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PART II

Estimates of the Value of Output

IN PART II the sources and derivation of the estimates of the value of output are described in such a way that each step in the estimating procedure and the reliability of the final estimates can be appraised. Section A discusses the *Census of Manufactures* and the problem of setting up detailed and comparable series for the different census years. It concludes with two comparisons: the detailed estimates for 1919 with those of Kuznets, and the grand total of finished commodities and construction materials for 1899 with the census estimate of the net value of manufactured products. Section B reviews the intercensal estimates for manufactured commodities in terms of the interpolating series and the criteria of selection and evaluation; Section C the estimates of nonmanufactured commodities. Section D describes the estimates for the years since 1919.

A CENSUS OF MANUFACTURES

The primary source of information on the production of manufactured commodities in the United States is the *Census of Manufactures,* taken decennially 1869–99 and quinquennially 1899–1919.[1] The successive

[1] Census volumes consulted include:
Ninth Census, 1870: Statistics of the Wealth and Industry of the United States; Compendium of the Ninth Census
Tenth Census, 1880: II, Manufactures of the United States; VIII, The Newspaper and Periodical Press; Alaska; Seal Islands; Shipbuilding; X, Petroleum, Coke, and Building Stones; XXII, Power and Machinery Employed in Manufactures, and the Ice Industry of the United States
Eleventh Census, 1890: Manufacturing Industries, Part I, Totals for State and Industries; Part III, Selected Industries
Twelfth Census, 1900: VII, Manufactures, Part I, United States by Industries; IX and X, Manufactures, Parts III and IV, Special Reports on Selected Industries
Census of Manufactures, 1905: Part I, United States by Industries; Parts III and IV, Selected Industries
Thirteenth Census, 1910: VIII, Manufactures, General Report and Analysis; X, Manufactures, Reports for Principal Industries
Census of Manufactures, 1914: II, Reports for Selected Industries and Detail Statistics for Industries, by States; Abstract of the Census of Manufactures, 1914
Fourteenth Census, 1920: VIII, Manufactures, General Report and Analytical Tables; X, Manufactures, Reports for Selected Industries; Abstract of the Census of Manufactures, 1919

censuses are fairly comparable in scope, coverage, and detail, and when not, pose no insuperable difficulties. Several hundred industries are reported separately in each census; and their products are consistently valued at selling prices, f.o.b. factory. All nongovernment manufacturing establishments with a value of product of $500 or more a year are included.[2]

A few imperfections in comparability are: First, some slight errors may be present in the data for 1909 as the census schedules were not edited, and those for the other census years were.[3] Second, the extent of manufacturers' cooperation in filing returns varied, particularly in the censuses prior to 1899. For example, the canvass for 1889 was closed before reports from all establishments had been obtained. However, for the most part, the missing returns were unimportant, and their omission affected the industry totals only slightly.[4]

Third, in 1899 and prior years the products of hand trades and custom establishments were included together with those of manufacturing establishments. But the 1904 census listed values for 1899 excluding such establishments; and it was possible to make similar adjustments for the earlier years on the basis of individual industry comparisons. The adjustments amounted to less than 3 percent of the total value of finished commodities. Though the corrections for 1889, 1879, and 1869 are almost certainly too small, based as they are on 1899 relationships, comparability is probably not affected appreciably.

Finally, the scope of the 1869 census was somewhat more restricted than those for later years and several smaller industries were not covered.[5] Moreover, it did not use special schedules or employ 'expert special agents', and the later censuses did. This lack of specialized approach suggests that the data for 1869 were less carefully compiled and are probably less comprehensive in coverage. Although it cannot be measured precisely, the undercoverage may have been as much as 5 percent. It may be

[2] The approximate importance of establishments with a value of product of less than $500 is suggested by the $30 million aggregate reported in 1899 for all such establishments, including some engaged in hand trades (Census Reports, VII, Twelfth Census of U. S. Manufactures, Part I, p. xlviii). Our estimate for all finished commodities and construction materials in 1899 is $6,372 million. Thus even the assumption that the entire $30 million belonged to these categories would imply an understatement of less than .5 percent.

[3] See Thirteenth Census, by H. Parker Willis (*Journal of Political Economy,* XXI, 7, pp. 577–92).

[4] *Abstract of the Eleventh Census: 1890,* 2d ed., p. 140.

[5] These can be identified by examining the detailed commodity data in Table II 1 and noting the entries of 'not reported'. There were few major omissions.

offset in part by our undercorrection for the removal of hand trades and custom establishments in 1869.

1 Census Commodity Data

We turn now to the commodity values derived from the census industry reports. Every effort was expended to make the values for each of the several thousand commodities in Table II 1 comparable from census year to census year. To achieve this, two types of adjustment often had to be applied.

The first involved the translation of industry output into commodity output. Industry output includes *all* products manufactured by plants assigned to an industry, whether or not these products ordinarily belong to the industry; whereas commodity output includes products produced by and belonging ordinarily to an industry as well as similar products manufactured by plants classified under other industries. The total value of products for the shoe industry, for example, would include such commodities as handbags and leather novelties produced in the industry, but would exclude shoes made in industries other than the shoe industry. The commodity total for shoes would include all shoes, no matter in which industry they were produced. Thus to pass from an industry to a commodity basis required a correction for products not normally belonging to an industry—'other' products; or for products similar to those manufactured in the industry but produced as incidental products in other industries—'secondary' products; or for both 'other' and 'secondary' products.

For most years and most products, commodity values could be obtained directly. When a particular census reported data on an industry basis alone, percentage adjustments were made on the basis of the closest census year for which 'other' or 'secondary' products were reported separately.

Since most of the adjustments were small, they are not itemized. However, for some industries they had to be based on data outside the period 1869–1919, i.e., for census years after 1919. Note A to Table II 1 shows the percentage effects of this procedure on the commodity group estimates for 1919. Only 8 of the 37 minor group totals were changed by as much as 3 percent. The major group totals—consumer perishable, semidurable, and durable, producer durable, and construction materials—were changed only 0.5, 1.2, 1.7, 1.0, and 1.8 percent respectively.

As an over-all check on the adequacy of the adjustments for 'other' and 'secondary' products, the grand commodity totals for each census year

(Table II 1) are compared with appropriate grand industry totals.[6] In view of the roughness of the adjustments for 'other' and 'secondary' products, the agreement is amazingly close. The largest dollar difference, $102 million in 1919, is less than .2 percent. The largest percentage difference, in 1869, is only 1 percent.

The second type of adjustment was occasioned by the failure of the census, particularly in the earlier years, to report commodity values in the same detail each year. Many commodities combined in some census reports we assigned to various commodity groups; and to establish comparability with the details for later years, such combinations had to be split. Usually the percentage apportionments for the closest census year for which the more detailed values were shown separately were applied to the combinations; occasionally more intricate computations had to be made.

Note B to Table II 1 lists the various combinations together with the corresponding percentage apportionments and the commodity groups to which each commodity was assigned. Unless otherwise specified, the percentages are based on data for the census year succeeding the final year noted in the column 'Census years in which estimated'. From the Note, in conjunction with Table II 1, the importance within each commodity group of the commodity values so estimated can be appraised. For example, for Group 8, shoes and other footwear, of the $541 million total for 1914, $51 million was estimated by apportioning various commodity combinations.

2 *Mixed Commodities*

With the detailed census data set up in comparable array, commodities could be assigned to appropriate groups.[7] Most could be assigned directly; but of many the uses were so diverse as to require further division before the group assignments could be made. A large number of food and

[6] The derivation of the comparable industry totals is shown in Table II 3. Besides itemizing the adjustments made in the census figures to establish comparability, this table distributes the Census industry data by major industrial groups.

	1869	1879	1889	1899	1904	1909	1914	1919
				(millions of dollars)				
Grand commodity total	3,845	5,091	8,059	11,391	14,793	20,633	24,268	62,520
Comparable grand industry total	3,882	5,096	8,108	11,407	14,794	20,672	24,246	62,418

[7] Our system of classification and the component commodity groups are described in Part I, Sec. A. The 37 groups are designated in Tables I 1 and II 1, and in all other tables presenting details by minor commodity groups.

textile products, for example, are in part further fabricated and in part destined for sale to consumers without additional fabrication. The allocations of these mixed commodities are shown in detail in Table II 2. Notes A, B, and C describe the techniques employed and make clear their limitations. Because of these inherent limitations Table II 1 was constructed so as to show separately the values for mixed commodities assigned to each group and their relative importance in each census year.

The accompanying tabulation gives the percentages that the commodities classified as mixed, and consequently specifically allocated, constituted of the major group totals in 1879, 1904, and 1919. From it or from

	1879	1904	1919
Consumer perishable	45.2	33.2	32.7
Consumer semidurable	30.8	18.4	25.6
Consumer durable	18.1	15.1	13.3
Producer durable	30.4	32.8	6.2
Construction materials	19.0	10.8	12.2

the percentages in Table II 1 for each minor group the importance of even a fairly sizable error in allocation can be gauged.[8] Thus for the major groups in the tabulation an assumed net error of 20 percent, very much larger than is likely, would change the perishable group by about 6 percent in 1904 and 1919, and 9 percent in 1879; and the other groups somewhat less.

3 *Comparisons with Other Estimates*

In this Section we compare our estimates with two other sets of data. The first comparison, with Kuznets' original estimates for 1919, can be pursued in as much detail as desired; the second, with the census estimate of 'net value of product for 1899', can be made only for the over-all total of finished commodities and construction materials for that year.

a *Kuznets' estimates for 1919*

At first glance, comparison with Kuznets' original estimates would seem to be somewhat spurious since the two sets were based on similar procedures and compiled essentially by the same investigators. However, five years elapsed between the two compilations, and no figures in our set—except for a few percentages applied to commodity combinations and mixed commodities—were taken directly from *Commodity Flow and*

[8] However, the high percentages for some of the minor groups do not necessarily imply a likelihood of substantial error. To gauge the error, Notes A, B, and C to Table II 2 must be consulted.

Capital Formation, Volume One. All transcriptions and the attendant decisions were made as independently as possible under the circumstances.

Differences between Kuznets' figures and ours may stem from a variety of causes. First, the degree of census detail was usually less (though occasionally the reverse was true) in 1919 and in earlier years than since. In Kuznets' volume 1929 was the base year. Consequently the data for 1929, or even for a later year if more detail was provided, were used to derive approximations for the years prior to 1929. Kuznets' 1919 commodity estimates were accordingly based in part on the greater detail available for later years.

In our study 1919 is both the base and the end year. Since the estimates extend back to 1869 it was thought preferable to make 1919 as comparable as possible with earlier years rather than to try to make 1919 alone more accurate. This decision precluded, except in the few instances described above, the use of data available solely for years more recent than 1919. However, careful comparisons show that neither the accuracy of our classification nor the adequacy of our estimates was appreciably reduced by the decision.[9]

A second source, quantitatively more important, of differences between the two sets of estimates is changes in the apportionment of mixed commodities. For the most part these reflect improvements made possible by additional information, such as the materials consumed data reported in the censuses for 1914 and 1919, or from reconsideration of the classification of the commodities in question. In small part they are due to our classification as completely finished of some mixed commodities that Kuznets allocated 90 percent or more to finished by applying approximate percentages derived from the *Distribution of Sales of Manufacturing Plants in 1929.*

Third, either for one or both reasons mentioned in the preceding paragraphs or because the new classification seemed more appropriate, we put some commodities in different groups from those to which Kuznets assigned them.

Finally, differences may arise because we include all manufacturing establishments with a gross value of product of more than $500. Kuznets excluded establishments with a value of product between $500 and

[9] For checking purposes a commodity by commodity comparison with Kuznets' estimates was made. Lack of space prevents the inclusion of the long note prepared as a result of this comparison. All statements made here concerning the relations between Kuznets' estimates and ours are based on this note.

$5,000 in 13 industries (see *Commodity Flow and Capital Formation*, Volume One, p. 17). As he says, however, the total deduction for the 13 industries amounted to less than $60 million, an exceedingly minor correction.

Although properly to appraise the quantitative differences between our estimates and Kuznets' requires comparison of specific commodities, approximate judgments as to relative reliability can be made by comparing minor groups. The following tabulation, which gives gross and net differences as well as brief explanations for them, provides a basis for such judgments. The gross difference is the absolute sum of all changes without regard to sign; the net difference is the actual difference between our group total and the comparable group total of Kuznets.[10]

	MINOR GROUP*	VALUE OF TOTAL OUTPUT 1919 (millions of dollars)	GROSS DIFFERENCE	NET DIFFERENCE	EXPLANATION
1a	Food & kindred products (1)	10,841	530	−220	Chiefly better classification & allocation. Only some $30 million added to our total owing to less precise allocation.
2	Cigars, cigarettes, & tobacco (2 & part of 8)	1,024	15	+9	Inclusion of establishments with products of $500–5,000 value, & better classification.
3	Drug, toilet, & household preparations (3 & part of 8)	691	150	−83	Net decrease of some $70 million due to improvements; thus the changes stemming from less precise classification almost canceled.
4	Magazines, newspapers, stationery & supplies & misc. paper products (4 & part of 6b)	480	175	−160	Chiefly better classification & allocation.
5a	Fuel & lighting products, mfd. (5a)	632	165	−100	Chiefly improvements. Only about $10 million added to our total owing to less precise allocation.

[10] In the basic commodity comparisons upon which the table is based, identity was assumed whenever a specific commodity, commodities, or aggregates of two or more commodities in the same minor group differed by less than 3 percent. Exceptions were made only when the absolute difference exceeded $5 million. Consequently the net differences in the table may not agree exactly with those obtained by a direct comparison of the group totals in Table II 1 with those in Tables I-4 and 5 of *Commodity Flow and Capital Formation*, Volume One.

	MINOR GROUP*	VALUE OF TOTAL OUTPUT 1919	GROSS DIFFERENCE	NET DIFFERENCE	EXPLANATION
	Caskets & coffins (6a)	...	64	−64	Now classified as unfinished since they constitute a part of the value of undertakers' services.
6	Dry goods & notions (7 & part of 8)	986	570	−100	Less precise estimates made our total about $200 million higher; remaining shifts of $370 million due to improvements.
7	Clothing & personal furnishings (9, 10, & part of 8)	3,866	145	−2	Improvements & added crudities about equal; &, as indicated by the small net difference, practically canceled.
8	Shoes & other footwear (11)	1,259	4	−4	A commodity omitted before 1919 because of difficulty of estimate.
9	Housefurnishings (semidurable) (12 & part of 8)	213	210	−155	Decrease of about $60 million due to added crudities of estimate; other changes due to improvements.
10	Toys, games, & sporting goods (13 & part of 6b)	161	225	−185	Net difference due to better classification; added crudities of about $40 million canceled.
11	Tires & tubes (14)	546	44	−44	Lack of data on 1 commodity, $11 million; remaining $33 million due to better classification.
12	Household furniture (15)	498	29	−29	Chiefly better allocation & classification.
13a	Heating & cooking apparatus & household appliances, except electrical (16, parts of 17 & 20)	351	95	+25	Improvements & added crudities about equal. Of the net difference, about $10 million due to poorer & about $15 million to better estimates.
13b	Electrical household appliances & supplies (part of 20)				
14a	Floor coverings (18)	370	180	+45	Except for $38 million decrease due to less precise classification, all changes due to improvements.
14b	Misc. housefurnishings (durable) (18)				

	MINOR GROUP*	VALUE OF TOTAL OUTPUT 1919	GROSS DIFFERENCE	NET DIFFERENCE	EXPLANATION
15	China & household utensils (19)	236	125	+60	Improvements & added crudities about equal. Of the net difference, about $50 million due to poorer and about $10 million to better estimates.
16	Musical instruments (22)	256	2	−2	Better classification.
17	Jewelry, silverware, clocks & watches (23)	305	5	+1	Chiefly better allocation & classification.
18	Printing & publishing: books (24)	133	...	...	Identical.
19	Luggage (25)	65	...	...	Identical.
20a	Motor vehicles (26)	1,364	...	...	Identical.
20b	Motor vehicle accessories (27)	211	−70	−70	Better estimate.
20c	Carriages & wagons (6 & 34a)	27	27	+27	New group; better classification.
21	Motorcycles & bicycles (28)	29	−11	−11	Chiefly better classification.
22	Pleasure craft (29)	5	−9	−9	Less complete estimate due to omission of pleasure craft of more than 5 gross tons.
23	Ophthalmic products & artificial limbs (30)	45	−14	−14	Probably better classification.
24	Monuments & tombstones (31)	73	31	+30	Better estimate.
25	Industrial machinery & equipment (32 & 34b)	1,918	510	+250	Chiefly less precise classification. Increase of $85 million & decrease of $125 million due to better classification. Increase of about $290 million due to poorer.
26	Electrical equipment, industrial & commercial (33)	457	150	+10	Chiefly better allocation & classification.
27	Farm equipment (34a)	395	335	−270	Increase of $17 million & decrease of $116 million due to improvements. Increase of $15 million & decrease of $187 million due to added crudities.

	MINOR GROUP*	VALUE OF TOTAL OUTPUT 1919	GROSS DIFFERENCE	NET DIFFERENCE	EXPLANATION
28	Office & store machinery & equipment (35)	153	70	−70	Chiefly better allocation & classification.
29	Office & store furniture & fixtures (36)	91	26	−12	Decrease of $6 million due to improvements. Increase of $7 million & decrease of $13 million due to crudities.
30	Locomotives & rr. cars (37)	550	52	−52	Parts excluded from present total.
31	Ships & boats (38)	1,390	387	+387	Our total includes all work done; original total included work done on completed vessels only.
32a	Business vehicles, motor (39)	380	...	...	Identical.
32b	Wagons (part of 34)	43	43	+43	New group.
33	Aircraft (40)	9	4	−4	Parts excluded from our total.
34	Professional & scientific equipment (41)	80	39	−3	Increase of $2 million & decrease of $20 million due to improvements. Increase of $16 million & decrease of $1 million due to added crudities.
35	Carpenters' & mechanics' tools (42)	208	118	+65	Chiefly better classification.
36	Misc. subsidiary durable equipment (43, 44)	360	400	65	Increase of about $206 million & decrease of $126 million due to improvements. Increase of $27 million & decrease of $42 million due to added crudities.
	Construction materials	3,366	960	−340	Increase of $200 million & decrease of $555 million due to improvements. Increase of $110 million & decrease of $95 million due to added crudities.

* The number in parentheses is Kuznets' group number corresponding to our grouping.

Several conclusions can be drawn from the tabulation. First, the gross differences are fairly large. Moreover, they usually reflect not a single large change but an aggregate of small ones. Second, the fact that for many groups the net differences are considerably less than the gross indicates a

tendency for the various changes to cancel one another and accounts for the similarity between our totals and Kuznets', especially when major commodity group totals are compared. For consumer perishables the *net* difference is $618 million, or 4.5 percent of our total; for consumer semidurables, $490 million, or 7.0 percent; for consumer durables, $53 million, or 1.3 percent; and for producer durables, $409 million, or 6.8 percent.

Finally, the tabulation reveals that changes due to improvements in the technique of measurement and in classification far exceed those due to less accurate allocation. With few exceptions, our group totals are at least as reliable as, and in many instances probably preferable to the original estimates. This does not mean, however, that they are devoid of crudities due to methods of estimating. Before the reliability of any group can be judged, the commodities included as well as the derivation of the specific commodity estimates must be examined carefully.

b *Census net value of manufactured products, 1899*

Although only our total of finished commodities and construction materials can be compared with the census net value of products, the comparison is in one respect more of a check than that with Kuznets' data: it is with an estimate made by a completely different approach.[11]

By the census definition the *net* value of manufactured products includes the value of all raw materials consumed in manufacturing and the entire value added to them by manufacturing. The sum of these two values is roughly equal to the difference between the gross value of products and the value of all partly manufactured materials consumed in the manufacturing process.[12] To get the required data, the census schedules for 1899 called for a classification of the two types of materials consumed: raw and partly manufactured. Raw was defined to include products of mines, forests, farms, and fisheries; partly manufactured, to include all manufactured or semimanufactured products used as materials by manufacturing establishments.

The tabulation of returns from the schedules made possible a first approximation of net value: $8,371 million. The census added $98 million to this approximation to allow for imported partly manufactured mate-

[11] For a similar comparison between Kuznets' estimates and the net values of manufactures for the census years 1919–33 see *Commodity Flow and Capital Formation,* Vol. One, pp. 19–26.

[12] Minor adjustments for mark-ups and for changes in inventories are needed to assure exact equality.

rials. Since these materials were not reported as products by any domestic establishment, this addition did not constitute duplication.

The difference between the final census estimate, $8,469 million, and our estimate, $6,372 million, of the value of finished commodities and construction materials (Table II 1) seems, at first glance, unduly large and indicative of errors in one estimate or both. But the two estimates are not really comparable. Our estimate excludes the value of repairs and servicing done in manufacturing establishments, and also several industries, the most important of which is manufactured gas. Moreover, the census estimate is based on the 1899 census data as originally reported: i.e., including custom establishments, mechanical and hand trades, some agricultural industries, and some construction industries; ours is based upon census data that exclude all these items. To make the two estimates comparable we have either to subtract items from the census or add to ours. The limitations of the data available for the adjustments necessitated a combination of the two methods.

Reconciliation of NBER Estimate of the Value of Output of Finished Commodities and Construction Materials with Census Estimate of *Net* Value of Manufactured Products for 1899 (millions of dollars)

NBER			CENSUS GROSS VALUE OF MFD. PRODUCTS	CENSUS MATERIALS PURCHASED IN PARTLY MFD. FORM	CENSUS NET VALUE OF MFD. PRODUCTS
Value of output of finished commodities & construction materials	6,372	Original census totals*	13,004	4,634	8,371
Add:		*Subtract:*			
Repairs & servicing done in mfg. establishments	260	Mechanical & hand trades	1,184	463	721
		Agric. industries (cotton compressing, cotton ginning, & tobacco stemming)	36	3	33
Custom establishments	304	Industries omitted in NBER estimates (gas, illuminating industry, & ordnance)	78	12	66
Construction industries (roofing, street constr. work)	59	*Add:* Imports of partly mfd. products*			98
Adj. totals	6,995		11,706	4,156	7,649

* *Twelfth Census*, VII, Manufactures, Part I, pp. cxxxvii, cxli.

The shortcomings of the reconciliation arise from crudities of certain figures in the table itself and from the impossibility of allowing quantitatively for other known incomparabilities. The deficiencies under the first head are minor. Additions to the NBER estimates are slightly too large because the value of roofing and street construction includes some construction materials already in the construction materials total. Moreover, the construction materials estimate itself contains some internal duplication. The adjustments to the basic census figures are inadequate because values for two very small agricultural industries, cotton cleaning and rehandling and hay and straw baling, were not subtracted, and because the addition to take care of imports should have been smaller by the amount of imports entering into all the classifications that were subtracted from the original census estimate.

Large differences arise from the incomparabilities that still remain. First, and most important, the census net value of products excludes only partly manufactured materials used in the manufacturing process; our value of output figure excludes also all unfinished products consumed in all other industries except construction, i.e., mining, trade, finance, etc. For this reason alone, we should expect the census *net* value estimate to be considerably higher than our value of output figure.

Second, the census stresses certain imperfections in its technique, particularly with respect to differentiating between raw and partly manufactured materials.[18] Its policy of classification yielded a conservative estimate of net value. This conservative bias is accentuated because the cost of partly manufactured materials to manufacturers is higher than their production values by the amount of transportation and other distributive charges. Consequently, the value of partly manufactured materials that the census deducted from the gross value of products was too large and the resulting net value too small.

Finally, the census estimate of net value includes the value of exported partly manufactured materials; our estimate of finished commodities and construction materials excludes them.

When all these factors are taken into consideration, it is apparent that the two sets of estimates roughly corroborate each other. Despite possible offsets arising from its conservative approach, the census net value ought to be several hundred million dollars higher than our value of output

[18] *Twelfth Census,* VII, Manufactures, Part I, p. cxli. Of course, there are similar difficulties involved in our classification of products. These are elaborated in Sec. 2 above.

total because of differences in definition. The actual difference, approximately $650 million, less than 10 percent, seems entirely reasonable.

B Intercensal Estimates

To make annual estimates that are as reliable as census year figures is of course impossible. But by the careful selection and combination of annual series, fairly reliable interpolators for most minor groups can be provided. Because the basic sources and materials, as well as their inherent limitations vary widely, the derivation of these interpolators is described in considerable detail.

1 The Data

Sources of annual data for the years prior to 1919 can be divided into two main classes: state materials and a heterogeneous classification including a wide variety of miscellaneous series. The relative homogeneity of the state materials, together with their direct relation to the state figures collected in the federal censuses, make it desirable to discuss them as a unit.

a *State materials*

To uncover the state data, annual reports of all states manufacturing 1 percent or more of the national total value of product in 1914 were examined. The reports for 23 states manufacturing 89.1 percent of the nation's output were supplemented by a finding list published in *Synopsis of Federal and State Statistical Laws and Reports,* by W. A. Countryman (19th Convention of Commissioners of State Labor Bureaus, Washington, D. C., April 28, 1903). Table 1 of this paper, a digest of laws and reports on manufactures, lists 31 states, 26 of which are said to have published figures on value of product. Since 7 of these were not among the 23 largest manufacturing states, the number of states included in our investigation was raised to 30 and the percentage coverage to 93.7.

Some of the states whose publications were examined did not collect data on value of product. Of the 10 largest states no annual figures were found for New York and California, while for Illinois, Michigan, Indiana, and Wisconsin, figures were given for a few scattered years alone, for too few industries, or were too scant in coverage to be of use. Nine of the remaining 13 states manufacturing 1 percent or more of the total value of product likewise provided few or no usable data. Moreover, several of the states tabulated by Countryman did little more than republish federal census data and over a dozen failed to provide sufficient continuous data.

Consequently, of the original 30 states—New York, Pennsylvania, Illinois, Ohio, Massachusetts, New Jersey, Michigan, Indiana, California, Wisconsin, Missouri, Connecticut, Minnesota, Maryland, Texas, Kansas, Iowa, North Carolina, Rhode Island, Virginia, Louisiana, Georgia, Washington, Nebraska, Tennessee, Maine, West Virginia, New Hampshire, Montana, and North Dakota—only 8 apparently collected annual statistics on manufactures for a period long enough to interpolate for at least one quinquennium. Table II 4 is designed to show not only the relative importance of these 8 states in total manufacturing but also the extent to which the figure for each state differs from that reported for the state by the federal census. Note A describes the nature and contents of the reports issued by each state.

The importance in total manufacturing is indicated roughly by the rank of the states in the federal census for 1914 and more precisely by the percentages in the last line of the table, ranging from 7 in 1889 to 26 in 1909. The fluctuations from 1909 to 1914 to 1919 are due to the absence of data for Pennsylvania in 1914, and for Ohio and New Jersey in 1919. The declines evidenced from 1909 to 1904 to 1899, although due partly to the changing composition of the sample, are due chiefly to less complete state censuses in the earlier years.

The variations in the coverage of the state data from census year to census year stand out conspicuously: that for Pennsylvania ranges from 13 to 100 percent, for Ohio from 42 to 77, and for Virginia from 21 to 100.[14] These variations can result from a change in the extensiveness of coverage, more or fewer industries being reported, or from a change in the intensiveness of coverage, more or fewer establishments within identical industries being reported. The accompanying tabulation is an attempt to separate the effects of these two causes of variation. Changes in extensiveness are eliminated, the percentages for each year referring solely to industries covered by *both* state and federal authorities. Since the percentages in this tabulation are much more stable than those in Table II 4, the state reports are apparently reasonably consistent with respect to intensity of coverage. Consequently, much of the variation in the percentages in Table II 4 arises from coverage of fewer industries by the states in the early years.

[14] Although 100 percent usually means that the state has accepted the reports of the federal census, comparison of years proximate to census years indicates that several states did achieve practically complete coverage.

Coverage in 8 States by State Agencies and by the United States Census of Manufactures, Comparable Industries, Census Years

	PERCENTAGE THAT STATE TOTAL IS OF FEDERAL					
	1889	1899	1904	1909	1914	1919
Pennsylvania		50	60	75		100
Ohio	*	70	85	85		
Massachusetts	75	85	95	100†	100†	100†
New Jersey		85	90	90	90	
Missouri		75	85	100†	100†	100
Connecticut			75			
Rhode Island		90‡	85‡	60‡		
Virginia		75‡	80	80	80	90

To measure the intensiveness of coverage by the various state agencies, the state totals are here compared with totals for comparable industries reported for the different states by the *Census of Manufactures*. The totals reported by the state agencies are the same as those in Table II 4. The figures with which they are compared, i.e., totals reported by the census for the industries reported by the state bureaus, are the same as those in Table II 4 only when the extensive coverage is identical. Otherwise, the percentages given here must be higher than those in it, because the totals reported by the census have been reduced for the purposes of this comparison. Percentages were rounded to the nearest number divisible by five.

* Scattered data, insufficient for meaningful comparison, were collected by the Ohio agency in 1889.

† Reflects state acceptance of the reports of the *Census of Manufactures*.

‡ Very few industries were reported. Since the comparison is confined to these industries, the ratios are not as meaningful as for states in which a great number of industries are reported. For Rhode Island, 10 industries were included in 1899 and 1904, 8 in 1909; and for Virginia, 10 in 1899.

The description thus far provides a synthetic picture of the state data that suggests important deficiencies. At best 8 states, covering only about one-fourth of total manufacturing, are included; geographically the sample contains no state in the lower south, middle west, or far west. Moreover, the picture lacks detail. Neither finished nor construction material industries were analyzed separately from all industries.

Although an industry by industry comparison of state and United States data would reveal the adequacy of the state figures for each minor group directly, such an appraisal would be incomplete, because for many industries either state and federal classifications are not strictly comparable or else at least one of the requisite figures is not reported at all.

It is possible, however, to make some industry comparisons and thus further to assay the state figures. Since the comparisons are inadequate for analyses by minor groups, they are made for a single year, 1909, and show only the extensiveness and intensiveness of state coverage of specified finished product and construction material industries (Table II 5). An outline of the derivation of the table will best indicate both its meaning and limitations.

First, the census year 1909 was chosen because data for 7 of the 8 states in the sample were available for that year. Other census years would have been less satisfactory both because one or more of the large states are absent, and, in the earlier years, because of the lack of detail.

Second, all essentially finished or construction material industries were listed; i.e., those in which finished commodities or construction materials are produced, with a value of products of $5 million or more. The $5 million limit meant excluding 26 of a possible 166 industries, but most of these would subsequently have been eliminated anyhow because comparable state classifications were lacking.

Third, the census figures for the specific industries in each of the 7 states in the sample were listed only if the state ranked fifth or better in the industry or produced at least 10 percent of total output. These criteria reduced the 140 industries originally selected to 110 and provided 249 entries. Unimportance of an industry in the 7 states was not the sole reason for this reduction; for 11 industries little or no detail by states was given in the federal census.

Fourth, all comparable industry figures that could be obtained from the state reports were listed. Since comparable figures were often lacking, because the states either did not collect any appropriate data at all, defined their industries differently, or grouped several similar industries together, the usable entries were reduced still further. Only the 85 industries and 134 state entries in Table II 5 remained. However, the value of product for these 85 industries constituted 84 percent of the total value for the original 166 industries.

The reductions resulting from steps (2), (3), and (4) indicate the difficulty of complete comparisons of federal and state data. But since the entries are much more important when considered in terms of value rather than number, Table II 5 is useful as evidence of both the extensiveness and intensiveness of the state coverage for finished and construction material industries.

The extensiveness is indicated by the number of industries included, approximately one-half of the possible total, and by their distribution among the major and minor commodity groups. They are well distributed: 15 are classifiable as perishable, 25 as semidurable, 18 as consumer durable, 17 as producer durable, and 10 as construction material industries. Moreover, all except one of the minor commodity groups are represented by at least one industry.

The intensiveness of coverage is suggested by the percentages that the

state industry totals are of corresponding national totals. The range and concentration of these percentages, entered for each state in column 6 of Table II 5, are shown in the accompanying frequency distribution.

Percentages that the Combined State Industry Totals are of Respective United States Industry Totals
Frequency Distribution

PERCENTAGE GROUP	NUMBER
0– 9.9	26
10–19.9	18
20–29.9	19
30–39.9	6
40–49.9	6
50 & over	6

Almost one-third of the state-national percentages are less than 10 percent; most of them, 63 out of a possible 81, are less than 30 percent. Although low percentages do not necessarily indicate nonrepresentativeness, they suggest a need for careful evaluation. This need is even more strongly suggested when the percentages are arranged by major groups. The combined state samples constitute 7.3 percent of the United States total for comparable industries making perishable commodities, 30.7 of semidurable, 16.8 of consumer durable, 22.5 of producer durable, and 17.9 of construction materials (Table II 5).

Thus it is obvious that neither singly nor collectively do the state samples provide ideal interpolating series. The lack of data from 2 of the 6 most important industrial states, the use of industries to represent commodities, the relative smallness of the samples, and to some extent their shifting coverage, and the impossibility of accurate tests of representativeness, all emphasize the need both for additional data and for some measure of the reliability of the sample for each minor group.

Since tests of reliability are important only for the series finally selected as interpolators, discussion is deferred to Section 2, which lists the series selected and attempts to evaluate their adequacy.

b *Miscellaneous sources*

Among the more important sources consulted were reports and special studies of the United States Departments of Agriculture, Commerce, Labor, and Interior, the Bureaus of Railway Economics, of Corporations, and of Internal Revenue, the Interstate Commerce Commission, the Federal Trade Commission, and the War Industries Board. Private sources included industrial and commodity monographs, trade association releases,

trade periodicals, and corporate reports. Since these sources are cited in Table II 6, Note B, detailed description would be superfluous. It suffices to mention that series were developed for 22 of the 44 commodity groups, and that several of the better series were for minor groups for which the state samples were especially poor.

Many of the miscellaneous series reflect modifications of data as reported. Quantities were multiplied by average prices; fiscal year figures were transformed into calendar year; and numerous minor adjustments were made to ensure consistency and comparability. Naturally these adjustments affect the adequacy of the resulting series; in fact, for some groups it is doubtful that the samples should be used for other than purely checking purposes. Yet, as will be brought out in Section 2, the movements of the miscellaneous series and those derived from state data were usually enough alike to inspire a fair degree of confidence in using them.

2 *Selection and Evaluation*

Table II 6 shows for each minor group the series finally selected as well as the complementary ones.[15] The notes to the table describe the components of each series briefly. Our first criterion of evaluation, the extensiveness and intensiveness of coverage, is likewise based on the information in Table II 6 and its notes, supplemented by the general comments in Section 1. Since it would be repetitive to describe the application of this criterion to every minor group, we take one group as an example. By adopting a similar procedure for any group in which he is especially interested, the reader can determine whether he agrees with our rating of a particular series. Minor Group 1a, Manufactured food and kindred products, is selected because almost every problem of evaluation is encountered.

Examination of Table II 6 reveals that there was a choice between the series based on state data and that compiled from data for various commodities. Inspection of the first series shows that at least four states are included in every census period except 1889–99, when only one is. This implies fair geographic extensiveness of coverage after 1899, and poor before. Note A to Table II 6 lists the industries included for each state. The immediate impression is one of good industrial extensiveness. Moreover, comparison of the industries included with the commodities that constitute the food group, listed for census years in Table II 1, reveals that every *important* commodity is included in the sample for 1914–19; sugar

[15] The term 'complementary' is applied to all series used for purposes of checking or corroborating the movements of the series finally selected.

alone is missing from 1899 to 1914; while before 1899 the sample is unsatisfactory. In short, industrial extensiveness of coverage was good after 1899, and poor before. Our over-all rating of the series based on state data, taking both geographic and industrial extensiveness into consideration, is fair for 1899–1919 and poor for 1889–99.[16]

The intensiveness of coverage of state data is much more difficult to appraise, since, as pointed out in Section 1, comparisons with federal census data cannot be accurate. A rough approximation, however, can be computed from Table II 5, which shows that the combined state coverage in 1909 for the 10 food industries there listed was only 6.3 percent. The lowness of this percentage suggests relatively poor intensiveness of coverage.

Extensiveness and intensiveness of coverage for the aggregate of miscellaneous commodity series can be determined from the descriptions of the individual series in Note B to Table II 6. For the food group both types of coverage seem good. Beverages and chocolate and confectionery products are the only important commodities not included directly or indirectly; and most of the series cover the entire United States. However, an additional element, the degree of artificiality, must be considered, because Note B indicates that most of the series are based on computations: either quantities are multiplied by not too comparable prices or fiscal year figures are roughly translated into calendar year figures. Moreover, such series as the Interstate Commerce Commission tonnage data and farm income from livestock represent manufacturers' output of finished foods only indirectly. Consequently, the rating of the aggregate for the miscellaneous food series must be reduced to fair, and should perhaps even be poor.

The above evidence indicates a slight margin of superiority for the state series 1899–1919, and a similar slight margin for the miscellaneous series 1889–99. This conclusion is confirmed by a second criterion: the stability of the census year ratios to the commodity group totals, measured by expressing each ratio as a percentage of the comparable ratio for the preceding census year (Table II 7). The period 1889–99 is not included in the averages because the interpolating data are relatively poor, and because it is ten years in length while the later periods are five.

In interpreting the entries in Table II 7 it must be kept in mind that although stable ratios suggest adequate interpolating series, they do not

[16] Since arithmetically accurate ratings are not feasible, we evaluate each aspect of the sample as good, fair, or poor. Similar designations are used for composite ratings.

necessarily prove their adequacy. Stability may be due to chance and intercensal movements of the sample completely at odds with the true movements. Instability, however, does imply inadequacy; for if the various series truly represented the census trend there would be no change whatsoever in the successive census-year ratios. Moreover, since our method of interpolation distributes differences in the ratios evenly over the intercensal period, the greater the instability of the ratios the greater the effect on the intercensal estimates.

The known inadequacies of most of the sample series make it reasonable to expect at least moderate changes in ratios computed at five and ten year intervals. Consequently, changes of less than 10 percent in five years were deemed small, and of less than 25 percent moderate. Only when the changes exceeded 25 percent was it thought necessary to review critically the rating of a series.

For the food group the percentage changes in the ratios of the series selected as the interpolator are small for 1904–09 and 1914–19, and moderate for 1899–1904 and 1909–14. Those in the ratios of the complementary series are small for 1904–09 and 1909–14, and moderate for 1899–1904 and 1914–19. These differences, however, were not believed sufficient to warrant modifying the earlier ratings of either series. For 1889–99 the smallness of the change in the ratios of the complementary series did suggest a reappraisal; but the evidence on coverage was so decisive as to outweigh the high degree of stability. Nor was the relative stability of the ratios of either series considered significant enough to justify raising either rating for 1889–99 from poor to fair.

As stated above, the degree of stability is of negative rather than positive assistance in evaluating a series. We sometimes lowered a rating because of great instability in the ratios, notably the series for Minor Groups 11 and 30; but we never raised a rating because of high stability.

The third criterion of evaluation is the correspondence between the annual movements of the various series. Since each series is directly related to the commodity group for which it was compiled, it is reasonable to assume that the correspondence between two or more provides some evidence upon which to appraise the reliability of each. But the evidence is crude if only because every series is usually defective in some way, implying distortion of some of the year to year movements. Moreover, since the series are rarely of equal merit they can hardly be expected to move identically.

We measured correspondence by computing the percentage changes

from year to year in the movement of each series. The difference in each year between the percentage changes in the interpolating and complementary series was then taken to indicate the degree of corroboration. For example, if one series showed a percentage increase of 2.2 and the other a percentage decrease of 1.1, the difference in movement is 3.3. The smaller this difference the better the correspondence.

After due consideration of the probable deficiencies in most of the samples it was arbitrarily assumed that differences between the interpolating and the complementary series of less than 10.0 were small enough to warrant classing the series as corresponding. But it is obvious that even so defined they will not correspond in all years, especially if they had previously been rated poor or fair. Consequently, it was decided to rate the correspondence satisfactory if six out of ten years were classifiable as corresponding. Standards may be more or less rigorous, but no matter how rigorous, Table II 8 provides merely a crude test of reliability and can be used only in conjunction with the other criteria of evaluation.

The data for the food group in Table II 8 are split into two periods, 1889–99 and 1899–1919, because a different interpolating series was selected for each period (see Table II 6). The correspondence from 1889 to 1899 is fair, the movements in six of the ten years being classifiable as corresponding; while that from 1899 to 1919 is good, 17 of a possible 20 annual movements corresponding. Thus application of the third criterion strengthens slightly our belief in the adequacy of the food group samples. The correspondence, however, is not considered sufficient to justify raising the earlier ratings.

The above procedure does not eliminate subjective evaluation. In fact, even its more mechanical phases were tempered by the knowledge and experience gained during the compilation of each series. The most significant criterion for rating a series obviously remains the relatively imprecise one of extensiveness and intensiveness of coverage.

The accompanying tabulation gives the final rating of the series used for interpolating each commodity group.[18] Since the ratings for 1889–99 are in most instances lower than the corresponding ones in later years, they are shown separately. Those for 1899–1919 are sufficiently uniform for each census period to make it unnecessary to provide separate ratings for the four periods included.

[18] The ratings refer to the probable reliability of each series as a measure of year-to-year changes.

FINAL RATING OF SERIES USED FOR INTERPOLATION*

1899–1919

Good (G)	2, 5b, 6, 8, 14a, 20a, 32a, CM
Fair (F)	1a, 3, 5a, 7, 9, 11, 12, 13a, 13b, 15, 17, 19, 20b, 20c, 24, 25a, 25b, 26, 28, 29, 30, 31, 32b, 35, 36
Poor (P)	1b, 4, 10, 14b, 16, 18, 21, 22, 23, 27, 33, 34

* Ratings were assigned also to Minor Groups 1b and 5b, both composed of nonmanufactured commodities. For the detailed steps in making the estimates for these groups see Section C.

1889–1899†

Good (G)	None
Fair (F)	2, 5b, 6, 7, 8, 14a, 30, CM
Poor (P)	1a, 1b, 3, 4, 5a, 9, 10, 11, 12, 13a, 14b, 15, 16, 17, 18, 19, 20c, 21, 22, 23, 24, 25, 26, 27, 28, 29, 31, 32b, 33, 34, 35, 36

† No rating is shown for Minor Groups 13b, 20a, 20b, 32a because few or no commodities in these groups were manufactured before 1899.

C NONMANUFACTURED COMMODITIES

Important in three groups—foods, fuels, and construction materials—nonmanufactured commodities include products of farms, fisheries, mines, and forests. Most of the estimates are based on data from the Department of Agriculture, and the Bureaus of Fisheries and Mines. The detailed figures together with descriptions of sources and methods are shown in Tables II 9, 10, and 11 and the notes to them.

1 Nonmanufactured Foods

a *Products of farms*

For agricultural foods *Gross Farm Income, Indexes of Farm Production and of Farm Prices in the United States, 1869–1937*, by Frederick Strauss and L. H. Bean (Department of Agriculture, Technical Bulletin 703, Dec. 1940) was especially helpful. From this monograph, hereafter referred to as Strauss and Bean, the decennial *Census of Agriculture*, and special crop reports of the Department of Agriculture farm income estimates could be compiled for almost every relevant crop and livestock product.[19]

[19] Lack of appropriate data prevented the computation of continuous estimates for several commodities; e.g., natural ice, honey, and maple sugar and sirup. For natural ice there were no satisfactory data; the combined values of honey and maple sugar and sirup amounted to $11 million in 1909 and $27 million in 1919 (14th Census, V, *Agriculture*, pp. 649, 849). Since the latter values constitute only .5 or .6 percent of the totals in Table II 9 and less than .2 percent of the estimates for all foods, their omission has little effect on the level of our estimates and probably even less on their fluctuations. It is likely that the omission of natural ice is also relatively unimportant.

The apportionment of the various agricultural foods between finished and unfinished presented problems similar to those involved in apportioning mixed manufactured commodities. Reliance was placed chiefly on the materials consumed method. The implications of this method are indicated in Note A to Table II 2; its application to specific groups of farm products is described in Note A to Table II 9.

The final estimates of finished farm products show long term movements fairly well, but may not measure year to year changes quite accurately, especially before 1900.[20] However, as these less reliable product estimates constitute at most only one-eighth of the perishable group total, the effect of even rather large errors would not be very great.

b *Products of fisheries*

Total values for edible fish for 1869, 1879, 1889, and 1908 (United States Censuses of the Fishery Industries) were interpolated and extrapolated on the basis of annual estimates of the catch in four important regions—New England, Middle Atlantic, Lake, and Pacific—and from occasional figures for other regions reported by the Bureau of Fisheries. The estimate of total catch was then allocated between finished and unfinished by means of the materials consumed method.

Because it was impossible to allow satisfactorily for wastage and because of the probable use of some edible fish as fertilizer, the level of the

[20] Since the compilation of our estimates, the Department of Agriculture has substantially completed its Income Parity Studies. Making use of these reports, many of which contain revised data back to 1909, as well as of many special sources, Harold Barger and Hans Landsberg of the National Bureau have refined and improved the production data for several crop and livestock series back to 1899 (*American Agriculture, 1899–1939: A Study of Output, Employment and Productivity,* National Bureau of Economic Research, 1942).

A review of the Barger-Landsberg series indicates that the ultimate effects of substituting their improved data would be relatively small. The revisions for the crops and products for which comparison was possible amounted to less than 10 percent in all except one instance; and even these differences showed a tendency to cancel when the values for the different commodities were totaled.

Despite the one exception, fluid milk, in which the revision gave values almost double those on which our estimate was based, the over-all effect of incorporating the Barger-Landsberg series would be to raise our total of finished nonmanufactured agricultural foods less than 10 percent. The effect on the total food group would be considerably smaller; while that on the perishable commodity group as a whole would average less than 2 percent. Year to year changes would hardly be influenced.

Because to incorporate the revised series would have occasioned laborious recalculations disproportionate to the improvements effected, we decided not to. But we advise the user of our estimates of nonmanufactured agricultural foods to bear in mind that they slightly understate the level of output.

final estimates for fresh fish destined for sale to ultimate consumers may be slightly too high. This slight exaggeration may be compensated in part by the possible failure of the various censuses of fisheries to achieve complete coverage. The year to year movements are believed to be fairly reliable.

c *Products of mines*

Annual values for the one food product here included, natural mineral waters, are from *Mineral Resources of the United States.*

2 *Nonmanufactured Fuels*

a *Products of mines*

Estimates were made for three products: anthracite coal, bituminous coal, and fuel briquets. Most of the data basic to these estimates were taken from *Mineral Resources of the United States.* The final estimates are believed to be tolerably good, except possibly those for bituminous coal, for which the apportionment between industrial (unfinished) and household (finished) was especially crude. The allocation for all years prior to 1915 was based upon that for 1915.

b *Products of forests*

Lack of data prevented the preparation of continuous estimates for firewood; but the few figures available give some idea of its importance. In 1880 consumption for domestic purposes amounted to about 141 million cords valued at close to $310 million; in 1908 it was apparently about 76 million cords with a value of about $225 million (*Consumption of Firewood in the United States,* Forest Service Circular 181, and *American Forests and Forest Products,* Department of Agriculture, Statistical Bulletin 21, Washington, D. C., 1928; issued Oct. 1927, revised March 1928, Table 213). These figures suggest a value approaching or, in prewar years, even exceeding that of coal destined for ultimate consumers.[21] Our failure to include firewood thus means a fairly serious deficiency in the fuel estimates, which the user should not forget.

[21] A recent Department of Agriculture publication, *Fuel Wood Used in the United States, 1630–1930* (Circular 641, Washington, D. C., Feb. 1942), provides additional evidence of the importance of firewood. The estimated total consumption by decades, in millions of cords, is: 1870–79, 1,407; 1880–89, 1,304; 1890–99, 1,087; 1900–09, 916; 1909–19, 913; and 1919–29, 746 (Table 2).

3 *Construction Materials*

a *Products of forests*

Estimates for lumber used in construction were pieced together by means of data from a wide variety of sources. Their reliability can be judged by consulting Note A to Table II 11. For reasons mentioned in the Note, the level of the final estimates is probably somewhat too high; there were no data on which satisfactorily to compute a downward adjustment. Our inability to make continuous estimates for certain miscellaneous lumber products, such as round timbers, poles, and the construction products of farms—the combined value of which runs to $25–100 million—compensates somewhat for the probable excess in the lumber estimates. The estimates for railroad cross ties are believed to be fairly reliable.

b *Products of mines*

Sand (building, paving, railroad ballast, and gravel) and crushed stone are the two major construction materials produced in mines. As indicated in Note A to Table II 11, values for the different types of sand and for crushed stone are reported in *Mineral Resources of the United States.* Since the values were small, no effort was made to extend any series beyond the earliest year for which each was reported. The year to year comparability of the totals is therefore reduced slightly.

D Derivation of the Estimates since 1919

1 *Adjustments to Kuznets' Estimates for 1919–1933*

Several shifts were made in the original commodity group classification in *Commodity Flow and Capital Formation* in order to make it more comparable with our estimates for the years before 1919. The adjustments were approximate. When differences in 1919 amounted to less than $5 million for any minor commodity group or when, by changing Kuznets' estimate we would have reduced its accuracy, no corrections were made. Only when our estimate for 1919 was an improvement over the corresponding one in *Commodity Flow* was the latter adjusted. For example, Kuznets' estimates for Minor Group 3, Drugs and household preparations, included a sizable amount of products of the chemicals, n.e.c., industry. Careful examination of the industry indicated that practically all the commodities there included should be classified as unfinished. Consequently, Kuznets' totals for the drug group were adjusted to exclude chemicals, n.e.c.

The corrections of Kuznets' modified estimates for exports and im-

ports were also rough.[22] Except those for three groups—food products, tractors, and construction materials—they were based on the 1929 relationships alone. Ratios of Kuznets' unadjusted value of domestic consumption to his unadjusted value of domestic output, computed for each minor group in 1929, were applied to his adjusted output values in every year, with the exception of the three groups already noted. For foods and tractors ratios were computed for every year; for construction materials they were computed for 1919 and 1929 and interpolated for the intervening years.

2 *Estimates for Years since 1933*

The 1935 and 1937 estimates of the value of the domestic consumption of manufactured commodities were based on the movement 1933–35 and 1935–37 of the value reported in the *Census of Manufactures* for 1935 and 1937. Separate estimates were made for each minor group. The sources for nonmanufactured commodities were *Agricultural Statistics, 1939*, p. 482 (for gross farm income from the sale of fruits, vegetables, nuts, dairy products, eggs, and chickens and the value of farm products retained for home consumption); and *Minerals Yearbook, seriatim* (for anthracite coal, coke, and fuel oil used for domestic purposes, also for nonmanufactured construction materials, crushed stone, sand and gravel).

The 1934, 1936, 1938, and tentative 1939 estimates were made only for the four major groups and construction materials.

a *Perishable*

The 1934 and 1936 estimates for perishable commodities consumed in the United States were based on the movement of the gross income of corporations manufacturing foods and kindred products, liquors and beverages, tobacco products, paper and pulp products, printing, publishing and allied products, petroleum and other mineral oil products, and chemicals and allied products (*Statistics of Income*); of gross farm income from the sale of fruits, vegetables, nuts, dairy products, eggs, and chickens; of the value of farm products retained for home consumption, and the value of anthracite coal and of coke used for domestic purposes. The estimate for 1938 was based on the sales of foods, paper and paper products (except boxes), newspapers and periodicals, newspapers (small),

[22] The procedure was based on the one Kuznets used in *Commodity Flow* to derive the original estimates. For most groups, exports and imports were compiled for 1929 alone; corrections for other years were based on the 1929 relationships.

chemicals, drugs, and petroleum and tobacco products (*Dun's Review,* May 1939), and on the farm income, coal, and coke totals.

For 1939 the tentative estimate was made from the movement of wholesale sales of beer, wine and liquors, drugs and drug sundries, groceries and foods, paper and products, and tobacco and its products (*Domestic Commerce,* Jan. 20, 1940); retail sales of filling stations (*ibid.,* Feb. 20, 1940); farm income (excluding the value of products retained for home consumption) and the wholesale value of all anthracite coal shipments (*Survey of Current Business,* Feb. 1939 and 1940).

b *Semidurable*

The 1934 and 1936 estimates for this major group were based on the movement of the gross income of corporations manufacturing textile mill products excluding woolen and worsted yarns, pulling, etc., leather and its manufactures, and rubber products (*Statistics of Income*). The 1938 sales of cotton textiles, silk and rayon goods, clothing, hosiery, shoes, and tires and other rubber goods (*Dun's Review,* May 1939) were used to extrapolate the 1937 estimate.

