

CHAPTER III.—DESCRIPTION OF THE TABLES, AND SUGGESTED USES

In each section devoted to a State tables are presented, first for the State as a whole and then for the cities within the State. Tables 1-15 in each section cover the entire area; the remaining tables pertain to separate cities and to groupings of cities classed by number of population.

The tables originally published in the separate State bulletins as Nos. 13 and 14 have been removed from these sections and published in the bound volume only in Part 1, where they appear under the same numbers. These tables present data covering the number and sales of stores for all retail trade and for each major kind of business, and present this information for each county and each incorporated city therein down to 1,000 population as well as for the remainder of the counties.

Each city having 30,000 population or more is represented by tables presenting data in so far as practicable on the same detailed basis as shown in the State summaries. Commodity data, however, are not shown, as a rule, for places of less than 150,000 population. Summary tables are also shown for the following groups of cities, classed on the basis of number of inhabitants; all cities of more than 30,000 population combined, all cities of 10,000 to 30,000 population combined, and all places combined (including open country) of less than 10,000 population. One table is given in each State showing the retail business of the latter category subdivided into cities of 5,000 to 10,000 population, 2,500 to 5,000 population, 1,000 to 2,500 population, and cities or places of less than 1,000 population. Unincorporated towns, having no legally defined boundaries, are classed with places of less than 1,000 population.

The following descriptions under the heading of table numbers refer to the State summary tables:

TABLE 1. RETAIL DISTRIBUTION, BY KINDS OF BUSINESS

Each business classification is summarized in this table, as to number of stores, net sales, proportion of the retail dollar spent in each kind of store, stock on hand at the end of the reporting year, the number of full-time and part-time employees, pay roll and the number of proprietors and firm members actively engaged in retailing but not included in the count of employees.

TABLE 2. OPERATING EXPENSES, BY KINDS OF BUSINESS

A valuable comparison is presented herein of the relative cost of doing business in the various kinds of stores. The average rent which each kind of business

pays for its premises is indicated by the rental figures reported, which apply strictly to leased premises and are shown in relation to the sales in such leased premises. This table also indicates the proportion of business done in leased premises, which is of particular significance at this time to insurance companies, realtors, property owners and those interested in the possibility of reducing the cost of distribution. (See paragraph on page 13 headed "Tenancy.")

This table introduces another factor in the cost of store operation—that of the wage value of the services of active proprietors. The schedules on which the census is based called for the salaries or compensation of active proprietors, but the figures reported were so varied and often fantastic that they were useless. In lieu thereof there is included in this table a column showing the value of proprietors' services computed at the same rate as that paid, in the same kind of business, to full-time employees. When a proprietor works actively in his store in lieu of an employee there is included, for expense comparison purposes, the same compensation that is paid the average full-time employee in stores of that kind, in the State. The total pay roll reported, plus the total of proprietors' services computed on the basis described, is known as the total wage cost. This table provides the basis for computing the relative wage cost in each kind of business, although the percentages are not shown.

Total wage cost, plus all other reported expenses (which include rent, and interest on borrowed money, but not interest on own invested capital), constitute total operating expense, which is shown in the table in percentage form. Occasionally an "X" in the percentage column is used to indicate that a percentage figure might be misleading because of the limited number of stores involved in the classification.

The marked differences in operating expense between different kinds of business are of particular interest, not only to the retailer but to the wholesaler and manufacturer. Except for businesses in which service income is an important factor, the expense percentage plus a 2 or 3 per cent profit allowance is approximately the gross margin. If a further allowance is added for the cost equivalent of mark-downs, or reductions inevitably required to move merchandise which fails to sell at its original price, the resulting percentages indicate almost exactly the average initial mark-up which each kind of store requires. They are of vital interest to the manufacturer in determining price policies and in selecting the kind of retailer which can best provide an outlet for the products of such manufacturer. (Initial mark-up is that proportion of the

dollar of selling price which is required over and above the net prime cost of the merchandise sold. Thus a marking rate of 25 per cent would mean that the retailer could pay 75 cents for an article that is marked to sell for \$1. In such a case the retailer's expenses would be about 21 cents, the cost of subsequent mark-downs would be about 2 cents and if he is lucky he might realize a profit of 2 cents on the \$1 of sales.)

TABLE 3. SEASONAL EMPLOYMENT

Expressed in percentage, there is shown for each kind of business the proportion of men and women employees, the proportion of men and women proprietors, and the seasonal variation in the number of employees required in the retail industry as a whole and separately for each kind of business. There is also shown, at four specified dates representing seasons, the proportion of part-time employees to the total number of employees, to measure the seasonal variation in the demand for part-timers. This table is of interest to economists and sociologists. Its interest to retailers is that it may suggest the further use of part-timers, when a store finds itself much out of line with the proportion shown in this table as applicable to its kind of business.

TABLE 4. SALES BY SIZE OF BUSINESS

Eleven size-classes are shown into which all stores in each State are classified, in accordance with their total net sales. The tables show the number of stores in each size-class, as well as the total sales of such stores, detailed by kinds of business. This information has been sought for many years, without result heretofore. The tables bring out the relatively large number of stores with insignificant annual sales, and in contrast the relatively small proportion of the total business of the country which is done by these small stores.

