	127
Aggregate Net Sales (in thousands)	$19,388	$143,808	$552,569	$101,743	$120,757	$6,261
Average Sales per Unit (median)	33,774	31,163	32,983	52,029	21,813	49,656
GROSS MARGIN	21.44%	21.73%	22.31%	22.53%	26.85%	26.44%
Store Expense:						
Salaries and Wages	7.90%	8.18%	7.96%	7.60%	12.96%	*
Tenancy Costs (including depreciation of major improvements)	2.44	2.67	2.53	2.22	3.29	*
Depreciation of Fixtures and Equipment	0.41	0.39	0.44	0.35	1.57†	*
Light, Heat, Water, Power, and Refrigeration	0.61	0.90	0.76	0.61	1.73	*
Supplies	0.71	0.71	0.68	0.76	1.22	*
Insurance	**	0.16	0.16	0.13	0.23†	*
Miscellaneous Expense:						
Communication	*	0.13†	0.11†	0.11†	0.21†	*
Unclassified	*	0.41	0.50	0.40	0.79	*
Total Miscellaneous Expense (subtotal)	1.08**	(0.51)	(0.61)	(0.50)	(1.09)	*
Total Store Expense[1]	13.21%	13.33%	13.29%	12.33%	22.53%	*
Store Profit	7.83%	9.00%	7.88%	10.11%	4.13%	*
Administrative, General, Warehouse, and All Other Expense	6.57%					*
Total Expense[1] before Interest	20.68%	SEE NOTE A	SEE NOTE B	SEE NOTE A	SEE NOTE B	27.69%
Total Interest	1.03†					0.55
TOTAL EXPENSE[1] including Interest	21.77%					28.25%
NET PROFIT OR LOSS	*L. 0.04%*					*L. 0.67%*
Percentage of Grocery Stores to Total Stores	100.00%	68.07%	67.14%	....	....	0.00%
Percentage of Combination Stores to Total Stores	0.00%	....	32.86%	31.93%	32.86%	0.00%
Percentage of Total Chain Sales	100.00%	43.29%	82.91%	39.68%	17.09%	100.00%

* Data not available. † Figures for this item were not reported by all the firms in the group.

** Insurance expense is included in the miscellaneous account for straight grocery chains.

‡ The six chains giving separate expense figures for stores and sides are identical. Figures for these six chains were included in preparing the data for 21 chains for grocery stores and sides combined.

The 21 chains giving figures for meat sides, and for grocery stores and sides combined, are identical.

[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.

NOTE A.—It is impossible to give these data because the chains, in reporting, did not allocate administrative, general, warehouse, and all other expense to the stores or sides, respectively. It does not seem desirable to imply that such expense should be distributed on the basis of sales. The median percentages for the administrative, general, warehouse, and all other expense, and for interest, for the grocery stores, grocery sides, and meat sides combined, however, are 6.77% and 1.02%, respectively. In passing it may be well to note that sales in meat sides typically amounted to 17.54% of the total sales for these six chains.

NOTE B.—It is impossible to give these data because the chains, in reporting, did not allocate administrative, general, warehouse, and all other expense to the stores or sides, respectively. It does not seem desirable to imply that such expense should be distributed on the basis of sales. The median percentages for the administrative, general, warehouse, and all other expense, and for interest, for the grocery stores, grocery sides, and meat sides combined were 7.16% and 0.97% respectively.

percentages for groceries. For store expense the difference between meat and grocery costs was more than 9% of sales. Furthermore, the differences between percentage expenses for meats and groceries were not confined to one or two items but were general throughout the list.

The much higher store expense for meat business in part reflects the fact that a relatively larger part of the job of meat retailing has to be performed at the point of sale. Also, the less favorable record of the meat sides of combination stores, as contrasted with grocery stores and sides, may have been due partly to the relatively low sales per unit of the meat sides, $22,000 rather than the $31,000 or more and $52,000 typically achieved by the grocery stores and sides, respectively.

Because of the difficulty of allocating overhead expenses as between meat sides and grocery sides, and the uncertain value of the results of such allocation, only the store expenses are shown in four of the divisions in Table 2. In contrast to Table 1, it is to be noted that the data in Table 2 are median figures rather than averages.[1]

To take cognizance of the difference in types of merchandise handled, a classification was made of the reporting chains into four groups: straight grocery chains, regular chains, combination chains, and meat chains. The first and fourth of these classifications are self-explanatory. The combination chains were those made up entirely of combination stores, that is, stores selling both meats and groceries. The regular chains were those typical concerns having some combination stores and some straight grocery stores. For these companies dry groceries and canned goods constituted about 33% of total sales, produce about 15%, and meat, including poultry and fish, about 19%. Both average and median figures are shown for these four groups of chains for the year 1934 in Table 3, and for the year 1933 in Table 4.

The tendency for the gross margin as well as the expense in meat business to be higher than the corresponding figures for grocery business is again evident in Tables 3 and 4. The fact that some of these differences do not agree with those which might be expected in the light of the evidence afforded by Table 2 shows that other conditions, such as, for instance, differences in size of chain, in average sales per store, in percentage of combination stores, and in size and sales of the average meat side, and differences between large and small cities, must have exerted considerable influence. Also, when straight grocery chains, regular chains, and combination chains are considered, the typical percentage of meat division business did not exceed 24% for any group of chains. Thus the differences in the typical percentages of meat division business for the several groups were not large, absolutely, and the influence of this important factor was limited. The notably greater rapidity of stock-turn achieved by the meat business is distinctly in evidence. Where such wide differences appear in stock turnover rates, the reason is to be sought in the nature of the merchandise itself rather than in differences in the management policies and procedures.

The lower gross margins and lower expense rates of the straight grocery chains[1] and the combination chains presumably were related in part, at least, to the relatively small size of the chains in these two groups, since previous studies have indicated that small chains—chains that perform fewer functions of a wholesale character; or, in other words, do not represent so complete an integration of retail and wholesale functions—frequently have lower expenses and lower gross margins than the large chains. In the case of the group of combination chains the low expense rates may be attributable in some part to their relatively high sales per store.

With regard to net profit and net gain, the average figures, which are, of course, weighted by the relative size of the chains in each group, suggest that regular chains and combination chains proved distinctly more profitable in 1933 and 1934 than did the straight grocery chains or the meat chains.

Store Expense Contrasted with Overhead Expense

Table 9, page 20, presents information on store expense, and on all other expense combined, for straight grocery chains, regular chains, and combination chains.

[1] In preparing percentages reflecting the average operating results for each group of chains, two procedures were used: (a) percentages were computed on the basis of the combined or aggregate dollar figures for the chains in each group, these percentages being referred to simply as "averages", and (b) medians were prepared by computing the several percentages or ratios for each chain individually, arranging the percentages for each item in an array from smallest to largest, and selecting the middle or median item.

The first procedure resulted in what were essentially consolidated statements for the chains in the several groups, the figures for the individual chains in each group being combined in the manner employed by each chain when consolidating the data for its individual units. Dollar sales for the several chains were combined to get aggregate dollar sales; dollar margins were combined to get aggregate dollar margin; and so on.

The percentages based on the aggregates, therefore, reflect the operations of all chains combined and are, for practical purposes, averages of the operations of the individual chains weighted according to sales volume. The percentages computed from the aggregates show what happened to the dollars spent by consumers in chain food stores; what portion of those dollars went for cost of merchandise, what portion for pay roll, what portion for other items of expense, and what portion for profit. They throw light on the long-run economic cost, the cost to the national economy, of distributing merchandise to consumers through chain food stores.

In addition, the consolidated figures afford some clue to the typical operating results for chains of the several categories; but, in using the data for this purpose, one must be careful to remember that the averages based on aggregates are not influenced equally by the figures for each chain, but that the several chains are given weight according to their size.

The median figures, on the contrary, reflect equal weighting of each chain regardless of its size. They, therefore, represent more reliably than do the aggregate figures the typical or common results for each group of chains. For many managerial purposes, the medians lead to more useful conclusions.

[1] The aggregate figures for 1933 offer contradictory testimony, indicating relatively high percentage expenses among the larger straight grocery chains.

Table 3. Operating Results of Food Chains Classified According to Type of Chain: 1934

(Net Sales = 100%)

Items	Average Figures[1] — Percentages Computed from the Combined Dollar Figures of the Chains in Each Type-of-Chain Group				Median Figures[1] — Percentages Computed from the Figures of Each Chain Taken Individually			
	Type of Food Chain				Type of Food Chain			
	Straight Grocery	Regular	Combination	Meat	Straight Grocery	Regular	Combination	Meat
Number of Chains	13	34	13	6	13	34	13	6
Aggregate Number of Stores	739	19,903	252	127	....	....	....	....
Aggregate Net Sales (in thousands)	$25,468	$911,461	$17,436	$6,261	....	....	....	....
Average Sales per Store	$34,463	$45,795	$69,190	$49,300	$37,550	$41,030	$79,215	$49,656
Index of Change (1934/1933):								
Number of Stores per Chain	....	....	....	....	100.00†	98.10	100.00	100.00
Net Sales per Chain	....	....	....	....	106.64†	104.35†	115.01†	112.01†
Average Sales per Store	....	....	....	....	110.47†	110.79†	113.09†	107.21†
Net Cost of Merchandise Sold	78.51%	75.96%	77.77%	75.29%	79.56%	77.06%	79.67%	73.56%
Gross Margin	21.49	24.04	22.23	24.71	20.44	22.94	20.33	26.44
Salaries and Wages	12.33%	12.58%	11.43%	13.43%	10.50%	12.13%	11.19%	15.07%
Tenancy Costs (including depreciation of major improvements)	3.78	3.18	2.49	3.70	2.51	3.00	2.03	3.71
Depreciation of Fixtures and Equipment	0.55	0.79	1.01	1.17	0.47	0.81	0.96	1.43
Light, Heat, Water, Power, and Refrigeration	0.84	1.04	0.84	1.38	0.68	1.05	0.80	1.72
Transportation Purchased	0.21†	0.37†	0.14†	....	0.55†	0.33†	0.17†	....
Supplies	1.04	1.16	1.05	1.26	0.97	1.04	1.15	1.58
Advertising	0.82	1.08	1.30	0.87†	0.95	0.97	1.20	1.09†
Insurance (except on real estate)	0.30	0.28	0.31	0.29	0.28	0.28	0.31	0.29
Taxes (except on real estate and federal tax on income)	0.33	0.55	0.38	0.64	0.39	0.36	0.29	0.40
Miscellaneous Expense:								
Communication	0.26†	0.18†	0.20	*	0.18†	0.19†	0.18	*
Travelling	0.10†	1.20	0.06†	*	0.13†	1.31	0.09†	*
Unclassified	0.86		1.11	*	0.56		1.30	*
Total Miscellaneous Expense (subtotal)	(1.22)	(1.38)	(1.37)	1.76†	(0.99)	(1.48)	(1.50)	1.46†
Total Expense before Interest	21.42%	22.41%	20.32%	24.50%	19.57%	22.26%	19.60%	27.69%
Total Interest (including interest on net worth)	0.86	1.01	0.87	0.42	0.87	0.97	0.68	0.55
Total Expense including Interest	22.28%	23.42%	21.19%	24.92%	20.43%	22.96%	20.55%	28.25%
Net Profit or Loss	*L.* 0.79%	0.62%	1.04%	*L.* 0.21%	0.16%	0.14%	0.44%	*L.* 0.67%
Net Other Income	1.19	1.66	0.98	0.47	0.84	1.20	0.80	0.63
Net Gain: Percentage of Net Sales	0.40%	2.28%	2.02%	0.26%	0.90%	1.53%	1.12%	0.31%
Percentage of Net Worth	6.10‡	9.65‡	12.84	3.80	5.14‡	7.44‡	9.40	4.26
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	7.46	8.38†	8.79	45.47	7.20	8.13†	8.90	47.55
Distribution of Stores by Type[2]:								
Straight Grocery	100.00%	57.87%	0.00%	0.00%	100.00%	67.14%	0.00%	0.00%
Meat	0.00	0.19	0.40	99.21	0.00	0.00	0.00	100.00
Combination	0.00	41.94	99.60	0.79	0.00	31.64	100.00	0.00
Self Service Grocery Units	20.57%†	15.62%†	46.42%†	....	0.00%†	0.00%†	100.00%†	....
Percentage of Sales in Meat Sides or Stores	....	....	....	....	....	16.64%†	*	100.00%
Distribution of Stores[3] among Cities with Populations of:								
Less than 10,000	22.46%	29.09%	14.66%	2.20%	25.00%	25.25%	0.00%	0.00%
10,000–25,000	10.45	8.99	14.22	12.09	5.66	8.40	7.69	11.77
25,000–100,000	8.74	13.87	31.90	6.59	0.00	7.01	17.86	0.00
100,000–500,000	21.84	21.19	39.22	37.36	0.00	5.32	0.00	0.00
500,000–1,000,000	5.15	6.07	0.00	0.00	0.00	0.00	0.00	0.00
1,000,000 or more	31.36	20.79	0.00	41.76	0.00	0.00	0.00	0.00

* Data not available. † Figures for this item were not reported by all the firms in the group.

‡ Because of inadequate balance sheet data in the case of three straight grocery chains and one regular chain, the figures for net gain as a percentage of net worth were based on the reports of 10 and 33 chains, respectively, of these two types.

[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.

[2] Total Stores = 100%.

[3] Location of stores by size of city was reported by 11 straight grocery chains having 641 stores, by 24 regular chains having 12,235 stores, by 11 combination chains having 232 stores, and by 5 meat chains having 91 stores.

Table 4. Operating Results of Food Chains Classified According to Type of Chain: 1933

(Net Sales = 100%)

Items	Average Figures[1] — Percentages Computed from the Combined Dollar Figures of the Chains in Each Type of Chain Group — Type of Food Chain				Median Figures[1] — Percentages Computed from the Figures of Each Chain Taken Individually — Type of Food Chain			
	Straight Grocery	Regular	Combination	Meat	Straight Grocery	Regular	Combination	Meat
Number of Chains	9	27	9	5	9	27	9	5
Aggregate Number of Stores	603	16,897	171	83	....	....	....	....
Aggregate Net Sales (in thousands)	$19,785	$729,835	$10,793	$3,268	....	....	....	....
Average Sales per Store	$32,810	$43,193	$63,116	$39,379	$34,350	$37,626	$75,790	$40,558
Index of Change (1933/1932):								
Number of Stores per Chain	....	....	....	....	98.18	95.19†	100.00†	96.43†
Net Sales per Chain	....	....	....	....	95.53†	100.43†	106.02†	*
Average Sales per Store	....	....	....	....	95.53	101.93†	99.65†	*
Net Cost of Merchandise Sold	77.61%	75.44%	79.12%	70.53%	77.95%	75.99%	80.43%	69.80%
Gross Margin	22.39	24.56	20.88	29.47	22.05	24.01	19.57	30.20
Salaries and Wages	12.03%	12.20%	10.69%	15.15%	10.84%	12.00%	9.63%	15.30%
Tenancy Costs (including depreciation of major improvements)	4.98	3.46	2.48	4.16	3.52	3.27	2.12	3.99
Depreciation of Fixtures and Equipment	0.84	0.86	0.84	2.03	0.49	0.89	0.83	2.16
Light, Heat, Water, Power, and Refrigeration	1.01	1.11	0.88	1.91	0.78	1.07	0.90	2.11
Transportation Purchased	0.59†	0.49†	0.18†	....	0.42†	0.38†	0.06†	....
Supplies	0.99	1.09	0.96	1.56	0.92	1.03	1.12	1.20
Advertising	0.54	1.10	1.31	0.87†	0.87	1.01	1.23	0.95†
Insurance (except on real estate)	0.25	0.30	0.33	0.33	0.25	0.30	0.34	0.25
Taxes (except on real estate and federal tax on income)	0.46	0.43	0.54	1.05	0.32	0.40	0.37	0.63
Miscellaneous Expense:								
Communication	0.26†	0.22	0.19	*	0.20†	0.23	0.19	*
Travelling	0.14†	1.45	0.06†	*	0.18†	1.42	0.08†	*
Unclassified	1.34		1.16	*	0.97		1.05	*
Total Miscellaneous Expense (subtotal)	(1.74)	(1.67)	(1.41)	2.03	(1.35)	(1.69)	(1.31)	1.58
Total Expense before Interest	23.43%	22.71%	19.62%	29.09%	21.51%	22.78%	19.35%	29.75%
Total Interest (including interest on net worth)	0.99	1.04	0.89	0.71	0.91	0.97	0.71	0.75
Total Expense including Interest	24.42%	23.75%	20.51%	29.80%	22.15%	23.84%	19.79%	30.58%
Net Profit or Loss	*L. 2.03%*	0.81%	0.37%	*L. 0.33%*	0.06%	*L. 0.20%*	*L. 0.23%*	0.07%
Net Other Income	0.92	1.72	0.96	0.52	0.99	1.16	0.73	0.83
Net Gain: Percentage of Net Sales	*L. 1.11%*	2.53%	1.33%	0.19%	0.78%	1.06%	0.37%	0.10%
Percentage of Net Worth	*L. 5.84‡*	10.51‡	8.87	1.62	7.05‡	6.64‡	3.89	1.16
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	7.66	9.29†	9.75	43.38	8.55	8.69†	10.72	37.55
Distribution of Stores by Type[2]:								
Straight Grocery	100.00%	58.29%	0.00%	0.00%	100.00%	68.75%	0.00%	0.00%
Meat	0.00	0.22	1.17	98.80	0.00	0.00	0.00	100.00
Combination	0.00	41.49	98.83	1.20	0.00	30.77	100.00	0.00
Self Service Grocery Units	14.10%†	15.10%†	36.84%†	....	0.00%†	0.00%†	100.00%†	....
Percentage of Sales in Meat Sides or Stores	....	....	....	....	....	16.41%†	*	100.00%
Distribution of Stores[3] among Cities with Populations of:								
Less than 10,000	17.33%	26.92%	9.93%	2.38%	9.97%	16.67%	0.00%	0.00%
10,000–25,000	11.73	8.36	12.06	10.72	3.64	6.84	6.00	10.71
25,000–100,000	8.84	13.13	43.97	9.52	4.17	3.35	62.50	0.00
100,000–500,000	5.78	17.14	34.04	34.52	0.00	5.03	0.00	0.00
500,000–1,000,000	5.96	6.54	0.00	0.00	0.00	0.00	0.00	0.00
1,000,000 or more	50.36	27.91	0.00	42.86	0.00	0.00	0.00	0.00

* Data not available. † Figures for this item were not reported by all the firms in the group.

‡ Because of inadequate balance sheet data in the case of two straight grocery chains and one regular chain, the figures for net gain as a percentage of net worth were based on the reports of 7 and 26 chains, respectively, of these two types.

[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.

[2] Total Stores = 100%.

[3] Location of stores by size of city was reported by 8 straight grocery chains having 554 stores, by 17 regular chains having 8,342 stores, by 7 combination chains having 141 stores, and by all the 5 meat chains reporting for 1933.

All other expense includes administrative, general, warehouse, and transportation charges, and frequently is referred to as overhead, or central office, expense. Table 2, already referred to, supplements this table by showing store expense separately for grocery operations and for meat operations; and Table 15, page 29, presents store expense percentages for the grocery and the meat operations of regular chains classified according to number of stores.

From Table 9 and Table 2 it is manifest that, in 1934: store expense accounted for nearly 70% of total expense; store salaries and wages absorbed a slightly larger portion of total salaries and wages; store tenancy costs ran to almost 90% of total tenancy costs as a rule; in the retailing of grocery division merchandise, store expense averaged about the same in percentage of sales (slightly more than 13%) for straight grocery stores whether those stores were units of straight grocery chains or of regular chains (but was lower by about 1% of sales for the grocery sides of combination stores, presumably because of their larger grocery sales per unit); food chains in 1934 typically expended from 6% to 7.5% of sales (at retail prices) for performing the central office function, which is roughly comparable to the wholesale function in the wholesaler-retailer channel of distribution, but which includes costs for advertising to consumers, transportation of goods to stores, supervision of stores, taxes on stores, and other costs not borne by wholesalers as a rule.

Chief Factors Influencing Results
(See Tables 11, 12, 13, 14, 15, 16, and 17)

Because of the differences already described between the meat business and the grocery business, the proportion of meat division sales to total sales was probably the most important single factor influencing the margin and expense rates of food chains in 1933 and 1934. A relatively high percentage of meat division sales tended to be accompanied by relatively higher rates of gross margin, of stock-turn, and of expense, and the effect on expense was general rather than limited to a few items. The effects of this factor on total chain operating results, however, were limited, as has been noted, by the relatively low percentages of meat division business to total business.

Next in importance as regards their influence on margins and expenses were the two factors: size of chain, and size of city served.

Whether measured by volume of sales or by number of stores, large food chains tended clearly to have higher gross margins than small food chains, the percentages of gross margin varying directly with the size of chain. These higher gross margin rates of the larger firms presumably resulted from several causes: larger percentages of meat division sales, greater manufacturing and private brand activity, greater assumption of wholesale functions with consequent reduction in manufacturers' marketing expense, larger sales of fancy merchandise, and possibly more extensive practice of speculative buying.

Large food chains in some cases had higher costs of doing business than small chains, although the tendency was less clear than in the case of gross margin, there being some evidence that the largest chains, those with more than 2,000 stores, had lower expense rates than chains of the second-largest category. In several cases the smallest chains enjoyed the lowest expense percentages. Such a relationship between scale of operations and rate of expense is not unusual in the marketing field. In fact, most of the Bureau's studies in other retail trades reveal a similar relationship between size and expense. In the chain food business, however, there is an important additional reason why small concerns should have lower expense rates than large companies; to wit, the smaller concerns do not carry on wholesale functions such as warehousing, transportation, private branding, and the like, to nearly so great an extent as do the large companies.

Net profit and net gain in percentage of sales clearly were highest for the largest chains covered, any disadvantage in expense for these chains not being great enough to counteract their advantage in gross margin. When earnings were measured in relation to net worth, the advantage of the large chain frequently was less marked because of its larger ratio of investment to sales.

Closely connected with these variations in the margins, expenses, and profits shown for large and small food chains were variations apparently related in part to differences in the size of cities. Food chains with stores concentrated in cities of 100,000 or more had higher rates of gross margin and total expense than chains of similar type operating primarily in smaller cities. The effect on expense was particularly noticeable for pay roll, and for tenancy and other plant items. These disadvantages in expense for large city chains were only partly overcome by advantages in gross margin. Profit showings generally were less satisfactory for the large city chains. Since the large chains, as measured by number of stores, have a greater proportion of their stores in the larger cities, it is possible that some of the tendencies which were found to be associated with variations in the size of chains may, in fact, be connected with differences in the size of cities. It is not clear that these tendencies persist throughout the entire size-of-city range, but it seems possible that chains operating chiefly in cities of 500,000 or more find themselves at

some disadvantage, as regards percentage expenses, in comparison to chains operating in cities of 100,000 to 500,000 population.

