

## CHAPTER V.—EXPLANATION OF TABLES

### PRESENTATION OF RESULTS

This volume presents a series of 13 uniform tables for the United States as a whole, and for each State and the District of Columbia. Eleven of these tables contain data relating to construction establishments which had a business of over \$25,000 during 1929, and the last two relate to those which had a smaller business. Although only establishments of the larger business group were required to file complete reports, many establishments of smaller size stated the value of their business. As a result, comprehensive sampling of this latter group was also obtained. The statistics are shown for each State and for cities of more than 100,000 population in 1930. The principal items contained in Table 1 are also presented for all counties of the State for which these could be shown without revealing individual operations.

The inclusion of the report of any establishment in a given locality was determined by the post office address from which the report was received. It is particularly desirable to keep this fact in mind in making use of any of these statistics, since *the data presented for any locality relate to the construction business of establishments whose offices were situated therein and not the actual amount of construction under way in that area.*

Statistics are presented in the various tables for groups of establishments engaged in designated classes of construction work. Each reporting establishment was classified according to the type of business in which it was engaged during 1929. If several types of work were reported, the classification was determined by the kind for which the greatest amount of business during the year was shown. Obviously, there is a certain amount of unavoidable overlapping among the respective classes of business, but it may be assumed that the additions to any class will, in the long run, be balanced by compensating deductions, and vice versa. It should also be noted that upon this basis of classification the principal line of work of a given establishment might vary from year to year. These groupings must, therefore, be considered only as a flexible standard indicated by the type of construction activity which prevailed during 1929.

To avoid disclosing individual operations, in certain instances it has been necessary to show combined figures for individual classes of establishments, or to omit the value figures entirely. An effort was made, wherever possible, to make such combinations between

similar or closely related groups, omitting only such items as could not be so combined.

Except in Tables 1 and 2, it has been necessary to use the sampling method, owing to the fact that some establishments which gave complete reports for certain tabulations failed to furnish satisfactory information for others. As a result of the use of this method, the figures shown in other than the first two tables should not be taken to represent the total value of any item for a given area or class of establishments. In using these figures, account must always be taken of the size of the sample to which they apply.

For example, the total value of construction business shown in Tables 1 and 2 comprises the business of all reporting establishments whose year's business was over \$25,000, whereas the amounts shown as "Value of construction business reported" in Tables 3, 6, 8, and 10 relate only to the varying number of establishments covered by each of these tabulations. This value of construction business reported, therefore, is to be used only in comparison with the items of the table in which it appears and must not be taken to represent the total volume of construction business handled by all establishments. Similar differences will be noted in the amounts shown for the following items in the tables indicated: Salaries of proprietors, firm members and salaried employees, Tables 5 and 8; wages, Tables 1, 6, 7, and 8; and cost of materials, Tables 1, 8, 9, 10, and 11.

### EXPLANATION OF TABLES

A more detailed explanation of the significance of each of the principal tabulations is given below.

#### ESTABLISHMENTS WHOSE 1929 BUSINESS WAS \$25,000 OR MORE

**Table 1.**—There are shown in this table the five principal items which were reported on all schedules, (1) value of construction business handled under general contract or directly for owners, (2) value of business handled under subcontract, (3) value of subcontract work let, (4) total annual wages paid for skilled and unskilled construction labor, and (5) total cost, delivered on the job, of materials furnished and used by reporting establishments. No report was considered complete for tabulation unless all of these five items were reported. These figures are presented by classes of establishments and by size of business

groups for all general contractors (including operative builders) and all subcontractors.

In connection with this table it is important to note the distinction here made between *construction business* handled under general contract or directly for owners and under subcontract, and *construction work done* as explained by the definitions of these terms on page 8.

The distinction between business under general contract and that under subcontract is made only in Tables 1 and 2. In all other tables the combined total business is used. In Table 9, however, the cost of each material per \$1,000 of construction work done by reporting establishments is based upon a net figure derived by subtracting the value of subcontract work let from the total value of construction business. In Table 10, also, the indicated per cent of all business which was done by own force refers to a similar net figure.