TABLE 5. RETAIL DISTRIBUTION, BY TYPES OF OPERATION

The usual classification of retailers, according to their types of operation, into chains and independents, is shown by this table to be meaningless for the reason that there are no such clean-cut distinctions. There are single-store, 2-store, and 3-store independents and, often, local branch systems which are all independent types of operation. Many times a local chain is developed almost unconsciously, often over a long period of years, by the expansion of a local store into a 2-store operation, then adding a third store, and finally becoming in fact a chain, although it may be owned and operated entirely by the same local men who operated the original store, and all the stores may be located in the same city.

The text in Chapter I of this volume describes each type of operation shown in detail in this table.

In any attempt to assign all retailers to one of the two types of so-called chains and so-called independents, it is necessary first to define the meaning of such terms which would become extremely difficult and controversial. Avoiding such controversy, the retail census presents the facts in the form of 15 different types of operation, each exactly defined, so that the material may be assembled by the user in any grouping desired.

For summary purposes, the totals for each State are shown in six major groups, corresponding to the six groups shown in Table 6. The first summarizes single-store independents. The second combines 2-store and 3-store independents and local-branch systems. The third applies to local chains. The fourth covers sectional chains, and the fifth covers national chains. All other types are summarized in the sixth group. All groups show the number of stores as well as sales and the percentage of the total business done by each type.

TABLE 6. SEVENTEEN KINDS OF BUSINESS, BY TYPES OF OPERATION

Seventeen of the more important kinds of business in which chains have become a factor are analyzed in this table according to six type classifications. As to each kind of store there are shown, for each of the six types of operation, the number of stores, total net sales, and the proportion of the total sales by the stores of each type class. It gives the first true picture of the degree of penetration of the multiunit type of operation in the principal kinds of retail business.

TABLE 7. CREDIT BUSINESS

For all stores together, and separately for each of 60 kinds of business in which the extension of credit to customers is a sales inducement, this table shows the number of stores which have reported that they do all of their business for cash, and the total sales of such stores; and, in contrast, the number of stores which do all or a part of their business on credit, and the total sales of such stores. The credit-granting stores are further analyzed according to the proportion of their business which is done on credit.

TABLE 8. CREDIT BUSINESS, BY TYPES OF OPERATION

The stores shown in Table 7 as those which do all or part of their business on credit are further analyzed, in this table, according to their types of operation. There is shown the ratio of credit sales to total sales, and the table also shows the total amount of installment sales which were reported.

Due to the fact that installment credit was not reported separately by stores whose total annual sales were less than \$60,000, nor by stores in places of less than 10,000 population, the dollar figures are incomplete and can not be related to the total credit sales. In five test States, representing all parts of the country, a special compilation was prepared of all

returns which included credit sales, eliminating the returns which made no provision for installment data, the purpose being to establish the relation between installment credit and total credit sales. This sample tabulation revealed that the installment credit reported as having been extended by the retailers constituted 38.83 per cent of total credit reported. At least for those test States, it may be assumed that about 61 per cent of the total credit reported is open-account credit and about 39 per cent is installment credit extended by the retailers.

In addition to installment credit extended by retailers, which in 1929 totaled about \$6,500,000,000, computed by the method described above, there was additional financing of retail installment contracts by finance companies to an estimated total of \$1,500,000,000. This is limited almost entirely to the financing of installment purchases of automobiles, but includes a small amount of furniture, radios, and electrical appliances. As far as the retailer is concerned, these are not regarded in certain kinds of business as credit sales because the retailer does not extend the credit.

TABLE 9. RECEIPTS OTHER THAN FROM THE SALE OF MERCHANDISE

Meals differ from most other merchandise in that they are not sold in the form in which the food is bought. The first part of this table shows receipts from the sale of meals, as reported by the stores. In addition to restaurants and other eating places, meals constitute a secondary source of income in many stores not in the restaurant group, as shown in this table. Additional data on the subject are contained in the commodity tables. Both tables should be taken into consideration in any study of food sales.

Receipts from repairs, service, and storage are reported in this table, with automotive repairs classified separately from other repairs and service. Considerably more than half of this income is not represented by a corresponding purchase of commodities from wholesalers or manufacturers.

TABLE 10. MERCHANDISE MANUFACTURED BY RETAILERS—SALES TO OTHER RETAILERS—RETURNED GOODS

Reported separately for each kind of business, this table reports three kinds of data, as indicated by the title. Merchandise manufactured on sales premises is a factor in retail distribution in that, like the sale of services and meals, it represents a proportion of total retail business for which there is no corresponding purchase of merchandise in kind. Sales to other retailers include merchandise for their use, such as supplies, and merchandise for resale, which is in the nature of wholesale business. Returned goods and

allowances were not reported by stores in cities and places of less than 10,000 population, nor by stores with sales of less than \$60,000 annually. Blanks indicate that no returned goods were reported, not necessarily that no goods were returned.

TABLE 11.—RETAIL SALES BY MANUFACTURERS AND WHOLESALERS—COUNTRY BUYING (ASSEMBLING) OF FARM PRODUCTS

The preceding table reports sales by one retailer to another retailer, which are somewhat in the nature of wholesale transactions. There is a large volume of retail business, however, which is not transacted by retailers at all, but is sold directly to the household consumer by manufacturers and wholesalers. This business is reported in Table 11 (A and C) and should be added to the total sales reported by retailers.