There was some evidence, also, that average sales per store was an important factor influencing operating results. Presumably high average sales per store should be a condition tending to produce a low expense rate, but since most of the stores with large sales volume were combination stores, the counteracting factor of high expense attached to meat sales came into play.

Firms with Highest Rates of Profit

The reports for the straight grocery chains, the combination chains, and the regular chains were classified according to rate of net profit into two groups, high-profit chains and all chains, including those with high profits. Typical figures were arrived at for each group. These data are presented in Tables 21 and 22, pages 44 and 45.

From these tables it is clear that the high-profit, or goal, firms among the reporting food chains, as contrasted with other chains having lower net profit rates, showed some tendency to be larger as regards total sales, and had no higher rates of increase in total sales, number of stores, or sales per store.

The operating results of the goal chains, however, showed that while a relatively high rate of gross margin is frequently, but not always, one of the factors contributing to high profit rates, lower-than-average percentage expenses are much more likely to be a factor contributing to superior earnings. This advantage as a rule was not restricted to any one or few classifications of expense.

Trends, 1929–1934

(See Charts 2 and 3, and Tables 18, 19, and 20)

The Bureau's first study of the chain food business covered the year 1929. Subsequently some figures were obtained for the years 1931 and 1932; and the present study is based on reports for 1933 and 1934. With the aid of supplementary information obtained both from published sources and from special investigations, it is possible to present a fairly clear picture of the changes that have taken place in the chain food business over this period.

These changes inevitably reflect the tremendous cyclical upheaval of business which occurred during those years, but they also mirror the evolution of the chain food business in response to alterations in consumer buying habits and in response to competitive pressures.

As might be expected, the number of food chain stores in operation, increasing up to 1930, exhibited a decline after that year, although the drop was of small proportions. This decrease in the number of stores was partly due to the depression, which encouraged the discontinuance of uneconomical units, and partly the result of a marked trend towards combination stores in response to the apparent desire of consumers to concentrate their food purchases. As a consequence of the drastic decline in prices, there was a substantial drop in the dollar volume of sales in chain food stores, but apparently the decrease in dollar sales failed to keep pace with the declining price level; in other words, there was a substantial increase in the physical volume of business handled by chain food stores over this period. This interpretation is supported by the data of the Census of 1933, showing that chains operating grocery and combination stores increased their proportions of the total food business of the country from 27% in 1929 to 33% in 1933.

The movement of gross margin over this period was rather unusual. Ordinarily, during a time of falling prices and declining dollar sales, gross margin rates tend to remain essentially unchanged or to shrink somewhat as inventory losses occur and executives cut mark-ups to gain volume. In the chain food business, however, the years of depression witnessed a rise in the gross margin ratio. In part, this advance may be attributed to the marked increase in the number of combination stores involving as it did larger sales of meat; apparently this factor accounted for but a fraction of the total increase, other influences being, perhaps, skillful buying, leading to avoidance of unusual inventory losses; an increase in private brands and in manufacturing; and a definite policy of food chain executives to increase mark-up in order to cover the rising expense ratio. Following 1933, however, the gross margin percentage moved down slightly.

In percentage of sales, expenses advanced, as might be expected during depression years. Also, for some concerns which maintained their dollar sales volume fairly well, the dollar outlays for expense actually increased. In general, higher expense percentages were, of course, to be expected as a result of decreasing sales volume. When prices fall it is impossible to lower dollar expenses as rapidly as sales are reduced. In the case of chain food stores in these years, there also were a number of other conditions which might help to account for a rising expense rate. One of these was the increased physical volume of merchandise handled. The chief force, however, probably was the trend to combination stores. Also, the increase in private brands, which has been noted as a possible cause of higher gross margin, may equally have been a cause of higher expenses, particularly for promotional purposes, as evidenced by

the increased outlays for advertising over this period. This was a time when chains are believed to have been deriving income in the form of higher gross margin for promotional services, and it is natural to suppose that the expenses of such promotional work also advanced. Closely allied was the factor of increased competitive pressure to offer services, such as a modified delivery service and, in some instances, extension of credit. Needless to say, the effect on pay rolls of the N.R.A., an effect which clearly extended beyond its legal demise, was an important cause of advancing pay roll percentages after 1933. Finally, the greatly increased tax burdens should not be overlooked. For a group of eight identical companies, taxes in percentage of sales were two and one-half times as great in 1934 as in 1929. In 1934, the expense rate receded, but remained substantially above that for 1929.

When all these powerful influences are taken into consideration, it is rather remarkable that the cost of doing business in chain food stores did not advance even more sharply. That such was not the case is a tribute to the effectiveness of management over these trying years.

During the depression profits declined not only absolutely but also as a percentage of sales and as a percentage of invested capital. A lower ratio of net profit was made inevitable by the fact that the expense rate rose more than did the gross margin percentage. Nevertheless, as an average showing, some net business profit was preserved throughout the period, a substantially greater achievement than many types of enterprise can point to, but one in no respect out of keeping with the essentially stable character of the retail food business.

The shrinkage in profit in food chains, while primarily a consequence of the business depression, must also be looked upon as part of the evidence that this type of business enterprise now may be approaching, or perhaps definitely in, what may be termed the maturity phase. Chain food stores have traded up; stores are more elaborate and attractive; more expensive merchandise is sold; promotional endeavors are more costly; and investments in relatively fixed forms of capital appear to be larger. All this is a natural consequence of marketing evolution and competitive pressure, but it may be expected that in the future chain food companies apart from the effects of cyclical movements, particularly changes in the price level, will find themselves increasingly vulnerable to competition from new types of low-cost distributors.

A general description of the chains for which data were available for this study is given in tabular form on page 2. The division of the 66 chains into the four major groups there listed was suggested by the fact that the handling of meat division merchandise involves percentages of gross margin and expense differing sharply from the corresponding percentages for grocery division merchandise; and by the additional fact that the operation of combination stores, owing to influences associated with their size and locations as well as with their meat volume, may involve problems quite different from those of the smaller straight grocery stores.

Direct and convincing evidence on the first of these subjects is afforded by the statistics in Table 2, which presents median percentages of margin and expense for straight grocery stores, the grocery sides of combination stores, the meat sides of combination stores, and meat stores. It is thought that frequently, or usually, the grocery figures covered the handling not only of the articles customarily thought of as groceries, but also of smoked meats (in straight grocery stores) and produce; and that the meat division figures included any poultry or fish carried. At least one reporting chain, however, included produce with meats rather than with groceries.

The percentages of gross margin and total expense are seen to have been sharply higher for meat operations than for groceries; and this difference in the expense rates extended to every individual classification of expense represented. Presumably the higher percentage costs for meats resulted primarily from the perishable and unstandardized nature of much meat division merchandise which, in turn, seems to have required somewhat higher average wages for meat division personnel than for grocery personnel, lower average sales per employee and per square foot, more expensive fixtures and equipment, more refrigeration expense, more supplies, and so on. The lower average sales per unit for the meat sides of combination stores also may have been an important factor making for relatively high percentage expenses for meats. These various costs led to a higher ratio of total expense to sales; and this, in turn, seems to have made necessary a higher rate of gross margin. It is noteworthy, however, that the differences in average gross margin between groceries and meats were smaller than the corresponding differences in expense, so that meats typically showed a much smaller store profit rate than groceries.

Major Groups of Chains

With these substantial differences in the percentages of expense and margin for meats and groceries, it appeared that the most important single factor to be considered in comparing the operating results of different food chains was the relative amount of business done in meat division merchandise as distinguished from grocery division merchandise. Accordingly, the reporting chains were classified first on this basis as follows:

1. Chains made up exclusively of stores carrying only groceries (which frequently, or usually, included smoked meats), or groceries and produce. For convenience, these chains were called straight grocery chains.

2. Chains made up in part of straight grocery stores, such as the stores operated by the chains in the first group, and in part of combination stores selling meat division merchandise (fresh meats, poultry, and fish) in addition to grocery division merchandise. These chains are referred to throughout this bulletin as regular chains, since almost all the large, well-known food chains are of this type.

3. Chains made up exclusively of combination stores.

4. Chains made up exclusively of stores selling chiefly fresh meats, and perhaps fish and poultry, and referred to briefly as meat chains. In several instances chains classified in this group carried some groceries; but always grocery sales constituted but a small portion of total sales.

The typical operating results for 1934 for the 13 straight grocery chains, the 13 combination chains, and the 34 regular chains are given in some detail in Tables 5, 6, and 8, which appear on pages 13, 15, and 17; and the percentage data from the three tables are summarized for convenient comparison in Table 3, page 6. Table 4 presents similar figures for 1933. Tables 3 and 4 include, also, percentage information for the several meat chains. Owing to the small dollar volume represented by these chains and the small number of firms reporting, dollar and middle range figures similar to those in Table 5 are not given for meats.

Straight Grocery Chains

The 13 straight grocery chains, the operations of which are summarized in Table 5, operated from 4 to 207 stores each, but half of the chains had between 34 and 55 stores each. As the table indicates, the total number of stores represented was 739.

As regards dollar sales per chain, the range was from $190,000 to $6,700,000, and one-half of the chains had sales between $800,000 and $2,500,000. Sales per store ranged from $22,700 to $55,000, the half of the chains lying in the middle of the range having from $30,000 to $40,000 sales per store.

Of the 13 chains, 11 chains, which operated 641 stores, gave data on the location of these stores by size of city. It will be noted from the table that these 600-odd stores were distributed fairly evenly throughout the size-of-city range provided. A study of the median figures for distribution of stores by size of city, however, shows that, while the individual chains must have differed widely in the distribution of their stores, there was some tendency for smaller cities to be more heavily emphasized than larger cities. These 13 grocery chains typically did not offer delivery or charge account service. On the average they purchased approximately 90% of their goods direct from manufacturers and the rest from wholesalers or jobbers. The reports indicated practically no warehousing of produce; but, on the average, 75% of the groceries handled passed through the warehouses operated by the chains. Two of the 13 chains operated self service stores exclusively, but the typical practice was to operate no self service stores.

In general, all the chains represented in this and the other tables submitted fairly complete reports on their profit and loss statements and balance sheets, but many of them gave less complete information descriptive of their operating policies and practices. The generalizations on these latter topics, therefore, are somewhat less reliable than the figures on sales, margin, expense, and profit.

Inspection of the figures on operating results in Table 5 shows that the typical chain among the 13 earned a gross margin of slightly more than 20% of sales, and achieved a small net profit after making provision for interest at 6% on net worth. Gross margin, here and throughout this study, was computed on the basis of net merchandise costs after deducting all discounts and allowances except advertising allowances representing direct payments for space used. Net gain or net business profit, without allowance for interest on owned capital and after crediting other income, typically amounted to 0.9% of sales. Among the expenses, salaries and wages were the largest, being 10.5% of sales, tenancy costs next largest at 2.5%, and supplies and advertising next, each being slightly under 1% of sales.

Comparison of the median percentages with average percentages based on aggregate dollar figures shows that the latter, in the preparation of which the larger chains received heavier weight, were higher in the cases of gross margin, salary and wage expense, tenancy cost, supplies, and total expense, but lower in the case of advertising expense. The percentages based on the aggregates, also show a net loss, after charging interest as an expense, and a smaller rate of net gain as a percentage of net sales. Thus, it appears that the larger chains among the 13 were able to earn larger percentage margins but were at a disadvantage as regards rates of expense, so that their earnings were less favorable on a percentage basis than those of the typical chain. The only notable advantage in expense enjoyed by the larger chains was that in advertising.

The disadvantage of the larger chains as to tenancy costs, and the fact that these chains had more of their stores in large cities than did the smaller chains, suggests that rental expense runs higher in percentage of sales in large cities than in small cities. Further evidence on this point appears later.

Of the 13 chains covered by Table 5, eight segregated store expense and all other expense. The latter category included administrative, general, warehouse, and transportation costs. Aggregate and median figures for these eight chains showing the functional breakdown of expense are given in Table 9, page 20.

Combination Chains

Table 6 presents aggregate and median figures for the 13 chains of combination stores. These chains tended to operate fewer stores per chain than the straight grocery chains, the range being from 3 stores to 50 stores. One-half of the reporting firms operated between 4 and 28 stores. In average sales per store, however, these chains had a distinct advantage over the straight grocery chains. Sales per store for the combination chains ranged from $26,000 to $199,000, and one-half the reporting chains had sales per store between $62,000 and $100,000. Thus aggregate net sales for these chains were larger than at first might have been expected. Total sales ranged from $166,000 to $2,913,000.

The individual stores of the combination chains were located chiefly in cities of moderate size rather than in either the very small cities or the cities of more than 500,000 population. Among the 13 chains none had stores in cities of over 500,000 and only one-quarter of the chains had more than 12% of their stores in cities of less than 10,000. On the aggregate basis, the bulk of the stores were concentrated in cities of from 25,000

Table 5. Operating Results of 13 Straight Grocery Chains: 1934

Items	Aggregate Figures[1]		Median[1] and Range Figures		
			Percentages Computed for Each of the 13 Chains Taken Individually		
	Amount (Dollars given in thousands)	Average Percentages Computed for the 13 Chains as a Group	Median[1]	One-half the Reported Figures, Centered on the Median, Lay between the Limits Listed Below	
Number of Chains	13	....	....	....	....
Aggregate Number of Stores	739	....	....	35	54
Net Sales	$25,468	100.00%	100.00%	....	....
Average Sales per Store	$34	....	$38	$30	$40
Index of Change (1934/1933):					
Number of Stores per Chain	....	....	100.00†	97.78	100.00
Net Sales per Chain	....	....	106.64†	104.38	110.91
Average Sales per Store	....	....	110.47†	108.47	115.45
Net Cost of Merchandise Sold	$19,995	78.51%	79.56%	77.82%	81.76%
GROSS MARGIN	5,473	21.49	20.44	18.24	22.18
Salaries and Wages	$3,139	12.33%	10.50%	9.74%	12.64%
Tenancy Costs (including depreciation of major improvements)	964	3.78	2.51	2.21	3.47
Depreciation of Fixtures and Equipment	140	0.55	0.47	0.43	0.67
Light, Heat, Water, Power, and Refrigeration	213	0.84	0.68	0.56	0.79
Transportation Purchased	54†	0.21†	0.55†	0.26	0.55
Supplies	265	1.04	0.97	0.84	1.04
Advertising	207	0.82	0.95	0.74	1.31
Insurance (except on real estate)	76	0.30	0.28	0.17	0.41
Taxes (except on real estate and federal tax on income)	85	0.33	0.39	0.23	0.42
Miscellaneous Expense:					
Communication	67†	0.26†	0.18†	0.15	0.38
Travelling	25†	0.10†	0.13†	0.08	0.21
Unclassified	220	0.86	0.56	0.45	1.14
Total Miscellaneous Expense (subtotal)	(312)	(1.22)	(0.99)	(0.59)	(1.43)
Total Expense before Interest	$5,455	21.42%	19.57%	16.82%	21.78%
Total Interest (including interest on net worth)	220	0.86	0.87	0.75	1.01
TOTAL EXPENSE including Interest	$5,675	22.28%	20.43%	17.57%	22.86%
NET PROFIT OR LOSS	*L. $202*	*L. 0.79%*	0.16%	*L. 1.81%*	1.60%
Net Profit or Loss from Real Estate Operations	$60†	0.23%†	0.12%†	0.04%	0.20%
Interest on Net Worth (except real estate, leaseholds, and goodwill)	208	0.82	0.83	0.74	0.91
Other Revenue, Net	35†	0.14†	0.30†	0.07	0.91
Total Net Other Income	$303	1.19%	0.84%	0.65%	1.86%
NET GAIN: Percentage of Net Sales	$101	0.40%	0.90%	*L. 0.04%*	1.32%
Percentage of Net Worth	....	6.10‡	5.14‡	2.60	12.22
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	....	7.46	7.20	6.19	8.84
Self Service Grocery Units[2]	152†	20.57%†	0.00%†	0.00%	0.00%
Distribution of Stores[2] among Cities with Populations of:					
Less than 10,000	144	22.46%	25.00%	4.45%	60.00%
10,000–25,000	67	10.45	5.66	3.33	12.04
25,000–100,000	56	8.74	0.00	0.00	10.81
100,000–500,000	140	21.84	0.00	0.00	22.22
500,000–1,000,000	33	5.15	0.00	0.00	0.00
1,000,000 or more	201	31.36	0.00	0.00	0.00

† Figures for this item were not reported by all the firms in the group.
‡ Because of inadequate balance sheet data in the case of three chains, the figure for net gain as a percentage of net worth is based on the reports of ten chains.
[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.
[2] Total Stores = 100%
[3] Location of stores by size of city was reported by 11 of the 13 chains.

to 500,000. This tendency was in contrast with that for the straight grocery chains to favor small cities. It is clear from the middle range data, also, that as a rule the combination chains did not cover cities differing widely in size, but rather concentrated their stores in one city or in cities of similar size.

These chains did not give sufficient information to warrant generalizations regarding the percentage of sales delivered, the sources of merchandise purchased, or the extent of warehousing. As regards charge business, however, pronounced differences between straight grocery chains and combination chains were disclosed. Only four of the 13 straight grocery chains offered charge account service, so the tendency clearly was in the direction of cash business. Among nine reporting combination chains, however, eight offered charge service; and for these eight, the median percentage of charge sales to total sales was 10. Eight of the 13 chains operated self service stores exclusively. It was not possible to determine definitely how expenses for self service and regular chain stores compared, but what evidence there was suggested that the eight combination chains with self service stores only, had no perceptible advantage in percentage expenses.

The figures in Table 6 are of interest for two purposes: as standards for the appraisal of operating results among combination chains, and as a basis for comparisons of combination chains with other types of food distributor. This latter purpose is served more satisfactorily by Table 3 in which selected information from Table 6 is reproduced; but for the first purpose, careful study of Table 6 is indicated. Such analysis need not be described in detail here, but attention may be directed to the fact that the differences between the aggregate percentages and the medians show the tendency already displayed by Table 5 for the larger chains to have higher rates of margin and expense than the smaller chains.

The division of expense for combination store chains on a functional basis is given in Table 9, page 20.

Regular Chains

In Table 8 there are presented figures summarizing the results of the 34 regular chains for which complete and comparable data were available. These 34 chains operated a total of 19,903 stores, and their stores per chain ranged from 6 to more than 4,300. The 18 chains in the middle of the range as regards number of stores had between 73 and 428 stores each. Clearly, therefore, the great bulk of the 19,903 stores were operated by a few very large chains.

In dollar sales per chain there were similar differences. The smallest chain had sales in 1934 of $270,000 and the largest chain had sales of more than $200,000,000, the total volume for the 34 chains being $911,000,000. In average sales per store, however, the differences, though large, were not so great. The extreme range was from about $20,000, reported by the chain with smallest sales per store, to approximately $70,000 for the chain with largest average sales per store. The average figure for the 34 chains (total dollar sales divided by total number of stores) was approximately $45,000, and the middle half of the chains, when arranged in order of sales per store, had sales per store of from $34,000 to $45,000.

Table 8 indicates, also, that reports on the location of stores by sizes of cities were received from chains operating more than 12,000 of the 19,903 stores. The several units of these chains were distributed fairly evenly among cities of various sizes, but cities with populations of less than 500,000 were better represented than the very large cities. Cash sales for the regular chains apparently amounted to approximately 98% of total sales, the charge business of these firms being practically negligible; on the average, no delivery service was offered. Perhaps such charge and delivery service as was offered by regular chains in 1934 was arranged for by store managers unofficially.

Twenty-eight of the 34 regular chains gave definite answers to the Bureau's question regarding self service stores. Of these 28 chains, 4, with 246 stores, operated self service stores exclusively, while 6 stated that self service stores constituted 0.4% to 75.0% of total stores. There is strong presumption that the 6 chains which did not answer the question had no self service stores. Thus, as Table 8 indicates, the experience of the regular chains is predominantly the experience of over-the-counter, clerk-service retailers. It is interesting to note, however, that the four chains with 100% self service stores showed no advantage over the other regular chains in expense for pay roll, tenancy, or supplies, or in total expense.

The regular chains reporting for 1934 bought the bulk of their merchandise direct from manufacturers. Fifteen of the 34 chains typically bought 75% of their merchandise in this way. Wholesalers and jobbers were the next in importance as sources, accounting for 15.0% of the total; and 18 reporting chains, on the average, manufactured 4.0% of the goods sold.