The preliminary 1939 estimate was based on the wholesale sales of amusement and sporting goods, dry goods, and clothing and furnishings (*Domestic Commerce,* Jan. 20, 1940).

c *Consumer durable*

The 1934 and 1936 estimates were based on the movement of the gross income of establishments manufacturing other wood products, household machinery and equipment; radios; musical, professional, and scientific instruments, and precious metal products and jewelry (*Statistics of Income*). The wholesale value of passenger cars sold in the United States (*Automobile Facts and Figures, 1939,* pp. 4, 9) was combined with the gross income totals to interpolate between the 1935 and 1937 estimates. For 1938 the passenger car value and the sales of furniture, electrical apparatus and appliances, and jewelry, watches, silverware, and findings (*Dun's Review,* May 1939) were used as an extrapolator. The 1939 estimate was based on the sales in the United States and Canada of passenger cars (Automobile Manufacturers' Association) and on wholesale sales of furniture and housefurnishings, jewelry and optical goods, and electrical goods (*Domestic Commerce,* Jan. 20, 1940).

d *Producer durable*

The value of producer durable commodities destined for domestic con-

sumption in 1934 and 1936 was estimated by means of the wholesale value of motor trucks sold in the United States (*Automobile Facts and Figures, 1939,* pp. 4, 9) and the gross income of corporations making locomotives and railroad equipment, factory machinery, agricultural machinery, electric machinery, miscellaneous machinery, office equipment and hardware, tools, etc. (*Statistics of Income*). The estimate for 1938 was based on the sales of motor trucks and of machinery, engines, and transportation equipment except automobiles and automotive accessories (*Dun's Review,* May 1939).

The tentative 1939 estimate was based upon the movement of wholesale sales of electrical goods and machinery equipment and supplies (*Domestic Commerce,* Jan. 20, 1940) and of the sales of trucks in the United States and Canada.

e *Construction materials*

The value of construction materials destined for domestic consumption in 1934 and 1936 was based on the gross income of sawmills; stone, clay and glass; paint and metal building materials corporations (*Statistics of Income*). The estimate for 1938 was based on sales of lumber and planing mill products, stone and stone products, clay and glass products, structural steel, heating, plumbing and air conditioning equipment, and paints, varnishes and lacquers (*Dun's Review,* May 1939). The estimate for 1939 of hardware, lumber and construction materials, metals and metal work, and plumbing and heating equipment was based on wholesale sales (*Domestic Commerce,* Jan. 20, 1940).

For all groups the tentative estimates for 1938 and 1939 were made before the 1939 *Census of Manufactures* and other detailed statistics had become available. Since the figures for all recent years will be superseded when the final report of the Department of Commerce (see Preface) is published, it was not thought worth while to attempt to improve the present estimates at this time. Inspection of the more detailed statistics suggests that there would be no changes sufficient to modify the conclusions reached in the analysis of movements over time (Part I, Sec. C).

TABLE II 1

Value of Manufactured Commodities, Census Years, 1869–1919
(thousands of dollars)

Major and Minor Commodity Groups

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
		FINISHED COMMODITIES								
		PERISHABLE								
		Minor Group 1 Food and Kindred Products								
I	36	Bread & other bakery products	36,797	65,628	128,037	174,843	268,774	395,594	491,616	1,150,940
I	44, 46	Canned fish & oysters, smoked fish, & salted & pickled fish	3,006	Not cov. by census	10,039	19,053	22,482	27,850	33,333	76,762
I	45	Canned & dried fruits & vegetables	4,514	14,643	24,845	46,947	75,227	92,641	151,960	392,425
I	61	Cheese	16,717	17,290	19,803	26,520	28,612	43,246	50,533	137,281
I	63	Chewing gum	(Included with I 80—Confectionery & Ice Cream)						17,243	53,430
I	65	Chocolate in cakes, sweetened or with nuts								43,052
		Milk chocolate								9,058
		Cocoa, powdered								9,423
		Other chocolate & cocoa products, except confectionery	423	607	1,969	4,508	6,711	10,438	16,761	3,115
		Finished chocolate & cocoa products made in other industries								647
I	74	Coffee, roasting & grinding	10,039	19,887	65,100	60,315	79,305	104,122	137,546	279,734
		Spice, roasting & grinding							4,442	11,146
I	80	Confectionery & ice cream	11,820	19,029	41,565	60,341	86,652	134,161	215,880	649,086
I	84	Cordials & flavoring sirups	198	317	1,821	2,016	3,359	9,250	14,701	44,970
I	122	Hominy and grits				2,567	8,455	12,509	15,036	9,249
		Oatmeal, breakfast food & all other cereal products	2,765	3,139	2,991	1,818	1,771	4,720	6,330	15,484
I	123	Breakfast foods made in Food preparations, n.e.s. industry		974	5,509	15,560	23,905	36,979	59,985	159,223
		Other food preparations for human consumption	1,544	514	2,908	8,212	12,611	23,999	36,210	86,103
		Macaroni, vermicelli & noodles		189	1,067	3,015	4,630	8,821	13,285	38,860
		Peanut butter		39	218	615	944	1,791	2,698	10,503
		Sweetening sirups other than cane	(Included with I 309—Sweetening sirup)					10,164	15,335	56,227

		Minor Group 1 Food and Kindred Products								
VII	188	Rum, whiskey & other distilled liquors	12,013	13,630	34,585	32,120	43,571	109,190	110,545	1,730
VII	189	Liquors, malt	55,261	99,845	180,539	234,048	294,766	370,233	436,637	376,563
VII	190	Liquors, vinous	2,165	2,110	2,769	6,371	10,798	12,079	15,462	16,218
VII	205	Mineral & soda waters	4,079	4,581	13,869	23,060	29,979	43,123	58,218	134,696
I	226	Oleomargarine	not reported	6,776	2,938	12,287	9,559	13,975	23,651	120,692
I	246	Pickles, preserves & sauces	1,658	3,211	13,061	31,329	30,933	41,557	60,137	155,961
I	263	Clean rice, fancy—head	not reported	2,281	4,873	6,355	12,157	17,400	16,435	70,649
I	272, 286	Sausage (incl. canned)			12,353	25,983	33,179	59,565	90,392	221,208
I	286	Fresh meat		249,941	252,169	342,970	398,163	578,485	769,384	1,642,462
	287	Cured meat			194,453	246,197	256,945	340,289	408,001	1,245,950
		Canned goods	75,286		18,734	19,187	16,115	15,346	26,418	96,904
		Meat puddings, scrapple, head cheese, etc.		39	220	621	953	2,510	4,488	10,050
		Edible meat products not made in slaughtering & meat packing industries		66	372	1,050	1,612	4,245	7,611	37,126
I	309	Sweetening sirup	3,050	3,886	3,077	5,991	6,804	(Included with I 123, sweetening sirups other than cane)		
I	331	Vinegar & cider	3,874	3,813	7,418	7,201	8,820	10,255	10,235	29,695
		Total, Commodities Classified Directly	245,749	532,435	1,047,302	1,421,100	1,777,792	2,534,537	3,320,508	7,396,622
VIII	17	Baking powders & yeast	275	3,956	5,949	13,269	16,300	15,547	16,208	25,019
I	40	Butter	not reported	5,622	34,721	81,623	109,226	173,361	212,587	508,293
I	79	Condensed & evaporated milk	not reported	597	1,969	9,768	16,671	28,282	52,784	282,968
I	120	Flavoring extracts	451	825	1,920	5,945	7,372	6,548	5,674	14,776

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
I	122	Flour: wheat, corn, rye, buckwheat & barley	332,135	370,125	364,454	354,636	482,643	529,141	498,182	1,255,226
I	123, 180	Lard, incl. lard compounds & substitutes	not reported	24,040	52,658	70,618	90,718	168,935	181,096	633,367
XIV	159	Ice, mfd.	125	266	2,384	6,706	12,175	22,070	31,096	69,398
I	235	Peanuts, grading, roasting, cleaning, shelling	829	1,642	5,373	4,979	6,567	8,804	13,509	32,842
VIII	269	Salt	1,117	1,107	1,170	1,696	1,613	2,240	3,221	7,570
I	308, 309, 310	Sugar, granulated, refined & brown	100,939	126,993	90,013	190,191	229,092	239,461	267,107	614,500
		Total, Minor Group 1	681,620	1,067,608	1,607,913	2,160,531	2,750,169	3,728,926	4,601,972	10,840,581
		% that Commodities Classified Directly form of Group Total	36.1	49.9	65.1	65.8	64.6	68.0	72.2	68.2
		Minor Group 2 Cigars, Cigarettes and Tobacco								
XIV	247	Pipes, tobacco	446	628	1,877	2,467	2,828	5,300	4,210	11,525
XI	319, 320	Cigars, cigarettes & tobacco: chewing, smoking, snuff & all other	71,762	116,773	195,537	263,713	331,112	416,695	490,165	1,012,933
		Total, Minor Group 2	72,208	117,401	197,414	266,180	333,940	421,995	494,375	1,024,458
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 3 Drug, Toilet and Household Preparations								
VIII	25	Bluing	107	401	531	669	789	1,248	1,258	2,847
VIII	95	Pharmaceutical metals & their salts							732	421
		Pills, tablets, powders, etc.		not reported	3,653	12,727	17,806	24,628	10,903	37,804
		Synthetic preparations							1,385	405
		Tinctures, fluid extracts, medicinal sirups, etc.							13,900	38,679
VIII	233	Patent medicines	13,104	11,834	26,292	48,073	60,731	68,290	83,455	162,474
VIII	240	Perfumes, cosmetics & toilet preparations	2,763	2,998	6,301	9,647	15,151	21,475	25,965	82,084
XIV	265	Druggists' & stationers' sundries	724	1,257	1,620	2,982	4,594	7,783	7,512	15,802

XIV	312	Surgical appliances	367	916	1,668	3,976	6,455	11,200	14,928	44,316
		Total, Commodities Classified Directly	17,065	17,406	40,065	78,074	105,526	134,624	160,038	384,832
VIII	24	Blacking, stains & dressings	583	1,062	2,067	3,210	4,233	5,998	7,042	18,020
VIII	66	Cleansing & polishing preparations	305	473	818	2,072	2,560	5,913	8,648	22,615
VIII	95	Alkaloids & derivatives	not reported		1,532	5,339	7,471	10,333	11,281	10,716
		Biological products	not reported		339	1,180	1,651	2,283	2,495	6,366
VIII	219	Castor oil	667	775	646	436	736	998	1,008	4,384
VIII	233	Patent compounds	1,618	1,461	3,247	5,937	7,501	8,434	10,321	28,969
VIII	294	Soap	17,628	20,530	34,201	41,464	56,024	87,783	99,255	215,405
		Total, Minor Group 3	37,866	41,707	82,915	137,712	185,702	256,366	300,088	691,307
		% that Commodities Classified Directly form of Group Total	45.1	41.7	48.3	56.7	56.8	52.5	53.3	55.7
		Minor Group 4 Magazines, Newspapers, Stationery and Supplies and Miscellaneous Paper Products								
XIV	8	Artists' materials	116	not reported separately	654	611	1,400	2,875	3,874	6,420
VIII	161	Ink, writing	301	432	927	1,063	1,546	2,059	2,290	6,172
VI	231	Playing cards	765	not reported	350	1,406	1,856	3,179	4,104	10,810
XIV	236	Pencils, lead	139	214	1,293	1,702	3,390	5,652	6,379	18,497
XIV	237	Pens, fountain & stylographic		not reported separately	333	856	1,967	3,347	6,504	15,633
III	239	Pens, steel	207	189	308	338	545	664	590	1,648
XIV	242	Phonograph needles	not reported separately			31	170	87	36	1,688
VI	254	Sheet music & books of music: published or printed & published		2,277	2,808	3,650	4,674	5,511	6,803	12,510

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
VI	255	Newspapers: subscriptions & sales Periodicals: subscriptions & sales	18,233	49,873	72,343	79,928	111,299	{84,439 {50,624	99,542 64,035	192,820 85,187
IV	266	Rules, ivory & wood	not reported	74	172	232	278	161	708	1,294
		Total, Commodities Classified Directly	19,761	53,059	79,188	89,817	127,125	158,598	194,865	352,679
VI	108	Envelopes	1,206	1,589	2,571	3,334	5,411	7,122	9,786	20,154
XIV	210	Mucilage, paste & other adhesives, n.e.s.	72	10	735	1,471	2,046	2,831	3,323	6,406
VI	230	Fine paper: writing	6,240	4,620	6,372	8,483	13,409	17,326	19,874	51,210
VI	231	All other paper goods, n.e.s.	1,528	795	2,172	8,116	10,715	18,353	23,689	49,388
		Total, Minor Group 4	28,807	60,073	91,038	111,221	158,706	204,230	251,537	479,837
		% that Commodities Classified Directly form of Group Total	68.6	88.3	87.0	80.8	80.1	77.7	77.5	73.5
		Minor Group 5 Fuel and Lighting Products *(a) Manufactured Fuel and Lighting Products*								
VIII	43	Candles	2,279	2,502	4,108	5,015	6,786	5,462	3,473	7,997
VIII	133	Gas-house coke, for sale	1,247	not reported	2,203	2,703	5,198	5,726	8,729	17,829
IV	200	Matches	3,535	4,661	2,191	5,998	5,639	11,337	12,538	18,470
		Total, Commodities Classified Directly	7,063	7,163	8,502	13,716	17,623	22,525	24,740	44,296
VIII	76	Coke	58	277	852	1,776	2,515	4,498	4,417	15,677
VIII	194, 241	Illuminating oils	22,580	32,447	50,298	72,453	88,625	91,711	89,062	188,530
		Lubricating oils	not reported			{3	82	453	3,800	37,008
		Gasoline				{105	1,025	5,877	37,562	346,314
		Total, Minor Group 5a	29,699	39,887	59,652	88,053	109,870	125,064	159,581	631,825

		% that Commodities Classified Directly form of Group Total	23.8	18.0	14.3	15.6	16.0	18.0	15.5	7.0
		Total, Major Group Perishables	850,200	1,326,676	2,038,932	2,763,697	3,538,387	4,736,581	5,807,553	13,668,008
		Total, Perishables Classified Directly	361,844	727,464	1,372,471	1,868,887	2,362,006	3,272,279	4,194,526	9,202,887
		% that Perishables Classified Directly form of Major Group Total	42.6	54.8	67.3	67.6	66.8	69.1	72.2	67.3
		SEMIDURABLE								
		Minor Group 6 Dry Goods and Notions								
XIV	78	Combs & hairpins, not made from metal or rubber	689	1,269	1,472	1,976	2,769	8,376	5,181	6,211
II	119	Flags & banners	not reported	134	510	1,160	956	2,218	3,792	5,454
XIV	146	Hairwork	1,396	1,039	1,762	1,382	1,752	11,025	3,277	6,909
II	203	Lacework, crocheted goods, handmade curtains of muslin & lace, ladies' & children's belts other than leather, & handkerchiefs	1,234	1,815	3,420	5,585	9,623	16,279	21,692	43,679
X	215	Pins, common or toilet	640	923	1,113	570	1,412	1,269	1,517	3,110
		Hairpins, metal				95	136	(Incl. with XIV 78)	641	1,650
		Safety pins				434	1,036	956	1,138	3,318
		Needles, other than knitting machine needles				611	751	670	798	2,040
VI	232	Paper patterns	not reported	691	508	757	3,051	3,518	4,514	7,090
V	250	Pocketbooks, purses & cardcases	1,141	1,821	2,229	2,569	3,879	3,736	3,835	13,823
II	284	Silk embroideries	13	45	81	58	112	485	34	128
		Silk laces, nets, veils, veiling	140	437	262	803	745	1,351	1,329	5,825
		Total, Commodities Classified Directly	5,253	8,174	11,357	16,000	26,222	49,883	47,748	99,237
XIV	5	Artificial flowers	712	1,333	2,472	1,713	1,429	6,530	5,500	12,264

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
XIV	42	Buttons	135	337	320	584	905	1,683	1,494	3,213
II	87,	Lace goods & nets	231	274	323	945	2,115	2,637	3,551	9,058
	88, 89	Cotton thread	4,904	4,641	6,742	5,008	5,559	6,810	8,459	20,851
		All other cotton woven goods	50,280	51,993	60,211	41,438	45,359	52,497	39,368	248,082
II	97	Dyeing & finishing textiles	5,608	12,314	8,455	8,225	3,782	7,121	12,573	47,905
XIV	110	Fancy articles, n.e.s.	252	3,371	6,216	8,108	10,722	11,106	15,825	55,112
XIV	111	Feathers & plumes	318	1,125	2,092	1,450	1,209	5,526	4,237	5,432
V	184	Leather goods, n.e.s.	no data	2,322	5,339	10,002	14,981	15,988	16,339	43,475
II	203	Embroideries	296	435	819	1,338	2,305	3,900	5,197	12,209
II	284	Silk ribbons	843	4,094	14,475	13,700	13,857	18,962	20,399	25,152
		Broadsilks	1,720	6,109	14,639	30,896	33,807	54,792	76,435	215,598
		Silk velvets & plushes	none		2,359	3,724	3,381	5,161	14,032	31,915
		Sewing & embroidery silks	157	504	1,855	2,130	2,553	2,456	3,335	4,629
IX	300	Statuary & art goods	(Incl. with XIV 110)				837	1,192	1,357	1,772
II	355, 356	Woolen & worsted woven goods, except shawls, blankets & carriage equipment	100,122	88,126	85,621	73,683	86,114	82,670	44,445	149,738
II	357	Mixed textiles	not reported	42,382			not reported separately			
		Total, Minor Group 6	170,831	227,534	223,295	218,944	255,137	328,914	320,294	985,642
		% that Commodities Classified Directly form of Group Total	3.1	3.6	5.1	7.3	10.3	15.2	14.9	10.1
		Minor Group 7 Clothing and Personal Furnishings								
II	70	Clothing, men's, regular factories	133,053	187,538	224,653	247,651	318,424	434,538	422,842	1,074,293
II	72	Clothing, women's, regular factories	12,653	31,389	66,851	156,272	242,894	377,205	468,029	1,151,611
II	77	Collars & cuffs	(Included with II 128)			9,078	7,250	9,924	12,566	35,452
II	86	Corsets	4,454	6,080	11,608	13,931	14,327	32,060	39,085	72,646
II	128	Furnishing goods, men's	(Incl. with II 70)	13,129	34,083	32,811	41,584	48,054	57,555	116,083
II	137x	Gloves & mittens, cloth								28,220

V	137	Gloves & mittens, leather, men's & boys'				12,588	14,657	18,349	16,850	36,944
		Gloves & mittens, leather, women's & children's	3,803	7,018	9,609	3,517	2,632	4,442	4,088	11,063
II	152	Hats & caps, other than felt, straw & wool	4,368	5,255	9,205	12,132	13,228	13,973	19,060	43,390
II	153	Hats, fur-felt	9,345	11,203	19,624	25,868	34,647	44,249	34,080	71,743
II	154	Hats, straw	3,509	4,222	7,394	9,746	10,606	21,946	27,028	32,650
II	155	Hats, wool-felt	7,672	9,195	5,756	3,945	2,858	4,551	2,082	5,486
II	176	Bathing suits		9	32	869	1,225	1,268	2,034	6,645
		Hosiery		10,893	19,162	27,420	44,113	69,382	98,099	308,662
		Gloves & mittens, knitted		530	1,935	4,244	5,556	7,310	10,520	19,530
		Knitted headwear (except infants')		785	1,476	1,002	1,775	3,373	3,456	3,996
		Leggings		286	85	249	620	521	314	63
		Scarfs & shawls		246	115	329	1,293	916	714	4,055
		Shirts & drawers	17,194	12,692	32,962	45,676	56,644	70,738	57,523	98,286
		Sweaters, sweater coats, jerseys, cardigan jackets, etc.		1,724	3,576	3,499	8,345	22,524	26,195	61,094
		Union suits		(None)		3,692	6,794	14,874	35,596	105,244
		All other fancy knit goods		113	760	951	2,119	2,428	3,197	16,322
		Undistributed knit goods made as secondary products in other industries		37	84	32	1,580	none	5,088	8,375
II	203	Women's neckwear	832	1,223	2,305	3,764	6,486	10,973	14,621	20,800
II	262	Regalia & society badges & emblems	613	800	3,140	3,015	4,701	6,060	5,101	8,933
XIV	265	Rubber clothing	651	1,130	1,456	2,680	4,129	6,996	6,800	8,824
II	281	Shirts	(Incl. with II 70)	1,796	33,082	48,222	52,161	84,335	93,366	199,166
II	355, 356	Shawls, all-wool woven	1,770	1,971	2,099	501	557	405	66	854
	—	Military goods	283			(Presumably included elsewhere)				
		Total, Commodities Classified Directly	200,200	327,264	491,052	673,684	901,205	1,311,394	1,465,955	3,550,430

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
XIV	127	Fur goods	7,183	6,648	15,997	21,609	30,971	46,650	36,739	145,070
II	203	Trimmed hats	2,741	4,031	7,595	12,402	21,370	36,151	48,173	118,309
II	313	Suspenders, garters & elastic woven goods	(Included with II 128, II 203, Millinery goods; and XIV 265, rubber goods, n.e.s.)					14,175	12,564	31,396
XIV	327	Umbrellas & canes	3,948	5,664	11,277	11,340	11,031	13,159	11,436	20,981
		Total, Minor Group 7	214,072	343,607	525,921	719,035	964,577	1,421,529	1,574,867	3,866,186
		% that Commodities Classified Directly form of Group Total	93.5	95.2	93.4	93.7	93.4	92.3	93.1	91.8
		Minor Group 8 Shoes and Other Footwear								
V	30	Boots & shoes, other than rubber	180,372	163,892	217,780	255,798	316,076	434,213	489,909	1,129,181
		Miscellaneous footwear		996	1,324	1,628	2,064	4,431	6,366	13,404
XIV	31	Boots & shoes, rubber	5,272	9,172	17,607	38,830	58,663	41,639	44,752	90,780
		Shoes, canvas, with rubber soles								25,177
		Total, Minor Group 8	185,644	174,060	236,711	296,256	376,803	480,283	541,027	1,258,542
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 9 House Furnishings (semidurable)								
XIV	38	Brooms, made from broom corn	6,340	5,015	6,722	8,777	10,023	13,818	13,486	28,977
XIV	39	Brushes, toilet	471	930	1,247	1,628	1,859	2,568	3,128	7,671
II	87,	Bedspreads & quilts								10,245
	88, 89	Cotton blankets	4,385	5,200	6,686	7,833	10,604	15,331	16,575	32,736
		Cotton table damask								9,544
		Sheets & pillow cases								3,369
		Lace curtains & bedspreads	336	398	469	1,373	3,075	3,834	5,163	9,125
II	158	Comforts & quilts	not reported	318	1,994	3,411	3,586	4,420	6,573	11,984
		Mops & dusters	50	192	1,206	2,062	2,168	2,673	3,991	5,217
		All other house-furnishing goods	no data	631	3,951	6,758	7,104	8,758	13,035	37,964

II	187	Linen woven goods	298	246	612	796	1,690	1,575	1,766	3,799
		Total, Commodities Classified Directly	11,880	12,930	22,887	32,638	40,109	52,977	63,717	160,631
II	87, 88, 89	Towels, towelling, wash cloths, turkish towels & terry weave	1,086	1,287	1,627	2,171	3,859	5,362	8,668	27,671
XIV	344	Window shades & fixtures	not reported	2,092	6,835	6,561	7,260	15,092	14,465	24,604
		Total, Minor Group 9	12,966	16,309	31,349	41,370	51,228	73,431	86,850	212,906
		% that Commodities Classified Directly form of Group Total	91.6	79.3	73.0	78.9	78.3	72.1	73.4	75.4
		Minor Group 10 Toys, Games and Sporting Goods								
IV	23	Billiard tables, bowling alleys & accessories	1,744	2,359	2,909	1,698	2,290	6,055	5,202	15,355
XII	52	Carriages & sleds, children's	1,523	1,784	4,352	4,560	6,772	9,358	12,355	24,672
III	91	Pocketknives	1,688	1,773	1,689	2,261	2,847	3,498	3,845	9,926
III	116	Firearms	5,460	5,611	2,859	5,326	8,095	7,881	10,316	29,212
XIV	118	Fireworks	880	1,391	593	1,785	1,987	2,269	2,296	4,630
XIV	243	Cameras	305	38	229	743	1,276	435	1,567	10,565
XIV	296	Sporting & athletic goods	811	1,346	2,343	3,138	6,083	9,556	11,996	21,592
XIV	322	Toys & games	617	1,663	3,990	4,267	5,935	8,792	14,321	45,337
		Total, Minor Group 10	13,028	15,965	18,964	23,778	35,285	47,844	61,898	161,292
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 11 Tires and Tubes								
XIV	265	Pneumatic tires & tubes, automobile	(Included with XIV 265, all other manufactures of rubber)				3,830	21,780	91,819	534,463
		Pneumatic tires & tubes, motorcycle & bicycle	(Included with XIV 265, all other manufactures of rubber)			13,309	2,847	3,402	5,193	11,876
		Total, Minor Group 11				13,309	6,677	25,182	97,012	546,339

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
		% that Commodities Classified Directly form of Group Total				0.0	0.0	0.0	0.0	0.0
		Total, Major Group Semidurables	596,541	777,475	1,036,240	1,312,692	1,689,707	2,377,183	2,681,948	7,030,907
		Total, Semidurables Classified Directly	461,005	538,393	780,971	1,042,356	1,379,624	1,942,381	2,180,345	5,230,132
		% that Semidurables Classified Directly form of Major Group Total	69.7	69.2	75.4	79.4	81.6	81.7	81.3	74.4
		CONSUMER DURABLE								
		Minor Group 12 Household Furniture								
IV	129	Household furniture	58,365	66,306	95,179	106,740	145,181	195,231	225,430	498,005
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 13a Heating and Cooking Apparatus and Household Appliances except Electrical								
IV	261	Refrigerators	561	1,715	4,473	5,270	7,282	10,593	14,775	25,431
III	278	Sewing machines, household	9,234	8,716	8,063	11,512	13,122	14,154	14,143	29,827
III	305	Stoves, ranges & fireless cookers	15,333	11,460	21,972	34,477	42,178	51,159	53,198	112,307
III	306	Stoves, gas & oil	not reported		2,221	4,759	8,025	13,357	22,281	57,519
XIV	334	Washing machines & clothes wringers	1,381	1,184	2,491	3,739	3,843	5,832	7,736	41,492
		Total, Minor Group 13a	26,509	23,075	39,220	59,757	74,450	95,095	112,133	266,576
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 13b Electrical Household Appliances and Supplies								
XIV	99	Dry primary batteries, including flashlight batteries		none		316	513	4,583	8,719	25,320
		Electrical household apparatus & appliances		none		312	351	1,733	3,465	38,748
		Total, Commodities Classified Directly				628	864	6,316	12,184	64,068

XIV	99	Incandescent lamps	none reported			1,230	2,434	5,500	6,072	20,176
		Total, Minor Group 13b				1,858	3,298	11,816	18,256	84,244
		% that Commodities Classified Directly form of Group Total				33.8	26.2	53.5	66.7	76.1
		Minor Group 14 House Furnishings (durable)								
		(a) Floor Coverings								
II	49	Rugs	63	106	2,629	7,138	10,593	17,881	23,551	51,989
II	50	Carpets, rag	1,202	1,031	2,050	2,099	2,294	3,071	3,333	6,138
II	175	Jute carpets & rugs	not reported	108	268	358	1,365	1,286	1,172	1,601
II	201	Mats & matting, from cocoa fiber, grass & coir	287	488	677	1,295	1,382	2,704	2,486	5,335
II	224	Oilcloth & linoleum, floor	3,896	4,397	3,587	7,221	9,606	15,331	16,972	41,366
		Total, Commodities Classified Directly	5,448	6,130	9,211	18,111	25,240	40,273	47,514	106,429
II	49	Carpets	16,676	24,207	34,756	28,876	36,747	38,719	32,628	44,968
		Total, Minor Group 14a	22,124	30,337	43,967	46,987	61,987	78,992	80,142	151,397
		% that Commodities Classified Directly form of Group Total	24.6	20.2	20.9	38.5	40.7	51.0	59.3	70.3
		(b) Miscellaneous House Furnishings								
X	19	Bells	1,301	1,356	1,047	1,587	1,272	1,222	1,234	1,060
III	91	Scissors, shears & clippers	1,008	1,059	1,009	1,351	1,700	2,090	2,307	10,160
IX	135	Lamps	1,556	1,570	2,794	1,499	1,248	3,523	3,583	4,959
		Chimneys				2,719	3,061			
II	147	Hammocks	not reported	193	105	840	783	1,012	812	1,103
II	158	Feather pillows & beds		212	1,326	2,268	2,385	2,940	4,359	8,129
X	178	Lamps, other than automobile lamps	799	2,696	3,242	6,657	6,984	10,599	8,472	18,090
XIV	202	Mattresses & spring beds, n.e.s.	not reported	5,047	14,971	17,633	27,255	35,152	39,852	90,703

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
II	225	Table, wall, shelf & stair oilcloth	not reported		855	1,289	2,893	3,540	5,639	6,025	12,530
II	355, 356	Blankets: All-wool woven, cotton-warp woven, & cotton-mixed woven	5,133		5,513	7,154	5,201	6,242	6,858	9,701	24,028
		Total, Commodities Classified Directly	9,798		18,501	32,937	42,648	54,470	69,035	76,345	170,762
II	87, 88, 89	Cotton tapestries	316		375	430	2,633	2,706	2,897	3,515	12,092
VIII	133	Receipts from sales of lamps & appliances by gas companies				none			790	2,478	5,050
IV	193	Looking-glass & picture frames	3,962		6,375	10,880	10,340	12,650	12,846	10,472	17,176
IX	207	Mirrors, framed & unframed	280		174	3,432	4,578	4,349	5,476	5,673	11,689
II	284	Silk upholstery & tapestries	none			3,601	980	1,513	372	815	2,092
		Total, Minor Group 14b	14,356		25,425	51,280	61,179	75,688	91,416	99,298	218,861
		% that Commodities Classified Directly form of Group Total	68.3		72.8	64.2	69.7	72.0	75.5	76.9	78.0
		Minor Group 15 China and Household Utensils									
X	3	Aluminum ware				not reported				20,058	53,375
II	91	Razors, plain & safety	4,308		4,523	4,310	5,770	7,265	8,927	4,627	23,109
		Table cutlery								5,198	7,546
X	102	Enameled ware	846		690	1,061	5,981	9,206	14,093	17,749	36,324
IX	135	Blown tumblers, stemware & bar goods	3,354		3,383	6,021	1,599	2,928	11,165	12,069	15,861
		Jellies, tumblers & goblets					2,007	1,639			
		Tableware					2,618	4,898			
		Fruit jars					2,935	3,436	3,741	3,538	10,022
IX	251	China, bone china, delft & beleek ware	4,009		4,600	4,339	1,298	3,479	1,767	2,385	7,709
		Cooking ware & other pottery products					3,973	3,424	1,718	1,632	3,992
		Red earthenware					762	822	805	1,060	1,298
		Stoneware & yellow & Rockingham ware				1,942	1,657	2,709	3,107	2,606	4,603
		White ware				3,572	6,376	9,196	13,728	14,968	29,847

IV	351	Wooden goods, n.e.s.	5,535	5,591	3,843	3,830	9,111	11,350	10,853	23,645
		Total, Commodities Classified Directly	18,052	18,787	25,088	38,806	58,113	70,401	96,743	217,331
IX	136	Glass, cutting, staining & ornamenting	389	1,283	3,082	4,428	6,648	8,150	8,415	14,631
X	318	Tinware, n.e.s.	179	221	294	442	678	952	1,299	3,667
		Total, Minor Group 15	18,620	20,291	28,464	43,676	65,439	79,503	106,457	235,629
		% that Commodities Classified Directly form of Group Total	96.9	92.6	88.1	88.8	88.8	88.6	90.9	92.2
		Minor Group 16 Musical Instruments								
XIV	211	Percussion instruments String instruments, including harps Wind instruments Other band & orchestral instruments	1,393	589	1,303	2,343	2,403	2,228	2,691	1,295 3,062 4,286 153
XIV	212,	Pianos & organs					48,272	64,483	63,441	101,898
	213, 214	Piano & organ parts—perforated music rolls	8,702	13,471	25,608	30,033	128	216	834	3,104
XIV	242	Phonographs (including dictating machines)	none		(Incl. with	1,241	2,966	5,407	15,290	95,888
		Records & blanks	none		all other industries)	539	4,703	5,034	11,176	46,799
		Total, Minor Group 16	10,095	14,060	26,911	34,156	58,472	77,368	93,432	256,485
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 17 Jewelry, Silverware, Clocks and Watches								
X	67	Clocks	2,206	3,613	3,717	6,292	7,795	10,755	9,697	22,144
X	248	Plated ware	8,020	8,467	11,330	12,420	11,957	18,248	18,212	40,635
X	285	Silversmithing & silverware	2,257	2,425	6,197	13,006	19,935	22,825	19,046	26,668
X	338	Watches & watch movements	2,957	3,431	6,347	7,158	12,447	10,947	13,280	31,506
		Total, Commodities Classified Directly	15,440	17,936	27,591	38,876	52,134	62,775	60,235	120,953

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
X	173	Jewelry	19,956	20,044	31,383	41,983	48,442	73,161	72,846	183,857
		Total, Minor Group 17	35,396	37,980	58,974	80,859	100,576	135,936	133,081	304,810
		% that Commodities Classified Directly form of Group Total	43.6	47.2	46.8	48.1	51.8	46.2	45.3	39.7
		Minor Group 18 Printing and Publishing: Books								
VI	253	Books & pamphlets: published or printed & published	8,341	19,145	34,409	44,516	53,312	62,930	68,588	132,699
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 19 Luggage								
V	323	Trunks & valises	7,445	7,270	10,849	12,727	19,091	28,703	26,768	64,864
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 20a Motor Vehicles								
XII	11	Passenger vehicles, excl. omnibuses, sight-seeing wagons, etc.		none		4,390	23,279	157,345	419,903	1,363,521
		Total, Minor Group 20a				4,390	23,279	157,345	419,903	1,363,521
		% that Commodities Classified Directly form of Group Total				100.0	100.0	100.0	100.0	100.0
		Minor Group 20b Motor Vehicle Accessories								
XII	10	Motor vehicle bodies & parts		none			2,451	20,930	54,525	210,834
		Total, Minor Group 20b					2,451	20,930	54,525	210,834
		% that Commodities Classified Directly form of Group Total					0.0	0.0	0.0	0.0

		Minor Group 20c Carriages and Wagons								
XII	53	Carriages, buggies & light pleasure vehicles	33,550	33,339	52,675	51,485	55,958	48,835	34,194	22,682
		Sleighs & sleds	1,322	1,314	2,094	2,474	2,911	2,232	1,232	1,268
II	355, 356	Carriage cloths & robes	1,239	1,313	1,274	1,681	2,211	2,624	1,677	3,280
		Total, Minor Group 20c	36,111	35,966	56,043	55,640	61,080	53,691	37,103	27,230
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 21 Motorcycles and Bicycles								
XII	209	Bicycles	not reported		1,907	23,656	3,741	3,228	5,361	12,691
		Motorcycles		none		34	359	3,052	12,307	16,196
		Total, Minor Group 21			1,907	23,690	4,100	6,280	17,668	28,887
		% that Commodities Classified Directly form of Group Total			100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 22 Pleasure-Craft								
XIV	279, 280	Work on boats of less than 5 gross tons	550	920	1,460	2,065	3,149	4,738	4,121	5,496
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 23 Ophthalmic Products and Artificial Limbs								
XIV	6	Artificial limbs	158	131	454	715	842	1,262	1,414	3,106
XIV	227	Ophthalmic products	228	621	1,842	4,091	4,802	9,215	14,062	41,935
		Total, Minor Group 23	386	752	2,296	4,806	5,644	10,477	15,476	45,041
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

INDUSTRY NUMBER	COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
	Minor Group 24 Monuments and Tombstones								
IX 199	Monuments & tombstones	6,581	7,543	15,247	20,323	25,689	38,405	40,977	73,361
	% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Total, Major Group Consumer Durable	245,179	289,070	466,206	603,369	782,886	1,148,856	1,553,358	3,967,940
	Total, Consumer Durable Classified Directly	203,421	236,391	378,348	507,879	664,268	979,063	1,354,620	3,441,708
	% that Consumer Durables Classified Directly form of Major Group Total	83.0	81.9	82.2	84.2	84.9	85.3	87.2	86.7
	PRODUCER DURABLE								
	Minor Group 25 Industrial Machinery and Equipment								
III 103, 124,	Stationary & portable steam engines & turbines (except marine)							20,484	27,900
169x, 197, 260,	Stationary and portable internal-combustion engines (not automobile, aviation, or marine)							26,121	58,987
302x,	Water wheels, motors & turbines							3,633	4,136
314	Traction engines, not locomotive							17,651	172,667
	Other engines & parts							9,453	52,294
	Steam & other power pumps							19,085	56,227
	Boiler shop products							27,140	143,666
	Air-compressing machinery							5,158	18,650
	Ammunition machinery	(Included with III 124, Miscellaneous machinery)						(Incl. with III 124)	570
	Bakers' machinery							2,555	9,359
	Bottling machinery							1,359	10,468
	Blowers & fans							(Incl. with III 124)	12,141
	Brick, pottery & other clay-working machinery							2,439	3,187
	Concrete mixers							2,956	10,450
	Condensers							(Incl. with III 124)	24,216

Cotton gins		4,902	10,176
Confectioners' machinery		(Incl. with III 124)	9,341
Cranes		4,194	52,534
Dredging machinery, excavating machinery & steam shovels		2,969	21,562
Elevators & elevator machinery		17,228	70,187
Firearms & ordnance machinery		(Incl. with III 124)	2,284
Flour-mill & grist-mill machinery		5,018	19,981
Glass-making machinery		1,091	3,316
Hydraulic rams		(Incl. with III 124)	3,597
Laundry machinery		7,565	13,891
Lawn mowers		2,848	3,777
Leather-working machinery, other than shoe machinery		1,067	4,691
Machine tools		31,447	184,632
Metal-working machinery, other than machine tools		17,420	57,541
Mining machinery		13,254	51,243
Oil-well machinery		10,569	28,351
Oil-mill machinery, cottonseed & other		1,878	11,306
Ore crushers		(Incl. with III 124)	2,367
Paper & pulp mill machinery	(Included with III 124, Miscellaneous machinery)	8,588	27,421
Photo-engraving machinery		(Incl. with III 124)	733
Printing machinery		19,228	53,325
Refrigerating machinery		10,522	30,667
Road-making machinery		3,545	15,778
Rubber-working machinery		2,726	17,002
Sand blast machines		(Incl. with III 124)	1,320
Shoe machinery		5,949	16,261

INDUSTRY NUMBER	COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
	Slot-vending machinery							(Incl. with III 124)	1,646
	Stokers, mechanical								4,280
	Sugar-mill machinery							1,972	14,847
	Well-drilling machinery other than oil-well							(Incl. with III 124)	2,567
	Wire-drawing machinery								1,402
	Woodworking machinery							13,393	36,763
	Brewers' machinery							3,882	(Incl. with
	Cannery machinery							1,306	III 124)
	Steel barrels, drums & tanks							8,768	21,343
	Textile machinery							30,438	86,894
	Parts, attachments & accessories for textile machinery							(Incl. with III 124)	34,788
III 134	Gas meters & water meters; gas machines; all other meters & appliances	1,294	1,189	1,639	3,912	5,017	11,857	13,525	23,804
III 278	Sewing machines, industrial types	4,405	4,153	3,841	5,485	6,252	6,743	6,747	14,231
	Total, Commodities Classified Directly	5,699	5,342	5,480	9,397	11,269	18,600	390,073	1,560,767
III 124	Misc. machinery & other machine shop products	106,986	97,404	186,749	293,031	355,875	473,796	160,428	357,840
	Total, Minor Group 25	112,685	102,746	192,229	302,428	367,144	492,396	550,501	1,918,607
	% that Commodities Classified Directly form of Group Total	5.1	5.2	2.9	3.1	3.1	3.8	70.9	81.3

		Minor Group 26 Electrical Equipment, Industrial and Commercial								
XIV	99	Generators (other than small dynamos under 10 k.w.)				5,905	6,027	9,940	10,405	19,308
		Transformers, over 50 k.w.				779	1,176	4,616	5,803	14,948
		Stationary motors				12,368	14,782	20,127	26,403	76,172
		Liquid primary batteries, incl. testing batteries				571	516	730	803	3,509
		Arc lamps				1,828	1,574	1,707	742	607
		Searchlights, projectors & focusing lamps				226	115	936	2,082	4,342
		Radio & wireless apparatus				none reported	114	448	673	7,835
XIV	99	Telegraph apparatus, excl. radio & wireless				1,642	997	1,509	1,576	4,982
		Telephone apparatus				9,188	13,792	10,507	18,755	23,155
		Measuring instruments, excl. testing & scientific	none	1,767	12,717	1,474	4,004	7,253	7,713	15,986
		Switchboards, panel boards, cutout cabinets for light & power				1,847	3,766	5,972	8,989	17,736
		Railway switches, signals & attachments				1,130	1,451	5,378	6,394	4,467
		Lightning arrestors & other protective devices				240	587	940	1,189	2,353
		Insulated cables, rubber & paper insulation				10,114	16,397	24,522	33,015	61,104
		All other electrical machinery & apparatus				6,813	14,340	18,995	27,424	151,759
		Industrial apparatus & appliances				40	45	221	584	16,045
		Converting apparatus: frequency changers, etc.				380	1,741	3,155	5,368	4,851
		Electric fans, incl. fan motors				1,055	1,168	2,451	4,836	9,908
		Motors for misc. uses				3,138	2,979	1,943	1,191	4,920
IX	251	Porcelain electrical supplies	none	168	339	470	1,500	3,047	4,130	12,615
		Total, Minor Group 26	none	1,935	13,056	59,208	87,071	124,397	168,075	456,602
		% that Commodities Classified Directly form of Group Total	none	100.0	100.0	100.0	100.0	100.0	100.0	100.0

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
		Minor Group 27 Farm Equipment								
XIV	2	Plows & cultivators					30,608	36,784	38,662	65,329
		Planters & seeders					11,225	12,141	12,189	17,490
		Harvesting implements					30,862	34,568	39,581	54,225
		Seed separators	45,173	57,435	68,004	84,674	6,640	11,030	13,096	22,365
		All other implements, incl. parts					14,462	22,933	27,844	64,105
		Agricultural implements made in other industries					1,350	2,989	4,034	14,938
XIV	92	Dairymen's, poultrymen's, & apiarists' supplies	21	not reported separately			7,108	16,789	18,983	36,801
III	259	Pumps, not incl. power pumps	3,514	4,545	5,116	1,673	3,558	6,963	7,928	34,052
XIV	342	Windmills	not reported	712	1,742	3,065	3,376	4,700	3,134	5,983
III	345	Barbed wire	1,264	3,923	7,969	19,139	28,720	13,882	13,764	30,896
		Woven-wire fence & poultry netting						19,835	19,796	30,527
III	346	Woven-wire fencing	1,092	3,315	5,648	7,205	11,998	15,223	15,628	18,263
		Total, Minor Group 27	51,064	69,930	88,479	115,756	149,907	197,837	214,639	394,974
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 28 Office and Store Machinery and Equipment								
III	58	Adding machines, cash registers & parts & all other calculating machines	none	7	1,349	5,380	9,362	22,466	28,789	79,451
III	274	Scales & balances	2,505	2,885	2,061	4,648	5,325	7,797	8,834	18,826
XIV	295	Soda water apparatus	702	930	2,343	2,605	4,004	5,664	7,163	13,852
III	326	Typewriters & parts	none		2,804	5,356	8,220	15,221	18,918	41,277
		Total, Minor Group 28	3,207	3,822	8,557	17,989	26,911	51,148	63,704	153,406
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

		Minor Group 29 Office and Store Furniture and Fixtures								
IV	129	Store & office furniture & fixtures	9,876	8,571	12,303	13,797	18,766	25,236	29,024	30,878
		Furniture for public buildings & seats for public conveyances		2,649	3,803	4,265	5,800	7,800	8,966	15,719
III	268	Safes & vaults	2,861	3,402	6,742	3,987	7,979	8,618	7,365	15,641
IV	282	Show cases	894	1,248	2,737	2,628	6,094	7,636	6,476	8,685
		Total, Minor Group 29	13,631	15,870	25,585	24,677	38,639	49,290	51,831	90,923
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 30 Locomotives and Railroad Cars								
XII	56, 57	Electric rr. cars, passenger service				6,687	8,809	6,249	8,076	11,496
		Electric rr. cars, freight service					488	377	714	2,007
		Steam rr. cars, passenger service	24,380	21,823	57,511	7,368	18,140	13,830	44,012	4,855
		Steam rr. cars, freight service				62,161	69,209	61,804	96,218	369,090
		Cars made in other industries	4,744	4,246	11,191	14,801	18,464	19,888	15,941	15,590
XIV	99	Electric locomotives: mining, industrial, & railway							3,721	8,160
III	192	Steam locomotives	12,521	11,479	22,142	30,397	55,451	31,713	42,637	139,226
		Total, Minor Group 30	41,645	37,548	90,844	121,414	170,561	133,861	211,319	550,424
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 31 Ships and Boats								
XIV	279, 280	Work on vessels of 5 gross tons & over	11,524	19,399	24,704	36,072	53,583	38,167	43,493	1,389,509
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
		Minor Group 32 Business Vehicles								
		(a) Motor								
XII	11	Business vehicles		none		(Incl. with 20a,	982	5,267	40,832	354,522
		Gov. & municipal vehicles		none		passenger	15	104	3,998	13,619
		Omnibuses, sightseeing wagons, etc.		none		motor vehicles)	354	2,393	335	5,156
		Trailers		none						6,634
		Total, Minor Group 32a	....	....	....	....	1,351	7,754	45,165	379,931
		% that Commodities Classified Directly form of Group Total	....	....	....	....	100.0	100.0	100.0	100.0
		(b) Wagons								
XII	53	Business, farm, gov. & municipal wagons	17,247	17,138	27,082	31,423	37,599	42,026	36,533	42,413
		Public conveyances	818	813	1,311	1,121	1,323	945	326	105
		Total, Minor Group 32b	18,065	17,951	28,393	32,544	38,922	42,971	36,859	42,518
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 33 Aircraft								
XIV	1	Aeroplanes & seaplanes				none			355	8,046
		All other aeronautical products							82	564
		Total, Minor Group 33	....	....	....	....	....	....	437	8,610
		% that Commodities Classified Directly form of Group Total	....	....	....	....	....	....	100.0	100.0
		Minor Group 34 Professional and Scientific Equipment								
XIV	99	Electrical testing & scientific instruments		none		368	1,001	547	1,073	3,336
		Therapeutic apparatus, incl. X-ray tubes				492	1,037	1,108	2,653	8,895
XIV	162	Instruments, professional & scientific	1,571	1,493	2,981	4,421	4,899	9,574	17,390	56,663
XIV	227	Optical goods & instruments	61	166	492	1,094	1,284	2,464	3,761	11,214
		Total, Minor Group 34	1,632	1,659	3,473	6,375	8,221	13,693	24,877	80,108
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

		Minor Group 35 Carpenters' and Mechanics' Tools								
III	91	Augurs, bits, planes, & chisels Axes & hatchets All other cutlery & edge tools	3,957	4,155	3,959	5,301	6,673	8,200	1,273 4,738 3,018	3,021 10,047 4,693
III	115	Files	1,606	2,422	3,097	3,315	4,278	5,542	5,507	17,239
III	273	Saws	2,743	3,407	4,815	5,568	8,484	9,966	10,278	26,913
III	321	Carpenters' tools, n.e.s. Machinists' tools Shovels, spades, hoes & scoops Tools, other than specified	2,550	4,339	10,781	13,679	20,897	31,109	3,580 9,078 4,900 16,138	7,255 69,925 15,939 52,975
		Total, Minor Group 35	10,856	14,323	22,652	27,863	40,332	54,817	58,510	208,007
		% that Commodities Classified Directly form of Group Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Minor Group 36 Miscellaneous Subsidiary Durable Equipment								
II	13	Awnings, tents, sails & canvas covers	2,219	1,516	6,034	9,034	11,134	14,329	18,138	45,433
XIV	20	Hose, rubber	450	779	3,958	4,429	10,737	13,811	16,854	26,998
XIV	38	Brooms made from materials other than broom corn	176	139	187	244	278	383	372	611
XIV	39	All other brushes	1,242	2,454	3,289	4,294	4,902	6,773	8,238	19,355
II	69	Clothing, horse	not reported	678	1,533	1,272	2,086	4,030	4,955	6,338
IX	90	Crucibles	1,530	1,981	996	3,572	1,840	2,533	2,502	6,674
IX	101	Emery & other abrasive wheels	154	317	716	1,363	2,033	6,616	7,144	31,127
XIV	117	Fire extinguishers, chemical	not reported	203	194	216	576	746	1,590	5,249
IX	144	Grindstones	246	278	183	1,634	1,182	2,532	1,026	1,327
XIV	148, 303	Hand stamps & stencils & brands	42	780	2,284	2,574	2,772	3,622	4,421	9,049
IX	156	Hones & whetstones	326	282	68	246	387	337	327	879
III	157, 164	Horseshoes	(Incl. with III 124, Foundry products)		1,110	3,918	6,286	8,223	8,917	12,186

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
IV	181	Lasts	688	790	1,280	1,942	2,603	4,296	4,740	12,658
IX	204	Millstones	819	356	47	76	83	(Incl. with all other industries)		67
XIV	208	Models & patterns, except paper patterns	1,242	1,048	2,805	3,935	4,663	9,102	8,793	25,925
II	216	Nets & seines	159	296	1,017	1,498	1,751	1,926	3,135	5,191
XIV	243	Motion-picture machines	661	83	495	1,609	2,763	940	1,894	3,606
		All other photographic apparatus & parts							1,498	10,398
IX	251	Chemical stoneware	219	260	554	473	773	887	743	805
VI	256	Printing materials	124	441	1,529	1,140	1,265	2,077	2,212	5,005
V	267	Saddlery & harness	17,809	20,734	28,840	34,107	42,560	54,879	54,588	85,727
XIV	283	Signs	not reported separately					8,036	14,489	19,344
XIV	315	Theatrical scenery, incl. stage equipment	not covered by census						327	1,067
XII	340	Wheelbarrows	426	204	1,067	409	1,060	1,462	998	3,219
XIV	341	Whips	1,231	1,682	2,132	2,707	3,116	3,909	3,182	3,090
II	355, 356	Horse blankets	1,239	1,327	1,722	1,741	1,724	2,049	2,018	1,606
		Total, Commodities Classified Directly	31,002	36,628	62,040	82,433	106,574	153,498	173,101	342,934
II	21	Hose, woven	not reported				392	758	613	8,544
II	83	Rope, cable & cordage	454	632	1,573	2,008	3,333	3,131	3,341	8,565
		Total, Minor Group 36	31,456	37,260	63,613	84,441	110,299	157,387	177,055	360,043
		% that Commodities Classified Directly form of Group Total	98.6	98.3	97.6	97.7	96.8	97.6	97.9	95.5
		Total, Major Group Producer Durables	295,265	322,443	561,585	828,767	1,092,941	1,363,718	1,646,465	6,033,662
		Total, Producer Durables Classified Directly	188,325	224,407	373,263	533,728	733,341	886,033	1,482,083	5,658,713
		% that Producer Durables Classified Directly form of Major Group Total	63.7	69.6	66.5	64.4	67.1	65.0	90.0	93.8