On the other hand, the business reported by country stores which are also country buyers or assemblers of farm products includes the volume which results from the sale of the farm products which have been assembled, as well as the sale of other merchandise purchased through trade channels. That part of their reported business which results from their country buying or assembling of farm products is shown in one section of Table 11.

TABLE 12. FORMS OF ORGANIZATION

Partnerships and sole proprietorships, shown together in retail census reports, constitute by far the majority of store forms of organization. The corporate form, although representing only 15.77 per cent of the total number of stores, covers 48.23 per cent of the total business done by retailers.

Cooperative associations, reported as such, play a small part in retailing, either in sales or in stores. These are a sort of incorporated partnership, with customers as the stockholders. It was intended originally to show as another form of organization, or as a type, the large number of cooperative merchandising groups, or "voluntary chains," which exist in such fields as foods, drugs, and hardware, but the information obtainable as to such affiliation was so incomplete and contradictory that it had to be abandoned as a separate classification.

In response to the request for more detailed data on Negro proprietorship in the retail field, a table is given herein which shows the total number of stores operated by Negroes, total sales, stocks, pay roll, employees and proprietors working in the stores. All of this is further classified by kinds of business.

In some of the Western States, and particularly in California, a large number of retail stores are owned and operated by orientals, either Chinese or Japanese. They are classified herein as oriental mutuals, and in the California report a special table is shown for them.

TABLE 13. RETAIL DISTRIBUTION, BY COUNTIES AND INCORPORATED PLACES

This table summarizes, by States, for each county and incorporated place having 1,000 or more inhabitants, the number of stores, proprietors, and firm member, full-time employees, net sales, stocks on hand, and total pay roll.

This table was published originally in the separate State bulletins, but has been withdrawn from the State sections of this report, and is included in Volume I, Part I, Retail Distribution, for ready reference, particularly as an aid in analyzing the marketing organization and its operation in the different sections of the country.

TABLE 14. COUNTY DISTRIBUTION, BY KINDS OF BUSINESS

Net sales and number of establishments are analyzed in this table by 40 kinds of business, or condensed business classifications. The information is presented by States, for each county and incorporated place of 1,000 or more inhabitants. This table has been removed from the State sections of this report and is included as Table 14 in Volume I, Part I, Retail Distribution.

TABLE 15. SALES BY COMMODITIES

Table 15 presents data on commodity sales classified on the basis of the kind-of-business analysis given in Table 1. Similar tables are presented for the larger cities.

Retailers, wholesalers, manufacturers who market their products through retailers, and advertising agencies directing and promoting the distribution of manufactured products, all have need at times for reliable commodity sales data in addition to the kind-of-business data shown in retail census reports. The basis for determining the approximate retail sales of given commodities is included in these retail census reports, but because its use requires a certain degree of assumption and estimate, and a somewhat different application to different uses, such computations are not presented in this volume.

WHY THE RETAIL CENSUS CAN NOT SHOW DOLLARS OF COMMODITY SALES

Not over 15 per cent of retail stores keep their records in such detail that they can report, nor do they even know, the breakdown of their sales in terms of commodities sold. They know the amount of their total business for the year, for each month, even for each week and day. But most stores can not say how much of each commodity has been sold. The 15 per cent which can report commodity data transact more than 35 per cent of the total business of the country.

This first Census of Distribution did not attempt to obtain complete commodity data. Experience with the trial census of 11 cities, three years earlier, indicated that anything approaching a full coverage would

be impossible owing to the lack of retail records of this type. Consequently, it was decided to limit the requests for such detail to cities of more than 10,000 population and to stores in such cities doing at least \$60,000 of annual sales. Whether a more complete coverage could have been obtained, in view of the lack of interest of retailers at that time, is open to question. Subsequent developments have increased greatly the general interest in more detailed commodity data, and it is probable that more retailers will keep commodity records hereafter and that a more complete coverage, among the smaller stores and especially in the smaller cities, can be obtained in future censuses. However, a commodity breakdown is available for a substantial percentage of the total sales in most kinds of stores.

The lack of commodity data applies not only to the small independent stores but also to many of the chains. It was found that, up to the time of the census, a substantial proportion of local, sectional, and even national chains depended upon week-to-week comparisons of operating and sales data, with little reference to the results in corresponding periods of the previous year and with no year-to-date accumulations of detailed data. Others were found which had departmentized their data into a relatively few groups, but later had permitted those groups to become unbalanced so that their titles were no longer descriptive, by adding newer lines at the instigation of group merchandisers without regard to the prevailing commodity content of the group. Thus the so-called "meat group," for instance, may have started as the meat department but now may include butter and cheese, but not milk and eggs, due to the peculiar history of the chain in its evolution from a strictly grocery chain. The same merchandiser later may have brought about the addition of ice cream, or cigarettes, which were added to his group without changing the title of "meat group." Without commodity figures the total of the "meat department," as it was called within the chain, could not be accepted by the Census Bureau as representative of the sale of meats, for it included other commodities as well as meats.