It was customary among these chains to operate warehouses for groceries and produce, but, as a rule, meats were not handled to any important extent through the chains' own warehouses. Reports from 24 chains indicated that as a rule approximately 80% of total grocery purchases were warehoused by the chains; reports from 19 chains showed the corresponding typical figure to be

Table 6. Operating Results of 13 Combination Food Chains: 1934

Items	Aggregate Figures[1]		Median[1] and Range Figures		
			Percentages Computed for Each of the 13 Chains Taken Individually		
	Amount (Dollars given in thousands)	Average Percentages Computed for the 13 Chains as a Group	Median[1]	One-half the Reported Figures, Centered on the Median, Lay between the Limits Listed Below	
Number of Chains	13	....	....	....	....
Aggregate Number of Stores	252	....	....	5	27
Net Sales	$17,436	100.00%	100.00%	....	....
Average Sales per Store	$69	....	$79	$62	$101
Index of Change (1934/1933):					
Number of Stores per Chain	....	....	100.00	100.00	113.04
Net Sales per Chain	....	....	115.01†	112.91	116.33
Average Sales per Store	....	....	113.09†	102.25	116.33
Net Cost of Merchandise Sold	$13,560	77.77%	79.67%	76.46%	81.78%
GROSS MARGIN	3,876	22.23	20.33	18.22	23.54
Salaries and Wages	$1,993	11.43%	11.19%	9.56%	11.61%
Tenancy Costs (including depreciation of major improvements)	434	2.49	2.03	1.72	2.86
Depreciation of Fixtures and Equipment	176	1.01	0.96	0.64	1.38
Light, Heat, Water, Power, and Refrigeration	147	0.84	0.80	0.64	1.06
Transportation Purchased	24†	0.14†	0.17†	0.04	0.37
Supplies	183	1.05	1.15	1.01	1.29
Advertising	227	1.30	1.20	1.00	1.58
Insurance (except on real estate)	55	0.31	0.31	0.24	0.39
Taxes (except on real estate and federal tax on income)	66	0.38	0.29	0.23	0.46
Miscellaneous Expense:					
Communication	34	0.20	0.18	0.13	0.22
Travelling	11†	0.06†	0.09†	0.08	0.09
Unclassified	193	1.11	1.30	0.82	1.63
Total Miscellaneous Expense (subtotal)	(238)	(1.37)	(1.50)	(0.97)	(1.89)
Total Expense before Interest	$3,543	20.32%	19.60%	18.27%	20.14%
Total Interest (including interest on net worth)	152	0.87	0.68	0.54	0.97
TOTAL EXPENSE including Interest	$3,695	21.19%	20.55%	18.81%	21.73%
NET PROFIT OR LOSS	$181	1.04%	0.44%	*L. 0.22%*	0.82%
Net Profit or Loss from Real Estate Operations	$15†	0.08%†	0.09%†	0.07%	0.12%
Interest on Net Worth (except real estate, leaseholds, and goodwill)	145	0.84	0.72	0.54	0.90
Other Revenue, Net	11†	0.06†	0.08†	*L. 0.25*	0.29
Total Net Other Income	$171	0.98%	0.80%	0.73%	1.09%
NET GAIN: Percentage of Net Sales	$352	2.02%	1.12%	0.50%	1.93%
Percentage of Net Worth	....	12.84	9.40	5.40	12.75
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	....	8.79	8.90	8.38	12.21
Self Service Grocery Units[2]	117†	46.42%†	100.00%†	0.00%	100.00%
Distribution of Stores[3] among Cities with Populations of:					
Less than 10,000	34	14.66%	0.00%	0.00%	12.00%
10,000–25,000	33	14.22	7.69	0.00	32.14
25,000–100,000	74	31.90	17.86	0.00	32.00
100,000–500,000	91	39.22	0.00	0.00	60.00
500,000–1,000,000	0	0.00	0.00	0.00	0.00
1,000,000 or more	0	0.00	0.00	0.00	0.00

† Figures for this item were not reported by all the firms in the group.

[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.

[2] Total Stores = 100%

[3] Location of stores by size of city was reported by 11 of the 13 chains.

90% for produce; but for meats, according to 19 reports, only 5% of the goods handled, on the average, passed through the chains' own warehouses.

Further light on the operating problems of the chains is afforded by the following median data on mark-downs and stock shortages for regular chains:

Items	Number of Chains Reporting	Percentages of Total Chain Net Sales		
		Median	One-half the Reported Figures, Centered on the Median, Lay between the Limits Listed Below	
Regular Mark-downs	15	0.43%	0.10%	0.63%
Special Sales Mark-downs	14	2.14	1.42	2.46
Mark-downs on Damaged Goods	11	0.67	0.37	1.00
Total Mark-downs	19	2.99	2.03	3.73
Stock Shortages (Net)	19	*0.11**	*0.44**	0.08
Total Mark-downs and Shortages (Net)	18	3.09	1.94	3.45

*Overage.

In computing these percentages, total chain net sales were taken as 100%. Since, as a rule, the inventories of only the grocery divisions were recorded in retail terms, these figures for mark-downs and shortages presumably cover grocery operations only. Grocery division business constituted 83.36% of total business among regular chains. Therefore, if grocery division sales had been taken as 100%, the percentages given above would have been increased by $\frac{1}{.8336} - 1$, or approximately 20%.

It is to be hoped that, in future studies, figures such as these may be supplemented by information for the several chains regarding methods of billing goods to be offered at 2-for or 3-for, the so-called "tare" allowance for wastage in weighing out bulk goods or for dehydration, and any reserves for shrinkage which may be set up.

Table 7 gives median percentages for sales by lines of goods (a) for all 17 chains which reported these data and (b) for these chains classified according to percentage of combination stores to total stores. These data indicate the experience of the typical chain as regards each of the several lines of merchandise; but, the several percentages in each set being medians, they do not add to 100.00%.

Manifestly, among regular chains, dry groceries and canned goods account for a larger proportion of total sales than any other single classification of merchandise. Next in importance come the meat and fish group with 19% of sales; the fresh fruit and vegetables with 15% of sales; and butter, cheese, and eggs with between 11% and 12% of sales. Non-food products account for almost 10% of sales. It may be surprising that even with the emphasis which has been placed on bakery products in recent years since chains have opened their own bakeries, this type of merchandise contributes less than 6% of total sales; but one must remember that a large portion of chain store bakery sales consist of bread, which has a low unit value. In spite of all the discussion which has arisen during the last few years over the selling of fluid milk by chains, apparently this item, along with cream and ice cream, contributes less than 2% of total sales for the typical regular chain.

Table 7. Sales by Merchandise Lines for 17 Regular Food Chains: 1934
(Median Figures[1]; Net Sales = 100%)

Items	All Chains Reporting Data	Chains Having Less than 35% Combination Stores	Chains Having 35% or More Combination Stores
Number of Chains	17	9	8
Aggregate Number of Stores	16,616	4,825	11,791
Aggregate Net Sales (in thousands)	$799,221	$213,893	$585,328
Percentage of Combination Stores to Total Stores	33.22%	29.25%	48.86%
Dry Groceries and Canned Goods	33.53%	29.55%	34.13%
Fresh Fruit and Vegetables	15.21	15.52	14.27
Meat (including poultry and fish)	19.00	17.58	19.30
Butter, Cheese, and Eggs	11.49	11.49	11.24
Other Dairy Products (including milk and cream)	1.39†	1.31†	2.45†
Bakery Products	5.70†	5.78†	5.70
All Other Food Products	6.68†	10.20†	3.93†
Non-food Products	9.45†	10.28†	9.19
Average Sales per Store	$41,319	$42,082	$40,071
Average Sales per Meat Side	17,657	21,813	16,103

†Figures for this item were not reported by all the firms in the group.
[1]See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.

The small difference in the percentages of meat business for the two groups of chains seems to reflect an important difference in operating policy. The chains with more than 35% combination stores apparently chose to operate meat sides in a great many of their stores but did not attempt to build up the sales of the individual meat sides

Classification of the 17 chains by percentage of combination stores discloses surprisingly little difference in the relative importance of the several lines of merchandise. Among the chains with a larger proportion of combination stores, meat and fish sales, as would be expected, bulked larger in proportion to total sales; but, strangely enough, sales of dry groceries and canned goods also were larger. The chief difference in the distribution of sales for the two groups, in fact, came in all other food products which accounted for 10% of sales for the chains with relatively few combination stores and only 4% of sales for the chains with a large percentage of combination stores.

Table 8. Operating Results of 34 Regular Food Chains: 1934

Items	Aggregate Figures[1]		Median[1] and Range Figures		
			Percentages Computed for Each of the 34 Chains Taken Individually		
	Amount (Dollars given in thousands)	Average Percentages Computed for the 34 Chains as a Group	Median[1]	One-half the Reported Figures, Centered on the Median, Lay between the Limits Listed Below	
Number of Chains	34	....	....	....	....
Aggregate Number of Stores	19,903	....	....	74	427
Net Sales	$911,461	100.00%	100.00%	....	....
Average Sales per Store	$46	....	$41	$34	$45
Index of Change (1934/1933):					
Number of Stores per Chain	....	....	98.10	95.41	100.00
Net Sales per Chain	....	....	104.35†	101.97	108.20
Average Sales per Store	....	....	110.79†	104.64	114.10
Net Cost of Merchandise Sold	$692,314	75.96%	77.06%	76.09%	77.94%
GROSS MARGIN	219,147	24.04	22.94	22.06	23.91
Salaries and Wages	$114,665	12.58%	12.13%	11.42%	12.81%
Tenancy Costs (including depreciation of major improvements)	28,980	3.18	3.00	2.62	3.71
Depreciation of Fixtures and Equipment	7,192	0.79	0.81	0.63	1.03
Light, Heat, Water, Power, and Refrigeration	9,503	1.04	1.05	0.85	1.17
Transportation Purchased	3,408†	0.37†	0.33†	0.18	0.95
Supplies	10,591	1.16	1.04	0.91	1.27
Advertising	9,804	1.08	0.97	0.73	1.23
Insurance (except on real estate)	2,562	0.28	0.28	0.21	0.35
Taxes (except on real estate and federal tax on income)	5,004	0.55	0.36	0.23	0.63
Miscellaneous Expense:					
Communication	1,669†	0.18†	0.19†	0.15	0.27
Travelling	10,917	1.20	1.31	1.10	1.55
Unclassified					
Total Miscellaneous Expense (subtotal)	(12,586)	(1.38)	(1.48)	(1.30)	(1.70)
Total Expense before Interest	$204,295	22.41%	22.26%	20.57%	23.16%
Total Interest (including interest on net worth)	9,186	1.01	0.97	0.80	1.05
TOTAL EXPENSE including Interest	$213,481	23.42%	22.96%	21.61%	24.10%
NET PROFIT OR LOSS	$5,666	0.62%	0.14%	*L. 0.69%*	0.79%
Net Profit or Loss from Real Estate Operations	$2,412†	0.26%†	0.17%†	0.03%	0.28%
Interest on Net Worth (except real estate, leaseholds, and goodwill)	9,825	1.08	0.93	0.65	1.12
Other Revenue, Net	2,865†	0.32†	0.14†	0.00	0.23
Total Net Other Income	$15,102	1.66%	1.20%	0.77%	1.66%
NET GAIN: Percentage of Net Sales	$20,768	2.28%	1.53%	0.16%	2.25%
Percentage of Net Worth	....	9.65‡	7.44‡	2.18	10.28
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	....	8.38†	8.13†	6.97	9.29
Distribution of Stores by Type[3]:					
Straight Grocery	11,519	57.87%	67.14%	51.89%	79.52%
Meat	37	0.19	0.00	0.00	0.00
Combination	8,347	41.94	31.64	20.00	48.11
Self Service Grocery Units	3,108†	15.62%†	0.00%†	0.00%	2.80%
Percentage of Sales in Meat Sides or Stores	....	....	16.64%†	10.54%	20.28%
Distribution of Stores[3] among Cities with Populations of:					
Less than 10,000	3,559	29.09%	25.25%	11.02%	37.56%
10,000–25,000	1,100	8.99	8.40	3.45	10.87
25,000–100,000	1,697	13.87	7.01	0.00	18.58
100,000–500,000	2,593	21.19	5.32	0.00	35.30
500,000–1,000,000	742	6.07	0.00	0.00	0.00
1,000,000 or more	2,544	20.79	0.00	0.00	2.32

† Figures for this item were not reported by all the firms in the group.
‡ Because of inadequate balance sheet data in the case of one chain, the figure for net gain as a percentage of net worth was based on the reports of 33 chains.
[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.
[2] Total Stores = 100%
[3] Location of stores by size of city was reported by 24 chains.

to a high degree, while the chains in the other group adopted the policy of operating fewer and larger combination stores with a larger meat side business in each. The average sales per store was but 5% smaller among the chains with more than 35% combination stores than among the other chains, while the average sales per meat side was 26% smaller.

Inspection of Table 8 shows that, among the 34 chains, gross margin typically amounted to just under 23% (22.94%) of net sales, an amount distinctly larger than those for straight grocery chains and for combination chains. Salaries and wages typically accounted for 12.13% of sales, tenancy costs for 3.00% of sales, and total expense including interest for 22.96% of sales. In spite of the fact that these figures for gross margin and total expense indicate that the typical regular chain incurred a slight loss in 1934, medians of the profit or loss figures for the several chains show that the typical chain earned a slight profit (0.14% of sales).

This profit was after including a charge for interest on invested capital; that is, interest actually paid, plus interest at 6% on net worth, less interest and dividends received. Hence the net profit figure represents not net business profit, as the term is ordinarily used by business men, but the net return from merchandising operations over and above long-run economic costs. Also, without an allowance for interest, it is impossible to secure strictly comparable reports for different chains which employ borrowed capital to varying degrees.

In addition to the net profit from merchandising operations, the typical regular chain secured income in 1934 amounting to 1.20% of sales and consisting largely of a credit for interest[1] to offset the imputed charge included among the expenses. After taking account of net other income the typical regular chain in 1934 earned a net business profit, or net gain, amounting to approximately 1.5% of sales.

Net gain is the profit on which Federal income taxes are paid. Figures on these taxes were reported by 32 of the 34 regular chains. For these 32 chains, Federal income taxes, computed by the aggregate method, typically amounted to 0.32% of sales; and, computed by the median method, to 0.17% of sales.

Turning now to the range figures presented in the last two columns of the table, it is seen that margin rates above or below the median by 1% of sales were exhibited frequently among regular chains; and that, for expense rates, almost the same dispersion was common. For the individual items of expense, the ranges covered by the middle half of the figures reported commonly were smaller, roughly in proportion to the differences between the respective medians. For salaries and wages, which account for roughly half of total expense, the middle range was from 0.7% below the median to 0.7% above, indicating no tendency towards greater dispersion among personnel costs than among margins and total expense percentages. Tenancy costs, however, showed a substantially greater range, one amounting to more than 35% of the median (average) as compared with a range of only 12% of the median for salaries and wages, and 11% for total expense. Apparently differences in the store location policies of the several chains, and perhaps differences in the sizes of the cities covered, brought about rather large differences in the percentage expenditures for tenancy costs. Perhaps, also, there was a tendency for the range to be larger relative to the median for items of expense small in percentage of sales than for items large in percentage of sales. Evidence pointing to this conclusion is afforded by the figures for light, etc., for supplies, and for advertising. In all three instances, the middle range reported amounted to more than 30% of the median, and for advertising the figure was 50%. Such items as net profit and net gain, of course, showed unusually large spreads because these figures resulted from the interplay of margin and expense.

Comparison of the median figures in Table 8 with the percentages based on the aggregate dollar figures, percentages which reflect a weighting of the figures for individual chains according to dollar volume, affords evidence that the larger chains tended to earn higher rates of gross margin and to incur somewhat higher rates of expense than the typical chain. As a result, the larger chains showed better net profits and better rates of net gain.

The data for 29 regular chains which reported store expense separately from other expense are given in Table 9, page 20, and are discussed beginning on page 19.

Meat Chains

As was observed on page 11, the small number of meat chains reporting, and their small aggregate sales, made it impracticable to prepare a table for meat chains corresponding to Tables 5, 6, and 8. Typical figures for these six chains, however, are given in Table 3, page 6. It was not possible to compute averages for this group of chains showing the division of expense between store operations and the central office functions. Since the several meat chains displayed substantial differences in operating results, the average and median figures for them probably are not so reliable as the corresponding data for the other three groups of chains.

[1] It should be noted that this credit for interest on net worth ordinarily did not agree with the charge for total interest in the expense statement, because most firms had some net charge or credit resulting from the offsetting of interest actually paid out and interest actually received, and because by the Bureau's procedure some imputed interest on investment (that used in manufacture) did not get into operating expense at all, but was included in purchases.

STORE EXPENSE CONTRASTED WITH OVERHEAD EXPENSE

Table 9 presents data indicating the average and median percentage expenditure for performing each of the two chief functional divisions of food chain work: (a) store operations; and (b) all other, central office, or overhead operations, the latter including the administrative, general, warehouse, and transportation functions. The expense for each of these functions is shown broken down by component natural divisions, such as pay roll, tenancy, and supplies.

The information for all three types of food chain represented in Table 9 agrees in offering testimony that in 1934 store expense typically accounted for around 70% of total expense before interest; and that expenses associated with the central office (including administrative, general, warehouse, and transportation expense) ordinarily accounted for about 30% of the total expense before interest. Figures for 1933 similar to those given in Table 9 disclosed slightly different results; but, on the basis of the available data for both years, the conclusions to be drawn from Table 9 are thought to be essentially representative.

Since store expense took about 70% of total expense, and since it included no portion of the outlays for transportation, advertising, or taxes (other than taxes on real estate which were included in tenancy cost), it follows that store operations tended to absorb more than 70% of the expense for the other items of expense. This conclusion is confirmed by the figures for salaries and wages, tenancy costs, depreciation of fixtures and equipment, and light, heat, power, and refrigeration; and it was true for supplies among straight grocery chains and regular chains. Expenditures for tenancy and for light, heat, water, power, and refrigeration represented almost entirely store cost, 87% or more of the total expenditure being for this function and as little as 5.5% (for one type of chain) for the central office function.

Cost of Performing the Wholesale Function

The figures in Table 9 are interesting not only for the light they throw on the relative cost of store and central office functions in food chains; but also because they give some indication of the percentage cost of performing the wholesale distribution function through food chains.

Quite clearly, administrative, general, warehouse, transportation, and all other expense for food chains in 1934 on the average absorbed from 6.0% to 7.5% of sales at retail prices. This is equivalent to from 7.6% to 9.9% of the value of goods sold at the chains' cost prices, the chains' gross margin being taken at from 21% to 24% of sales (see Table 3). Since the ordinary wholesaler's selling prices presumably are higher than the chains' cost prices, but lower than the chains' retail prices, the cost to the chains of performing their central office functions amounts to between 6.0% and 9.9% of the wholesalers' selling prices. This affords some rough basis for comparing the chains' costs with wholesalers' operating costs, which customarily are expressed in percentages of the wholesalers' sales. It must be noted, however, that the chains' costs include those for several functions frequently not performed by wholesalers. These include:

1. Advertising, such as that commonly done by, and at the expense of, the retail stores which buy from wholesalers.
2. Transportation of goods from the warehouse (which corresponds to the wholesaler's establishment) to the retail store.
3. Supervision of the retail store.
4. Taxes, such as commonly are paid by independent retailers, plus any taxes levied solely, or at higher rates, on chains.
5. In some cases, costs for the wholesale function on meats and on fresh fruits and vegetables, which may run higher than corresponding costs on dry groceries.

The Bureau does not have comparable figures on the operating costs of wholesale grocers for recent years based upon its own researches, but such data may be found in the publications of the United States Department of Commerce and the Bureau of Business Research of the Ohio State University.

Store Expense for Grocery and for Meat Operations

In connection with this discussion of the relationship between store expense and overhead expense, it is interesting to compare the data on store expense only for the several types of unit represented in Table 2, page 4. Corresponding data in dollars per unit are given in Table 10.

The preparation of the figures for these tables involved the apportionment of expenses between the

Table 9. Store Expense, General Overhead Expense, and Total Expense for Straight Grocery Chains, Regular Chains, and Combination Chains: 1934

(Net Sales = 100%)

Items	Average[1] Figures — Percentages Computed from the Combined Dollar Figures of the Chains in Each Group			Median[1] Figures — Percentages Computed from the Figures of Each Chain Taken Individually		
	Straight Grocery Chains	Regular Chains	Combination Chains	Straight Grocery Chains	Regular Chains	Combination Chains
Number of Chains	8	29	6	8	29	6
Store Expense:						
Salaries and Wages	9.55%	9.20%	9.04%	7.90%	8.93%	9.45%
Tenancy Costs (including depreciation of major improvements)	3.59	2.80	2.55	2.44	2.70	2.71
Depreciation of Fixtures and Equipment	0.42	0.57	0.89	0.41	0.60	0.90
Light, Heat, Water, Power, and Refrigeration	0.80	0.98	0.85	0.61	0.96	0.77
Supplies	0.83	0.72	0.73	0.71	0.75	0.88
Miscellaneous Expense (including insurance other than on real estate)	1.15	0.76	1.06	1.08	0.86	0.96
Total Store Expense before Interest	16.34%	15.03%	15.12%	13.21%	15.13%	15.40%
Administrative, General, Warehouse and All Other Expense:						
Salaries and Wages	3.45%	3.40%†	3.12%	3.43%	3.34%†	2.96%
Tenancy Costs (including depreciation of major improvements)	0.44†	0.39†	0.32	0.32†	0.46†	0.24
Depreciation of Fixtures and Equipment	0.17†	0.22†	0.25	0.11†	0.20†	0.14
Light, Heat, Water, Power, and Refrigeration	0.08	0.06†	0.05†	0.07	0.06†	0.07†
Transportation Purchased	0.22†	0.38†	0.11†	0.55†	0.35†	0.17†
Supplies	0.24†	0.45†	0.22	0.28†	0.36†	0.20
Advertising	0.73	1.08	1.28	0.83	1.07	1.39
Taxes (except on real estate and federal tax on income)	0.23	0.55	0.38	0.27	0.36	0.27
Miscellaneous Expense (including insurance other than on real estate)	0.55	0.90	0.56	0.62	0.77	0.44
Total Administrative, General, Warehouse, and All Other Expense before Interest	6.11%	7.43%	6.29%	6.57%	7.08%	5.74%
Total Expense:						
Salaries and Wages	13.00%	12.60%	12.16%	11.74%	12.23%	11.54%
Tenancy Costs (including depreciation of major improvements)	4.03	3.19	2.87	2.61	3.10	2.84
Depreciation of Fixtures and Equipment	0.59	0.79	1.14	0.55	0.82	0.97
Light, Heat, Water, Power, and Refrigeration	0.88	1.04	0.90	0.68	1.05	0.82
Transportation Purchased	0.22†	0.38†	0.11†	0.55†	0.35†	0.17†
Supplies	1.07	1.17	0.95	0.99	1.11	1.11
Advertising	0.73	1.08	1.28	0.83	1.07	1.39
Taxes (except on real estate and federal tax on income)	0.23	0.55	0.38	0.27	0.36	0.27
Miscellaneous Expense (including insurance other than on real estate)	1.70	1.66	1.62	1.67	1.72	1.61
Total Expense before Interest	22.45%	22.46%	21.41%	20.68%	22.36%	20.13%
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	7.38	8.43†	8.38	7.20	8.39†	8.79
Percentage of Groceries Warehoused	....	....	....	90.45%†	70.00%†	*
Percentage of Produce Warehoused	....	....	....	*	90.00†	*
Percentage of Meat Warehoused	....	....	....	....	4.00†	*
Distribution of Stores by Type[2]:						
Straight Grocery	100.00%	57.39%	0.00%	100.00%	65.00%	0.00%
Meat	0.00	0.19	0.00	0.00	0.00	0.00
Combination	0.00	42.42	100.00	0.00	33.22	100.00
Self Service Grocery Units	18.01%†	16.12%†	29.71%†	0.00%†	0.00%†	100.00%†
Percentage of Sales in Meat Sides or Stores	....	....	....	0.00%	16.93%	23.67%

* Data not available.
† Figures for this item were not reported by all the firms in the group.
[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.
[2] Total Stores = 100%.

