

Chapter 1.—INTRODUCTION.

This volume gives in condensed form the statistics collected for the census of manufactures of 1919, and makes comparisons with prior censuses. It is designed to meet the requirements of those who desire statistics for the United States as a whole, for the separate industries, and for the states and principal cities. The general report and analytical tables are presented in Volume VIII. The detail statistics for the different industries in the states and cities and the totals for counties are given in the special reports for the states, Volume IX, and similar details for the principal industries are contained in the special reports for such industries in Volume X.

In addition to a brief description of census methods, this volume contains separate chapters dealing with particular subjects and four general tables which assemble the more important data in convenient form. These general tables form the closing chapters of the volume, and contain statistics as follows:

TABLE 222.—*Capital, expenses, value of products, persons engaged, and power and fuel, for the United States, by industries: 1919.*—This table is confined to the census of 1919, and gives a fairly complete presentation of the census returns for each industry. Further detail, namely, the number of wage earners employed, by months, appears in Chapter VIII, and the statistics as to establishments classified according to character of ownership, size, and prevailing hours of labor are covered by Chapters VI, VII, and IX, respectively.

TABLE 223.—*Comparative summary, by geographic divisions and states: 1919, 1914, 1909, and 1904.*—This table shows, for all industries combined, in each geographic division and state, for each of the four censuses, the number of establishments in each state, the average number of wage earners employed, primary horsepower, capital, the amount paid for wages, the cost of materials, and the value of products.

TABLE 224.—*Capital, expenses, value of products, persons engaged, and power and fuel, by geographic divisions and states: 1919.*—This table contains, for all industries combined in each state, practically the same data which are shown in Table 222 for each industry in the United States as a whole.

TABLE 225.—*Summary for industries: Comparative for the United States, by states for 1919.*—This table presents statistics for each of the industries reported in 1919, and shows for each industry, so far as available, comparative data for a number of census years; also separate totals for 1919, for all states which can be given without disclosing the operations of individual establishments. It shows the same items as are given in Table 223, with the addition of "value added by manufacture" (value of products less cost of materials).

Scope of census.—Census statistics of manufactures are compiled primarily for the purpose of showing the absolute and relative magnitude of the different branches of industry covered and their growth or decline. Incidentally, the effort is made to present data throwing light upon character of ownership, size of establishments, both by value of products and average number of wage earners, and germane subjects. When such use of the data is made it is imperative to note that owing to the limitations of the statistics, any attempt made to derive from the figures the average wages, cost of production, or profits is not only futile but misleading.

The census did not cover establishments which were idle during the entire year or those which had a value of products of less than \$500, nor the manufacturing done in educational, eleemosynary, and penal institutions.

The censuses of 1919, 1914, 1909, and 1904 were taken in conformity with the provision of the law which directs that the canvass shall "be confined to manufacturing establishments conducted under what is known as the factory system, exclusive of the so-called neighborhood, household, and hand industries." In arranging for the census a broad construction was given to the term "factory system." In order that the factory industries should be properly represented, it was decided to include all establishments, provided the annual products amounted to \$500.

Broadly speaking, the instructions were to exclude the following classes of establishments:

- (1) All establishments reporting products valued at less than \$500 during the census year.
- (2) Establishments doing only work for the use of the individual customer, such as custom tailoring, dressmaking, millinery, and shemaking establishments, the purpose being to confine the census to establishments producing for the general or the wholesale trade. Of course, this rule did not apply to large concerns manufacturing to meet special orders.
- (3) Establishments engaged in the building industries other than those manufacturing building materials for the general trade.
- (4) Establishments engaged in the so-called neighborhood industries and hand trades, such as blacksmithing, harness making, and tinsmithing, in which little, if any, power machinery is used, and which usually do only a local business.
- (5) Retail stores which incidentally manufacture on a small scale, particularly where it is impossible to distinguish the data relating to the manufacturing business from those relating to the mercantile business.
- (6) Educational, eleemosynary, and penal institutions engaged in manufacturing industries.
- (7) Reports, however, were secured in 1919, and a special tabulation made of custom flour, feed, and grist mills and sawmills grinding or sawing for toll or for local consumption exclusively, but the statistics are not included in the general tables, nor in the totals for manufacturing industries.

Most of the establishments of classes 3 and 4 would have been excluded in any case under the rule applying to those of class 2, their work being done mainly to individual order.

Although the manufacturing establishments operated by the Federal Government were canvassed, the data are not included with those for other manufacturing establishments, but are presented separately on page 15.