Chains in other kinds of business were found which had equally ambiguous commodity group figures—which were perfectly understandable to them, and served to measure the sales and earnings of each merchandising group to the chains' satisfaction, but were useless as measures of commodity sales, because they contained several commodities under a single commodity title. Another complication was encountered in the fact that more than a majority of the chains, which did keep commodity sales records for the chain as a whole, were unable to determine the commodity sales of individual stores or units of the chain.

In many cases of this kind where there was a willingness to cooperate, the chains were helped or induced

to break down the group sales into commodities in accordance with the regular commodity schedule used by the retail census (Form 13), but it was impossible to develop this commodity breakdown for the individual stores of the chains. In several cases the executives of the chains found these analyses of their sales so valuable that they adopted the method as future standard practice. A similar realization of the value of commodity sales data undoubtedly will result in the adoption of similar analyses currently by more chains and independent stores of all kinds throughout the country.

Because of the limitations outlined above, commodity tables in the retail reports necessarily do not, as a rule, include the following:

- (1) Stores with annual sales of less than \$60,000 (no breakdown requested).
- (2) Stores in cities and places of less than 10,000 population (no breakdown requested).
- (3) Stores which did not keep an analysis of their sales by commodities.
- (4) Classifications in which the commodity coverage proved to be too small to be representative so that even the few stores which did report had to be deleted.
- (5) Units or stores of chains which, although they could supply commodity sales data for the chain as a whole, could supply no analysis of individual store sales (thereby eliminating them from all city and State commodity tables).
- (6) Chains which kept no commodity sales records cumulatively for the entire year, relying upon weekly or current comparisons only.

The commodity data presented in the retail census reports may be regarded as substantial samples, covering the entire country, obtained through the cooperation of progressive retailers who kept adequate commodity records. They are expressed in percentage form so that they may be applied to the full amount of sales, including also those stores which were unable to contribute to the analyses. In some kinds of stores the commodity coverage is practically or actually 100 per cent. In others there are no commodity data sufficiently complete to present. All available data have been handled with great care and with as much discrimination and verification as the tremendous task permitted. There being no precedent to follow, experience alone can tell to what degree such mass compilations prove to be reliable, and how well the staff of the retail census have succeeded in presenting the data in its most acceptable form.

MERCHANDISING SERIES INCLUDES COMMODITY ANALYSIS OF CHAIN SALES

A separate series of retail chain reports, known as the merchandising series, has been provided by the retail census covering the operations of all chains in

many retail fields in which chains have become a substantial factor. These reports include such data as sales by geographic divisions, operating expenses, pay-roll cost, rental cost, growth of the chains, and an analysis of sales by commodities and, with a summary of all chain operations, are bound in a separate volume. The titles of the individual reports therein are—

- Food chains.
- Department-store chains.
- Ownership groups of department stores.
- Variety-store chains.
- Motor-vehicle dealer chains.
- Automobile accessories chains.
- Filling-station chains.
- Men's-wear chains.
- Women's-apparel chains.
- Shoe chains.
- Furniture chains.
- Household-appliances chains.
- Restaurant group of chains.
- Newsdealer chains.
- Drug-store chains.
- Jewelry chains.
- Hardware chains.
- Office-appliances chains.

HOW THE RETAIL CENSUS PRESENTS COMMODITY DATA

The limitations outlined above, and the very nature of the retail industry, make impossible a complete coverage of retail sales in commodity tables. The best that can be done is to take the reliable data available, infinitely more than ever has been brought together before, and present it in such manner that it contains the basis for reasonably accurate estimates also of the breakdown of that proportion of sales which is not reported in detail. This has been done by expressing the sale of each commodity in percentage, or in terms of its ratio to the total sales of the kind of store in which it is sold. The degree of coverage of the data on which the sets of commodity percentages are based is also shown. (See paragraph, "Per cent of commodity coverage.")

For instance, suppose that in a given city the total sales of all hardware stores are \$1,000,000, but that the stores which can report their sales by commodities sell in aggregate only \$800,000. The entire \$1,000,000 is shown in the first city table, but for the purposes of the commodity table the "commodity coverage" is reported as 80 per cent. In other words, the user knows that whatever is shown in detail in the commodity table is based upon the sales experience of stores whose business represents 80 per cent of all the hardware-store business in the city. In the absence of any better data he may elect to apply the same proportions to the entire 100 per cent in order to determine the approximate total sales of each commodity in hardware stores as a whole, in that city. The same

applies to other cities, to States, and to other kinds of stores, each having a commodity analysis applicable strictly to itself.

ASSEMBLING COMMODITY SALES TOTALS

Most commodities are sold in more than one kind of store. A hardware store will sell paints and varnishes to the extent, perhaps, of 10 per cent of its sales, but paints and varnishes will be found in the commodity breakdown of many other kinds of stores, such as variety stores, department stores, and paint stores, each with a percentage which represents the sale of paints and varnishes in relation to the total sales of that kind of store—not in proportion to the total sales of paints and varnishes in that city. In order to determine the *total sales* of paints and varnishes in the city, it is necessary only to compute the sale of paints and varnishes in each kind of store which sells them.