Table 10. Store Expense in Dollars Per Unit of Straight Grocery Stores and of Combination Stores, in Total and by Sides, for 6 Regular Chains Combined: 1934

(Averages[1] per unit based on aggregate figures)

Items	Grocery Stores		Combination Stores						All Stores	
			Grocery Sides		Meat Sides		Total Combination			
	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage
Aggregate Number of Units	4,423	73.77%	1,573	....	1,573	....	1,573	26.23%	5,996	100.00%
Aggregate Net Sales (in thousands)	$143,808	....	$101,743	....	$60,158	....	$161,901	....	$305,709	....
Sales per Unit	$32,514	100.00%	$64,681	100.00%	$38,244	100.00%	$102,925	100.00%	$50,985	100.00%
Store Expense:										
Salaries and Wages	$2,615	8.04%	$5,487	8.48%	$4,404	11.51%	$9,891	9.61%	$4,523	8.87%
Tenancy Costs (including depreciation of major improvements)	744	2.29	1,625	2.51	1,171	3.06	2,796	2.72	1,282	2.51
Depreciation of Fixtures and Equipment	80	0.25	159	0.25	444	1.16	603	0.59	218	0.43
Light, Heat, Water, Power, and Refrigeration	238	0.73	331	0.51	660	1.72	991	0.96	436	0.86
Supplies	183	0.56	363	0.56	423	1.11	786	0.76	341	0.67
Insurance (except on real estate)	41	0.13	74	0.12	87	0.23	161	0.16	73	0.14
Total Miscellaneous Expense	138	0.42	391	0.60	270	0.71	661	0.64	275	0.54
Total Store Expense	$4,039	12.42%	$8,430	13.03%	$7,459	19.50%	$15,889	15.44%	$7,148	14.02%

[1] See explanation of types of average used, page 49.

grocery sides and the meat sides of combination stores. The Bureau's instructions to the reporting firms did not lay down hard and fast rules for this apportionment, but indicated that each firm should follow its own practice. It was implied, however, that wherever possible expense should be charged directly to the respective sides; that tenancy, light, heat, water, power, and refrigeration might be charged on a square-foot basis; and that other expenses might be allocated on the basis of sales.

Three facts stand out clearly in Table 2:

1. Store expense for the retailing of grocery division merchandise through straight grocery stores was almost exactly the same, between 13.0% and 13.5%, in straight grocery chains (which had no combination stores) and in the straight grocery stores of regular chains. For both types of outlet, store salaries and wages amounted to about 8% of sales; store tenancy costs to about 2.5% of sales; depreciation, light, heat, water, power, and refrigeration chargeable to store operations to about 1% of sales; and all other store expense to about 1.5% of sales.

2. Store expense for the retailing of grocery division merchandise was lower in the grocery sides of combination stores than in straight grocery stores by about 1% of sales. Differences in cost appeared in practically all the component items of store expense. Apparently they were associated to some degree with differences in average sales per unit (*i.e.*, per store or side), for as Table 2 indicates, the grocery sides of combination stores had average sales per unit about 67% larger than the straight grocery stores of the same chains, and about 54% larger than the straight grocery chains. The advantage of combination stores over straight grocery stores as regards percentage expenses was confirmed by store expense data for 4 of the 13 combination chains.

3. Store expense for the retailing of meat division merchandise was higher by 9% or 10% of sales than store expense for the retailing of grocery division merchandise.

Both Table 2 and Table 10 reflect the relatively high costs, in meat division business, for depreciation, refrigeration and related items, supplies, and insurance, as well as for pay roll and tenancy.

RELATION OF SIZE OF CHAIN, SIZE OF CITY, AND SALES PER STORE TO OPERATING RESULTS

In order to provide bases for appraising the effects of size of chain upon operating results, and to yield standards of performance for chains of different sizes, the three groups of chains covered in Tables 5, 6, and 8 were divided into sub-groups based upon total sales per chain or upon number of stores operated. The figures for these sub-groups appear in Tables 11, 12, 13, and 14. The small number of meat chains for which figures were available made it impossible to subdivide their reports by size of chain.

Straight Grocery Chains

Examination of Table 11 indicates that the straight grocery chains covered in the three classifications, respectively, differed not only in dollar sales per chain, but also in average number of stores operated and in the size of city covered. Since all the firms were straight grocery chains, none of them had any combination stores or meat division sales.

From the table it is manifest that gross margin and total expense, measured in percentages of net sales, varied from group to group directly with size; but that the largest chains did not have an advantage in margin sufficiently great to offset their disadvantage in expense, for they typically had the least satisfactory earnings.

According to the table, the tendency for the expense rate to be higher among the larger chains extended to salaries and wages, the tenancy items, supplies, insurance, communication, and total miscellaneous expense; while in transportation purchased, advertising, and taxes, the smaller chains were at a disadvantage. Apparently among the smaller straight grocery chains it was not customary to operate warehouses; or where warehouses were operated, the transportation of goods from the warehouse to the store commonly was done by outside truckmen. On the other hand, the larger chains, which on the average operated about 100 stores, handled at least a substantial amount of trucking in their own vehicles. Table 12, and other tables which follow, suggest that this difference of practice did not obtain among combination chains and regular chains.

The amount of advertising done by the straight grocery chains did not vary in proportion to the amount of business done, for the larger chains typically had lower percentage expenditures for this item. Finally, rates of stock-turn tended to be higher for the larger straight grocery chains, and to vary with size of chain.

Owing to a rather clear tendency for straight grocery chains to differ more in number of stores than in average sales per store, the chains with large sales volume, as a rule, also had the largest number of stores. Hence, the classification of straight grocery chains based on number of stores resulted in a grouping of chains, and disclosed operating results essentially similar to those shown in Table 11. It should be noted, also, that among straight grocery chains, the stores of the smaller chains and the chains of moderate size, chains with total sales of less than $2,000,000, were concentrated in cities of less than 10,000 population; while the stores of chains with sales of $2,000,000 or more tended to be concentrated in cities of 100,000 or more population. Thus, as will be observed later, the classification of straight grocery chains by size was to a substantial degree a classification by size of city covered. For this reason, one cannot be sure that the differences seen in Table 11 reflect chiefly the influence of size. They may reflect, also, the influence of size of city covered, and this latter factor may have been the dominant one as regards some aspects of performance.

Combination Chains

Table 12 presents a classification of combination chains by both dollar sales per chain and number of stores.

Average sales per store were more than $100,000 for the smaller chains and roughly $65,000 for the larger chains. In fact, the four smaller combination chains had larger average sales per store than the chains in any other group covered by this bulletin and about the same as the average sales per combination store for the six regular chains covered by Table 10. The average figure for these six chains, however, was controlled by the data for two large regular chains which had large sales per combination store. The other four chains represented had substantially smaller sales per combination store.

More than 60% of the small chain units were located in cities of 100,000 to 500,000 population, and none of them were in cities of less than 10,000; while the larger chains had 16% of their stores in cities of less than 10,000, and only about 40% in cities of 100,000 or more.

Table 11. Operating Results for 13 Straight Grocery Chains Classified According to Volume of Sales: 1934

(Net Sales = 100%)

Items	Average Figures[1] — Percentages Computed from the Combined Dollar Figures of the Chains in Each Volume Group — Net Sales Volume			Median Figures[1] — Percentages Computed from the Figures of Each Chain Taken Individually — Net Sales Volume		
	Less than $1,000,000	$1,000,000–2,000,000	$2,000,000 or more	Less than $1,000,000	$1,000,000–2,000,000	$2,000,000 or more
Number of Chains	4	5	4	....	....	....
Aggregate Number of Stores	70	225	444	....	....	....
Aggregate Net Sales (in thousands)	$2,354	$6,802	$16,312	....	....	....
Average Sales per Store	$33,632	$30,230	$36,740	$40,513	$30,123	$36,893
Index of Change (1934/1933):						
Number of Stores per Chain	....	....	....	100.00†	100.00†	95.10
Net Sales per Chain	....	....	....	106.02†	110.91	104.61
Average Sales per Store	....	....	....	106.02†	114.78†	112.23
Net Cost of Merchandise Sold	81.16%	80.28%	77.39%	82.41%	79.84%	77.66%
Gross Margin	18.84	19.72	22.61	17.59	20.16	22.34
Salaries and Wages	9.21%	10.86%	13.39%	9.54%	10.84%	13.38%
Tenancy Costs (including depreciation of major improvements)	2.37	2.14	4.68	2.36	2.24	4.58
Depreciation of Fixtures and Equipment	0.56	0.62	0.52	0.47	0.51	0.53
Light, Heat, Water, Power, and Refrigeration	0.41	0.62	0.99	0.48	0.63	0.95
Transportation Purchased	1.28	0.01†	0.14†	0.63	*	*
Supplies	0.85	0.85	1.15	0.86	0.86	1.19
Advertising	1.29	1.16	0.60	1.11	0.95	0.54
Insurance (except on real estate)	0.22	0.25	0.33	0.23	0.24	0.47
Taxes (except on real estate and federal tax on income)	0.67	0.56	0.19	0.41	0.37	0.19
Miscellaneous Expense:						
Communication	0.22†	0.23	0.28	0.16†	0.19	0.21
Travelling	0.73	0.87	1.03	0.65	1.06	0.91
Unclassified						
Total Miscellaneous Expense (subtotal)	(0.95)	(1.10)	(1.31)	(0.73)	(1.21)	(1.21)
Total Expense before Interest	17.81%	18.17%	23.30%	17.57%	17.48%	23.74%
Total Interest (including interest on net worth)	0.73	1.01	0.82	0.70	1.08	0.84
Total Expense including Interest	18.54%	19.18%	24.12%	18.27%	18.56%	24.59%
Net Profit or Loss	0.30%	0.54%	*L.* 1.51%	0.76%	0.57%	*L.* 0.83%
Net Other Income (including interest on net worth)	*L.* 0.31	1.47	1.29	0.55	1.06	0.74
Net Gain: Percentage of Net Sales	*L.* 0.01%	2.01%	*L.* 0.22%	0.09%	1.32%	1.03%
Percentage of Net Worth	*	*	*	2.60‡	7.47‡	7.29‡
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	6.67	6.97	7.83	7.42	6.59	8.15
Self Service Grocery Units[2]	0.00%†	20.00%†	24.10%†	0.00%†	0.00%†	0.00%†
Distribution of Stores[2] among Cities with Populations of:						
Less than 10,000	77.50%	52.31%	3.25%	*	*	*
10,000–25,000	8.75	21.54	7.42	*	*	*
25,000–100,000	6.25	16.15	6.96	*	*	*
100,000–500,000	7.50	10.00	28.07	*	*	*
500,000–1,000,000	0.00	0.00	7.66	*	*	*
1,000,000 or more	0.00	0.00	46.64	*	*	*

* Data not available. † Figures for this item were not reported by all the firms in the group.

‡ Because of inadequate balance sheet data in the case of one chain in each group, the figures for net gain as a percentage of net worth were based on the reports of 3 small, 4 medium size, and 3 large straight grocery chains, respectively.

[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.

[2] Total Stores = 100%.

[3] Location of stores by size of city was reported by 3 of the 5 chains with sales of from $1,000,000 to $2,000,000.

Three of the four smaller chains conducted all their grocery business on a self service basis while a substantially smaller percentage of the larger chains (4 out of 7) followed this practice.

The smaller chains represented in Table 12 had the lower rates of gross margin (17% as contrasted with 23%), the lower rates of total expense, and the lower percentage expenditures for all important classifications of expense other than supplies and advertising. The median figures show that they had an advantage in supplies expense. Salaries and wages were lower by more than 3.4% of sales. The typical percentage of total expense to sales for the group of smaller combination chains was lower, in fact, than that for any other group of chains represented in this bulletin; and total expense before interest for these chains was about the same as total *store* expense for the combination stores of similar size operated by the six regular chains covered in Table 10.

The disadvantage in percentage margin of the four smaller combination chains was somewhat greater than their advantage in percentage expense, so that they typically had lower percentages of net profit than the larger chains; but their sales per store were sufficiently larger to give them much larger dollar profits per store.

All these facts, coupled with the higher rates of stock-turn (almost double), the lower interest expense, and the higher advertising expense, of the four smaller chains of Table 12, suggest that they were more aggressively merchandised, may have done less warehousing, and may have stressed appeals to price somewhat more than the larger chains did. Apparently it is not to be inferred, however, that a sales volume of $100,000 per combination store in itself makes possible a total expense rate for store and central office functions combined of around 16%. But apparently these four chains achieved a considerable degree of operating efficiency by selecting cities of such size that aggressive promotion and low margins would bring sales of about $100,000 per store, by managing their businesses so as to secure a high rate of stock-turn, by selecting sites which could be secured at a low rental, and by operating their grocery divisions on the self service plan.

With reference to the influence of size, one may conclude from the evidence of Tables 11 and 12 that, among the straight grocery and combination chains, which were small relative to many regular chains, size of chain had some relation to percentages of operating expense and gross margin, large size tending to bring about relatively high rates of both expense and margin; that the effect of size on expense was pervasive and not restricted to a few items; and that size had no clear relation to rates of either profit or stock-turn.

Regular Chains

The figures for regular chains in Table 13, both aggregates and medians, show that margin rates manifestly were higher for the larger chains, as was true in the cases of straight grocery chains and combination chains. With respect to percentages of total expense, also, a tendency toward higher figures for the larger firms appeared, especially in the medians; but the differences were irregular and the average percentages for the largest chains, those with sales of $100,000,000 or more (typically about 3,000 stores), showed some tendency to be lower than the percentages for the group of second largest chains, those with sales of $20,000,000 to $50,000,000 (typically 600 stores). The average percentages for the four groups of chains with sales of $2,000,000 or more (on the basis of the averages, 100 to 3,000 stores) differed by less than 1.5% of sales. Finally the average percentages of total expense for the smallest chains covered in the table, those with sales of less than $2,000,000, were lower than the percentages for any group of larger chains; and the differences between the average figures for these chains and those for the chains with sales of $2,000,000 or more amounted to 1.3% of sales or more.

Looking at the individual items of expense, it is seen that the largest chains on the average had the highest rates of pay roll expense. Their handicap in this respect, according to the medians, amounted to 0.6% of sales as compared with the group having the second highest percentage, but the aggregates showed a corresponding difference of only 0.09%, too small to be significant. The differences in tenancy costs were more pronounced than those in pay roll expense; but the chains with sales of $20,000,000 to $50,000,000 reported the highest percentages, on the average. The smallest chains had noteworthy advantages in percentage expenditures for supplies, taxes, and interest; and for them the ratio of net sales to net worth (not shown in the table) typically was higher than for any group of larger chains covered in Table 13. The figures for most of the other items of expense display little disposition to vary with sales per chain, but advertising expense was highest, and taxes high, for the largest chains. These facts should be interpreted, of course, in the light of the differences among the several groups of chains with respect to the percentages of combination stores, meat business, and self service units shown in the table.

Earnings were at their highest rates, on the average, among the chains with sales of $100,000,000 or more, apparently because of the advantage which those chains typically enjoyed as regards gross margin and the slight advantage which some of them enjoyed in expense.

A table similar to Table 13, but covering a smaller

Table 12. Operating Results of 11§ Combination Food Chains Classified According to Volume of Sales and Number of Stores: 1934

(Net Sales = 100%)

Items	Average Figures[1]		Median Figures[1]	
	Percentages Computed from the Combined Dollar Figures of the Chains in Each Group		Percentages Computed from the Figures of Each Chain Taken Individually	
	Volume and Number of Stores		Volume and Number of Stores	
	Net Sales of Less than $1,000,000 Less than 10 Stores	Net Sales of $1,000,000 or more 20–50 Stores	Net Sales of Less than $1,000,000 Less than 10 Stores	Net Sales of $1,000,000 or more 20–50 Stores
Number of Chains	4	7	....	....
Aggregate Number of Stores	18	222	....	....
Aggregate Net Sales (in thousands)	$2,000	$13,897	....	....
Average Sales per Store	$111,095	$62,599	$101,302	$66,485
Index of Change (1934/1933):				
Number of Stores per Chain	....	....	100.00	100.00
Net Sales per Chain	....	....	125.79	114.08†
Average Sales per Store	....	....	126.21	113.09†
Net Cost of Merchandise Sold	82.69%	76.79%	83.32%	76.46%
Gross Margin	17.31	23.21	16.68	23.54
Salaries and Wages	8.03%	12.05%	8.22%	11.61%
Tenancy Costs (including depreciation of major improvements)	1.83	2.66	1.85	2.06
Depreciation of Fixtures and Equipment	0.74	1.10	0.81	0.96
Light, Heat, Water, Power, and Refrigeration	0.68	0.88	0.63	0.84
Transportation Purchased	0.03†	0.12†	0.00†	0.13†
Supplies	1.10	1.02	1.14	1.21
Advertising	1.84	1.13	1.73	1.03
Insurance (except on real estate)	0.24	0.33	0.24	0.36
Taxes (except on real estate and federal tax on income)	0.22	0.37	0.21	0.29
Miscellaneous Expense:				
Communication	0.17	0.20	0.15	0.20
Travelling	0.99	1.24	1.03	1.51
Unclassified				
Total Miscellaneous Expense (subtotal)	(1.16)	(1.44)	(1.20)	(1.71)
Total Expense before Interest	15.87%	21.10%	16.67%	20.14%
Total Interest (including interest on net worth)	0.50	0.95	0.45	0.95
Total Expense including Interest	16.37%	22.05%	17.12%	21.73%
Net Profit or Loss	0.94%	1.16%	0.38%	0.57%
Net Other Income (including interest on net worth)	0.55	1.09	0.66	0.95
Net Gain: Percentage of Net Sales	1.49%	2.25%	0.47%	1.74%
Percentage of Net Worth	18.07	12.88	7.13	10.41
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	15.65	8.33	15.17	8.63
Self Service Grocery Units[2]	66.67%	44.14%†	100.00%	100.00%†
Percentage of Sales in Meat Stores or Sides	....	....	*	23.81%†
Distribution of Stores[3] among Cities with Populations of:				
Less than 10,000	0.00%	16.18%	0.00%	11.21%
10,000–25,000	18.75	12.75	0.00	7.85
25,000–100,000	18.75	31.37	0.00	18.93
100,000–500,000	62.50	39.70	57.14	30.00
500,000–1,000,000	0.00	0.00	0.00	0.00
1,000,000 or more	0.00	0.00	0.00	0.00

* Data not available. † Figures for this item were not reported by all the firms in the group.

§ Two combination chains could not be classified according to the groups used in this table.

[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.

[2] Total Stores = 100%.

[3] Location of stores by size of city was reported by 3 of the 4 small chains and 6 of the 7 large chains.

number of chains for 1933, corroborated the testimony of Table 13 on a number of points. It displayed the tendencies (a) for gross margin rates to be higher for the larger chains, increasing with the size of chain; (b) for the chains with sales of more than $100,000,000 to have an advantage in total expense rates over chains with sales of $20,000,000 to $50,000,000; (c) for average expense rates to vary by less than 1.0% of sales among chains with sales of $2,000,000 or more; (d) for the smallest chains to have the lowest total expense percentages; (e) for the typical percentages of tenancy cost for the several groups of chains to show larger differences than the typical percentages of salaries and wages, and to be highest for chains with sales of $20,000,000 to $50,000,000; and (f) for earnings to be highest for the largest chains.

Table 14 presents typical figures for another grouping of regular chains according to size, that based on number of stores operated. Here there were some differences among the several groups with reference to average sales per store, the larger chains tending to have the larger sales per store[1], but nevertheless a large number of stores manifestly was accompanied as a rule by large total volume, a tendency apparent in earlier tables. Differences among the several groups in percentage of combination stores were great enough to suggest important effects on operating results. The chains with 100 to 500 stores had only 31% combination stores, while both larger and smaller chains had well over 40% combination stores. Finally, the middle-size chains apparently located their units in smaller cities than those covered b y the small and large chains.

As for the operating results themselves, margin rates varied directly with size of chain. The median percentages of total expense in Table 14 were largest for the largest chains and smallest for the smallest chains, but the percentages computed on the aggregate basis did not show the same tendencies. Apparently the larger chains among the 8 with less than 100 stores each, tended to have relatively high expenses. The individual items of expense, as reflected in both averages and medians, do not exhibit a tendency for costs to be higher for the larger chains except in the case of pay roll, and even there the lowest percentages were reported by the middle-size chains. Perhaps the influence of size of city occupied was sufficiently great to counteract any influences of meat business and size, and to give these middle-size chains the lowest percentages of expense for pay roll, tenancy, light, heat, and power, and taxes (other than Federal income taxes and taxes on real estate). It may be noteworthy, also, that advertising expense as a percentage of sales was smallest for the smallest chains, though not always largest for the largest chains. All the chains with more than 500 stores did not have high advertising expense, but clearly the larger ones did, for the aggregate-basis percentage was higher than the median percentage for this group. Finally, some significance may attach to the fact that average rates of stock-turn were largest for the largest chains and varied directly with size.

In the course of the Bureau's analysis, a table similar to Table 14 was prepared on the basis of 1933 results. This table pointed to conclusions essentially similar to those just reached in discussing Table 14, with the exception, perhaps important, that total expense as a percentage of sales was smaller for the largest chains than for the middle-size chains. This fact takes on some added significance when it is noted that the median percentage of meat division sales to total sales for the largest chains was higher by 6% of sales than the corresponding figures for either small or middle-size chains. It suggests that substantial size frequently may bring a certain advantage in total expense.

Finally, comparisons were made of store expense, and expense for all other functions combined, for regular chains of different sizes. Some of these data are given in Table 15 and others are not reproduced.

Comparison of these detailed expense statistics for the several groups indicated:

1. That store salaries and wages, and total store expense, tended clearly to be higher for the larger chains (this was true for both grocery sides and meat sides);

2. That no other items of either store or overhead expense showed a definite relationship to size of chain; but that

3. The smallest chains (less than 100 stores) had the lowest advertising expense by a substantial margin;

4. The largest chains had the highest percentage expenses for store tenancy and for taxes (excluding Federal income taxes and taxes on real estate);

5. The largest chains had the lowest expenses for store supplies; and

6. The medium-size chains (100–500 stores) had the lowest percentage expenses for overhead salaries and wages, and the highest percentage expenses for overhead miscellaneous, and for total overhead.

According to this evidence, the higher percentage expenses of large chains for pay roll presumably were due to high store pay roll costs. This immediately suggests that large size may bring difficulties of supervision and control which have not yet been overcome. The relatively high tenancy costs of the largest chains perhaps resulted in part from the fact that the stores of those chains were concentrated in large cities.

[1] See the aggregates, and also the difference between the aggregate and the median figures for chains with 500 stores or more.