Special agents in different parts of the United States did not in every case interpret these instructions exactly alike. The magnitude of the totals other than those for the number of establishments, however, would not be materially affected by differences in interpretation of the instructions, since the establishments as to which doubt might arise in nearly all cases are small. Table 2 does not give the totals for censuses prior to 1904, but comparisons for the earlier censuses are made in Table 3. The comparability of the statistics has been preserved by the use, so far as possible, of the same form of schedule at the different censuses. Some unimportant changes were made in the form for 1909, principally in the inquiries concerning employees. The same form was used for 1909, 1914, and 1919, except that the schedules for 1914 and 1919 contained no inquiry concerning amounts expended for rent of offices or machinery, for royalties, use of patents, insurance, ordinary repairs, advertising, traveling expenses, and other sundries. These items of expense were not deemed necessary in order to determine the magnitude of the different industries and their progress from census to census. The schedule for 1919 also contained an inquiry as to the number of male and female wage earners employed by months (see Table 212, p. 404).

The establishment.—As a rule, the term "establishment" represents a single plant or factory, but in some cases it represents two or more plants which were operated under a common ownership or for which one set of books of account was kept. If, however, the plants constituting an establishment as thus defined were not all located within the same city, county, or state, separate reports were secured in order that the figures for each plant might be included in the statistics for the city, county, or state in which it was located. Statistics for counties were not presented separately in 1914. In some instances separate reports were secured for different industries carried on in the same establishment.

Period covered.—The returns relate to the calendar year 1919, or the business year which corresponded most nearly to that calendar year, and cover a year's operations, except for establishments which began or discontinued business during the year.

Statistics of capital.—*Description of inquiry.*—The census act of 1919, like those for prior censuses, directed that the schedule for manufacturing establishments should include an inquiry concerning capital. The following form of inquiry, which was substantially the same as that employed at the censuses of 1904, 1909, and 1914, was used at the census of 1919.

Amount of capital actually invested—owned and borrowed.—The answer should show the total amount of capital, both owned and borrowed, on the last day of the business year reported. All the items of fixed and live capital may be taken at the amounts carried on the books. If land or buildings are rented, that fact should be stated and no value given. If a part of the land or buildings is owned, the remainder being rented, that fact should be so stated and only the value of the owned property given. Do not include securities and loans representing investments in other enterprises.

Land, buildings, machinery, and tools.....	\$
Materials, stocks in process, finished products, fuel, and miscellaneous supplies.....
Cash, bills receivable, and sundries.....
Total.....

Borrowed and rented capital.—It will be noted that this form of inquiry regarding capital calls for borrowed capital as well as for that owned, if invested in the business covered by the report. In other words, the amount of the various classes of assets is called for without any deduction on account of liabilities whether current or of a more or less permanent character. Capital borrowed for constructing plants or for conducting business is just as truly employed in the manufacturing industry as capital owned and similarly invested.

The census schedule did not call for the value of rented property used by manufacturers, but the amount paid for rent of the factory is shown as a separate item in Table 222.

Classes of capital not distinguished in tables.—The inquiry on the schedules for 1914 and 1919 called for three principal classes of capital separately. The distinction of these three classes was made with a view to conveying a correct understanding of what should be included in the total for all capital. Although a majority of the establishments reported separate amounts for the three items, many failed to distinguish them and in many other cases the separation was an estimate only. In view of these conditions, it was not deemed advisable to present the statistics for the three classes of capital separately. The census reports, therefore, show only the totals for capital.

Defectiveness of statistics of capital.—The statistics of capital have been frequently referred to in the reports of previous censuses as defective, and it has been recommended by the census authorities that the inquiry should be omitted from the schedule. There are, of course, some establishments which have accounting systems, and a correct return for capital can be made, but this is not true of the great majority canvassed, and it is not thought that the figures for capital show the actual amount of the capital invested in manufacturing enterprises.

Some of the reasons why it can not be expected that uniform returns as to capital will be secured by census methods may be briefly mentioned:

- (1) Many concerns have no capital accounts whatever.
- (2) Capital invested in buildings and machinery depreciates as the result of wear and tear unless maintained by further expenditure. Many establishments make no allowances for depreciation on their books, and have no definite idea as to the relation between the original cost or value of buildings and machinery and their present value, and often do not know what it would cost to reproduce such property either wholly new or in its actual condition.
- (3) The invention of new machinery, the opening up of new supplies of raw material, or other changes in conditions of production, or changes in demand for the class of goods manufactured, may render almost worthless an investment in a manufacturing enterprise or greatly reduce its value.
- (4) The proprietors of many manufacturing establishments have purchased them as going concerns. In such cases they are likely to enter on their books as the value of the property the amount paid for it, which may bear no relation whatever to the original investment, or to the present physical valuation of the property, or to the cost of reproducing it.
- (5) Some manufacturing corporations have issued capital stock and other securities in excess of the actual cost of their properties and assets, or even in excess of the capitalization of the present earning capacity of their plants according to prevailing capitalization rates. In such cases it frequently happens that an arbitrary value is assigned to the assets of the corporation in order to balance its securities, and this arbitrary value is likely to be reported to the Census Bureau rather than the actual value.