To do that it is necessary to assume that the breakdown, when based on less than 100 per cent of total sales, holds equally good as to the entire 100 per cent. The 100 per cent figure (total net sales, for instance, of all hardware stores in the city or State) can be found in Table 1 of each State section and in the first table of each city section, included in the same State section. The percentages to be applied to these total sales figures can be found in the State commodity table, for the State as a whole, and in city commodity tables whenever the city contains a population of 150,000 or more. (In some States where there is no city of 150,000 population somewhat smaller but important cities have been included in the commodity analyses.) It should be understood that the State tables showing sales by commodities (Table 15 in each State section except Connecticut, and Table 12 in the Connecticut section) are based upon data from all stores in the State from which were received acceptable reports of sales by commodities regardless of the size of the city. All of the cities which may be separately reported are also included in the State tables. An illustration of the way to compute the total sales of a given commodity is shown on page 22 with explanation on page 19.

PER CENT OF COMMODITY COVERAGE

Commodity coverage is the proportion of sales in those stores which reported commodity figures, to the total sales of all stores in the same kind-of-business classification. The coverage varies with each kind of store. The ratio of commodity coverage indicates how representative is the breakdown shown under the kind-of-business heading in Table 15. Commodity coverage may vary from as much as 100 per cent in the case of department stores to as little as 3 per cent or even nothing in the case of delicatessen stores and lunch counters. In cities the *total* coverage often exceeds 50 per cent. For the State as a whole, because of the fact that practically all commodity data are limited to city

stores, the coverage varies from 40 per cent in heavily populated States to 30 per cent or even 25 per cent in a few States wherein stores in small towns and rural areas predominate. For the United States as a whole it amounts to about 35 per cent of the total sales of all stores, and covers about 15 per cent of the total number of stores represented. Much of the missing data, however, relates to kinds of business which lend themselves readily to approximations, being largely single-commodity stores. Other stores fall with fields which keep them entirely apart from the given commodity that may be under consideration, and therefore need not be included for most purposes. The commodity breakdowns in the Merchandising Series of chain reports, referred to above, provide further factors and increase the degree of coverage considerably. Most of the important business classifications show a satisfactory and surprising degree of commodity coverage, especially in the cities, reflecting credit upon the well-managed stores which were able to contribute such detailed data.

KINDS OF STORES NOT INCLUDED IN COMMODITY TABLE

The commodity tables include separate sections for each separate kind of store, such as drug stores, hardware stores, filling stations, etc. Some kinds of stores, however, are omitted. This is due to the fact that not sufficient coverage was obtainable to provide a fair estimate of what such stores sell. In some kinds of stores the coverage, though very low, is included with the object both of showing how little commodity information really is obtainable and of showing even a fragmentary picture of the nature of the commodities sold by such stores. Delicatessen stores, for instance, are a good example.

In many cases the absence of commodity data is caused primarily by the fact that most of the stores in that classification are small proprietorships operating without adequate records. In other cases the number of separate ownerships is so small that the inclusion of commodity data would be a revelation of individual operations, as in the case of a large mail-order catalogue house. In still other cases, of which grocery stores without meats are a good example, most of the stores are either small proprietorships without records or units of sectional chains without individual store records as to commodity sales.

The absence of commodity data or a low per cent of coverage in the retail census reports might indicate an opportunity for trade associations to supplement the work of the census with sample breakdowns, obtainable from as many member stores as possible with the aid of field auditors and a careful analysis of purchase records. Chains in that field may find it desirable to keep commodity records of individual store sales, so that for the next retail census a complete report for each separate store or unit may be available.

PURPOSE OF TWO COLUMNS OF PERCENTAGES IN TABLE 15

Table 15 of each State section (and each city commodity table, also) contains two columns of percentages opposite each list of commodities. The second column always adds to 100 per cent and is applicable to the total sales shown in the kind-of-business table, for the purpose of computing the approximate total sales of each commodity in dollars. The first column of percentages is for another purpose.

The main purpose of the first column of percentages is to show the sales importance of any related line of merchandise, in relation to the total sales of stores carrying that line. All stores of a given kind sell each of the primary commodities, but not all sell each of the related commodities. The first percentage column shows the relative sales of each of the related commodities, *in those stores which sell that commodity*, leaving out of consideration all other stores of the same kind which *do not* sell it. An example will make this clearer:

Hardware stores	Per cent	Per cent
Builders' and shelf hardware.....	37.2	37.2
Carpenters' tools.....	6.3	6.3
Radio sets.....	4.4	2.6
Wall paper.....	4.4	.6
Grain and feed, etc.....	6.7	.3
Etc.....	Etc.	Etc.

The first column gives the percentage which the sales of the specified commodity constitute of the total sales of all hardware stores selling that commodity, while the second column gives the percentage which the total sales of that commodity constitute of the total sales of *all* hardware stores, including those which do not as well as those which do sell that commodity.

To illustrate:

Sales of wall paper represent 4.4 per cent of the total sales of those hardware stores which sell that commodity, but represent only 0.6 per cent of the total sales of all hardware stores. The percentages differ because many hardware stores do not sell wall paper.

On the other hand, sales of carpenters' tools represent 6.3 per cent of the total sales of those hardware stores which sell that commodity and represent also 6.3 per cent of the total sales of all hardware stores. The percentages are identical because all hardware stores sell carpenters' tools. (See following section for basis of computation of the percentages.)