RECAPITULATION

Perishable	850,200	1,326,676	2,038,932	2,763,697	3,538,387	4,736,581	5,807,553	13,668,008
Semidurable	596,541	777,475	1,036,240	1,312,692	1,689,707	2,377,183	2,681,948	7,030,907
Consumer Durable	245,179	289,070	466,206	603,369	782,886	1,148,856	1,553,358	3,967,940
Producer Durable	295,765	322,443	561,585	828,767	1,092,941	1,363,718	1,646,465	6,033,662
All Finished Mfd. Commodities	1,987,685	2,715,664	4,102,963	5,508,525	7,103,921	9,626,338	11,689,324	30,700,517
% Each Major Group forms of Total Finished Mfd.								
Perishable	42.8	48.9	49.7	50.2	49.8	49.2	49.7	44.5
Semidurable	30.0	28.6	25.3	23.8	23.8	24.7	22.9	22.9
Consumer Durable	12.3	10.6	11.4	11.0	11.0	11.9	13.3	12.9
Producer Durable	14.9	11.9	13.7	15.0	15.4	14.2	14.1	19.7
Total, All Finished Mfd.	1,987,685	2,715,664	4,102,963	5,508,525	7,103,921	9,626,338	11,689,324	30,700,517
Total, All Commodities Classified Directly	1,169,595	1,726,655	2,905,053	3,952,850	5,139,239	7,079,756	9,211,574	23,533,440
% All Commodities Classified Directly form of All Finished Mfd.	58.8	63.6	70.8	71.8	72.3	73.5	78.8	76.7

CONSTRUCTION MATERIALS

XIV	4	Blasting & detonating caps & fuses	230	176	605	1,205	1,844	2,411	3,126	6,470
IX	7, 199	Artificial stone products Marble & stone work, incl. roofing slate & other slate products	16,353	16,402	33,257	43,344	4,157 59,155	18,726 74,688	21,959 66,078	33,640 55,804
XIV	9	Asbestos building materials	Included with XIV 264 and XIV 302						1,943	5,038
IX	37, 251, 271	Brick, except fire brick & silica brick			55,954	50,004	66,975	80,517	67,812	93,862
		Tile (not drain tile)			796	1,276	2,726	5,292	5,706	8,137
		Architectural terra-cotta			1,431	2,028	3,793	6,251	6,088	3,988
		Fireproofing, terra-cotta lumber, & hollow building tile or blocks	28,570	32,846	403	1,665	4,317	4,667	8,385	17,965
		Drain tile			5,010	3,662	5,522	9,799	8,522	10,946
		Sewer pipe			5,395	4,560	8,416	10,322	14,015	16,755
		Sanitary ware			1,593	2,212	3,933	5,989	7,874	14,872
XIV	39	Brushes, paint & varnish	1,041	2,056	2,756	3,599	4,109	5,676	6,917	10,673

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
IX	59	Cement	1,772	2,740	7,472	13,612	26,032	53,611	82,204	138,714
VIII	76	Tar	not reported			249	613	1,409	2,867	6,919
X	82	Copper, tin & sheet-iron work	14,768	18,238	24,224	36,464	56,026	89,288	94,335	157,092
XIV	99	Interior and underground conduits	none			1,066	2,416	5,098	4,875	19,267
III	132	Gas & electric fixtures	5,142	5,482	9,908	14,538	19,794	30,240	30,211	43,062
VIII	133	Tar	480	not reported	876	1,075	2,064	1,877	3,255	4,663
IX	135	Window glass	3,811	5,047	9,037	10,879	11,611	11,743	17,496	41,101
		Obscured glass, incl. cathedral & sky light glass	26	63	360	732	972	1,359	2,417	4,300
		Wire glass, polished, and all other building glass	(Incl. with window glass)		10	125	565	481	1,054	2,522
IX	135	Shades, globes & other gas goods	920	927	1,651	2,498	1,949	3,239	3,542	33,534
III	149	Builders' hardware	7,024	7,065	8,335	11,180	14,274	20,244	22,877	48,947
III	164	Rails, incl. rerolled or renewed rails, rail joints & fastenings	47,999	58,691	60,895	46,533	66,400	98,300	66,975	125,184
		Bars for reinforced concrete			none			5,589	7,752	18,429
III	164, 307	Structural ironwork	1,315	3,533	39,104	69,336	94,219	138,038	165,070	305,660
III	166	Cast-iron pipe & fittings	6,437	5,851	11,219	17,603	21,378	28,396	25,979	48,515
III	167	Iron & steel, doors & shutters	not reported	427	77	276	1,275	2,595	4,503	9,144
IV	196, 343	Lumber, planing mill products, incl. window & door screens & weather strips	100,297	91,735	229,500	261,427	384,210	520,965	511,631	889,513
VIII	229, 329	Paints, colors, putty & fillers	16,885	20,513	38,214	49,027	59,781	81,501	94,039	254,443
VI	230	Building papers	not reported	1,265	1,753	3,026	4,846	9,251	9,476	17,737
XIV	234	Paving materials	405	928	2,247	3,566	4,560	5,644	34,530	41,290
VIII	241	Liquid asphaltic road oils & tars	296	{298	1,971	688	3,138	2,216	4,018	6,014
		Asphalt, other than liquid asphalt		{142	641	741	2,982	2,725	4,867	12,500

III	249	Plumbers' supplies	not reported separately		11,613	14,343	20,917	42,420	42,116	57,896
IV	258	Wall board			118	425	492	594	1,496	8,117
XIV	264	Roofing materials	1,501	2,869	13,552	13,773	19,990	19,324	28,964	81,341
III	276	Screws, wood	1,774	1,132	1,817	2,031	1,667	4,843	4,770	12,411
X	298	Bathtubs, lavatories & sinks	none	29	45	262	394	594	720	6,515
III	301	Steam fittings & steam & hot-water heating apparatus	3,507	5,251	23,703	22,615	25,509	55,382	65,458	164,069
III	305	Hot-air furnaces	4,150	3,102	5,947	9,331	11,415	13,846	14,379	32,114
III	330	Vault lights & ventilators	45	303	505	375	537	1,061	2,275	2,256
VI	332	Wall paper, not made in paper mills	2,155	6,236	7,395	10,610	12,574	14,377	15,808	22,933
IX	333	Wall plaster & composition flooring	2,730	1,088	2,969	5,408	10,306	12,979	16,604	27,551
IV	349	Wood preserving	not reported	102	145	2,427	3,412	14,282	21,332	33,482
		Total, Construction Materials Classified Directly	269,633	294,537	622,503	739,796	1,051,265	1,517,849	1,626,320	2,955,385
IX	135	Plate glass, polished	299	731	4,172	5,159	7,978	11,569	13,656	23,344
IX	136	Glass, cutting, staining & ornamenting	156	516	1,240	1,782	2,675	3,280	3,386	5,887
III	164, 165	Bolts, nuts, washers & rivets	4,698	6,581	8,084	9,133	9,595	15,483	11,644	42,623
III	164, 169	Cut nails & spikes, wire nails & spikes, forged nails & spikes & all other, incl. tacks	8,465	3,964	11,672	10,405	11,195	13,095	12,477	27,023
III	164, 170	Wrought pipe, iron & steel	24,078	43,431	33,851	69,571	56,864	90,838	83,772	250,484
IX	186	Lime	4,882	850	2,318	4,222	8,075	9,468	6,799	11,372
IV	195	Lath	1,601	2,431	3,520	4,699	5,436	9,963	6,267	8,293
		Shingles	6,080	10,388	17,138	18,870	24,010	30,262	20,134	38,517
IX	300	Statuary & art goods	(Partly incl. with XIV 110, Fancy articles, n.e.s.)				1,619	2,305	2,623	3,424
		Total, Construction Materials	319,892	363,429	704,498	863,637	1,178,712	1,704,112	1,787,078	3,366,352
		% Construction Materials Classified Directly form of Total	84.3	81.0	88.4	85.7	89.2	89.1	91.0	87.8

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
		REPAIRS AND SERVICING CONSUMER DURABLE								
XII	12	Automobile repairing			not reported				30,531	224,885
IV	23	Billiard tables, bowling alleys & accessories: custom work	30	41	50	29	40	106	88	283
XII	53	Carriages & wagons: repair work & parts	10,008	9,945	15,670	21,227	21,862	26,489	28,837	25,664
IV	129	Furniture: custom work & repairing	274	312	447	502	682	918	1,020	2,194
XIV	211	Musical instruments & materials, not specified: custom work & repairing	52	22	49	87	89	83	100	324
XIV	212, 213, 214	Musical instruments, organs & pianos: repairs	83	128	243	285	440	740	622	1,252
XIV	242	Phonographs & graphophones: custom work & repairing		none		1	6	3	2	269
V	250	Pocketbooks, purses & card-cases: custom work & repairing	2	4	5	5	8	8	8	28
		Total, Repairs and Servicing of Consumer Durable	10,449	10,452	16,464	22,136	23,127	28,347	61,208	254,899
		PRODUCER DURABLE								
XIV	1	Aeroplanes, seaplanes, & airships & parts: repair work			none				210	1,232
XIV	2	Agricultural implements: amount received for repair work	1,687	2,145	2,540	3,197	1,968	3,115	1,437	12,947
X	35	Brass, bronze, & copper products: custom work & repairs	115	240	440	779	899	1,318	1,467	7,208
XIII	54	Cars & general shop construction & repairs by electric rr. companies: motive power & machinery department:								
		repairs to motors			not reported			4,004	4,933	7,082
		work for other corporations			not reported		3	88	57	75
		all other products or work		not reported		358	508	418	390	769

		Car department:								
		repairs to cars of all kinds				7,848	11,255	22,870	27,629	60,060
		work for other corporations	not reported		2,833	27	37	625	441	1,174
		all other products or work				474	685	1,714	2,205	2,241
		Bridge & building department:								
		repairs & renewals				179	253	274	200	262
		all other products or work	not reported			54	75	235	57	75
		All other products & work, not classified				9	17	1,676	1,286	2,778
XIII	55	Cars & general shop construction & repairs by steam-rr. companies: motive power & machinery department:								
		repairs to locomotives, motors, etc.				57,383	101,327	127,929	169,058	463,953
		work for other corporations				3,339	5,681	4,735	7,053	16,889
		all other products or work				30,449	40,782	49,019	57,018	135,813
		Car department:								
		repairs to cars of all kinds	not reported			74,666	105,319	147,194	183,754	479,229
		work for other corporations			117,810	7,085	6,947	8,784	14,820	31,101
		all other products or work				20,105	24,493	30,464	32,403	58,246
		Bridge & building department:								
		repairs & renewals				3,937	4,351	1,907	2,450	7,288
		work for other corporations				242	41	46	37	23
		all other products or work				1,236	704	847	641	1,224
		All other products or work, not classified	not reported				5,286	18,060	31,213	74,510
XIV	99	Electrical machinery, apparatus & supplies: custom work & repairing	none			2,064	2,799	5,693	5,677	27,106
III	164	Iron & steel—steel works & rolling mills: custom work & repairing		290	794	1,122	1,172	1,325	1,710	6,307
XIV	279, 280	Shipbuilding, steel & wooden, incl. boat building: repair work	9,918	16,713	10,021	23,155	22,850	26,759	33,021	183,922
III	345	Wire: custom work & repairing	11	21	44	106	158	233	327	236
		(a) Work done in rr. repair shops	not reported		120,643	207,391	307,764	420,889	535,645	1,342,792
		(b) All other servicing of producer durables	11,731	19,409	13,839	30,423	29,846	38,443	43,849	238,958
		Total, Repairs & Servicing of Producer Durables	11,731	19,409	134,482	237,814	337,610	459,332	579,494	1,581,750
		Total, All Repairs & Servicing	22,180	29,861	150,946	259,950	360,737	487,679	640,702	1,836,649

INDUSTRY NUMBER	COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
	UNFINISHED COMMODITIES								
	Census Industry Group 1 Food and Kindred Products								
40,	Powdered milk							1,968	12,182
61,	Sugar of milk			none				401	2,633
79	Buttermilk sold							1,279	4,027
	Casein				384	554	796	991	2,200
	Whey sold	not reported		220	29	45	54	73	3,424
	Cream		73		4,435	2,364	9,829	13,802	26,174
	Skimmed milk sold			309	2,531	1,369	629	786	2,454
41	Butter, processed		not reported		3,107	10,681	12,048	7,703	2,872
65	Chocolate in cakes, unsweetened								8,135
	Chocolate coatings								33,051
	Chocolate liquor								2,790
	Cocoa, other than powdered	472	677	2,194	5,023	7,478	11,629	18,675	14,181
	Cocoa butter								13,897
	Unfinished chocolate & cocoa products made in other industries								721
122	Bran & middlings, & feed & offal	50,959	57,853	58,965	99,691	152,202	231,279	245,073	505,521
123	Other food preparations for animals & fowls	2,329	501	2,830	7,994	12,276	23,343	46,531	152,841
138	Starch, glucose, corn oil, grape sugar, dextrine, corn-oil cake & meal	4,951	9,936	13,788	25,554	27,594	42,486	45,137	158,388
263	Clean rice, second-head, screenings & brewers'				1,725	3,302	3,287	5,220	12,813
	Polish & bran	not reported	839	1,793	552	774	1,098	1,125	3,465
	Hulls & waste				62	117	166	74	880
272,	Oleo oil			12,202	11,483	10,202	16,476	11,926	31,213
286,	Oleo stock			23	320	632	1,332	1,362	7,685
287	Stearin			120	1,650	3,259	6,872	2,752	8,999
	Sausage casings			1,384	2,910	3,716	6,671	10,146	26,355
	Hoofs, horns, & horn tips, strips, etc.	743	21,983	18	246	486	1,056	945	2,181
	Hides & pelts			26,166	41,329	53,171	79,827	87,484	243,561
	Hair, hog & cattle			52	714	1,411	3,169	2,957	4,059
	Wool			2,009	3,334	5,230	8,327	7,938	20,071
	Custom & contract work			23	141	199	1,330	1,255	1,746
308	Molasses				25	221	1,130	1,536	2,365
	Sugar, raw	464	283	340	1,642	431	292	239	247
	Pulp, beet				22	202	796	2,095	5,799
	All other products				54	46	259	384	2,893

309	Sugar, raw						20,856	7,615	9,899
	Sugar, clarified	10,383	14,456	11,447	22,287	25,958	3,212	6,742	26,563
	Molasses & sirup							2,632	9,058
310	Molasses & sirup		(Included with 309)				2,735	3,284	15,317
40	Butter	not reported	1,237	2,101	2,793	4,412	6,814	8,751	25,037
79	Condensed & evaporated milk		951	1,618	2,121	3,478	5,305	6,087	15,691
120	Flavoring extracts	599	854	1,751	2,911	3,540	5,848	9,544	25,309
122	Flour: wheat, corn, rye, buckwheat & barley	9,173	17,358	29,852	39,829	65,179	100,164	116,274	308,137
123, 180	Lard, incl. lard compounds & substitutes	not reported	5,939	7,318	11,461	16,843	25,555	31,193	107,599
235	Peanuts, grading, roasting, cleaning, shelling	68	135	442	409	540	724	1,111	2,701
308, 309, 310	Sugar, granulated, refined & brown	4,953	10,103	18,544	26,751	38,842	58,539	81,909	248,744
	Total, Census Industry Group 1	85,094	143,178	195,519	323,519	456,754	693,933	794,999	2,113,878
	Census Industry Group 2 Textiles and their Products								
15	Bags, other than paper	12,578	13,039	19,905	19,357	36,838	55,234	77,865	212,184
49	Contract work		none		20		none		
68	Cloth, sponging & refinishing	not reported	223	400	566	1,053	1,544	1,531	3,691
70	Clothing, men's, contract shops	14,130	19,915	23,857	26,299	33,815	46,141	33,671	81,988
71	Clothing, men's, buttonholes	not reported		817	710	729	814	665	1,136
72	Clothing, women's, contract shops	364	904	1,926	4,502	6,997	10,988	12,597	63,609
83,	Linen thread				2,332		3,407	3,409	6,609
175,	Binder twine				14,186		14,080	24,095	46,256
187	Twine, other than binder twine	6,449	10,771	26,810	5,888	41,024	11,351	16,789	36,265
	Yarns for sale				4,456		5,434	8,320	13,288
	Jute woven goods, except carpets & rugs, & all other woven goods				7,307		5,346	9,100	14,911
87,	Cotton bags & bagging			2,192	2,554	3,954	4,862	9,706	18,769
88,	Cotton waste for sale			5,680	5,564	10,062	10,874	14,422	39,399
89	Yarns for sale			34,031	56,165	80,936	109,400	132,913	463,710
	Ducks			8,664	14,263	17,006	27,590	9,180	237,215
	Tape & webbing			1,887	2,521	4,060	5,559	45,189	16,665
	Batting, wadding & mattress felts	105,949	125,630	2,094	864	1,173	16,977	437	9,037
	Other unfinished cotton products			6,422	7,653	7,047		21,594	37,067
	Contract work				916	1,216	1,697	1,894	6,082
	Unbleached & bleached sheetings, shirtings & muslin			98,744	113,294	141,565	200,013	196,521	477,408

INDUSTRY NUMBER	COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
112	Felt goods	(Incl. with 355, 356)	2,389	3,071	5,364	8,332	11,459	13,277	38,908
121	Flax & hemp, dressed	815	1,310	981	159	347	467	283	2,369
145, 328	Haircloth						2,230	2,395	3,315
	Excelsior						1,763	2,547	4,979
	Imitation leather & leatheroid	2,138	1,952	6,088	10,671	13,464	3,179	6,192	26,301
	Curled hair & all other upholstering materials, n.e.s.						9,061	8,283	9,930
151	Hat & cap materials	2,991	2,055	3,213	3,568	5,970	7,636	6,492	24,432
152, 154	Contract work	80	96	168	221	246	260	353	846
153	Fur-felt hat bodies & hats in the rough	533	639	1,120	993	661	2,704	2,373	7,657
	Contract work				492	561	554	509	24
155	Wool-felt hat bodies & hats in the rough	237	284	176	120	100	309	13	165
	Contract work		none		24			none	
158	Cotton batting, not made in cotton mills	not reported	127	797	1,364	1,434	1,768	2,630	1,531
176	Fleece lining (shoe & glove)		65	1,089	2,205	1,249	1,314	670	2,521
	Eider down			122	723	1,019	442	517	1,175
	Jersey cloth & stockinette	848	1,221	2,158	1,305	1,145	784	4,379	28,691
	Tricolette				1,709	2,406	2,492	4,005	17,172
	All other knitted cloth			2,286	332	354	269	1,252	9,788
	Contract work		76		274	208	1,083	3,649	8,771
203	Dress & cloak trimmings, braids & fringes	464	682	1,285	2,098	3,615	6,116	8,150	13,000
217	Oakum	not reported		363	440	361	338	359	983
225	Enameled oilcloth		371	561	1,257	1,542	2,265	2,495	3,421
281	Neckbands for sale as such	not reported	148	247	360	389	659	767	1,643
	Contract work		1,161	1,940	2,828	3,059	4,944	5,749	12,320
284	All other silk mfrs.		21,748	35,905	23,759	28,023	33,432	35,255	119,876
	Contract work	6,967	697	1,106	2,337	3,716	8,364	8,401	38,335
335	Waste	not reported		1,968	4,932	8,708	11,705	18,379	31,401
352	Wool pulling	not reported separately			531	882	5,181	8,273	17,361
353	Wool scouring				890	1,053	3,289	4,565	13,680
354	Shoddy	1,834	5,175	8,162	6,738	8,113	7,315	6,765	22,092
	Contract work			18	291	336	230	407	1,099

355,	Woolen, worsted, merino & other yarns		21,939	35,070	43,912	60,820	94,677	86,370	239,119
356	Woolen, worsted, mohair & other upholstering goods	26,372		3,634	3,709	2,564	3,785	3,077	9,356
	Worsted tops & slubbing, noils & wool waste		6,897	3,177	5,231	8,083	20,506	15,340	41,542
	Contract work			154	1,569	1,189	3,026	3,437	18,387
—	Bleaching & dyeing	58,571				not reported			
21	Belting & hose, woven	none	36	1,004	925	3,268	6,325	5,117	11,800
49	Carpets	4,353	6,319	9,072	7,538	9,592	10,107	8,505	13,199
83	Rope, cable & cordage	2,591	3,609	8,983	11,466	19,033	17,885	19,081	49,012
87, 88, 89	Towels, towelling, wash cloths, turkish towels & terry weaves	142	169	214	285	506	704	1,137	3,631
	Lace goods & nets	310	368	433	1,267	2,838	3,539	4,766	12,154
	Cotton thread	2,814	4,511	4,896	6,901	9,484	13,841	14,458	38,554
	Cotton tapestries	210	249	286	1,748	1,799	1,924	2,334	8,027
	All other cotton woven goods	4,449	12,902	22,244	55,156	85,418	136,579	165,052	444,884
97	Dyeing & finishing textiles	8,383	19,983	20,446	36,738	47,068	76,435	96,719	276,063
203	Embroideries	1,102	1,621	3,054	4,987	8,594	14,538	19,372	45,510
	Trimmed hats & hat frames	150	221	417	680	1,172	1,983	2,642	6,489
284	Silk ribbons	1,026	1,929	2,667	4,842	8,126	13,912	17,810	41,038
	Silk upholstery & tapestries	none		111	30	47	11	25	65
	Broadsilks	1,764	5,116	8,820	21,873	33,869	54,154	65,444	176,399
	Silk velvets & plushes	none		786	1,241	1,127	1,720	4,678	10,638
	Sewing & embroidery silks	85	272	999	1,147	1,375	1,322	1,796	2,492
313	Suspenders, garters & elastic woven goods		not reported separately				14,175	12,563	31,395
355, 356	Woolen & worsted woven goods, except shawls, blankets & carriage equipment	41,121	65,906	71,539	100,831	137,572	202,225	211,238	563,301
357	Mixed textiles	not reported	23,840			not reported separately			
	Total, Census Industry Group 2	309,820	386,565	504,259	677,488	928,312	1,356,296	1,540,243	4,292,211

INDUSTRY NUMBER	COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
	Census Industry Group 3. Iron and Steel and Their Products								
103, 124,	Marine steam engines & turbines							1,300	74,053
169x, 197,	Automobile, aviation & marine internal-								
260, 302x,	combustion engines	(Incl. with III 124, Misc. machinery and other machine shop products)						19,193	115,381
314	Foundry products, n.e.s.							126,429	421,049
	Tempering & welding, iron & steel								11,357
113,	Pig iron		88,204	145,613	206,513	228,911	387,830	312,762	785,960
163	Ferroalloys	69,013							49,327
	Slag		278	8	61	728	307	462	751
	Blast-furnace gas to other departments						593	2,341	5,261
116	Contract work	72	74	38	70	107	104	137	396
149	Locks & all other hardware, incl. vehicle, piano & organ hardware	12,930	13,006	15,344	20,580	26,278	37,268	42,081	99,957
150	Hardware, saddlery	3,043	3,443	3,883	3,913	4,546	4,886	3,808	13,237
164	Structural shapes		5,593	15,463	29,362	32,731	65,565	57,475	151,970
	Merchant bars, mill shafting, spike & chain rods, bolt & nut rods, horseshoe bars, & strips		56,697	68,567	100,597	84,069	121,488	102,729	375,854
	Wire rods & steel rods				35,530	52,995	61,948	61,578	149,188
	Nail & tack plate				3,117	2,462	2,540	2,008	2,548
	Armor plate, gun forgings & ordnance				7,526	10,550	10,649	19,948	55,700
	Car & locomotive wheels, rolled or forged, & all other rolled products, incl. all forged or other iron & steel products, n.o.e.		23,355	63,886	25,868	32,429	58,310	56,292	131,290
	Ingots	77,601			2,781	3,985	3,594	1,383	33,315
	Direct steel castings				14,610	20,600	38,862	44,734	134,644
	Scrap iron or steel				10,788	11,080	18,164	16,335	37,414
	Plates or sheets, other than for tinning		22,432	39,359	68,109	77,802	133,272	129,786	523,621
	Black plates for tinning		not reported		20,968	25,297	30,956	43,147	94,456
	Skelp		13,980	23,629	49,160	46,780	64,515	52,443	151,557
	Hoops, bands & cotton ties					12,760	10,430	19,945	69,865
	Axles, rolled or forged		1,779	3,063	4,483	2,876	3,831	3,407	9,753
	Blooms, billets & slabs, steel, incl. rolled blooms, etc., for forging purposes		3,968	1,183	96,322	109,611	110,762	82,334	260,985
	Sheet & tin plate bars						37,745	45,373	117,856
	Muck & scrap bar		2,441	7,412	5,941	3,941	4,986	2,968	10,756
	Iron & steel rolling mill products made in other industries		not reported			347	6,628	2,832	7,143

164, 297	Springs, steel, car & carriage	3,708	4,627	5,484	7,204	7,266	9,091	12,272	52,889
166	Castings, other than pipe & fittings	172	156	299	470	571	758	682	1,614
168	Iron and steel, forgings, not made in steel works or rolling mills	8,512	6,589	9,179	10,595	12,292	20,596	28,391	173,972
275	Screws, machine	1,466	935	1,502	2,615	3,444	3,829	7,767	45,004
277, 278	Sewing machine cases	1,750	1,970	2,147	2,686	5,030	5,487	5,577	13,588
	Sewing machine attachments		398	368	526	599	646	644	1,158
317	Tin plate & terneplate		not reported		31,371	34,767	46,733	66,270	175,776
	All other products, incl. plates redipped, tin dross, scruff, scrap, etc.		not reported		521	516	1,634	2,073	4,549
326	Typewriter supplies		not reported	782	1,493	2,292	4,254	5,277	10,481
345	Wire brads, tacks & staples						1,324	1,325	3,161
	Plain wire, iron & steel						22,632	22,317	58,756
	Galvanized & other coated wire						16,213	15,950	37,641
	Wire rope, cable & strand	3,783	6,893	14,000	33,626	50,458	6,684	7,974	29,826
	Other woven-wire products						2,834	2,823	4,724
	Cold-rolled flat wire, washers & other fabricated iron & steel wire products						9,605	8,899	20,406
346	Wire rope & cable & other wirework products	1,984	6,023	10,263	13,091	21,800	27,659	28,426	78,235
124	Misc. machinery & other machine shop products	92,615	84,320	161,663	253,668	308,070	410,152	312,736	772,079
164, 165	Bolts, nuts, washers & rivets	9,080	12,719	15,623	17,649	18,544	29,923	22,504	82,372
164, 169	Cut nails & spikes, wire nails & spikes, forged nails & spikes & all other, incl. tacks	16,359	7,660	22,556	20,109	21,635	25,308	24,113	52,222
164, 170	Wrought pipe—iron & steel	2,885	5,204	4,056	8,336	6,813	15,157	16,076	77,374
	Total, Census Industry Group 3	304,973	372,744	635,370	1,110,259	1,284,982	1,875,752	1,845,326	5,590,471
	Census Industry Group 4 Lumber and Its Remanufactures								
18	Baskets & rattan & willow ware	1,101	1,984	3,619	3,836	5,472	6,008	6,768	12,383
32	Boxes, cigar	985	2,978	7,276	6,009	7,988	8,712	8,853	13,649
34	Boxes, wooden packing, except cigar boxes	12,303	16,020	33,462	53,346	79,305	106,487	118,532	238,542
60	Charcoal, not incl. production in the lumber & wood distillation industries	(Incl. with VIII 348)	1,371	1,340	1,593	1,404	996	459	673
75	Coffins, burial cases & other undertakers' goods	3,950	8,003	11,999	13,687	19,881	24,050	25,730	64,237
81	Cooperage	25,435	31,922	36,564	38,432	49,414	49,612	50,008	91,893
85	Cork, cutting	749	1,554	2,817	4,357	4,455	5,892	7,811	16,182

INDUSTRY NUMBER	COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
129	Contract work	69	78	112	125	171	229	351	754
195	Pulp wood	not reported separately						631	not reported separately
258	Pulp goods, except wall board	not reported separately		245	879	1,018	1,228	3,092	16,799
347	Wood carpet	not reported	102	512	1,057	801	490	557	(Incl. with all other industries)
350	Wood, turned & carved	5,103	8,671	11,257	14,733	20,754	22,840	19,676	36,694
193	Looking-glass & picture frames	248	400	682	648	793	805	657	1,077
195	Lumber and timber products	175,945	194,517	367,945	423,851	393,123	489,772	466,345	907,825
	Total, Census Industry Group 4	225,888	267,600	477,830	562,553	584,579	717,121	709,470	1,400,708
	Census Industry Group 5 Leather and Its Finished Products								
22	Belting, leather	3,888	5,567	7,365	9,061	12,130	20,210	20,157	39,073
28	Boot & shoe cut stock, not made in shoe factories	not reported	7,796	18,531	24,057	28,645	46,224	62,040	163,363
29	Boot & shoe findings, not made in boot & shoe factories	3,753	3,015	6,989	8,047	10,172	26,194	29,065	66,022
30	Cut stock & findings made in shoe factories								8,377
	Received for crimping, stitching, buttonhole making & contract work	1,272	1,162	1,545	1,621	2,056	4,430	6,340	876
	Other income from custom work, leather scraps, remnants, etc.								4,098
185	Leather: tanned, curried & finished				194,202	236,921	312,572	348,957	849,356
	Contract work	155,508	198,062	170,243	4,322	8,190	12,766	12,287	51,800
	Byproducts of tanning, currying & finishing				3,286	4,568	5,226	7,913	13,605
250	Contract work	9	15	18	21	31	30	31	112
184	Leather goods	258	694	1,595	2,988	4,475	4,775	4,881	12,986
	Total, Census Industry Group 5	164,688	216,311	206,286	247,605	307,188	432,427	491,671	1,209,668
	Census Industry Group 6 Paper and Printing								
16	Bags, paper, excl. those made in paper mills	1,726	4,783	5,843	7,907	11,731	18,258	21,140	55,077
27	Bookbinding & blank-book making	22,917	19,499	27,787	33,848	41,061	50,895	53,610	89,347
33	Boxes, paper & other, n.e.s.	4,292	8,164	20,027	29,092	39,263	57,989	78,162	212,425
47	Card cutting & designing	not reported	53	247	629	1,101	1,049	1,108	5,522
48	Cardboard, not made in paper mills		2,138	2,387	2,831	4,176	6,766	9,305	19,355

105	Engraving & diesinking	2,603	1,000	1,854	1,427	2,354	2,187	3,086	6,923
106	*Engraving, steel & copper plate,* incl. plate printing		3,086	3,445	5,249	6,115	9,706	14,185	24,307
107	Engraving, wood		731	1,546	610	644	707	733	1,126
177	Labels & tags	680	781	945	997	2,221	4,213	8,846	23,862
191	Lithographing	2,456	6,746	17,556	21,707	24,639	33,290	38,204	69,810
230	All other paper (except writing paper, building paper & cardboard, bristol board, etc.)	38,085	41,922	57,699	92,214	138,602	197,739	250,866	571,481
	Wood pulp		5,171	7,081	18,498	23,145	30,177	31,678	80,095
245	Photo-engraving	not reported		2,294	4,638	8,046	13,342	17,282	32,754
253, 254,	Electrotyping, lithographing, engraving, etc., except photo-engraving		1,940	1,956	2,425	2,961	6,339	7,498	9,681
255	Newspapers & periodicals: advertising		39,136	71,243	95,861	145,518	202,533	255,633	528,299
	Newspapers & periodicals: printed for publication by others						9,020	8,577	22,913
	Sheet music & books of music: printed for publication by others						1,001	823	3,767
	Job printing, incl. machine composition for others	38,082	54,736	77,029	97,437	151,439	198,076	249,650	460,613
	Books & pamphlets: printed for publication by others						10,210	19,050	32,861
	Ready prints (patent insides & outsides)						2,293	1,965	2,011
	All other products for sale & in execution of orders		6,240	6,558	8,511	12,602	11,885	13,801	30,805
304	Stereotyping & electrotyping	1,050	708	2,134	3,685	4,890	6,237	8,205	15,659
325	Type founding	2,234	2,388	4,015	2,913	2,796	2,789	2,379	2,137
108	Envelopes	1,159	1,526	2,470	3,204	5,199	6,843	9,402	19,364
230	Fine paper: writing	2,752	2,037	2,810	3,740	5,912	7,640	8,763	22,580
231	All other paper goods, n.e.s.	1,515	788	2,154	8,052	10,629	18,206	23,501	48,995
	Total, Census Industry Group 6	119,551	203,573	319,080	445,475	645,044	909,390	1,137,552	2,391,769
	Census Industry Group 7 Liquors and Beverages								
188	Alcohol & cologne spirits	23,527	26,695	67,737	62,959	85,336	91,897	93,207	30,300
198	Malt	12,197	18,547	23,795	19,665	30,743	38,835	48,494	39,053
	Total, Census Industry Group 7	35,724	45,242	91,532	82,624	116,079	130,732	141,701	69,353

INDUSTRY NUMBER	COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
	Census Industry Group 8 Chemicals and Allied Products								
26	Bone, carbon & lampblack	194	661	1,031	939	1,266	2,136	2,954	7,579
62, 73, 311	Chemicals	20,319	37,732	57,990	55,216	81,485	133,497	180,365	574,674
	Byproducts & residues of chemical operations		901	1,384	1,463	2,164	5,885	4,410	25,924
	Contract work		19	30	28	39	108	189	481
76	Byproducts of coke production, except gas & tar	not reported			658	1,693	4,095	8,652	40,113
94	Drug grinding	not reported		437	4,308	5,146	6,007	8,080	16,938
98	Dyestuffs & extracts	2,738	4,996	8,838	6,989	10,031	15,691	19,996	122,277
109	Explosives	4,116	5,636	11,031	17,009	27,793	38,120	39,778	82,362
	Contract work, shooting wells				not reported				3,435
114	Fertilizers	5,571	22,658	37,535	42,778	58,017	102,097	155,176	287,716
133	Byproducts of mfd. gas except coke & tar	96	not reported	178	218	423	5,898	9,669	4,091
139	Glue & gelatin	1,785	4,514	4,458	5,626	10,479	14,779	18,174	36,204
143	Grease & tallow, not incl. lubricating grease	9,585	21,803	11,870	18,981	29,878	37,197	41,499	95,606
160	Ink, printing	586	1,079	2,322	3,009	5,641	8,662	13,552	25,786
194	Lubricating greases, not made in petroleum refineries	not reported	476	1,102	936	1,145	1,930	6,537	9,817
218	Oil, cake & meal, cottonseed	2,237	7,799	19,607	59,549	97,758	149,885	214,765	588,220
220	Oils, essential	551	234	240	763	1,406	1,531	1,865	5,021
221, 223	Other oils, n.e.s., incl. lard oil & oleo oil, not made in slaughtering establishments	17,568	10,966	14,172	23,618	27,446	39,821	44,573	184,703
222	Oil, linseed	7,353	14,886	22,757	26,287	26,667	34,717	42,973	114,045
229, 329	Varnishes, japans & shellac	4,987	8,017	14,935	19,123	22,534	32,531	37,949	92,771
241	Fuel oils	3,368	3,389	6,440	7,551	9,205	36,463	84,018	318,124
	Coke, petroleum		35	159	176	150	508	819	3,928
	Light products of distillation, except gasoline		382	1,179	2,063	2,750	5,131	15,779	86,139
	Lubricating & axle grease		52	640	1,591	903	1,016	2,293	8,147
	Petrolatum		28	1,347	864	491	552	1,243	3,750
	Paraffin wax		632	3,054	7,791	10,007	9,389	8,897	28,348
	Partly refined oils, acid oil, reclaimed acid & other special products		325	1,467	1,699	6,856	6,307	8,999	37,763
324	Turpentine & rosin	3,521	5,842	8,029	20,231	24,073	25,488	21,313	56,499
348	Wood distillation & charcoal mfr.	2,029	(Incl. with 62)		5,996	8,811	9,795	9,910	28,122
17	Baking powders & yeast	733	1,405	2,391	3,135	5,142	7,842	8,998	23,537
24	Blacking, stains & dressing	182	332	645	1,002	1,322	1,874	2,200	5,628
66	Cleansing & polishing preparations	69	107	186	470	581	1,342	1,963	5,134
76	Coke	1,111	5,259	16,190	33,743	47,790	85,467	83,917	242,663

95	Alkaloids & derivatives	not reported		673	2,343	3,278	4,534	4,951	4,700
	Biological products			506	1,762	2,466	3,411	3,728	9,510
133	Receipts from sales of lamps & appliances by gas companies	832	not reported	1,462	1,797	3,816	5,538	7,393	10,547
219	Castor oil	24	43	70	58	68	133	257	821
233	Patent compounds	971	877	1,948	3,562	4,500	5,061	6,193	17,382
241	Lubricating oils	88	1,763	7,268	10,894	23,471	38,431	52,012	159,234
	Illuminating oils	698	1,004	1,556	2,241	2,741	2,836	7,744	47,133
	Gasoline	none	2,580	7,963	13,824	17,540	28,764	68,578	333,553
269	Salt	4,077	4,043	4,271	6,206	7,722	9,158	10,763	29,025
294	Soap	940	1,349	1,724	2,397	3,422	5,475	7,959	20,394
	Total, Census Industry Group 8	96,329	171,824	279,085	418,894	598,116	929,102	1,271,083	3,797,844
	Census Industry Group 9 Stone, Clay and Glass Products								
37	Fire & silica brick & stove lining	3,644	4,021	6,470	9,053	11,753	17,044	16,948	49,615
	Other brick & tile products			2,181	4,304	5,501	2,695	3,166	8,840
59	All other products of the cement industry	262	406	1,107	2,016	3,841	9,664	19,646	36,551
64	China decorating, not incl. that done in potteries	not reported		606	496	334	803	743	925
135	Milk jars	not reported			729	1,161	2,071	4,961	4,653
	Lantern globes	183	185	329	497	853	436	521	1,023
	Plate glass, rough	30	74	337	76	4	37	26	171
	Wire glass, rough	not reported		11	125	568	483	1,057	2,271
	All other bottles & jars	7,749	7,818	13,914	18,013	29,034	30,296	43,460	79,995
	All other products				691	2,323	2,370	4,023	12,752
	Opal ware				1,582	870			
	Cut glass	1,344	1,356	2,414	672	988	9,036	10,563	15,372
	All other pressed & blown glass				1,385	3,533			
186	Limestone	1,328	231	631	1,149	2,197	2,681	3,345	4,132
206	Minerals & earths, ground or otherwise treated	527	1,417	2,770	3,622	4,319	4,553	10,294	44,638
135	Plate glass, polished	not reported					636	1,118	10,004
136	Glass cutting, staining & ornamenting	229	756	1,817	2,611	3,920	4,806	4,962	8,627
186	Lime	2,092	365	994	1,810	3,461	4,558	7,248	16,846
207	Mirrors, framed & unframed	176	110	2,167	2,890	2,746	3,457	3,582	7,380
—	Quartz milled	18,386				not reported			
	Total, Census Industry Group 9	54,336	16,739	35,748	51,721	77,406	95,626	135,663	303,795

INDUSTRY NUMBER	COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
	Census Industry Group 10 Metals and Metal Products, Other than Iron and Steel								
3	All other aluminum manufactures, incl. ingots, plates & sheets				not reported				26,220
14	Babbitt metal & solder	324	275	3,036	9,605	13,690	20,652	22,718	67,500
35	Castings & machinery fittings							62,220	137,260
	Ingots & bars							8,820	44,250
	Plates & sheets							43,020	103,409
	Rods	14,302	29,771	54,521	96,563	111,544	163,370	14,570	43,598
	Tubing							13,935	43,366
	Wire, plain							34,062	74,148
100	Electroplating	not reported	1,849	2,921	2,812	3,066	4,663	4,820	10,354
102, 172,	Enameling	225	183	182	1,287	1,980	3,033	2,185	2,693
298	Stamped ware	not reported	3,125	9,327	14,297	21,958	34,763	43,671	99,331
	Japanning	216	190	351	216	607	331	381	771
131	Galvanizing	3,620	8,565	13,437	11,228	29,168	33,345	51,723	85,551
140	Gold & silver, leaf & foil	1,411	1,614	2,978	2,666	2,695	2,631	2,432	4,461
141	Gold & silver, reducing & refining, not from the ore	792	8,908	29,890	11,021	17,469	22,030	26,685	52,307
178	Automobile lamps		none		41	259	1,736	4,901	14,864
	Reflectors	62	209	252	517	542	822	656	1,032
183	Lead, bar, pipe & sheet	12,453	5,125	7,642	6,842	8,488	8,370	9,431	16,396
215	Hooks & eyes				575	691		1,694	928
	Knitting machine needles	571	799	964	648	677	2,694	755	4,665
	Snap fasteners & clasps				258	303		768	7,996
238	Pens, gold	389	443	597	665	576	996	534	1,498
288, 291, 292x	Smelting & refining, metals, n.e.s.				not reported separately				20,074
289	Smelting & refining, copper	11,684	not reported		165,132	240,780	378,806	444,022	651,102
290	Smelting & refining, lead	3,499			175,466	185,827	167,406	171,579	196,795
292	Smelting & refining, zinc	1,224	2,725	2,977	18,188	24,791	34,206	53,538	104,123
293	Smelting & refining, not from the ore	1,094	8,411	28,189	7,832	17,507	28,249	40,539	51,050
316	Tin & other foils, n.e.s.	not reported	417 (Incl. with 'all other industries')		1,593	2,795	3,419	5,070	19,438
336	Watch & clock materials, except watch cases	1,349	829	1,959	812	1,010	1,589	2,389	3,159
337	Watch cases	2,151	4,231	7,946	7,175	7,954	9,695	6,633	16,617
173	Jewelry	2,168	2,178	3,410	4,561	5,263	7,949	7,914	19,976
318	Tinware, n.e.s.	11,016	13,604	18,068	27,198	41,718	58,563	79,874	225,510
	Total, Census Industry Group 10	68,550	93,451	188,647	567,198	741,358	989,318	1,161,539	2,150,442

	Census Industry Group 12 Vehicles for Land Transportation								
10	Contract & custom work		none			37	609	1,426	7,614
11	Automobile chassis All other products of motor vehicle industry, incl. bodies & parts & repair work done in factories		none		515	2,885	29,465	44,336	650,565
51	Carriage & wagon materials	5,582	9,608	15,449	23,776	29,009	32,800	23,606	27,413
56, 57	All other products, incl. parts & repair work	6,888	6,166	16,249	21,599	25,373	49,280	56,251	169,217
	Parts & repair work done in other industries	53	47	124	165	205	210	980	3,290
209	Motorcycle & bicycle parts	none		522	6,503	1,083	3,874	5,352	18,171
10	Motor vehicle bodies & parts		none			1,076	36,704	81,066	471,885
	Total, Census Industry Group 12	12,523	15,821	32,344	52,558	59,668	152,942	213,017	1,348,155
	Census Industry Group 14 Miscellaneous Industries								
1	Aircraft under construction at close of year				none				1,659
	Engines and parts			none				126	2,855
4	Ammunition Safety fuses, other fuses, naval & rr. torpedoes	2,023	1,552	5,326	10,611	16,233	21,224	27,516	92,967 17,259
	Contract settlements				none				3,354
9	Textile-mill products & all other asbestos products			not reported				1,073	16,398
20	Belting, rubber	213	370	1,880	2,104	5,099	6,559	7,989	22,436
31	Heels, rubber		none			7,548	5,358	5,754	16,104
42	Button parts Blanks or molds	157	394	373	24 656	22 916	2,769	111 2,349	1,070 3,092
93	Dental goods	540	803	2,421	3,472	7,287	10,106	15,025	27,281

INDUSTRY NUMBER	COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
99	Fuses, cur-outs & fuse plugs				355	868	1,002	1,757	7,895
	Small dynamos (under 10 k.w.), starting motors & generators, automotive				3,466	3,837	3,142	5,933	36,663
	Sockets, receptacles, bases & attachment plugs				594	2,011	4,522	5,513	15,008
	Annunciators & push buttons				225	186	236	264	710
	Transformers, under 50 k.w.				2,184	3,292	4,185	7,317	10,613
	Rheostats, resistances, controllers, motor starters, regulators, etc.				831	933	2,675	9,788	23,083
	Generator parts & supplies				1,102	1,220	996	1,527	6,217
	Vehicle & railway motors	none	1,037	7,468	2,944	3,442	4,772	7,234	7,171
	Motor parts & supplies				none		2,795	4,512	18,722
	Storage batteries				2,792	1,569	4,244	10,615	56,648
	Battery parts & supplies					1,646	1,056	3,266	6,986
	Carbons				1,731	2,711	1,935	3,603	13,292
	Telephone parts & supplies				1,325	2,072	3,752	4,061	23,059
	Insulated wire				11,178	18,123	27,103	36,491	67,579
	Circuit fittings, not elsewhere provided for				1,679	3,525	1,080	2,068	5,053
	Magneto ignition apparatus, generators, spark plugs & coils				328	678	6,092	22,261	51,287
104	Engravers' materials	not reported	82	193	267	162	873	684	2,009
125	Foundry supplies	(Incl. in 'other industries')	211	655	1,101	1,033	2,241	1,963	9,528
130	Furs, dressed	294	272	652	1,401	3,219	2,393	2,878	21,551
142	Graphite, ground & refined	not reported	293	77	598	476	1,588	2,401	2,754
159	Receiprs from cold storage	7	15	137	380	892	2,041	3,415	7,143
171	Ivory, shell & bone work, excl. combs & hairpins	1,223	1,647	2,172	2,120	3,242	2,111	2,147	2,910
174	Jewelry & instrument cases	224	136	1,501	1,194	2,365	3,218	3,602	8,551
179	Lapidary work	106	540	313	5,740	7,586	9,100	5,317	29,741
211	Musical instruments, n.e.s., parts & materials	554	234	518	931	955	886	1,070	3,502
214	Piano & organ parts, excepr perforated music rolls	3,007	4,655	8,849	10,378	16,733	22,557	23,786	39,906
242	Phonograph cabinets & parts & accessories	none	(Incl. with 'all other industries')		269	1,503	763	323	14,836

244	Motion picture films, not exposed, & all other photographic materials	not reported	140	2,087	5,681	9,392	21,036	34,197	69,072
	Motion picture projection films			none			4,206	not reported separately	32,092
257	Pulp, from fiber other than wood	not reported		524	103	(Incl. with 'all other industries')			524
265	Tires, solid							13,736	52,922
	Rubber packing	6,760	11,740	15,128	27,841	42,894	72,666	3,508	7,317
	Rubber reclaimed							11,135	20,173
	All other manufactures of rubber							42,137	151,101
270	Sand & emery paper & cloth	436	327	1,560	1,468	1,843	5,439	5,401	11,612
283	Advertising novelties			not reported separately			5,916	10,684	25,404
299	Stationery goods, n.e.s.	35	6,152	9,863	5,284	9,248	17,371	23,887	61,565
302	Steam packing	not reported		963	3,354	8,594	11,674	13,940	39,377
306X	Straw goods	7,390	9,346	330	37	186 (Incl. with 'all other industries')			
339	Whalebone cutting	262	527	683	135	(Incl. with 'all other industries')			
358	Teasels	not reported		85		not reported			
5	Artificial flowers	238	444	824	571	476	2,176	1,834	4,088
42	Buttons	1,364	3,412	3,233	5,902	9,148	17,016	15,110	32,491
99	Incandescent lamps		not reported		2,285	4,519	10,215	11,278	37,471
110	Fancy articles, n.e.s.	44	586	1,080	1,408	1,862	1,929	2,749	9,574
111	Feathers & plumes	581	2,052	3,819	2,647	2,207	10,085	7,733	9,913
127	Fur goods	961	889	2,140	2,891	4,144	6,241	4,915	19,408
159	Ice, manufactured	126	265	2,385	6,706	12,175	22,069	31,096	69,397
210	Mucilage, paste, & other adhesives, n.e.s.	68	9	686	1,374	1,912	2,644	3,105	5,985
265	Pneumatic tires & tubes, automobile			none		2,062	11,220	33,961	150,746
	Pneumatic tires & tubes, motorcycle and bicycle			none	4,389	939	1,122	1,713	2,920
327	Umbrellas & canes	611	876	1,745	1,755	1,707	2,036	1,770	3,246
344	Window shades & fixtures	not reported	157	514	494	546	1,136	1,089	1,852
	Total, Census Industry Group 14	27,224	49,163	80,184	146,305	235,238	389,571	508,717	1,515,142
	Total, All Unfinished Commodities	1,486,314	1,982,211	3,045,874	4,686,199	6,034,724	8,672,210	9,950,881	26,183,436

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
		INDUSTRIES AND COMMODITIES NOT ELSEWHERE CLASSIFIED								
VIII	76	Coke, excl. gas-house coke: gas	not reported			333	844	2,609	6,010	16,685
XIV	126	Fuel, mfd.	no reports	102	(Incl. with 'all other industries')			453	1,155	2,359
VIII	133	Gas, mfd., illuminating & heating: gas			15,971	69,572	112,888	138,869	175,198	282,401
		Gas, mfd., illuminating & heating: receipts from rent of lamps & appliances	29,330		166	204	434	718	1,122	1,763
III	228	Ordnance & accessories	not reported		2,425	2,240	558	(Incl. with 'all other industries')		77,508
I	252	Poultry, killing & dressing, not done in slaughtering & meat packing establishments			not reported				16,902	52,133
		Total, Industries & Commodities, n.e.c.	29,330	102	54,562	72,349	114,724	142,649	200,387	432,849
		RECAPITULATION								
		All Commodities	3,845,401	5,091,267	8,058,843	11,390,660	14,792,818	20,632,988	24,268,372	62,519,803
		Finished	1,987,685	2,715,664	4,102,963	5,508,525	7,103,921	9,626,338	11,689,324	30,700,517
		Construction materials	319,892	363,429	704,498	863,637	1,178,712	1,704,112	1,787,078	3,366,352
		Repairs and servicing	22,180	29,861	150,946	259,950	360,737	487,679	640,702	1,836,649
		Unfinished	1,486,314	1,982,211	3,045,874	4,686,199	6,034,724	8,672,210	9,950,881	26,183,436
		Commodities, n.e.c.	29,330	102	54,562	72,349	114,724	142,649	200,387	432,849
		PERCENTAGES								
		All Commodities	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Finished	51.7	53.3	50.9	48.4	48.0	46.7	48.2	49.1
		Construction materials	8.3	7.1	8.7	7.6	8.0	8.3	7.4	5.4
		Repairs and servicing	.6	.6	1.9	2.3	2.4	2.4	2.6	2.9
		Unfinished	38.6	38.9	37.8	41.1	40.8	42.0	41.0	41.9
		Commodities, n.e.c.	.8	*	.7	.6	.8	.7	.8	.7

*Less than one-half of one-tenth percent.

n.e.c.: not elsewhere classified.
n.e.s.: not elsewhere specified.

n.o.c.: not otherwise classified.
n.o.e.: not otherwise enumerated.