In view of these and other difficulties encountered in obtaining statistics of capital, it is proper to say that the statistics as published in the present census report and in previous census reports have no great significance. They may show an approximation of the amounts of capital actually invested in different industries or in different localities, but it is doubtful if they furnish a correct measure of the increase from census to census in the amount of capital invested in all industries combined or in any particular industry. Changes in the method of calculating capital, or in the ownership or in the form of organization of an establishment, may result in the reporting of a much larger or much smaller amount at one census than at another without any corresponding change in the actual investment. The percentages of increase or decrease in the capital reported are in many cases inconsistent with the percentages of increase or decrease in value of products, value added by manufacture, number of wage earners, and other items, which leads to the conclusion that the figures for capital are not fairly comparable. There are, of course, good reasons why in some cases the statistics of capital should show a movement from census to census different from that of other items covered by the census inquiry, but these reasons do not explain all the differences in the movements appearing in the statistics.

Rent and taxes.—The rent reported is confined to that paid for "factory or works" and does not include that paid for other buildings or offices. The taxes include internal revenue, corporation income tax, and state, county, and local taxes. In some instances the amount of the corporation income tax for 1919 had not been ascertained when the report was prepared and the amount paid for 1918 was given. In the manufacture of distilled liquor the amount of internal-revenue tax greatly exceeds the cost of manufacture. In this and other industries subject to the tax, its inclusion greatly increases the value of the product.

Amount paid for contract work.—It is the practice of manufacturers in some industries to have work done under contract by persons who do not work in the factory of the establishment reporting. This practice is common in the clothing industry and in the manufacture of gloves, shoes, and other products where the work is supervised by subcontractors or done at the factories or homes of the persons contracted with. The amounts paid for such work represent wages almost entirely, but since it was not paid to the regular employees of the manufacturer reporting it is not included in the amount paid as wages, but is shown as a separate item under "contract work" in Table 222. Reports, however, for establishments engaged on contract work for others, where the materials are furnished by the establishments for which the work is done, will show the number of employees and their wages.

Materials.—The following instructions were given in regard to the inquiry concerning materials:

Materials, mill supplies, and fuel: Total cost of all used during the year covered by this report.—This inquiry relates to all materials and mill supplies of every description consumed in the process of manufacture, or used as containers, and all fuel, whether used for heat or power or in process of manufacture, as in making coke, gas, or pig iron. The data should embrace the cost only of these articles that were *actually used* during the year covered by the report. The cost of materials produced in the plant itself and used by it for further manufactures should not be duplicated. If freight paid on materials is kept in a separate account, enter in the proper line as called for; otherwise include the cost in answers to the first two items.

In addition to the inquiry in the general schedule used for every manufacturing establishment, there were in various special schedules used for certain industries inquiries regarding the quantity and cost of specific materials used.

The total cost of materials as shown in the census reports includes not only that of materials which become component parts of the product, but also that of materials essential to production by machinery, such as fuel and lubricants, as well as that of packing boxes, cans, crates, etc.

In many cases the reports gave the cost of materials used as delivered, while in other cases the freight charges paid by the manufacturers on materials were reported as a separate item.

The schedule called for the cost of materials actually used during the year, which may be entirely different from that of materials purchased during the year.

The total cost of materials as shown in the census reports represents the sum of the amounts reported by all establishments. There is extensive duplication in this total, due to the frequent use of the products of one establishment as the materials of another.

Value of products and value added to materials by manufacture.—The schedule for the census of 1919 contained the following instructions for the reply to the inquiry as to value of products:

Products: Value of products and work performed during the year.—Give the selling value at the factory or works, and account for all products *manufactured* during the year (whether sold or not), including by-products. The principal products should be enumerated separately and the total quantity and value given for each. The value should include that of the containers, if sold with the goods. "All other products manufactured during the year" should include the total value of all products other than those for which separate values are given. Amounts received for work done on materials furnished by others should always be shown separately as "Contract work on materials furnished by others."

In addition to the inquiry in the general schedule, there were in various special schedules used for important industries inquiries regarding the quantity and value of specified products.

It will be noted that the schedule called for the selling value or price of the products at the factory. The value, if correctly reported, therefore, generally includes the profit of the manufacturer.

Some manufacturers sell goods at prices which include delivery, but the special agents collecting the statistics were instructed in such cases to deduct freight and other delivery charges wherever possible. Products are often sold on the basis of a list price subject to large discounts, and the instructions were that such discounts should be deducted. In other words, every effort was made to secure the true net selling value of the products at the factory.

The inquiry called for the value of products manufactured during the year, and not the value of products sold during the year. The special agents were instructed, where the books of the manufacturers would permit, to ascertain accurately the value of the products manufactured by adding to the amount of sales the increase in the value of the stock of manufactured goods (or of stocks in process of manufacture) on hand at the end of the year as compared with the beginning of the year, or by deducting from the sales the decrease in such stocks.

