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## Appendix I

# Classification of Manufacturing Industries,

1929

Table I contains the complete industry title, the Bureau of Census industry number (1929), and symbols indicating how and in what proportions the industry totals have been allocated according to the four classification schemes discussed in the text. In most instances the appropriate classification of a particular industry is indicated by the Census description of its products. The divisions between unfinished and finished products (Classification A) are based for the most part on data published by the Bureau of the Census in *Distribution of Sales of Manufacturing Plants*, and parallel similar classifications by Simon Kuznets in the National Bureau studies of capital formation. Certain exceptions to Dr. Kuznets' classifications, chiefly the classification as 'finished' of producers' supplies consumed outside the manufacturing system, are indicated in the text and in Appendix IV. Divisions of an industry total according to the ultimate use made of the industry's product (Classification C) are explained in column 7 of the table and, for certain industries, in detailed notes.

In general the classification of an industry is based upon the character of the major commodities produced. Whenever the industry's products fall into two or more categories of a particular classification scheme, the industry is included in each division with weights determined by commodity totals. Since the industry's secondary products are not included in these commodity totals, although similar products of other industries are, the basis of classification is not entirely satisfactory. Nevertheless, it is thought that this discrepancy does not introduce

any serious error. When the analysis is based on the reported distribution of sales, or where special industry data are available, the discrepancies between industry and commodity data are unimportant.

### *Classification*

#### A Stage of Fabrication

- Key 1 Finished  
2 Unfinished

#### B Durability in Use

- Key 1 Durable  
2 Semidurable  
3 Transient

#### C Character of Ultimate Use

- Key 1 Consumption goods  
11 Foods, tobacco, beverages  
12 Wearing apparel and personal equipment  
13 House furnishings and household supplies  
14 Publications  
15 Transportation  
    a Motor cars  
    b Gasoline and oil  
    c Rubber tires  
    d Other  
16 Fuel and lighting  
17 Drugs, medicines, and sundries  
18 Recreation  
2 Construction materials  
3 Capital equipment  
4 Producers' supplies  
    41 Producers' fuels and materials  
    42 Containers  
    43 Other producers' supplies

D Chief Source of Material

Key 1 Agricultural

11 Farm, except animal

12 Animal

2 Nonagricultural

21 Forest

22 Mineral

a Metal

b Nonmetal

3 Mixed

Alternate Classification (D)

Key A Vegetable

B Animal

C Fibres

D Wood

E Iron

F Nonferrous metal

G Nonmetallic mineral

H Chemicals

Table 1

Entries in columns (3), (4), (5), (6) are explained in the preceding description of the classification schemes employed. Where more than one entry is made, the first of each pair of figures represents the classification group, the second (following the colon) represents the percentage of the industry total identified with that group. The symbols in column (7) refer to the chief basis for the estimated industry divisions in column 5 (classification according to ultimate use). The key to these symbols is as follows: C, division based on commodity tables of the Census of Manufactures, 1929; D, *Distribution of Sales of Manufacturing Plants, 1929* (Bureau of the Census); F, *Facts and Figures of the Automobile Industry* (National Automobile Chamber of Commerce, 1929); I, Industry information, much of it unpublished; K, data from the National Bureau study of capital formation conducted by Simon Kuznets; L, *High Level Consumption* by W. H. Lough and M. R. Gainsbrugh; M, Materials consumed as reported in the Census of Manufactures, 1929; R, *Mineral Resources of the United States* (Bureau of Mines); Z, approximate division, based on no statistical evidence. Lower case letters refer to detailed descriptions for selected industries given at the end of the table. Numbers refer to specific publications listed at the end of the table.

Industry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classification C (7)
		A Stage of fabrication (3)	B Durability in use (4)	C Character of ultimate use (5)	D Chief source of material (6)	
	<i>Food and Kindred Products</i>					
101	Beverages	I	3	II	IIA	
102	Bread and other bakery products	I	3	II	IIA	
103	Butter	I:96,2:4	3	II	I2B	
104	Canning and preserving; Fish, crabs, shrimps, oysters, and clams	I	3	II	I2B	
105	Canning and preserving; Fruits and vegetables; pickles, jellies, preserves, and sauces	I	3	II	IIA	