Note A to Table II 1

Estimates from Data Later than 1919 for Products not Belonging to an Industry (*o*) and Products Made in Other Industries (*s*)
(thousands of dollars)

Major and Minor Commodity Groups

		Value 1919	Estimated Correction for *o*	*s*	Difference between *o* & *s*	Difference as % of Total Values
	Consumer Perishable, Total	13,668,008	68,919		68,919	0.5
1	Food & kindred products	10,840,581	54,964		54,964	0.5
2	Cigars, cigarettes & tobacco	1,024,458	35		35	
3	Drug, toilet & household preparations	691,307	3,247		3,247	0.5
4	Magazines, newspapers, stationery & supplies, & misc. paper products	479,837	10,557		10,557	2.2
5	Fuel & lighting products, mfd.	631,825	116		116	
	Consumer Semidurable, Total	7,030,907	88,144	965	87,179	1.2
6	Dry goods & notions	985,642	6,839	262	6,577	0.7
7	Clothing & personal furnishings	3,866,186	63,774	703	63,071	1.6
8	Shoes & other footwear	1,258,542				
9	House furnishings (semidurable)	212,906	5,892		5,892	2.8
10	Toys, games & sporting goods	161,292	11,639		11,639	7.2
11	Tires & tubes	546,339				
	Consumer Durable, Total	3,967,940	65,825		65,825	1.7
12	Household furniture	498,005	17,557		17,557	3.5
13a	Heating & cooking apparatus, & household appliances, except electrical	266,576	4,374		4,374	1.6
13b	Electrical household appliances & supplies	84,244				
14a	Floor coverings	151,397				
14b	Misc. house furnishings (durable)	218,861	11,979		11,979	5.5
15	China & household utensils	235,629	5,894		5,894	2.5
16	Musical instruments	256,485				
17	Jewelry, silverware, clocks & watches	304,810	18,509		18,509	6.1
18	Printing & publishing books	132,699				
19	Luggage	64,864				
20a & b	Motor vehicles & accessories	1,574,355	5,989		5,989	0.4

		Value 1919	Estimated Correction for o	s	Difference between o & s	Difference as % of Total Values
20c	Carriages & wagons	27,230				
21	Motorcycles & bicycles	28,887				
22	Pleasure-craft	5,496				
23	Ophthalmic products & artificial limbs	45,041	1,523		1,523	3.4
24	Monuments & tombstones	73,361				
	Producer Durable, Total	6,033,662	67,761	5,112	62,649	1.0
25	Industrial machinery & equipment	1,918,607	8,929	4,885	4,044	0.2
26	Electrical equipment, industrial & commercial	456,602				
27	Farm equipment	394,974	6,350		6,350	1.6
28	Office & store machinery & equipment	153,406	11,584		11,584	7.6
29	Office & store furniture & fixtures	90,923	2,349		2,349	2.6
30	Locomotives & railroad cars	550,424				
31	Ships & boats	1,389,509				
32a	Business vehicles, motor	379,931				
32b	Business vehicles, wagons	42,518				
33	Aircraft	8,610				
34	Professional & scientific equipment	80,108	7,153		7,153	8.9
35	Carpenters' & mechanics' tools	208,007	23,881		23,881	11.5
36	Misc. subsidiary durable equipment	360,043	7,515	227	7,288	2.0
	All Finished Commodities, Total	30,700,517	290,649	6,077	284,572	0.9
	Construction Materials	3,366,252	61,386		61,386	1.8

Note B to Table II 1

Commodity Values Estimated from Combined Totals, and Other Commodity Apportionments

Industry Number	Census Years in which Estimated	Commodities by Census Groups	Group Classification	% of combined total accounted for by each commodity
		1 FOOD AND KINDRED PRODUCTS		
40, 61	1889	Casein; whey sold; cream	Un	84.1
		Products not belonging to the industry		15.9
	1879	Butter[a]	1, Un	
		Cheese[a]	1	

65	1919	Finished chocolate & cocoa products made in other industries	1	47.3
		Unfinished chocolate & cocoa products made in other industries	Un	52.7
	1869–1914	Chocolate in cakes, sweetened or with nuts; milk chocolate; cocoa, powdered; other chocolate & cocoa products, except confectionery; finished chocolate & cocoa products made in other industries	1	47.3
		Chocolate in cakes, unsweetened; chocolate coatings; chocolate liquors; cocoa, other than powdered; cocoa butter; unfinished chocolate & cocoa products made in other industries	Un	52.7
74, 235	1869–1899	Coffee & spice, roasting & grinding	1	91.8
		Peanuts, grading, roasting, cleaning, shelling	1, Un	8.2
122	1869, 1879	Hominy & grits; oatmeal, breakfast foods & all other cereal products	1	.7
		Flour: wheat, corn, rye, buckwheat & barley	1, Un	86.4
		Bran & middlings, & feed & offal	Un	12.9
122, 123, 286	1914	Food preparations for human consumption remaining in Food preparations, n.e.s. industry	1	34.8
		Food preparations for human consumption transferred to other industries	1, Un	65.2
	1879–1909	Food preparations for human consumption remaining in Food preparations, n.e.s., industry	1	41.7
		Food preparations for human consumption transferred to other industries	1, Un	58.3
122	1904–1909	Meat products made in Food preparations industry (industry total)[b]	1, Un	
		Breakfast foods made in Food preparations, n.e.s., industry[b]	1	
	1879–1899	Meat products made in the Food preparations industry (industry total)	1, Un	33.0
		Breakfast foods made in Food preparations, n.e.s. industry	1	67.0
123	1909	Peanut butter	1	4.0
		Sweetening sirups, other than cane	1	22.7
		Macaroni, vermicelli & noodles	1	19.7
		Other food preparations for human consumption	1	53.6
	1879–1904	Peanut butter	1	3.1
		Macaroni, vermicelli & noodles	1	15.2
		Other food preparations for human consumption	1	41.4
		Other food preparations for animals & fowls	Un	40.3
263	1914–1919	Clean rice, fancy-head[c]	1	
		Clean rice, second-head, screenings & brewers'[c]	Un	
	1914–1919	Hulls & waste	Un	28.3
		Products not belonging to the industry		71.7
	1899	Clean rice, fancy-head[d]	1	
		Clean rice, second-head, screenings & brewers'[d]	Un	
	1899	Hulls & waste	Un	67.8
		Products not belonging to the industry		32.2
	1879–1889	Clean rice, fancy-head	1	73.1
		Clean rice, second-head, screenings & brewers'; polish & bran; hulls & waste	Un	26.9

INDUSTRY NUMBER	CENSUS YEARS IN WHICH ESTIMATED	COMMODITIES BY CENSUS GROUPS	GROUP CLASSIFICATION	% OF COMBINED TOTAL ACCOUNTED FOR BY EACH COMMODITY
286, 287	1879–1909	Meat puddings, scrapple, head cheese, etc.[e]	1	
		Edible meat products made in other industries[e]	1	
		Lard compound & substitutes[e]	1	
	1889–1899	Canned goods[f]	1	
	1909	Oleo stock	Un	9.9
		Tallow		90.1
	1889–1909	Sausage casings[g]	Un	
	1889	Fresh meat[h]	1	
	1914–1919	Custom & contract work	Un	1.4
		Other products[i]		98.6
	1909–1914	Hair, hog & cattle	Un	3.3
		Other products[i]		96.7
	1909	Hoofs, horns & horn tips, strips, etc.	Un	1.1
		Other products[i]		98.9
	1889–1904	Oleo stock	Un	1.3
		Stearin	Un	6.7
		Hoofs, horns & horn tips, strips, etc.	Un	1.0
		Hair, hog & cattle	Un	2.9
		Other products[i]		88.1
	1889	Custom & contract work	Un	1.3
		Other products[i]		98.7
	1889–1899	Hides & pelts[i]	Un	
	1879	Fresh meat; cured meat; canned goods; sausage	1	83.0
		Lard	1, Un	9.7
		Stearin; sausage casings; hoofs, horns & horn tips, strips, etc.; hides & pelts; hair, hog & cattle; wool; custom & contract work	Un	7.3
308	1889	Sugar, beet (industry total)[k]	1, Un	
309	1909	Sugar, refined & brown	1, Un	22.8
		Sugar, raw & clarified	Un	77.2
	1904	Sugar, refined & brown	1, Un	90.4
		Molasses & sirup; sugar, raw; sugar, clarified	Un	9.6
	1879–1899	Sweetening sirup	1	2.5
		Sugar, refined & brown	1, Un	88.2
		Molasses & sirup; sugar, raw & sugar, clarified	Un	9.3
	1869	Sweetening sirup	1	2.8
		Sugar, refined & brown	1, Un	97.2
310	1909	Sugar, refined	1, Un	98.9
		Molasses and sirup	Un	1.1

49	1879	Rugs[1]	14a	
		Carpets[1]	14a, Un	
	1869	Rugs	14a	.3
		Carpets	14a, Un	99.7
70	1869–1904	Clothing, men's, regular factories	7	90.4
		Clothing, men's, contract shops	Un	9.6
72	1869–1904	Clothing, women's, regular factories	7	97.2
		Clothing, women's contract shops	Un	2.8
83, 175, 187	1904	Jute carpets & rugs	14a	2.1
		Linen woven goods	9	2.6
		Rope, cable & cordage	36, Un	34.4
		Linen thread	6, Un	5.6
		Binder twine; twine, other than binder twine; yarns for sale; jute woven goods, except carpets & rugs & all other woven goods	Un	55.3
	1879–1889	Jute carpets & rugs	14a	.7
		Linen woven goods	9	1.6
		Rope, cable & cordage	36, Un	27.6
		Linen thread	6, Un	4.8
		Binder twine; twine, other than binder twine; yarns for sale; jute woven goods, except carpets & rugs & all other woven goods	Un	65.3
	1869	Linen woven goods	9	25.0
		Linen thread	Un	75.0
		Rope, cable & cordage	36, Un	35.4
		Other cordage & twine manufactures	Un	64.6
87, 88, 89	1889–1914	Cotton blankets; cotton table damask; sheets & pillow cases, bedspreads & quilts	7	7.5
		All other cotton woven goods	6, Un	92.5
	1869–1909	Lace curtains & bedspreads	9	38.3
		Lace goods & nets	6, Un	61.7
	1889	Towels, toweling, wash cloths, turkish towels & terry weave	9, Un	12.1
		Tape & webbing	6, Un	12.4
		Other unfinished cotton products & contract work	Un	42.2
		All other products not belonging to the industry		33.3
	1869, 1879	Cotton blankets; cotton table damask; sheets & pillow cases; bedspreads & quilts	7	2.5
		Towels, toweling, wash cloths, turkish towels & terry weaves	9, Un	.7
		Lace & lace curtains	9, Un	.5
		Threads	6, Un	4.4
		Tape & webbing	6, Un	.7
		Tapestries	14b, Un	.3
		All other cotton woven goods	6, Un	31.2
		All unfinished cotton goods products	Un	59.7

INDUSTRY NUMBER	CENSUS YEARS IN WHICH ESTIMATED	COMMODITIES BY CENSUS GROUPS	GROUP CLASSIFICATION	% OF COMBINED TOTAL ACCOUNTED FOR BY EACH COMMODITY
152, 153, 154, 155	1869	Hats & caps, other than felt and wool, & hats, straw	7, Un	31.0
		Hats, fur-felt	7, Un	40.4
		Hats, wool-felt	7, Un	28.6
152, 153, 154	1879–1889	Hats & caps, other than felt & wool	7, Un	43.5
		Hats, fur-felt	7, Un	56.5
152, 154	1869–1899	Hats, straw	7	44.1
		Hats & caps, except felt, straw & wool	7	54.9
		Contract work	Un	1.0
153	1869–1889	Fur-felt hats	7	94.6
		Fur-felt hat bodies & hats in the rough; contract work	Un	5.4
155	1869, 1879	Hats, wool-felt	7	97.0
		Hats in the rough & hat bodies	Un	3.0
158	1879–1909	Comforts & quilts	9	21.5
		Feather pillows & beds	14b	14.3
		Mops & dusters	9	13.0
		All other house-furnishing goods	9	42.6
		Cotton batting, not made in cotton mills	Un	8.6
176	1914	Tricolette	Un	66.6
		Products not belonging to the industry		33.4
	1904–1909	Bathing suits	7	25.3
		Tricolette	Un	49.7
		Products not belonging to the industry		25.0
	1899	Bathing suits	7	20.9
		Eider down	Un	17.4
		Tricolette	Un	41.1
		Products not belonging to the industry		20.6
	1889	Tricolette; all other knitted cloth; contract work	Un	73.0
		Products not belonging to the industry		27.0
	1879	Bathing suits	7	.6
		Jersey cloth & stockinette; eider down; tricolette; all other knitted cloth; contract work	Un	83.8
		Products not belonging to the industry		15.6
	1879	Hosiery; shirts & drawers; leggings; gloves & mittens, knitted; knitted headwear (except infants'); sweaters, sweater coats, jerseys, cardigan jackets, etc.; scarfs & shawls & all other fancy knit goods[m]	7	
		Fleece lining (shoe & glove)[m]	Un	
	1869	All finished knit goods	7	95.3
		All unfinished knit goods	Un	4.7

203	1869–1909	Women's neckwear	7	12.2
		Lace work, crocheted goods, hand-made curtains of muslin & lace, ladies' & children's belts other than leather, & handkerchiefs	6	18.1
		Embroideries	6, Un	20.5
		Trimmed hats & hat frames	7, Un	42.4
		Dress & cloak trimmings, braids & fringes	Un	6.8
225	1879–1899	Table, wall, shelf & stair oilcloth	14b	69.7
		Enameled oilcloth	Un	30.3
281	1909–1919	Shirts	7	88.1
		Neckbands for sale as such	Un	.8
		Contract work	Un	6.0
		Products not belonging to the industry		5.1
	1879–1904	Shirts	7	93.8
		Contract work	Un	5.5
		Neckbands for sale as such	Un	.7
284	1889	Sewing & embroidery silks[n]	6, Un	32.0
		Machine twist, fringe & floss silks[n]	Un	68.0
	1889	Silk embroideries	6	4.6
		All other products		95.4
	1889	Contract work	Un	65.9
		All other products[o]		34.1
	1889–1904	All other silk manufactures	Un	63.6
		Products not belonging to the industry[p]		36.4
	1879	Silk embroideries	6	.2
		Contract work	Un	3.1
		All other silk manufactures	Un	96.7
	1869	Silk embroideries	6	.1
		Silk ribbons	6, Un	14.7
		Silk laces, nets, veils, veiling, etc.	6, Un	1.2
		Broad silks	6, Un	27.4
		Sewing & embroidery silks	6, Un	1.8
		All other silk manufactures; contract work	Un	54.8
355, 356	1879	Blankets: all-wool woven, cotton-warp woven, & cotton-mixed woven	14b	80.6
		Horse blankets	36	19.4
	1879	Woolen, worsted, merino & other yarns[q]	Un	
	1879	Shawls: all-wool woven	7	1.2
		Carriage cloths & carriage robes	20	.8
		Woolen & worsted woven goods, except shawls, blankets & carriage equipment	6, Un	93.8
		Woolen, worsted, mohair & other upholstering goods; worsted slubbing, noils & wool waste; contract work	Un	4.2

INDUSTRY NUMBER	CENSUS YEARS IN WHICH ESTIMATED	COMMODITIES BY CENSUS GROUPS	GROUP CLASSIFICATION	% OF COMBINED TOTAL ACCOUNTED FOR BY EACH COMMODITY
	1869	Blankets, etc.	14	2.9
		Shawls: all-wool woven	7	1.0
		Horse blankets	36	.7
		Carriage cloths & carriage robes	20	.7
		Woolen & worsted woven goods, except, etc.	6, Un	79.8
		All other woolen manufactures	Un	14.9
		III IRON AND STEEL AND THEIR PRODUCTS		
91	1869–1909	Pocket-knives	10	15.4
		Scissors, shears & clippers	14b	9.2
		Table cutlery; razors, plain & safety	15	39.3
		Axes & hatchets; augurs, bits, planes & chisels; all other cutlery & edge tools	35	36.1
113, 163	1879–1904	Slag; blast furnace gas to other departments	Un	25.0
		Products not belonging to the industry		75.0
116	1869–1909	Firearms	10	98.7
		Contract work	Un	1.3
124, 302X	1914	Steel barrels, drums & tanks	25	1.8
		Misc. machinery (incl. machinery not reported separately for both 1919 & 1914) & other machine shop products	25, Un	98.2
124, 166	1869–1904	Foundry & machine shop products, excl. locomotives & stoves & hot-air furnaces	25, Un	96.8
		Iron and steel—cast-iron pipe	C, Un	3.2
124, 305	1869–1899	Foundry & machine shop products, incl. cast-iron pipe & excl. locomotives	25, C, Un	92.7
		Stoves & hot-air furnaces	13, C	7.3
124, 192	1869–1879	Foundry & machine shop products, incl. cast-iron pipe & stoves & hot-air furnaces	13, 25, C, Un	94.0
		Locomotives not made by rr. companies	30	6.0
149	1869–1909	Locks & all other hardware, incl. vehicle, piano & organ hardware	Un	64.8
		Builders' hardware	C	35.2
164	1904	Scrap iron or steel	Un	12.5
		Custom work & repairing	S	1.3
		All other iron or steel products, not rolled		69.9
		Products not belonging to the industry		16.3
	1879–1889	Wire rods & steel rods; nail & tack plate; armor plate, gun forgings & ordnance; car & locomotive wheels, rolled or forged, etc.; ingots; direct steel castings; scrap iron or steel	Un	56.3
		Custom work & repairing	S	34.9
		All other iron or steel products, not rolled		.7
		Products not belonging to the industry		8.1

	1869	Rails, incl. rerolled or renewed rails, rail joints & fastenings 17a	C	
166	1869–1909	Cast-iron pipe & fittings	C	97.4
		Castings, other than pipe & fittings	Un	2.6
275, 276	1869, 1879	Screws, machine	Un	33.7
		Screws, wood	C	66.3
278	1879–1909	Sewing machines, household types	13a	65.7
		Sewing machines, industrial types	25	31.3
		Sewing machine attachments	Un	3.0
	1869	Sewing machines, household types	13a	67.7
		Sewing machines, industrial types	25	32.3
305	1869–1909	Stoves, ranges & fireless cookers	13a	78.7
		Hot-air furnaces	C	21.3
326	1889–1904	Typewriters & parts	28	78.2
		Typewriter supplies	Un	21.8
345	1909	Woven-wire fence & poultry netting	27	87.5
		Other woven-wire products	Un	12.5
	1879–1904	Barbed wire; woven-wire fence & poultry netting	27	36.2
	1869	Woven-wire fence & poultry netting	27	25.0
		Wire brads, tacks & staples; plain wire, iron & steel; galvanized & other coated wire; wire rope, cable & strand; other woven-wire products; cold-rolled flat wire, etc.	Un	74.8
		Custom work & repairing	S	.2
346	1869–1909	Woven-wire fencing	27	35.5
		Wire rope & cable & other wirework products	Un	64.5
		IV LUMBER AND ITS REMANUFACTURES		
23	1869–1904	Billiard tables, bowling alleys & accessories	10	98.3
		Custom work	S	1.7
129	1914–1919	Store & office furniture & fixtures	29	76.4
		Furniture for public buildings, incl. public conveyance seats	36, Un	23.6
	1869–1909	Household furniture	12	85.1
		Store & office furniture & fixtures	29	11.0
		Furniture for public buildings, incl. public conveyance seats	29	3.4
		Contract work	Un	.1
		Custom work & repairing	S	.4
258	1889–1914	Pulp goods, except wall board	Un	67.4
		Wall board	C	32.6

INDUSTRY NUMBER	CENSUS YEARS IN WHICH ESTIMATED	COMMODITIES BY CENSUS GROUPS	GROUP CLASSIFICATION	% OF COMBINED TOTAL ACCOUNTED FOR BY EACH COMMODITY
		V LEATHER AND ITS FINISHED PRODUCTS		
30	1899, 1904, 1914	Misc. footwear	8	50.1
		Cut stock & findings made in shoe factories; amount received for crimping, stitching, buttonhole making & contract work; other income, custom work, leather scraps, remnants, etc.	Un	49.9
	1909	Boots & shoes, other than rubber	8	98.0
		Misc. footwear	8	1.0
		Cut stock & findings, etc.; amount received, etc.	Un	1.0
	1869–1889	Boots & shoes, other than rubber	8	98.7
		Misc. footwear	8	.6
		Cut stock, etc.	Un	.7
250	1869–1919	Pocketbooks, purses & cardcases	7	99.0
		Contract work	Un	.8
		Custom work & repairing	S	.2
		VI PAPER AND PRINTING		
230	1919	Fine paper: writing	4, Un	84.1
		All other paper	Un	15.9
	1889	Fine paper: writing	4, Un	76.9
		All other paper	Un	23.1
	1889	Building papers	C	24.9
		All other paper	Un	75.1
	1879	Fine paper; writing	4, Un	12.1
		Building papers	C	2.3
		All other paper	Un	76.2
		Wood pulp	Un	9.4
	1869	Fine paper: writing(r)	4, Un	19.1
		All other paper(r)	Un	80.9
231	1889–1909	Playing cards	4	8.0
		All other paper goods, n.e.s. (excl. collars & cuffs, paper)	4, Un	92.0
253, 254, 255	1879–1899	Books & pamphlets: published or printed & published	18	22.7
		Sheet music & books of music: published or printed & published	4	2.7
		Electrotyping, engraving, lithographing, etc., except photo-engraving	Un	2.3
		Newspapers & periodicals: printed for publication by others; sheet music & books of music: printed for publication by others; job printing; books & pamphlets: printed for publication by others	Un	64.9
		All other products for sale & in execution of orders	Un	7.4

		VII LIQUORS AND BEVERAGES		
188	1909	Whisky, brandy, gin, & rum	1	54.3
		Alcohol & cologne spirits	Un	45.7
	1869–1899	Whisky, brandy, gin, & rum	1	33.8
		Alcohol & cologne spirits	Un	66.2
		VIII CHEMICALS AND ALLIED PRODUCTS		
43, 294	1869–1899	Candles	5a	5.4
		Soap	3, Un	94.6
62, 73, 311	1909	Contract work	Un	4.9
		Byproducts, not chemical		95.1
	1904	Chemicals[s]	Un	
	1904	Byproducts, chemical	Un	72.7
		Contract work	Un	1.3
		Byproducts, not chemical		26.0
	1899	Chemicals	Un	97.3
		Byproducts & residues of chemical operations	Un	2.6
		Contract work	Un	.1
	1879, 1889	Chemicals	Un	97.6
		Byproducts & residues of chemical operations	Un	2.3
		Contract work	Un	.1
95	1889–1909	Pharmaceutical metals & their salts; pills, tablets, powders, etc.; synthetic preparations; tinctures, fluid extracts, medicinal sirups, etc.	3	54.5
		Alkaloids & derivatives	3, Un	32.9
		Biological products	3, Un	12.6
133	1914	Byproducts (except coke & tar)[t]	Un	39.7
		Products not belonging to the industry		60.3
	1869, 1889–1914	Receipts from sales of lamps & appliances	13, Un	89.8
		Receipts from rents of lamps & appliances	N.C.	10.2
	1909	Byproducts (except coke & tar)[t]	Un	40.1
		Products not belonging to the industry		59.9
	1904	Byproducts (except coke & tar)	Un	43.5
		Products not belonging to the industry		56.5
	1889–1899	Coke, for sale	3, Un	63.1
		Tar	C	25.1
		Byproducts (except coke & tar)	Un	5.1
		Products not belonging to the industry		6.7

INDUSTRY NUMBER	CENSUS YEARS IN WHICH ESTIMATED	COMMODITIES BY CENSUS GROUPS	GROUP CLASSIFICATION	% OF COMBINED TOTAL ACCOUNTED FOR BY EACH COMMODITY
160, 161	1879	Ink, printing	Un	67.8
		Ink, writing	4, Un	32.2
219, 221, 223	1914–1919	Castor oil	3, Un	2.7
		Other oils, incl. lard oil & oleo oil, not made in the slaughtering industry	Un	97.3
229, 239	1879–1889	Paints, colors, putty & fillers	C	71.9
		Varnishes, japans & shellac	Un	28.1
233	1869–1909	Patent medicines	3	83.5
		Patent compounds	3, Un	16.5
241	1879–1909	Lubricating & axle grease	5a, Un	64.8
		Petrolatum	Un	35.2
	1879–1909	Gasoline	5a, Un	87.1
		Other light products of distillation	Un	12.9
	1909	Partly refined oils, acid oil & other special products	Un	56.1
		Products not belonging to the industry		43.9
	1904	Asphalt, other than liquid asphalt	C	20.6
		Partly refined oils, acid oil & other special products	Un	44.6
		Products not belonging to the industry		34.8
	1899	Asphalt, other than liquid asphalt	C	20.1
		Partly refined oils, acid oil, reclaimed acids sold, & other special products	Un	46.1
		Products not belonging to the industry		33.8
	1879–1889	Illuminating oils	5a	90.8
		Fuel oils	Un	9.2
	1879, 1889	Lubricating oils	5a, Un	65.5
		Lubricating greases & petrolatum	5a, Un	34.5
	1879, 1889	Coke, petroleum[u]	5a, Un	
	1879, 1889	Asphalt, other than liquid asphalt	C	12.5
		Lubricating oils	5a, Un	38.8
		Partly refined oils, acid oil, reclaimed acids sold, & other special products	Un	28.6
		Products not belonging to the industry		20.1
	1889	*Illuminating oils; liquid asphaltic road oils & tar; lubricating oils; lubricating & axle grease; gasoline; fuel oils; light products of distillation except gasoline; petrolatum; paraffin wax*[v]	5a, C, Un	
	1869	Illuminating oils	5a, Un	86.4
		Liquid asphaltic road oils & tar; asphalt other than liquid asphalt	C	1.1
		Fuel oils; coke, petroleum; light products of distillation; petrolatum; paraffin wax; partly refined oils, acid oil, reclaimed acid, & other special products	Un	12.5

7, 199	1879–1889	Artificial stone products; marble & stone work	C	68.5
		Monuments & tombstones	24	31.5
37, 251, 271	1889	China, bone china, delft & belleek ware; red earthenware; cooking ware & other pottery products	15	69.2
		Porcelain electrical supplies	26	5.4
		Sanitary ware	C	25.4
	1889–1914	Stoneware & yellow & Rockingham ware	15	77.8
		Chemical stoneware	36	22.2
	1869, 1879	Stoneware & yellow & Rockingham ware; china, bone china, delft & belleek ware; red earthenware; cooking ware & other pottery products; white ware	15	73.4
		Porcelain electrical supplies	26	.4
		Chemical stoneware	36	.4
		Brick, excp. fire brick & silica brick; tile (not drain); architectural terra-cotta; fireproofing, terra-cotta lumber, & hollow building tile or blocks; sanitary ware; draintile; sewer pipe	C	16.2
		Fire & silica brick & stove lining; other brick & tile products	Un	9.6
59, 186, 333	1879–1899	Cement	C, Un	54.5
		Lime	C, Un	26.9
		Wall plaster & composition flooring	C	18.6
59	1869–1899	Cement	C	87.1
		All other products	Un	12.9
135	1909–1919	Fruit jars; table ware; jellies, tumblers & goblets; blown tumblers, stem ware & bar goods[w]	15	
		Lamps & chimneys[w]	14b	
		Shades, globes & other gas goods & lantern globes[w]	15, Un	
		All other bottles & jars; opal ware; cut glass; all other pressed & blown glass[w]	Un	
	1889–1909	Wire glass, rough	Un	50.1
		Wire glass, polished & all other building glass	C	49.9
	1879	Plate glass, polished	C, Un	92.1
		Obscured glass, incl. cathedral skylight glass	C	7.9
	1869–1889	Fruit jars; tableware, jellies & blown tumblers	15	22.2
		Lamps & chimneys	14b	10.3
		Shades, globes & other gas goods, etc.	15, Un	7.3
		All other bottles & jars; all other products	Un	51.3
		Opal ware, cut glass & all other pressed glass	Un	8.9
	1869–1889	Shades, globes & other glass goods	C	83.4
		Lantern globes	Un	16.6
	1869	Plate glass, polished	C	84.2
		Plate glass, rough	Un	8.5
		Obscured glass, incl. cathedral & skylight glass	C	7.3

INDUSTRY NUMBER	CENSUS YEARS IN WHICH ESTIMATED	COMMODITIES BY CENSUS GROUPS	GROUP CLASSIFICATION	% OF COMBINED TOTAL ACCOUNTED FOR BY EACH COMMODITY
186	1909–1919	Limestone	C	65.3
		Products not belonging to the industry		34.7
	1869–1904	Lime	C, Un	84.0
		Limestone	C	16.0
		X METALS AND METAL PRODUCTS OTHER THAN IRON AND STEEL		
35	1869–1909	Wire, plain; tubing; ingots & bars; plates & sheets; rods; castings & machinery fittings	Un	99.2
		Custom work & repairs	S	.8
82, 318	1869–1899	Copper, tin & sheet-iron work	C, Un	57.2
		Tinware, n.e.s.	15, Un	42.8
102, 172, 298	1909	Enameled ware	15	28.5
		Stamped ware	Un	70.3
		Bathtubs, lavatories & sinks	C	1.2
	1899, 1904	Enameled ware	15	27.4
		Stamped ware	Un	65.5
		Bathtubs, lavatories & sinks	C	1.2
		Enameling	Un	5.9
	1879, 1889	Enameled ware	Un	95.9
		Bathtubs, lavatories & sinks	C	4.1
	1869	Enameled ware	15	88.3
		Enameling	Un	11.7
178	1899–1909	Automobile lamps[x]	Un	
		Lamps, other than automobile lamps & reflectors[x]	14b, Un	
	1869–1909	Lamps, other than automobile lamps	14b	92.8
		Reflectors	Un	7.2
215	1909	Pins, common or toilet	6	22.7
		Safety pins	6	17.1
		All other needles, incl. sewing machine needles	6, Un	12.0
		Knitting needles; hooks & eyes; snap fasteners & clasps	Un	48.2
	1899, 1904	Hooks & eyes	Un	35.8
		Snap fasteners & clasps	Un	18.3
		Products not belonging to the industry		45.9
	1879, 1889	Pins, common or toilet; hairpins, made of metal; safety pins	6	34.5
		All other needles, incl. sewing-machine needles	6, Un	19.1
		Knitting-machine needles; hooks & eyes; snap fasteners & clasps	Un	46.4
	1869	Pins; hairpins; safety pins	6	72.5
		Knitting-machine needles	Un	27.5

10, 11	1899	Automobile bodies & parts	20b, Un	11.3
		Automobiles	20a, 32, Un, S	88.7
11	1919	Passenger vehicles[y]	20a	22.6
		Business vehicles[y]	32a	77.4
	1904	Omnibuses, sightseeing wagons, etc.	32a	15.6
		Government & municipal vehicles	32a	.7
		Passenger vehicles excl. omnibuses, etc.	20a	83.7
	1899	Passenger vehicles	20a	89.5
		All other products of motor-vehicle industry	Un	10.5
53	1889–1919	Repair work & parts	S	74.2
		Products not belonging to the industry		25.8
	1869, 1879	Carriages, buggies, & light pleasure vehicles	20c	53.3
		Sleighs & sleds	20c	2.1
		Business, farm, government, & municipal wagons	32b	27.4
		Public conveyances	32b	1.3
		Repair work & parts	S	15.9
56, 57	1869–1904	Cars made in other industries	30	98.9
		Parts made in other industries	Un	1.1
	1869–1889	Steam- & electric-rr. cars: passenger & freight service	30	67.6
		Parts & cars made in other industries	30, Un	13.3
		All other products, incl. parts & repair work	Un	19.1
209	1899–1914	Motorcycle & bicycle parts, incl. side cars & delivery cars	21, Un	66.5
		Products not belonging to the industry		33.5
	1889	Bicycles	21	78.5
		Bicycle parts	21, Un	21.5

XIV MISCELLANEOUS INDUSTRIES

1	1914–1919	All other aeronautical products[z]	33	
		Repair work[z]	S	
	1914	Aeroplanes & seaplanes	33	73.8
		Engines & parts	Un	26.2
2	1904–1909	All other implements, incl. parts	27	47.1
		Products not belonging to the industry		52.9
	1869–1889	Plows & cultivators; planters & seeders; harvesting implements; seed separators; all other implements, incl. parts; agricultural implements made in other industries	27	96.4
		Amount received for repair work	S	3.6
4	1869–1914	Ammunition; safety fuses, other fuses, naval torpedoes & railroad torpedoes	Un	89.8
		Blasting & detonating caps & fuses	C	10.2
111	1879–1904	Artificial flowers	6, Un	37.7

INDUSTRY NUMBER	CENSUS YEARS IN WHICH ESTIMATED	COMMODITIES BY CENSUS GROUPS	GROUP CLASSIFICATION	% OF COMBINED TOTAL ACCOUNTED FOR BY EACH COMMODITY
		Feathers & plumes	6, Un	62.3
20	1869–1909	Hose, rubber	36	67.8
		Belting, rubber	Un	32.2
20, 31, 265	1869	Belting & hose, rubber	36, Un	4.3
		Boots & shoes, rubber & canvas	8	38.3
		Rubber goods, n.e.s.	3, 7, Un	57.4
31	1914	Boots & shoes, rubber & canvas	8	84.8
		Heels, rubber	Un	15.2
	1904, 1909	Boots & shoes, rubber & canvas	8	88.6
		Heels, rubber	Un	11.4
38	1869–1909	Brooms, made from broom corn	9	97.3
		Brooms, made from materials other than broom corn	36	2.7
38, 39	1879–1904	Brooms	9, 36	49.6
		Brushes	9, 36, C	50.4
39	1869–1909	Brushes, toilet	9	17.1
		All other brushes	36	45.1
		Brushes, paint & varnish	C	37.8
42	1909	Buttons	6, Un	87.1
		Button parts; blanks or molds	Un	12.9
	1899–1904	Button parts[aa]	Un	
	1869–1889	Buttons	6, Un	90.5
		Button parts; blanks or molds	Un	9.5
78, 110	1879–1889	Combs & hairpins, except those made from metal or rubber[bb]	6	
		Fancy articles, n.e.s.[bb]	6, Un	
99	1909	Household apparatus & appliances[cc]	13b	
		Industrial apparatus & appliances[cc]	26	
	1904	Household apparatus & appliances	13b	88.7
		Industrial apparatus & appliances	26	11.3
	1899	Rheostats, resistances, controllers, motor starters, regulators, etc.	Un	70.2
		Household apparatus & appliances	13b	26.4
		Industrial apparatus & appliances	26	3.4
	1899–1909	Generators (other than small dynamos under 10 k.w.)[dd]	26	
		Small dynamos (under 10 k.w.), starting motors & generators, automotive[dd]	Un	
		Generator parts & supplies[dd]	Un	
	1899	Transformers, over 50 k.w.	26	26.3
		Transformers, under 50 k.w.	Un	73.7

	1899	Measuring instruments, excl. testing & scientific	26	80.0
		Electrical testing & scientific instruments	34	20.0
		Lightning arrestors & other protective devices	26	40.3
		Fuses, cut-outs & fuse plugs	Un	59.7
	1899–1914	Insulated cables, rubber & paper insulation	26	47.5
		Insulated wire	Un	52.5
	1899–1909	Stationary motors[ee]	26	
		Vehicle & railway motors[ee]	Un	
	1904	All other electrical machinery & apparatus	26	61.1
		Products not belonging to the industry		38.9
	1899	All other electrical machinery & apparatus	26	49.9
		Therapeutic apparatus, incl. X-ray tubes	34	3.6
		Magneto-ignition apparatus, generators, spark plugs & coils	20, Un	2.4
		Circuit fittings, not elsewhere provided for	Un	12.3
		Products not belonging to the industry		31.8
	1879, 1889	Finished electrical machinery & supplies[ff]	26	63.0
		Unfinished electrical apparatus[ff]	Un	37.0
127, 130	1869, 1879	Fur goods	7, Un	96.7
		Furs, dressed	Un	3.3
159	1899–1919	Receipts from cold storage	Un	66.6
		Products not belonging to the industry		33.4
	1869–1889	Ice, manufactured	1, Un	97.2
		Receipts from cold storage	Un	2.8
211	1869–1914	Wind instruments; string instruments, incl. harps; other band & orchestral instruments; percussion instruments	16	69.7
		Parts & materials	Un	27.7
		Custom work & repairing	S	2.6
212, 213, 214	1909	Repairs	S	34.9
		Products not belonging to the industry		65.1
	1904	Piano & organ parts—perforated music rolls[gg]	16	
		Piano & organ parts excl. perforated music rolls[gg]	Un	
		Repairs[gg]	S	
	1869–1899	Pianos & organs; perforated music rolls	16	73.8
		Piano & organ parts, excl. perforated music rolls	Un	25.5
		Repairs	S	.7
227	1869–1919	Ophthalmic products	23	78.9
		Optical goods & instruments	34	21.1
234	1889	Paving materials[hh]	C	

INDUSTRY NUMBER	CENSUS YEARS IN WHICH ESTIMATED	COMMODITIES BY CENSUS GROUPS	GROUP CLASSIFICATION	% OF COMBINED TOTAL ACCOUNTED FOR BY EACH COMMODITY
242	1899–1914	Phonograph needles	4	10.2
		Cabinets & other parts & accessories	Un	89.8
	1899–1909	Custom work & repairing	S	.6
		Products not belonging to the industry		99.4
	1899–1904	Phonograph parts & accessories	4, Un	64.4
		All other products	Un	35.6
243	1869–1909	Cameras	10	31.6
		All other photographic apparatus & parts; motion-picture machines	36	68.4
264	1869–1889	Roofing materials[ii]	C	
265	1869–1909	Druggists' & stationers' sundries[ii]	3	8.9
		Rubber clothing[ii]	7	8.0
		All other manufactures of rubber[ii]	Un	83.1
279, 280	1869	Work on vessels of 5 gross tons & over	31	52.4
		Work on boats of less than 5 gross tons	22	2.5
		Repair work	S	45.1
283	1909	Signs	36	57.6
		Advertising novelties	Un	42.4

[a] The products of combined butter and skim cheese factories in 1879 were apportioned between butter and cheese. The value to be apportioned to butter was determined by multiplying the per pound price, $.232, of butter made in butter factories to the amount produced in the combined butter and cheese factories. Because no price per pound for cheese made in the combined factories could be obtained, the value of cheese made in the combined factories was estimated by subtracting the estimate for butter and the value of skimmed milk from the total value of products of the combined cheese and skim cheese factories.

[b] The amount of food preparations transferred to the slaughtering industry is the difference between the total transferred to other industries in 1904 and 1909 and the amount transferred to the flour and gristmill industry (taken directly from the Census).

[c] The 1919 values for clean rice, fancy-head and clean rice, second-head, screenings and brewers' were estimated on the basis of quantity and value data for 1923 and 1921. For 1919 as for 1921 the total quantity of clean rice was apportioned between fancy- and second-head. The 1923 values per pound were then multiplied by the quantity figures, the resulting values totaled and equated to the 1919 total value for clean rice.

The 1914 values were estimated on the basis of 1909 data. The 1914 quantities were multiplied by 1909 prices, then equated to the 1914 total value for clean rice.

[d] The total quantity figure for clean rice was divided between fancy- and second-head rice as in 1904, then multiplied by 1904 prices per pound for each grade of rice. The resulting values were totaled, then equated to an estimated 1899 commodity total excluding hulls and waste.

[e] These products were estimated on the basis of their relation in 1914 to the value of meat products made in the Food preparations industry: meat puddings, scrapple, head cheese, etc., 8.1 percent; edible meat products made in other industries, 13.7 percent; lard compounds and substitutes, 160.6 percent.

[f] Estimated from the 1904 percentage of canned goods to canned beef, 209.3 percent.

[g] Estimated from the relation in 1914 of sausage casings to sausages, 11.2 percent.

[h] An estimate was made for veal and 'all other' meat on the basis of the percentage, 104.5, fresh meat including veal and 'all other' was, in 1899, of fresh meat, excluding veal and 'all other'.

[i] 'Other products' is the difference between the industry total and the commodity total for products already estimated. In 1914 it covered hair, hog and cattle and all other products not belonging to the industry, including custom work; in 1909, hoofs, horns, and horn tips, strips, etc., hair, hog and cattle and all other products, including custom work; in 1904, 1899, and 1889, stearin and oleo stock as well as the commodities listed for 1909.

[j] Sheep, lamb, goat and kid pelts were estimated on the basis of the percentage, 20.2, that their cost was, in 1904, of the total cost of sheep, lambs, goats and kids.

[k] Sugar, beet, was included with 'all other industries' in 1889. However, the estimate of Guilford L. Spencer, Expert Special Agent of the Bureau of the Census, was used (see *Census of Manufactures,* IX, 1900, Part III, p. 545).

[l] For 1879 quantities alone were reported. They were multiplied by 1889 per unit prices for carpets and for rugs, the resulting values were totaled, then equated to the 1879 commodity total derived for carpets and rugs.

[m] For 1879 quantities alone were reported. They were multiplied by 1889 per unit prices for each item reported separately. The resulting values were totaled, then equated to the 1879 commodity total for the items here estimated, this commodity total being the total census value reported for the items. All commodities were estimated separately and later combined.

[n] The estimate for machine twist and fringe and floss silks was added to other silk manufactures, which include fringes and gimps, braids and bindings, trimmings, organzine and tram, hard crepe twist, spun silk, artificial silk, raw silk and miscellaneous unclassified silk fabrics as well as machine twist and fringe and floss silks as here estimated.

[o] 'All other products' is the difference between all other products as reported by the Census and an estimate for silk embroideries. It includes contract work, millinery trimmings, ladies' dress trimmings, and cloak trimmings.

[p] Before this allocation was made all other products not belonging to the industry were estimated by subtracting millinery trimmings, ladies' dress trimmings, and cloak trimmings from 'all other products'.

[q] The quantity of yarn produced in 1879 and the cost per pound of purchased yarn were reported in the Census of Manufactures. The 1879 cost per pound of purchased yarn was multiplied by the ratio of the sales price per pound of yarn to the cost per pound of yarn purchased in 1889. The number of pounds of yarn produced in 1879 was then multiplied by the estimated sales price per pound in that year.

[r] The value for 1869 was estimated by multiplying the quantity produced by a price based upon the 1879 price as extrapolated by a price index of iron rails (Aldrich Report).

[s] The 1869 percentage allocation was based upon the proportion that each paper industry constituted of the combined industry total.

[t] The 1904 value for chemicals was rendered comparable to those for 1909 and later years by excluding an estimate for all byproducts and contract work, based upon the percentage, 30.2, that byproducts and contract work were, in 1909, of the sum of other specified chemicals, unclassified chemicals, chemical byproducts and residues, byproducts, not chemical and contract work.

[u] The estimate did not include all byproducts (except coke and tar). The values for the byproducts reported separately were added to the estimates of the byproducts included with products not belonging to the industry.

[v] In 1879 and 1889 all other products included coke, petroleum, as well as asphalt, other than liquid asphalt; partly refined oils, acid oil and

other special products; and products not belonging to the industry. From this total, coke was deducted in 1879 and 1889 on the basis of the percentage, 310, that it was in 1899 of a total for coke and all other products as defined above. The resulting 1879 and 1889 values for all other products were then probably closely comparable with those reported for 1899 and 1904.

[w] In all years except 1889 the values for the various commodities included the cost of containers. The total cost of barrels was reported for 1889 as well as the number of barrels used in measuring the production of each commodity listed in the table.

Total cost, reduced 6.2 percent to allow for containers used for products not belonging to the industry, was divided by the number of barrels to get the average cost per barrel. The average cost per barrel was then multiplied by the number of barrels used for each commodity. Since the sum of these estimates differed from the total cost of barrels as previously calculated, the ratio of the latter to the former was employed to correct the estimated values of barrels used for each commodity. The final estimates were added to the respective 1889 commodity values for which barrel data were available.

[x] Quantity data were available in 1909, 1914, and 1919 for pressed and blown glass and bottles and jars. The 1919 values were estimated on the basis of 1925 prices per unit; the price per unit of each type of pressed and blown glass and for each type of bottle and jar was first calculated for 1925. From the total value of bottles and jars in 1919 all other bottles and jars not reported separately were estimated on the basis of the percentage, 10.0, that the value of a comparable 'all other bottles and jars' figure was of the 1925 total for bottles and jars. The quantity figures for each type of bottle or jar were then multiplied by the 1925 per unit value. The resulting values were added and equated to the 1919 total value for bottles and jars excluding the estimate for all other bottles and jars. The values for the pressed and blown glass items in 1919 were calculated similarly. For pressed and blown glass the value of all other pressed and blown glass was estimated to be 7.13 percent of the total value.

The 1914 and 1909 values were estimated similarly except that 1904 price data were used instead of 1925. The 1904 values were believed more satisfactory because the relative weights to be assigned to each commodity differed less from 1904 to 1914 than from 1914 to 1925. Furthermore, the marked postwar price changes were avoided.

All other bottles and jars were estimated to be 5.5 percent of the total in 1909 and 1914; all other pressed and blown glass to be 16.04 percent.

The values for each item were estimated separately for each year. After the separate estimates had been made, commodities in the same minor commodity groups were combined.

[y] The values for automobile lamps were estimated in 1889, 1904, and 1909 according to the percentage, 1.05, that automobile lamps were in 1914 of the value of finished automobiles, including trucks and trailers. The remainder of the commodity total for each year was apportioned between lamps, other than automobile, and reflectors on the basis of the percentage each was of the 1914 total for lamps, other than automobile lamps and reflectors.

[z] Complete chassis was apportioned between passenger vehicles and business vehicles on the basis of the 1921 ratios.

[aa] All other products in 1919 included repair work, all other aeronautical products, and products not belonging to the industry. Repair work was estimated in 1919 on the basis of the percentage, 68.0, that it was in 1914 of the total for all other products including repair work. All other aeronautical products were estimated in 1919 and 1914 on the basis of the percentage, 83.0, that airships, balloons, parachutes, etc. were in 1925 of the value for all other products, including all other aeronautical products and products not belonging to the industry, but excluding repair work. The residual included only commodities not belonging to the industry.

[bb] The values for button parts were estimated in 1899 and 1904 on the basis of the percentage, 3.4, that button parts constituted in 1914 of the total reported for all other buttons. This estimate was deducted from the total value of buttons in both years.

[cc] The census industry totals for celluloid and celluloid goods in 1879 and 1889 were apportioned between fancy articles, n.e.s., and combs and hairpins, except those made from metal or rubber, on the basis of the division in each year of the combined industry total for fancy articles and combs. In 1889 the apportionment was 17.5 percent to combs and 82.5 to fancy articles; in 1879, 25.2 percent to combs and 74.8 to fancy articles.

[dd] The 1909 total for electric heaters, stoves, ranges, and cooking devices was apportioned between household and industrial appliances on the basis of the 1914 division of a similar group of commodities. Of the total, 85.0 percent was included with household appliances and 15.0 with industrial. The value for industrial appliances includes also welding apparatus; the household figure includes flatirons.

[ee] For 1909 the total value of direct current generators and small dynamos . . . was apportioned 33.3 percent to the former and 66.7 to the latter. To the estimate for the former was added the value of alternating current generators.

Before the total of direct current generators and small dynamos . . . could be apportioned in 1904 and 1889, the generator parts and supplies included in the total were estimated on the basis of the percentage, 17.5, they were of the 1909 total for direct current generators, dynamos, and generator parts and supplies. As in 1909, the residual was then apportioned between generators and small dynamos.

[ff] Railway motors were included with stationary motors 1899–1914. Railway motors were estimated on the basis of the percentage, 18.2, they were of the combined 1919 total of railway motors and stationary motors. This estimate was then added to the total of other vehicle motors.

[gg] The commodity total was allocated on the basis of the division of the 1899 total between finished and unfinished.

[hh] Perforated music rolls, piano and organ parts made in establishments whose principal products are pianos and organs, and repairs were estimated in 1904 from the total of all other products reported by the Census. As in 1909, music rolls were estimated to be 4.5 percent of this total.

Of the total of all other products including repairs, parts, and music rolls, 44.4 percent was apportioned to repairs and products not belonging to the industry—on the basis of the apportionment of a similar total in 1914. Of this estimate, 34.9 percent represented repairs, also based on 1914 data.

The remainder of the total of all other products including parts, rolls, and repairs, 51.1 percent, was taken to represent the total value of parts and materials made in establishments whose principal products were finished pianos and organs. The balance of the total for parts and materials, except perforated music rolls, was reported by establishments whose chief products were parts.

[ii] The 1889 industry total for paving materials was derived by straight line interpolation between 1879 and 1899. The residual of the total the Census reported for paving materials and street construction work in 1889 was classed as street construction work.

[jj] The industry totals reported by the Census included roofing work as well as materials in 1879 and 1889. Construction work was eliminated on the basis of the 1899 allocation of an industry total including both materials and work, 45.8 percent remaining as roofing materials alone.

[kk] Estimated from a total excluding pneumatic automobile, bicycle and motorcycle tires. For the tire estimates, see Note B to Table II 2, Minor Group 11.