In the case of the repair shops of steam and electric railroads, few if any products are manufactured for sale, but the work is done on the products manufactured solely or principally for the use and benefit of the railroads operating the shops. In such cases the value reported usually represents the operating cost or cost of production, as no market value can properly be assigned to the work or the products and as it is not customary for such establishments to make any allowance for profit in assigning a value to them.

Somewhat akin to the case of railroad repair shops is that of establishments which make partly finished products, or containers and auxiliary articles, for the use of other manufacturing establishments under the same ownership. A wood-pulp plant, for example, may make pulp for use in a paper factory owned by the same concern. In such cases the Bureau of the Census accepted as the value of products the "transfer value" assigned by the manufacturer. Such transfer value is based sometimes on market prices, sometimes on cost of manufacture, and sometimes on an arbitrary basis.

The value of products in the case of certain establishments represents merely the receipts for work performed on materials or commodities furnished by the establishment for which the work is done.

Value added to materials by manufacture.—Manufacturing is a transformation of materials. The economic importance of the processes of manufacture can not be judged correctly by the quantity or value of the products leaving the factories, but must be judged by the addition to the utility or to the money value of the materials. The value created by the manufacturing processes is in most cases substantially the difference between the cost of the materials and the value of the products. In comparing manufacturing industries with one another this relation of the value of finished products to the cost of materials must be constantly borne in mind. One industry may turn out products valued at the same amount as those turned out by another industry, but the manufacturing processes of one may have added several times as much value to the materials as the other.

For this reason statistics of "value added by manufacture" are presented. These statistics in each case represent the difference between the value of products and the cost of materials. The statistics of value added by manufacture are particularly valuable because they are almost entirely free from the duplication that appears in the total value of products. In a few industries, however, there is some duplication even in this item, due to the fact, already mentioned, that certain establishments do contract work on materials furnished by other establishments either in the same industry or in affiliated industries.

It is sometimes contended that in deducting cost of materials in order to arrive at "value added by manufacture," the cost of fuel, payments for rent of power, and the cost of lubricants and other "mill supplies" ought not to be treated as part of the cost of materials, but that the expenditures for these purposes should rather be looked upon as expenditures upon those materials which become a constituent part of the product. It was impossible to distinguish the cost of mill supplies from other materials, and in many cases the cost or part of the cost of fuel and power can not be separated. In particular, freight charges on all materials were often reported as a single item, including the charges on fuel and mill supplies, as well as on those materials which become a constituent part of the product. Consequently, it has been deemed preferable in all cases to deduct the total cost of materials, including fuel and mill supplies, from the value of products in calculating the value added by manufacture.

Duplication in value of products.—The value of products as reported by manufacturing establishments duplicates to a large extent the value of products of the industries producing raw materials—the agricultural, mining, and fishery industries. This, however, is by no means the only duplication involved in the census statistics of value of products. There is even greater duplication within the manufacturing industries themselves, due to the fact that the products of one establishment frequently become the materials for other establishments, and in small measure to "contract work," before mentioned. The total value of products, therefore, as shown in the census reports represents the sum of the amounts reported by all establishments.

Cost of manufacture and profits.—Census data do not show the entire cost of manufacture, and consequently can not be used to show profits. No account has been taken of depreciation, interest, rent of offices and buildings other than factory or works, insurance, ordinary repairs, advertising, and other sundry expenses. The sum of the reported expenses—salary and wage payments, cost of materials, and rent and taxes—can not therefore be taken as representing the total cost of production, nor be used, by comparison with value of products, to determine the profit or loss made by manufacturing establishments.

Primary horsepower.—This item represents the total primary power reported by the manufacturing establishments which includes the amount of rented power, principally electric. It does not include the electric power developed by the primary power of the establishments reporting, the inclusion of which would result in duplication.

Chapter II.—GENERAL SUMMARY.

Continental United States and noncontiguous territory: 1919.—Table 1 gives the more important figures for the manufactures of continental United States, and for Alaska, Hawaii, and Porto Rico. The statistics for Alaska, Hawaii, and Porto Rico include some small establishments peculiar to these territories which would be omitted from the canvass for continental United States.

TABLE 1.—CONTINENTAL UNITED STATES AND NONCONTIGUOUS TERRITORY: 1919.