**Table 2.**—This table gives an analysis of the construction business of reporting establishments, by class of ownership and by type of construction work. The total value of the principal items in Table 1 is shown at the head of the respective sections of this table, together with that part of the total for which no further distribution was given, followed by the total distributed according to the minor detail called for on the construction schedule, and the indicated distribution.

The first section of the table shows the breakdown of the total value of all construction business reported, for all classes of establishments and for general contractors (including operative builders) and subcontractors, respectively, by indicated classes of ownership: Private, quasi-public or community, and public, with the latter group further analyzed as Federal, State, county or township, and municipal.

In the second section the total value of business handled under general contract or directly for owners is broken down by the principal classes of construction: Building, highways and streets, etc. The further analysis by subordinate classes of all buildings and all public works and utilities construction is also included in this section.

In the third section the detailed distribution of all business handled under subcontract is shown by individual types of work.

In this table, it will be noted that the number of establishments reporting the several classes of work do not add to the respective group totals. This apparent discrepancy is due to the fact that some establishments reported more than one item in a given breakdown.

**Table 3.**—The location of construction business in the home city, in the home State and elsewhere, is shown in this table. It should be noted in this connection that the figures shown for the value of construction business in the home State include that which

was reported as done in the home city, being a combination of the respective amounts called for on the schedule as the value of business in the home city and the value of business in the home State outside the home city. This table shows the tendency of establishments engaged in various lines of work to extend their field of operation outside the local area.

**Table 4.**—The actual location by States, of construction business outside the home State is shown in this table. In summarizing the reports of establishments which operated in the United States and in foreign countries, the entire report was retained only when it was impossible to segregate the various items of expenditure relating to the foreign work. In cases, however, in which all the business reported was done in foreign lands, the reports were not included in this tabulation. In using the figures in this table, this fact should be taken into account, since the foreign business here reported is only fragmentary and does not in any sense represent the total amount of business done by American contractors abroad.

**Table 5.**—Statistics are given of the number and salaries of proprietors and firm members and salaried employees, together with the sex distribution of the latter. The total amount of proprietors' salaries reported in this table may be subject to some question, owing to the fact that certain types of concerns do not pay their proprietors and firm members a stated salary. In the case of establishments engaged in construction work, however, particularly those conducted by individuals or as partnerships, the firm members themselves are more often than not actually working as superintendents, foremen, or highly skilled workmen, and therefore, may be considered as entitled to the regular pay received by that class of labor. The figures presented in this table are a summary of those actually reported on the schedules received.

Officers of incorporated companies who received regular salaries are included with "Officers and clerical staff" under "Salaried employees."

With regard to the number and salaries of "Superintendents, foremen, etc.," it was frequently reported that persons occupying such positions on construction jobs were included on the pay roll along with regular skilled and unskilled workmen, since they were from among the workmen and received only a slightly higher rate of pay for the added responsibility. Both numbers and salaries for this group are, on this account, probably less than might be expected.

It should be noted that in many instances the sex distribution of salaried employees was not reported. In practically all cases women are employed by construction establishments only in clerical capacities, although occasional instances have been found in which they held official or supervisory positions.

**Table 6.**—A double analysis is given of the cost of equipment purchased during 1929 and the inventory value at the end of the year, in comparison with the total reported value of all business handled and total wages paid skilled and unskilled workmen, by classes of establishments, and by percentage of equipment owned for all general contractors (including operative builders) and all subcontractors.

**Table 7.**—The figures here presented are a summary of statistics of employment as indicated by the pay roll nearest the 15th of each month, or nearest normal working day, and total wages paid during the year. This table shows not only the trend of employment by each class of establishments, but also gives a basis of comparison among the individual classes of both the general contracting and subcontracting groups. The distribution of these same totals by length of working week is also shown. See also explanation of "wages" on page 7.