Industry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classification C (7)
		A	B	C	D	
		Stage of fabrication (3)	Durability in use (4)	Character of ultimate use (5)	Chief source of material (6)	
106	Cereal preparations	I	3	II	IIA	
107	Cheese	I	3	II	II B	
108	Chewing gum	I	3	II	IIA	
109	Chocolate and cocoa products, not incl. confectionery	I:75,2:25	3	II	IIA	
110	Coffee and spice, roasting and grinding	I	3	II	IIA	
111	Condensed and evaporated milk	I:71,2:29	3	II	II B	
112	Confectionery	I	3	II	IIA	
113	Corn sirup, corn sugar, corn oil, and starch	I:56,2:44	3	II	IIA	
114	Feeds, prepared, for animals and fowls	2	3	4I	IIA	
115	Flavoring extracts and flavoring sirups	I:75,2:25	3	II	IIA	
116	Flour and other grain mill products	I:50,2:50	3	II	IIA	
117	Food preparations, n.e.c.	I	3	II	IIA	
118	Ice cream	I	3	II	II B	
119	Ice, mfd.	I:54,2:46	3	II:54,43:46	3	D
120	Shortenings (not incl. lard) and vegetable cooking oils	I:83,2:17	3	II	IIA	
121	Macaroni, spaghetti, vermicelli, and noodles	I	3	II	IIA	
122	Malt	I:46,2:54	3	II	IIA	
123	Meat packing, wholesale	I:93,2: 7	2:4,3:96	II:96,12:4	II B	C
124	Oleomargarine, not made in meat packing establishments	I	3	II	IIA	
125	Peanuts, walnuts, and other nuts, processed or shelled	I:92,2: 8	3	II	IIA	
126	Poultry killing, dressing and packing, wholesale	I	3	II	II B	
127	Rice cleaning and polishing	I:82,2:18	3	II	IIA	

Industry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classification C (7)
		A Stage of fabrication (3)	B Durability in use (4)	C Character of ultimate use (5)	D Chief source of material (6)	
128	Sausage, meat pudding, headcheese, etc., and sausage casings, not made in meat packing establishments	1:90,2:10	3	11	12B	
129	Sugar, beet	1:68,2:32	3	11	11A	
130	Sugar, cane, not incl. products of refineries	1:68,2:32	3	11	11A	
131	Sugar refining, cane	1:68,2:32	3	11	11A	
132	Vinegar and cider	1:90,2:10	3	11	11A	
<i>Textiles and their Products</i>						
201	Artificial leather	2	2	13:68,15a:32	11C	CF
202	Asphalted-felt-base floor covering	1	2	13	3	
203	*Awnings, tents, sails, and canvas covers	1	1	18:25,3:75	11C	I
204	*Bags, other than paper, not made in textile mills	2	2	3	11C	
205	*Belting other than leather and rubber, not made in textile mills	1	2	3	11C	
206	Carpets and rugs, rag	1	1	13	12C	
207	Carpets and rugs, wool, other than rag	1	1	13:77,3:23	12C	CI1
208	Clothing (except work clothing) men's, youths', and boys', n.e.c.	1:93,2:7	2	12	12C	
209	Clothing, men's, buttonholes	2	2	12	12C	
210	Clothing, women's, n.e.c.	1:94,2:6	2	12	11:75,12:25, C	
211	Clothing, work (incl. sheep-lined and blanket-lined work coats but not shirts), men's	1:93,2:7	2	12	11C	
212	Cloth sponging and refinishing	2	2	12	12C	
213	Collars, men's	1	2	12	11C	
214	Cordage and twine	2	2	43	11C	

Industry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classification C (7)
		A Stage of fabrication (3)	B Durability in use (4)	C Character of ultimate use (5)	D Chief source of material (6)	
215	Corsets and allied garments	1	2	12	11C	
216	Cotton goods	1:33,2:67	2	12:61,13:23 15a:3,3:4, 43:4	11C	CI
217	Cotton small wares	1:33,2:67	2	12:95,3:5	11C	C
218	Dyeing and finishing textiles	2	2	12:80,13:20	3	I
219	Embroideries	2	2	12	11C	
220	Felt goods, wool, hair, or jute	2	1	12:50,3:50	12C	C
221	Flags and banners	1	2	43	11C	
222	Flax and hemp, dressed	2	2	12:50,13:50	11C	Z
223	Furnishing goods, men's, n.e.c.	1	2	12	11C	
224	Gloves and mittens, cloth or cloth and leather combined, made from purchased fabrics	1	2	12	11C	
225	Haircloth	2	2	12:40,13:60	3	C
226	Handkerchiefs	1	2	12	11C	
227	Hat and cap materials, men's	2	2	12	12C	
228	Hats and caps, except felt and straw, men's	1	2	12	11:50 12:50 C	
229	Hats, fur-felt	1:75,2:25	2	12	12C	
230	Hats, wool-felt	1:60,2:40	2	12	12C	
231	*Horse blankets, fly nets, and related products	1	1	3	11C	
232	House-furnishing goods, n.e.c.	1	2	13	11C	
233	Jute goods	2	2	43	11C	
234	Knit goods	1:94,2: 6	2	12	11:80 12:20 C	
235	Lace goods	1:75,2:25	2	12:43,13:57	11C	C
236	Linen goods	1:58,2:42	2	12:50,13:50	11C	Z
237	Linoleum	1	2	13:60, 3:40	3	I
238	Mats and matting, grass and coir	1	1	13	11C	
239	Millinery	1:91,2: 9	2	12	3	
240	*Nets and seines	1	2	3	11C	
241	Oilcloth	1	2	13	11C	