	MANUFACTURING INDUSTRIES.				
	Total.	Continental United States.	Alaska.	Hawaii.	Porto Rico.
Number of establishments.....	291,367	290,105	147	496	619
Persons engaged.....	10,850,250	10,812,736	7,316	11,744	18,454
Proprietors and firm members.....	270,679	269,137	55	700	787
Salaried employees.....	1,450,670	1,447,227	686	1,075	1,682
Wage earners (average number).....	9,128,901	9,006,372	6,575	9,069	15,085
Primary horsepower.....	29,654,959	29,504,792	18,646	61,295	67,226
Capital.....	\$44,664,533,453	\$44,466,593,771	\$64,949,405	\$48,840,967	\$84,151,310
Salaries and wages.....	13,454,438,035	13,425,771,834	10,895,712	8,666,024	9,104,465
Salaries.....	2,898,795,876	2,892,371,494	2,056,260	2,029,261	2,338,861
Wages.....	10,555,642,159	10,533,400,340	8,839,452	6,636,763	6,766,604
Paid for contract work.....	467,014,272	464,403,700	2,447,002	34,820	157,781
Rent and taxes.....	2,305,847,617	2,291,412,446	1,577,501	10,662,930	2,194,740
Cost of materials.....	37,376,834,172	37,376,380,283	19,482,485	81,144,130	59,827,274
Value of products.....	62,678,177,262	62,418,078,773	41,495,243	133,096,412	85,506,834
Value added by manufacture ¹	25,141,343,090	25,041,698,400	22,012,758	51,952,282	25,679,560

¹ Value of products less cost of materials.

Comparative summary, continental United States.—Table 2 gives the general statistics for the United States for 1919, 1914, 1909, and 1904, with percentages of increase from census to census.

TABLE 2.—COMPARATIVE SUMMARY: 1919, 1914, 1909, AND 1904.

	MANUFACTURING INDUSTRIES.				PER CENT OF INCREASE. ¹		
	1919	1914	1909	1904	1914-1919	1909-1914	1904-1909
Number of establishments.....	290,105	275,791	268,491	216,180	5.2	2.7	24.2
Persons engaged.....	10,812,736	8,263,063	7,678,578	6,213,612	30.9	7.6	23.6
Proprietors and firm members.....	269,137	262,599	273,265	225,673	2.5	-3.9	21.1
Salaried employees.....	1,447,227	964,217	790,267	519,556	50.1	22.0	52.1
Wage earners (average number).....	9,096,372	7,036,247	6,615,046	5,468,883	29.3	6.4	21.0
Primary horsepower.....	29,504,792	22,437,072	18,075,576	13,487,707	31.5	20.1	38.5
Capital.....	\$44,466,593,771	\$22,790,979,937	\$18,428,269,706	\$12,675,580,874	65.1	25.7	45.4
Salaries and wages.....	13,425,771,834	5,354,249,384	4,305,612,851	3,184,884,275	150.7	22.6	37.1
Salaries.....	2,892,371,494	1,275,916,951	938,574,067	574,439,322	120.7	35.9	63.4
Wages.....	10,533,400,340	4,078,332,433	3,427,037,884	2,610,444,953	158.3	19.0	31.3
Paid for contract work.....	464,403,700	198,876,826	178,645,035	145,322,540	133.5	11.3	22.0
Rent and taxes.....	2,291,412,446	582,039,065	457,883,110	131,964,826	206.7	27.1
Cost of materials.....	37,376,380,283	14,368,088,831	12,142,790,878	8,500,207,810	100.1	18.3	42.9
Value of products.....	62,418,078,773	24,246,434,724	20,672,051,870	14,769,902,593	157.4	17.3	39.7
Value added by manufacture ²	25,041,698,490	9,878,345,893	8,529,260,992	6,293,604,753	153.5	15.8	35.5

¹ A minus sign (—) denotes decrease.

² Exclusive of internal revenue.

³ Value of products less cost of materials.

The totals in Table 2 show that the greatest increase in the manufacturing industries of the United States, as a whole, was during the five-year period 1914 to 1919, and that the smallest increase of the several census periods shown in the table was for the five

years from 1909 to 1914. The decrease of 3.9 per cent shown for proprietors and firm members from 1909 to 1914 is due to the increase in the number of establishments owned by corporations. The salaried officials of corporations are included in the total for "salaried employees," and no proprietors or firm members are reported for such establishments. It would be improper to infer that manufactures increased in volume during the three five-year periods covered by the table to the full extent indicated by the increase in value of materials consumed or in the value of products, since the increase shown in these items is certainly due in part to the increase that has taken place in the price of commodities. This is specially applicable to the census period 1914 to 1919, where the large increases in wages, cost of materials, and value of products are due in great measure to the changes in the industrial conditions brought about by the World War.

Comparison with earlier censuses.—In 1810 the Secretary of the Treasury made a report on the condition of manufactures in the United States and estimated that the value of products for 1809 exceeded \$120,000,000. An estimate based on the returns of the census of 1810 placed the value of the annual product at \$198,613,471. Further efforts to secure statistics of manufactures were made in 1820 and 1840, but the results were more or less unsatisfactory. In 1830 no such attempt was made. The census of 1850 was the first to present fairly complete statistics for manufactures. Each census from that time to 1890 was based in part on returns for the preceding calendar year and in part on returns for other twelve-month periods, mainly ending during the census year itself. The last four censuses cover principally returns for the preceding calendar year or for twelve-month periods ending within that year. In general, in this report, the statistics for all censuses are referred to by the year preceding that in which the census was taken.