TABLE II 2
Mixed Commodities and their Allocation, Census Years, 1869–1919
(thousands of dollars)

Major and Minor Groups

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
					PERISHABLE					
		1 Food and Kindred Products								
VIII	17	Baking powders & yeast								
		Total	1,008	5,361	8,340	16,404	21,442	23,389	25,206	48,556
		Finished	275	3,956	5,949	13,269	16,300	15,547	16,208	25,019
		Unfinished	733	1,405	2,391	3,135	5,142	7,842	8,998	23,537
I	40	Butter								
		Total		6,859	36,822	84,416	113,638	180,175	221,338	533,330
		Finished	not reported	5,622	34,721	81,623	109,226	173,361	212,587	508,293
		Unfinished		1,237	2,101	2,793	4,412	6,814	8,751	25,037
I	79	Condensed & evaporated milk								
		Total		1,548	3,587	11,889	20,149	33,587	58,871	298,659
		Finished	not reported	597	1,969	9,768	16,671	28,282	52,784	282,968
		Unfinished		951	1,618	2,121	3,478	5,305	6,087	15,691
I	120	Flavoring extracts								
		Total	1,050	1,679	3,671	8,856	10,912	12,396	15,218	40,085
		Finished	451	825	1,920	5,945	7,372	6,548	5,674	14,776
		Unfinished	599	854	1,751	2,911	3,540	5,848	9,544	25,309
I	122	Flour: wheat, corn, rye, buckwheat & barley								
		Total	341,308	387,483	394,306	394,465	547,822	629,305	614,456	1,563,363
		Finished	332,135	370,125	364,454	354,636	482,643	529,141	498,182	1,255,226
		Unfinished	9,173	17,358	29,852	39,829	65,179	100,164	116,274	308,137
I	123, 180	Lard, incl. lard compounds & substitutes								
		Total		29,979	59,976	82,079	107,561	194,490	212,289	740,966
		Finished	not reported	24,040	52,658	70,618	90,718	168,935	181,096	633,367
		Unfinished		5,939	7,318	11,461	16,843	25,555	31,193	107,599

XIV	159	Ice, manufactured								
		Total	251	531	4,769	13,412	24,350	44,139	62,192	138,795
		Finished	125	266	2,384	6,706	12,175	22,070	31,096	69,398
		Unfinished	126	265	2,385	6,706	12,175	22,069	31,096	69,397
I	235	Peanuts, grading, roasting, cleaning, shelling								
		Total	897	1,777	5,815	5,388	7,107	9,528	14,620	35,543
		Finished	829	1,642	5,373	4,979	6,567	8,804	13,509	32,842
		Unfinished	68	135	442	409	540	724	1,111	2,701
VIII	269	Salt								
		Total	5,194	5,150	5,441	7,902	9,335	11,398	13,984	36,595
		Finished	1,117	1,107	1,170	1,696	1,613	2,240	3,221	7,570
		Unfinished	4,077	4,043	4,271	6,206	7,722	9,158	10,763	29,025
I	308, 309, 310	Sugar, granulated, refined & brown								
		Total	105,892	137,096	108,557	216,942	267,934	298,000	349,016	863,244
		Finished	100,939	126,993	90,013	190,191	229,092	239,461	267,107	614,500
		Unfinished	4,953	10,103	18,544	26,751	38,842	58,539	81,909	248,744
		3 *Drug, Toilet and Household Preparations*								
VIII	24	Blacking, stains & dressing								
		Total	765	1,394	2,712	4,212	5,555	7,872	9,242	23,648
		Finished	583	1,062	2,067	3,210	4,233	5,998	7,042	18,020
		Unfinished	182	332	645	1,002	1,322	1,874	2,200	5,628
VIII	66	Cleansing & polishing preparations								
		Total	374	580	1,004	2,542	3,141	7,255	10,611	27,749
		Finished	305	473	818	2,072	2,560	5,913	8,648	22,615
		Unfinished	69	107	186	470	581	1,342	1,963	5,134
VIII	95	Alkaloids & derivatives								
		Total			2,205	7,682	10,749	14,867	16,232	15,416
		Finished	not reported		1,532	5,339	7,471	10,333	11,281	10,716
		Unfinished			673	2,343	3,278	4,534	4,951	4,700
		Biological products								
		Total			845	2,942	4,117	5,694	6,223	15,876
		Finished	not reported		339	1,180	1,651	2,283	2,495	6,366
		Unfinished			506	1,762	2,466	3,411	3,728	9,510

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
VIII	219	Castor oil								
		Total	691	818	716	494	804	1,131	1,265	5,205
		Finished	667	775	646	436	736	998	1,008	4,384
		Unfinished	24	43	70	58	68	133	257	821
VIII	233	Patent compounds								
		Total	2,589	2,338	5,195	9,499	12,001	13,495	16,514	46,351
		Finished	1,618	1,461	3,247	5,937	7,501	8,434	10,321	28,969
		Unfinished	971	877	1,948	3,562	4,500	5,061	6,193	17,382
VIII	294	Soap								
		Total	18,568	21,879	35,925	43,861	59,446	93,258	107,214	235,799
		Finished	17,628	20,530	34,201	41,464	56,024	87,783	99,255	215,405
		Unfinished	940	1,349	1,724	2,397	3,422	5,475	7,959	20,394
		4 Magazines, Newspapers, Stationery and Supplies, and Miscellaneous Paper Products								
VI	108	Envelopes								
		Total	2,365	3,115	5,041	6,538	10,610	13,965	19,188	39,518
		Finished	1,206	1,589	2,571	3,334	5,411	7,122	9,786	20,154
		Unfinished	1,159	1,526	2,470	3,204	5,199	6,843	9,402	19,364
XIV	210	Mucilage, paste & other adhesives, n.e.s.								
		Total	140	19	1,421	2,845	3,958	5,475	6,428	12,391
		Finished	72	10	735	1,471	2,046	2,831	3,323	6,406
		Unfinished	68	9	686	1,374	1,912	2,644	3,105	5,985
VI	230	Fine paper: writing								
		Total	8,992	6,657	9,182	12,223	19,321	24,966	28,637	73,790
		Finished	6,240	4,620	6,372	8,483	13,409	17,326	19,874	51,210
		Unfinished	2,752	2,037	2,810	3,740	5,912	7,640	8,763	22,580
VI	231	All other paper goods, n.e.s.								
		Total	3,043	1,583	4,326	16,168	21,344	36,559	47,190	98,383
		Finished	1,528	795	2,172	8,116	10,715	18,353	23,689	49,388
		Unfinished	1,515	788	2,154	8,052	10,629	18,206	23,501	48,995

		5a Fuel and Lighting Products, Manufactured							
VIII	76	Coke							
		Total	1,169	5,536	17,042	35,519	50,305	89,965	88,334	258,340
		Finished	58	277	852	1,776	2,515	4,498	4,417	15,677
		Unfinished	1,111	5,259	16,190	33,743	47,790	85,467	83,917	242,663
VIII	194, 241	Illuminating oils								
		Total	23,278	33,451	51,854	74,694	91,366	94,547	96,806	235,663
		Finished	22,580	32,447	50,298	72,453	88,625	91,711	89,062	188,530
		Unfinished	698	1,004	1,556	2,241	2,741	2,836	7,744	47,133
		Lubricating oils								
		Total	88	1,763	7,268	10,897	23,553	38,884	55,812	196,242
		Finished		none		3	82	453	3,800	37,008
		Unfinished	88	1,763	7,268	10,894	23,471	38,431	52,012	159,234
		Gasoline								
		Total	none	2,580	7,963	13,929	18,565	34,641	106,140	679,867
		Finished		none		105	1,025	5,877	37,562	346,314
		Unfinished	none	2,580	7,963	13,824	17,540	28,764	68,578	333,553
		Perishable, Totals								
		Total	517,662	659,176	783,983	1,085,798	1,465,085	1,918,981	2,203,026	6,263,374
		Finished	488,356	599,212	666,461	894,810	1,176,381	1,464,302	1,613,027	4,465,121
		Unfinished	29,306	59,964	117,522	190,988	288,704	454,679	589,999	1,798,253
		SEMIDURABLE								
		6 Dry Goods and Notions								
XIV	5	Artificial flowers								
		Total	950	1,777	3,296	2,284	1,905	8,706	7,334	16,352
		Finished	712	1,333	2,472	1,713	1,429	6,530	5,500	12,264
		Unfinished	238	444	824	571	476	2,176	1,834	4,088
XIV	42	Buttons								
		Total	1,499	3,749	3,553	6,486	10,053	18,699	16,604	35,704
		Finished	135	337	320	584	905	1,683	1,494	3,213
		Unfinished	1,364	3,412	3,233	5,902	9,148	17,016	15,110	32,491
II	87, 88, 89	Lace goods & nets								
		Total	541	642	756	2,212	4,953	6,176	8,317	21,212
		Finished	231	274	323	945	2,115	2,637	3,551	9,058
		Unfinished	310	368	433	1,267	2,838	3,539	4,766	12,154

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
		Cotton thread								
		Total	7,718	9,152	11,638	11,909	15,043	20,651	22,917	59,405
		Finished	4,904	4,641	6,742	5,008	5,559	6,810	8,459	20,851
		Unfinished	2,814	4,511	4,896	6,901	9,484	13,841	14,458	38,554
		All other cotton woven goods								
		Total	54,729	64,895	82,455	96,604	130,777	189,076	204,420	692,966
		Finished	50,280	51,993	60,211	41,438	45,359	52,497	39,368	248,082
		Unfinished	4,449	12,902	22,244	55,166	85,418	136,579	165,052	444,884
II	97	Dyeing & finishing textiles								
		Total	13,991	32,297	28,901	44,963	50,850	83,556	109,292	323,968
		Finished	5,608	12,314	8,455	8,225	3,782	7,121	12,573	47,905
		Unfinished	8,383	19,983	20,446	36,738	47,068	76,435	96,719	276,063
XIV	110	Fancy articles, n.e.s.								
		Total	296	3,957	7,296	9,516	12,584	13,035	18,574	64,686
		Finished	252	3,371	6,216	8,108	10,722	11,106	15,825	55,112
		Unfinished	44	586	1,080	1,408	1,862	1,929	2,749	9,574
XIV	111	Feathers & plumes								
		Total	899	3,177	5,911	4,097	3,416	15,611	11,970	15,345
		Finished	318	1,125	2,092	1,450	1,209	5,526	4,237	5,432
		Unfinished	581	2,052	3,819	2,647	2,207	10,085	7,733	9,913
V	184	Leather goods, n.e.s.								
		Total	258	3,016	6,934	12,990	19,456	20,763	21,220	56,461
		Finished	none	2,322	5,339	10,002	14,981	15,988	16,339	43,475
		Unfinished	258	694	1,595	2,988	4,475	4,775	4,881	12,986
II	203	Embroideries								
		Total	1,398	2,056	3,873	6,325	10,899	18,438	24,569	57,719
		Finished	296	435	819	1,338	2,305	3,900	5,197	12,209
		Unfinished	1,102	1,621	3,054	4,987	8,594	14,538	19,372	45,510
II	284	Silk ribbons								
		Total	1,869	6,023	17,142	18,542	21,983	32,874	38,209	66,190
		Finished	843	4,094	14,475	13,700	13,857	18,962	20,399	25,152
		Unfinished	1,026	1,929	2,667	4,842	8,126	13,912	17,810	41,038

		Broadsilks								
		Total	3,484	11,225	23,459	52,769	67,676	108,946	141,879	391,997
		Finished	1,720	6,109	14,639	30,896	33,807	54,792	76,435	215,598
		Unfinished	1,764	5,116	8,820	21,873	33,869	54,154	65,444	176,399
		Silk velvets & plushes								
		Total			3,145	4,965	4,508	6,881	18,710	42,553
		Finished	not reported		2,359	3,724	3,381	5,161	14,032	31,915
		Unfinished			786	1,241	1,127	1,720	4,678	10,638
		Sewing & embroidery silks								
		Total	242	776	2,854	3,277	3,928	3,778	5,131	7,121
		Finished	157	504	1,855	2,130	2,553	2,456	3,335	4,629
		Unfinished	85	272	999	1,147	1,375	1,322	1,796	2,492
IX	300	Statuary & art goods								
		Total					2,456	3,497	3,980	5,196
		Finished		not reported			837	1,192	1,357	1,772
		Construction material					1,619	2,305	2,623	3,424
II	355, 356	Woolen & worsted woven goods, except shawls, blankets & carriage equipment								
		Total	141,243	154,032	157,160	174,514	223,686	284,895	255,683	713,039
		Finished	100,122	88,126	85,621	73,683	86,114	82,670	44,445	149,738
		Unfinished	41,121	65,906	71,539	100,831	137,572	202,225	211,238	563,301
II	357	Mixed textiles								
		Total		66,222						
		Finished	not reported	42,382		(Presumably included with other industries)				
		Unfinished		23,840						
		7 Clothing and Personal Furnishings								
XIV	127	Fur Goods								
		Total	8,144	7,537	18,137	24,500	35,115	52,891	41,654	164,478
		Finished	7,183	6,648	15,997	21,609	30,971	46,650	36,739	145,070
		Unfinished	961	889	2,140	2,891	4,144	6,241	4,915	19,408
II	203	Trimmed hats & hat frames								
		Total	2,891	4,252	8,012	13,082	22,542	38,134	50,815	124,798
		Finished	2,741	4,031	7,595	12,402	21,370	36,151	48,173	118,309
		Unfinished	150	221	417	680	1,172	1,983	2,642	6,489

INDUSTRY NUMBER	COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
II 313	Suspenders, garters & elastic woven goods								
	Total						28,350	25,127	62,791
	Finished			(Included elsewhere)			14,175	12,564	31,396
	Unfinished						14,175	12,563	31,395
XIV 327	Umbrellas & canes								
	Total	4,559	6,540	13,022	13,095	12,738	15,195	13,206	24,227
	Finished	3,948	5,664	11,277	11,340	11,031	13,159	11,436	20,981
	Unfinished	611	876	1,745	1,755	1,707	2,036	1,770	3,246
	9 House Furnishings (semidurable)								
II 87, 88, 89	Towels, towelling, wash cloths, turkish towels & terry weave								
	Total	1,228	1,456	1,841	2,456	4,365	6,066	9,805	31,302
	Finished	1,086	1,287	1,627	2,171	3,859	5,362	8,668	27,671
	Unfinished	142	169	214	285	506	704	1,137	3,631
XIV 344	Window shades & fixtures								
	Total		2,249	7,349	7,055	7,806	16,228	15,554	26,456
	Finished	not reported	2,092	6,835	6,561	7,260	15,092	14,465	24,604
	Unfinished		157	514	494	546	1,136	1,089	1,852
	11 Tires and Tubes								
XIV 265	Tires & tubes, automobile								
	Total					5,892	33,000	125,780	685,209
	Finished		none			3,830	21,780	91,819	534,463
	Unfinished					2,062	11,220	33,961	150,746
	Tires & tubes, motorcycle & bicycle								
	Total				17,698	3,786	4,524	6,906	14,796
	Finished		none		13,309	2,847	3,402	5,193	11,876
	Unfinished				4,389	939	1,122	1,713	2,920
	Semidurable, Totals								
	Total	245,939	385,030	406,734	529,339	676,417	1,029,970	1,197,656	3,703,971
	Finished	180,536	239,082	255,269	270,336	310,083	434,802	501,603	1,800,775
	Construction materials					1,619	2,305	2,623	3,424
	Unfinished	65,403	145,948	151,465	259,003	364,715	592,863	693,430	1,899,772

		13b Electrical Household Appliances and Supplies							
XIV	99	Incandescent lamps							
		Total			3,515	6,953	15,715	17,350	57,647
		Finished		none	1,230	2,434	5,500	6,072	20,176
		Unfinished			2,285	4,519	10,215	11,278	37,471
		14a Floor coverings							
II	49	Carpets							
		Total	21,029	30,526	43,828	36,414	46,339	48,826	41,133	58,167
		Finished	16,676	24,207	34,756	28,876	36,747	38,719	32,628	44,968
		Unfinished	4,353	6,319	9,072	7,538	9,592	10,107	8,505	13,199
		14b Miscellaneous house furnishings (durable)							
II	87, 88, 89	Tapestries							
		Total	526	624	716	4,381	4,505	4,821	5,849	20,119
		Finished	316	375	430	2,633	2,706	2,897	3,515	12,092
		Unfinished	210	249	286	1,748	1,799	1,924	2,334	8,027
VIII	130	Receipts from sales of lamps & appliances by gas companies							
		Total	832	not reported	1,462	1,797	3,816	6,328	9,871	15,597
		Finished			none			790	2,478	5,050
		Unfinished	832	not reported	1,462	1,797	3,816	5,538	7,393	10,547
IV	193	Looking-glass & picture frames							
		Total	4,210	6,775	11,562	10,988	13,443	13,651	11,129	18,253
		Finished	3,962	6,375	10,880	10,340	12,650	12,846	10,472	17,176
		Unfinished	248	400	682	648	793	805	657	1,077
IX	207	Mirrors, framed & unframed							
		Total	456	284	5,599	7,468	7,095	8,933	9,255	19,069
		Finished	280	174	3,432	4,578	4,349	5,476	5,673	11,689
		Unfinished	176	110	2,167	2,890	2,746	3,457	3,582	7,380
II	284	Silk upholstery & tapestries							
		Total			3,712	1,010	1,560	383	840	2,157
		Finished	not reported		3,601	980	1,513	372	815	2,092
		Unfinished			111	30	47	11	25	65

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
		15 China and Household Utensils								
IX	136	Glass, cutting, staining & ornamenting								
		Total	774	2,555	6,139	8,821	13,243	16,236	16,763	29,145
		Finished	389	1,283	3,082	4,428	6,648	8,150	8,415	14,631
		Construction materials	156	516	1,240	1,782	2,675	3,280	3,386	5,887
		Unfinished	229	756	1,817	2,611	3,920	4,806	4,962	8,627
X	318	Tinware, n.e.s.								
		Total	11,195	13,825	18,362	27,640	42,396	59,515	81,173	229,177
		Finished	179	221	294	442	678	952	1,299	3,667
		Unfinished	11,016	13,604	18,068	27,198	41,718	58,563	79,874	225,510
		17 Jewelry, Silverware, Clocks and Watches								
X	173	Jewelry								
		Total	22,124	22,222	34,793	46,544	53,705	81,110	80,760	203,833
		Finished	19,956	20,044	31,383	41,983	48,442	73,161	72,846	183,857
		Unfinished	2,168	2,178	3,410	4,561	5,263	7,949	7,914	19,976
		20b Motor Vehicle Accessories								
XII	10	Motor vehicle bodies & parts								
		Total					3,527	57,634	135,591	682,719
		Finished			none		2,451	20,930	54,525	210,834
		Unfinished					1,076	36,704	81,066	471,885
		Consumer Durable, Totals								
		Total	61,146	76,811	126,173	148,578	196,582	313,152	409,714	1,335,883
		Finished	41,758	52,679	87,858	95,490	118,618	169,793	198,738	526,232
		Construction materials	156	516	1,240	1,782	2,675	3,280	3,386	5,887
		Unfinished	19,232	23,616	37,075	51,306	75,289	140,079	207,590	803,764
		PRODUCER DURABLE								
		25 Industrial Machinery and Equipment								
III	103, 124, 169X, 197, 260, 302X, 314	Foundry and machine shop products, n.e.s.								
		Total	199,601	181,724	348,412	546,699	663,945	883,948		
		Finished	106,986	97,404	186,749	293,031	355,875	473,796	(See III 124)	
		Unfinished	92,615	84,320	161,663	253,668	308,070	410,152		

III	124	Miscellaneous machinery & other machine shop products							
		Total						473,164	1,129,919
		Finished				(Included with III 103, etc.)		160,428	357,840
		Unfinished						312,736	772,079
		36 Miscellaneous Subsidiary Durable Equipment							
II	21	Belting & hose, woven							
		Total	none	36	1,004	925	3,660	7,083	5,730	20,344
		Finished		none			392	758	613	8,544
		Unfinished	none	36	1,004	925	3,268	6,325	5,117	11,800
II	83	Rope, cable & cordage							
		Total	3,045	4,241	10,556	13,474	22,366	21,016	22,422	57,577
		Finished	454	632	1,573	2,008	3,333	3,131	3,341	8,565
		Unfinished	2,591	3,609	8,983	11,466	19,033	17,885	19,081	49,012
		Producer Durable, Totals								
		Total	202,646	186,001	359,972	561,098	689,971	912,047	501,316	1,207,840
		Finished	107,440	98,036	188,322	295,039	359,600	477,685	164,382	374,949
		Unfinished	95,206	87,965	171,650	266,059	330,371	434,362	336,934	832,891
		CONSTRUCTION MATERIALS								
IX	135	Plate glass, polished								
		Total	299	731	4,172	5,159	7,978	12,205	14,774	33,348
		Construction materials	299	731	4,172	5,159	7,978	11,569	13,656	23,344
		Unfinished			none			636	1,118	10,004
IX	136	Glass, cutting, staining & ornamenting*								
		Total	774	2,555	6,139	8,821	13,243	16,236	16,763	29,145
		Finished	389	1,283	3,082	4,428	6,648	8,150	8,415	14,631
		Construction materials	156	516	1,240	1,782	2,675	3,280	3,386	5,887
		Unfinished	229	756	1,817	2,611	3,920	4,806	4,962	8,627
III	164, 165	Bolts, nuts, washers & rivets								
		Total	13,778	19,300	23,707	26,782	28,139	45,406	34,148	124,995
		Construction materials	4,698	6,581	8,084	9,133	9,595	15,483	11,644	42,623
		Unfinished	9,080	12,719	15,623	17,649	18,544	29,923	22,504	82,372

INDUSTRY NUMBER		COMMODITY	1869	1879	1889	1899	1904	1909	1914	1919
III	164, 169	Cut nails & spikes, wire nails & spikes, forged nails & spikes & all other, incl. tacks								
		Total	24,824	11,624	34,228	30,514	32,830	38,403	36,590	79,245
		Construction materials	8,465	3,964	11,672	10,405	11,195	13,095	12,477	27,023
		Unfinished	16,359	7,660	22,556	20,109	21,635	25,308	24,113	52,222
III	164, 170	Wrought pipe, iron & steel								
		Total	26,963	48,635	37,907	77,907	63,677	105,995	99,848	327,858
		Construction materials	24,078	43,431	33,851	69,571	56,864	90,838	83,772	250,484
		Unfinished	2,885	5,204	4,056	8,336	6,813	15,157	16,076	77,374
IX	186	Lime								
		Total	6,974	1,215	3,312	6,032	11,536	14,026	14,047	28,218
		Construction materials	2,092	850	2,318	4,222	8,075	9,468	6,799	11,372
		Unfinished	4,882	365	994	1,810	3,461	4,558	7,248	16,846
IV	195	Lumber & timber products								
		Total	183,626	207,336	388,603	447,420	422,569	529,997	492,746	954,635
		Construction materials	7,681	12,819	20,658	23,569	29,446	40,225	26,401	46,810
		Unfinished	175,945	194,517	367,945	423,851	393,123	489,772	466,345	907,825
IX	300	Statuary & art goods*								
		Total					2,456	3,497	3,980	5,196
		Finished		not reported			837	1,192	1,357	1,772
		Construction materials					1,619	2,305	2,623	3,424
		Construction Materials, Totals								
		Total	257,238	291,396	498,068	602,635	582,428	765,765	712,896	1,582,640
		Construction materials	47,469	68,892	81,995	123,841	127,447	186,263	160,758	410,967
		Finished	389	1,283	3,082	4,428	7,485	9,342	9,772	16,403
		Unfinished	209,380	221,221	412,991	474,366	447,496	570,160	542,366	1,155,270

*This commodity is included in the totals for construction materials even though it has already been recorded under the minor group in which the finished portion is classified.

	GRAND TOTALS							
Total	1,283,857	1,595,859	2,168,791	2,918,627	3,594,784	4,920,182	5,003,865	14,059,367
Finished	818,090	989,009	1,197,910	1,555,675	1,964,682	2,546,582	2,477,750	7,167,077
Construction materials	47,469	68,892	81,995	123,841	127,447	186,263	160,758	410,967
Unfinished	418,298	537,958	888,886	1,239,111	1,502,655	2,187,337	2,365,357	6,481,323
	PERCENTAGES							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Finished	63.7	62.0	55.2	53.3	54.7	51.8	49.5	51.0
Construction materials	3.7	4.3	3.8	4.2	3.5	3.8	3.2	2.9
Unfinished	32.6	33.7	41.0	42.5	41.8	44.5	47.3	46.1

NOTE A TO TABLE II 2

Allocation Based on Census Reports of Materials Consumed in Manufacturing

For many of the more important industries the Census of Manufactures reports detailed data on materials consumed. Between 1899 and 1919 such data are usually reported for one or more census years.[a] Since *total* cost of materials is reported for all years, percentages for the closest year for which we have detailed data are applied to the total cost of materials (excluding fuel and rent for power when possible) for the years for which we have no detailed data.

Some discussion and comment on this method of apportioning mixed commodities appear in *Commodity Flow and Capital Formation,* Volume One, pp. 17, 18, and 68. In one respect the technique is more exact than Kuznets'; the detailed data, when available for 1919 or earlier years, cover an entire industry, not merely a part. But the principal defect of the method, that the estimates of unfinished are minima because some industries using specified materials do not report them separately in any year, still holds. It is possibly compensated in part by the inclusion of an indeterminate amount of transportation charges and distributive costs in the cost of materials as reported in the Census.

The mixed commodities to which the materials consumed method could be applied are listed below, by minor commodity groups, together with a description of the industries and years for which data were available.

1 FOOD AND KINDRED PRODUCTS

Baking powder and yeast: Consumption in the bread and other bakery products industry was estimated from the 1923 percentage.

Butter: Consumption in the bread and other bakery products industry was estimated from the 1923 percentage; in the chocolate and cocoa products industry from the percentage the 1919 estimate in *Commodity Flow and Capital Formation,* Volume One, Note A to Table I 3, constituted of a residual of unidentified other materials consumed in the industry in 1919; in the confectionery and ice cream industry from the percentage the 1919 estimate in *ibid.* constituted of a residual of unidentified other materials consumed in the industry in 1919; in the oleomargarine industry from the 1899 percentage. In this last estimate, the figures for all years except 1914 and 1919 were adjusted to include oleomargarine made in the meatpacking industry. The estimates for 1914 and 1919, computed independently, were based upon the quantity of butter consumed as reported for the fiscal year 1915 and an average of the fiscal years

[a] In a few instances no detailed data are available except for years after 1919. We chose to use these 'remote' figures rather than omit the estimates. For example, it was considered better to apply percentages computed from data in the 1923 Census on materials consumed in the bread and other bakery products industry to total materials consumed by it in 1919 and prior years than not to use the materials consumed data for the industry. The crudity of this technique, however, should be kept in mind. Whenever such 'remote' figures are utilized, it is clearly indicated in the comprehensive commodity notes below.

1919 and 1920 (Katherine Snodgrass, *Margarine as a Butter Substitute;* Food Research Institute, Stanford University, Dec. 1930; Fats and Oils Studies 4, App. Table V A). These data were multiplied by appropriate butter prices calculated from data in the 1889, 1914, and 1919 Censuses.

Condensed and evaporated milk: Consumption in the bread and other bakery products industry was estimated from the 1923 percentage.

Flavoring extracts: Consumption in the chocolate and cocoa products industry was estimated from the 1919 percentage; in the mineral and soda waters industry from the percentage the 1919 figure (based on 1929 data) in *Commodity Flow and Capital Formation,* Volume One, Note A to Table I 3, constituted of the total cost of materials excluding fuel and rent for power; and in the confectionery (including chewing gum) and ice cream industry from the 1919 percentage (an additional figure in 1919 for flavors consumed in the chewing gum industry—*ibid.*—having first been included).

Flour: Consumption in the bread and other bakery products industry was estimated from the 1923 percentage. In the macaroni industry the 1919 figure (based on 1929 data) from *ibid.* was used; for 1914 the 1919 percentage of the total cost of materials, and for the earlier years the 1914 percentage of the commodity produced estimate was applied to the respective commodity estimates.

Lard including lard compounds and substitutes: Consumption in the bread and other bakery products industry was estimated from the 1923 percentage; in the oleomargarine industry, from the 1899 percentage. The 1919, 1914, 1909, and 1904 figures for the amount consumed in the oleomargarine industry were then raised to allow for oleomargarine made in the meat-packing industry.

Sugar: The amounts consumed in 8 industries were estimated. For the bread and other bakery products industry the 1923 percentage was used in all years. For the butter, cheese and condensed milk industry data were available for all years except 1879; for that year the 1889 percentage was applied. For the canning and preserving fruits and vegetables, and pickles, preserves, and sauces industry the 1919 figure (based on 1929 data) from *ibid.* was applied to the 1919 total cost of materials, excluding fuel and rent of power, and the resulting percentage used for all years. A similar procedure was followed for the flavoring extracts and cordials and sirups and the mineral and soda water industries. For the chocolate and cocoa products industry the 1919 percentage was used for all other years. For the confectionery and ice cream industry the 1919 percentage was similarly applied; in 1919, however, the amount consumed in the chewing gum industry (*ibid.*) was first added. For the oleomargarine industry the 1899 percentage was applied in all other years; the resulting estimates for the years after 1899 were further adjusted to allow for oleomargarine made in the meat-packing industry.

3 Drug, Toilet and Household Preparations

Castor oil: Consumption in the soap and natural dyestuffs and extracts industries was estimated from the 1919 percentages.

Soap: Consumption in 5 textile industries was estimated. Considerable soap is

probably consumed also in other industries for which no data are available. The amount consumed in the silk manufactures industry was estimated from the 1889 percentage; in dyeing and finishing textiles, from the 1889 and 1899 percentages; in the knit goods industry, from the 1889 and 1904 percentages; in the wool manufactures industries, from the 1889 and 1904 percentages; and in the fur-felt hat industry, from the 1899 percentage.

NOTE B TO TABLE II 2

Allocation by Special Methods

1 FOOD AND KINDRED PRODUCTS

Ice, manufactured: An approximation, 50 percent to finished and 50 to unfinished, was based on data in *Commodity Flow and Capital Formation,* Volume One (see p. 73) which indicated that about 55 percent of manufactured ice was finished, and on data reported in the Tenth Census: 1880, Vol. XXII *Power and Machinery Employed in Manufactures* and *The Ice Industry of the United States.*

Of the total tonnage of natural ice sold in 20 principal cities during the season 1879–80, 42 percent went to private families, the remainder to brewers, butchers and meat packers, butter dealers, ships, and miscellaneous consumers.

Salt: The production of salt by type was reported in *Mineral Resources of the United States, seriatim,* Part II. As a rough approximation, table and dairy salt were considered finished and all other types (common fine, common coarse, packers', coarse solar, rock, and milling) unfinished. Values for 1919, 1914, and 1909 were taken from the 1920 volume, p. 19, the 1915 volume, p. 268, and the 1909 volume, p. 664. For 1904 and 1899 quantity data on the production of table and dairy salt were multiplied by prices, by applying, to the price of all salt in the two earlier years, the ratio of the price of table and dairy salt to the price of all salt in 1906. For years before 1899 the 1899 percentage apportionment, 21.5 to finished and 78.5 to unfinished, was used.

3 DRUG, TOILET AND HOUSEHOLD PREPARATIONS

Alkaloids and derivatives: For 1919 the value of alkaloids and their salts used as materials in the druggist's preparations and patent medicines and compounds industries was reported. Classified as unfinished, the percentage it constituted of the total production of alkaloids and derivatives for 1919, 30.5, was used in all the earlier years.

Biological products: Lack of more pertinent data compelled the use of the apportionment for 1927 when the Census reported that 40.1 percent of biological products were for human use and 59.9 percent for animal use. These percentages were used in all years, the estimates of products for animal use being classified as unfinished.

Patent compounds: A crude apportionment, based upon detailed data in 1921, put insecticides, boiler compounds, and fire-extinguishing compounds, comprising 37.5 percent of total patent compounds in 1921, under unfinished.

5a Fuel and Lighting Products, Manufactured

Coke: From *Mineral Resources of the United States, 1920,* Part II, pp. 401–4, data were taken on the sales of coke to furnaces, foundries, and domestic and other consumers. Since the value of coke sold to domestic and other consumers in 1919, $16,383,219, probably included sales of screening and breeze, the value of screening and breeze sold was estimated from more detailed data reported for 1920, when 27.6 percent of total production was sold as screening and breeze. The total production figure for 1919 was multiplied by this percentage and the resulting estimate of screening and breeze subtracted from the domestic sales figure above. The residual, $15,676,551, was assumed to be the value of finished coke for 1919.

Few data are available on the distribution of coke prior to 1919. In *Mineral Resources of the United States, 1915,* Part II, p. 541, about 5 percent of coke consumed was reported to be used principally for domestic purposes. Lack of more exact data compelled the application of this approximate percentage to total production for 1914 and all earlier years.

Illuminating oils: A crude apportionment for 1919, 1914, and 1909 was based on estimates of J. E. Pogue in *Economics of Petroleum* (New York, 1921). A chart on page 140 of that volume showed that the following amounts (approximate) of illuminating oils were used for tractors, boats, and stationary engines, i.e., for power purposes: 1919, 475 million gallons; 1914, 150; 1909, 50. These amounts, constituting about 20, 8, and 3 percent of the corresponding annual outputs, were assumed to be the unfinished portion of illuminating oils. To years before 1909, the 1909 percentage was applied.

Lubricating oils: It was assumed that of the important uses of lubricating oils—railroad, industrial, tractor, exports and automotive, truck and passenger car—only that in passenger cars was finished in our terminology. To estimate it the following procedure was adopted. Beginning and end of the year registration figures for passenger cars were averaged to get an approximation of cars in use (see *Automobile Facts and Figures, 1938,* p. 16). These estimates of cars in use were then multiplied by a conversion factor of 25 gallons, the figure used by Pogue in his estimates (*op. cit.,* Table 78, p. 180). Finally, the consumption figure in gallons for each year was multiplied by a corresponding price per gallon derived from the quantity and value data reported in the Census of Manufactures for 1919, 1914, 1909, 1904, and 1899. The procedure was like that used for lubricating oils, except that the conversion factor was 300 gallons, based, according to Pogue, upon a War Industries Board investigation in 1918, modified by additional calculation and experience (*ibid.,* p. 123).

Since for both lubricating oils and gasoline, exports are included with the unfinished portion, the finished portion was not adjusted for exports or imports.

Cotton thread: Apportionment in 1919 was based upon sample data for 1924 on billings of silk thread (*Distribution of Textiles,* Bulletin 56, Harvard University, Bureau of Business Research). Table 24, p. 186, of that volume indicated that 64.9 percent of machine twist silk thread was sold to cutters-up and other manufacturers. No data on industrial sales by wholesalers were available. For years other than 1919, the estimated value of unfinished for 1919 was extrapolated by an index of the cost of materials in the men's and women's clothing industries.

All other cotton woven goods: The apportionment was based upon sample data on billings reported for 1924 in the *Distribution of Textiles.* From Tables 30, 32, 34, and 36 of that volume, billings of voiles, marquisettes, lawns, pique, twills, sateens, plushes, velvets, etc., dress corduroys, all-cotton fine goods, cotton, silk, and rayon mixtures, ginghams, drills, denims, outing flannels and dometts, canton flannels, etc., cottonades and cotton suitings, osnaburgs, and all other woven fabrics were added. Billings to converters, cutters-up, and other manufacturers were 72.0 percent of all billings. Supplementary data from Table 39 revealed that manufacturers who did their own converting billed 38 percent of their goods to cutters-up and other manufacturers. These two percentages, representing industrial billings by the two types of cotton goods manufacturers, were weighted and combined on the basis of data in Table 27, which showed that of total billings of all cotton woven fabrics, 77 percent were yarn-dyed and grey goods and 23 percent were converted for mills' own account. The final weighted percentage of industrial billings was thus 64.2 percent. Lack of data compelled the assumption that no other industrial sales were made by wholesalers. The final percentage was applied in 1919 and the resulting estimate of unfinished cotton woven goods extrapolated by an index of the cost of materials in the women's clothing industry.

Dyeing and finishing textiles: Contract work was first estimated from 1929 data in the *Distribution of Sales of Manufacturing Plants: 1929,* Table 3. The percentage that contract work (unfinished in our classification) constituted of the value of products for the industry, 52.3, was used for all years. The remainder of the industry was then apportioned for 1919 on the basis of sample data for 1924 (*Distribution of Textiles,* Table 42) which showed that 69 percent of billings of converters and finishers were to cutters-up and other manufacturers. For years before 1919 industrial use was estimated by applying an index of the cost of materials in the women's clothing industry to the value estimated for 1919.

Silk ribbons: Apportionment between finished and unfinished in 1919 was based upon sample data for 1924 (*Distribution of Textiles,* Table 24), which showed that 62 percent of billings of ribbons were to cutters-up and other manufacturers. Since it was impossible to ascertain other billings by wholesalers to manufacturers, the above percentage is a maximum estimate of finished ribbons. For years other than 1919, the estimated 1919 value for unfinished was ex-

trapolated by an index of the cost of materials in the millinery and lace goods industry.

Broadsilks: 45 percent of the billings of the 1924 sample were direct to cutters-up and other manufacturers (*Distribution of Textiles,* Table 22). Use of this percentage to estimate unfinished for 1919 yields a minimum estimate of unfinished because no adequate data on the billings of wholesalers are available. For years other than 1919 the estimated value of unfinished broadsilks for 1919 was extrapolated by an index of the cost of materials in the women's clothing industry.

Silk velvets and plushes: The percentage, 25, that sample billings in 1924 were direct to cutters-up and other manufacturers (*Distribution of Textiles,* Table 23) was used for all years to estimate the value of unfinished silk velvets and plushes.

Sewing and embroidery silk: The percentage, 35, that sample billings in 1924 of silk threads were direct to cutters-up and other manufacturers (*Distribution of Textiles,* Table 25) was used for all years to estimate the value of unfinished sewing and embroidery silks.

Woolen and worsted woven goods: An approximate apportionment was based upon data in the *Distribution of Textiles* for the distribution of billings in 1924. The percentage, 79, that billings of men's and women's wear woolen and worsted fabrics were direct to cutters-up (*ibid.,* Table 13) was used to estimate the value of unfinished woven goods for 1919, lack of adequate data preventing any adjustment for billings of wholesalers to cutters-up. For years other than 1919, the estimated 1919 value of unfinished was extrapolated by an index of the cost of materials in the men's and women's clothing industries.

Mixed textiles: Since the exact constitution of this industry is unknown, there is no accurate method of apportioning the commodity total between finished and unfinished. To approximate an allocation, the estimates for other cotton woven goods, broadsilks and silk ribbons and woolen and worsted woven goods were totaled. This mixed textile total was allocated by the percentage distribution of this aggregate: 64 to finished and 36 to unfinished.

7 Clothing and Personal Furnishings

Fur goods: From the 1925 census it was estimated that 11.8 percent of the commodity total for that year was fur trimmings. Since trimmings were classified as unfinished, this computation indicated an apportionment of 88.2 percent to finished and 11.8 to unfinished.

Trimmed hats and hat frames: The value of unfinished for all years was estimated from the percentage that hat frames and linings constituted of total trimmed hats, hat frames, and hat linings, 5.2—a crude apportionment, based on 1927 data.

Suspenders, garters and elastic woven goods: According to the 1923 Census, the value of elastic webbing produced was about the same as the value of suspenders, garters, and elastic woven goods made from purchased webbing (in

1923 establishments making elastic webbing were transferred from the suspenders . . . industry to the cotton smallwares industry). On this basis a crude allocation was made, 50 percent to finished and 50 to unfinished.

9 House Furnishings (semidurable)

Towels, towelling, wash cloths, turkish towels and terry weave: Apportionment between finished and unfinished was based upon the distribution of billings in 1924 (*Distribution of Textiles*). 11.6 percent of these fabrics were sold to cutters-up and other manufactures (*ibid.*, Table 28). Lack of data compelled the assumption that no other industrial sales were made by wholesalers.

11 Tires and Tubes

Tires and tubes, automobile: For 1919 and 1914 total output was reported by the Census of Manufactures. Upon the assumption that tires and tubes used for original equipment were unfinished, casings required for original equipment (*Special Circular 3500,* Bureau of Foreign and Domestic Commerce, Rubber Section, Table III) were estimated to be 22 and 27 percent respectively of total output in 1919 and 1914. To get the estimated values of unfinished tires and tubes the total value of casings and tubes was multiplied by these percentages.

Prior to 1914 tire and tube data were not reported separately in the Census of Manufactures. Total production as well as its apportionment had to be estimated. For 1909 and 1904 the method used in *Special Circular 3500* for 1910 and later years was used. Tires required for original equipment were estimated on the basis of total cars and trucks produced, less an allowance for trucks equipped with solid tires. The conversion factor was four casings per unit. Renewals were estimated from registration figures for December 31 of the preceding year, a conversion factor of five casings per pneumatic tired car being used. A small allowance was then made for exports. Adding these estimates gave an estimated output of 1,500,000 casings in 1909 and 250,000 in 1904. It was assumed that an equal number of tubes was produced. Of total output 34 percent represented requirements for original equipment in 1909, and 35 percent in 1904.

To translate the above estimates into values, some sort of price index was required, since per unit prices for tires and tubes were available only for 1914. Approximations were based on two sources: price lists of the United States Rubber Products Corporation for 1911 and 1914 and quotations in the *India Rubber World,* December 1, 1910, for 1907 through 1910. The latter stated that prices did not change much between 1904 and 1907. On the basis of the above data, it was decided that, on 1914 as a base, the 1909 price was about 140 and the 1904 price about 150. This crude index, applied to the prices per casing and per tube in 1914, yielded prices that could be used to translate the quantities estimated above into values.

Prior to 1904 neither quantity nor value was estimated. Since only 800 cars

were registered in 1898 and 3,200 in 1899 the output of automobile tires must have been very small, and for the most part unfinished, i.e., original equipment.

Tires and tubes, motorcycle and bicycle: For 1919 and 1914 tires and tubes used for original equipment were estimated from the number of bicycles and motorcycles produced each year. Two tires were allowed for each bicycle and motorcycle and two tubes for each motorcycle in 1919. Since no tubes were reported for 1914 two tires were allowed for each vehicle. The above method gave 19.7 percent in 1919 and 24.8 percent in 1914 as the estimated requirement for original equipment. The 1914 estimate was extrapolated to 1909, 1904, and 1899 on the basis of a production index for bicycles and motorcycles.

From these estimates of original equipment for the earlier years the total output of tires was estimated by multiplying them by the 1914 ratio of total output to output required for original equipment. This somewhat unsatisfactory method was adopted because better data were lacking.

Prior to 1899 few if any pneumatic tires were made. The use of solid or cushion tires on bicycles cannot be estimated since all solid rubber tires are an indeterminate part of all other rubber manufactures, classified by us as unfinished.

13b Electrical Household Appliances and Supplies

Incandescent lamps: Allocation of 35 percent to finished and 65 to unfinished, representative for 1929, was based on information supplied by the General Electric Company, Incandescent Lamp Department (see *Commodity Flow and Capital Formation,* Vol. One, p. 119).

14 House Furnishings (durable)

Carpets: Apportionment between finished and unfinished was based upon sample data, covering about one-fourth of the industry, on billings in 1924 (*Distribution of Textiles*). The percentage of billings direct to manufacturers and institutions, 56 (pp. 74, 77), was applied to the 1919 and 1914 census data on carpets excluding rugs made of sewed strips. For years before 1914 the percentage, 20.7, that unfinished carpets constituted in 1914 of total carpets, including rugs, made of sewed strips was used.

Silk upholstery and tapestries: The percentage, 3, that billings of the 1924 sample were direct to cutters-up and other manufacturers (*Distribution of Textiles,* Table 23) was used for all years to estimate the value of unfinished upholstery and tapestries.

Lamps and appliances sold by gas companies: Since most of these lamps and appliances were purchased from other manufacturers, duplication would result if the gross receipts from such sales were included as finished. Net receipts alone, the difference between gross sales and the amount reported paid for lamps and appliances purchased for resale, should be included. Cost data are available back to 1899 but exceed slightly the estimated sales values in 1899 and 1904. Thus before 1909 entire gross sales are classified as unfinished.

15 China and Household Utensils

Tinware: Lack of better information compelled the use of census data for 1927, when stamped household tinware was 1.6 percent of the total production of tinware. The other 98.4 percent was considered unfinished.

17 Jewelry, Silverware, Clocks and Watches

Jewelry: Apportionment between finished and unfinished was based upon census data for 1927, when 9.8 percent of the total output of jewelry was jewelry findings, classified as unfinished. The other 90.2 percent was considered finished.

20 Motor Vehicle Accessories

Motor vehicle bodies and parts: Because direct information on replacement parts and parts used for original equipment was not available, an indirect method of apportionment was used. The wholesale or manufacturers' value of replacement parts, accessories, and tires was estimated to be $854,500,000 in 1921 (*Automotive Industries,* Feb. 22, 1923, p. 466). To get a per car basis this estimate was divided by the number of passenger cars registered (average of beginning and end of year registration); all automobile registration data are from *Automobile Facts and Figures, 1938.* Multiplication of the replacement per car figure by the average number of cars registered in 1919, 1914, 1909, and 1904 gave estimates of the total replacement bill for these years in 1921 prices. To express the estimates in current prices, a price index was needed. In its absence a crude substitute was calculated from the number and value of passenger cars produced each year. This per unit passenger car price was put in index form (1921:100) and used to extrapolate the estimates in 1921 prices.

The estimates in current prices obtained by the above procedure included tires as well as other parts and accessories. To get parts and accessories excluding tires the values of tires used for replacement (see Minor Group 11) were subtracted.

It was assumed that all parts produced in 1899 were for original equipment.

25 Industrial Machinery and Equipment

Miscellaneous machinery and machine-shop products: Of the total production of foundry and machine shop products in 1927, 40.1 percent was machinery and parts. This percentage, applied to the 1919 foundry and machine shop industry total excluding metal working machinery, gave a machinery and parts estimate of $894,916 thousand. From this estimate the known values for specified classes of machinery were subtracted. To the remainder, $273,259 thousand, was added the value of machinery made as secondary products in other industries, the sums being assumed to be miscellaneous machinery and parts or the finished portion of miscellaneous machinery and machine-shop products. A similar procedure followed for 1914 (after the subtraction of metal working

machinery, machine tools, textile machinery, and an estimated value for steel barrels, drums, and tanks from the 1914 industry total) yielded a miscellaneous machinery estimate of $160,428 thousand. For both years the values of unfinished estimated by the above method include an indeterminate amount of contract and repair work as well as miscellaneous machine shop products.

Foundry and machine-shop products: Prior to 1914 no commodity detail whatsoever was reported for this industry. Consequently, the commodity totals for the earlier years could be apportioned only crudely between finished and unfinished on the basis of the 1914 division. By this method 53.6 percent was classified as finished and 46.4 as unfinished.

36 Miscellaneous Subsidiary Durable Equipment

Belting and hose, woven, other than rubber: In 1919 and 1914 the apportionment between unfinished and finished was based upon the industry division between belting manufacturers and hose manufacturers, as reported by the census. The estimates for hose were treated as finished. Estimates for 1904 and 1909 were based upon the 1914 allocation. It was assumed that prior to 1904 no woven hose was produced, since the *Abstract of the Census of Manufactures: 1914,* p. 92, states that the increase in the industry from 1899 to 1904 was due largely to the replacement of leather hose by woven hose.

Rope, cable and cordage: A crude apportionment was based upon the detailed data reported in the 1919 Census. Manila drilling cable, transmission rope, and other commercial and bolt ropes, 14.9 percent of the total, were classified as finished; all other types of rope as unfinished.

Construction Materials

Plate glass, polished: The percentage classified as unfinished in 1919, 30, was based on the proportion of the total production of plate glass that was consumed in the automobile industry in 1921 (*Facts and Figures of the Automobile Industry, 1922,* p. 11). Estimates for 1914 and 1909 were made by using the percentage, 5, that the 1919 estimate constituted of the output of closed cars in that year. The use of plate glass in the automobile industry was assumed to be negligible prior to 1909.

Bolts, nuts, washers and rivets: For 1919 it was possible to get data on the values of railroad spikes, bolts and nuts, and of bolts, nuts, rivets and washers, other than railroad, made in rolling mills. The percentage that railroad spikes, bolts and nuts, classified as construction materials, constituted of the total, 34.1, was applied to the 1919 commodity total, and, because of lack of other data, to the commodity totals of all the other years as well.

Cut nails and spikes, wire nails and spikes, forged nails and spikes and all other including tacks: Lack of data compelled the use of a purely arbitrary procedure for the apportionment between construction materials and unfinished. The percentage derived for bolts, nuts, washers and rivets was applied to the nail totals.

Wrought pipe: For 1919, 1914, 1909, and 1904 the wrought pipe and tubing

made in rolling mills was reported in sufficient detail for a crude apportionment between construction materials and unfinished. Boiler tubes, seamless, hot finished or cold drawn, and all other were classified as unfinished; casing, tubing drain and line pipe, other black pipe, and other galvanized pipe were classified as construction materials. Since boiler tubes were reported separately for 1919 alone, the amount made in rolling mills was estimated for the three earlier years by using the percentage that such tubes constituted in 1919 of all wrought welded pipe, 6.

It was assumed that establishments in the wrought pipe industry proper and in other industries manufactured pipe and tubing in the same proportion as the rolling mill establishments. Thus, wrought pipe and tubing used as construction materials were estimated through 1904; for preceding years the 1904 percentage allocation was used, 89.3 to construction materials and 10.7 to unfinished.

Lime: Values of lime sold, by uses, were reported for 1919, 1914, and 1909 in the respective volumes of *Mineral Resources of the United States,* Part II. Since they differ slightly from census data, they could not be used directly. Instead the amount sold as building lime in each year was expressed as a percentage of all lime, excluding that sold to dealers. Lime sold to dealers was assumed to be distributed in the same proportions as lime sold directly to the various types of ultimate user. Estimates of lime used for construction purposes were based upon the percentages thus derived: 40.3 for 1919, 48.4 for 1914, and 67.5 for 1909. Although a definite trend is revealed by the above percentages, the percentage in 1906, the earliest year for which comparable data were available, was only 69.7. Thus an approximation of 70 percent to construction materials was adopted for all years prior to 1909.

Lumber and timber products: The census data for this industry are not strictly comparable from year to year because of the varying treatment of logging camps. In some census years all logging camps were covered; in others only those connected with saw mills. Consequently it was impossible to apportion the commodity totals between construction materials and unfinished by using a fixed percentage. The values of lumber and timber intended for construction materials had to be estimated directly.

Although many construction materials (other than planing mill products) are composed of lumber and timber, the values for two alone, lath and shingles, are here estimated. The other principal products used in construction—railroad ties, mine timbers, and poles—are discussed in Note A to Table II 11.

The quantity and value data for lath and shingles for 1919, 1909, 1904, 1899, and 1889 in the respective census volumes were compiled by the Bureau of the Census in cooperation with the Department of Agriculture Forest Service. For 1879 quantity data alone are available and for 1914 no data whatsoever. For 1914 quantities of lath were estimated by straight line interpolation between 1912 and 1915, the nearest years for which quantities were reported; quantities of shingles were estimated from an interpolation index between 1912 and 1915 based upon the output of reporting mills of cypress, white pine, and

cedar, the principal woods from which shingles were manufactured. A 1914 price for lath was calculated by applying the Bureau of Labor Statistics wholesale price index for lath to the 1919 census price; a 1914 price for shingles was calculated by using an average of the BLS prices for cypress and red cedar shingles to interpolate between 1911 and 1919, two years for which Forest Service prices were available. Values of lath and shingles were then obtained by multiplying the quantity estimates by the appropriate price estimates.

Prices, needed for 1879 alone, were estimated by extrapolating the 1889 census prices of lath and shingles respectively by the prices of average quality, 1 inch softwoods, and of first quality, 1 inch softwoods (*American Forests and Forest Products,* Department of Agriculture, Statistical Bulletin 21, 1927, Table 76, p. 118). Values were then obtained by multiplying the 1879 quantities by the estimated prices.

NOTE C TO TABLE II 2

Allocation Based upon Percentage Sales to Industrial Consumers in 1929

The use of percentages derived from census reports for 1929[a] is difficult to defend, especially for the period before World War I. The few times they were used it was in the belief that almost any type of apportionment is preferable to none at all if the commodity is obviously mixed. Unless otherwise specified, the percentages below are from *Commodity Flow and Capital Formation,* Volume One, Table B-1, pp. 72, 73.

1 FOOD AND KINDRED PRODUCTS

Peanuts: 92.4 percent to finished, 7.6 to unfinished.

3 DRUG, TOILET AND HOUSEHOLD PREPARATIONS

Blacking, stains, and dressings: 76.2 percent to finished, 23.8 to unfinished.

Cleansing and polishing preparations: 81.5 percent to finished, 18.5 to unfinished.

4 MAGAZINES, NEWSPAPERS, STATIONERY AND SUPPLIES, AND MISCELLANEOUS PAPER PRODUCTS

Envelopes: 51.0 percent to finished, 49.0 to unfinished. In the envelopes industry, 49.0 percent of sales were direct to industrial consumers. No other data on industrial sales by wholesalers could be obtained from the wholesale census.

Mucilage, paste and other adhesives, n.e.s.: 51.7 percent to finished, 48.3 to unfinished.

[a] *Distribution of Sales of Manufacturing Plants* and *Wholesale Distribution: Summary for the United States.* The derivation of the basic 1929 percentages is explained in *Commodity Flow and Capital Formation,* Vol. One, Note B to Table I-3, pp. 71–3.

Fine paper, writing: 69.4 percent to finished, 30.6 to unfinished.

All other paper goods, n.e.s.: 50.2 percent to finished, 49.8 to unfinished. These percentages were derived from the figures for the paper goods, n.e.c. industry in *Distribution of Sales of Manufacturing Plants: 1929,* and from the sales of wholesale establishments selling other paper products reported in the *Census of Wholesale Distribution: United States Summary: 1929,* Table 2.

6 Dry Goods and Notions

Artificial flowers: 75.0 percent to finished, 25.0 to unfinished.

Buttons: 9.0 percent to finished, 91.0 to unfinished.

Lace goods and nets: 42.7 percent to finished, 57.3 to unfinished.

Fancy articles, n.e.s.: 85.2 percent to finished, 14.8 to unfinished, the percentages reported in *Distribution of Sales of Manufacturing Plants: 1929* for the fancy and miscellaneous articles industry. No other data on the sales distribution of wholesalers were available.

Feathers and plumes: 35.4 percent to finished, 64.6 to unfinished.

Leather goods, n.e.s.: 77.0 percent to finished, 23.0 to unfinished, the percentages calculated from the figures for the leather goods, n.e.c. industry reported in *Distribution of Sales of Manufacturing Plants: 1929,* and from the figures on the sales of wholesale establishments selling leather goods, n.e.c., in the *Census of Wholesale Distribution: United States Summary: 1929,* Table 2.

Embroideries: 52.1 percent to finished, 47.9 to unfinished. These percentages were applied after an estimated value for contract work, based upon data from the *Census of Manufactures: 1929,* had been subtracted. In 1929 the value of contract work was 59.4 percent of total embroidery production.

Statuary and art goods: 34.1 percent to finished, 65.9, the percentage of sales reported as sales to industrial consumers—assumed to be contractors—to construction materials.

7 Clothing and Personal Furnishings

Umbrellas and canes: 86.6 percent to finished, 13.4 to unfinished, the percentages reported in *Distribution of Sales of Manufacturing Plants* for the umbrella, parasol, and cane industry. No other data on the sales distribution of wholesalers were available.

9 House Furnishings (semidurable)

Window shades and fixtures: 93.0 percent to finished, 7.0 to unfinished.

14b Miscellaneous House Furnishings (durable)

Cotton tapestries: 60.1 percent to finished, 39.9 to unfinished.

Looking glass and picture frames: 94.1 percent to finished, 5.9 to unfinished.

Mirrors, framed and unframed: 61.3 percent to finished, 38.7 to unfinished.

15 China and Household Utensils

Glass cutting, staining and ornamenting: 50.2 percent to finished, 20.2 to construction materials, and 29.6 to unfinished, the percentages reported for the glass products industry in *Distribution of Sales of Manufacturing Plants: 1929*. The percentage allocated to construction materials is that reported sold to contractors, institutions, churches, etc. No other data on the distribution of sales by wholesalers were available.

Construction Materials

See the allocation of statuary and art goods under Minor Group 6 and that of glass, cutting, staining, and ornamenting under Minor Group 15.