Table 13. Operating Results of 34 Regular Food Chains Classified According to Volume of Sales: 1934

(Net Sales = 100%)

Items	Average Figures[1] — Percentages Computed from the Combined Dollar Figures of the Chains in Each Volume Group — Net Sales Volume (000 omitted)					Median Figures[1] — Percentages Computed from the Figures of Each Chain Taken Individually — Net Sales Volume (000 omitted)				
	Less than $2,000	$2,000–7,000	$7,000–20,000	$20,000–50,000	$100,000 or more	Less than $2,000	$2,000–7,000	$7,000–20,000	$20,000–50,000	$100,000 or more
Number of Chains	6	12	7	5	4	....	....	....	....	....
Aggregate Number of Stores	214	1,299	2,297	3,164	12,929	....	....	....	....	....
Aggregate Net Sales (in thousands)	$6,301	$50,714	$86,763	$143,385	$624,297	....	....	....	....	....
Average Sales per Store	$29,443	$39,041	$37,773	$45,318	$48,287	$30,956	$42,129	$39,426	$41,614	$45,707
Index of Change (1934/1933):										
Number of Stores per Chain	....	....	....	....	....	98.44	99.57	97.77	97.96	97.62
Net Sales per Chain	....	....	....	....	....	108.20†	103.05†	108.62†	102.08	106.99
Average Sales per Store	....	....	....	....	....	111.69†	106.26†	113.21†	103.91	109.69
Net Cost of Merchandise Sold	78.19%	77.41%	76.47%	76.05%	75.73%	78.24%	77.86%	76.19%	75.83%	75.40%
GROSS MARGIN	21.81	22.59	23.53	23.95	24.27	21.76	22.14	23.81	24.17	24.60
Salaries and Wages	12.19%	12.06%	11.92%	12.62%	12.71%	12.12%	12.19%	11.55%	12.10%	12.83%
Tenancy Costs (including depreciation of major improvements)	3.04	3.66	2.78	3.99	3.01	2.85	3.01	2.54	3.84	3.03
Depreciation of Fixtures and Equip.	0.73†	0.96	0.83	0.92	0.74	0.63†	0.84	0.82	0.92	0.60
Light, Heat, Water, Power, and Refrigeration	0.96	1.14	0.95	0.96	1.07	1.03	1.11	0.80	1.08	1.05
Transportation Purchased	0.14†	0.68†	0.61	0.26†	0.34†	0.18†	1.06†	0.32	0.24†	0.36†
Supplies	0.99	1.13	1.29	1.04	1.18	0.88	1.11	1.17	1.03	1.11
Advertising	0.90	1.06	0.94	1.03	1.11	1.00	0.92	0.88	0.98	1.05
Insurance (except on real estate)	0.35	0.27	0.29	0.25	0.29	0.34	0.26	0.27	0.25	0.28
Taxes (except on real estate and federal tax on income)	0.25	0.63	0.53	0.41	0.58	0.18	0.66	0.36	0.38	0.45
Communication	0.20	0.22†	0.21	0.16	0.18†	0.19	0.22†	0.21	0.15	0.17†
Unclassified (including Travelling)	1.21	1.25	1.93	1.20	1.09	1.44	1.29	1.37	1.19	1.12
Total Expense before Interest	20.96%	23.06%	22.28%	22.84%	22.30%	20.34%	21.87%	22.58%	23.16%	22.26%
Total Interest (including interest on net worth)	0.77	0.90	0.90	1.05	1.02	0.85	0.99	0.88	0.97	1.04
TOTAL EXPENSE including Interest	21.73%	23.96%	23.18%	23.89%	23.32%	21.39%	22.91%	23.57%	24.32%	23.40%
NET PROFIT OR LOSS	0.08%	*L. 1.37%*	0.35%	0.06%	0.95%	*L. 0.10%*	*L. 0.43%*	0.45%	0.14%	1.09%
Net Profit or Loss from Real Estate Operations	*L. 0.14†*	0.12†	0.15	0.35	0.28†	*	0.19†	0.09	0.34	0.30†
Interest on Net Worth (except real estate, leaseholds, and goodwill)	0.72	0.89	0.86	1.08	1.13	0.52	0.96	0.84	1.07	1.12
Other Revenue, Net	0.33	0.11†	0.02†	0.06	0.43	0.17	0.04†	*	0.02	0.20
Total Net Other Income	0.91%	1.12%	1.03%	1.49%	1.84%	0.87%	1.05%	1.04%	1.72%	1.71%
NET GAIN: Percentage of Net Sales	0.99%	*L. 0.25%*	1.38%	1.55%	2.79%	0.29%	1.06%	1.42%	1.18%	2.88%
Percentage of Net Worth	7.25‡	*L. 1.30*	8.15	5.76	11.51	2.72‡	5.05	8.74	6.42	10.92
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	7.21†	7.08†	8.36	9.86†	8.21†	8.66†	7.14†	8.13	9.80†	8.44†
Distribution of Stores by Type[2]:										
Grocery	77.57%	57.89%	70.22%	70.64%	52.23%	77.75%	52.09%	71.19%	66.78%	50.56%
Combination	22.43	42.11#	29.78	29.36	47.77	22.25	47.91	28.81	33.22	49.44
Self Service Grocery Units	2.80%†	20.17%†	0.48%	6.86%	20.20%	0.00%†	0.00%†	0.00%	0.00%	4.03%
Percentage of Sales in Meat Sides or Stores	....	....	....	....	....	*	17.73%†	11.21%†	14.21%	18.37%†
Distribution of Stores[3] among Cities with Populations of:										
Less than 10,000	35.92%	27.53%	44.99%	18.86%	29.36%	19.21%	13.79%	37.56%	10.86%	*
10,000–25,000	6.31	9.69	15.30	6.42	8.63	3.09	6.12	13.22	1.99	*
25,000–100,000	0.49	18.54	20.52	5.89	15.15	0.00	18.58	23.53	4.36	*
100,000–500,000	57.28	25.84	19.19	1.67	26.60	66.80	0.00	16.23	0.23	*
500,000–1,000,000	0.00	9.41	0.00	0.00	9.10	0.00	0.00	0.00	0.00	*
1,000,000 or more	0.00	8.99	0.00	67.16	11.16	0.00	0.00	0.00	84.53	*

* Data not available. † Figures for this item were not reported by all the firms in the group. # Includes 2.85% meat markets.

‡ Because of inadequate balance sheet data in the case of one chain, the figure for net gain as a percentage of net worth is based on the reports of five chains.

[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.

[2] Total Stores = 100%.

[3] Location of stores by size of city was reported by all 6 of the chains in the first group, 7 of the firms in the second group having 712 stores, 5 chains in the third group having 1,438 stores, 4 chains in the fourth group having 2,460 stores, and 2 chains in the fifth group having in total more than 5,000 stores.

Table 14. Operating Results of 31§ Regular Food Chains Classified According to Number of Stores Operated: 1934

(Net Sales = 100%)

Items	Average[1] Figures			Median[1] Figures		
	Percentages Computed from the Combined Dollar Figures of the Chains in Each Number-of-Stores Group			Percentages Computed from the Figures of Each Chain Taken Individually		
	Number of Stores			Number of Stores		
	40–100	100–500	500 or more	40–100	100–500	500 or more
Number of Chains	8	15	8	....	....	....
Aggregate Number of Stores	535	3,532	15,786	....	....	....
Aggregate Net Sales (in thousands)	$21,468	$142,011	$746,578	....	....	....
Average Sales per Store	$40,126	$40,207	$47,294	$42,493	$39,603	$41,467
Index of Change (1934/1933):						
Number of Stores per Chain	....	....	....	97.98	98.43	97.58
Net Sales per Chain	....	....	....	102.37†	104.54†	103.77
Average Sales per Store	....	....	....	110.79†	111.07†	107.53
Net Cost of Merchandise Sold	78.00%	76.64%	75.76%	77.88%	76.61%	75.63%
GROSS MARGIN	22.00	23.36	24.24	22.12	23.39	24.37
Salaries and Wages	12.26%	11.96%	12.71%	12.36%	11.70%	12.83%
Tenancy Costs (including depreciation of major improvements)	4.00	2.92	3.21	3.28	2.67	3.25
Depreciation of Fixtures and Equipment	1.03	0.86	0.75	0.80	0.83	0.64
Light, Heat, Water, Power, and Refrigeration	1.13	0.96	1.06	1.06	0.94	1.07
Transportation Purchased	0.38†	0.56†	0.34†	0.48†	0.52†	0.33†
Supplies	1.18	1.22	1.15	1.16	1.10	1.01
Advertising	0.78	1.01	1.10	0.73	1.07	1.05
Insurance (except on real estate)	0.30	0.27	0.28	0.32	0.25	0.28
Taxes (except on real estate and federal tax on income)	0.72	0.50†	0.56	0.42	0.30†	0.43
Miscellaneous Expense:						
Communication	0.20	0.21	0.18†	0.21	0.20	0.17†
Unclassified (including Travelling)	1.31	1.62	1.11	1.32	1.35	1.16
Total Miscellaneous Expense (subtotal)	(1.51)	(1.83)	(1.29)	(1.52)	(1.46)	(1.37)
Total Expense before Interest	23.29%	22.09%	22.45%	21.87%	22.01%	22.72%
Total Interest (including interest on net worth)	0.94	0.90	1.03	1.00	0.97	1.00
TOTAL EXPENSE including Interest	24.23%	22.99%	23.48%	22.52%	22.88%	23.81%
NET PROFIT OR LOSS	*L. 2.23%*	0.37%	0.76%	*L. 0.27%*	0.45%	0.19%
Net Profit or Loss from Real Estate Operations	0.07%†	0.19%†	0.28%	0.00%†	0.20%†	0.30%
Interest on Net Worth (except real estate, leaseholds, and goodwill)	0.91	0.89	1.12	0.96	0.92	1.12
Other Revenue, Net	0.19	0.06†	0.37	0.22	0.04†	0.09
Total Net Other Income	1.17%	1.14%	1.77%	1.08%	1.05%	1.63%
NET GAIN: Percentage of Net Sales	*L. 1.06%*	1.51%	2.53%	1.07%	1.63%	1.94%
Percentage of Net Worth	*L. 5.25*	8.10	10.22	5.05	8.74	8.48
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	6.81†	8.32†	8.46†	6.45†	7.66†	9.11†
Distribution of Stores by Type[2]:						
Straight Grocery	57.57%	67.81%	55.64%	62.48%	67.50%	63.95%
Meat	0.00	1.05	0.00	0.00	0.00	0.00
Combination	42.43	31.14	44.36	37.52	29.25	36.05
Self Service Grocery Units	25.05%†	3.94%†	17.92%	0.00%†	0.00%†	0.21%
Percentage of Sales in Meat Sides or Stores	....	....	....	13.65%†	14.48%†	18.37%†
Distribution of Stores[3] among Cities with Populations of:						
Less than 10,000	22.80%	37.35%	27.54%	17.77%	37.20%	28.76%
10,000–25,000	4.66	12.65	8.31	4.58	10.03	8.01
25,000–100,000	13.21	17.44	13.13	1.19	20.32	13.95
100,000–500,000	42.75	16.73	21.05	33.10	2.78	6.61
500,000–1,000,000	0.00	3.00	7.05	0.00	0.00	0.00
1,000,000 or more	16.58	12.83	22.92	0.00	0.00	12.74

† Figures for this item were not reported by all the firms in the group.

§ The three regular chains omitted from this classification had fewer than 40 stores each.

[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.

[2] Total Stores = 100%.

[3] Location of stores by size of city was reported by 6 of the chains in the first group having 386 stores, 10 of the chains in the second group having 2,230 stores, and 5 of the chains in the third group having 9,572 stores.

Table 15. Store Operating Results (Medians[1]) for Grocery Stores and Sides Compared with Meat Sides for Regular Food Chains: 1934

(Net Sales = 100%)

Items	All Chains Reporting		Chains with Less than 100 Stores		Chains with 100–500 Stores		Chains with 500 Stores or More	
	Grocery Stores and Sides	Meat Sides	Grocery Stores and Sides	Meat Sides	Grocery Stores and Sides	Meat Sides	Grocery Stores and Sides	Meat Sides
Number of Chains	21	21	5	5	10	10	6	6
Aggregate Number of Units	13,249	4,943	298	106	2,420	859	10,531	3,978
Aggregate Net Sales (in thousands)	$552,569	$120,757	$11,195	$1,502	$88,105	$16,285	$453,269	$102,970
Average Sales per Unit (median)	$32,983	$21,813	$37,566	$14,174	$36,407	$18,958	$43,041	$25,885
Gross Margin	22.31%	26.85%	20.79%†	27.86%†	22.58%	26.99%	22.69%†	26.93%†
Store Expense:								
Salaries and Wages	7.96%	12.96%	7.46%	12.51%	7.96%	12.74%	8.17%	13.25%
Tenancy Costs (including depreciation of major improvements)	2.53†	3.29†	2.28	3.16	2.30†	3.00†	2.81	3.42
Depreciation of Fixtures and Equipment	0.44	1.57†	0.44	1.79	0.49†	1.54†	0.39	1.57
Light, Heat, Water, Power, and Refrigeration	0.76	1.73	0.86	1.79	0.69	1.65	0.73	1.84
Supplies	0.68	1.22	0.73	1.23	0.70	1.31	0.57	0.97
Insurance	0.16	0.23†	0.17	0.21†	0.14†	0.22†	0.16	0.23
Miscellaneous Expense:								
Communication	0.11†	0.21†	0.13†	0.16†	0.10	0.25†	0.12†	0.11†
Unclassified	0.50	0.79	0.75	0.71	0.45	0.84†	0.56	0.90
Total Miscellaneous Expense (subtotal)	(0.61)	(1.09)	(0.98)	(0.82)	(0.56)	(1.16)	(0.62)	(0.95)
Total Store Expense[2]	13.29%	22.53%	12.74%	21.50%	13.29%	22.32%	13.81%	23.52%
Store Profit[3]	7.88%	4.13%	5.95%†	3.89%†	9.05%	4.18%	8.88%†	3.93%†

† Figures for this item were not reported by all the firms in the group.

[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.

[3] The store profit item represents profit before the allocation to stores of indirect expense. Thus, in arriving at this profit figure, no accounting has been made for advertising, transportation to stores, taxes, or any other administrative, general, or warehouse expense.

Conclusions Regarding the Effects of Size

With reference to the characteristics of small and large chains, it should be noted, first of all, that food chains of similar type differ more sharply as regards number of stores than they do as regards sales per store; and that, therefore, classification by number of stores tends to yield much the same groupings as classification by sales volume, and vice versa. It should be noted, also, that by and large, for regular chains in 1934 and in 1933, the larger chains had somewhat larger average sales per store than the smaller chains; and that there was some tendency for the larger chains to have higher percentages of meat division sales to total sales than smaller chains. For the differences in size set up for this study, these differences in the percentage of meat division sales tended to be not greater than 8% of total sales; but yet they were sufficiently large to reflect, for the large chains, percentages of meat division sales to total sales one-third or one-half larger than the corresponding percentages for smaller chains.

In other respects, large and small chains in general showed no important differences, although the larger straight grocery chains tended to be located in sizeable cities and the larger combination chains in cities of moderate size.

Thus, any differences in operating results found to run through all or most of the comparisons which have been described must have been due chiefly to differences (a) in size, (b) in average sales per store, and (c) in percentage of meat division business.

Every comparison showed that gross margin rates were higher for the larger chains and varied directly with size of chain. Clearly, therefore, a generalization to this effect may be made with safety. As to total expense, no conclusion can be drawn; but, as a rule, the advantage of the large chains in gross margin was greater than any disadvantage in expense, so that large size tended to be accompanied by relatively large profits in percentage of sales.

With respect to the individual items of expense, there

was a tendency for store salaries and wages to be higher for the larger chains; and there was some evidence that total salaries and wages also tended to be higher in percentage of sales for the larger chains. Tenancy costs, and expense for light, heat, water, power, and refrigeration, displayed a disposition to vary with the size of chain; but it is thought that tenancy cost percentages, at least, may follow size of city more closely than size of chain.

Rates of stock-turn frequently were higher for the larger chains; but, in spite of this fact, interest on net worth usually was higher for those chains. In other words, the larger chains tended to have heavier aggregate investments per dollar of sales than the smaller chains.

The reasons for these differences and tendencies cannot be deduced from the data available, but some inferences which appear to be reasonable may be mentioned. The higher margin rates of the larger firms quite possibly result from a combination of several factors: higher percentages of meat division sales, more manufacturing and private-brand activity, more and/or more successful speculative buying, higher rates of stock-turn (in some instances) which should tend toward low shrinkages, buying advantages, and the importance of high margin luxury and semi-luxury merchandise. Concrete evidence supporting this last point is not available, but it is thought among chain executives that the percentage of sales in the fancier lines, which carry high percentage margins, tends to increase with the size of store. Also, the large chains perform more functions than the small chains and hence have somewhat higher expenses, which justify higher margins. As regards buying advantages, it may be pointed out that the large chains are able to buy for less than the smaller chains partly as a result of superior bargaining power, and partly because they perform certain of the manufacturers' distribution functions.

The higher expenses found in some sizeable chains may be traced in some degree to the influence of meat division operations, which involve higher percentage costs than grocery operations, and to the tendency frequently encountered for the larger chains to place relatively heavy emphasis on serving the larger cities. These forces, however, may not account for all the expense disadvantages of the larger chains. Partial responsibility may attach to tendencies (a) for small, multi-unit organizations to perform fewer than the full complement of chain functions and to do less manufacturing; (b) for chains, as they grow, to add functions somewhat faster than they can digest them; (c) for difficulties of control, especially control of personnel, to be greater in large-scale chain store operation and for small chains to require less elaborate organizations; and (d) for large chains to add services and low-turn luxury merchandise more extensively than small chains.

Size of City

Although not all the reporting chains gave information on the distribution of their stores by size of city, among the straight grocery chains and the regular chains enough firms gave this information to permit use of it as a basis for the classifications given in Tables 16 and 17.

As will be noted from these tables, the small city and larger city chains differed not only with respect to the size of city in which their stores were located, but also as regards number of stores, aggregate sales, and sales per store. Thus, any differences in results disclosed by these tables may be due to differences in size of chain and of store as well as to differences in size of community served.

Table 16 shows that the straight grocery chains with stores concentrated in cities of 100,000 or more were in excess of three times as large as those serving smaller cities chiefly, and had larger sales per store. They had substantially higher rates of gross margin[1] and of total expense than the chains which operated chiefly in the small cities, the latter in spite of the fact that any influence of self service operations should have favored the larger city chains. The regular chains operating in the larger cities, also, clearly tended to have higher rates of total expense. On the average, however, (see the median figures) they did not have higher margin percentages, although the larger chains among them did enjoy an advantage in this respect.

This tendency for the rate of total expense to be higher for the chains operating in cities of 100,000 or more was matched by tendencies for many of the individual items of expense to be higher. The pay roll costs shown in Table 16, for example, were approximately 13.4% of sales for the chains in larger cities as compared with 10.2% for the chains in smaller cities. Table 17 displayed smaller differences in the same direction. For tenancy costs the differences were much greater in proportion to the size of the item. Percentage tenancy costs for the straight grocery chains operating in larger cities were more than twice as large as corresponding costs for the chains operating in smaller cities; and all five large city chains had higher tenancy percentages than any of the small city chains. Among the regular chains those with stores concentrated in the larger cities operated at a disadvantage of over 40% in tenancy costs. In addition, depreciation charges,

[1] All five large city chains had higher percentage margins than five of the six small city chains.

Table 16. Operating Results of 11§ Straight Grocery Chains Classified According to the Population of the Cities in Which Their Stores Were Located: 1934

(Net Sales = 100%)

Items	Average Figures[1]		Median Figures[1]	
	Percentages Computed from the Combined Dollar Figures of the Chains in Each Population Group		Percentages Computed from the Figures of Each Chain Taken Individually	
	Percentage Distribution of Stores per Chain by Size of City		Percentage Distribution of Stores per Chain by Size of City	
	60% or More of Stores in Cities of Less than 25,000	60% or More of Stores in Cities of 100,000 or More	60% or More of Stores in Cities of Less than 25,000	60% or More of Stores in Cities of 100,000 or More
Number of Chains	6	5	....	....
Aggregate Number of Stores	186	495	....	....
Aggregate Net Sales (in thousands)	$5,705	$17,473	....	....
Average Sales per Store	$30,673	$35,299	$34,702	$35,024
Index of Change (1934/1933):				
Number of Stores per Chain	....	....	100.00†	96.23
Net Sales per Chain	....	....	108.25	104.38
Average Sales per Store	....	....	110.47†	109.01
Net Cost of Merchandise Sold	80.22%	77.52%	80.80%	77.82%
Gross Margin	19.78	22.48	19.20	22.18
Salaries and Wages	10.20%	13.39%	10.12%	13.32%
Tenancy Costs (including depreciation of major improvements)	2.13	4.54	2.23	4.54
Depreciation of Fixtures and Equipment	0.47	0.57	0.46	0.63
Light, Heat, Water, Power, and Refrigeration	0.52	0.96	0.53	0.84
Transportation Purchased	0.49†	0.13†	0.37†	*
Supplies	0.83	1.14	0.87	1.13
Advertising	1.21	0.62	1.11	0.68
Insurance (except on real estate)	0.19	0.32	0.23	0.46
Taxes (except on real estate and federal tax on income)	0.43	0.20	0.40	0.23
Miscellaneous Expense:				
Communication	*	0.28	*	0.19
Travelling	*	0.10†	*	0.11†
Unclassified	*	0.95	*	1.14
Total Miscellaneous Expense (subtotal)	1.22	(1.33)	1.06	(1.43)
Total Expense before Interest	17.69%	23.20%	17.15%	23.48%
Total Interest (including interest on net worth)	0.95	0.83	0.91	0.85
Total Expense including Interest	18.64%	24.03%	18.07%	24.31%
Net Profit or Loss	1.14%	*L. 1.55%*	1.09%	*L. 1.81%*
Net Other Income (including interest on net worth)	0.62	1.27	0.84	0.90
Net Gain: Percentage of Net Sales	1.76%	*L. 0.28%*	1.01%	0.90%
Percentage of Net Worth	*	*	*	*
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	7.20	7.76	8.64	7.46
Self Service Grocery Units[2]	0.00%†	21.62%†	0.00%†	0.00%†

* Data not available. † Figures for this item were not reported by all the firms in the group.

§ One chain did not report the location of its stores, and one chain, operating in both large and small cities, could not be classified in either size of city group.

[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.