Industry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classification C (7)
		A Stage of fabrication (3)	B Durability in use (4)	C Character of ultimate use (5)	D Chief source of material (6)	
242	Regalia, badges, and emblems	1	1	18	11C	
243	Shirts	1:92,2: 8	2	12	11C	
244	Silk and rayon mfrs.	1:25,2:75	2	12:99,13: 1	3	CI
245	Suspenders, garters, and other elastic woven goods, made from purchased webbing	1	2	12	11C	
246	Trimmings (not made in textile mills) and stamped art goods for embroidery	1:41,2:59	2	12	11C	
247	Upholstering materials, n.e.c.	2	1	13	3	
248	Waste	2	3	43	11C	
249	Woolen goods	1:13,2:87	2	12:87,13: 4 15a:9	12C	CF
250	Wool pulling	2	2	12	12C	
251	Wool scouring	2	2	12	12C	
252	Wool shoddy	2	2	12	12C	
253	Worsted goods	1:13,2:87	2	12:87,13: 4 15a:9	12C	CF
<i>Forest Products</i>						
301	Baskets and rattan and willow ware, not incl. furniture	1	3	42	21D	C
302	*Billiard and pool tables, bowling alleys, and accessories	1	1	18:33, 3:67	21D	CZ
303	Boxes, cigar, wooden	2	3	42	21D	
304	Boxes, wooden, except cigar boxes	2	3	42	21D	
305	Caskets, coffins, burial cases, and other morticians' goods	1	3	12	21D	
306	*Cooperage	2	1:50,3:50	3:50,42:50	21D	C
307	Cork products	2	1:40,2:30 3:30	13:30, 2:40 42:30	21D	C
308	Excelsior	2	3	42	21D	
309	Furniture, incl. store and office fixtures	1	1	13:72, 3:28	21D	C
310	*Lasts and related products	1	1	3	21D	C

Industry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classification C (7)
		Stage of fabrication (3)	Durability in use (4)	Character of ultimate use (5)	Chief source of material (6)	
311	*Lumber and timber products, n.e.c.	2	1:83,3:17	12:1,13:5 14:1,15a:2 18:1,2:50 3:24,42:16	21D	a
312	Matches	1	3	11	21D	
313	Mirror and picture frames	1	1	13	21D	
314	Planing-mill products (incl. general millwork) not made in planing mills connected with sawmills	2	1	2	21D	
315	Pulp goods	2	2	13	21D	
316	Refrigerators and refrigerator cabinets, excl. mechanical refrigerating equipment	1:60,2:40	1	13:68,3:32	21D	C
317	Turpentine and rosin	2	2:77,3:23	12:2,13:16 14:23,2:50 43:9	21D	C2
318	Window and door screens and weather strip	1	1	2	21D	
319	*Wood preserving	2	1	2	21D	
320	Wood turned and shaped and other wooden goods, n.e.c.	1:26,2:74	1	13:49,15d:2 18:4,3:45	21D	C
<i>Paper and allied Products</i>						
401	Bags, paper, excl. those made in paper mills	2	3	42	21D	
402	Boxes, paper, n.e.c.	2	3	42	21D	
403	Cardboard, not made in paper mills	2	3	42	21D	
404	Card cutting and designing	2	2	43	21D	
405	Envelopes	1:20,2:80	3	13:20,43:80	21D	C
406	Labels and tags	2	3	43	21D	
407	Paper	1:10,2:90	2:4,3:96	13:12,14:28 2: 4,43:56	21D	
408	Paper goods, n.e.c.	1:50,2:50	3	13:50,14:18 43:32	21D	C

Industry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classification C (7)
		A Stage of fabrication (3)	B Durability in use (4)	C Character of ultimate use (5)	D Chief source of material (6)	
410	Pulp (wood and other fiber)	2	2:4,3:96	13:12,14:28 2: 4,43:56	21D	
411	Wall paper	2	2	2	21D	
<i>Printing, Publishing, and allied Industries</i>						
501	Bookbinding and blank-book making	1:33,2:67	3	14	21D	
502	Engravers' materials	2	3	43	3	
503	*Engraving (other than steel, copperplate, or wood), chasing, etching, and diesinking	2	1	3	22aF	
504	Engraving, steel and copperplate, and plate printing	2	3	14	22a, E;50,F;50 21D	
505	Engraving, wood	2	3	14	3	
506	Lithographing	2	3	14		
507	Photo-engraving, not done in printing establishments	2	3	14	22aF	
508	Printing and publishing, book and job	1:21,2:79	3	14:21,43:79	21D	CD
509	Printing and publishing, music	1	3	14	21D	
510	Printing and publishing, newspaper and periodical	1	3	14	21D	
511	*Printing materials, not incl. type or ink	1	1	3	22aE	
512	Stereotyping and electrotyping, not done in printing establishments	2	3	14	22aF	
513	*Type founding	2	1	3	22aF	
<i>Chemicals and allied Products</i>						
601	Alcohol, ethyl, and distilled liquors	1:43,2:57	1:3,2:8 3:89	11:20,12: 3 13: 3,15a:36 17: 8, 2: 5 41:25	11A	b