TABLE II 3

Industrial Composition of the *Census of Manufactures*, 1869–1919
(thousands of dollars)

CENSUS INDUSTRY GROUPS	1869	1879	1889	1899	1904	1909	1914	1919
Food & kindred products	695,748	1,118,305	1,574,179	2,199,202	2,845,556	3,937,617	4,816,709	12,438,890
Textiles & their products	760,032	978,642	1,279,282	1,646,732	2,179,250	3,108,369	3,473,438	9,248,290
Iron & steel	589,548	664,579	1,209,305‡	1,824,532	2,205,607	3,170,228	3,228,989	9,417,880
Lumber & its remfrs.	418,580	471,328	852,316	1,004,719	1,214,475	1,582,522	1,593,862	3,055,829
Leather & its finished products	377,620	422,783	483,782	582,050	724,390	992,713	1,104,595	2,610,231
Paper & printing	153,041	289,503*	449,224	607,905	859,812	1,179,284	1,456,046	3,012,583
Liquors & beverages	110,481	167,187	327,214	382,899	501,254	674,310	772,080	603,895
Chemicals & allied products	205,420	266,366†	516,653	761,690	1,075,521	1,526,597	2,001,636	5,610,299
Stone, clay & glass products	114,917	99,511	212,332	270,726	391,231	531,737	614,162	1,085,531
Metals, other than iron & steel	123,160	152,688	275,588	701,170	912,291	1,243,726	1,419,589	2,763,710
Tobacco mfrs.	71,762	116,773	195,537	263,713	331,112	416,695	490,165	1,012,933
Vehicles for land transportation	104,424	104,969	200,176	277,485	320,624	561,764	1,034,497	4,058,912
Rr. repair shops			132,428	227,485	323,212	437,564	552,618	1,354,446
Misc. industries	157,424	243,521	399,179	656,564	909,339	1,308,539	1,686,941	6,144,291
All other industries			469	59	230	390	1,104	362
Subtotal comparable with commodity total (see Table II 1)	3,882,157	5,096,155	8,107,664	11,406,931	14,793,904	20,672,055	24,246,431	62,418,082
Custom establishments§	101,043	135,373	247,246	303,212				
Mechanical & hand trades§	249,115	261,754	993,701	1,183,616				
Agricultural industries		5,651	25,187	38,262				
Roofing work		3,376	15,942	16,226				
Street construction work			28,164	42,512				
Adjusted totals‖	4,232,315	5,502,309	9,417,904	12,990,759	14,793,904	20,672,055	24,246,431	62,418,082
Census grand totals¶	4,232,325	5,369,579	9,372,379	13,000,149	14,793,903	20,672,052	24,246,435	62,418,079
Add:								
Petroleum & printing values not reported in Census totals		132,904						
Iron & steel not reported in Census totals			47,733					
Subtract:			9,420,181					
U.S. Navy shipbuilding			2,277					
Products of gov. establishments in D.C.				9,887				
Adj. Census grand totals‖	4,232,325	5,502,483	9,417,835	12,990,262	14,793,903	20,672,052	24,246,435	62,418,079

* Includes newspaper and periodical printing valued at $89,199.
† Includes petroleum valued at $43,705 reported in a special survey of the petroleum industry.
‡ Includes iron and steel rolling mill products valued at $47,733 reported among detailed data for the industry but not included in the census totals for 1889.
§ The 1889, 1879, and 1869 values for custom establishments are entirely estimated. The values for the hand trades are only partly estimated in those years. Clothing, men's, custom work and repairing was estimated to be $126,219 in 1889; furniture, cabinet making, repairing and upholstering was estimated to be $23,884 in 1889 and $7,159 in 1879.
‖ The small discrepancies in 1869, 1879, and 1899 between the adjusted total—the sum of the data for separate industries—and the adjusted census grand totals are probably due to minute changes made in some of the individual figures by census authorities and not carried over to the grand totals.
¶ *Abstract of the Census of Manufactures: 1919,* p. 14, and *Twelfth Census,* Vol. VII, Manufactures, Part I, p. xlvii.

TABLE II 4

Value of Products Reported for Eight States by the United States Census of Manufactures and by State Agencies, Census Years, 1889–1919
(millions of dollars)

	PENN.*	OHIO†	MASS.‡	N. J.§	MO.‖	CONN.¶	R. I.**	VA.††	TOTAL	% TOTAL IS OF ADJ. CENSUS GRAND TOTAL‡‡
RANK OF STATE IN 1944 CENSUS	2	4	5	6	11	12	19	20		
1889										
State			523			126			649	7
Census			766			215			981	10
% State is of Census	13	42	82	65		58			66	
1899										
State	210	305	737	355	153		82	21	1,863	14
Census	1,598	732	903	544	306		165	102	4,350	33
% State is of Census			68		50		50	21	43	
1904										
State	278	721	994	579	348	204	107	74	3,305	22
Census	1,882	934	1,109	760	424	364	202	139	5,814	39
% State is of Census	15	77	90	76	82	56	53	53	57	
1909										
State	1,234	1,057	1,491	824	574		66	117	5,363	26
Census	2,532	1,404	1,491	1,125	574		280	208	7,614	37
% State is of Census	49	75	100	73	100		24	56	70	
1914										
State			1,641	1,091	637			190	3,559	15
Census			1,641	1,381	638			243	3,903	16
% State is of Census			100	79	100			78	91	
1919										
State	7,041		4,011		1,576			608	13,236	21
Census	7,044		4,011		1,558			610	13,223	21
% State is of Census	100		100		101			100	100	

General Note

The comparison is for census years and by states between the totals reported for all manufacturing industries in each state by the United States Census of Manufactures and the totals reported by the respective state agencies. A blank indicates that no data were reported by the state for the census year in question.

No attempt is made to render the totals exactly comparable in either extensiveness or intensiveness of coverage. Coverage by the Census of Manufactures is assumed to be complete, because reports for *all* manufacturing industries are included; therefore, in the Note to Table II 4, the extensiveness or range of industries covered by each state sample is compared with the *universe* or total reported by the Census of Manufacturers. Intensiveness refers to the relative coverage by the state of particular industries. Here again, the totals from the United States Census are assumed to be the universe, and the totals reported by the state bureaus are compared with them.

Certain major adjustments for differences in the content of state and federal totals have been made, however. For example, since the Census includes railroad repair shops and the illuminating gas industry, while the state bureaus usually exclude them, the totals for these industries were subtracted from the United States Census total for each census year. Custom and repair shops and hand trades, included in the United States Census in 1889, have been also subtracted whenever possible. The adjustment was crude; only industries classified completely as custom or repair shops or hand trades were subtracted; those in which custom or repair or hand work was combined with manufacturing could not be apportioned, for there was no satisfactory basis for dividing the reported census data. Since we have little direct information on the policies followed by the state agencies in 1889, it can be said merely that the coverage percentages may be slightly understated.

* In 1919 and 1909 the extensiveness of coverage by the state agency and the United States Census was approximately the same. Pennsylvania's intensiveness of coverage rose sharply from 1909 to 1919, however. In 1904 and 1899 coverage was considerably poorer than in the later years. Also, the state sample, emphasizing reports for identical establishments, does not adequately depict the steady growth in total manufactures.

† For Ohio the extensiveness of coverage by the two agencies was roughly similar; intensiveness of coverage by the state increased considerably from 1899 to 1904. In 1889 the state reported data for scattered establishments; no comparison was possible.

‡ As Massachusetts accepted the United States Census industry totals for 1919, 1914, and 1909, no correction was made in either total, since it could not affect the comparison in any way. In 1904, 1899, and 1889 the Massachusetts Bureau of Statistics covered fewer establishments but still covered all industries. Since totals for identical establishments for each two consecutive years were reported, the intensiveness of coverage changed once every two years.

§ The New Jersey reports failed to cover any food industries other than breweries, canning, confectionery, and 'food products.' Although the last-mentioned industry included several reported separately by the United States Census, its scope was not broad enough to cover all food products; this deficiency accounts for the major portion of the difference between the state and federal totals. Moreover, intensive coverage by the state agency is slightly narrower.

‖ Missouri accepted the United States Census totals for 1914 and 1909. Differences for

1914 are due to minor revisions of the data by the state agency. Before 1909 its reports were incomplete in all respects. The probability that it included small establishments not covered by the United States Census in 1919 accounts for the slight excess it reported.

¶ For Connecticut the United States Census reported more establishments in most industries and also covered more industries.

** Only 10 industries were reported for Rhode Island by the state agency: cotton goods; hosiery and knit goods; silk goods; woolen and worsted goods; jewelry and silversmithing; rubber and elastic goods; dyeing and finishing, textiles; jewelers' findings; refining, gold and silver; electroplating, enameling, engraving and die-sinking. In 1909, however, the last 2 were not included, and intensiveness of coverage in the remaining 8 was considerably reduced.

†† For Virginia coverage of industries was similar 1904–19. The United States Census reported more establishments in all years. In 1899 the state agency reported fewer industries.

‡‡ The comments in the General Note concerning custom and repair shops and the hand trades do not entirely apply here. Adjustments were made in 1889, separately for each industry affected, to remove all such work on the basis of the 1899 overlap. Such a procedure could not be followed for the individual states because detailed revised 1899 figures were lacking. If the figures collected by the state agencies are assumed to include some custom and repair work, the percentage given here for 1889 is a little too high. But the effect of this lack of comparability, if it exists, is so slight as not to modify the interpretation of the 1889 percentage in the text.

NOTE TO TABLE II 4

Description of the State Reports

The following descriptions include the title of the report in which the data are published,[a] the years for which the reports are available, and a summary of pertinent information concerning the reliability, continuity, and usability of the data.

PENNSYLVANIA

Calendar year figures were published in the *Annual Report of the Bureau of Statistics and Information,* Department of Labor and Industry, 1892–1912. No report was published for 1913, 1914, or 1915. In 1919 the first annual *Report on Productive Industries,* published by the Bureau of Statistics and Information, Department of Internal Affairs, contained data for 1916–19.

For 1892–94, 381 identical establishments in 51 industries were reported; 1896–1905, 710 identical establishments in 84 industries. For neither period was the coverage good, extensively or intensively. From 1906 to 1912 coverage improved decidedly, additional establishments and industries being canvassed each year. But even by 1912 not much more than half the manufactured products of the state were covered, and several important industries, including the entire food group, were still completely omitted. For 1916–19, however, coverage was almost complete and the 1919 state and federal nearly identical.

There are several major breaks in comparability. The first, in 1896, together with the inadequacies of many of the figures reported for the '90's, made the use of data before 1899 inadvisable except for a few minor groups mentioned specifically in Table 5. That in 1906 was marked enough to suggest the un-

[a] The titles of the state reports vary somewhat from year to year. To simplify the presentation we usually give the title of the 1909 report (for Connecticut, 1908).

desirability of using the 1905 data. Consequently 1899–1904 was treated as a unit, and new series were started in 1906. The final break, evidenced by nonpublication of reports for three years, was naturally disastrous for the continuity of the sample. Moreover, the lack of comparability between the figures collected for 1912 and 1916 made it impossible to construct satisfactory estimates for the missing years.

OHIO

Calendar year figures were published in the *Annual Report of the Bureau of Labor Statistics* to the General Assembly of the State of Ohio, 1893–1912. The data for selected industries reported between 1885 and 1892 were too scattered to inspire any confidence.

One serious break, which caused the value of products reported to increase approximately 60 percent from 1900 to 1901, was discovered. The 1901 report, attributing this "to the amended law enacted by the Legislature at its last session", stated that in 1901 (and consequently later years) the Bureau sought statistics from large and small concerns alike whereas previously it had collected data from large concerns alone.[b] Owing to this break, it was necessary to study carefully the figures reported for 1900, 1901, and 1902, industry by industry.[c] Significant variations were discovered in examining wages paid and number of wage earners as well as number of establishments and value of product. For a few industries the data for all three years seemed comparable, but for most the 1900 figure had to be omitted, leaving two periods, 1893–99 and 1901–12. The data for the first period had to be examined further to remove industries reflecting obvious errors or inconsistencies.

Even after 1901 the coverage of the state agency was considerably less than that of the federal census, owing to the almost complete omission of most paper and printing industries and to the failure to include very small establishments.

MASSACHUSETTS

Calendar year figures were published, 1886–1919, in the *Annual Report on the Statistics of Manufactures* by the Director of the Bureau of Statistics. The annual reports were supplemented by complete state censuses of manufactures for 1885, 1895, and 1905.

For 1886–1906 figures were presented for identical establishments by pairs of years, giving two sets of figures for each year, the one comparable with the preceding year, the other with the following. The construction of a single series from the original data is described in Note A to Table 5. The intensity of coverage gradually increased so that by 1906 "the returns made each year had come to approximate 90 percent of completeness of the canvass made in census

[b] *Annual Report of Ohio Bureau of Labor Statistics, 1901*, pp. 7, 8.

[c] In several industries the full effect of the change in collection methods was not apparent until 1902. Consequently both 1901 and 1902 had to be omitted.

years (and for the leading industries were quite as complete in the non-census as in the census years)".[d] Because of this approach to completeness, all returns received were published beginning with 1907 instead of returns for identical establishment alone. However, there was a partial break between 1907 and 1908 owing to the adoption of the federal system of classification in the latter year. Until 1907 Massachusetts used its own system of industry classification, which was somewhat less detailed than that of the United States Census. For most industries the classifications could be matched well enough to set up continuous series. The few minor groups for which two distinct series, one for 1889–1907 and the other for 1909–19, had to be used are mentioned in the footnotes of Note A to Table 5. For 1909–19 the state agency achieved practically complete coverage and, in consequence, accepted the United States census data for 1909, 1914, and 1919 as fully comparable with and in place of the state canvas.

New Jersey

Calendar year figures were published, 1897–1916, in the *Annual Report of the Bureau of Statistics of Labor and Industry*. The scattered figures given in several reports between 1880 and 1896 were not reliable enough to justify their use for interpolation.

No important break was found in the figures, coverage remaining at about 75 percent of the federal census throughout the period. Comparison of state and federal data for census years revealed that the other 25 percent was probably composed of food industries, many of which were not included in the state totals at all, and numerous "petty" establishments not canvassed by the state. That the omission of "petty" establishments and of such industries as bread and bakery products was deliberate is suggested by the contention in the 1906 report that the presentation is a complete annual census of the "real" factories of the state, but does not include a vast number of "petty" concerns.[e]

Missouri

Calendar year figures were published, 1896–1910, and 1914–19, in the *Annual Report of the Bureau of Labor Statistics*.[f] Some reports between 1890 and 1895 contained scattered noncontinuous figures for fiscal years ending June 30. For 1911, 1912, and 1913 no state-wide data were published. The figures given for a few of the larger cities were not thought sufficiently dependable for use as an index of state output.

Two breaks occurred in the Missouri data. The first, evidenced by a sudden improvement in both extensive and intensive coverage between 1900 and 1901, necessitated the use of separate series for 1902–09 except for a few in-

[d] *Annual Report on the Statistics of Manufactures, 1909*, p. xxx.
[e] *Annual Report of the Bureau of Statistics of Labor and Industries of New Jersey, 1907*, pp. ix, x.
[f] Sometimes entitled the *Missouri Red Book*. The state agency was called the Missouri Bureau of Labor Statistics and Inspection in the earlier years.

dustries specified in the footnotes of Note A to Table 5. Coverage increased gradually, reaching 100 percent by 1909, when the federal figures were accepted by the state. The second and more important break, in 1911, compelled the abandonment of all the Missouri figures for the inter-censal period 1909–14 except those for the boot and shoe industry, for which special data were available. For 1914–19 the state coverage was apparently slightly higher than the federal, probably because some very small establishments were included.

Connecticut

Fiscal year figures for years ending November 30 (1889–91, 1900–04, and 1906) were published in the *Annual Report of the Bureau of Labor Statistics.* Data for 1900–04 alone were usable for interpolation. Although state coverage was far from complete, it remained fairly constant throughout the period.

Rhode Island

Calendar year figures 1893–1900 and 1904–10 for selected industries were published in the *Annual Report of the Commissioner of Industrial Statistics* to the General Assembly. Ten industries were reported in the earlier period, and such of these as fit into our minor group classifications were used 1893–99. In the later period only 8 industries were reported continuously. Moreover, a break occurred in 1906 when the state agency undertook to present figures for identical establishments alone. Although there was an overlap in 1906 that made it possible to splice the various series, the movement 1904–06 is for nonidentical establishments, while that for 1906–09 is for identical. Since the Rhode Island figures were applicable to only 3 minor groups, their influence on the interpolation samples is slight.

Virginia

Calendar year figures 1897 and 1899–1919 were published in the *Annual Report of the Bureau of Labor and Industrial Statistics.* Before 1904 the data were for principal industries reported in alternate years and could not be used for interpolation.

No important breaks were noted in the data, and most of the industries could consequently be used for the entire period 1904–19. Coverage was extended, however, between 1909 and 1919 by the addition of several industries. Moreover, between 1914 and 1919 a gradual increase in intensive coverage was observed.

TABLE II 5

Value of Product, Selected Industries,
Reported by United States Census of Manufactures and by State Agencies, 1909
(thousands of dollars)

	CENSUS TOTAL (1)	STATE (2)	CENSUS TOTAL FOR STATE (3)	RANK OF STATE IN 1909 CENSUS (4)	TOTAL REPORTED BY STATE AGENCIES (5)	% STATE IS OF CENSUS (6)
Bread & other bakery products	396,865	Mass.	26,146	4	26,146	6.6
		Ohio	23,007	5	15,520	3.9
Confectionery	134,796	Mass.	15,266	2	15,266	11.3
		Ohio	7,307	5	6,697	5.0
Liquors, distilled	204,699	Ohio	12,011	5	9,642	4.7
Liquors, malt	374,730	Mo.	27,447	5	27,447	7.3
Mineral & soda waters	43,508	Mass.	2,193	4	2,193	5.0
Slaughtering & meat packing	1,370,568	Mo.	79,581	5	79,581	5.8
Flavoring extracts	8,114	Mass.	931	4	931	11.5
Flour-mill & grist-mill products	883,584	Ohio	48,093	5	32,081	3.6
Ice, mfd.	42,953	Ohio	2,270	5	1,471	3.4
Salt	11,328	Ohio	1,807	3	757	6.7
Pipes, tobacco	5,312	Mo.	396	3	396	7.5
Tobacco mfrs.	416,695	Mo.	30,951	4	30,951	7.4
		Ohio	28,907	5	21,720	5.2
Blacking & cleansing & polishing preparations	14,679	Mass.	3,713	2	3,713	25.3
Soap	111,358	Ohio	17,077	3	20,719[a]	18.6[a]
		N. J.	13,674	4	20,641[a]	18.5[a]
		Penn.	9,124	5	7,077	6.4
Printing & publishing	737,876	Ohio	41,657	5	22,224	3.0
Buttons	22,708	N. J.	2,750	3	3,440	15.1
Cotton goods, incl. cotton small wares	628,392	Mass.	186,462	1	186,462	29.7
		R. I.	50,313	4	15,650	2.5
Dyeing & finishing textiles	83,556	N. J.	15,796	2	18,343	22.0
		R. I.	13,956	3	4,459	5.3
Fancy articles, n.e.s.	22,632	Mass.	6,618	2	6,619	29.2
Leather goods[d]	18,838	Mass.	1,581	5	1,581	8.4
Silk & silk goods, incl. throwsters	196,912	N. J.	65,430	1	53,764	27.3
		Penn.	62,061	2	60,750	30.9
		Mass.	8,942	5	8,942	4.5

Woolen, worsted & felt goods, & wool hats	435,979	Mass.	141,967	1	141,967	32.6
		Penn.	77,447	2	50,117	11.5
		R. I.	74,600	3	46,133	10.6
		N. J.	33,939	4	33,200	7.6
Clothing, men's, incl. shirts	568,077	Ohio	24,869	5	35,056[b]	3.7[b]
Clothing, women's	384,752	Ohio	19,493	3	[b]	[b]
		Mass.	11,728	5	11,728	3.0
Corsets	33,257	Mass.	3,752	4	3,752	11.3
		N. J.	3,336	5	3,608	10.8
Furnishing goods, men's	87,710	Ohio	4,623	4	3,439	3.9
Hats & caps, other than felt, straw, & wool	13,689	Penn.	1,097	2	[c]	[c]
		Mass.	659	5	659	4.8
Hats, fur-felt	47,865	Penn.	13,023	1	13,567[c]	22.0[c]
		N. J.	8,825	4	9,073	19.0
		Mass.	3,746	5	3,746	7.8
Hats, straw	21,424	Mass.	6,589	2	6,589	30.8
Hosiery & knit goods	200,144	Penn.	49,658	2	29,554	14.8
		Mass.	14,736	3	14,724	7.4
Millinery & lace goods	85,894	Mass.	3,977	5	3,977	4.6
Umbrellas & canes	15,864	Penn.	5,060	2	3,723	23.5
Boots & shoes[d]	442,631	Mass.	187,046	1	187,046	42.3
		Mo.	35,410	3	35,410	8.0
		Ohio	28,771	5	28,870	6.5
Boots & shoes, rubber	49,721	Mass.	18,722	1	18,722	3.8
Brooms	14,432	Penn.	1,261	3	235	1.6
		Ohio	1,079	4	[e]	[e]
Brushes	14,694	Mass.	2,875	2	2,875	19.6
		N. J.	1,564	3	418	2.8
		Ohio	1,219	4	1,670[e]	5.7[e]
Window shades & fixtures	18,571	N. J.	1,155	4	347	1.9
Carriages & sleds, children's	8,805	Mass.	1,755	2	1,755	19.9
Sporting & athletic goods	11,052	Mass.	2,510	2	2,510	22.7
Toys & games	8,264	Mass.	1,751	2	1,751	21.2
Furniture & refrigerators	239,887	Penn.	18,952	4	13,033	5.4
Stoves & furnaces, incl. gas & oil stoves	78,853	Ohio	15,358	1	11,316	14.4

	CENSUS TOTAL (1)	STATE (2)	CENSUS TOTAL FOR STATE (3)	RANK OF STATE IN 1909 CENSUS (4)	TOTAL REPORTED BY STATE AGENCIES (5)	% STATE IS OF CENSUS (6)
Carpets & rugs, other than rag	71,188	Penn.	24,879	2	26,065	36.6
		Mass.	12,812	3	12,812	18.0
		N. J.	1,945	4	1,945	2.7
Oilcloth & linoleum	23,339	N. J.	10,143	1	10,292	44.1
Looking glass & picture frames	13,475	Ohio	879	4	695	5.2
Mattresses & spring beds	35,783	Ohio	3,307	2	2,808	7.8
		Mass.	2,227	4	2,227	6.2
		Penn.	2,223	5	1,296	3.6
Cutlery & edge tools[d]	22,885	Mass.	4,391	3	4,391	19.2
		N. J.	2,014	4	1,198	5.2
Glass, cutting, staining, & ornamenting	92,095	N. J.	883	4	424	0.5
Pottery, terra cotta & fire clay products	76,119	Ohio	21,173	1	12,234	16.1
		N. J.	13,139	2	7,370	9.7
Musical instruments, pianos & organs & materials	89,790	Mass.	4,957	3	4,957	5.5
Clocks & watches, incl. cases & materials	35,197	N. J.	3,848	4	3,615	10.3
		Ohio	2,873	5	2,446	6.9
Silverware & plated ware	42,229	Mass.	6,539	3	6,539	15.5
		R. I.	6,198	4	5,983	14.2
		N. J.	3,035	5	2,725	6.5
Jewelry	80,350	R. I.	20,685	1	6,024	7.5
		Mass.	15,211	3	15,211	18.9
		N. J.	13,272	4	10,853	13.5
Trunks & valises[d]	28,028	Penn.	2,859	2	1,013	3.6
		Va.	2,551	4	2,265	8.1
Carriages & wagons & materials	159,893	Ohio	21,949	1	16,257	10.2
		Penn.	12,748	5	3,371	2.1
Bicycles, motorcycles & parts	10,699	Mass.	2,706	1	2,706	25.3
		Ohio	2,308	2	2,682	25.1
Optical goods	11,735	Mass.	3,058	2	3,058	26.1
Marble & stone work	113,093	Mass.	7,804	4	7,805	6.9
Foundry & machine shop products[d]	883,948	Ohio	125,521	2	125,729[f]	14.2
		Mass.	71,967	5	71,967	8.1
Electrical machinery, apparatus, & supplies	221,309	Penn.	31,351	2	17,215	7.8
		N. J.	28,365	3	15,650	7.1
		Mass.	28,143	4	28,143	12.7
Agri. implements	146,329	Ohio	14,440	3	10,464	7.2

Pumps, excl. steam pumps	5,583	Ohio	2,747	1	1,890	33.9
Wirework, incl. wire rope & cable	41,938	Mo.	3,396	4	3,396	8.1
Safes & vaults	8,491	Ohio	5,488	1	3,782	44.5
		Penn.	1,338	2	2,913	34.3
Locomotives	31,582	Penn.	g		14,892	47.2
Cars, steam-rr., excl. operations of rr. companies	123,730	Penn.	27,510	1	31,417	25.4
		Ohio	6,451	4	2,100[h]	1.6 [h]
Cars, street-rr., excl. operations of rr. companies	7,810	Ohio	1,955	1	[h]	[h]
Shipbuilding, incl. boat building	73,360	N. J.	8,841	2	8,681	11.8
		Mass.	6,996	3	1,848[i]	2.5
		Penn.	6,178	4	5,581	7.6
Instruments, professional & scientific	10,504	Mass.	864	4	864	8.2
Tools, n.e.s.[d]	30,381	Mass.	7,219	1	7,219	23.8
		Ohio	4,648	2	7,772	25.6
		Penn.	3,798	3	3,246	10.7
Awnings, tents & sails	14,499	Mo.	1,784	2	1,784	12.3
		Ohio	1,387	3	1,465	10.1
		Mass.	886	5	886	6.1
Emery & other abrasive wheels	6,711	Mass.	1,982	2	1,982	29.5
Models & patterns, excl. paper patterns	8,868	Ohio	670	4	341	3.8
		Mass.	625	5	625	7.0
Signs & advertising novelties	13,546	Ohio	2,598	2	2,474	18.3
Saddlery & harness[d]	54,225	Ohio	4,934	1	4,186	7.7
Brick & tile	92,777	Ohio	9,358	2	12,886	13.9
Cement	63,205	Penn.	18,855	1	15,692	24.8
Gas & electric fixtures & lamps & reflectors	45,057	N. J.	5,771	3	7,359	16.3
Paint & varnish	124,889	Penn.	14,020	3	2,166	1.7
		Ohio	13,617	4	10,829	8.7
		N. J.	12,767	5	9,293	7.4
Roofing materials	19,204	Ohio	3,900	1	6,082	31.7
		N. J.	2,285	4	2,238	11.7
Iron & steel bolts, nuts, washers, & rivets, not made in steel works or rolling mills	24,485	Mass.	2,427	4	2,427	9.9
Iron & steel, nails & spikes, cut & wrought, incl. wire nails not made in steel works or rolling mills	8,192	Mass.	2,928	1	2,928	35.7
Structural iron work[a]	133,241	Penn.	29,846	1	20,133	15.1
		Ohio	18,920	2	6,862	5.2
Plumbers' supplies[a]	43,687	Ohio	5,155	3	4,226	9.7
Steam fittings & heating apparatus[a]	54,084	Mass.	5,948	5	5,948	11.0

Notes to Table II 5

[a]The Ohio total includes candles and tallow; the New Jersey total, tallow; since the total United States production of candles and tallow is less than $5 million, the amount of both included in the totals must be negligible. The Ohio and New Jersey values are therefore expressed as percentages of the Census of Manufactures total for soap alone.

[b]The Ohio total for clothing, men's, included women's clothing; the figure shown is the percentage that that total (35,056) is of the Census of Manufactures total for all clothing (952,829).

[c]Pennsylvania combined fur-felt hats with hats and caps other than felt, straw and wool; the state total is therefore taken as a percentage of the combined Census of Manufactures total.

[d]This is one of several industries for which the 1909 Census of Manufactures reported no totals for the separate states. State totals were available, however, for each of these industries combined with one or more related industries. E.g., leather goods, n.e.s., trunks and valises, and saddlery and harness were combined in the Census tables showing value of products by states; boots and shoes included cut stock and findings; cutlery and tools, n.e.s. were combined; and foundry and machine shop products included structural iron work, plumbers' supplies, and steam fittings and heating apparatus.

In 1914 all these industries were shown separately and were also reported by states. The rank in 1914 of the states in each industry was used for 1909, as was the percentage that each state constituted of the total value of products for the nation. The 1914 percentages were then applied to 1909 industry totals to derive approximate census values for five of the seven states in the sample. Since both Massachusetts and Missouri accepted the U. S. Census in 1909, and usually presented separate values for the industries combined by the federal agency, no estimates had to be made and figures from these two states were entered in both columns 3 and 5.

[e]Ohio reported brooms and brushes as a single item. The state total is therefore expressed as a percentage of the federal total for brooms and brushes.

[f]This total includes foundry products valued at $76,261,000. These unfinished commodities were included to make the state total comparable with the U. S. total for the state.

[g]The U. S. Census did not give a division by states; this industry is used in the comparison because Pennsylvania produces a very substantial proportion of the nation's locomotives.

[h]The Ohio total is for all cars and furnishings; it is expressed as a percentage of the Census of Manufactures total for steam and street railroad cars.

[i]This total is for wooden shipbuilding only; the state includes steel shipbuilding with all other industries.

TABLE II 6

Composition of Interpolating Series by Minor Commodity Groups

MINOR COMMODITY GROUP	1889–1899	1899–1904	1904–1909	1909–1914	1914–1919
		PERISHABLE			
1 Food & kindred products Series used	Natural mineral waters; rice; peanuts; butter; cheese; condensed & evaporated milk; coffee imports; slaughtering; sugar meltings	Ohio; Mass.; N.J.; Mo.	Ohio; Mass.; N.J.; Mo.; Va.	Ohio; Mass.; N.J.; Va.	Pa.; Mass.; Mo.; Va.
Complementary series	Mass.	Natural mineral waters, rice, peanuts, butter, cheese, condensed & evaporated milk, coffee in all years together with ICC tonnage for sugar, dressed meat, other packing house products & flour 1899–1919 & production of canned tomatoes, peas & corn 1909–19, multiplied by appropriate prices			
2 Cigars, cigarettes & tobacco Series used	Quantity production of cigarettes, fine-cut tobacco, cigars weighing more than 3 lb. per M, little cigars, smoking tobacco, plug & twist tobacco, & snuff multiplied by appropriate prices				
Complementary series	Ohio; Mass.	Pa.; Ohio; Mass.; N.J.; Mo.	Ohio; Mass.; N.J.; Mo.; Va.	Ohio; Mass.; N.J.; Va.	Pa.; Mass.; N.J.; Mo.
3 Drug, toilet & household preparations Series used	Mass.	Ohio; Mass.; N.J.; Mo.	Pa.; Ohio; Mass.; N.J.; Mo.	Pa.; Ohio; Mass.; N.J.	Pa.; Mass.; Mo.
4 Magazines, newspapers, stationery & supplies & misc. paper products Series used	Mass.	Pa.; Ohio; Mass.; N.J.	Ohio; Mass.; N.J.; Va.	Pa.; Mass.; N.J.; Va.	Pa.; Mass.; N.J.; Mo.; Va.
5a Fuel & lighting products, mfd. Series used Complementary series	Coke sold for domestic purposes; production of crude petroleum Lubricating oil; kerosene; gasoline				
		SEMIDURABLE			
6 Dry goods & notions Series used	Pa.; Mass.; R.I.	Pa.; Mass.; N.J.; Conn.	Pa.; Mass.; N.J.; R.I.; Va.	Pa.; Mass.; N.J.; Va.	Pa.; Mass.; N.J.; Va.
7 Clothing & personal furnishings Series used	Pa.; Ohio; Mass.; R.I.	Pa.; Ohio; Mass.; N.J.; Conn.	Pa.; Ohio; Mass.; N.J.; Mo.; R.I.; Va.	Pa.; Ohio; Mass.; N.J.; Va.	Pa.; Mass.; N.J.; Mo.; Va.
8 Shoes & other footwear Series used	Ohio; Mass.: Mo.	Pa.; Ohio; Mass.; N.J.; Mo.	Pa.; Ohio; Mass.; N.J.; Mo.; Va.	Pa.; Ohio; Mass.; N.J.; Mo.; Va.	Pa.; Mass.; N.J.; Mo.

MINOR COMMODITY GROUP	1889–1899	1899–1904	1904–1909	1909–1914	1914–1919
9 House furnishings (semidurable) Series used	Pa.; Mass.	Pa.; Mass.; N.J.	Pa.; Ohio; Mass.; N.J.	Pa.; Ohio; Mass.; N.J.	Pa.; Mass.; N.J.
Complementary series			ICC tonnage for household goods & furniture		
10 Toys, games & sporting goods Series used	Mass.	Mass.	Mass.	Mass.	Pa.; Mass. Exports of firearms
11 Tires & tubes Series used	Movement of combined automobile & bicycle series		Ohio; N.J.	Ohio; Mass.; N.J.	Renewals of automobile casings multiplied by BLS rubber tire price relatives Mass.; N.J.
Complementary series					
CONSUMER DURABLE					
12 Household furniture Series used	Ohio; Mass.	Ohio; Mass.; Mo.	Ohio; Mass.; Mo.; Va.	Ohio; Mass.; Va.	Pa.; Mass.; Mo.; Va.
Complementary series			ICC tonnage for household goods & furniture		
13a Heating and cooking apparatus & household appliances, except electrical Series used	Pa.; Ohio; Mass.	Pa.; Ohio; Mass.; N.J.; Mo.	Ohio; Mass.; N.J.; Mo.; Va.	Ohio; Mass.; N.J.; Va.	Pa.; Mass.; N.J.; Mo.; Va.
13b Electrical household appliances & supplies Series used		Pa.; Ohio; Mass.; N.J.; Mo.	Pa.; Ohio; Mass.; N.J.; Mo.	Pa.; Ohio; Mass.; N.J.	Pa.; Mass.; N.J.; Mo.
14a Floor coverings Series used	Pa.; Mass.	Pa.; Mass.; N.J.	Pa.; Mass.; N.J.	Pa.; Mass.; N.J.	Pa.; Mass.; N.J.
14b Misc. house furnishings (durable) Series used	Pa.; Mass.	Pa.; Ohio; Mass.; N.J.; Conn.	Pa.; Ohio; Mass.; N.J.	Pa.; Ohio; Mass.; N.J.	Pa.; Mass.; N.J.
Complementary series			ICC tonnage for household goods & furniture		
15 China & household utensils Series used	Pa.; Mass.	Pa.; Mass.; N.J.; Conn.	Ohio; Mass.; N.J.	Ohio; N.J.	Pa.; Mass.; N.J.
		Red earthenware; stoneware & yellow & Rockingham ware; white ware, incl. C. C. ware; china, bone china, delft & belleek ware; misc. pottery			
16 Musical instruments Series used	Pa.; Mass.	Pa.; Ohio; Mass.; N.J.; Conn.	Ohio; Mass.; N.J.	Ohio; Mass.; N.J.	Pa.; Mass.; N.J.; Mo.
Complementary series				Sales of two piano companies	
17 Jewelry, silverware, clocks & watches Series used	Mass.	Ohio; Mass.; N.J.; Conn.	Ohio; Mass.; N.J.; Mo.; R.I.	Ohio; Mass.; N.J.	Pa.; Mass.; N.J.; Mo.

18	Printing & publishing: books Series used	Mass.	Ohio; Mass.; N.J.; Mo.	Ohio; Mass.; N.J.; Mo.	Ohio; N.J.	Pa.; Mass.; N.J.; Mo.
19	Luggage Series used	Mass.	Ohio; Mass.; N.J.; Mo.	Pa.; Ohio; Mass.; N.J.; Mo.; Va.	Pa.; Ohio; Mass.; N.J.; Va.	Mass.; N.J.; Mo.; Va.
20a	Passenger motor vehicles Series used				Factory sales, passenger cars	
20b	Motor vehicles accessories Series used				Factory sales, passenger cars	
20c	Passenger vehicles, carriages & wagons Series used	Ohio; Mass.; Mo.	Ohio; Mass.; N.J.; Mo.; Conn.	Pa.; Ohio; Mass.; N.J.; Mo.; Va.	Pa.; Ohio; Mass.; N.J.; Va.	Pa.; Mass.; N.J.; Mo.; Va.
21	Motorcycles & bicycles Series used	Exports of bicycles & motorcycles		Ohio; Mass.	Ohio; Mass.	Exports of bicycles & production of Indian Motorcycle Co.
	Complementary series	Ohio; Mass.	Mass.	Exports of bicycles & motorcycles		
22	Pleasure-craft Series used	Mass.	Mass.	Pa.; Mass.; N.J.	Pa.; Mass.; N.J.	Pa.; Mass.; N.J.
23	Ophthalmic products & artificial limbs Series used		Movement of Minor Group 3		Mass.; N.J.	Pa.; Mass.; N.J.
24	Monuments and tombstones Series used Complementary series		Mass.	Granite monumental stone Mass.	Mass.	Mass.
	PRODUCER DURABLE					
25	Industrial machinery & equipment Series used	Mass.	Pa.; Ohio; Mass.; N.J.; Mo.; Conn.	Ohio; Mass.; N.J.; Mo.; Va.	Ohio; Mass.; N.J.; Va.	Pa.; Mass.; N.J.; Mo.
	Complementary series			Exports of machinery, n.e.s.		
26	Electrical equipment, industrial & commercial Series used	Mass.	Pa.; Ohio; Mass.; N.J.; Mo.	Pa.; Ohio; Mass.; N.J.; Mo.	Pa.; Ohio; Mass.; N.J.	Pa.; Mass.; N.J.; Mo.
	Complementary series				Gross revenues of two companies	
27	Farm equipment Series used	Pa.; Ohio; Mass.	Pa.; Ohio; Mass.; N.J.; Mo.	Pa.; Ohio; Mass.; N.J.; Mo.; Va.	Pa.; Ohio; Mass.; N.J.; Va.	Pa.; N.J.; Mo.; Va.
	Complementary series					ICC tonnage of agricultural implements multiplied by BLS price relative

MINOR COMMODITY GROUP	1889–1899	1899–1904	1904–1909	1909–1914	1914–1919
28 Office & store machinery & equipment Series used	Movement of Minor Group 25	Pa.; Ohio; Mass.; N.J.; Conn.	Ohio; Mass.; N.J.; Mo.; Va.	Ohio; Mass.; N.J.; Va.	Pa.; Mass.; N.J.; Mo.
29 Office & store furniture & fixtures Series used	Movement of Minor Group 12	Pa.; Ohio; Mass.; Mo.	Pa.; Ohio; Mass.; Mo.; Va.	Pa.; Ohio; Mass.; Va.	Pa.; Mass.; Mo.; Va.
30 Locomotive & rr. cars Series used	Pa.; Mass.	Pa.; Ohio; Mass.	Pa.; Ohio; Mass.	Pa.; Ohio	
Complementary series		Locomotives & cars built multiplied by available prices			
31 Ships & boats Series used	Mass.	Mass.	Pa.; Mass.; N.J.	Pa.; Mass.; N.J.	Pa.; Mass.; N.J.
32a Business motor vehicles Series used			Factory sales, motor trucks		
32b Business wagons Series used	Ohio; Mass.; Mo.	Ohio; Mass.; N.J.; Mo.; Conn.	Pa.; Ohio; Mass.; N.J.; Mo.; Va.	Pa.; Ohio; Mass.; N.J.; Va.	Pa.; Mass.; N.J.; Mo.; Va.
33 Aircraft Series used				Domestic consumption, incl. exports, multiplied by per unit prices of motor trucks	
Complementary series				Same series multiplied by export prices	
34 Professional & scientific equipment Series used	Movement of Minor Groups 25 & 26			Mass.; N.J.	Pa.; Mass.; N.J.
35 Carpenters' & mechanics' tools Series used	Pa.; Mass.	Pa.; Ohio; Mass.; N.J.	Pa.; Ohio; Mass.; N.J.	Ohio; Mass.; N.J.	Pa.; Mass.; N.J.
36 Misc. subsidiary durable equipment Series used	Mass.	Pa.; Ohio; Mass.; Mo.	Ohio; Mass.; Mo.	Ohio; Mass.	Pa.; Mass.; Mo.
Construction materials Series used	Roofing slate; building lime; cement; stone; structural shapes; cut & wire nails; iron & steel rails; softwood production, lath and shingle	Chemical stoneware, millstones, grindstones, oilstones Roofing slate; building lime; mfd. asphalt; building stone; paving stone; stone curbing; stone flagging; rubble; riprap; crushed railroad ballast, concrete and road metal; building sand; paving sand; sand railroad ballast; gravel; sand-lime brick; common brick; vitrified brick; face brick; fancy or ornamental brick; enameled brick; architectural terra cotta; hollow building tile and fireproofing; tile, not drain; drain-tile; sewer pipe; sanitary ware; softwood production, lath and shingles; structural shapes; concrete bars; cut & wire nails; iron & steel rails; pipe, butt & lap welded			
Complementary series	Ohio; Mass.	Pa.; Ohio; Mass.; N.J.; Mo.; Conn.	Pa.; Ohio; Mass.; N.J.; Mo.; Va.	Pa.; Ohio; Mass.; N.J.; Va.	Pa.; Mass.; N.J.; Mo.; Va.

NOTE A TO TABLE II 6

Industrial Composition of the State Series

This note describes in tabular form the composition of the state series used either as interpolating or complementary series. It lists the industries included during each intercensal period for every state for which usable data were available. To designate complementary series, used for corroboration alone, the letter (c) follows the minor group number of a series so used.

The asterisk after some of the industry titles within the various minor groups denotes that figures for the industry were available for a majority of years during the intercensal period but not for the entire period. In such cases the series excluding the industry was spliced to the one including the industry at the year it was first included.

1889–1899	1899–1904	1904–1909	1909–1914	1914–1919
		Minor Group 1 (c for 1889–99)		
		PENNSYLVANIA[a]		
				Baking powder; bread & other bakery products; butter, cheese, & condensed milk; pickles; canned & preserved goods; chocolate & cocoa products; coffee & spices, roasting & grinding; confectionery; ice cream; cordials & sirups; flour & gristmill products; ice; slaughtering & meat packing; sugar refining; vinegar & cider; flavoring preparations; liquors, distilled; liquors, malt; table waters; butterine & oleomargarine; peanut products, caramels
		OHIO		
	Bread & other bakery products*; canned goods*; chewing gum*; confectionery and ice cream*; dairy products*; flouring mill products*; ice (artificial)*; liquors, distilled*; liquors, malt*; pickles, preserves & sauces*; salt*; slaughtering & meat packing*; soda & mineral water*	Same	Same*	
		MASSACHUSETTS[b]		
Food preparations; liquors, malt, distilled & fermented; liquors & beverages, not spirituous	Same	Same; butter*; canning & preserving, fish*; coffee & spice, roasting & grinding*; confectionery*; flavoring extracts*; flour & grist mill products*; pickles, preserves & sauces*; sausages*; slaughtering & meat packing, wholesale*; vinegar & cider*; bread & other bakery products*; cordials & sirups*	Same	Same; ice, mfd.; ice cream; chocolate & cocoa products

1889–1899	1899–1904	1904–1909	1909–1914	1914–1919
		NEW JERSEY		
	Brewing (beer, ale & porter); confectionery; food products; canning	Same	Same	
		MISSOURI		
	Bakery products; canning, preserving, pickling; candy, confections, gum; flour, feed, meal, cereals; grocers' sundries, n.e.s.; liquors, malt; packing house products	Same; carbonated beverages, soda; creamery & dairy products; grocers' sundries, n.e.s.*		Carbonated beverages, soda; baking powder, yeast; butterine, oleomargarine; coffee, roasting, grinding; creamery & dairy products; grocers' sundries, n.e.s.
		VIRGINIA		
		Canneries, fruits & vegetables; flour & gristmill products; ice, artificial; pickles, vinegar, & apple cider; breweries	Same	Candy, chewing gum, etc.; canneries, fruits & vegetables; crabs, oysters, clams-packing; flour & gristmill products; ice, artificial; peanut cleaning, coffee roasters; pickles, vinegar & apple cider
		Minor Group 2 (c)		
		PENNSYLVANIA[a]		
	Cigars			Cheroots & stogies; chewing tobacco; cigars; cigarettes; smoking tobacco; pipes, tobacco
		OHIO		
Cigars*; tobacco, chewing and smoking*	Same	Same	Same*	
		MASSACHUSETTS[b]		
Tobacco, snuff and cigars	Same	Tobacco, cigars & cigarettes*; tobacco, chewing & smoking & snuff*; tobacco, snuff & cigars*	Tobacco, cigars & cigarettes*; tobacco, chewing & smoking & snuff*; tobacco mfrs.*	Tobacco mfrs.
		NEW JERSEY		
	Cigars & tobacco	Same	Same	Same*
		MISSOURI		
	Corncob & wooden pipes; cigars, cigarettes, cheroots; tobacco, chewing & smoking	Same		Corncob & wooden pipes; cigars, cigarettes, cheroots; tobacco, chewing & smoking
		VIRGINIA		
		Tobacco & its products; cigars, cigarettes & cheroots	Same	

		Minor Group 3		
		PENNSYLVANIA[a]		
		Soap*	Soap*	Cleansing & polishing preparations; patent & proprietary medicines; soap; toilet preparations; surgical appliances
		OHIO		
Drugs, chemicals & druggists' sundries*; extracts, toilet articles & perfumery*; soap, candles & tallow	Same	Same*		
		MASSACHUSETTS[b]		
Tallow, candles, soap & grease; drugs & medicines; perfumes, toilet articles, etc.; polishes & dressings	Same	Druggists' preparations; cleansing & polishing preparations; soap; patent medicines & compounds; blacking; perfumes, toilet articles, etc.	Same; stains & dressing	Same, excl. perfumes
		NEW JERSEY		
	Chemical products; soap & tallow	Same	Same	
		MISSOURI		
	Drugs, chemicals, patent compounds; soap, candles, washing preparations	Same		Drugs, chemicals, patent compounds; cleansing & polishing preparations; liquid soap
		Minor Group 4		
		PENNSYLVANIA[a]		
	Paper mill goods, not specified		Glue and gelatin*; paper mill goods, not specified*	Same; ink, writing; mucilage & paste; stationery goods, not specified; pens & pencils
		OHIO		
	Inks	Inks		
		MASSACHUSETTS[b]		
Paper & paper goods; crayons, pencils, crucibles, etc.; ink, mucilage & paste	Same	Same; stationery goods, n.e.s.*; bookbinding & blank-bookmaking*	Paper goods, n.e.s.; bookbinding & blank-bookmaking; mucilage & paste; stationery goods, n.e.s.; envelopes; glue, isinglass	Same
		NEW JERSEY		
	Inks & mucilage; paper	Same	Same	Same*
		MISSOURI		
				Stationery supplies, paper goods, n.e.s.; envelopes

1889–1899	1899–1904	1904–1909	1909–1914	1914–1919
		VIRGINIA		
		Paper & pulp mill products; stationery & printing	Same	Stationery & printing
		Minor Group 6		
		PENNSYLVANIA[a]		
Woolen & worsted fabrics*; lace goods & embroideries*; silk ribbons*; silk broadgoods*	Same	Silk & silk goods & throwsters; lace goods & embroideries	Same*; handkerchiefs & embroideries*	Handkerchiefs & embroideries; silk & silk goods; thread; woolen, worsted & felt goods; needles, pins, hooks & eyes; artificial flowers, feathers & plumes; buttons; fancy articles & specialties; flags, banners, regalia, emblems; hairwork; cotton goods
		MASSACHUSETTS[b]		
Linen*; mixed textiles*; silk & silk goods; cotton, woolen and other textiles*; woolen goods; worsted goods; straw and palm leaf goods; buttons & dress trimmings; fancy articles; hairwork; cotton goods; ivory, bone, shell & horn goods	Silk & silk goods; woolen goods; worsted goods; straw & palm leaf goods; buttons & dress trimmings; fancy articles; hairwork; cotton thread & yarn; woolen woven goods & yarn; ivory, bone, shell & horn goods; cotton goods	Same; cotton small wares*; linen goods*	Linen; silk & silk goods; woolen & worsted goods; fancy articles; buttons; cotton small wares; combs & hairpins; ivory, bone, shell & horn goods*	Same, excl. ivory, bone, shell & horn goods
		NEW JERSEY		
	Buttons (ivory, metal & pearl*); silk (broad & ribbon goods); textile products; thread; cotton goods; woolen & worsted goods; cotton, finishing & dyeing; leather goods; silk dyeing	Same	Same; embroideries*	Same*
		CONNECTICUT		
	Cotton goods*; cotton mills*; silk goods*			
		RHODE ISLAND		
Cotton goods*; silk goods*; dyeing & finishing textiles*		Cotton goods*; silk goods*; dyeing & finishing textiles*		
		VIRGINIA		
		Silk mill products; cotton goods	Same	Same

Minor Group 7

PENNSYLVANIA[a]				
Hosiery; knit goods*; neckwear*; shirts*; suspenders*; underwear*; umbrellas*; hats and caps*; wool hats*; fur & felt hats*	Same	Same	Hats & caps, other than straw*; hosiery & knit goods*; underwear*; umbrellas and parasols*	Clothing, men's; clothing, women's & children's; corsets; fur goods; furnishing goods, not specified; gloves, other than leather; hats and caps, other than straw; hats, straw; hosiery & knit goods; ladies' shirts; millinery; neckwear; overalls; shirts; shirtwaists; suspenders; underwear; gloves, leather; umbrellas & parasols
OHIO				
Hats, caps and furnishings*; woolen goods*; clothing, men's*; clothing, ladies'*; regalia*	Clothing*; cotton & woolen goods, knit & woven*; furs*; gloves & mittens*; hats, caps & furnishings*; regalia*	Same	Same*	
MASSACHUSETTS[b]				
Clothing; hosiery & knit goods; leather goods	Same	Hosiery & knit goods; clothing, men's; clothing, women's; corsets*; fur goods*; garters, suspenders, & hose supporters*; hats & caps, other than straw*; millinery*; neckwear*; shirts*; other clothing*; leather goods*; pocketbooks*	Same; hats, straw; furnishing goods, men's*	Same
NEW JERSEY				
	Clothing; corsets & corset waists; hats (fur & felt); hats (straw); knit goods; shirts	Same; shirtwaists, women's; underwear, women's & children's	Same	Same, excl. clothing*
MISSOURI				
		Clothing, men's & boys'; clothing, women's & children's		Clothing, men's & boys'; clothing, women's & children's; hats & caps, straw & felt; millinery & headwear, women's; furnishing goods, men's*
CONNECTICUT				
	Corsets*; hosiery & knit goods*; hats & caps*; woolens & woolen mills*			
RHODE ISLAND				
Hosiery & knit goods*; woolen & worsted goods*		Same*		

1889–1899	1899–1904	1904–1909	1909–1914	1914–1919
		VIRGINIA		
		Knitting mill products; overalls, shirts & clothing; woolen mill products	Same	Same; hats & caps
		Minor Group 8		
		PENNSYLVANIA[a]		
	Boots & shoes	Same	Same*	Boots & shoes; boots & shoes, rubber
		OHIO		
Boots & shoes*	Same	Same	Same*	
		MASSACHUSETTS[c]		
Boots & shoes	Boots & shoes	Same	Boots & shoes; boots & shoes, rubber	Same
		NEW JERSEY		
	Shoes	Shoes	Shoes	Shoes*
		MISSOURI[d]		
Boots & shoes, slippers & pumps	Same	Same	Same[d]	Same
		VIRGINIA		
		Boots & shoes	Same	
		Minor Group 9		
		PENNSYLVANIA[a]		
Blankets, flannels, etc.*; cotton goods*; tapestry & table covers*	Blankets, flannels, etc.; cotton goods	Cotton goods; brooms*	Same*	Blankets, flannels, etc.; cotton goods; curtains; brooms; brushes; window shades & fixtures; towels
		OHIO		
		Brooms & brushes	Same*	
		MASSACHUSETTS[b]		
Cotton goods; brooms, brushes & mops	Same	Same; window shades & fixtures*	Same	Same
		NEW JERSEY		
	Cotton goods; brushes	Same	Same	Same*

Minor Group 10[e]

PENNSYLVANIA[a]

				Fireworks; billiard tables & supplies; children's carriages, sleds, etc.; sporting & athletic goods; toys & games

MASSACHUSETTS[b]

Sporting & athletic goods; toys & games (children's); firearms; fireworks	Same	Same; billiard tables & materials*; carriages & sleds, children's*	Same, excl. fireworks	Same, excl. firearms

Minor Group 11[f]

OHIO

		Rubber goods	Rubber goods*	

MASSACHUSETTS[b]

			Rubber goods, n.e.s.	Rubber goods, n.e.s.