[2] Total Stores = 100%.

and the cost of light, heat, and related items, were higher for the larger city chains. Provisions in the N.R.A. codes may have played a part in producing the differences in pay roll costs; perhaps the larger city chains encountered higher site rentals because of the size of the cities which they served, and also found it necessary, for competitive reasons, to have more elaborate fixtures and equipment. Similarly, the chains

operating in the cities of 100,000 or more tended to have higher percentage expenditures for insurance; but their advertising expense was smaller in percentage of sales, quite possibly because they had larger numbers of stores and larger sales volumes over which to spread advertising expenditures.

Apparently the size of the community served had a definite influence on food chain operating results, at least as between cities of less than 25,000 and cities of 100,000 or more. Percentage expenses, as a rule, were higher in the cities of 100,000 or more, especially for pay roll, and for tenancy and other plant items. The data available did not indicate conclusively whether chains operating chiefly in large cities, say those of 500,000 or more, had higher percentage costs than those concentrating their stores in cities of from 100,000 to 500,000; but there was slight evidence that this may have been true as regards tenancy costs and total expense, especially among straight grocery chains. Any such disadvantage, however, was small.

The food chains serving the larger cities were able to offset these higher costs to some degree by higher rates of gross margin; but for the groups studied, the larger city chains had much less satisfactory rates of net profit than the smaller city chains. Four of the six small city straight grocery chains showed net profits in 1934, while only two of the five large city chains did; and all small city regular chains earned profits, while only two of the seven large city chains did.

These indications that costs are somewhat higher in large cities than in small cities suggest the existence of factors, tending toward relatively high costs in large cities, important enough to offset such factors as the following: (a) waste in advertising coverage, (b) high supervision cost per call and per store for both supervisors' salaries and transportation, and (c) high cost for merchandise transportation; all of which might tend to produce relatively high percentage costs in small cities and towns.

Average Sales per Store

It was found possible to classify the reports for straight grocery chains, combination chains, and regular chains according to the size of the average store; and typical figures were established for seven sub-groups of chains established on this basis. Intensive study of the aggregate and median figures for these several groups yielded only a few conclusions as to the influence of size of average store upon food chain operating results. In fact, careful analysis indicated that the available information could not be classified in a manner which would disclose the influence of sales per store in an adequate fashion. Although average sales per store could be computed for each chain which reported both aggregate sales and number of stores operated; and although the straight grocery chains, regular chains, and combination chains were grouped on this basis; it was not possible to eliminate other differences between the several groups of chains; and these other differences (in size of chain, in proportion of self service stores to total stores, in size of city covered, etc.) apparently were so great as to obscure the influence of differences in average sales per store. For this reason, the several tables are not reproduced in this bulletin, and only a few observations are made as to the probable influence of this factor, notwithstanding its seeming importance. The difficulties encountered suggest that to isolate and measure the influence of sales per store may require the gathering of operating results for the individual units of single chains, in order that differences in managerial policies and effectiveness may be eliminated, and then the classification of these stores by size of city, type of neighborhood, experience of manager, prices and lines of goods carried, and other significant characteristics, so that the groups of stores for which actual comparisons are made may differ only in sales per store. Such studies as this can be made readily by individual chains for their own benefit, but it is to be hoped that some way will be found shortly to make the results of such research publicly available. Of course, a study of this nature would be most likely to yield conclusive findings if it could cover the stores of a number of different chains.

Study of the reports received for the present study suggested several generalizations as to the characteristics of chains having large, and small, sales per store. It was noted, first, that among straight grocery chains the firms operating large stores tended to have relatively few stores, and that the chains with small stores were larger as regards both number of stores and total sales than the chains with large stores. Among the regular chains this situation was reversed. The regular chains with large stores, as a rule, had more stores and larger total sales than the chains with small stores. Among the combination chains, however, the large store chains had fewer units, but larger aggregate sales, than the small store chains.

Second, among the regular chains the firms with large average sales per store tended to operate a relatively large percentage of combination stores; and the typical percentage of meat division sales to total sales, although larger for the large store chains than for the small store chains, did not vary in proportion to the percentage of combination stores to total stores. Possibly the chains with large sales per store had been expanding their operations rapidly by adding combination stores, but

Table 17. Operating Results of 13§ Regular Food Chains Classified According to the Population of the Cities in Which Their Stores Were Located: 1934

(Net Sales = 100%)

Items	Average Figures[1]		Median Figures[1]	
	Percentages Computed from the Combined Dollar Figures of the Chains in Each Population Group		Percentages Computed from the Figures of Each Chain Taken Individually	
	Percentage Distribution of Stores per Chain by Size of City		Percentage Distribution of Stores per Chain by Size of City	
	65% or More of Stores in Cities of Less than 25,000	65% or More of Stores in Cities of 100,000 or More	65% or More of Stores in Cities of Less than 25,000	65% or More of Stores in Cities fo 100,000 or More
Number of Chains	6	7	....	....
Aggregate Number of Stores	1,252	2,256	....	....
Aggregate Net Sales (in thousands)	$50,572	$105,657	....	....
Average Sales per Store	$40,393	$46,834	$42,236	$39,779
Index of Change (1934/1933):				
Number of Stores	....	....	98.63	96.86
Net Sales per Chain	....	....	108.25†	102.08
Average Sales per Store	....	....	109.94†	110.79
Net Cost of Merchandise Sold	76.87%	76.07%	77.06%	77.22%
Gross Margin	23.13	23.93	22.94	22.78
Salaries and Wages	11.26%	12.48%	11.45%	12.26%
Tenancy Costs (including depreciation of major improvements)	2.84	4.03	2.63	3.71
Depreciation of Fixtures and Equipment	0.70	1.07	0.79	0.92
Light, Heat, Water, Power, and Refrigeration	0.99	1.04	1.00	1.08
Transportation Purchased	1.19†	0.20†	0.95†	0.33†
Supplies	1.00	1.11	1.03	0.99
Advertising	1.13	1.03	1.13	0.95
Insurance (except on real estate)	0.19	0.24	0.22	0.25
Taxes (except on real estate and federal tax on income)	0.58	0.41	0.33	0.30
Miscellaneous Expense:				
Communication	0.21	0.16	0.19	0.17
Travelling	1.22	1.18	1.28	1.34
Unclassified				
Total Miscellaneous Expense (subtotal)	(1.43)	(1.34)	(1.41)	(1.30)
Total Expense before Interest	21.31%	22.95%	20.51%	22.77%
Total Interest (including interest on net worth)	0.84	1.11	0.93	0.97
Total Expense including Interest	22.15%	24.06%	21.44%	23.04%
Net Profit or Loss	0.98%	*L. 0.13%*	0.78%	*L. 0.26%*
Net Profit or Loss from Real Estate Operations	0.03%†	0.45%†	0.05%†	0.27%†
Interest on Net Worth (except real estate, leaseholds, and goodwill)	0.84	1.15	0.92	1.04
Other Revenue, Net	0.04	0.11	0.07	0.20
Total Net Other Income	0.91%	1.71%	1.17%	1.67%
Net Gain: Percentage of Net Sales	1.89%	1.58%	1.85%	0.70%
Percentage of Net Worth	12.59	5.05	11.95	2.72
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	7.41†	9.72	6.93†	9.29
Distribution of Stores by Type[2]:				
Grocery	70.69%	66.31%	74.06%	66.78%
Combination	29.31	33.69	25.94	33.22
Self Service Grocery Units	8.46%	10.59%†	0.00%	0.00%†
Percentage of Sales in Meat Sides or Stores	....	....	10.54%†	14.21%†

† Figures for this item were not reported by all the firms in the group.

§ Ten chains did not report the location of their stores, and 11 chains, operating in both large and small cities, could not be classified in either size of city group.

[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.

[2] Total Stores = 100%.

had not yet brought these combination stores to maturity.

Third, there was some tendency for the proportion of self service stores to total stores to be larger for the chains with large sales per store than for the chains with small sales per store. Apparently the self service method is better adapted to stores of moderate or large size than to small stores, as might be inferred from the fact that a certain minimum staff is required for a small store whether service is given or not; while it may be possible to get along with a relatively small staff in a large store if customers can be induced to do some of the work of serving themselves. The figures did not make it clear, however, that the large store chains secured any great advantage in total expense from this self service feature, although there was some evidence suggesting that they had secured appreciable economies in pay roll. Finally, there was some indication that among regular chains large sales per store, self service, and a high percentage of combination stores tended to be associated.

Fourth, there was a clear tendency for the units of regular chains with large sales per store to be located in larger cities than the units of regular chains with small sales per store.

As to the relation between sales per store and operating results, four observations may be made.

First, gross margin percentages did not vary consistently with sales per store. Perhaps total sales per chain, plus such related factors as the proportion of sales in meats, are of more importance than average sales per store in determining the rate of gross margin.

Second, the relation of large sales per store to percentage expenses was not at all clear from the tables. There was, however, some tendency for pay roll expense to be lower for the large store chains (this, of course, may have been due in some measure to the influence of self service); and for their advertising expenses to be higher. The higher outlays for advertising suggest that the large sales per store were secured in part, at least, by more expensive, and perhaps more vigorous, promotion.

Third, among regular chains and combination chains the rates of stock-turn typically were higher for the firms with large sales per store.

Fourth, the comparison of typical results (medians) for combination chains with large and small average sales per store exhibited the most pronounced differences, and showed, for the large store chains:

a. an advantage of about 2.0% of sales in salaries and wages;

b. an advantage of about 0.6% of sales in tenancy costs and another similar advantage in depreciation;

c. some disadvantage in advertising;

d. an advantage of about 2% of sales in total expense after interest; and

e. an advantage of about two turns per year in the rate of stock-turn.

Since these differences were accompanied by a disadvantage in gross margin for the large store chains of around 2% of sales, the rates of net profit for the two groups typically were approximately the same. The large store chains in this comparison were somewhat smaller than the small store chains, and they had substantially more self service stores, but the stores of the two groups were located in cities of about the same size. The average sales per store were $48,000 for the small store chains and $105,000 for the large store chains. In view of the large difference in sales per store for the two groups, and the relatively small differences in size of chain and size of city covered, it appears that the differences in operating results reflect pretty largely the combined influences of sales per store and self service, which factor predominantly cannot be said.

The data to which the Bureau of Business Research had access for this study were insufficient to disclose year-to-year trends individually for all four basic groups of food chains; that is, regular chains, straight grocery chains, combination chains, and meat chains; but there were such data covering regular chains and all food chains combined. These included:

a. Information on sales and number of stores for 12 identical chains for the years, 1928 to 1934, inclusive;

b. Complete profit and loss statements for eight identical regular chains for the year, 1929, and for the years, 1931 to 1934, inclusive; and

c. Median percentages reflecting typical operating results for food chains for 1929, and for 1931 to 1934, inclusive.

Trends in Sales and Number of Stores: 1928 to 1934

Chart 2 presents graphically relatives showing the fluctuations in aggregate dollar sales, and aggregate number of stores operated, for 12 important chains[1] for the seven years, 1928 to 1934, inclusive. Chart 3 presents similar relatives reflecting the fluctuations in the numbers of total stores, straight grocery stores, and combination stores for 11 of the 12 chains.

The total dollar sales for the 12 chains in 1929 were more than $1,700,000,000, and the total number of stores operated on the average in that year exceeded 28,800. Clearly, therefore, the chart represents a very substantial portion of the chain food trade in the United States.

In preparing the data for Chart 2, the Bureau simply found the aggregate sales and aggregate number of stores for the 12 chains in each year, and took the respective aggregates for 1929 as 100. It was noted that one chain increased its number of stores very substantially in 1929 as contrasted with 1928. This increase was so large as to have a very pronounced influence on the relatives; and, since the increase appeared to have resulted largely from mergers and to have been quite non-typical, the Bureau excluded that chain's data from the figures for both 1928 and 1929 in arriving at the relationship between the figures for those two years as shown in the chart. Thus, the chart shows the 1928 to 1929 trends for 11 chains, and the 1929 to 1934 trends for 12 chains.

After 1929 there was some expansion by merger among the 12 chains; but the effects of this type of expansion on the aggregate figures were seen to be negligible when the 12-chain aggregates were compared with similar figures for 8 chains which were not known to have expanded at all through mergers. The reason for the failure of the merger influence among the four chains to affect the aggregates seemed to be that among

[1] Some of the figures for these chains were taken from published materials; some were taken from the Bureau's own files; and some were secured in confidence especially for this chart. It seems inadvisable, therefore, to name the chains represented.

Chart 2. Sales, Number of Stores, and Sales per Store for 12 Food Chains: 1928-1934 (Aggregates: 1929 = 100)

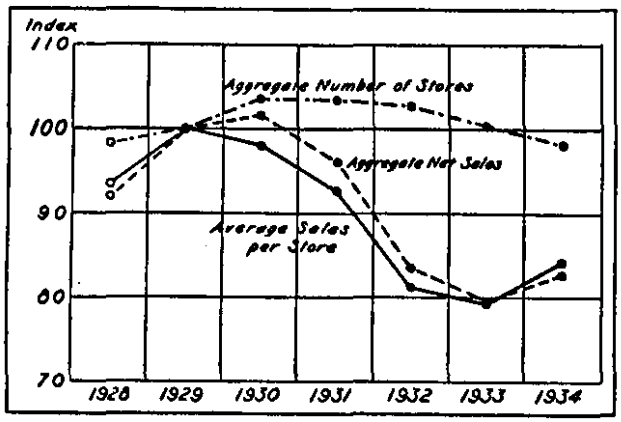


Chart 3. Number of Stores, Straight Grocery Stores, and Combination Stores for 11 Food Chains: 1929-1934 (Aggregates: 1929 = 100)

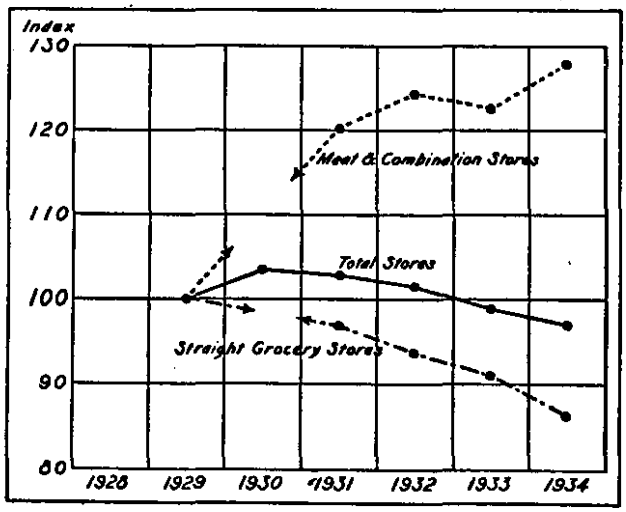


Table 18. Operating Results of 8 Identical Regular Food Chains: 1929, 1931–1934

Items	Aggregate Figures[1]										Median Figures[1]				
	Amounts (Dollar figures given in thousands)					Average[1] Percentages Computed from the Combined Dollar Figures					Percentages Computed from the Figures of Each Chain Taken Individually				
	1929	1931	1932	1933	1934	1929	1931	1932	1933	1934	1929	1931	1932	1933	1934
Aggregate Number of Stores	5,548	6,327	6,256	6,146	6,011	....	....	....	....	....	....	....	....	....	....
Aggregate Net Sales	$252,306	$276,093	$252,458	$249,461	$259,583	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Average Net Sales per Chain	31,538	34,512	31,557	31,183	32,448	....	....	....	....	....	....	....	....	....	....
Average Sales per Store	$45	$44	$40	$41	$43	....	....	....	....	....	$45	$43	$40	$40	$41
Index of Change (current year/preceding year):															
Number of Stores per Chain	....	....	....	....	....	*	*	98.88	98.24	97.80	*	*	97.07	95.53	98.67
Net Sales per Chain	....	....	....	....	....	*	96.03	91.44	98.81	104.06	*	96.66	86.40	98.81	102.95
Average Sales per Store	....	....	....	....	....	*	*	90.91	102.50	104.88	*	*	91.25	103.69	107.35
Net Cost of Merchandise Sold	$198,480	$211,202	$189,817	$187,759	$197,091	78.67%	76.50%	75.19%	75.27%	76.02%	78.48%	76.97%	75.28%	75.20%	76.05%
Gross Margin	53,826	64,891	62,641	61,702	62,492	21.33	23.50	24.81	24.73	23.98	21.52	23.03	24.72	24.80	23.95
Salaries and Wages	$25,582	$30,149	$28,272	$28,262	$29,929	10.14%	10.92%	11.20%	11.33%	11.49%	10.10%	11.10%	11.48%	11.61%	11.76%
Tenancy Costs; and Light, Heat, Water, Power, and Refrigeration; and Depreciation	10,099	13,466	13,806	13,765	13,720	4.00	4.88	5.46	5.52	5.27	3.80	5.14	5.85	5.24	4.95
Supplies	2,525	2,400	2,244	1,978	2,420	1.00	0.87	0.89	0.79	0.93	1.03	0.81	0.88	0.97	1.05
Advertising	1,516	2,128	2,245	2,510	2,537	0.60	0.77	0.89	1.01	0.97	0.64	0.85	0.97	0.96	0.93
Insurance (except on real estate)	327†	503†	598†	536	562	0.13†	0.18†	0.24†	0.21	0.22	0.16†	0.22†	0.30†	0.23	0.23
Taxes (except on real estate and federal tax on income)	336	613	661	756	863	0.13	0.22	0.26	0.30	0.33	0.12	0.22	0.26	0.38	0.34
Miscellaneous Expense	3,964	6,195	6,033	6,492	6,299	1.58	2.24	2.39	2.61	2.41	1.48	1.72	1.80	2.41	2.00
Total Expense before Interest	$44,349	$55,454	$53,859	$54,299	$56,330	17.58%	20.08%	21.33%	21.77%	21.62%	18.18%	20.61%	21.70%	22.86%	22.64%
Total Interest	1,695	2,593	2,570	2,654	2,704	0.67	0.94	1.02	1.06	1.04	0.68	0.81	0.91	0.96	0.93
Total Expense including Interest	$46,044	$58,047	$56,429	$56,953	$59,034	18.25%	21.02%	22.35%	22.83%	22.66%	18.57%	21.17%	22.37%	23.42%	23.58%
Net Profit or Loss	$7,782	$6,844	$6,212	$4,749	$3,458	3.08%	2.48%	2.46%	1.90%	1.32%	2.27%	1.16%	1.00%	0.68%	0.27%
Net Other Income (including interest on net worth)	2,894	2,835	2,812	3,407	3,342	1.15	1.03	1.11	1.37	1.29	0.79	0.98	0.95	1.14	0.96
Net Gain:	$10,676	$9,679	$9,024	$8,156	$6,800	....	....	....	....	....	....	....	....	....	....
Percentage of Net Sales	....	....	....	....	....	4.23%	3.51%	3.57%	3.27%	2.61%	3.06%	2.07%	2.15%	1.72%	1.31%
Percentage of Net Worth	....	....	....	....	....	24.82‡	18.27‡	16.41‡	13.87‡	11.34‡	21.04‡	17.98‡	10.07‡	10.28‡	7.44‡
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	....	....	....	....	....	8.33†	8.90†	8.94†	9.20†	8.88†	9.05†	8.88†	9.09†	9.37†	9.36†
Percentage of Combination and Meat Stores[2]	....	....	....	....	....	9.95%	14.76%	17.05%	19.56%	22.54%	9.59%	18.54%	21.08%	25.64%	29.50%

* Data not available. † Figures for this item were not reported by all the chains in the group.
‡ Because of inadequate balance sheet data in the case of one chain, the figures for net gain as a percentage of net worth are based on the reports of seven chains.
[1] See the explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.
[2] Total Stores = 100%.

these same chains there were unusual decreases in number of stores which almost exactly offset the unusual increases.

It is believed, therefore, that Chart 2 pictures, with a reasonable degree of accuracy, the fluctuations in total number of stores, total sales, and sales per store for food chains in the United States for the years covered.

Number of Stores

As Chart 2 clearly indicates, by 1930 the number of stores operated by the 12 chains had risen about 5% above the level of 1928. After 1930, the total number of stores declined steadily, though very slowly, so that in 1934 the total number of stores in operation was less than 2% below the number for 1929 and about the same as that for 1928.

Interpretation of these two trends is complicated somewhat by the fact that most chains, including the 12 covered by these figures, were gradually increasing the percentage of combination stores to total stores during most of these years. This process, for 11 of the 12 chains[1], is pictured in Chart 3. From 1929 to 1934, the total number of stores operated by the 11 chains showed a net decline of about 3% (800 units). During these same years, however, the number of straight grocery stores declined 13.65%, or by almost 2,700 units; and the number of combination stores increased 28%, or by about 1,870 units. Of the total decrease in straight grocery stores, about 70% was offset, in so far as number of units is concerned, by the increase in combination stores, and about 30% represented a net decrease in units operated. Owing to the larger size of the combination stores, however, what may be called the total installed retail capacity of the 11 chains may actually have been higher at the close of the period than it was in 1930, when the number of stores was at its peak.

Sales

While the number of stores was rising from 1928 to 1930, and falling from 1930 to 1934, dollar sales were passing through a different set of changes, as is indicated by Chart 2.

In 1929, dollar sales rose above the 1928 level to a greater degree than did number of stores, since average sales per store increased more than 6%; and, in 1930, total dollar sales continued to rise, even though average sales per store began to fall, probably under the influence of declining prices. The higher dollar sales in 1930, therefore, clearly resulted from the fact that chains were increasing their number of stores in that year. After 1930, dollar sales fell until they reached their low point in 1933, when they were about 20% below the 1929 level. In 1934, there was some recovery to a point between 17% and 18% below the 1929 level. Since changes in number of stores were very small between 1930 and 1935, average sales per store fluctuated in much the same manner as total sales. Following 1930, however, the trend in average sales per store was somewhat more favorable than that in total sales. This, of course, would be expected in view of the gradual decline in total number of stores, and the shift from straight grocery stores to combination stores.

In view of the violent price changes which marked the seven years in question, it would be interesting to interpret the fluctuations in sales, and in sales per store, for these years in the light of prices. Unfortunately, however, there is no published index of retail prices for food chains. The index of retail food prices published by the United States Bureau of Labor Statistics does not represent a composite of the prices of foods sold by chains. Meats and dairy products, for instance, are more heavily weighted than they should be for a chain store index. Since the time and resources available for this study did not permit the preparation of an alternative index, questions relating to the price level and the physical volume of goods sold are largely omitted in this bulletin.

Trends in Operating Results

Detailed comparative data on margins, expenses, and profits for the eight identical regular chains are given in Table 18, which presents aggregate and median figures such as are found in many other tables in this bulletin. Table 19 gives statistics on a per-store basis for the eight chains of Table 18 combined (aggregates) for the several years covered by the latter table; while median percentages for all chains reporting for each of the years covered by the Bureau's surveys are given in Table 20.