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Industry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classification C (7)
		A Stage of fabrication (3)	B Durability in use (4)	C Character of ultimate use (5)	D Chief source of material (6)	
602	Ammunition and related products	1	3	18:70,41:30	22aF	C
603	Baking powders, yeast, and other leavening compounds	1:56,2:44	3	11	11A	
604	Blackening, stains, and dressings	1	3	12:75,43:25	3	DS
605	Bluing	1	3	13	22bH	
606	Bone black, carbon black, and lamp-black	2	2:70,3:30	11:12,14:18 15c:03,2:7 13:40,43:60	22bG	CR
607	Candles	1	3	13:40,43:60	12B	D
608	Chemicals, n.e.c.	1:8,2:92	1:5,2:26 3:69	11:2,12:24 13:4,14:1 15a:1,15b:2 2:2,3:5 41:58,42:1	3	c
609	Cleaning and polishing preparations	1:82,2:18	3	13	22bH	
610	Compressed and liquefied gases	2	3	41	22bH	
611	Druggists' preparations	1	3	17	3	
612	Drug grinding	2	3	17	3	
613	Explosives	2	1:13,3:87	18:10,2:13 41:77	22bH	C <sub>3</sub>
614	Fertilizers	2	3	41	22bH	
615	Fireworks	1	3	18	22bH	
616	Glue and gelatin	2	3	11:23,43:77	12B	C
617	Grease and tallow, not incl. lubricating greases	2	3	13:67,43:33	12B	C <sub>4</sub>
618	Ink, printing	2	3	43	22bH	
619	Ink, writing	1:90,2:10	3	13:90,43:10	22bH	K
620	Liquors, vinous	1:67,2:33	3	17	11A	
621	Mucilage, paste, and other adhesives, except glue and rubber cement	1:52,2:48	3	13:52,43:48	3	K
622	Oil, cake, and meal, cottonseed	2	2:11,3:89	11:46,12:11 13:4,41:39	11A	C <sub>5</sub>
623	Oil, cake, and meal, linseed	1:50,2:50	2:63,3:37	13:5,2:58 43:37	11A	C <sub>5</sub>
624	Oils, essential	2	3	17	21D	

Industry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classification C (7)
		A Stage of fabrication (3)	B Durability in use (4)	C Character of ultimate use (5)	D Chief source of material (6)	
625	Oils, n.e.c.	2	2:4,3:96	11:27,12:15 13:35,2:4, 43:10	3	C6
626	Paints and varnishes	1:10,2:90	2	13:18,15a:11 15c:3,2:68	3	CR
627	Patent or proprietary medicines and compounds	1	3	17	3	
628	Perfumes, cosmetics, and other toilet preparations	1	2	12	3	
629	Rayon and allied products	2	2	12	11C:50 21D:50	
630	Salt	1:20,2:80	3	11:20,43:80	22bG	K7
631	Soap	1:90,2:110	3	12:27,13:73	3	CI
632	Tanning materials, natural dyestuffs, mordants and assistants, and sizes	2	2	12	21D	
633	Wood distillation and charcoal manufacture	2	3	41	21D	
<i>Products of Petroleum and Coal</i>						
701	Coke, not incl. gas-house coke	1:20,2:80	1:80,3:20	16:20,41:80	22bG	CR
702	Fuel, briquettes and boulets	1	3	16	22bG	
703	Gas, mfd., illuminating and heating	1:78,2:22	3	16:78,41:22	22bG	CR
704	Lubricating oils and greases, not made in petroleum refineries	1:28,2:72 1:46,2:54	3	15b:28,41:72 15b:41,16:7 2:2,41:50	22bG 22bG	CR8 CR8
705	Petroleum refining	1:46,2:54	2:2,3:98	15b:28,41:72 15b:41,16:7 2:2,41:50	22bG 22bG	CR8 CR8
<i>Rubber Products</i>						
801	Boots and shoes, rubber	1	2	12	21D	CI
802	Rubber goods, other than tires, inner tubes, and boots and shoes	1:20,2:80	2	12:23,13:10 15a:16,17:5 18:3,3:43	21D	
803	Rubber tires and inner tubes	1:69,2:31	2	12:3,13:2 15a:2,15c:88 3:5	21D	CI

Industry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classification C (7)
		A Stage of fabrication (3)	B Durability in use (4)	C Character of ultimate use (5)	D Chief source of material (6)	
<i>Leather and its Manufactures</i>						
901	*Belting, leather	1	1	3	12B	
902	Boot and shoe cut stock, not made in boot and shoe factories	2	2	12	12B	
903	Boot and shoe findings, not made in boot and shoe factories	2	2	12	3	
904	Boots and shoes, other than rubber	1	2	12	12B	
905	Gloves and mittens, leather	1	2	12	12B	
906	Leather goods, n.e.c.	1:80,2:20	2	12	12B	
907	Leather: Tanned, curried, and finished	2	2	12:85,13:73:8	12B	C
908	Pocketbooks, purses, and cardcases	1	2	12	12B	
909	*Saddlery and harness	1	1	15d:25,3:75	12B	DL
910	Trunks, suitcases, and bags	1	1	12	12B	
<i>Stone, Clay, and Glass Products</i>						
1001	Asbestos products, other than steam packing or pipe and boiler covering	2	1:40,2:60	15a:40,2:40,3:20	22bG	C
1002	*Cement	2	1	2	22bG	C
1003	China firing and decorating, not done in potteries	1	1	13	22bG	
1004	Clay products (other than pottery) and nonclay refractories	2	1:75,2:25	2:75,43:25	22bG	C
1005	Concrete products	2	1	2	22bG	
1006	*Crucibles	1	1	3	22bG	
1007	*Emery wheels and other abrasive and polishing appliances	1	1	3	22bG	