The statistics of manufactures secured at the decennial censuses from 1850 to 1900, inclusive, covered the neighborhood, hand, and building industries, as well as the factory industries, while the reports for 1904, 1909, 1914, and 1919 were confined to factory industries. The statistics for 1899, obtained at the decennial census of 1900, although originally taken on the broader basis, have, for the purpose of comparison with later censuses, been reduced to the factory basis by eliminating as far as possible the neighborhood, hand, and building trades, but no such elimination is possible with respect to the earlier censuses. For this reason the statistics for years prior to 1899 are not comparable with those for 1904, 1909, 1914, and 1919. Nevertheless, for the purpose of showing in a rough way the movement during each decade since 1850, the summary in Table 3 is presented.

TABLE 3.—SUMMARY: 1840 TO 1919.

	Number of establishments.	Wage earners (average number).	Capital.	Wages.
FACTORIES AND HAND AND NEIGHBORHOOD INDUSTRIES.				
1849 (census of 1850).....	123,025	957,059	\$533,245,351	\$236,755,464
1859 (census of 1860).....	140,433	1,311,246	\$1,009,855,715	\$378,878,966
Per cent of increase, 1849 to 1859.....	14.1	37.0	89.4	60.0
1869 (census of 1870) (gold value).....	252,148	2,053,996	\$1,694,587,015	\$620,467,474
Per cent of increase, 1859 to 1869.....	79.6	56.6	67.8	63.8
1879 (census of 1880).....	253,852	2,732,595	\$2,790,272,606	\$947,953,795
Per cent of increase, 1869 to 1879.....	0.7	33.0	64.7	52.8
1889 (census of 1890).....	355,405	4,251,535	\$6,525,050,759	\$1,891,219,696
Per cent of increase, 1879 to 1889.....	40.0	55.6	133.8	99.5
1899 (census of 1900).....	512,191	5,306,143	\$9,613,834,390	\$2,320,938,168
Per cent of increase, 1889 to 1899.....	44.1	24.8	50.4	22.7
FACTORIES, EXCLUDING HAND AND NEIGHBORHOOD INDUSTRIES.				
1899 (census of 1900).....	207,514	4,712,763	\$8,075,256,496	\$2,008,361,119
1904 (census of 1905).....	216,180	5,468,383	\$12,675,580,574	\$2,610,444,953
Per cent of increase, 1899 to 1904.....	4.2	16.0	41.2	30.0
1909 (census of 1910).....	268,491	6,615,046	\$18,428,269,706	\$3,427,037,884
Per cent of increase, 1904 to 1909.....	24.2	21.0	45.4	31.3
Per cent of increase, 1899 to 1909.....	29.4	40.4	105.3	70.6
1914 (census of 1915).....	275,791	7,036,247	\$22,790,979,937	\$4,078,332,433
Per cent of increase, 1909 to 1914.....	2.7	6.4	23.7	19.0
Per cent of increase, 1904 to 1914.....	27.6	28.7	79.8	56.2
1919 (census of 1920).....	290,105	9,096,372	\$44,466,593,771	\$10,533,400,340
Per cent of increase, 1914 to 1919.....	5.2	29.3	95.1	158.3

TABLE 3.—SUMMARY: 1849 TO 1919—Continued.

	Cost of materials.	Value of products.	Value added by manufacture.
FACTORIES AND HAND AND NEIGHBORHOOD INDUSTRIES.			
1849 (census of 1850).....	\$555,123,882	\$1,019,106,616	\$463,982,734
1859 (census of 1860).....	\$1,031,605,092	\$1,885,861,676	\$854,256,584
Per cent of increase, 1849 to 1859.....	85.8	85.0	84.1
1869 (census of 1870) (gold value).....	\$1,990,741,794	\$3,385,860,354	\$1,395,118,560
Per cent of increase, 1859 to 1869.....	93.0	79.5	63.3
1879 (census of 1880).....	\$3,396,823,549	\$5,369,579,191	\$1,972,765,642
Per cent of increase, 1869 to 1879.....	70.6	58.6	41.4
1889 (census of 1890).....	\$5,162,013,878	\$9,372,378,843	\$4,210,364,965
Per cent of increase, 1879 to 1889.....	52.0	74.5	113.4
1899 (census of 1900).....	\$7,343,627,875	\$13,000,149,159	\$5,656,521,284
Per cent of increase, 1889 to 1899.....	42.3	38.7	34.3
FACTORIES, EXCLUDING HAND AND NEIGHBORHOOD INDUSTRIES.			
1899 (census of 1900).....	\$6,575,851,491	\$11,406,926,701	\$4,831,075,210
1904 (census of 1905).....	\$8,500,207,810	\$14,793,002,563	\$6,203,694,763
Per cent of increase, 1899 to 1904.....	29.3	29.7	30.3
1909 (census of 1910).....	\$12,142,790,878	\$20,672,051,870	\$8,529,260,092
Per cent of increase, 1904 to 1909.....	42.9	39.7	35.5
Per cent of increase, 1899 to 1909.....	84.7	81.2	76.5
1914 (census of 1915).....	\$14,368,088,831	\$24,246,434,724	\$9,878,345,893
Per cent of increase, 1909 to 1914.....	18.3	17.3	15.8
Per cent of increase, 1904 to 1914.....	69.0	63.9	57.0
1919 (census of 1920).....	\$37,376,380,283	\$62,418,078,773	\$25,041,698,490
Per cent of increase, 1914 to 1919.....	160.1	157.4	153.5