In interpreting Table 18, it should be borne in mind that the sample is small and that the eight chains differed substantially in size. None of these chains, however, had fewer than 95 stores in any of the years covered, six of the chains had between 300 and 1,500 stores in all five years, and one chain had more than 1,500 stores in all five years. All eight chains operated both straight grocery stores and combination stores in 1934, although some did not do so in all years. Because of the differences in size among the eight chains, both the aggregate and the median percentages should be thought of as averages of the operating results of chains somewhat unlike. None of the data in Table 18 indicate the typical results for any size-class of regular chain for any one year; and none, therefore, should be used as

[1] The necessary data were not available for the twelfth chain.

standards for the appraisal of performance in a single year.

It should be noted, also, that the eight chains were not strictly typical of the chain food business as a whole, if the data in Chart 2 are so representative. For instance, dollar sales for the eight chains covered in Table 18, at their low point in 1933, were only about 1% below sales in 1929; while, according to Chart 2, the low point for the trade as a whole was about 20% below the 1929 level. Similarly, the number of stores for the eight chains in 1931 was 14% above the 1929 level, instead of 3% above, as in the case of the 12 chains of Chart 2. By 1934, the number of stores for the eight chains of Table 18 was more than 8% above the 1929 figure; while the chains covered by Charts 2 and 3 exhibited decreases. Again, the shift from straight grocery stores to combination stores did not begin so early, or proceed so far, with the 8 chains of Table 18 as with the 11 of Chart 3, but the 8 chains increased their percentage of combination stores more rapidly.

Gross Margin

According to Table 18, gross margin in dollars reached the peak for the five years in 1931, when dollar sales for the eight chains also were at their highest point. Of greater significance, however, is the fact that gross margin in dollars increased at a faster rate than sales from 1929 to 1931. This increase in the percentage of gross margin to sales was due in part, of course, to the increase in the percentage of meat division business which probably accompanied the increase in the percentage of combination stores. It is estimated, however, that the actual increase in the gross margin rate shown by Table 18 was several times as large as any increase which might have been accounted for by the larger meat division sales. The eight chains undoubtedly stepped up their margin rates in the face of declining prices, as any merchant would be expected to try to do. A similar increase in the margin percentage is displayed in Table 20; and, of course, in Table 19.

From 1931 on, aggregate margin in dollars was maintained by the eight chains at figures within 5% of the level reached in 1931, even though sales fell almost 10% below those of 1931. In other words, after 1931, the percentage of gross margin continued to rise. The median figures in both Table 18 and Table 20 indicate that, for the average chain, the peak percentage of margin was not reached until 1933. Here again, the increase was substantially greater than could be accounted for by the increase in meat division business. It should be noted, however, that the high point in dollar margin per store came in 1934, but showed little change from 1931 to 1934, inclusive.

This ability of the food chains to increase the percentage of gross margin during a period of sharply declining prices is worthy of special comment. When prices fall, sales at retail usually fall with them, and store operating expense in dollars tends to lag behind. In addition, the physical volume of goods sold may rise. Hence, the expense rates of retail enterprises tend to rise. An understandable step on the part of retail executives, of course, is to increase the percentages of mark-up and gross margin. Among department stores, however, competition and/or mark-downs appear largely to have prevented this during the current depression; while food chain executives were more skillful or more fortunate.

Neverthless, the rise in gross margin did not keep pace with the rise in expenses from 1929 to 1933; and both dollar earnings and percentage earnings declined steadily during that period.

In 1934 (1933 and 1934 according to the aggregates), the percentage of gross margin fell, even though the percentage of meat division business presumably was rising as the shift from straight grocery stores to combination stores continued. From 1929 to 1934, however, the net increase in the percentage of gross margin amounted to about 2.5% of sales.

Expense

Mention already has been made of the fact that percentages of total expense to sales typically increased during the years from 1929 to 1933, inclusive, when prices, dollar sales, and dollar sales per store were declining. These increases in the expense rates show up clearly in both Table 18 and Table 20. They resulted not only from the fact that in some years chain executives apparently were unable to cut dollar expenses in proportion to declines in dollar sales, but also from the fact that in some years there were increases in dollar expense. Such an increase occurred in 1933, when expenditures rose in the face of a drop in dollar sales.

Reasoning with respect to the significance of the changes in dollar expense and percentage expense which occurred during the period in question is confused by four circumstances:

1. The shift from straight grocery stores to combination stores, which have larger total sales per unit, larger grocery sales per unit, lower expense rates for grocery operations, higher expense rates for grocery and meat operations combined, and higher investments. This shift naturally tended to increase dollar expense per store as well as percentage expenses.

2. The economies in chain operation which un-

doubtedly were made during the depression under the pressure of declining profits.

3. An increase in the physical volume of goods handled. Dollar sales in 1934 for the eight chains were about 3% higher than those for 1929, while prices were substantially lower than in 1929.

4. A gradual elaboration of plant, merchandise lines, and services among food chains.

In view of these several conflicting developments, and the dearth of available information, it is rather difficult to arrive at reliable generalizations for the trade as a whole. Some estimates indicate that the shift from straight grocery stores to combination stores between 1929 and 1934 was sufficiently pronounced to account for all the increase in dollar expense per store. In fact, it may be that the shift to combination stores would account for a larger change in dollar expense per store than is shown by Table 19. All this suggests that the rise in percentage expense was due largely to the lower prices, and that the eight chains may well have made substantial increases in general operating efficiency during the period. This, however, should not be taken for granted. Chain executives should make careful studies of their own operations during this period, using estimates where actual data cannot be obtained, in order to determine whether their individual businesses, taken as a whole and by departments and functions, showed increases in efficiency which were commensurate with those to be expected. Attention should be paid, especially, to costs per unit of work done and to output per unit of time, labor, equipment, or expenditure.

Both Table 18 and Table 20 indicate that by the end of 1933 for many chains the worst of the depression had been passed in so far as percentage expenses were concerned. According to the median figures in Table 18 for total expense including interest, however, the expense rate continued to rise in 1934.

The data for the individual items of expense show

Table 19. Operating Results Per Store of 8 Identical Regular Food Chains: 1929, 1931–1934

(Averages[1] per store based on aggregate figures)

Items	1929		1931		1932		1933		1934	
	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage
Aggregate Number of Stores	5,548	....	6,327	....	6,256	....	6,146	....	6,011	....
Aggregate Net Sales (in thousands)	$252,306	....	$276,093	....	$252,458	....	$249,461	....	$259,583	....
Average Sales per Store	$45,477	100.00%	$43,637	100.00%	$40,355	100.00%	$40,589	100.00%	$43,185	100.00%
Net Cost of Merchandise Sold per Store	$35,777	78.67%	$33,383	76.50%	$30,343	75.19%	$30,552	75.27%	$32,829	76.02%
GROSS MARGIN	9,700	21.33	10,254	23.50	10,012	24.81	10,037	24.73	10,356	23.98
Salaries and Wages	$4,611	10.14%	$4,765	10.92%	$4,520	11.20%	$4,599	11.33%	$4,962	11.49%
Tenancy Costs; and Light, Heat, Water, Power, and Refrigeration; and Depreciation	1,819	4.00	2,129	4.88	2,203	5.46	2,241	5.52	2,276	5.27
Supplies	455	1.00	380	0.87	359	0.89	320	0.79	402	0.93
Advertising	273	0.60	336	0.77	359	0.89	410	1.01	419	0.97
Insurance (except on real estate)	59†	0.13†	79†	0.18†	97†	0.24†	85	0.21	95	0.22
Taxes (except on real estate and federal tax on income)	59	0.13	96	0.22	105	0.26	122	0.30	142	0.33
Miscellaneous Expense	719	1.58	977	2.24	965	2.39	1,059	2.61	1,041	2.41
Total Expense before Interest	$7,995	17.58%	$8,762	20.08%	$8,608	21.33%	$8,836	21.77%	$9,337	21.62%
Total Interest	305	0.67	410	0.94	411	1.02	430	1.06	449	1.04
TOTAL EXPENSE including Interest	$8,300	18.25%	$9,172	21.02%	$9,019	22.35%	$9,266	22.83%	$9,786	22.66%
NET PROFIT OR LOSS	$1,400	3.08%	$1,082	2.48%	$993	2.46%	$771	1.90%	$570	1.32%
Net Other Income (including interest on net worth)	523	1.15	449	1.03	448	1.11	556	1.37	557	1.29
NET GAIN	$1,923	4.23%	$1,531	3.51%	$1,441	3.57%	$1,327	3.27%	$1,127	2.61%
Percentage of Combination and Meat Stores[2]	....	9.95%	....	14.76%	....	17.05%	....	19.56%	....	22.54%

† Figures for this item were not reported by all the chains in the group.
[1] See explanation of types of average used, page 49.
[2] Total Stores = 100%.

that salaries and wages as a percentage of sales rose steadily from 1929 through 1933, and according to Table 18, continued to rise in 1934. The net increases for the period disclosed by the two tables amounted to from 1.35% to 1.80% of net sales. The bulk of the increase in aggregate dollar salaries and wages occurred between 1929 and 1931, and was shared by seven of the eight chains; but the largest increase in dollar pay roll per store occurred in 1934, when the N.R.A. presumably became an important influence. From 1929 through 1933, salaries and wages in dollars per store were essentially stable. Unfortunately, data are not available to indicate whether the net increase for the period represents chiefly higher wage rates, an increase in the wage cost per physical unit of goods sold, or some other development.

Tenancy costs and related occupancy expense reached a peak in percentage of sales in 1932 or 1933, and declined in percentage of sales in 1934. The important rise between 1929 and 1931 resulted from increases for all eight chains. The movements of these percentages reflect conflicting influences which include the somewhat inflexible nature of tenancy costs, the fluctuation in dollar sales, and the increasing proportion of combination stores (shown by Table 10 to have higher percentage rentals). Such estimates as have been made from the data in this bulletin, however, suggest that the last factor may have been important enough to account for the entire net increase in dollar tenancy cost per store which took place between 1929 and 1934. It seems surprising that so important an increase in dollar costs for occupancy should have taken place at a time when many chains were securing important reductions in rentals, if it were not warranted by a change in the type of business done; but it is possible that some of the eight chains involved had undertaken leases running over somewhat longer terms than the one-year leases commonly employed by some food chains.

The percentage data in Table 18 on expense for supplies indicate that the larger chains among the eight were more successful than the smaller chains in holding down supplies expense. The latter in 1934 had higher percentage expenses for supplies than they did in 1929. In this connection it should be remembered, of course, that the physical volume of goods handled in 1934 presumably was substantially larger than in 1929 and that growing meat business added to supply costs. Table 20 indicates a steady upward movement of percentage expense for supplies.

As regards advertising expense, Table 18 discloses a steady rise from year to year in dollar expenditures. In 1934 the aggregate advertising expense for the eight chains was 66% above the 1929 figure, while number of stores had increased only 8% and dollar sales about 3%. The percentage of advertising expense to sales based on these aggregates, therefore, was more than 60% higher in 1934 than in 1929. Since the dollar figures for advertising expense represent the net outlays by the chains after credits for any receipts from vendors for actual advertising services rendered, it is quite possible that the amount of advertising space carrying the names of the eight chains was expanded more during the period than the dollar expenditures indicate. The increased emphasis on advertising is attested, also, by the percentage figures in both Table 18 and Table 20. This suggests that the chains have made important changes in their methods of merchandising and promotion during the depression; that they now are relying less on a general reputation for low prices and more on advertising, which of course may feature specific low prices.

Finally, it should be observed that the dollar expenditures for taxes (other than Federal income taxes and taxes on real estate) in 1931 were 82% above the expenditure in 1929; and that expenditures for this item continued to increase throughout the period until in 1934 they amounted to more than two and one-half times the 1929 figure. The percentages in both tables reflect this same tendency for tax expense to be higher, although the median figures show a slight easing of the burden in 1934. The figures on taxes in dollars per store for the eight chains also give evidence of this steady upward movement.

The Bureau thus far has not been able to get comparable and complete information on the taxes paid by chain store companies. The problem is complicated not only by the many varieties of taxes imposed and fees required by the several governmental agencies but also by the fact that many chains operate stores in a number of localities and in a number of states. The Bureau's expense figures just cited are believed to reflect accurately the average situation over the country in the years in question; but apparently a special study devoted solely to the tax burden of chain stores will be necessary if reliable, detailed generalizations for individual states are to be forthcoming.

Earnings

The upward drift in expenses during the period covered by Table 18, combined with the adverse movement of the gross margin rate in 1934, resulted in a steady drop in the percentage of net profit (after charging interest as a cost) and in the percentage of net gain (net business profit). In other words, such increases as the chains were able to make in the rate of gross margin were by no means sufficient to offset the rising expenses. That

the same condition prevailed as regards dollar margin and dollar expense per store is shown clearly in Table 19. When aggregate and median figures for both measures of earnings are considered along with the per-store data of Table 19, it seems safe to say that profits in 1934 for the eight chains typically were at about half the rate earned in 1929. Table 20 reflects conditions essentially similar, although it shows that some improvement in earnings took place in 1934.

Part of the drop in profit rates may have been due to the general increase in the percentage of combination stores and the percentage of meat division sales to total sales. As has been noted, meat business on the whole yielded smaller profits than grocery business in 1933 and 1934. The lower price level, also, has been, and still is, a substantial handicap. In spite of the fact that the eight chains developed their combination stores from 10% of the total stores in 1929 to 30% of the total in 1934 (medians), dollar sales per store actually were lower in 1934 than in 1929.

In addition, the rising tax burden clearly was to some degree responsible for the lower profits. The burden of taxes as defined in Table 18 and Table 20 (taxes excluding taxes on real estate and Federal income taxes), however, was too small to be shouldered with responsibility for more than a part (about 11% according to Table 18; about 20% according to Table 20) of the drop in profits. More important were the higher percentage expenses for salaries and wages, occupancy costs, and advertising, and the higher expenditures for these items in dollars per store.

Whether these higher expenses per store resulted in

Table 20. Operating Results of All Reporting Food Chains: 1929, 1931–1934

(Medians[1]; Net Sales = 100%)

Items	1929	1931	1932	1933	1934
Number of Chains	79*	31	39	50	66
Aggregate Number of Stores	33,147	23,718§	23,741	17,754	21,021
Aggregate Net Sales (in thousands)	$1,976,374	$1,346,223	$1,181,968	$763,681	$960,626
Average Sales per Store (median)	$47,815	$41,617†	$39,735	$39,342†	$41,614
Index of Change (current year/preceding year):					
Number of Stores per Chain	108.85†	100.30†	100.00†	98.15†	100.00†
Net Sales per Chain	110.79†	95.63†	86.33†	99.20†	106.58†
Average Sales per Store	105.68†	94.12†	85.64†	100.53†	110.47†
Net Cost of Merchandise Sold	80.47%	78.26%	77.99%	76.30%	77.61%
Gross Margin	19.53	21.74	22.01	23.70	22.39
Salaries and Wages	10.03%†	11.12%	11.35%†	11.83%	11.78%
Tenancy Costs; Light, Heat, Water, Power, and Refrigeration; and Depreciation	3.52†	4.22†	4.94†	5.24	4.69
Supplies	0.74†	0.86†	0.93†	1.04	1.07
Advertising	0.70†	0.81	1.02	0.97†	1.03†
Insurance (except on real estate)	0.21†	0.23†	0.26†	0.29	0.28
Taxes (except on real estate and federal tax on income)	0.15†	0.24†	0.30†	0.37	0.36†
Miscellaneous Expense[2]	1.78†	1.70	1.77	1.97	1.66†
Total Expense before Interest	17.49%	20.06%	21.55%	22.76%	21.08%
Total Interest (including interest on net worth)	0.69†	0.84	0.98	0.90	0.87
Total Expense including Interest	18.14%	20.77%	22.46%	23.77%	22.00%
Net Profit or Loss	1.21%	0.63%	*L. 0.05%*	*L. 0.07%*	0.14%
Net Other Income (including interest on net worth)	0.68†	0.99	1.14	1.05	0.96
Net Gain: Percentage of Net Sales	1.91%	1.77%	1.07%	0.80%	0.89%
Percentage of Net Worth	*	10.97‡	5.74‡	5.90‡	7.73‡
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	9.35†	9.98†	9.88†	9.10†	8.64†

* Data not available.

† Figures for this item were not reported by all the firms in the group.

‡ Because of inadequate balance sheet data in the case of 7 chains in 1931, 5 chains in 1932, 3 chains in 1933, and 4 chains in 1934, the figures for net gain as a percentage of net worth were not based on the reports of all the firms submitting statements for the study.

§ One firm did not report the number of stores operated in 1931. This figure includes an estimate of the number of stores based on the number reported by the firm in 1932.

[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.

[2] In 1929, data for transportation supplies, taxes, licenses, etc., were reported in a composite item and included in miscellaneous expense. In all other years the various trucking expenses were included in the several natural expense accounts. For 1929 the percentage for miscellaneous expense excluding these trucking expenses was 1.46%†.

the main from a larger physical volume of goods handled cannot be stated with assurance, but apparently circumstances made it impossible for the food chains to increase margin rates sufficiently to compensate for either the lower prices or the high dollar expenses. The competition of super-markets and cheapies may have added to the trials of the depression period by taking a substantial share of the business in many trading areas.

There is some possibility, also, that the eight chains, knowingly or otherwise, have been drifting in the direction of higher costs. They apparently have increased their advertising costs by placing greater reliance upon this method of promotion; and perhaps there is some reason to believe that they have added services which have increased personnel costs. The shift from straight grocery stores to combination stores, accompanied by a tendency toward more expensive fixtures and equipment, has been largely responsible for the higher occupancy costs; and some competent observers feel that food chains generally have traded up during the past five years, partly by adding fresh fruits and vegetables, and partly by increasing assortments and adding luxury or semi-luxury items, all of which involve higher costs than the staple, dry groceries which formerly constituted the chains' chief reliance. Finally, the chains, during the period covered by these tables, may not have held costs to the lowest point possible in view of functions performed. The chains, in other words, may well have been gradually losing their traditional character as extremely low-cost distributors. The gap which heretofore has separated them from the service independent grocers may have been narrowed; and if this is true, the chains presumably have placed themselves in a position of increased vulnerability and may expect to encounter increasing pressure from low-cost competitors.

RESULTS FOR MOST PROFITABLE CHAINS

In the hope of throwing light on the characteristics or policies making for superior earnings among food chains, the reports for the firms with the highest rates of net profit among the straight grocery chains, among the combination chains, and among the regular chains, were segregated in what may be called "goal" groups for special study. For each of these special groups figures indicative of the average or typical performance were prepared. These data are referred to as "goal" figures, because some chain executives will want to use them as objectives or goals at which to aim in planning or controlling their own operations.

Tables 21 and 22 present these goal figures in the form of both aggregates and medians for each of the three groups of chains, respectively. With the goal figures are given, for comparison, the corresponding average data for all chains reporting, including the goal chains as well as the less profitable chains, these all-chains data being taken from Tables 5, 6, and 8.

Among the straight grocery and the combination chains, the goal chains typically operated fewer stores than the less profitable chains, but among only the straight grocery chains did the goal firms typically have smaller aggregate sales. Among the regular chains the goal firms were larger as regards both number of stores and dollar sales. Apparently the relation between size of chain or size of store and profit rates is not clear-cut. Nevertheless there was some tendency for high profit percentages to be associated with an advantage in total sales per chain and, to a much smaller degree, in sales per store, but not in stores per chain. Again, among the straight grocery chains (data not shown in table), the goal firms tended to have more of their stores in smaller cities than did the less profitable firms; and among the regular chains this was true speaking broadly, although one goal chain had practically all its stores in large cities. Adequate data on this subject were not available for combination chains. Among combination chains, all three goal firms operated self service stores only, while but 5 of the 10 less profitable chains followed this practice. This evidence suggests that there may have been some connection between the self service policy and high profits. There is no such evidence, however, in the data for straight grocery chains or regular chains. Here the ratio of self service chains to total chains was no higher among goal firms than among less profitable concerns. Finally, it is significant that the goal firms typically did not enjoy an advantage in the rates of increase in sales, number of stores, or sales per store.

Turning now to the operating results of the goal firms, it is seen that among combination chains and regular chains the goal firms, on the average, had higher rates of margin than the other chains in their respective groups; while among straight grocery chains the goal firms had relatively low margins. Clearly, a higher gross margin is not always one of the influences contributing to large percentage profits; but frequently chains which earn good profits do so, in part at least, because of better-than-average margins.

Both tables, however, agree in indicating that the more profitable firms are likely to have lower-than-average expense rates. The median figures for combination chains do not show an advantage of this sort for the goal firms; but for straight grocery chains and for regular chains both aggregate and median figures for total expense were lower for goal firms, and the same was true of the aggregate figures for the combination chains.

When one inspects the individual items of expense, he sees similarly a fairly general tendency for the goal firms to have lower percentage expenses. This was true not merely for the larger items of expense, salaries and wages and tenancy costs, but extended to the smaller items as well. Among regular chains, there was some tendency for the goal firms to have higher expenditures for transportation purchased; but this fact may indicate nothing except that they chose to purchase their transportation service rather than to operate their own trucks. One of the groups of goal firms represented in Table 21 shows a tendency to higher tax expense, but this also may not be of significance. In the case of the other group, the combination chains, the aggregate figures disclose a few points in which the goal firms were at a disadvantage; but the advantages which they enjoyed in salaries and wages and in several of the smaller items were more than sufficient to offset these disadvantages and, according to the aggregate figures, the advantage of the goal firms in total expense before interest amounted to more than 1.3% of sales.

Thus, the two tables disclose a general tendency for the goal firms to have lower rates of expense for all items; and no tendency for the goal firms generally to operate at a disadvantage in any item of expense.