Industry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classification C (7)
		A Stage of fabrication (3)	B Durability in use (4)	C Character of ultimate use (5)	D Chief source of material (6)	
1008	Glass	1:25,2:75	1:43,2:25 3:32	13:25,15a:13 2:17,3:13 42:32	22bG	CFI
1009	Glass products (except mirrors) made from purchased glass	1:31,2:69	1	13:50,2:50	22bG	CSZ9
1010	*Graphite, ground and refined	2	1:65,2:8 3:27	13:15,2:8 3:05,43:12	22bG	R
1012	*Hones, whetstones, and similar products	1	1	3	22bG	
1013	Lime	2	1:91,3:9	14:9,2:44 3:11,41:36	22bG	R
1014	Marble, granite, slate, and other stone products	1:32,2:68	1	2	22bG	C
1015	Minerals and earths, ground or otherwise treated	2	3	41	22bG	
1016	Mirrors, framed and unframed	1:61,2:39	1	13:61,3:39	22bG	K
1017	Pottery, incl. porcelain ware	1:54,2:46	1	13:43,2:45 3:12	22bG	C
1018	Sand-line brick	2	1	2	22bG	
1019	Statuary and art goods, factory product	1:34,2:66	1	13	22bG	
1020	Wall plaster, wall board, and floor composition	2	1	2	22bG	
<i>Iron and Steel and their Products, not incl. Machinery</i>						
1101	*Bolts, nuts, washers, and rivets, not made in rolling mills	2	1	2:76,3:24	22aE	C
1102	*Cast-iron pipe	2	1	2	22aE	
1103	Cutlery (not incl. silver and plated cutlery) and edge tools	1	1:50,3:50	12:50,13:22 3:28	22aE	C
1104	Doors, shutters, and window sash and frames, metal	2	1	2	22aE	
1105	Files	1	2	43	22aE	

Industry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classification C (7)
		A Stage of fabrication (3)	B Durability in use (4)	C Character of ultimate use (5)	D Chief source of material (6)	
1106	Firearms	1	1	18	22aE	
1107	*Forgings, iron and steel, not made in rolling mills	2	1	3	22aE	
1108	Galvanizing and other coating, not done in rolling mills	2	1	2	22aE	
1109	Hardware, n.e.c.	1:18,2:82	1	13:46,15a:28 2:26	22aE	CI
1110	*Iron and steel: Blast furnaces	2	1:93,3:7	13:4,15a:15 2:27,3:47 42:7	22aE	Md
1111	*Iron and steel, processed	2	1	3	22aE	
1112	*Iron and steel: Steel works and rolling mills	2	1:92,3:8	13:4,15a:15 2:28,3:45 42:8	22aE	e
1113	Nails, spikes, etc., not made in rolling mills or wire mills	2	1	2	22aE	
1114	Plumbers' supplies, not incl. pipe or vitreous-china sanitary ware	2	1	2	22a E:50,F:50	
1115	*Safes and vaults	1	1	3	22aE	
1116	*Saws	1	1	3	22aE	
1117	*Screw-machine products and wood screws	2	1	2:12,3:88	22aE	C
1118	Springs, steel, except wire, not made in rolling mills	2	1	15a:77,3:23	22aE	C10
1119	Steam fittings and steam and hot-water heating apparatus	2	1	2	22aE	
1120	*Steel barrels, kegs, and drums	1	1	3	22aE	
1121	Stoves and ranges (other than electric) and warm-air furnaces	1	1	13	22aE	