Identical percentages in the two columns therefore show that the article is one which is sold by all stores in that classification and is a primary commodity. A larger percentage in column 1 than in column 2 indicates that the commodity is sold by some of the stores in that class but not by all of them, and is a related commodity except as noted below.

Wide discrepancy between the two percentages and a marked dissimilarity in the nature of the commodity

may indicate that the few stores which are selling such commodity are located in the smaller places or in sections not served by the specialized stores which usually sell such commodity, and have taken on something of the nature of a general store.

It may be noted that the ratio between the two percentages gives the ratio which the total sales of those stores selling the given commodity are to the total sales of all stores in that class. If the percentage which the sales of commodity "A" form of the total sales of all stores selling that commodity is five times the percentage which the sales of commodity "A" form of the total sales of *all* stores in that class, then the total sales of those stores selling commodity "A" is one-fifth of the total sales of all stores in that class. To illustrate: The total sales of the hardware stores selling wall paper is about one-seventh of the total sales of all hardware stores. The result may be expressed in the form of a percentage, obtained by dividing the figure in the second percentage column by the figure in the first, thus showing that the total sales of those hardware stores selling wall paper represent about 14 per cent of the total sales of all hardware stores, and that the total sales of those hardware stores selling radio sets are about 41 per cent of the total sales of all hardware stores.

Wall paper is a good example of a related line which offers an extreme contrast. In hardware stores *which sell wall paper*, the first column shows that the commodity accounts for 4.4 per cent of such stores' total sales, even though it accounts for only 0.6 per cent of the total sales of *all* hardware stores analyzed, including those which do not sell wall paper. A wall-paper manufacturer or a wholesaler is interested in that fact, as well as in the fact that in hardware stores as a whole the sale of wall paper amounts to only 0.6 per cent of total sales, as disclosed by the second column. As a potential outlet for a wall-paper manufacturer, or wholesaler, a given hardware store should be good for that proportion of sales shown in the first column, if it carries wall paper at all. As a class of outlet, hardware stores as a group regard wall paper as of the importance shown in the second column. The same is true of radio sets, or grain and feed, or any other related commodity.

To a hardware retailer the two columns are significant, for another reason. If he is not carrying a commodity shown in the breakdown of hardware stores the item is suggested to him as a line worthy of investigation, and the percentage in the first column indicates what other hardware stores have been able to sell of that commodity. If he already carries it, the first percentage is an average to guide him. (See also p. 24.)

Such contrasts between the first, or "potential sales" column, and the second, or "actual sales" column,

direct the attention of the retailer, the wholesaler, and the manufacturer to sales opportunities for related lines of merchandise. The "potential sales" column, however, is an indicator of potential or obtainable sales as to those stores only which sell the commodity, and can not be applied to total sales in an effort to show an alleged "potential market" for the commodity.

HOW THE PERCENTAGES ARE COMPUTED

Although the second column of percentages always adds to 100 per cent, and indicates the relative distribution of each commodity through that kind of store as a whole, the first column can not be added, because the base for each separate percentage shifts with each commodity. That is to say, the same number of dollars of sales of radio sets, for instance, if referring to the illustration given above, is used for the computation of both percentages, but in the case of the second column the divisor is the total sales of *all* hardware stores included in the commodity analysis, and in the case of the first column the divisor is the total sales of *only such stores as report that they sell radio sets*. The same stores which sell radio sets may not sell wall paper, so that the base which would represent 100 per cent for the first column changes in each instance, except in the case of primary commodities. The first column, then, will not and is not intended to add. Each separate item in that column is applicable strictly to itself. Thus the first column is equally as valuable as the second, but for an entirely different purpose.

COMMODITIES SHOWN AS INDENTED GROUPS

Occasionally, in Table 15, a group of commodities is shown indented, with a single column of percentages shown in short. That form of presentation indicates that, although the total of the indented group is representative, the detail shown is merely a substantial sample of what constitutes the principal item above it. It is based upon 50 per cent or less coverage than the principal item of which it is a part, and under which it is shown. The fact that it is included means that we believe it to be worthy of use in the absence of any better data.

HOW TO COMPUTE THE TOTAL SALES OF A GIVEN COMMODITY

About 200 commodities or commodity classes are included in the commodity tables. To compute the total sales of any commodity specifically listed in Table 15 of the State reports, go through the separate sections of the table and list every kind of business in which the commodity appears, setting down opposite each the percentage shown in the second column. From Table 1 set down opposite each item the total sales of all stores of that kind. Apply the percentage

to the total sales of the kind of store to which it applies, thereby determining the approximate sales of the commodity in each kind of store. Adding these dollars together, the total is the approximate total sales of the commodity in all stores in the city, except only the kind-of-business classifications which are not reported in Table 15. Page 8 contains an example of such application of commodity data.

As related earlier, certain kinds of stores can not be included in the commodity tables for various reasons, principally because the commodity breakdown obtainable is not representative. It is necessary, then, to go through the list of stores (checking off against Table 1 the kinds of business for which breakdowns are found in the commodity table) to determine if there are any which may sell the commodity in question but for which no breakdown is shown. Unrelated kinds of business may be disregarded, thereby limiting the work materially. It is necessary to estimate a commodity sales figure for any missing kinds of business which do sell the commodity, although in most instances the amount involved either is insignificant or it includes the entire sales of a highly specialized kind of business (for which there may be no breakdown). The total thus arrived at is a close approximation of the sales of the given commodity in whatever city or State it is used. The list thus compiled is valuable also in showing what kinds of stores are outlets for the commodity and in what relative order. (See example on p. 8.)