NEW JERSEY

		Rubber goods	Same	Same*

Minor Group 12

PENNSYLVANIA[a]

				Furniture

OHIO

Furniture*	Furniture	Furniture	Furniture*	

MASSACHUSETTS[b]

Furniture	Furniture	Furniture	Furniture	Furniture

MISSOURI

	Furniture, rattan & willow goods	Same		Furniture, rattan & willow goods

VIRGINIA

		Furniture, upholstering & caskets	Same	Same

Minor Group 13a

PENNSYLVANIA[a]

Stoves, heaters & ranges*; sewing machines*	Stoves, heaters & ranges			Washing machines & wringers; stoves, heaters & ranges; refrigerators

1889–1899	1899–1904	1904–1909	1909–1914	1914–1919
		OHIO		
Stoves, ranges & furnaces*	Same	Same; clothes wringers, washboards, washing machines	Same*	
		MASSACHUSETTS[b]		
Cooking, lighting & heating apparatus	Same	Same*; stoves & furnaces, excl. gas & oil stoves*	Stoves & furnaces, excl. gas & oil stoves; refrigerators	Same
		NEW JERSEY		
	Furnaces, ranges & heaters	Same	Same	Same*
		MISSOURI		
	Stoves, ranges, radiators, etc.	Same		Stoves, ranges, radiators, etc.
		VIRGINIA		
		Stoves	Stoves	Stoves
		Minor Group 13b[g]		
		PENNSYLVANIA[a]		
	Supplies, electrical	Same	Same*	Same
		OHIO		
	Electrical goods & supplies*	Same	Same*	
		MASSACHUSETTS[b]		
	Electrical apparatus & appliances	Same*; electrical machinery, apparatus & supplies*	Electrical machinery, apparatus & supplies	Same
		NEW JERSEY		
	Electrical appliances	Same	Same	Same*
		MISSOURI		
	Electrical apparatus	Same		Electrical apparatus
		Minor Group 14a		
		PENNSYLVANIA[a]		
Carpets*	Carpets; rugs, incl. yarns	Carpets and rugs*; oilcloth and linoleum*	Same*	Same; mats & matting
		MASSACHUSETTS[b]		
Carpetings, textile & other	Same	Same*; carpets & rugs, rag*; carpets & rugs, other than rag*	Same	Same

		NEW JERSEY		
	Carpets & rugs; oilcloth & linoleum	Same	Same	Same*
		Minor Group 14b[1]		
		PENNSYLVANIA[a]		
			Mattresses & bedding*	Lamps & chimneys; mirrors; beds & bed springs; awnings, tents & sails; mattresses & bedding; statuary & art goods
		OHIO		
	Mouldings & frames*; mattresses & pillows*	Same	Same*	
		MASSACHUSETTS[b]		
			House furnishing goods, n.e.s.; mattresses & spring beds; looking glass & picture frames; statuary & art goods; lamps & reflectors	Same; mirrors
		NEW JERSEY		
	Lamps; mattresses & bedding; window shades	Same; glass mirrors	Same	Same*
		Minor Group 15[1]		
		PENNSYLVANIA[a]		
Glass, tableware*; pottery*; tinware*	Same, excl. pottery			Cut glass; glass, tableware; aluminum & its products; cutlery; tin & stamped ware; enameled & galvanized ware
		OHIO		
		Cutlery & edge tools; glass & glassware; hollow ware	Same*	
		MASSACHUSETTS[k]		
Glass; earthen, plaster & stone ware	Same	Same*		Woodenware, n.e.s.; glass, cutting, staining & ornamenting
		NEW JERSEY		
	Cutlery; wooden goods	Same	Same; glass tableware	Same*
		CONNECTICUT		
	Cutlery & tools*			
		Minor Group 16		
		PENNSYLVANIA[a]		
Pianos and organs*	Same			Musical instruments, not specified; pianos & organs

1889–1899	1899–1904	1904–1909	1909–1914	1914–1919
	Pianos & other musical instruments*	OHIO Same	Same*	
Musical instruments & materials	Same	MASSACHUSETTS[b] Same*; musical instruments & materials, n.e.s.*; musical instruments, organs*; musical instruments, pianos*	Musical instruments & materials, n.e.s.; musical instruments, pianos; musical instruments, organs	Same
	Musical instruments	NEW JERSEY Same	Same	Same*
		MISSOURI		Musical instruments
	Musical instruments & parts*	CONNECTICUT		
		Minor Group 17 PENNSYLVANIA[a]		Silverware & plated ware; watches & clocks; jewelry
	Jewelry & watches*	OHIO Same	Same*	
Clocks & watches; jewelry	Same	MASSACHUSETTS[b] Same*; jewelry*; silversmithing & silverware*; plated ware*	Jewelry; silversmithing & silverware; plated ware	Same
	Jewelry; silver goods; watches, cases & materials	NEW JERSEY Same	Same	Same*
		MISSOURI Jewelry, clocks & watches*		Jewelry, clocks & watches
	Silver & plated ware*	CONNECTICUT		
		RHODE ISLAND Jewelry*; silversmithing & silverware*		

		Minor Group 18		
		PENNSYLVANIA[a]		Printing and publishing
	Printing & binding*	OHIO Printing & binding	Printing & binding*	
Printing, publishing & bookbinding	Same	MASSACHUSETTS[k] Same*		Printing and publishing, book & job*; printing & publishing*
	Printing & bookbinding	NEW JERSEY Same	Same	Same*
	Printing, publishing, lithographing, bookbinding	MISSOURI Same*		Printing, publishing, lithographing, bookbinding
		Minor Group 19		
		PENNSYLVANIA[a] Trunks & suitcases*	Trunks & suitcases*	
	Trunks & valises*	OHIO Trunks & valises	Trunks & valises*	
Trunks & valises	Same	MASSACHUSETTS[b] Same	Same	Same
	Trunks & traveling bags	NEW JERSEY Same	Same	Same*
	Trunks, valises, cases, etc.*	MISSOURI Same*		Trunks, valises, cases, etc.
		VIRGINIA Trunks & bags	Same	Same
		Minor Group 20c		
		PENNSYLVANIA[a] Carriages, wagons & parts*	Carriages, wagons & parts*	Carriages, wagons & parts
Carriages & wagons*	Carriages & wagons*	OHIO Carriages & wagons	Carriages & wagons	
Carriages & wagons	Same	MASSACHUSETTS[b] Same*	Same	Same
	Carriages & wagons	NEW JERSEY Same	Same	Same*
Carriages, wagons & repairs	Same	MISSOURI Same		Carriages, wagons & repairs*

1889–1899	1899–1904	1904–1909	1909–1914	1914–1919
		CONNECTICUT		
	Carriages & carriage parts*			
		VIRGINIA		
		Carriages, wagons, etc.	Same	Same
		Minor Group 21 (c)		
		OHIO		
Bicycles & bicycle sundries*		Bicycles & bicycle sundries	Same*	
		MASSACHUSETTS[b]		
Bicycles, tricycles, etc.*	Same	Same*	Bicycles, motorcycles & parts	
		Minor Group 22[l]		
		PENNSYLVANIA[a]		
		Steamship & boat building*	Same*	Same
		MASSACHUSETTS[k]		
Shipbuilding	Same	Same*; shipbuilding, wooden, incl. boat building*	Shipbuilding, wooden, incl. boat building	Same
		NEW JERSEY		
		Shipbuilding	Same	Same*
		Minor Group 23[m]		
		MASSACHUSETTS		
			Surgical appliances	Surgical appliances; artificial limbs
		Minor Group 24 (c)		
		MASSACHUSETTS[b]		
	Stone, cut & monumental	Stone, cut & monumental*	Monuments & tombstones	Monuments & tombstones
		Minor Group 25		
		PENNSYLVANIA[a]		
	Machinery & parts; steam pumps			Engines, gas & gasoline; engines, stationary; machinery & parts; gas meters; pumps & valves; elevators & hoists; machine tools
		OHIO		
	Machinery; elevators	Machinery; elevators	Machinery*; elevators*	
		MASSACHUSETTS[b]		
Machines & machinery	Same	Same*; foundry & machine shop products*	Foundry & machine shop products	Same; machine tools*; textile machinery & parts*

	Machinery	NEW JERSEY Same	Same	Same*
	Foundry products: engines, etc.*	MISSOURI Same		Foundry products, engines, etc.
	Machine shops*	CONNECTICUT		
		VIRGINIA Iron & machinery	Same	
		Minor Group 26[g]		
	Supplies, electrical	PENNSYLVANIA[a] Same	Same*	Same
	Electrical goods & supplies*	OHIO Same	Same*	
Electrical apparatus & appliances	Same	MASSACHUSETTS[k] Same*; electrical machinery, apparatus & supplies*	Electrical machinery, apparatus & supplies	Same
	Electrical appliances	NEW JERSEY Same	Same	Same*
	Electrical apparatus	MISSOURI Same		Electrical apparatus
		Minor Group 27		
Agricultural implements & machinery*; fences, railing & wire goods*	Same	PENNSYLVANIA[a] Same	Same*	Agricultural implements & machinery
Agricultural implements*	Same	OHIO Same	Same*	
Agricultural implements	Same	MASSACHUSETTS[k] Same	Same	
	Agricultural machinery & implements	NEW JERSEY Same	Same	Same*
	Agricultural implements, silos, tractors, dairy apparatus	MISSOURI Same		Agricultural implements, silos, tractors, dairy apparatus
		VIRGINIA Agricultural implements	Same	Same

1889–1899	1899–1904	1904–1909	1909–1914	1914–1919
		Minor Group 28[n]		
		PENNSYLVANIA[a]		
	Scales			Scales, typewriters; soda water apparatus
		MASSACHUSETTS[b]		
			Scales & balances	
		NEW JERSEY		
		Typewriters & supplies	Same	Same*
		Minor Group 29[o]		
		PENNSYLVANIA[a]		
	Safes & vault doors	Safes, vaults & locks	Same*	Same
		OHIO		
	Billiard tables, bars & store fixtures; safes, vaults & locks	Same	Same*	
		MASSACHUSETTS[b]		
			Showcases	Showcases
		MISSOURI		
		Bank, store & office fixtures*		
		Minor Group 30[p]		
		PENNSYLVANIA[a]		
Cars & car wheels*; locomotives, stationary engines, etc.*	Locomotives & cars, built & repaired; locomotives, stationery engines, etc.	Cars & car wheels; steam & electric locomotives	Same*	Cars & car wheels; engines, rr.
		OHIO		
	Cars & car furnishings*	Same	Same*	
		MASSACHUSETTS[b]		
Rr. construction & equipment	Same	Same*		
		Minor Group 31		
		PENNSYLVANIA[a]		
		Steamship & boat building*	Same*	Same
		MASSACHUSETTS[k]		
Shipbuilding	Same	Same*; shipbuilding, wooden, incl. boat building*	Shipbuilding, wooden, incl. boat building	Same
		NEW JERSEY		
		Shipbuilding	Same	Same*

		Minor Group 32b		
		PENNSYLVANIA[a]		
		Carriages, wagons & parts*	Carriages, wagons & parts*	Carriages, wagons & parts
		OHIO		
Carriages & wagons*	Carriages & wagons*	Carriages & wagons	Carriages & wagons	
		MASSACHUSETTS[b]		
Carriages & wagons	Same	Same*	Same	Same
		NEW JERSEY		
	Carriages & wagons	Same	Same	Same*
		MISSOURI		
Carriages, wagons & repairs	Same	Same		Carriages, wagons & repairs*
		CONNECTICUT		
	Carriages & carriage parts*			
		VIRGINIA		
		Carriages, wagons, etc.	Same	Same
		Minor Group 34m		
		PENNSYLVANIA[a]		
				Instruments, professional & scientific
		MASSACHUSETTS		
			Instruments, professional & scientific; optical goods	Instruments, professional & scientific
		NEW JERSEY		
			Scientific instruments	Same*
		Minor Group 35		
		PENNSYLVANIA[a]		
Axes & edge tools; files*; saws*; shovels, scoops & spades*; wrenches, picks, etc.*	Same	Axes & edge tools; shovels, scoops & spades		Axes & edge tools; files; saws; shovels, scoops & spades
		OHIO		
	Tools & implements	Same	Same*	
		MASSACHUSETTS[b]		
Artisans' tools	Same	Artisans' tools*; cutlery & edge tools*	Cutlery & edge tools; tools, n.e.s.; files*; saws*	Cutlery & tools, n.e.s.
		NEW JERSEY		
	Artisans' tools	Same	Same	Same*

1889–1899	1899–1904	1904–1909	1909–1914	1914–1919
		Minor Group 36[a]		
		PENNSYLVANIA[a]		
	Cordage & twine, jute & linen goods			Crucibles; emery & other abrasive wheels; grindstones; belting, rubber; lasts; models & patterns, not paper; cordage & twine, jute & linen goods; handstamps, stencils & brands; photographic apparatus & supplies; enameled & electric signs; wheelbarrows; horse blankets; horse shoes
		OHIO		
	Advertising novelties & signs*; awnings, tents & sails*; cordage & twine*; harness & saddlery*; patterns & models*; stencils, stamps & seals*; whips*	Same	Same*	
		MASSACHUSETTS[b]		
Cordage & twine; wooden goods; models, lasts & patterns; awnings, sails, tents, etc.; photographic materials & supplies; saddlery & harness; whips, lashes & stocks	Same	Same*	Cordage & twine; models & patterns, excl. paper patterns; emery wheels & other abrasive wheels; lasts; printing materials & type founding; awnings, sails, tents, etc.; saddlery & harness; hand stamps, stencils & brands; signs & adv. novelties; whips; photographic materials & supplies	Same, excl. emery wheels & other abrasive wheels
		MISSOURI		
	Awnings, tents, canvas; harness, saddlery, straps	Awnings, tents, canvas; harness, saddlery, straps*		Awnings, tents, canvas; patterns, models, lasts; photographic supplies
		Construction Materials (c)		
		PENNSYLVANIA[a]		
	Iron and steel for bridges; plumbers' supplies; structural iron; wall paper; bath boilers & tanks	Cement*; glass, plate; glass, window; paints, white lead, etc.; structural iron	Same*	Cement; chandeliers & gas fixtures; glass, decorative; glass, plate; glass, window; mantels & tile; paints, white lead, etc.; planing mills & building material; plumbers' supplies; radiators & steam fitting; sky lights & cornices; structural iron; wall paper; granite & marble work; building paper & roofing material; tar; artificial stone; brick; lime; paving materials; pottery, terra cotta & fire-clay products; wall plaster; fire escapes; iron & steel work, ornamental

		OHIO		
Iron, structural; lime, sand, cement, plaster*; paints & varnish*; roofing materials*; sash, doors, lumber*	Bath cabinets*; lime, sand, cement*; lighting apparatus*; marble & granite*; paints & varnish*; plumbing, steam supplies*; roofing materials*; sash, doors, lumber*; stone, cut & sawed*	Same; brick & tile	Same*	
		MASSACHUSETTS[b]		
Stone, quarried; brick, tile & sewer pipe; cement, kaolin, lime & plaster; building materials; paints & varnishes	Same	Same*	Iron & steel, bolts, nuts & rivets; iron & steel, spikes, nails, tacks, etc.; structural ironwork; lumber planing mill products, incl. sash, doors & blinds; brick & tile; lime; marble & stone work; plumbers' supplies; artificial stone; paints and varnishes; gas & electric fixtures; steam fittings & heating apparatus	Same; copper, tin & sheet-iron products
		NEW JERSEY		
	Boilers, tanks, etc.; brick & terra cotta; cornices & skylights; lime & cement; paints; quarrying stone; roofing; sash, blinds & doors; steel & iron, structural	Same; gas and electric light fixtures; art tile	Same	Same*
		MISSOURI		
	Brick, tile, pottery, clay*; lime*; paint, varnish, supplies*; planing mill products*; stone, marble, granite, slate*; structural iron*; sheet metal goods*	Same*; asphalt and tar*		Artificial stone, tile, plaster, cement; brick, pottery, clay; lime; paint, varnish & supplies; stone, marble, granite, slate; sheet metal goods
		CONNECTICUT		
	Wood preserving*			
		VIRGINIA		
		Brick & tile; lime, cement & limestone; sash, doors & blinds	Same	Lime, cement & limestone

[a] Though no asterisks appear after the names of industries recorded for 1914–19, all figures are for an incomplete period, since Pennsylvania reported no data for 1914 and 1915.

[b] The artificial adjustments applied to some of the figures reported for Massachusetts, mentioned in the brief commentaries on the state data in Note A to Table II 4, are now described more fully in order that their effects may be appraised.

For 1886–1906 the Massachusetts data were reported by pairs of years for identical establishments, yielding two figures for each industry for each year, the one comparable with that for the preceding year, the other with that for the following year. Adding the industries within a minor commodity group gave two totals for each year. To get a single series the pairs of totals were spliced, working backwards from 1905–06.‡ Year to year move-

‡ Although splicing by separate industries would be more accurate, it is not believed that the use of minor group totals affects the results enough to justify such a laborious refinement.

ments were not changed by this procedure; all series were simply set at 1905–06 levels.

Also available for Massachusetts were decennial censuses for 1895 and 1904. Since the data reported covered all industrial establishments in the state, the industries were arranged by minor groups and the respective totals compared with those previously derived for the same years. Final estimates for 1886–1906 were based on the resulting ratios. For the years between 1895 and 1904 geometric interpolations of 1895 and 1904 ratios were applied to the series previously derived; for 1905 and 1906, the 1904 ratio was used; and for 1886–94, the 1895 ratio. Exceptions to this procedure, in Minor Groups 8, 13b, 15, 18, 22, 26, 27, and 31, are discussed in specific footnotes.

[c] The correction of the Massachusetts data for boots and shoes differed from the general adjustment described in footnote b. The continuous series derived for 1889–1906 was compared with 1889 and 1899 federal census totals for Massachusetts as well as with the 1895 and 1904 Massachusetts state census totals; ratios were computed for each of the four years, and five-year interpolations made instead of the usual ten-year. This modification was possible because of the homogeneity of the boot and shoe industry and the consequent comparability of state and federal census totals.

[d] Special reports comparable with the regular state totals for 1909, 1910, and 1914 were made for the Missouri boot and shoe industry in 1911 and 1913. Since 1912 alone had to be estimated, a departure was made from the general rule of excluding Missouri totals during the 1909–14 intercensal period. The 1912 estimate was based on the movement from 1911 to 1912 to 1913 of figures for boots and shoes manufactured in St. Louis, Kansas City, and St. Joseph (*Annual Report of the Missouri Bureau of Labor Statistics*).

[e] Firearms were estimated separately from other sporting goods 1914–19 because of their erratic output during the war (see Note B to Table 5, Minor Group 10). The state industries listed here were used to interpolate the Minor Group totals (excluding firearms).

[f] Before being used for interpolation the state data were modified in order to incorporate a crude adjustment for the growth of tire renewals. From Table III, *Special Circular 3500* (Bureau of Foreign and Domestic Commerce, Rubber Section), annual ratios of renewals to total output of tire casings were obtained for 1910–19. By the methods used in *Special Circular 3500* comparable ratios were calculated for 1904–09. These annual ratios, 1904–19, were applied to the total value of products for the rubber goods industries in Ohio, Massachusetts, and New Jersey, and the resulting estimates then selected as the interpolating series for 1904–14 and as a complementary one for 1914–19.

[g] Since household and industrial electrical appliances were not reported separately, the sample for all electrical appliances was apportioned according to the breakdown in census years of the combined total for Minor Groups 13b and 26. Apportionment for intercensal years was based on straight line interpolation of the census year percentages. The two series thus derived were then used to interpolate Minor Groups 13b and 26.

[h] The adjustment of the Massachusetts data for electrical equipment differed from the usual adjustment. The single series derived for 1889–1906 was compared with the 1899 federal census total as well as with the 1895 and 1904 Massachusetts state census totals, and five-year interpolations made instead of the usual ten-year.

[i] To get a more representative sample, the totals for Minor Groups 9, 14b, and 15 (excluding pottery) were combined and used for interpolation in place of the figures for 14b alone.

[j] Since the production of pottery products was reported in *Mineral Resources of the United States, seriatim* (see Note B to this table, Minor Group 15), no data for the pottery industries are included in the state samples 1899–1919.

[k] In this group the single Massachusetts series first derived for 1889–1906 was used instead of estimates based on the state decennial censuses. Also, because of apparent inconsistencies in the Massachusetts sample, the data for 1909–14 were omitted.

[l] A special shipbuilding census for 1916 made it possible to divide the intercensal period into two parts, 1914–16 and 1916–19. The state samples were used for the first part alone; for the second, the census figures were interpolated along a straight line. This procedure was considered preferable to the use of the state samples which showed a tremendous increase arising from extraordinary military demands.

[m] For interpolation from 1909 to 1919 the state samples for Minor Groups 23 and 34 were combined and the resulting totals used for both groups. For years before 1909 Minor Group 23 was estimated from the movement of the sample for Minor Group 3; Minor Group 34 was estimated from the combined state samples for Minor Groups 25 and 26.

[n] Since most state reports included office machinery with industrial machinery, the sample for this group was combined with that for Minor Group 25, and the interpolation based on the combined total.

[o] The state data for this group were used only to interpolate the census values for vaults and showcases. The totals of furniture for offices and public buildings were interpolated by the sample used for Minor Group 12. The two series were then added.

[p] The state data for the railroad car industry were used for direct interpolation only from 1889 to 1909. For 1909–14 railroad car figures for Ohio and Pennsylvania were first adjusted by data from special sources; and for 1914–19 the state figures were used only as a complementary series. Moreover, the state figures for the locomotive industry were used as a complementary series throughout. For details regarding the sources of the special data see Note B to Table II 6, Minor Group 30.

[q] Before being used for interpolation the state totals were combined with several series from *Mineral Resources of the United States* (see Note B to Table II 6, Minor Group 36).

NOTE B TO TABLE II 6

Miscellaneous Interpolating Series

MINOR GROUP 1

Data for natural mineral waters are from *Mineral Resources of the United States* (*seriatim*).

Data for rice, peanuts, cheese, butter, and condensed and evaporated milk were taken directly or derived from *Gross Farm Income, Indexes of Farm Prices in the United States, 1869–1937,* by Frederick Strauss and Louis Bean (Department of Agriculture, Washington, D.C., 1939). The figures for rice and peanuts were taken directly; those for cheese and butter were reduced to cover factory production alone on the basis of unpublished percentage estimates by E. E. Vial, Bureau of Agricultural Economics; production of condensed and evaporated milk was taken directly but the prices used for translation into values were first adjusted to conform with prices for census years reported in the *Census of Manufactures.*

Calendar year imports of coffee are from the *Monthly Summary of Foreign Commerce of the United States* (*seriatim*).

Annual data on 'tonnage originating on road', reported for the year ending June 30, 1916 and all earlier years on a fiscal year basis, and for calendar years, 1916–19, *Statistics of Railways,* Interstate Commerce Commission, were used to derive series for sugar, dressed meats, other packing-house products, and flour. The figures for each commodity were adjusted to a calendar year basis by means of the 1916 calendar-fiscal ratios.

Several adjustments for comparability had also to be made. The figures for 1917–19 were raised to include Class II railroads on the basis of 1916 ratio; those for 1913 and 1914 were raised to include Class III roads on the basis of the 1912 ratios of Class II and III to Class II alone. The data reported for 1910 and earlier years for all railroads were presumably comparable with the 1911 figures for Class I, II, and III roads. Consequently two ICC tonnage series were derived for each commodity: 1914–19, for Class I and II roads; 1899–1914, for all roads. Conversion into dollar values was based on various price series.

For sugar the average annual price per pound of granulated sugar *Wholesale Prices, 1890–1922* (Bureau of Labor Statistics, Bulletin 320) was used; for dressed meats a weighted average of three BLS price series: native sides, New York beef, weight 4, mutton: dressed, weight 1, and pork: cured short clear sides, weight 5.[a] For other packing-house products the BLS price for lard: prime contract, was used; for flour two BLS series were combined: wheat, spring patents, New York, average price per barrel, weight 9, and meal: corn, fine yellow, New York, average price per 100 pounds, weight 1.[a] The wheat series was extrapolated from 1913 to 1919 by an index of the price of wheat, standard patents, Minneapolis; and the corn meal from 1917 to 1919 by an index of the price of meal: corn, Philadelphia.

[a] Rough weights were determined from quantities reported for census years in the *Census of Manufactures.*

The pack of canned tomatoes, cases of 24 No. 3 cans (*Yearbook of Agriculture, 1923,* pp. 780–1), was multiplied by the BLS price per dozen No. 3 cans, Standard New Jersey. Lack of satisfactory price data prevented the extension of the series back of 1909.

The pack of canned corn and peas, cases of 24 No. 2 cans, was taken from *Canned Food Pack Statistics, 1937,* Part 1, Vegetables (pp. 9, 11), compiled by the National Canners Association, Division of Statistics. BLS prices for corn, per dozen No. 2 cans, and peas, per dozen No. 2 cans, Republic, sifted, were used for conversion into values.

Addition of the preceding foods series provided a complementary total series for the food group 1899–1919. For 1889–99, however, the series that extended through this decade were combined with sugar meltings (Willett and Gray, *Weekly Statistical Trade Journal*), multiplied by the BLS price per pound for granulated sugar, and with the gross income from the slaughter of animals adjusted for changes in inventories (Strauss, *op. cit.*). This aggregate was used for interpolation in preference to data from one state, Massachusetts.

Minor Group 2

Calendar year production of smoking tobacco, fine-cut tobacco, snuff, plug and twist tobacco, cigars not weighing more than 3 pounds per thousand, cigars weighing more than 3 pounds per thousand, and cigarettes (*Annual Report of the Commissioner of Internal Revenue, seriatim*) were multiplied by prices, then added to get the total used for interpolation.

The following prices were given in the Report of the Commissioner of Corporations on the *Tobacco Industry, 1915,* Part III, Prices, Costs and Profits:

Smoking tobacco	1893–1910, 1912, 1913	Snuff	1900–10, 1912, 1913
Fine-cut tobacco	same	Little cigars	1895–1910, 1912, 1913
Plug & twist tobacco	same	Big cigars	1901–10
Cigarettes	same		

Prices for 1910 and earlier years were for the tobacco trust; prices for 1912 and 1913 were for companies that succeeded the trust upon its dissolution by the courts. All prices include taxes, and the later are comparable with the earlier.

Prices for 1911 were derived by straight line interpolation of the figures for 1910 and 1912. The several series were then extrapolated from 1914 to 1918 on the basis of prices calculated from data in Lloyd L. Shaulis, *Prices of Tobacco and Tobacco Products* (War Industries Board, *Bulletin 19*). The Bulletin prices for six types of cigarette were weighted and combined on the basis of the relative quantities of leaf used in their manufacture in 1917. The weights taken from *Bulletin 19,* p. 8, were: Burley and Turkish, 16; Virginia, 6.5; Virginia and Turkish, 4.2; Turkish and Virginia, 2.5; Turkish, 2.2; and Burley, 0.4. Similarly, to derive a single price series for smoking tobacco a weighted average of the prices for scrap, long cut, and cut plug was constructed. The weights, 3, 2, and 4, respectively, were taken from *Bulletin 19,* p. 13.

The War Industries Board prices for little cigars and snuff were used for extrapolation without adjustment; those for long-cut tobacco were used to

extrapolate the fine-cut series. Since no prices later than 1910 were available for big cigars, the prices of little cigars were used as an index for 1910–18.

Prices for 1919 were estimated from data in *Prices of Tobacco Products* (Federal Trade Commission, Jan. 1922, p. 32). Prices of cigarettes, smoking and plug tobacco in 1918 and 1919 were used to extrapolate the previously derived 1918 figures. Lack of detailed data for big and little cigars, snuff and fine-cut tobacco compelled the use of the average movement 1918–19 of the prices of smoking and plug tobaccos to extrapolate these series.

Since until 1897 production of little cigars was included with cigarettes, the prices of cigarettes had to be made comparable. For 1895 and 1896 prices of the two items were averaged with weights based on quantities produced in 1897. For earlier years cigarette prices were adjusted on the basis of the ratio of the average price derived for 1895 to the cigarette price in that year.

Prices for the years preceding 1893 were estimated from the BLS series and data in the Aldrich Report, *Wholesale Prices, Wages and Transportation* (Senate Document 1394, 52d Cong., 2d Sess.), Part 2, Table XI, pp. 116, 117. The BLS prices extended to 1890 and included plug tobacco and smoking tobacco; prices for earlier years in the Aldrich Report were for plug tobacco alone. Consequently, all extrapolations for the years preceding those covered in the Report of the Commissioner of Corporations were necessarily rough and based on much the same series.

Minor Group 5a

For the estimates of coke for census years see Note B to Table II 1. Intercensal estimates were made by methods similar to those described there. For 1918 the same method was used as for 1919; for 1915 and all earlier years 5 percent of total coke production was estimated to be destined for domestic consumption. Estimates for 1916 and 1917 were based on straight-line interpolation of the 1915 and 1918 ratios of domestic to total coke.

The annual value at well of crude petroleum was taken from *Mineral Resources of the United States, 1921,* Part II, p. 261. Ratios of census year totals for illuminating oils, lubricating oils and gasoline to the values for crude petroleum were calculated, and intercensal estimates based on straight line interpolation.

Intercensal estimates for the other commodities in Minor Group 5a were based on the movement of the previously derived series for coke and petroleum products.

Complementary series were derived also for the major petroleum products. Gasoline consumption was estimated by multiplying the average annual passenger car registration (*Automobile Facts and Figures, 1939,* p. 16) by a conversion factor of 300 gallons per car (J. E. Pogue, *Economics of Petroleum,* New York, 1921, p. 123). BLS prices were used for conversion into values 1913–19; for earlier years the BLS series was extrapolated by the value per barrel of crude petroleum (*Mineral Resources of the United States, 1923,* Part II, p. 379). A similar procedure was followed for lubricating oils. Here automobile registration was multiplied by a conversion factor of 25 gallons (Pogue,

op. cit., p. 180); prices were taken from the same sources, a BLS series being extrapolated by prices of crude petroleum for years before 1913. Kerosene output 1916–19 was taken from *Mineral Resources of the United States* (*seriatim*); for 1914, from the Census of Manufactures, and for 1915 it was estimated from the 1916 ratio to the total output of crude petroleum. Prices of tank-wagon kerosene (Pogue, *op. cit.*, p. 136) were used for conversion into values.

Minor Groups 9, 12, and 14b

The complementary series for semidurable and durable house furnishings and furniture is little more than a crude index of values. It consists of ICC tonnage data for household goods and furniture (for a description of the general adjustments made to ICC data see Minor Group 1 above) multiplied by BLS relatives for a composite price series of all housefurnishing goods (Bureau of Labor Statistics, *Bulletin 320*).

Minor Group 10

Because of the extraordinary output during the war firearms were estimated independently of other sporting goods 1914–19. Lack of state samples or other adequate data compelled the use of exports (*Monthly Summary of Foreign Commerce, seriatim*) for the interpolation. It is doubtful that exports are a good index of output but they are believed better than other sporting goods or straight line interpolation.

Minor Group 11

For 1899–1904 tires and tubes were estimated from the movement of the combined annual series for Minor Groups 20a and 21. For years before 1899, for lack of more adequate data, the movement of the bicycle series alone was used.

For 1914–19 tire renewals (see Note B to Table II 2, Minor Group 11) were multiplied by the BLS price series for automobile tires at factory, reported in *Rubber Industry of the United States, 1839–1939* (Bureau of Foreign and Domestic Commerce, Trade Promotion Series 197, Table 10).

Minor Group 15

The interpolating series used for this group was a combination of china and household utensils, excluding pottery, reported in the state samples (see Note A to Table II 6, Minor Group 15, for states included) and the following products reported under clay-working industries in *Mineral Resources of the United States:* red earthenware; stoneware and yellow and Rockingham ware; white ware, including C. C. ware; china, bone china, delft and belleek ware; and miscellaneous pottery, the greater part of which consists of red and brown white-lined cooking ware.

Minor Group 16

Sales of the Baldwin and American Piano companies, 1909–19, were taken from annual reports in *Moody's Industrials*. Because of their narrow scope, the data serve merely as rough corroboratory totals.

MINOR GROUP 20a, 20b

Factory sales of passenger cars (*Automobile Facts and Figures, 1939,* p. 4) were used to interpolate the census year figures for both passenger cars and parts and accessories. Since no figure was given for 1900 (the 1900 figure there being the census value for 1899) straight line interpolation was applied to our estimates for 1899 and 1901.

A complementary series for parts was developed by using automobile registration figures, based on averages of end of year figures (*ibid.,* p. 16).

MINOR GROUP 21

The sum of bicycle and motorcycle export was used to interpolate from 1899 to 1914. For bicycles exports were used to interpolate between 1914 and 1919; for motorcycles, the output of the Indian Motorcycle Company (annual reports in *Moody's Industrials*) multiplied by per unit export prices was used.

MINOR GROUP 24

Intercensal estimates 1899–1919 were based on the values of monumental stone (*Mineral Resources of the United States, seriatim*). For 1889–99 the values for total granite were used.

MINOR GROUP 25

Exports of machinery, n.e.s. were used as a complementary series. Calendar year data for the machinery category, excluding adding and calculating machines, cash registers and parts, sewing machines, and typewriters, are from *Monthly Summary of Foreign Commerce of the United States* (*seriatim*).

MINOR GROUP 26

Combining gross revenues of the General Electric and the Westinghouse Electric and Manufacturing companies 1909–19 (annual reports in *Moody's Industrials*) gave a rough complementary series.

MINOR GROUP 27

For 1914–19 ICC tonnage for agricultural implements (for adjustments to ICC figures see Minor Group 1 above) was converted to values by the price index of farm machinery (*Monthly Labor Review,* Aug. 1935, p. 528). Lack of satisfactory price data prevented the use of the ICC data before 1914.

MINOR GROUP 30

Intercensal estimates for railroad cars, 1889–1909, were based on state data (for states included see Note A to Table II 6, Minor Group 30). For later years better series were available. For 1911–14 the number of cars produced (*Railway Age,* Jan. 3, 1931, p. 84) was multiplied by the average domestic price (*Final Report of the Chairman of the United States War Industries Board to the President of the United States,* Senate Committee Print No. 3, 74th

Cong., 1st Sess., p. 978). This series was extrapolated from 1911 to 1909 by the combined totals for Ohio and Pennsylvania.

For 1914–19 production of passenger and freight cars (*Railway Age, loc. cit.*) was converted into values by the use of average selling prices per car, based on those of six large companies, ascertained by correspondence with Julius Parmelee, Statistician of the Bureau of Railway Economics. Passenger car prices were available for the entire period; but all-steel and wood and steel freight car prices were given only through 1918, and all wood ones only through 1917. Freight car prices for the missing years were estimated from the movement of per pound prices from the same source.

Intercensal estimates for locomotives were based on the number of locomotives built as given in A. F. Burns, *Production Trends in the United States Since 1870,* p. 300 (compiled from various issues of *Railway Age* and *Railroad Gazette*). For 1889–1914 per unit export prices calculated from data in *Monthly Summary of Foreign Commerce of the United States* (*seriatim*) were used for conversion into values; for 1914–19 average selling prices (Bureau of Railway Economics) were used.

As indicated in the preceding description, census year values for cars and locomotives were interpolated separately; the estimates were then combined to get a group total.

Minor Group 32a

Intercensal estimates were based on the annual sales of motor trucks 1904–19 (*Automobile Facts and Figures, 1939,* p. 4). Since no significant number of trucks was produced before 1904, all motor vehicle production was classified as passenger cars in the early years.

Minor Group 33

From *Air Commerce Bulletin,* Vol. 1, No. 5 (Washington, D.C., Sept. 2, 1929, p. 6), the annual consumption of aeroplanes by the Army and Navy 1912–19 was taken; no data were reported for civil consumption. To these totals were added calendar year exports (*Monthly Summary of Foreign Commerce, seriatim*). Since no good price series was available and per unit export prices were not comparable from one year to the next, per unit motor truck prices (*Automobile Facts and Figures, 1939,* p. 4) were used for conversion into values. For years before 1912 it was assumed that the output of aeroplanes was insignificant; a small but indeterminate output for the census year 1909 was included with the motorcycle and bicycle industry.

Minor Group 36

The interpolating series was based on a combination of state totals (see Note A to Table II 6) and several commodities reported in *Mineral Resources of the United States* (*seriatim*). These commodities included chemical stoneware from the clay-working industries group, and millstones, grindstones, and oilstones from the natural abrasives group.

Construction Materials

From *Mineral Resources of the United States* (*seriatim*), data were taken for roofing slate; building lime; manufactured asphalt; building stone; paving stone; stone curbing; stone flagging; rubble; riprap; crushed railroad ballast, concrete and road metal; building sand; paving sand; sand railroad ballast; gravel; sand-lime brick; common brick; vitrified brick; face brick; fancy or ornamental brick; enameled brick; architectural terra cotta; hollow building tile and fire-proofing; tile, not drain; draintile; sewer pipe; and sanitary ware. Series for products of the clay-working industries (brick through sanitary ware) were usable only from 1899 to 1919. Building lime was estimated for 1889–93 from the movement of total lime. Building stone was estimated for 1889–91 from the movement of all quarried stone.

Softwood production, 1899, 1904–19, was reported in Frank J. Hallauer, *Our National Timber Requirements,* Senate Document 12, Separate 4 (prepared by the Forest Service in response to Senate Resolution 175, 73d Cong., 1st Sess.), Table 1. The derivation of softwood production for 1889–99 and 1899–1904 is described in Note A to Table II 11. Prices used were those per M bd. ft. in eastern United States, average quality, 1 inch softwoods, *American Forests and Forest Products,* Statistical Bulletin 21, Department of Agriculture, 1927, Table 76.

Production of lath and shingles, 1904–19 (except 1913 and 1914), was taken from *Statistical Bulletin 21* and from the *Agricultural Yearbook, 1923,* pp. 1072–6. Quantities of lath for 1913 and 1914 were estimated by straight line interpolation between 1912 and 1915; shingles were estimated from the movement of the production by reporting mills of cypress, white pine, and cedar. Prices for 1904, 1906–11, and 1919 were also taken from the above sources. Prices of lath 1913–18 were estimated from the movement of the BLS wholesale price index for lath; and for 1912 and 1905 were based on the movement of the prices of average quality 1 inch soft woods in eastern markets. Shingle prices for 1905 and 1912–18 were estimated from the movement of the average of the BLS prices for cypress and red cedar shingles.

Lath production was estimated for years before 1904 by means of an interpolating series consisting of the production of lath in the Northwest (*American Lumberman,* Jan. 21, 1905), reported for 1892–99, and production of lath in the Adirondack forest, 1894–1904 (James E. Defebaugh, *History of the Lumber Industry of America,* Chicago, 1907, Vol. 2, p. 405). These series provided estimates back to 1892; estimates for 1890 and 1891 were based on straight line interpolation between the 1889 census figure and the 1892 estimate. Prices for the years before 1904 were derived by adjusting to census levels the prices for average quality 1 inch softwoods in eastern markets.

The production of shingles was estimated for 1889–99 and 1899–1904 by using the cut of shingles in the Northwest, 1889–1904 (*American Lumberman,* Jan. 21, 1905, p. 28); receipts of shingles at San Francisco, 1889–98 (*Annual Report of the San Francisco Chamber of Commerce, seriatim*), and production of shingles in the Adirondack forest, 1894–1904 (Defebaugh, *op. cit.,* p. 405), as interpolating series. Shingle prices were based on BLS prices for cypress and

white pine shingles, 1890–1904, weighted 1 and 9 respectively according to approximate importance, and adjusted to census price levels.

Production of iron and steel rails, 1889–1919, is from the *Annual Statistical Report of the American Iron and Steel Institute for 1924* (p. 43). BLS prices for steel rails: Bessemer, used to derive values for 1890–1919, were extrapolated to 1889 by the movement of the price for steel rails: Bessemer (*Wholesale Prices, Wages and Transportation,* Part 2, p. 215).

Production of iron and steel structural shapes, 1892–1919, is from the Institute Report (p. 44). For conversion into values, BLS structural steel prices were used for 1913–19; for years before 1913, prices were estimated from the movement of the BLS price for billets: Bessemer. The estimates for structural shapes, 1889–91, were based upon the movement of the value of iron and steel rails.

Production of concrete bars, 1909–19, is from the Institute Report (p. 52). BLS prices for 1913–19 were extrapolated back to 1909 by the movement of the price for bar iron, Philadelphia.

Production of cut and wire nails, 1889–1919, is from the Institute Report (p. 59); BLS prices for wire nails were used to calculate values.

Production of butt and lap weld pipe, 1914–19, is from *Metal Statistics, 1938* (p. 109); prices for the same period were derived by interpolating census per unit values for pipes and tubes made in rolling mills by the movement of BLS prices for cast-iron pipe.

The sum of the estimated values for all the above mineral, lumber, and metal products was used as the interpolating series for construction materials.

TABLE II 7

Percentage Changes in Census Year Ratios of Interpolating and Complementary Series to Minor Commodity Group Totals

	COMMODITY GROUP	PERCENTAGE CHANGE IN RATIOS FROM 1889 TO 1899	1899 TO 1904	1904 TO 1909	1909 TO 1914	1914 TO 1919	AVG. CHANGE FOR THE 4 PERIODS, 1899–1919
	A INTERPOLATING SERIES						
1	Food & kindred products	22.5	13.2	6.8	16.9	0.5	9.4
2	Cigars, cigarettes & tobacco	0.5	2.8	8.8	0.8	14.9	6.8
3	Drug, toilet & household preparations	42.2	6.6	8.9	17.0	11.0	10.9
4	Magazines, newspapers, stationery & supplies & misc. paper products	18.8	1.3	12.4	7.7	12.9	8.6
5a	Fuel & lighting products: mfd.*	38.2	20.0	11.3	22.5	11.5	16.3
6	Dry goods & notions	14.0	5.5	9.7	13.4	13.1	10.4
7	Clothing & personal furnishings	5.8	0.5	6.7	2.3	3.9	3.4
8	Shoes & other footwear	18.6	3.8	16.2	1.0	1.5	5.6

* Although coke and petroleum products were estimated separately for all years, the two samples were combined to derive the ratios from which the percentage changes were calculated.

TABLE II 7 *cont.*

	COMMODITY GROUP	PERCENTAGE CHANGE IN RATIOS FROM 1889 TO 1899	1899 TO 1904	1904 TO 1909	1909 TO 1914	1914 TO 1919	AVG. CHANGE FOR THE 4 PERIODS, 1899–1919
9	House furnishings (semi-durable)	26.4	2.2	5.7	0.9	14.7	5.9
10	Toys, games & sporting goods	37.1	15.5	15.6	5.8	12.5†	12.4
11	Tires & tubes‡		52.7	37.1	94.1	19.8	50.9
12	Household furniture	8.8	2.4	23.2	3.2	29.8	14.6
13a	Heating & cooking apparatus, household appliances except electrical	25.0	31.2	33.3	6.9	12.8	21.0
13b	Electrical household appliances & supplies		20.7	9.6	10.6	22.6	15.9
14a	Floor coverings	11.1	6.4	0.6	8.1	7.0	5.5
14b	Misc. house furnishings (durable)	9.9	3.1	21.5	9.9	16.3	12.7
15	China & household utensils§	12.6	12.2	11.8	6.0	29.1	14.8
16	Musical instruments	70.1	47.1	37.9	19.2	63.3	41.9
17	Jewelry, silverware, clocks & watches	13.9	11.1	6.3	3.8	7.1	7.1
18	Printing and publishing: books	19.3	36.2	7.4	36.8	0.8	20.3
19	Luggage	19.4	7.5	25.3	23.1	10.8	16.7
20a	Passenger vehicles, motorized		‖	1.2	1.3	0.1	0.9
20b	Motor-vehicle accessories		‖	26.3	2.3	19.0	15.9
20c	Passenger vehicles & accessories, horse-drawn	22.0	23.4	20.2	34.2	30.6	27.1
21	Motorcycles & bicycles¶		48.6	31.9	37.9	16.5	33.7
22	Pleasure-craft	23.1	8.0	40.7	30.6	26.5**	26.4
23	Ophthalmic products & artificial limbs††	79.1	22.6	15.8	40.7	29.1	27.0
24	Monuments & tombstones	61.6	19.0	46.8	8.9	14.9	22.4
25	Industrial machinery & equipment	14.3	7.0	3.2	4.7	8.1	5.8
26	Electrical machinery, industrial & commercial	149.2	20.7	16.5	6.9	22.8	16.7
27	Farm equipment	1.6	7.7	26.7	5.4	23.9	15.9

† Although firearms and all other toys, games, and sporting goods were estimated separately, 1914–19, the two samples were combined to derive the ratios from which the percentage changes were calculated.

‡ The interpolating sample was changed in 1899, 1904, and 1914.

§ Although pottery and clay products and all other china and household utensils were estimated separately in all years after 1899, the two samples were combined to derive the ratios from which the percentage changes were calculated.

‖ No percentage change is given for this period because no sample total was available for 1899.

¶ Changes were made in the interpolating series in 1904 and 1914. For years before 1904, exports were used to interpolate for both bicycles and motorcycles; from 1904 to 1914, state totals. From 1914 to 1919, exports were again used, but for bicycles alone; production of the Indian Motorcycle Company was used for motorcycles. The two samples were combined in 1914 and 1919 to derive the ratios from which the percentage change was calculated.

** Change from 1914 to 1916 only; state data were not used in 1917, 1918, or 1919.

†† The interpolating samples for Minor Groups 23 and 34 were changed in 1909.

TABLE II 7 *concl.*

	COMMODITY GROUP	PERCENTAGE CHANGE IN RATIOS FROM 1889 TO 1899	1899 TO 1904	1904 TO 1909	1909 TO 1914	1914 TO 1919	AVG. CHANGE FOR THE 4 PERIODS, 1899–1919
28	Office & store machinery & equipment	51.8	14.4	45.7	6.3	25.2	22.9
29	Office & store furniture & fixtures	21.5	7.0	2.2	4.7	0.2	3.5
30	Locomotives & rr. cars‡‡	1.8	0.1	45.0	6.3	19.6	17.8
31	Ships & boats	27.9	5.3	33.5	8.9	39.8§§	21.9
32a	Business vehicles, motorized			37.0	29.8	0.2	22.3
32b	Business vehicles, horse-drawn	10.0	16.6	0.2	18.3	9.1	11.0
33	Aircraft					57.7	57.7
34	Professional & scientific equipment††	27.0	9.3	26.8	27.0	21.4	16.1
35	Carpenters' & mechanics' tools	14.6	15.1	5.6	14.0	2.3	9.2
36	Misc. subsidiary durable equipment	26.9	0.0	13.0	34.6	12.9	15.1
	Construction Materials	30.2	9.5	10.2	13.1	12.4	11.3
	B COMPLEMENTARY SERIES						
1	Food & kindred products	9.6	17.7	4.4	2.5	22.1	11.7
2	Cigars, cigarettes & tobacco	39.8	25.2	16.9	13.1	22.5	19.4
5a	Fuel & lighting products: mfd.		92.6	76.6	80.0	17.0	66.6
9	House furnishings (semi-durable)		31.7	26.7	11.3	47.3	29.2
11	Tires & tubes					46.2	46.2
12	Household furniture		24.9	18.8	13.4	32.8	22.5
14b	Misc. house furnishings (durable)		31.7	6.7	18.6	32.5	22.4
16	Musical instruments				3.1	129.9	66.5
21	Motorcycles & bicycles		42.4	264.8	9.3		37.4
24	Monuments & tombstones		12.3	‖‖	4.9	69.2	28.8
25	Industrial machinery & equipment	51.3	9.1	8.6	24.9	17.0	14.9
26	Electrical machinery, industrial & commercial				7.9	7.9	7.9
27	Farm equipment					19.5	19.5
34	Professional & scientific equipment					89.9	89.9
	Construction Materials	0.2	9.6	3.2	21.7	5.1	9.9

‡‡ Although locomotives and railroad cars were estimated separately for all years, the two samples were combined to derive the ratios from which the percentage changes were calculated.

§§ Census commodity totals were available for 1916 as well as for 1919; the change from 1914 to 1919 is an arithmetic average of the percentage changes from 1914 to 1916 and from 1916 to 1919.

‖‖ Because of a break in the state sample between 1907 and 1908, the 1904 and 1909 ratios were not comparable.

TABLE II 8

Differences in the Year-to-year Percentage Changes in the Interpolating Series Frequency Distribution by Minor Commodity Groups

COMMODITY GROUP	PERCENTAGE CLASS	1889–1899	1899–1904	1904–1909	1909–1914	1914–1919	TOTAL
Food & kindred products	0–4.9	4					4
	5.0–9.9	2					2
	10.0 & over	4					4
	0–4.9		3	3	3	4	13
	5.0–9.9		1	1	2		4
	10.0 & over		1	1		1	3
Cigars, cigarettes & tobacco	0–4.9	4	3	5	2	2	16
	5.0–9.9	4	1		3	2	10
	10.0 & over	2	1			1	4
Fuel & lighting products, mfd.	0–4.9		1			1	2
	5.0–9.9			2		1	3
	10.0 & over		4	3	5	3	15
Housefurnishings	0–4.9		3	3	2	2	10
	5.0–9.9		1		2	1	4
	10.0 & over		1	2	1	2	6
Tires & tubes	0–4.9					1	1
	5.0–9.9					1	1
	10.0 & over					3	3
Household furniture	0–4.9		1	1	2	2	6
	5.0–9.9		2	2		1	5
	10.0 & over		2	2	3	2	9
Misc. housefurnishings	0–4.9		2	2	2	3	9
	5.0–9.9		2	1	2	1	6
	10.0 & over		1	2	1	1	5
Musical instruments	0–4.9				4	1	5
	5.0–9.9				1		1
	10.0 & over					4	4
Motorcycles & bicycles*	0–4.9	1	1				2
	5.0–9.9		1				1
	10.0 & over	3	3				6
	0–4.9			2	1		3
	5.0–9.9				1		1
	10.0 & over			3	3		6
Monuments & tombstones	0–4.9		1				1
	5.0–9.9				4		4
	10.0 & over		4	5	1	5	15
Industrial machinery & equipment—tractors	0–4.9	3	2	3	2	1	11
	5.0–9.9	2					2
	10.0 & over	5	3	2	3	4	17
Electrical equipment, industrial & commercial	0–4.9				5	5	10
	5.0–9.9						
	10.0 & over						

* This commodity group was estimated for only four years before 1899. The bicycle industry expanded rapidly within a few years, then declined almost immediately.

TABLE II 8 *concl.*

COMMODITY GROUP	PERCENTAGE CLASS	1889–1899	1899–1904	1904–1909	1909–1914	1914–1919	TOTAL
Farm equipment	0–4.9					1	1
	5.0–9.9					2	2
	10.0 & over					2	2
Aircraft†	0–4.9				1	2	3
	5.0–9.9						
	10.0 & over				1	3	4
Construction materials	0–4.9		3	3	1	2	9
	5.0–9.9	2	2	1	1	1	7
	10.0 & over	8		1	3	2	14
Total	0–4.9	14	21	24	26	28	113
	5.0–9.9	14	12	7	19	10	62
	10.0 & over	36	27	29	27	42	161

† This group was estimated for two years before 1914.