Industry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classification C (7)
		A Stage of fabrication (3)	B Durability in use (4)	C Character of ultimate use (5)	D Chief source of material (6)	
1122	*Structural and ornamental iron and steel work, not made in rolling mills	2	1	2	22aE	
1123	Tin cans and other tinware, n.e.c.	2	1:2,2:2,3:96	13:2,3:2,42:96	22a	C
1125	*Tools, not incl. edge tools, files, or saws	1	1	3	22aE	
1126	*Wire, drawn from purchased bars or rods	1:11,2:89	1	13:2,2:213:77	22a E:33,F:67	C
1127	*Wirework, n.e.c.	1:10,2:90	1	13:38,15a:82:12,3:42	22aE	C10
1128	*Wrought pipe, welded and heavy riveted, not made in rolling mills	2	1	2:68,3:32	22aE	C
<i>Nonferrous Metals and their Products</i>						
1201	Aluminum mfrs.	1:22,2:78	1	13:30,15a:252:8,3:37	22aF	CRF
1202	Clocks, clock movements, time-recording devices, and time stamps	1	1	13:74,15a:63:20	22aF	C
1203	Collapsible tubes	2	3	42	22aF	
1204	Copper, tin, and sheet-iron work, incl. galvanized-iron work, n.e.c.	2	1	2	22aF	
1205	Electroplating	2	1	13:50,15a:50	22aF	Z
1206	*Fire extinguishers, chemical	1	1	3	22aF	
1207	Gas and electric fixtures; lamps, lanterns, and reflectors	1:20,2:80	1	13:48,15a:253:27	22aF	C
1208	*Gold leaf and foil	2	1	3	22aF	
1209	Gold, silver, and platinum, reducing and refining, not from the ore	2	1	12	22aF	

Industry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classification C (7)
		A Stage of fabrication (3)	B Durability in use (4)	C Character of ultimate use (5)	D Chief source of material (6)	
1210	Jewelry	1:87,2:13	1	12	22aF	
1211	Needles, pins, hooks and eyes, and snap fasteners	1:38,2:62	2	12:76,3:24	22aF	CK
1212	*Nonferrous-metal alloys and products, not incl. aluminum products	2	1	13:5,15a:16 2:17,3:62	22aF	f
1213	Plated ware	1	1	13:90,3:10	22aF	C
1214	Silversmithing and silverware	1	1	13	22aF	
1215	*Smelting and refining, copper	2	1	12:2,13:5 15a:15,2:16 3:62	22aF	g
1216	*Smelting and refining, lead	2	1:95,3:5	12:2,13:5 15a:19,18:3 2:22,3:44 42:5	22aF	h
1217	*Smelting and refining, metals other than gold, silver, or platinum, not from the ore	2	1:93,3:7	13:4,15a:17 2:17,3:55 42:7	22aF	i
1218	*Smelting and refining, zinc	2	1	12:1,13:7 15a:10,18:1 2:40,3:40 41:1	22aF	j
1219	Stamped ware, enameled ware, and metal stamping, enameling, japaning, and lacquering	1:34,2:66	1:87,3:13	13:60,15a:27 42:13	22aF	C
1220	Tin and other foils, not incl. gold foil	2	3	42	22aF	
1221	Watch and clock materials and parts, except watchcases	1:50,2:50	1	12:50,13:50	22aF	

In- dustry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classifi- cation C (7)
		A Stage of fabrica- tion (3)	B Durability in use (4)	C Character of ultima- te use (5)	D Chief source of ma- terial (6)	
1222	Watchcases	I	I	12	22aF	
1223	Watches and watch movements	I	I	12	22aF	
	<i>Machinery, not incl. Transportation Equip- ment</i>					
1301	*Agricultural im- plements	I	I	3	22aE	
1302	*Cash registers, add- ing, calculating, and card-tabulat- ing machines	I	I	3	22aE	
1303	*Electrical machin- ery, apparatus, and supplies	1:70,2:30	1:98,2:2	13:31,15a:9 2:16,3:42 43:2	22a E:33,F:67	
1304	*Engines, turbines, tractors, and water wheels	1:75,2:25	I	15a:11,18:4 3:85	22aE	C19,11
1305	*Foundry and ma- chine-shop prod- ucts, n.e.c.	1:50,2:50	I	15a:5,2:3 3:92	22aE	C
1306	*Gas machines, gas meters, water and other liquid meters	I	I	3	22aE	
1307	*Machine tools	I	I	3	22aE	
1309	*Pumps (hand and power) and pump- ing equipment	I	I	13:10,3:90	22aE	C
1310	Refrigerators, me- chanical	1:93,2:7	I	13:91,3:9	22aE	K
1311	*Scales and balances	I	I	3	22aE	
1312	Sewing machines and attachments	1:78,2:22	I	13:71,3:29	22aE	C
1313	*Textile machinery and parts	I	I	3	22aE	
1314	*Typewriters and parts	I	I	13:16,3:84	22aE	C9
1315	Washing machines, wringers, driers, and ironing ma- chines, for house- hold use	I	I	13	22aE	
1316	*Windmills and windmill towers	I	I	2	22aE	