Commodities which are not specifically listed (for example, shaving cream or paint brushes or gloves) may be related first to some other listed commodity, after which the foregoing procedure can be followed.

HOW MANUFACTURERS AND WHOLESALERS CAN USE THE COMMODITY FIGURES

The primary value of the commodity tables in the retail census, for manufacturers and wholesalers, is to narrow the field which has heretofore been a field of speculation and broad guesses, to a steadily contracting lane within which the interest of the particular user is confined, and which can be surveyed in finer detail and with more assurance than ever before.

One way in which manufacturers can use commodity tables is illustrated in the example given on page 8.

This application of the tables results in (a) a list of the kinds of stores through which this commodity could be sold, thereby broadening the field of prospects open to salesmen, (b) an appraisal of the stores in relation to their relative importance as outlets for the commodity, (c) a measure of the potential additional market for a commodity in any given kind of store, by comparison of column B with column D. In selecting as a potential retail outlet the most desirable kind of store for a given commodity, and then the most

EXAMPLE OF THE APPLICATION OF COMMODITY DATA AS DESCRIBED ON PAGE 22

SALE OF RADIO MERCHANDISE (SETS AND PARTS) IN OHIO

Commodity coverage (shows the proportion of total dollar sales which were broken down by commodities)	Relative importance of radio sales to total sales in such stores as sell radio merchandise (first percentage column)	KIND OF BUSINESS	Per cent of radio merchandise to total sales of all stores in same classification (second percentage column)	Total sales (all commodities) in all stores in same classification (from Table 1)	Indicated sale of radio merchandise in all stores listed in Column C	Relative importance of each kind of store as an outlet for radio merchandise
A ¹	B	C	D	E	F	G
		Department stores:				
99.2	1.9	With food departments.....	1.5	\$46,638,000	\$699,540	2.12
86.2	2.2	Without food departments.....	1.5	232,160,000	3,482,400	10.53
29.5	6.0	General merchandise stores (without food departments).....	4.0	14,255,000	570,200	1.72
31.5	4.3	Variety stores.....	1.7	65,820,000	1,118,940	3.38
69.0	2.1	Automobile sales rooms.....	.1	378,714,000	378,714	1.15
31.5	20.2	Automobile accessory stores.....	4.4	18,326,000	806,344	2.44
35.2	35.9	Battery shops.....	9.3	6,955,000	646,815	1.96
45.7	14.5	Tire shops.....	1.7	19,685,000	334,645	1.01
		Filling stations:				
16.6	15.9	With tires and accessories.....	.7	27,866,000	195,062	.59
10.6	13.0	With other merchandise.....	1.7	23,172,000	393,924	1.19
11.6	15.6	Garages.....	1.8	29,230,000	526,140	1.60
76.3	9.7	Furniture stores.....	4.9	83,736,000	4,103,064	12.41
14.8	9.8	Furniture and hardware stores (rural).....	6.0	2,147,000	128,820	.39
62.4	10.1	Household appliance stores.....	3.1	14,433,000	447,423	1.35
90.0	1.5	Interior decorators.....	1.1	9,295,000	102,245	.31
43.8	52.8	Radio and electrical shops.....	50.4	21,315,000	10,742,760	32.48
73.0	51.7	Radio and musical instrument stores.....	51.7	11,834,000	6,151,520	18.60
19.9	30.9	Plumbing shops.....	2.5	11,637,000	288,425	.87
30.9	6.4	Hardware stores.....	2.3	50,447,000	1,160,281	3.51
8.1	3.7	Hardware and farm implement stores.....	1.2	10,135,000	121,620	.37
61.6	5.0	Seed and nursery dealers.....	.3	3,150,000	9,450	.03
92.4	10.5	Installment jewelers.....	2.5	7,673,000	191,825	.58
63.1	14.4	Music stores.....	6.6	3,326,000	219,516	.66
26.8	9.1	News dealers.....	.3	5,787,000	17,361	.05
68.2	11.1	Office and school supply stores.....	.6	4,062,000	24,372	.07
46.9	12.3	Sporting goods specialty stores.....	1.8	1,344,000	24,192	.07
78.2	36.4	Sporting goods, toys, and stationery.....	13.9	1,307,000	181,673	.55
		Total sales of radio merchandise through outlets listed above.....			33,087,271	99.98
		Estimated sale through other outlets ¹			5,000	.02
		Total.....			33,072,271	100.00

¹ What the columns mean.—Take for illustration the figures for furniture stores as given in the above table. They show that 76.3 per cent of the total sales of furniture stores were reported by commodities (column A); that the sales of radio merchandise by furniture stores as so reported represented 9.7 per cent of the total sales of those furniture stores which handled radio merchandise (column B); and 4.9 per cent of the total sales of all furniture stores (column D); that the total sales of all furniture stores amounted to \$83,736,000 (column E); that the sales of radio merchandise by furniture stores, being 4.9 per cent of their total sales, therefore amounted to \$4,103,064 (column F); that the sales of radio merchandise by furniture stores represented 12.41 per cent, or about one-eighth of the total sales of radio merchandise in the State of Ohio (column G).