TABLE II 9

Value of Nonmanufactured Food Products Destined for Consumption in Farm Households or for Sale to Ultimate Consumers, 1869, 1879, 1889–1919
(thousands of dollars)

	FRUITS, VEGETABLES & NUTS (SEE TABLE II 9A)	WHEAT, CORN, RYE & BUCKWHEAT CONSUMED IN FARM HOUSEHOLDS	FARM BUTTER	FARM CHEESE	FLUID MILK (SEE TABLE II 9B)	EGGS (SEE TABLE II 9C)	CHICKENS	CATTLE & CALVES, HOGS & SHEEP & LAMBS SLAUGHTERED ON FARMS FOR HOME CONSUMPTION	FISH (SEE TABLE II 9D)	NATURAL MINERAL WATERS	TOTAL
1869	241,822	15,801	151,995*	7,538*	72,459	55,924	56,000	75,176	9,446	no data	686,161
1879	264,259	21,135	108,913	1,851	75,532	63,859	47,000	88,282	29,850	577	701,258
1889	306,855	23,083	171,327	1,441	92,968	114,653	73,000	117,468	33,748	1,748	936,291
1890	320,383	23,498	141,851	1,420	116,501	122,670	80,000	108,151	36,515	2,601	953,590
1891	380,044	25,755	144,614	1,412	123,392	137,099	85,000	114,644	38,259	2,996	1,053,215
1892	336,507	23,436	146,817	1,494	127,361	154,963	86,000	114,312	41,081	4,906	1,036,877
1893	388,618	17,821	158,013	1,234	135,254	167,385	90,000	149,727	41,062	4,247	1,153,361
1894	319,657	17,478	136,795	1,213	119,609	154,507	91,000	118,147	38,474	3,742	1,000,622
1895	376,098	18,673	139,453	964	116,715	156,697	94,000	114,772	36,446	4,254	1,058,072
1896	235,488	16,118	158,854	903	113,819	151,793	92,000	102,969	33,082	4,136	909,162
1897	326,404	19,103	147,605	1,219	128,590	151,018	98,000	110,156	30,449	4,599	1,017,143
1898	370,527	24,339	140,091	1,086	147,285	167,617	99,000	119,193	30,175	8,052	1,107,365
1899	347,869	23,262	150,076	1,365	156,178	182,315	110,000	121,706	41,401	6,948	1,141,120
1900	361,905	26,645	174,340	1,382	169,903	197,161	106,000	150,913	39,577	5,792	1,233,618
1901	461,324	29,407	175,798	1,466	171,850	223,252	112,000	168,915	45,528	7,444	1,396,984
1902	487,838	27,839	166,393	1,375	181,633	252,711	134,000	196,896	38,039	8,634	1,495,358
1903	459,743	27,478	162,910	1,323	213,029	260,859	145,000	173,343	39,507	6,788	1,489,980
1904	555,080	29,959	160,138	1,057	194,329	297,374	147,000	150,913	40,497	6,219	1,582,566
1905	424,445	33,217	188,838	1,256	195,279	299,739	148,000	160,057	48,603	6,491	1,505,925
1906	583,188	32,711	168,181	1,048	184,447	312,720	153,000	195,359	38,688	8,028	1,677,370
1907	560,481	34,460	190,994	1,070	258,003	367,856	167,000	197,549	48,389	7,332	1,833,134
1908	616,908	39,710	233,113	1,002	227,546	355,271	162,000	184,859	42,259	6,713	1,869,381

TABLE II 9 *concl.*

	FRUITS, VEGETABLES & NUTS (SEE TABLE II 9A)	WHEAT, CORN, RYE & BUCKWHEAT CONSUMED IN FARM HOUSEHOLDS	FARM BUTTER	FARM CHEESE	FLUID MILK (SEE TABLE II 9B)	EGGS (SEE TABLE II 9C)	CHICKENS	CATTLE & CALVES, HOGS & SHEEP & LAMBS SLAUGHTERED ON FARMS FOR HOME CONSUMPTION	FISH (SEE TABLE II 9D)	NATURAL MINERAL WATERS	TOTAL
1909	656,197	42,318	222,720	1,117	295,169	363,837	188,000	230,044	50,860	6,894	2,057,156
1910	724,936	37,645	260,757	1,298	302,963	409,178	197,000	270,598	41,414	6,358	2,252,147
1911	843,266	35,563	231,019	1,067	261,032	358,990	183,000	210,305	52,173	6,838	2,183,253
1912	898,105	37,935	213,352	1,238	344,563	404,755	194,000	215,788	35,552	6,616	2,351,904
1913	768,318	38,012	214,451	1,216	343,392	384,216	210,000	244,739	45,923	5,631	2,255,898
1914	825,515	38,550	220,934	1,216	317,157	407,883	214,000	247,464	37,169	4,892	2,314,780
1915	792,997	41,267	239,603	1,380	290,759	431,540	213,000	229,306	36,740	5,139	2,281,731
1916	999,013	46,747	257,547	1,526	304,709	472,939	248,000	273,605	41,290	5,735	2,651,111
1917	1,545,672	81,497	278,110	2,132	437,414	663,980	316,000	439,068	63,205	4,932	3,832,010
1918	1,460,867	93,627	266,261	1,870	629,422	731,545	408,000	556,561	59,357	4,533	4,212,043
1919	1,634,048	87,653	346,104	2,231	631,200	932,377	448,000	572,320	55,443	4,880	4,714,256

*The values for 1869 include both farm and factory output.

TABLE II 9a

Value of Fruit, Nut, and Vegetable Crops Produced and Destined for Consumption in Farm Households or for Sale to Ultimate Consumers, 1869, 1879, 1889–1919
(thousands of dollars)

	CITRUS FRUITS	ORCHARD FRUITS	GRAPES	POTATOES	SWEET POTATOES	DRY EDIBLE BEANS	NUTS	FRUITS, VEGETABLES & NUTS ESTIMATED DIRECTLY	SMALL FRUITS‡	VEGETABLES RAISED FOR SALE & FARM GARDEN CROPS‡	TOTAL PRODUCED	USED IN MFG.	DESTINED FOR CONSUMPTION IN FARM HOUSEHOLDS OR FOR SALE TO ULTIMATE CONSUMERS
1869	4,991*	47,335	no	57,690	25,000	5,000	no	150,727†	16,354	78,559	245,620	3,798	241,822
1879	5,365*	50,876	data	76,920	19,000	4,000	data	168,107†	18,240	87,617	273,964	9,705	264,259
1889	8,824	83,683	9,368	65,786	20,000	5,000	4,650	197,311	21,408	102,838	321,557	14,702	306,855
1890	13,497	67,673	7,010	88,053	21,000	5,000	4,399	206,632	22,420	107,697	336,749	16,366	320,383
1891	7,124	80,763	8,178	119,428	21,000	5,000	4,393	245,886	26,679	128,156	400,721	20,677	380,044
1892	10,482	81,824	6,038	91,089	20,000	5,000	3,953	218,386	23,695	113,823	355,904	19,397	336,507
1893	12,690	89,933	7,782	115,379	19,000	5,000	3,224	253,008	27,451	131,868	412,327	23,709	388,618
1894	9,008	65,540	5,553	102,222	19,000	5,000	2,430	208,753	22,650	108,802	340,205	20,548	319,657
1895	5,240	116,873	4,906	94,125	18,000	5,000	2,229	246,373	26,731	128,410	401,514	25,416	376,098
1896	4,822	64,128	6,070	56,678	17,000	4,000	2,060	154,758	16,791	80,660	252,209	16,721	235,488
1897	4,534	97,482	11,272	78,944	18,000	3,000	1,943	215,175	23,346	112,149	350,670	24,266	326,404
1898	9,410	96,741	8,756	105,258	19,000	4,000	1,887	245,052	26,588	127,721	399,361	28,834	370,527
1899	9,798	83,752	11,848	98,174	20,000	5,000	2,211	230,783	25,030	120,282	376,095	28,226	347,869
1900	10,027	89,863	13,974	95,137	21,000	8,000	3,008	241,009	25,113	124,409	390,531	28,626	361,905
1901	15,575	107,631	16,441	133,597	24,000	9,000	2,180	308,424	30,812	157,666	496,902	35,578	461,324
1902	9,530	107,924	29,382	141,694	26,000	9,000	3,879	327,409	31,268	165,767	524,444	36,606	487,838
1903	10,395	94,423	21,362	142,706	27,000	11,000	2,903	309,789	28,253	155,297	493,339	33,596	459,743
1904	16,841	115,911	15,004	183,190	30,000	12,000	2,537	375,483	32,629	186,352	594,464	39,384	555,080
1905	14,980	94,138	16,947	119,428	31,000	10,000	2,519	289,012	23,872	141,992	454,876	30,431	424,445
1906	21,931	148,763	25,582	156,876	32,000	12,000	2,569	399,721	31,298	194,384	625,403	42,215	583,188
1907	22,214	118,991	36,397	155,863	36,000	14,000	3,196	386,661	28,574	186,139	601,374	40,893	560,481
1908	22,173	136,220	21,548	189,263	37,000	17,000	5,221	428,425	29,818	204,102	662,345	45,437	616,908
1909	23,903	140,866	22,028	209,499	37,000	21,000	4,448	458,744	29,975	216,257	704,976	48,779	656,197
1910	30,972	199,935	41,213	169,415	41,000	21,000	5,884	509,419	32,501	239,682	781,602	56,666	724,936
1911	30,246	251,749	27,564	213,572	45,000	21,000	6,462	595,593	37,105	279,631	912,329	69,063	843,266
1912	28,430	241,696	38,161	253,186	45,000	23,000	8,124	637,597	38,766	298,778	975,141	77,036	898,105
1913	33,189	215,789	40,168	188,990	43,000	21,000	6,083	548,219	32,509	256,402	837,130	68,812	768,318
1914	36,495	258,144	30,990	197,445	42,000	21,000	5,992	592,066	34,221	276,376	902,663	77,148	825,515
1915	33,946	259,274	40,540	160,807	43,000	24,000	10,433	572,000	32,261	266,495	870,756	77,759	792,997
1916	48,081	252,816	52,954	271,790	51,000	37,000	11,171	724,812	39,792	336,965	1,101,569	102,556	999,013
1917	46,297	322,058	53,086	528,270	76,000	88,000	14,092	1,127,803	60,225	523,301	1,711,329	165,657	1,545,672
1918	63,084	357,328	78,297	369,339	91,000	86,000	27,090	1,072,138	55,644	496,486	1,624,268	163,401	1,460,867
1919	112,057	431,098	95,586	391,432	112,000	53,000	29,714	1,224,887	61,732	537,915	1,824,534	190,486	1,634,048

* Extrapolated according to orchard fruit movement.
† Raised to include grapes and nuts on the basis of the percentage, in 1889, that the total for crops estimated directly was of the total excluding grapes and nuts.

‡ The values for these crops were not estimated directly; see Note A to Table II 9 for a description of the estimates.

TABLE II 9b

Value of Fluid Milk Produced and Destined for Consumption in Farm Households or for Sale to Ultimate Consumers 1869, 1879, 1889–1919 (thousands of dollars)

	PRODUCED*	USED IN MFG.*	DESTINED FOR CONSUMPTION IN FARM HOUSEHOLDS OR FOR SALE TO ULTIMATE CONSUMERS
1869	73,000	541	72,459
1879	77,000	1,468	75,532
1889	95,000	2,032	92,968
1890	119,000	2,499	116,501
1891	126,000	2,608	123,392
1892	130,000	2,639	127,361
1893	138,000	2,746	135,254
1894	122,000	2,391	119,609
1895	119,000	2,285	116,715
1896	116,000	2,181	113,819
1897	131,000	2,410	128,590
1898	150,000	2,715	147,285
1899	159,000	2,822	156,178
1900	173,000	3,097	169,903
1901	175,000	3,150	171,850
1902	185,000	3,367	181,633
1903	217,000	3,971	213,029
1904	198,000	3,671	194,328
1905	199,000	3,721	195,279
1906	188,000	3,553	184,447
1907	263,000	4,997	258,003
1908	232,000	4,454	227,546
1909	301,000	5,831	295,169
1910	310,000	7,037	302,963
1911	268,000	6,968	261,032
1912	355,000	10,437	344,563
1913	355,000	11,608	343,392
1914	329,000	11,843	317,157
1915	303,000	12,241	290,759
1916	319,000	14,291	304,709
1917	460,000	22,586	437,414
1918	665,000	35,578	629,422
1919	670,000	38,800	631,200

* Other than to make butter, cheese, and condensed and evaporated milk.

TABLE II 9c

Value of Eggs Produced and Destined for Consumption in Farm Households or for Sale to Ultimate Consumers, 1869, 1879, 1889–1919 (thousands of dollars)

	PRODUCED	USED IN MFG.	DESTINED FOR CONSUMPTION IN FARM HOUSEHOLDS OR FOR SALE TO ULTIMATE CONSUMERS
1869	57,400	1,476	55,924
1879	66,690	2,831	63,859
1889	119,470	4,817	114,653
1890	127,728	5,058	122,670
1891	142,648	5,549	137,099
1892	161,134	6,171	154,963
1893	173,925	6,540	167,385
1894	160,427	5,920	154,507
1895	162,582	5,885	156,697
1896	157,380	5,587	151,793
1897	156,479	5,461	151,018
1898	173,552	5,935	167,617
1899	188,630	6,315	182,315
1900	203,995	6,834	197,161
1901	231,014	7,762	223,252
1902	261,497	8,786	252,711
1903	269,957	9,098	260,859
1904	307,738	10,364	297,374
1905	310,707	10,968	299,739
1906	324,702	11,982	312,720
1907	382,586	14,730	367,856
1908	370,113	14,842	355,271
1909	379,652	15,815	363,837
1910	427,072	17,894	409,178
1911	374,768	15,778	358,990
1912	422,588	17,833	404,755
1913	401,228	17,012	384,216
1914	426,029	18,146	407,883
1915	451,307	19,767	431,540
1916	495,224	22,285	472,939
1917	696,069	32,089	663,980
1918	767,865	36,320	731,545
1919	979,944	47,567	932,377

TABLE II 9d

Value of Fish Catch Destined for Sale to Ultimate Consumers 1869, 1879, 1889–1919 (thousands of dollars)

	TOTAL CATCH	USED IN MFG.	DESTINED FOR SALE TO ULTIMATE CONSUMERS
1869	10,510	1,064	9,446
1879	33,656	3,806	29,850
1889	37,757	4,009	33,748
1890	41,252	4,562	36,690
1891	43,406	4,992	38,414
1892	46,810	5,589	41,221
1893	46,993	5,818	41,175
1894	44,222	5,669	38,553
1895	42,076	5,579	36,497
1896	38,359	5,255	33,104
1897	35,464	5,015	30,449
1898	35,325	5,150	30,175
1899	48,717	7,316	41,401
1900	46,870	7,293	39,577
1901	54,265	8,737	45,528
1902	45,627	7,588	38,039
1903	47,696	8,189	39,507
1904	49,212	8,715	40,497
1905	58,927	10,324	48,603
1906	46,798	8,110	38,688
1907	58,398	10,009	48,389
1908	50,884	8,625	42,259
1909	61,098	10,238	50,860
1910	50,715	9,301	41,414
1911	65,151	12,978	52,173
1912	45,284	9,732	35,552
1913	59,694	13,771	45,923
1914	49,326	12,157	37,169
1915	50,332	13,582	36,740
1916	58,435	17,145	41,290
1917	92,513	29,308	63,205
1918	89,975	30,618	59,357
1919	87,139	31,696	55,443

NOTE TO TABLE II 9

DERIVATION OF THE ESTIMATES

1 *Fruits, vegetables, and nuts*

Citrus fruits, orchard fruits, grapes, potatoes, sweet potatoes, dry edible beans, nuts, vegetables raised for sale, products of farm gardens, and small fruits are included in this classification.

a *Citrus fruits*

The method of estimate was suggested in *Gross Farm Income, Indexes of Farm Production, and Indexes of Farm Prices in the United States, 1869–1937,* Frederick Strauss and Louis Bean (Department of Agriculture, Washington, D.C., 1939), hereafter referred to as Strauss and Bean. Because of minor improvements, our estimates do not correspond exactly with those of Strauss and Bean.

Crop year shipments of both California and Florida oranges and lemons were available 1889–1918. California figures in boxes, 1901–18, were taken from the *Annual Report of the State Board of Agriculture, 1918,* p. 178; *1919,* p. 161; before 1901 the figures were given in carlots, *ibid., 1921,* p. 237. The carlot data were converted to boxes on the basis of 374 boxes of oranges and 313 boxes of lemons to a car. Florida shipments in boxes are given for the entire period in Strauss and Bean, p. 85.

California orange prices, 1895–1918, were computed by dividing f.o.b. income (Strauss and Bean, p. 85) by the number of boxes shipped. The level of this series was then adjusted to the calendar year census[a] prices of California oranges and lemons. Prices, 1889–95, were estimated by using the Strauss and Bean price index for orchard fruits, citrus fruits, and grapes (p. 147) to interpolate between the 1889 census price and the previously derived 1895 price. A similar procedure was followed with the Florida data except that prices could be computed only to 1909; prior to that year the Florida price series was extrapolated by the movement of the series previously estimated for California oranges.

Crop year shipments were converted to calendar year by distributing them 25 and 75 percent (Strauss and Bean, p. 83) and multiplying the calendar year estimates by the appropriate price series. The resulting values were combined and raised to cover all lemons and oranges grown in the United States and to include other citrus and subtropical fruits by straight line interpolation of census year ratios.

b *Orchard fruits*

Apples, peaches, pears, and plums and prunes were estimated separately:

Calendar year production of apples since 1899 (*Yearbook of Agriculture, 1928,* p. 764) was multiplied by an estimated apple price series (Strauss and

[a] Reference to 'census' means that figures were obtained from the *Census of Agriculture,* taken decennially from 1869 to 1919.

Bean, p. 82) which had been adjusted to the level of the census prices for 1909 and 1919.

Calendar year peach production since 1899 (*Yearbook of Agriculture, 1923,* p. 745, and *1928,* p. 778) was extrapolated to 1889 by the Department of Agriculture 'condition of crop' or yield percentages (*ibid., 1923,* p. 746). The 1889 and 1899 census quantities were raised to full crop estimates by dividing by these percentages, then interpolating along a straight line. The resulting full crop estimates were multiplied by the yield percentages to derive actual crop estimates. For 1910–19 (*ibid.,* p. 747) the 1919 census price was extrapolated by a weighted average of farm prices per bushel of peaches. Prior to 1909 the 1909 census price for peaches was extrapolated by the Strauss and Bean apple price series. Values were then calculated by multiplying the production data by the derived prices.

Calendar year production of pears (*ibid.,* p. 748, and *1928,* p. 781) was multiplied by the weighted average price per bushel of pears (*ibid., 1923,* p. 750) for 1910–19. Because the level of this series was extremely close to the 1919 census price it was not adjusted.

Calendar year production of plums and prunes in California 1890–1917 (*Annual Report of the California State Board of Agriculture, 1919,* p. 165) was adjusted to the level of census totals by extrapolating forward to 1917 using the 1909 ratio, by straight line interpolation of the census year ratios for the intercensal period 1899–1909, and by extrapolating backward to 1890 using the 1899 ratio. A figure for 1918 was obtained by straight line interpolation between the 1917 estimate and the 1919 census total. The average price per pound for California prunes, in boxes, 1890–1919 (Bureau of Labor Statistics, *Bulletin 320,* pp. 116–7) was converted to a per bushel basis, adjusted to census price levels, and used to translate the production estimates into values. The estimated 1890 price was used also for 1889.

The aggregates of the above orchard fruits were raised, by straight line interpolation of census year ratios, to cover all orchard fruits. For 1879 and 1869 census value for all orchard fruits were used directly.

c *Grapes*

The estimates of grape production are based on data for California, Ohio, and the Chatauqua-Erie district of New York state. California production of table and raisin grapes, 1899–1919, and wine grapes, 1890–1919, are from S. W. Shear and H. F. Gould, *Economic Status of the Grape Industry* (University of California College of Agriculture, Agricultural Experiment Station, *Bulletin 429,* 1927), p. 122, and S. W. Shear and G. G. Pearce, *Supply and Price Trends in the California Wine Grape Industry* (*ibid.,* Giannini Foundation, mimeographed report 34, June 1934), Table 42. The Ohio grape crop, 1889–1918, is from the *Annual Report of the Secretary of State to the Governor of Ohio, 1890–1914,* and *Ohio Agricultural Statistics, 1914–20.* A figure for 1919 was obtained by correspondence with P. P. Wallrabenstein, Department of Rural Economics, Ohio State University. Production in the Chatauqua-Erie district, 1900–18, is from H. D. Phillips, *Cooperative Marketing in the Chatauqua-*

Erie Grape Industry (Cornell University, Agricultural Experiment Station, *Memoir 28,* Sept. 1919), p. 14. Data for 1919 (Shear and Gould, *op. cit.,* p. 89), reported in carlots, were converted to tons by using the Shear and Gould conversion factor of 10 tons per car. An 1899 estimate was based on the movement of the California and Ohio series.

To estimate total grape production 1899–1919 the three series were combined and raised to census levels by straight line interpolation of the census year ratios. The 1899 census total was extrapolated 1890–98 by the two available series.

F.o.b. shipping point, average prices per ton, for California Malaga and Tokay grapes 1910–19 are from Shear and Gould, *op. cit.,* p. 86; also, the estimated prices per ton paid to California growers for wine grapes 1889–1910 (Table 25). Prices for dry and sweet wine grapes are reported separately; averages were calculated by weighting the prices 6 and 4 respectively. Finally, the average prices per ton of Chatauqua-Erie grapes, 1900–19, were calculated by dividing the reported values by the derived tonnage figures.

For 1910–19 the California Malaga-Tokay prices were weighted 9 and the Chatauqua-Erie prices 1 on the basis of approximate production in census years. The 1919 census price was extrapolated to 1910 by the resulting average. The 1909 census price was extrapolated to 1900 by the average of the California wine grape price, weighted 4, and the Chatauqua-Erie price, weighted 1. For years before 1900 the movement of the California series alone was used.

d *Potatoes*

Crop year sales of potatoes and the value of those used in farm households 1909–19 (*Disposition of Potatoes, Crop Years 1910–37,* Department of Agriculture, Agricultural Marketing Service, Sept. 1939, p. 8) were adjusted to calendar years on the basis of the ratios of calendar year gross income from potatoes to crop year gross income (Strauss and Bean, p. 53). The series were extrapolated beyond 1909 by the Strauss and Bean calendar year gross income figures.

e *Sweet potatoes and dry edible beans*

Calendar year estimates of gross income received by farmers for these crops were taken from Strauss and Bean, pp. 55, 73.

f *Nuts*

California production of walnuts and almonds, 1899–1918, was taken from the *Annual Statistical Report of the California State Board of Agriculture, 1918,* pp. 217, 218, and *1917,* p. 191. For 1899–1909 the series was raised to cover all walnuts and almonds grown in the United States by straight line interpolation of the census year ratios. For 1909–18 the 1909 ratios were used. Average calendar year import prices for almonds, 1889–1919, and walnuts, 1901–19, were taken from the *Monthly Summary of Foreign Commerce* (*seriatim*). For 1909–19 these prices were adjusted to census levels by straight line interpolation of the census year ratios; for years before 1909 the 1909

ratios were used. Walnut prices before 1901 were estimated from the movement of almond prices.

Values, calculated by multiplying the almond and walnut production estimates by the adjusted import price series, were raised to include all nuts by straight line interpolation of the census year ratios for 1909 and 1919, and by using the 1909 ratios for 1899–1909.

For 1889–98 the 1889 and 1899 census quantities of almonds, walnuts, and pecans were interpolated along a straight line. The census year quantities were divided into the estimated 1899 value for all nuts and the 1889 census value in order to get per pound prices which, when multiplied by the estimated production of almonds, walnuts and pecans, gave estimates of the value of all nuts. The prices for 1899 and 1889 were then interpolated by the movement of the almond import price series, and the resulting series used to convert the previously derived quantities into values.

g *Small fruits*

Census values for 1899, 1909, and 1919 were used directly. Estimates were made for 1910–18, 1900–08, 1879–98, and 1869 from the movement of the aggregate estimates for all fruits, vegetables, and nuts, excluding small fruits, vegetables raised for sale, and farm garden crops.

h *Vegetables raised for sale and farm garden crops*

Census values for 1899, 1909, and 1919 were used directly. Vegetables raised for sale were estimated for 1918 from the movement of the value of commercial truck crops in *Agricultural Statistics, 1939,* p. 258; farm garden crops were estimated for 1918 from the movement of the aggregate estimates for all fruits, vegetables, and nuts, excluding small fruits, vegetables raised for sale, and farm garden crops. For 1899–1918 estimates for the combined value of vegetables raised for sale and farm garden crops were based on straight line interpolation of the ratios of the 1918 total and the 1909 and 1899 census values to the aggregate estimates excluding small fruits. For years before 1899, 1899 ratios were used.

Apportionment of Fruits, Vegetables and Nuts

The estimates of unfinished fruits, vegetables, and nuts were based on the materials consumed method. The limitations of this method, which is used also for other nonmanufactured foods below, are described in Note A to Table II 2.

Census data were reported for fruits and vegetables consumed in the canning and preserving industry (1899, 1904), nuts in the chocolate and cocoa products industry (1919), fruits and nuts in the confectionery and ice cream industry (1919), fruits in the flavoring extracts industry (1929), potatoes in the glucose and starch industry (1899–1919), and grapes in the liquors, vinous industry (1899). Estimates for the other census years were based upon the ratios of these materials to the total cost of materials, excluding fuel and rent of power, for the respective industries. The census year estimates were then totaled and expressed as a percentage of the estimates of the aggregate value of all fruits, vegetables, and nuts for those years; intercensal estimates

were based on straight line interpolation of census year ratios. Estimates for finished fruits, vegetables, and nuts, are the differences between the estimates for unfinished and aggregate values.

2 *Wheat, Corn, Rye, and Buckwheat consumed in farm households*

Farm household consumption of each crop was estimated separately.

For the calendar years 1910–19 the annual values were taken from *Income Parity for Agriculture,* Part I, Farm Income (Department of Agriculture, Bureau of Agricultural Economics), Sec. 5, *Income from Wheat,* p. 7; Sec. 7, *Income from Corn,* p. 12; Sec. 10, *Income from Rye and Buckwheat,* pp. 11, 81.

Values were estimated for the years before 1910 by using the calendar year gross incomes for each crop as extrapolators (Strauss and Bean, pp. 36, 39, 40, 48–50).

3 *Butter and cheese*

Total production of butter and cheese, farm and factory, was taken from Strauss and Bean, pp. 94–5. Farm production was computed by applying unpublished percentage allocations prepared by E. E. Vial of the Department of Agriculture. Census prices of butter and cheese were interpolated by the butter prices and Wisconsin cheese prices given in Strauss and Bean, pp. 94–5. Farm values were then calculated by multiplying the quantity estimates by the derived prices.

Since all unfinished butter and cheese, except unfinished butter for 1869, had been estimated previously (Note A to Table II 2) it was unnecessary to apportion the estimates of farm value between finished and unfinished. Unfinished butter for 1869 was estimated on the basis of its percentage relation in 1879 to the total value of farm and factory butter.

4 *Fluid milk*

Gross income from the production of fluid milk was taken from Strauss and Bean, p. 98. Since the data excluded milk used in the production of butter, cheese, condensed and evaporated milk, it was necessary to estimate only the value of fluid milk consumed in other manufacturing industries. Such estimates, made by using the materials consumed method, were based on milk consumed in the bread and bakery products industry (1923), the oleomargarine industry (1899), the ice cream industry (1929), and the confectionery industry (1929). Consumption in other census years was estimated from the ratios of the value of milk consumed to the total cost of materials, excluding fuel and rent of power, in the census years for which specific industry data were available. Consumption in the ice cream industry was estimated for 1914 and 1919 alone since the industry was not included in the census before 1914. The census year aggregates of milk consumed were expressed as a percentage of total farm production of fluid milk, and intercensal consumption was based upon straight line interpolation of the resulting ratios.

5 *Eggs*

For census years, figures adjusted for varying amounts of census underreporting were taken from Strauss and Bean, p. 103. Intercensal interpolation was based on the marketings of eggs, 1891–1919, in Boston, Chicago, Milwaukee, New York, St. Louis, and San Francisco (*Yearbook of Agriculture, 1912,* p. 688, and *1919,* p. 666); and on the production of eggs in Ohio, 1889–1917 (Annual Reports of the Ohio Board of Agriculture, *Ohio Agricultural Statistics, seriatim*). The Ohio series was extended to 1919 by the movement of the marketing totals in seven cities, the six listed above and Cincinnati. Since an indeterminate amount of the Ohio production was duplicated in the marketings, the marketing series was weighted 2 and the Ohio series 1 in combining the two samples. Ratios of the combined sample to the census year figures were computed and intercensal estimates based on straight line interpolation of these ratios. The resulting estimates were multiplied by the annual price of eggs (Strauss and Bean, p. 103).

The allocation of eggs between finished and unfinished was estimated by the materials consumed method. Census year estimates of consumption in the bread and other bakery products industry were based on the 1923 ratio of the cost of eggs to the total cost of materials, excluding fuel and rent of power. This series was then raised to cover consumption in all industries on the basis of data for 1929. Total consumption by manufacturers (*Materials Used in Manufactures: 1929,* p. 45) was expressed as a percentage of 1929 consumption in the bread and bakery products industry. Intercensal estimates were derived by straight line interpolation of the census year ratios of the estimated cost of eggs used in all manufacturing to the estimated values for total egg production.

6 *Cattle and calves, hogs, sheep and lambs slaughtered for home consumption*

Quantities and values of cattle and calves, hogs, and sheep and lambs slaughtered for home consumption were reported for 1909–19 in *Income Parity for Agriculture,* Part I, Farm Income, Sec. 4, *Income from Cattle and Calves,* pp. 12, 13; Sec. 3, *Income from Hogs,* pp. 11, 12; and Sec. 6, *Sheep and Lambs, Wool and Mohair,* pp. 17, 18. Quantities were extrapolated to 1899 by the movement of the farm slaughter series (*Agricultural Statistics, 1939,* pp. 318, 329, and 347). Estimates for 1869, 1879, and 1889–98 were based upon the movement of the total slaughter series (Strauss and Bean, pp. 110, 114, 119, 122–3).

Prices with which to translate the estimated quantities into values were calculated by extrapolating the 1909 prices per unit slaughtered for home consumption. The cattle and calf price was extrapolated by the average of beginning and end of year farm values for cattle other than milk cows (*Agricultural Statistics, 1939,* p. 308); the hog price and the sheep and lamb price were extrapolated by series given in Strauss and Bean, pp. 119, 122–3.

7 *Fish*

United States totals for fish were built up from annual estimates of the catch in four important regions—New England, Middle Atlantic, Lake, and Pacific—and from occasional figures reported by the Bureau of Fisheries for other regions.

The quantity and value of the New England catch were given for 1889, 1898, 1902, 1905, 1908, and 1919 in *Fishery Industries of the United States, 1929* (Bureau of Fisheries, Document 1095), p. 825. Interpolating series included the value of landings at Boston and Gloucester in 1891 and 1893–1919 (*Annual Report of U. S. Commissioner of Fisheries, seriatim*); and the Connecticut shad and lobster catch for 1905–19 (*Biennial Report of Connecticut State Board of Fisheries and Game, seriatim*).

For 1905–19 the two samples were combined and ratios to the New England catch in 1905, 1908, and 1919 computed; intercensal estimates were then based upon straight line interpolation of the ratios. For years before 1905 the Boston and Gloucester sample alone was used. Ratios to total catch were computed and estimates for 1891 and 1893–1905 based on the various ratios. Estimates for 1890 and 1892 were calculated by straight line interpolation of the catch for 1889 and the estimates already made for 1891 and 1893.

The quantity and value of the Middle Atlantic catch were given for 1889–91, 1897, 1901, 1904, and 1908 in *Fishery Industries,* p. 859. Interpolating series included the landing of mackerel along the Atlantic coast, 1908–19 (*ibid.,* p. 856) and the value of landings, excluding mackerel, at Boston and Gloucester (for years reported, see above). For 1908–19 the mackerel series, multiplied by the average price per pound for mackerel landed at Boston and Gloucester, was combined with the Boston and Gloucester series; and the total used to extrapolate the 1908 value for the Middle Atlantic catch. Estimates for all earlier years except 1892 were based upon the ratios of the Boston and Gloucester data, including mackerel, to the Middle Atlantic catch. That for 1892 was derived by straight line interpolation of the figures for 1891 and 1893.

The quantity and value of the Lake catch were reported for 1890, 1899, 1903, and 1908, and quantity alone for 1913–19 in *Fishery Industries,* p. 1,038. A value for 1917 was estimated by using the per pound price calculated from the Great Lakes quantity and value figures (*Statistical Abstract of the United States, 1924,* p. 674). Values for 1913–16 were estimated by using prices obtained by extrapolating the 1917 price by the price per pound of the Lake Erie catch (*Biennial Report of Pennsylvania Department of Fisheries, 1916–17,* p. 26; *1915–16,* p. 31; *1914–15,* p. 17; *1913–14,* p. 13; *1912–13,* p. 18).

Estimates for 1909–12 were based upon the movement of the value of the catch in Lakes Michigan, Superior, and Green Bay (*Biennial Report of Wisconsin Commissioners of Fisheries, 1913–14,* p. 11; *1911–12,* p. 34; *1909–10,* p. 29). No estimates were made for the years missing before 1908.

The quantity and value of the Pacific catch were given for 1892, 1895, 1899, 1904, 1908, and 1915 in *Fishery Industries,* p. 1,007. Interpolating series,

1889–1919, included the Pacific cod catch in pounds (J. N. Cobb, *Pacific Cod Fisheries,* Department of Commerce, Bureau of Fisheries, Document 1,014, p. 464), and the Pacific salmon pack, excluding Alaska and British Columbia (J. N. Cobb, *Pacific Salmon Fisheries, ibid.,* Document 1,092, pp. 553–55). Quantities for the entire Pacific catch were interpolated by the total of these two series.

Prices were calculated by interpolating the available per pound figures for the entire catch by annual salmon prices. The salmon series was for opening prices of 1 pound tall cans for the different varieties given, together with pack data, in *Pacific Salmon Fisheries,* pp. 586–88. For 1906–19 the pack data, also reported by varieties, were used as weights to derive a single composite series. Before 1906 the separate prices were combined by using weights approximated from an average of the 1906–10 figures: Chinock, 1, Puget sockeye, 1, Alaska red, 5, and Alaska pink, 5.

The values of the catch in the South Atlantic and Gulf regions were reported for 1889, 1890, 1897, 1902, 1908, and 1918 in *Fishery Industries,* pp. 910, 967. No estimates were made for intervening years.

Censuses of the fishery industries of the United States were taken in 1869, 1879, 1889, and 1908. All products except food fish, edible crustaceans and mollusks, and oysters were eliminated from the totals reported for those years. Estimates for the years in which the South Atlantic and Gulf catches were available as well as that for other regions were based upon straight line interpolation of census year ratios between 1889 and 1908 and 1908 ratios for 1918. Estimates for all other years except 1919 were based upon straight line interpolation of the ratios of the sample data to the previously derived totals for the specified years; that for 1919 was based upon the 1918 ratios.

The apportionment of fish between finished and unfinished was based upon the materials consumed method. Total consumption of fish in food manufacturing industries in 1929 (*Materials Used in Manufactures: 1929,* p. 45) was extrapolated to all other census years except 1879 by the movement of the cost of materials, excluding fuel and rent of power, in the fish canning and preserving industry. Ratios of estimated census year consumption to total catch were then calculated and intercensal estimates based upon straight line interpolation.

Since the fish canning and preserving industry was not included in the 1879 census, a more complicated method had to be employed. First an 1879 commodity total for the industry was estimated by applying the 1889 ratio of the commodity total for the fish canning industry to the fish catch for that year. An 1879 cost of materials estimate was calculated by applying the 1889 ratio of cost of materials to the commodity total; this estimate was then adjusted to include all fish consumed in food manufacturing industries. Finally, the estimated consumption figure was subtracted from the value of the fish catch; the estimated commodity total for the fish canning industry was added. This provided an 1879 total roughly comparable with the sum of the fish canning figures in Table I and the estimates of the finished part of the fish catch in other census years.

8 *Natural mineral waters*

Annual values of natural mineral waters, 1889–1919, were taken from *Mineral Resources of the United States,* Part II, *1914,* p. 218; *1918,* p. 499, and *1921,* p. 231. A figure for 1879 was estimated from the ratio in 1889 of the value of natural waters to the census value of manufactured mineral and soda waters.

TABLE II 10

Value of Nonmanufactured Fuels Destined for Sale to Ultimate Consumers, 1869, 1879, 1889–1919

	ANTHRACITE COAL, DOMESTIC SIZES			BITUMINOUS COAL			FUEL BRIQUETS		
	SHIPMENTS 000 NET TONS (1)	PRICE PER NET TON $ (2)	VALUE AT MINE $000 (3)	DESTINED FOR SALE TO ULTIMATE CONSUMERS $000 (4)	AV. PRICE PER NET TON PREPARED SIZES AT MINE $ (5)	VALUE AT MINE $000 (6)	PRODUCTION 000 NET TONS (7)	VALUE $000 (8)	TOTAL $000 (3) + (6) + (8) (9)
1869	13,014	3.484	45,341	2,101	2.092	4,395			49,736
1879	24,537	2.015	49,442	4,975	1.210	6,020			55,462
1889	33,617	1.902	63,932	12,452	1.069	13,311			77,243
1890	34,385	1.884	64,779	14,405	1.069	15,399			80,178
1891	37,595	1.929	72,505	15,290	1.069	16,345			88,850
1892	39,072	2.071	80,936	16,418	1.069	17,551			98,487
1893	39,809	2.098	83,528	16,513	1.037	17,124			100,652
1894	37,818	1.991	75,298	15,308	0.983	15,048			90,346
1895	41,100	1.866	76,695	17,422	0.929	16,186			92,881
1896	38,320	1.982	75,955	17,743	0.897	15,915			91,870
1897	36,357	1.991	72,390	19,027	0.875	16,649			89,039
1898	36,202	1.866	67,555	21,383	0.864	18,475			86,030
1899	40,376	1.929	78,561	24,747	0.940	23,262			101,823
1900	38,036	1.964	74,714	26,967	1.124	30,311			105,025
1901	45,000	2.205	99,242	28,852	1.134	32,718			131,960
1902	25,414	2.429	61,720	33,429	1.210	40,449			102,169
1903	49,558	2.696	133,629	36,319	1.340	48,667			182,296
1904	47,282	2.509	118,627	35,528	1.188	42,207			160,834
1905	50,001	2.420	120,985	40,181	1.145	46,007			166,992
1906	44,529	2.446	108,937	43,701	1.199	52,397			161,334
1907	53,417	2.518	134,497	50,105	1.232	61,729	67	258	196,484
1908	51,799	2.509	129,960	42,126	1.210	50,972	90	323	181,255
1909	49,297	2.429	119,721	48,138	1.156	55,648	140	453	175,822
1910	51,873	2.509	130,145	52,944	1.210	64,062		631	194,838
1911	56,013	2.571	144,035	50,928	1.199	61,063	218	809	205,907
1912	52,566	2.714	142,679	56,642	1.242	70,349	220	952	213,980
1913	58,052	2.723	158,088	59,784	1.275	76,225	182	1,007	235,320
1914	57,299	2.768	158,596	53,143	1.264	67,173	251	1,155	226,924
1915	55,042	2.768	152,350	55,000	1.221	67,155	222	1,036	220,541
1916	53,787	3.179	170,695	62,787	1.426	89,534	295	1,446	261,675
1917	60,502	3.723	225,263	57,104	2.441	139,391	407	2,234	366,888
1918	58,762	4.330	254,460	57,000	2.787	158,859	477	3,213	416,532
1919	55,537	5.366	298,018	53,611	2.690	144,214	296	2,301	444,533

NOTE TO TABLE II 10

DERIVATION OF THE ESTIMATES

Anthracite Coal

Annual shipments of domestic sizes, pea and larger, were given for 1913–19 in *Mineral Resources of the United States, 1926,* Part II, p. 574, and *1924,* Part II, p. 575. Data excluding pea were also shown for 1890–1912; for these years pea was estimated upon the basis of the 1913 ratio of pea to total pea and steam. Shipments of domestic sizes in 1869, 1879, and 1889 were estimated from the 1890 ratio to all anthracite shipments.

A composite price of domestic sizes, calculated by weighting prices of lump, broken, egg, stove, chestnut, and pea (reported for 1910–19 in *Mineral Resources*) by the quantity of each type shipped, was extrapolated to 1909 and the earlier years through 1880 by the average value at mine per net ton of all anthracite (*Mineral Resources, 1921,* Part II, p. 534). The 1879 and 1880 relative prices for stove, egg, and chestnut (Aldrich Report, Part I, p. 39) were weighted similarly in order to extrapolate the estimated 1880 price to 1879. To get a price for 1869 the movement of bituminous prices shown in the Aldrich Report was used.

The estimates of values, obtained by multiplying the estimated shipments of domestic sizes by the derived prices, are slightly high because of the inclusion in domestic sizes of a small but indeterminate amount intended for business or industrial use.

Bituminous Coal

Total United States consumption was given for 1913–19 in *Mineral Resources of the United States, 1923,* Part II, p. 504. For years before 1913 production figures (*Mineral Resources, 1921,* Part II, p. 482) were adjusted for calendar year exports and imports on the basis of data compiled from *Monthly Summary of Commerce and Finance* (*seriatim*).

Domestic or household consumption was estimated by applying varying percentages to total consumption. For 1919, 12 percent, the approximate percentage for 1923, the nearest postwar year for which data were available, was used; for 1918, 10 percent, 1917, 11, and 1915, 13 were used, on the basis of figures in *Report of Distribution Division, 1918–1919,* Part I, *The Distribution of Coal and Coke* (United States Fuel Administration) p. 12; for 1916 and the years before 1915, the 1915 percentage was applied. These obviously crude estimates should be considered merely as usable approximations.

The average value at mine, 1880–1919 (*Mineral Resources, 1921,* Part II, p. 482), raised on the basis of the average ratio for 1917–20 of the wholesale prices of prepared sizes, southern Illinois field, to the wholesale prices of mine run, same field (Bureau of Labor Statistics, *Bulletin 320,* p. 16) was used as a price series. A price was estimated for 1869 and 1879 by means of the movement from 1880 to 1879 of the relative prices for bituminous coal (Aldrich Report, p. 39).

Fuel Briquets

Annual values were reported for 1907–09 and 1911–19 in *Mineral Resources of the United States, 1919,* Part II, p. 35. A figure for 1910 was estimated by straight line interpolation of the 1909 and 1911 figures. Prior to 1907 production was apparently so negligible as not to be compiled separately.

TABLE II 11

Value of Nonmanufactured Construction Materials
1869, 1879, 1889–1919
(thousands of dollars)

	LUMBER DESTINED FOR DIRECT USE IN CONSTRUCTION	CROSSTIES	SAND-BUILDING, PAVING, RR. BALLAST & GRAVEL	CRUSHED STONE	TOTAL
1869	43,503	5,707		no	49,210
1879	67,083	11,037		data	78,120
1889	106,034	18,374		4,309	128,717
1890	123,826	19,565		4,388	147,779
1891	116,340	16,913		3,913	137,166
1892	146,175	22,704		4,031	172,910
1893	119,809	21,117		2,812	143,738
1894	120,856	19,871		3,067	143,794
1895	128,950	21,764		2,870	153,584
1896	112,328	19,901		2,593	134,822
1897	127,664	20,970		2,984	151,618
1898	126,268	22,943		3,176	152,387
1899	131,419	28,394		3,697	163,510
1900	157,780	30,533		5,142	193,455
1901	161,079	32,618		6,744	200,441
1902	184,926	38,562	133	8,820	232,441
1903	190,619	48,751	122	9,327	248,819
1904	191,125	44,188	1,784	11,071	248,168
1905	202,390	40,230	6,086	11,540	260,246
1906	244,527	48,819	7,798	11,477	312,621
1907	267,221	78,959	8,680	15,390	370,250
1908	245,021	58,932	9,332	14,435	327,720
1909	233,257	60,721	12,959	17,067	324,004
1910	243,019	68,483	15,085	18,308	344,895
1911	230,174	60,909	15,091	18,868	325,042
1912	244,038	59,898	16,380	18,334	338,650
1913	254,501	54,540	18,138	20,759	347,938
1914	216,262	54,626	18,533	19,437	308,858
1915	197,656	49,288	17,909	19,434	284,287
1916	226,650	54,582	22,216	17,593	321,041
1917	271,200	49,946	25,135	16,185	362,466
1918	304,586	57,690	24,796	14,941	402,013
1919	379,222	75,722	34,773	18,654	508,371

NOTE TO TABLE II 11

DERIVATION OF THE ESTIMATES

Lumber

The production of soft- and hardwoods in 1899 and 1904–19 was taken from Frank J. Hallauer, *Our National Timber Requirements,* Senate Document 12, Separate 4 (prepared by the Forest Service in response to Senate Resolution 175, 73d Cong., 1st Sess.), Table 1. Total production, given also for 1869, 1879, and 1889, was apportioned according to the division in 1899.

Softwood production for intercensal years prior to 1904 was estimated from the following samples:

1 Production of white pine in the Northwest, 1889–1904 (*American Lumberman,* Jan. 21, 1905, p. 27).
2 Pine, spruce and hemlock surveyed at Bangor, Me., 1889–1904 (J. E. Defebaugh, *History of the Lumber Industry of America,* Vol. 2, Chicago, 1907, pp. 58–9).
3 Spruce, pine and hemlock, product of the Adirondack forest, 1889–1904 (*ibid.,* p. 405).
4 Arrivals of redwood, pine, and fir at California points, 1899–1904 (*Monthly Summary of Finance and Commerce, seriatim*).
5 Receipts of lumber at Norfolk, Va., 1889–99 (*ibid.,* Nov. 1900, p. 1,089).
6 Shipments of lumber from Savannah, Ga., 1889–99 (*ibid.,* p. 1,092).

For 1899–1904 estimates were based upon the movement of the aggregate for the first four series; for 1889–99 the sum of all the series except that of arrivals at California points was used.

Since no satisfactory hardwood samples were available, hardwood production for intercensal years was estimated from the movement of the derived softwood figures.

The allocation of production between unfinished and construction materials was based upon the quantities of wood, by species, used in all industries engaged primarily in the manufacture of wooden products (J. C. Nellis, *Lumber Used in the Manufacture of Wooden Products,* Department of Agriculture, *Bulletin 605,* Feb. 27, 1918, Table 1). Totals for soft and hardwoods were calculated by summation. Although the Nellis compilation was built up from state reports for several years, the majority were for 1911 and we used the figures to represent consumption in that year. The percentages that consumption of soft- and hardwoods constituted of total production were computed and applied to the production totals for all other years. Application of constant percentages undoubtedly affects the reliability of the estimates, especially during the War years. But the error introduced is perhaps not as serious as might be supposed. A similar compilation for 1928 (*Lumber Used in Manufacture,* 1928, Department of Agriculture, *Forest Service,* Table 1), shows that the lumber consumed in that year was between 50 and 60 percent of total production. For 1911 the roughly comparable percentage was 57.1. These over-all

percentages, however, conceal an apparent trend toward greater consumption of hardwoods and less consumption of softwoods.

The annual output of lumber destined for use in construction without further processing, obtained by subtracting the consumption estimates, was converted into values by data from *American Forests and Forest Products,* Statistical Bulletin 21 (Department of Agriculture, 1927). Table 74 of that bulletin gives average mill prices per M board feet, by kinds of wood, for 1899, 1904, 1907, 1909–11, and 1915–19. To derive a composite price series for softwoods the individual prices for 10 important species—cedar, cypress, Douglas fir, hemlock, redwood, spruce, western yellow pine, eastern yellow pine, white pine, and larch—were weighted by annual production figures. Similarly, a composite hardwood price was obtained by weighting the prices for oak, maple, gum, chestnut, birch, beech, yellow poplar, elm, basswood, cottonwood, ash, and hickory by annual production figures. To interpolate for the missing years and to extrapolate for the years before 1899, the average prices per M board feet, in eastern markets, of first and average quality 1 inch soft- and hardwoods (*ibid.,* Table 76) were used. For both soft- and hardwoods the prices for average quality were given a weight of 2 and those for first quality a weight of 1.

The price series thus derived are at levels determined by the weights of the total production of the different species; they should be at levels determined by the amount of each species used directly for construction. For 1911 composite prices were estimated by applying approximately correct weights, calculated by raising the total production of the woods listed above to allow for underreporting,[a] and subtracting the amount of each species consumed in manufacturing. The 1911 composite prices thus estimated were compared with the prices first estimated for 1911 and the levels of the original prices adjusted accordingly. The same proportionate adjustments were applied to all years.

The values of lumber destined for direct use in construction, calculated from the above production and price data, include lath and shingles. Since these products are already included with manufactured construction materials (see Table I 4 for census year values and Note B to Table II 6 for a description of the derivation of intercensal estimates) they were subtracted from the total lumber figures. The differences, the final estimates, are probably too high. First, data on lumber consumption apparently do not include lumber used for boxes and crates in establishments whose chief products are not wooden. Second, even though we made crude adjustments we are not sure that the levels of the price series are low enough. There is reason to believe that lumber used in manufactures is usually superior in quality to that used directly for construction; if so, average prices received for the total production of each species overstate the values destined for construction. Finally, our estimates probably include small but indeterminate amounts of sawed ties, the values of which are included also in the estimates of railway ties (see below). To the extent that lumber pro-

[a] The Forest Service revised the total estimates of soft- and hardwoods for 1911 (*Our National Timber Requirements,* Table 1), but did not revise the estimates for the different species (*Statistical Bulletin 21,* pp. 62–3). To compute revised figures for each species we applied ratios based upon the revision of the soft- and hardwood totals.

duced on farms (not included in the total production on which we based our estimates) is used directly for construction, the preceding biases may be compensated.

Crossties

Purchases of crossties by steam and electric railroads for 1906–11 and 1915 were reported in *Statistical Bulletin 21,* Tables 186 and 188. A 1905 figure for steam railroads alone was raised to include electric roads by using 1906 percentages. Estimates for 1904, 1912–14, and 1916–19 were based upon the production of the three types of wood most commonly used in making crossties; southern pine, oak, and cedar (*ibid.,* Table 55). An extrapolating series for 1890–1904 was constructed from the track mileage data for steam railroads (*Statistics of Railways, 1926,* p. XCVIII). Additions to mileage for the fiscal year following the calendar year were multiplied by 3,000, the approximate number of ties required per mile of new construction (*Our National Timber Requirements,* p. 272). Approximate renewals were calculated by multiplying the total track mileage of the fiscal year preceding the calendar year by 261 ties per mile, the average figure for renewals on principal roads 1910–15 (*ibid.,* p. 271). The sum of these two series was used to extrapolate the 1905 figure for total purchases. Estimates for 1889, 1879, and 1869 were also based upon track mileage, but the mileage data had first to be adjusted. Total mileage for the year ending June 30, 1889 was estimated from the movement of operated mileage (*Report on the Transportation Business in the United States at the Eleventh Census: 1890,* Part I, *Transportation by Land,* p. 53). A total mileage figure for the year ending June 30, 1880 was given in the *Report of the Agencies of Transportation in the United States* (Tenth Census, Washington, D.C., 1883), p. 292; a figure for the fiscal year 1879 was estimated from the movement of operated mileage (p. 290, and the *1890* report, p. 53).

Values of purchased crossties for 1906 and 1907 and an average price for 1909 were reported in *Statistical Bulletin 21,* Table 189. A partial value reported for 1905 was raised to cover electric railroads by applying the average price per tie paid by steam railroads to our estimate of the number of ties purchased by electric roads. Approximate average prices for 1918 and 1919 were published in the *Annual Report of the Director General of Railroads, 1919, Division of Purchases,* pp. 6, 7. Finally, an average price for 1889 was calculated by using the partial data on quantities and values from the *Report on Manufacturing Industries in the United States at the Eleventh Census: 1890,* Part III, *Selected Industries,* pp. 620, 639. For all other years prices were interpolated and extrapolated by the movement of the average price in eastern markets of first quality hard- and softwoods, weighted equally (*Statistical Bulletin 21,* Table 76).

Other Lumber Products

Other lumber products used directly for construction include round timbers for mining, round timbers for bridge building and construction other than mining, poles, and an indeterminate amount of the forest products of farms. Be-

cause data are not continuous and an interpolation would be unsatisfactory, we did not make estimates for these products; our estimates of lumber used directly for construction are incomplete.

The magnitude of the deficiency is suggested by the figures for single years. The cost to mines of round timbers was approximately $9 million in 1905 and $18.5 million in 1923 (*Statistical Bulletin 21,* Table 182). No figures on round timbers used for other construction are reported, but it is likely that the value is considerably smaller. Purchases of poles by telephone and telegraph companies and railroads were about $9 million in 1906 and $10 million in 1907 (*Poles Purchased, 1907,* Bureau of the Census, Forest Products, No. 9, Table 1). Although the total value of forest products produced on farms is reported for three census years: 1899, $110 million; 1909, $195 million; and 1919, $394 million (*Fourteenth Census,* V, *Agriculture,* pp. 881–3), little information is given concerning their distribution. Approximately one-half is consumed on farms and the other half cut for sale; but how much is destined for direct use in construction is difficult to determine. The greater part of farm output is used for fuel; some is undoubtedly sold to manufacturing concerns. Perhaps 10 percent, representing chiefly the amount used for fence posts and other farm construction, would be a plausible estimate.

The total of the omitted products probably ranges between $25 and $100 million. Although these are sizable figures, they are only 1 or 2 percent of the estimated totals for all construction materials. Consequently, their inclusion, were satisfactory estimates possible, would have no appreciable effect upon the movement of the totals.

Sand-building, Paving, Railroad Ballast, and Gravel

Values of building sand were reported for 1905–19 and in part for 1902–04, of paving sand for 1911–19, of railroad ballast for 1913–19, and of gravel for 1905–19 in *Mineral Resources of the United States* (*seriatim*). Since the output of these materials was relatively small and satisfactory extrapolation was impossible, no attempt was made to extend the various series beyond the earliest year reported. The comparability of the construction material totals is thus affected very slightly.

Crushed Stone

Values were reported in *Mineral Resources of the United States* (*seriatim*).