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In- dus- try No. (1)	Industry (2)	CLASSIFICATION				Notes on Classifi- cation C (7)
		A Stage of fabrica- tion (3)	B Durability in use (4)	C Character of ulti- mate use (5)	D Chief source of mater- ial (6)	
1318	*Machine-tool acces- sories and small metal-working tools, n.e.c.	I	I	3	22aE	
<i>Transportation Equipment, Air, Land, and Water</i>						
1401	*Aircraft and parts	I	I	15d:40,3:60	22aE	CD12
1402	*Carriage, wagon, sleigh, and sled materials	2	I	3	21D	
1403	Carriages and sleds, children's	I	I	18	3	
1404	*Carriages, wagons, sleighs, and sleds	I	I	3	21D	
1405	*Cars, electric and steam railroad, not built in rail- road repair shops	I	I	3	22aE	
1406	*Locomotives, not made in railroad repair shops	I	I	3	22aE	
1407	Motor-vehicle bodies and motor-vehicle parts	1:17,2:83	I	15a:85,3:15	22aE	Ck
1408	Motor vehicles, not incl. motor cycles	I	I	15a:82,3:18	22aE	Kk
1409	Motor cycles, bi- cycles, and parts	1:86,2:14	I	15d	22aE	K
1410	*Ship and boat building, steel and wooden, incl. re- pair work	1:38,2:62	I	18:12,3:88	21:30, 22a:70 D:30,E:70	CD
<i>Railroad Repair Shops</i>						
1501	*Car and general construction and repairs, electric- railroad repair shops	I	I	3	22aE	

In- dus- try No. (1)	Industry (2)	CLASSIFICATION				Notes on Classifi- cation C (7)
		A Stage of fabrica- tion (3)	B Durability in use (4)	C Character of ulti- mate use (5)	D Chief source of ma- terial (6)	
1502	*Car and general construction and repairs, steam- railroad repair shops	1	1	3	22aE	
	<i>Miscellaneous In- dustries</i>					
1601	Artificial and pre- served flowers and plants	1:25,2:75	2	12:25,13:75	11C	K
1603	Artists' materials	1	2	18:50,43:50	3	Z
1604	Brooms	1	2	13:89,3:11	11A	C
1605	Brushes, other than rubber	1	2	12:26,13:38 3:36	12B	C
1606	Buttons	2	2	12	3	
1607	Carbon paper and inked ribbons	2	3	43	3	
1608	Cigars and cigarettes	1	3	11	11A	
1609	Combs and hairpins, not made from metal or rubber	1	2	12	3	
1610	*Dairymen's sup- plies; creamery, cheese-factory, and butter-fac- tory equipment; and poultry-men's and apiarists' supplies	1	1	3	22aE	
1611	Dental goods and equipment	1	1:78,2:22	12:64,3:14 43:22	3	C
1612	Fancy and misc. articles, n.e.c.	1	3	13	3	
1613	Feathers, plumes, and mfrs. thereof	1:33,2:67	2	12	12B	
1614	*Foundry supplies	2	2	43	3	
1615	Fur goods	1:58,2:42	2	12	12B	
1616	Furs, dressed	2	2	12	12B	
1617	Hair work	1	1	12	3	
1618	*Hand stamps and stencils and brands	1	1	3	22aE	
1619	Hats, straw, men's	1	2	12	11A	
1620	*Instruments, pro- fessional and scientific	1:77,2:23	1	3	3	

Industry No. (1)	Industry (2)	CLASSIFICATION				Notes on Classification C (7)
		A Stage of fabrication (3)	B Durability in use (4)	C Character of ultimate use (5)	D Chief source of material (6)	
1621	Ivory, shell, and bone work, not incl. buttons, combs, or hair-pins	1:25,2:75	1	13	3	
1622	Jewelry and instrument cases	1:10,2:90	1	12	3	
1623	Lapidary work	2	1	12	22bG	
1624	Mattresses and bed springs, n.e.c.	1	1	13	3	
1625	*Models and patterns, not incl. paper patterns	1	1	3	21D	
1626	Motion pictures, not incl. projection in theaters	1	3	18	3	
1627	Musical instrument parts and materials: piano and organ	2	1	13	3	
1628	Musical instruments and parts and materials, n.e.c.	1	1	18	3	
1629	Musical instruments: Organs	1	1	18	22aF	
1630	Musical instruments: Pianos	1	1	13	3	
1631	Optical goods	1:64,2:36	1	12	3	
1632	*Paving materials: Asphalt, tar, crushed slag, and mixtures	2	1	2	22bH	
1633	Pencils, lead (incl. mechanical)	1:76,2:24	3	13:76,43:24	3	K
1634	Pens, fountain and stylographic; pen points, gold, steel, and brass	1	1:95,2:5	12:95,43:5	3	C
1635	Phonographs	1	1	13	3	
1636	Phonographic apparatus and materials	1:41,2:59	1:21,3:79	18:36,3:5 43:59	3	KI
1637	Pipes (tobacco)	1	1	12	21D	
1638	Roofing, built-up and roll; asphalt shingles; roof coatings other than paint	2	1	2	22bH	