Contents of each column in table.—A=Per cent of commodity coverage. This column shows to what degree each breakdown is representative of the total sales of all of the stores in the State or city in that kind of business. Thus, practically all department store sales are covered and the breakdown may be used with full assurance. The breakdown for garages, however, based on 11.6 per cent coverage, is questionable as to whether it represents the situation in the balance of the garages which were unable to analyze their sales. Each user must decide that for himself, and may accept the percentages given or modify them in the light of additional facts. No data may be represented as census data, however, in which any modification is included.

B=This column shows the sales importance of radio merchandise in all stores (of each kind) which sell radio goods. For sales promotion purposes, column B indicates how much of the commodity can be expected to be sold, if the commodity is added to the stock of a selected store which does not now sell it. When the commodity under review is a primary line in a given kind of store, so that all such stores sell it, the percentage in column B will be identical with that in column D, as is shown in the case of radio and musical instrument stores (51.7 per cent). Where the commodity is a related line of merchandise, carried or not at the option of each store, the difference between the two percentage columns in the Commodity Tables is significant of an opportunity for sales promotion for the retailer. For the manufacturer and wholesaler it is helpful in measuring potential sales when selecting a desirable retail representative in that particular kind of business. Automobile-accessory stores, for instance, show only 4.4 per cent of radio sales as a whole, but those automobile-accessory stores which sell radios find that the merchandise accounts for 20.2 per cent of their total sales.

C=Kinds of stores which sell the commodity, as disclosed by study of the commodity tables in the final series of retail State reports. Add to this list any stores in Table 1 which might sell radios but for which no breakdown is shown in Table 15.

D=This column shows the per cent of radio sales to total sales for each kind of business listed. The figures are taken from the second percentage column of the commodity tables.

E=Total sales all kinds of merchandise (from Table 1) in each kind of business listed. Radio merchandise is included in these sales figures to the extent shown by column D.

F=These indicated sales of radio merchandise are obtained by multiplying total sales (column E) by the per cent of radio merchandise (column D).

G=This column converts the figures in column F into percentages, with total radio sales (total of column F) as the base. It is useful in showing what kinds of stores are important factors in the retail distribution of the commodity and in what relative order.

¹ The necessity for this final estimated figure is described in a paragraph on p. 22. For the purpose of this present example the \$5,000 is arbitrary. In practice, the figure should be detailed by estimating the sales of radio merchandise in each kind of store for which no breakdown is shown in the commodity table.

desirable store in that classification, the value and significance of the two columns of percentages become apparent. Increasing the number of outlets does not necessarily produce an increase in consumption, but the selection of the most desirable kinds of outlets is productive of maximum sales and minimum costs of distribution.

A new manufacturer, in appraising the relative desirability of various outlets, might reasonably find less sales resistance and a more willing acceptance of his product, in those kinds of stores in which there is the greatest difference between the two columns of percentages.

The commodity tables also serve as a basis for revising sales territories and advertising plans. They show that, for almost any commodity, there are a number of *kinds of stores* which can and do sell that commodity. From the list a manufacturer can select those kinds of stores which he believes his salesmen should contact. From Table 1 he can determine the number of such stores in any State, and from Table 14 in Part I of this volume he can determine the number in each county, city, and town within the State. From the size-of-business tables he can determine how many, if any, are too small to consider as desirable accounts. The balance will be those which he wants his sales organization to investigate, and from which he may desire a certain proportion of accounts for his products. By plotting the acceptable stores on a map he can often reroute his salesmen to advantage. Another use of such a map is that it will serve to show where distributing houses or wholesale representatives should be located so as to serve the greatest number of retail accounts. It will also guide in selecting the most effective advertising media, both local and national, with respect to maximum circulation within the areas of greatest sales activity or potential activity.

HOW RETAILERS CAN USE THE COMMODITY FIGURES

Retailers can learn, from the commodity tables, what their kind of store is selling in their community as to any listed commodity. Secondly, by listing every kind of store which sells the commodities which are regarded as primary lines by a retailer it is possible for him to determine the nature and extent of his competition in the sale of that commodity. For instance, the illustration on page 8 shows that radio dealers sell only about one-half of the radio merchandise sold in Ohio. There are at least five other kinds of stores which are direct competitors of radio shops in addition to all other radio shops.

Third, a retailer can learn from the commodity tables what commodities are being sold by his direct competitors as related lines of merchandise. Primary lines are those which the customer has a right to expect to find in every store of a given kind, as, for example, tools in a hardware store. Primary lines constitute the bulk of the total sales. Related lines are those which may or may not be carried, at the option of each store; for example, wall paper in a hardware store. Well-selected related merchandise often becomes an important factor in sales and profits, and when it is properly displayed it has the advantage of selling with little or no advertising and a minimum of sales effort. Customers are attracted to the store by the primary lines, and tend to buy related lines because they are accessible. Because of their importance, a knowledge of what related commodities are being sold by competitors is valuable information. However, the information should be purely suggestive, and should be followed up by a careful investigation of the desirability of the merchandise, the nature of other kinds of competition, market resources and trade practices, and the peculiarities and difficulties to be expected in the merchandising of the commodity.