Two sets of figures are given in Table 3 for 1899, one including the neighborhood, hand, and building trades, in order that the data may be made comparable with those for preceding censuses, and the other excluding them in order to make the figures comparable with those for later censuses. The values and wages for 1869 have been reduced to a gold basis, inasmuch as the figures reported, because of the inflation of the currency at that time, would exaggerate the increase from 1859 to 1869, and underestimate the increase from 1869 to 1879.

Governmental manufacturing establishments.—Although the statistics for establishments operated by the Federal Government are not included in the general tables of this report nor in the totals for manufacturing industries, reports were secured from these establishments for 1919, 1914, and 1909, and the most important of the statistics thus secured are presented in Table 4.

Power laundries, dyeing and cleaning, custom gristmills, and custom sawmills.—Tables 5, 6, 7, and 8 show the general statistics for four industries, respectively, as follows: Power laundries; dyeing and cleaning; custom gristmills; and custom sawmills. The statistics for these, however, are not included in the general tables nor in the totals for manufacturing industries. Power laundries are shown for 1919, 1914, and 1909, and embrace only those using mechanical power and operated commercially. Dyeing and cleaning was taken in 1919 for the first time since the census omitted the hand trades and neighborhood industries. The dyeing and cleaning industry, however, includes only establishments operated by mechanical power.

Statistics for custom gristmills and custom sawmills have been taken only at decennial census periods, and include small mills grinding or sawing for toll or for local consumption. The statistics are shown for 1919 and 1909 only.

TABLE 4.—GOVERNMENTAL ESTABLISHMENTS—COMPARATIVE SUMMARY: 1919, 1914, AND 1909.

INDUSTRY.	Census year.	Number of establishments.	Wage earners (average number).	Wages.	Cost of materials.	Value of products.	Primary horsepower.
All industries.....	1919	88	106,763	\$151,363,384	\$174,299,743	\$396,402,001	172,998
	1914	43	35,236	30,155,362	29,188,223	67,412,017	74,515
	1909	40	32,519	28,215,976	21,752,072	55,919,143	47,787
Clothing, men's, including shirts.	1919	7	2,788	3,064,365	14,293,830	19,849,245	2,005
	1914	6	1,686	1,181,710	3,079,903	4,474,566	374
	1909	5	1,085	536,262	1,884,280	2,643,157	311
Firearms and ammunition...	1919	5	7,700	9,979,518	6,079,045	20,800,027	13,844
	1914	3	3,478	2,553,304	5,461,913	8,284,489	5,461
	1909	4	3,623	2,449,802	3,788,188	6,661,343	4,411
Ordnance and accessories....	1919	6	20,177	30,272,911	32,530,377	69,314,661	46,773
	1914	6	6,081	5,435,565	6,152,626	12,738,984	13,892
	1909	3	5,024	4,530,622	3,602,804	8,598,032	5,251
Printing and publishing.....	1919	13	11,672	15,801,026	7,348,201	24,820,722	5,015
	1914	9	7,474	7,430,849	2,350,767	10,830,447	5,038
	1909	8	7,647	7,638,689	2,296,513	10,895,364	3,884
Shipbuilding.....	1919	22	59,941	86,028,675	95,539,667	239,603,243	84,654
	1914	13	15,785	13,091,667	11,103,113	29,217,265	47,319
	1909	12	14,540	12,670,524	9,526,109	25,872,033	32,525
All other industries ¹	1919	35	4,485	6,216,889	18,508,623	22,014,103	20,707
	1914	6	732	462,267	1,039,901	1,857,266	2,431
	1909	8	600	390,077	654,178	1,249,214	1,405

¹ All other industries embrace: For 1919, aeroplanes, seaplanes, and airships, and parts, 4; artificial stone products, 1; automobile repairing, 3; bags, other than paper, 1; coffee, roasting and grinding, 1; explosives, 1; flour-mill and gristmill products, 2; foundry and machine-shop products, 1; gas, illuminating and heating, 1; hardware, 1; instruments, professional and scientific, 1; and lumber and timber products, 13. For 1914, bags, other than paper, 1; explosives, 2; gas, illuminating and heating, 1; hardware, 1; and instruments, professional and scientific, 1. For 1909, bags, other than paper, 1; cement, 1; explosives, 2; foundry and machine-shop products, 2; gas, illuminating and heating, 1; and instruments, professional and scientific, 1.