Table 21. Operating Results for the Most Profitable Straight Grocery Chains and Combination Food Chains with Comparable Figures for All Chains Reporting: 1934

(Net Sales = 100%)

Items	Straight Grocery Chains				Combination Chains			
	Average Figures[1]		Median Figures[1]		Average Figures[1]		Median Figures[1]	
	All Reporting Chains	Most Profitable Chains	All Reporting Chains	Most Profitable Chains	All Reporting Chains	Most Profitable Chains	All Reporting Chains	Most Profitable Chains
Number of Chains	13	3	....	....	13	3	....	....
Number of Stores	739	117	....	....	252	49	....	....
Aggregate Net Sales (in thousands)	$25,468	$3,874	....	....	$17,436	$4,646	....	....
Average Sales per Store	$34,463	$33,113	$37,550	$40,051	$69,190	$94,816	$79,215	$99,448
Index of Change (1934/1933):								
Number of Stores per Chain	....	....	100.00†	100.00	....	....	100.00	100.00
Net Sales per Chain	....	....	106.64†	110.91	....	....	115.01†	114.88
Average Sales per Store	....	....	110.47†	110.91	....	....	113.09†	102.25
Net Cost of Merchandise Sold	78.51%	80.65%	79.56%	80.75%	77.77%	76.18%	79.67%	76.46%
GROSS MARGIN	21.49	19.35	20.44	19.25	22.23	23.82	20.33	23.54
Salaries and Wages	12.33%	9.90%	10.50%	9.49%	11.43%	9.89%	11.19%	9.56%
Tenancy Costs (including depreciation of major improvements)	3.78	1.92	2.51	1.79	2.49	2.49	2.03	1.80
Depreciation of Fixtures and Equipment	0.55	0.48	0.47	0.47	1.01	0.82	0.96	0.79
Light, Heat, Water, Power, and Refrigeration	0.84	0.62	0.68	0.70	0.84	0.90	0.80	0.80
Transportation Purchased	0.21†	0.11†	0.55†	*	0.14†	0.11†	0.17†	*
Supplies	1.04	0.91	0.97	0.88	1.05	1.14	1.15	1.13
Advertising	0.82	0.84	0.95	0.75	1.30	1.16	1.20	1.11
Insurance (except on real estate)	0.30	0.26	0.28	0.18	0.31	0.35	0.31	0.31
Taxes (except on real estate and federal tax on income)	0.33	0.58	0.39	0.42	0.38	0.42	0.29	0.22
Miscellaneous Expense:								
Communication	0.26†	0.10	0.18†	0.15	0.20	0.18	0.18	0.17
Travelling	0.10†	0.72	0.13†	0.53	0.06†	1.49	0.09†	1.30
Unclassified	0.86		0.56		1.11		1.30	
Total Miscellaneous Expense (subtotal)	(1.22)	(0.82)	(0.99)	(0.90)	(1.37)	(1.67)	(1.50)	(1.50)
Total Expense before Interest	21.42%	16.44%	19.57%	16.14%	20.32%	18.95%	19.60%	19.87%
Total Interest (including interest on net worth)	0.86	1.03	0.87	1.01	0.87	1.09	0.68	0.80
TOTAL EXPENSE including Interest	22.28%	17.47%	20.43%	17.15%	21.19%	20.04%	20.55%	20.55%
NET PROFIT OR LOSS	*L.* 0.79%	1.88%	0.16%	1.83%	1.04%	3.78%	0.44%	3.82%
Net Profit or Loss from Real Estate Operations	0.23%†	0.14%	0.12%†	0.12%	0.08%†	0.16%	0.09%†	0.13%
Interest on Net Worth (except real estate, leaseholds, and goodwill)	0.82	0.89	0.83	0.91	0.84	1.02	0.72	0.81
Other Revenue, Net	0.14†	1.09	0.30†	1.10	0.06†	*L.* 0.33	0.08†	*
Total Net Other Income	1.19%	2.12%	0.84%	2.07%	0.98%	0.85%	0.80%	0.81%
NET GAIN: Percentage of Net Sales	0.40%	4.00%	0.90%	3.90%	2.02%	4.63%	1.12%	4.63%
Percentage of Net Worth	6.10‡	18.46	5.14‡	21.72	12.84	23.57	9.40	29.46
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	7.46	7.16	7.20	6.24	8.79	8.72	8.90	10.54
Self Service Grocery Units[2]	20.57%†	38.46%	0.00%†	0.00%	46.42%†	100.00%	100.00%†	100.00%

* Data not available. † Figures for this item were not reported by all the firms in the group.

‡ Because of inadequate balance sheet data in the case of three chains, the figure for net gain as a percentage of net worth is based on the reports of ten chains.

[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.

[2] Total Stores = 100.%.

Table 22. Operating Results for the Most Profitable Regular Food Chains with Comparable Figures for All Chains Reporting: 1934

(Net Sales = 100%)

Items	Regular Food Chains			
	Average[1] Figures		Median[1] Figures	
	All Reporting Chains	Most Profitable Chains	All Reporting Chains	Most Profitable Chains
Number of Chains	34	6	....	....
Aggregate Number of Stores	19,903	6,409	....	....
Aggregate Net Sales (in thousands)	$911,461	$268,658	....	....
Average Sales per Store	$45,795	$41,919	$41,030	$41,909
Index of Change (1934/1933):				
Number of Stores per Chain	....	....	98.10	98.18
Net Sales per Chain	....	....	104.35†	103.73†
Average Sales per Store	....	....	110.79†	105.77†
Net Cost of Merchandise Sold	75.96%	75.53%	77.06%	76.33%
GROSS MARGIN	24.04	24.47	22.94	23.67
Salaries and Wages	12.58%	12.26%	12.13%	11.68%
Tenancy Costs (including depreciation of major improvements)	3.18	3.15	3.00	2.72
Depreciation of Fixtures and Equipment	0.79	0.62	0.81	0.73
Light, Heat, Water, Power, and Refrigeration	1.04	1.00	1.05	0.94
Transportation Purchased	0.37†	0.72†	0.33†	0.76†
Supplies	1.16	0.92	1.04	0.94
Advertising	1.08	0.89	0.97	0.96
Insurance (except on real estate)	0.28	0.24	0.28	0.23
Taxes (except on real estate and federal tax on income)	0.55	0.35	0.36	0.28
Miscellaneous Expense:				
Communication	0.18†	0.14	0.19†	0.16
Travelling	1.20	0.20	1.31	0.21
Unclassified		0.77		0.98
Total Miscellaneous Expense (subtotal)	(1.38)	(1.11)	(1.48)	(1.29)
Total Expense before Interest	22.41%	21.26%	22.26%	20.59%
Total Interest (including interest on net worth)	1.01	1.14	0.97	1.15
TOTAL EXPENSE including Interest	23.42%	22.40%	22.96%	21.53%
NET PROFIT OR LOSS	0.62%	2.07%	0.14%	1.84%
Net Profit or Loss from Real Estate Operations	0.26%†	0.36%†	0.17%†	0.28%†
Interest on Net Worth (except real estate, leaseholds, and goodwill)	1.08	1.19	0.93	1.18
Other Revenue, Net	0.32†	0.05	0.14†	0.09
Total Net Other Income	1.66%	1.60%	1.20%	1.30%
NET GAIN: Percentage of Net Sales	2.28%	3.67%	1.53%	3.55%
Percentage of Net Worth	9.65‡	14.33	7.44‡	15.82
Rate of Stock-turn (times a year) Based on Average of Inventories at the Beginning and End of the Year	8.38†	7.80	8.24†	7.80
Distribution of Stores by Type[2]:				
Straight Grocery	57.87%	73.25%	67.14%	73.39%
Meat	0.19	0.00	0.00	0.00
Combination	41.94	26.75	31.64	26.61
Self Service Grocery Units	15.62%†	0.18%†	0.00%†	0.00%†
Percentage of Sales in Meat Sides or Stores	....	....	16.64%†	14.21%†
Distribution of Stores[3] among Cities with Populations of:				
Less than 10,000	29.09%	40.62%	25.25%	60.00%
10,000–25,000	8.99	13.77	8.40	13.22
25,000–100,000	13.87	5.53	7.01	3.91
100,000–500,000	21.19	1.48	5.32	1.54
500,000–1,000,000	6.07	0.00	0.00	0.00
1,000,000 or more	20.79	38.60	0.00	0.00

† Figures for this item were not reported by all the firms in the group.
‡ Because of inadequate balance sheet data in the case of one chain, the figure for net gain as a percentage of net worth was based on the reports of 33 chains.
[1] See explanation of types of average used, page 49. Since all the medians were set independently, the figures for the several items cannot be expected to tie to the respective totals.
[2] Total Stores = 100%.
[3] Location of stores by size of city was reported by 24 regular food chains operating 12,235 stores. Of these 24 chains, 3 were included in the group of the 6 most profitable chains.

APPENDIX

DEFINITIONS AND EXPLANATORY NOTES

In order to obtain comparability among the reports from individual firms used in this study, and to make the published figures as representative as possible, the Bureau adopted a number of definitions and followed certain accounting and statistical procedures. The more important of these definitions and procedures are described in this Appendix.

Base of Percentages. All percentages in this bulletin, unless otherwise indicated, are based on net sales as 100%.

Net Sales. Net sales are gross sales at retail, less any returns by or allowances to customers, not including sales taxes collected from customers as an item distinct from price and segregated in special accounts until turned over to the government.

Gross Margin. The term "gross margin" is increasingly used in preference to "gross profit". It represents the amount remaining after the deduction of net cost of goods sold from net sales. Net cost of goods sold is billed or invoice cost of goods sold, plus any processing taxes, less cash discounts taken and allowances received, plus inward transportation charges, plus proper charges for merchandise depreciation and stock shortages, and plus or minus any change in the value of the inventory. The treatment of inward transportation charges, that is, charges incurred in moving the goods to the point where the firm first takes physical possession, as part of the merchandise cost makes the gross margin figure lower by the amount of such charges than it otherwise would be and is a common practice among trading businesses.

The several important figures used in computing net cost of goods sold are defined as follows:

Net Inventory of Merchandise. This item consists of the value of merchandise on hand in stores and warehouses at cost or market, whichever is lower, including merchandise held on consignment, merchandise in transit if bought f.o.b. shipping point, and finished goods of own manufacture, but not manufacturing or wholesaling inventory or inventories of fixtures, equipment, or supplies.

Purchases. The net invoice cost of merchandise purchased is the extended figure on the invoice after trade and quantity discounts and brokerage have been deducted or added, but before cash discounts, advertising allowances, and deferred quantity discounts have been considered. This figure includes merchandise received on consignment, if sold; merchandise in transit, if bought f.o.b. shipping point; the cost of goods transferred from own manufacturing departments; duties and insurance on imported purchases; and any processing taxes paid. It excludes returns to manufacturers and allowances from manufacturers for damaged or spoiled merchandise, as well as purchases for any wholesale business or purchases of office or store supplies or equipment.

Discounts and Allowances Received. This item, which is deducted from the net invoice cost of purchases, includes cash discounts received on merchandise purchased, discounts or rebates secured by purchasing a given minimum quantity in a given period of time, and advertising allowances of indefinite character. Allowances received from manufacturers for advertising space actually used are treated as a credit to advertising expense.

Inward Transportation. Inward transportation charges include all expenses (freight, express, and truckage) for transporting merchandise from source of supply to warehouses, whether done by outside firms or in the chains' own trucks. Many chains in some lines of business treat this item as operating expense rather than as cost of merchandise, but the better and more general practice seems to be to include it with purchases. Note that expense for transportation from warehouse to stores, or from stores to customers, is not included here, but is treated as expense. To secure comparability among the figures for the six meat chains, however, all transportation expense was included with inward transportation.

Salaries and Wages. The salary and wage classification embraces all items of pay roll expense both in stores and in the central organizations, including the compensation of chief executives. Thus, it includes salaries, commissions, bonuses, profit sharings, supper money, pensions, and other miscellaneous forms of compensation.

Store salaries and wages include these expenses which relate specifically to store operation, whether for selling or non-selling work. Carpenters and mechanics regularly employed for labor on major improvements are deemed to be store employees. Other salaries and wages

include the compensation of all central office and district office executives and employees, superintendents and supervisors, and all men engaged directly or indirectly in transporting goods from warehouses to stores, but no manufacturing employees. All pensions are included in other salaries and wages.

Tenancy Costs. Tenancy costs comprise all expenses on property used in the business. They therefore cover, in the case of leased property, not only rentals actually paid to landlords or realty holding companies but also any other payments made in lieu of rent, such as taxes, insurance, repairs, amortization or depreciation of major improvements, and amortization of leaseholds. The charges on owned real estate included in this account are the sum of the amounts that would be paid if outside firms owned the property, or, in other words, rentals based on the going value of real estate in the respective localities. Ordinarily, but not necessarily, rent on owned property will cover taxes, insurance, repairs, and depreciation on owned real estate, plus a fair charge for interest on equity in land, buildings, and improvements, as well as interest actually paid on mortgages.

In cases where a chain owns or leases more space than it needs and subleases portions to others, the going value of the space occupied by the chain is entered as expense. This amount should represent a fair rent on the real estate used, including a fair proportion of any additional expenses on the property, such as taxes, insurance, and repairs; and any profit or loss resulting from the subleasing operations, or from failure to sublease, is carried to other income.

Transportation Purchased. This item includes charges for freight, express, trucking, and handling done by outside firms in moving goods from warehouses to stores; but, in view of the definition of inward transportation, it does not include charges for the moving of merchandise from sources of supply to warehouses or to the points where the chain first takes physical possession of the goods. When trucking is done in a chain's own vehicles, the total cost is distributed equitably between inward transportation and expense, debits being made to the appropriate natural items, but no debit is made to transportation purchased.

Advertising. Advertising covers no salaries or supplies but does include the total space cost of advertising in newspapers, the cost of preparing mats at the central office, the total cost of printing handbills, circulars, catalogs, and other printed materials, the cost of special rider tickets bearing the firm's trade-mark or name and attached to merchandise, and the space cost for magazine advertising.

Allowances received from manufacturers for space actually used are credited to this account in order to arrive at the total net advertising cost for the chain; but note that allowances not in compensation for space actually used are included with discounts and allowances.

Insurance. Insurance expense includes all insurance costs except insurance on real estate, which is treated as part of tenancy cost. It includes amounts set aside for self-insurance.

Taxes. Taxes includes all taxes borne directly by the chains except taxes on real estate, which are included in tenancy costs, and Federal taxes on income. Where sales taxes are collected directly from customers in the form of additional charges and later passed on to the government, they are not included in sales or in expense. In most states, however, no such provision for special collection was made in the law, the tax being levied either at a flat rate or at a graduated rate upon the total sales volume. Therefore, in most cases, reporting chains operating stores in sales tax states were able to shift the burden of the tax to consumers only by increasing their mark-ups. The amounts collected in such cases are, of course, included in the net sales figure, and the sales tax expense in such cases is included in taxes. It is recognized that this method of handling sales taxes, dictated by expediency, is subject to some criticism. The error resulting from the inclusion of the additional amounts in the net sales figure used as a base for percentage computation is small, however.

Interest. In order to obtain comparability between businesses using different methods of financing, interest at the rate of 6% on the average net worth is considered as an expense, along with interest actually paid, less interest and dividends received. Interest at 6% on real estate equity, and mortgage interest, are included with tenancy expense; while the item interest includes interest at 6% on net worth exclusive of real estate, leaseholds, and goodwill; plus interest paid, other than mortgage interest; less the amount of interest and dividends received.

Total Expense Including Interest. Total expense including interest is the complete cost of doing business, comprising, in addition to the usual outlays and charges, salaries of executives, proprietors, and partners; rental charges for owned real estate; and interest on owned capital.

Net Profit. The above procedure with respect to interest leads to a narrow definition of net profit as a theoretically residual sum over and above all the economic costs (as distinguished from the accounting or business costs) of carrying on the chain's merchandising operations, including interest on invested capital at either cost or 6%.

Net Other Income. Net other income has three

component parts: net profit or loss from real estate operations; interest on net worth other than real estate; and other revenue, net. In the first of these are included net profit or loss on owned real estate not used in the business, interest previously charged as expense on the investment in owned real estate used in the business, profit or loss on real estate which has been sublet, and the profit or loss of any subsidiary real estate holding companies. Under interest on net worth is credited back the interest at 6% on the average net worth (excluding real estate) previously included as an operating expense in arriving at the net profit on merchandising operations. Miscellaneous revenue, including receipts from the sale of salvaged materials, profits on any wholesaling or manufacturing business done with outsiders, and income from weighing or vending machines and pay telephones, is added under other revenue, net.

Net Gain. To arrive at the final net gain or net business profit, net other income is added to the net profit. Therefore the net gain figure, while not affording, from a statistical standpoint, so valid an interchain comparison as the net profit figure, may be taken as roughly approximate to net business profit in the commonly understood sense. Net gain is expressed both as a percentage of net sales and as a percentage of the average net worth. The use of the average net worth as a base for this figure introduces the complication of differing policies in regard to investment, particularly in assets requiring considerable capital, such as real estate. Where a chain owns many of the store sites and/or buildings used, either directly or through a subsidiary real estate corporation, the total average net worth is large in proportion to the net sales volume, and as a result the rate of return on invested capital is low as compared with that for a chain owning little or no real estate.

Rate of Stock-turn. The rate of stock-turn, or rapidity of merchandise turnover, is calculated by dividing the cost of merchandise sold by the average inventory at cost. For chain enterprises the average total inventory includes merchandise both in stores and in warehouses, plus other minor items noted earlier in defining net inventory of merchandise. Stock-turn figures of two types were computed for this study: the first, available for practically all chains, was based on the average of the beginning and ending total chain inventories (store and warehouse inventories combined); and the second, available for part of the chains only, was based on store inventories alone. Only total chain stock-turn figures are published in this report.

Types of Average Used. Some of the operating results included in this report are averages based on aggregate or combined dollar figures for groups of chains, while other typical or summary figures are median or range data based on percentages computed for each firm individually.

The averages based on dollar aggregates manifestly are weighted according to sales volume. They do not afford good year-to-year comparisons unless only identical firms are used, since the averages are substantially affected by the omission or addition of one or two large firms.

The median figures give equal weight to each chain, irrespective of sales volume and number of stores. The median is the middle figure in an array of percentages listed in order from the smallest to the largest. Thus, in the third column of Table 5, where the gross margin of straight grocery chains is stated as 20.44%, this means that when the gross margin percentages for all 13 chains were arranged in order from the smallest to the largest, 20.44% was the percentage which stood at the mid-point. The range figures given in the last two columns of Table 5 indicate how closely the middle 50% of the percentages in the array for any item grouped themselves around the median. A narrow middle range indicates close concentration around the median figure; and the closer this concentration, the more reliable and more nearly representative is the median figure. In the interpretation of the median figures it should be noted that because of their statistical nature the medians for the individual items of expense ordinarily will not add to the median total expense, and the median net profit as a rule will not correspond precisely to the difference between the median gross margin and the median total expense. The same conditions hold true of the middle range figures.

Information Omitted or Not Comparable. A careful effort was made to get complete and fully comparable reports from all chains, but in a number of instances this was not possible.

Where information was not reported, or was not comparable and could not be made comparable, median figures were based on the comparable data available. This involved no important complications. In preparing medians each chain's experience received the same weight as each other chain's experience, and it was a simple matter to omit one or two figures. Unless only a few reports were available, or unless there was substantial dispersion among the figures reported, this normally would not have any important effect on the median.

More difficulty was encountered in the preparation of the averages based on aggregates of dollar figures. Here, if complete reports were not available for all firms, it was not possible to arrive at correct dollar

aggregates or to compute correct percentages from the dollar aggregates; and hence, speaking strictly, one could not simply omit a firm's data for one item of expense unless that firm's data for all items were omitted. To avoid this latter alternative in cases where reports contained only minor, or a few, shortcomings, one or the other of two practical expedients was adopted.

Where the omission, or lack of comparability, concerned an item of small importance, or a relatively small chain (which, of course, would have small weight), the omission was overlooked, the dollar aggregate figure was built up on the basis of all firms which did report, and in computing the percentage the total dollar aggregate thus arrived at was divided by the dollar sales for all firms. In such cases, the dollar expense and the percentage expense for the item in question were understated, but the understatement was deemed to be not serious. Such figures are indicated in the tables by daggers (†).

Where the figure omitted, or not comparable, was of more importance, so that the procedure just described would lead to serious error not only in the figure for the individual item but also in those for other items, such as total expense or net profit, or where the dollar amount involved was large, the Bureau prepared an estimated dollar figure for the chain which did not report. Such estimates were based on the figures which were reported by the chain concerned, and also upon the experiences of other similar chains which supplied complete information. They were employed occasionally in the case of interest, both the expense and the offsetting credit, for chains which did not report balance sheet data adequate for the computation of net worth.

Classification of Expense. Expenses are classified on the usual so-called "natural" basis as follows: salaries and wages; tenancy costs, including amortization or depreciation of major improvements; depreciation of fixtures and equipment; light, heat, water, power, and refrigeration; transportation purchased; supplies; advertising; insurance; taxes; miscellaneous expense; and interest. Miscellaneous expense includes communication, travelling, professional services, and unclassified expense.

Such a classification indicates the type of expenditure but does not indicate for what activity or function of the business the expenditure was incurred. Therefore, for the firms reporting sufficiently detailed figures, average percentages are presented, also, for expenses subdivided according to a roughly functional classification into "store" expense and "administrative, general, warehouse, and transportation" expense. Several detailed aspects of this classification have been described in connection with the definition of salaries and wages, and other aspects are evident from Table 9, page 20. It should be noted especially that all advertising expense, all taxes except those on real estate and Federal taxes on income, and transportation expense incurred in moving goods from warehouses to stores are included with central office or overhead expense; and that interest is not included with either store expense or other expense, but is placed in a category entirely separate.

For other groups of chains which reported in sufficient detail, gross margin, store expense, and store profit (before allocation of central office overhead) are given for straight grocery stores, for the grocery sides of combination stores, for straight grocery stores and the grocery sides of combination stores combined, and for the meat sides of combination stores.

Distribution of Expense. No definite rules were laid down for the distribution, or allocation, of expense between the grocery and meat sides of combination stores. It was felt that the divergence of practice among chains was so great that such rules would have involved substantial hardship and perhaps would have discouraged firms from reporting figures. The Bureau indicated, however, that wherever possible expense should be charged directly to the respective sides; that tenancy, light, heat, water, power, and refrigeration might be charged on a square foot basis; and that other expenses might be allocated on the basis of sales.

Goal Figures. As is described in the body of this report on pages 9 and 43, the so-called "goal" figures presented for several groups of food chains are based on the operations of the most profitable firms in each group and are offered as standards of operating efficiency. The name "goal" has been taken over from the department store field where it is well established.

Manufacturing and Wholesaling. Where there were any substantial sales at wholesale to outsiders, whether of goods manufactured by the chain or goods bought for resale, all figures relating to these operations were excluded from the operating statement (except that any net profit or loss from them was carried to other income) and listed separately on the balance sheet. Goods transferred from a manufacturing department to the chain were transferred at cost, the appropriate amount being included as purchases. This cost reflected expenditures and charges for materials, labor, supplies, depreciation, interest paid, interest at 6% on the equity in inventory, plant, and equipment, and other items, but no profit.

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