**Table 8.**—A tabulation of expenditures reported by all establishments which gave the complete distribution called for on the construction schedule is presented in this table. A comparison of the individual items for the various classes of contractors will reveal their relative importance.

**Tables 9, 10, and 11.**—These three tables form a group which present various breakdowns of the cost of materials furnished and used by reporting establishments during 1929. A detailed explanation of the use of these tables has been presented in Chapter III. In the reports submitted by individual establishments the reported cost of materials did not include the cost of materials furnished and installed by subcontractors working for them on construction projects. Nevertheless, if these subcontractors had a business of over \$25,000 during 1929 and were among the establishments which made complete reports for the construction census, the cost of materials which they furnished and used in their own work is also included in these tabulations in the aggregate value of materials reported for their particular class of contractors and in the total for all classes of establishments.

It must be observed, however, that the breakdown of materials furnished and used by a particular class of contractors does not include materials furnished and installed by contractors of a different class group who did work for them under subcontract. For example, a building contractor, who sublet the furnishing and installation of plumbing work and fixtures to a subcontracting plumber, would not have reported the cost of these materials under the materials caption "Plumbing and gas-fitting equipment and supplies" in his own report. If, however, the particular subcontracting plumber made a report for the construction census the value of all materials which he furnished and used

in his work is included in the tabulation for his class of business as well as in the aggregate total for all establishments. Yet, it is impossible to allocate any part of this aggregate value of all plumbing fixtures to a particular class of general contractors for which some plumbing work may have been done under subcontract. The discussion of the breakdown of materials reported by building contractors found in Chapter III, page 28, will serve as a further illustration of this point.

**Table 9.**—This table gives the breakdown of materials reported by all classes of establishments, by all general contractors (including operative builders), and by all subcontractors, together with the percentage distribution of the combined total cost of materials reported by all classes of establishments, and the cost of each designated material per \$1,000 construction work done by all reporting establishments with their own forces.

This latter column, which shows the cost of each designated class of materials per thousand dollars construction work, gives a measure of the proportion of the cost of construction work done that is being spent for any given material. From these figures the market analyst, or a concern interested in the distribution of a specific material, should be able to determine the potentialities of the market for such material. By ascertaining the value of contract awards in any community during a given month, it is possible then to determine approximately how much of any given material will be needed for such work. Such information is essential for proper sales planning and sales control.

**Table 10.**—This table gives a further analysis of each designated kind of material, of which the cost amounted to as much as 1 per cent of the total cost of all materials furnished and used during 1929 by reporting establishments in the designated area. The percentage distribution of the total cost of the specified material among the enumerated classes of establishments is shown, as well as the ratio of the cost of such material to the total cost of all materials distributed by kind.

If greater detail is desired concerning the ratio of the cost of a designated material to the total value of construction business handled or the volume of work done by a given class of establishments, such information may be obtained by using the figures in the last column of this table, supplemented by the percentages in the footnote. A simple example of the use of these figures is given under the heading "Determining prospective demand" in Chapter III, page 30.

**Table 11.**—The total reported cost of all materials, the total cost of all materials of which the itemized distribution was given, and the percentage of coverage

represented by the distributed amounts are given in this table, together with the detailed distribution of the cost of each kind of material reported by the respective classes of establishments.

**ESTABLISHMENTS WHOSE 1929 BUSINESS  
WAS LESS THAN \$25,000**

**Table 12.**—The classification is here shown of all establishments according to type of work handled, and the number and percentage in each class actively

engaged in construction work during 1929. The number of establishments reporting their volume of business is also given, as well as the amount of business reported, the percentage so reporting, and the average amount of business per reporting establishment.

**Table 13.**—The distribution is here presented of the general contractors, subcontractors, and those whose type of work was unknown, who reported their volume of business, grouped according to the range of the volume of business.