TABLE 5.—POWER LAUNDRIES—COMPARATIVE SUMMARY: 1919, 1914, AND 1909.

	1919	1914	1909	PER CENT OF INCREASE. ¹	
				1914-1919	1909-1914
Number of establishments.....	5,678	6,097	5,186	-6.9	17.6
Persons engaged.....	152,369	149,100	124,214	2.3	20.0
Proprietors and firm members.....	5,514	6,397	5,560	-13.8	15.1
Salaries employees.....	15,176	12,062	9,170	25.8	31.5
Wage earners (average number).....	131,879	130,641	109,484	0.9	19.3
Primary horsepower.....	196,793	174,881	123,477	12.5	41.6
Capital.....	\$153,805,267	\$98,055,001	\$68,935,226	56.9	42.2
Salaries and wages.....	115,597,022	71,764,059	53,007,747	61.1	35.4
Salaries.....	22,698,185	12,292,815	8,180,769	84.6	50.3
Wages.....	92,898,837	59,471,244	44,826,978	56.2	32.7
Paid for contract work.....	1,554,364	374,448	239,090	315.1	55.6
Rent and taxes.....	6,730,569	4,104,933	2,776,871	64.0	47.8
Cost of materials.....	53,502,177	26,919,200	17,696,360	98.8	52.1
Amount received for work done.....	² 236,382,369	142,503,253	104,680,086	65.9	36.1

¹ A minus sign (-) denotes decrease.

² In addition, laundry work to the amount of \$319,268 was reported by manufacturers of clothing, shirts, etc.

TABLE 6.—DYEING AND CLEANING—SUMMARY: 1919.

	Number or amount.
Number of establishments.....	2, 156
Persons engaged.....	24, 934
Proprietors and firm members.....	2, 285
Salaried employees.....	3, 842
Wage earners (average number).....	18, 807
Primary horsepower.....	23, 946
Capital.....	\$28, 734, 049
Salaries and wages.....	23, 520, 907
Salaries.....	5, 275, 883
Wages.....	18, 245, 024
Paid for contract work.....	460, 600
Rent and taxes.....	2, 231, 379
Cost of materials.....	11, 801, 549
Amount received for work done.....	54, 421, 305

TABLE 7.—CUSTOM GRISTMILLS—COMPARATIVE SUMMARY: 1919 AND 1909.

	1919	1909	Per cent of increase, ¹ 1909-1919.
Number of establishments.....	10, 427	11, 961	-12. 8
Persons engaged.....	14, 828	22, 795	-35. 0
Proprietors and firm members.....	12, 449	15, 634	-20. 4
Salaried employees.....	245	147	66. 7
Wage earners (average number).....	2, 134	7, 014	-69. 6
Primary horsepower.....	218, 894	272, 763	-19. 7
Capital.....	\$28, 871, 215	\$21, 258, 510	35. 8
Salaries and wages.....	1, 954, 817	1, 186, 540	64. 7
Salaries.....	174, 881	47, 828	265. 6
Wages.....	1, 779, 936	1, 138, 712	56. 3
Cost of materials.....	78, 957, 395	46, 314, 868	70. 5
Value of products.....	94, 784, 528	55, 115, 553	72. 0
Value added by manufacture ²	15, 827, 133	8, 800, 685	79. 8

¹ A minus sign (-) denotes decrease.² Value of products less cost of materials.

TABLE 8.—CUSTOM SAWMILLS—COMPARATIVE SUMMARY: 1919 AND 1909.

	1919	1909	Per cent of increase, ¹ 1909-1919.
Number of establishments.....	5, 396	4, 133	30. 6
Persons engaged.....	10, 389	12, 836	-19. 1
Proprietors and firm members.....	7, 177	5, 792	25. 9
Salaried employees.....	39	44	-----
Wage earners (average number).....	3, 173	7, 000	-55. 2
Primary horsepower.....	130, 916	93, 280	40. 3
Capital.....	\$7, 254, 316	\$5, 655, 145	28. 3
Salaries and wages.....	2, 063, 625	1, 600, 152	21. 7
Salaries.....	10, 616	8, 900	19. 3
Wages.....	2, 053, 009	1, 687, 252	21. 7
Cost of materials.....	730, 640	97, 574	654. 9
Value of products.....	5, 562, 484	4, 515, 881	23. 2
Value added by manufacture ²	4, 825, 935	4, 418, 307	0. 2

¹ A minus sign (-) denotes decrease; percentages are omitted where base is less than 100.² Value of products less cost of materials.