In- dus- try No. (1)	Industry (2)	CLASSIFICATION				Notes on Classifi- cation C (7)
		A Stage of fabrica- tion (3)	B Durability in use (4)	C Character of ulti- mate use (5)	D Chief source of ma- terial (6)	
1639	Sandpaper, emery paper, and other abrasive paper and cloth	2	1:50,3:50	2:50,43:50	3	D
1640	*Signs and advertis- ing novelties	1	1:66,3:34	3:66,43:34	3	C
1641	*Soda-water apparatus	1	1	3	3	
1642	Sporting and ath- letic goods, not incl. firearms or ammunition	1	2	18	3	
1643	Stationery goods, n.e.c.	1:80,2:20	2	13	3	
1644	Steam and other packing, pipe and boiler covering, and gaskets, n.e.c.	2	2	15a:10,3:27 43:54	3	C
1645	Surgical and ortho- pedic appliances, incl. artificial limbs	1	1	12	3	
1646	*Theatrical scenery and stage equip- ment	1	1	3	3	
1647	Tobacco: chewing and smoking, and snuff	1	3	11	11A	
1648	Toys (not incl. children's wheel goods or sleds), games, and play- ground equipment	1	2	18	3	
1649	Umbrellas, parasols, and canes	1	1	12	3	
1650	*Whips	1	1	3	12B	
1651	Window shades and fixtures	1	2	13	3	

\* Industries classed as dominantly capital producing in the frequency distributions of Ch. III. Lumber (No. 311) and electrical machinery, apparatus, and supplies (No. 1303) are included with half weight.

#### SPECIAL REFERENCES

- 1 *Distribution of Textiles*, Bureau of Business Research, Harvard University, Bulletin 56, 1926
- 2 *Agricultural Yearbook*, 1932, p. 384

- 3 *Production of Explosives in the United States in 1931*, Bureau of Mines, Technical Paper #540
- 4 *Report to Congress on Certain Vegetable Oils, Whale Oil and Copra*, U.S. Tariff Commission, #41, 2d series, 1932, pp. 8, 31
- 5 *Animal and Vegetable Fats and Oils*, U.S. Department of Commerce, 1935, p. 25
- 6 Same as 4 above, p. 31
- 7 *Production and Distribution of Salt in the United States by Primary Producers*, U.S. Tariff Commission (mimeographed), 1935
- 8 *Petroleum Investigation. Hearings before Committee on Interstate and Foreign Commerce*, H. Res. 441, Part I, p. 121, Washington, 1934
- 9 *Census of Manufactures, 1931*
- 10 *Census of Manufactures, 1927*
- 11 *Agricultural Yearbook, 1930*, pp. 1040-1
- 12 *Air Commerce Bulletin*, Vol. 4, May 1933, p. 533; also article on 'Aviation,' *Encyclopedia of the Social Sciences*, Vol. 2, p. 361

## NOTES

a *Lumber and timber products, n.e.c.* (311)

Minor lumber products (lath, shingles, firewood, pulpwood, fence posts, poles, etc.) are reported by the Bureau of the Census and have been classified according to their dominant use. The values of railroad ties and mine timbers are estimated on the basis of partial data. The value of lumber cut was estimated from the quantity produced, which was apportioned 37.3 per cent used in manufactures, other than building (based on data in *Lumber Used in Manufactures, 1928*, U.S. Department of Agriculture, Forest Service, adjusted to 1929 on the basis of production index), 4.5 per cent as net exports, and the rest, 58.2 per cent, to building use. An estimated value added by planing mills operated in conjunction with sawmills (\$62 million: value of product less lumber consumed times average price at mill) was likewise so apportioned. The amount used in manufacturing industries other than planing mills was further al-

located according to ultimate uses, as indicated by a detailed classification of the 60 consuming industries reported in *Lumber Used in Manufactures, 1928*. Finally, all value estimates were cumulated according to the ultimate use of the product and percentages of the grand total computed.

b *Alcohol, ethyl, and distilled liquors (601)*

All distilled liquors were classified as C11. Of total completely denatured alcohol, we estimate 35,000 wine gallons consumed as an anti-freeze (C15a), 5,000 wine gallons diverted for beverage (C11) purposes (cf. p. 13, *Whiskey, Wine, Beer and other Alcoholic Beverages and the Tariff*, U.S. Tariff Commission Report #90), the rest used for general supply and fuel (C41). Specially denatured alcohol has been allocated among various uses in accordance with estimates for 39 industrial uses for the fiscal year 1929-30 given in *Statistics Concerning Intoxicating Liquors, 1933*, Tables 19 and 26. Cumulated totals for all products, in terms of tax proof gallons, provide the proportions according to the seven groups listed above.

c *Chemicals, n.e.c. (608)*

Wherever information concerning the use of one of the hundred odd products classified in this group was not available, its value was classified as producers' supplies (C41). For major products (sulphuric acid, soda ash, caustic soda, chlorine) data on industrial consumption are available and were utilized to apportion the commodity totals. Useful information was found in the files of *Chemical and Metallurgical Engineering*.

d *Iron and steel: blast furnaces (1110)*

See *Census of Manufactures, 1929*, p. 940; also note e below, and allocation ratios for other industries indicated in the Census as consumers of blast furnace products.

e *Iron and steel: steel works and rolling mills (1112)*

Certain products of steel works and rolling mills can be allocated according to ultimate use with little or no difficulty; e.g., rails, etc. (C3) or shapes (C2). Other products such as bars; plates;

sheets; ties, hoops, banks, and strips; cold rolled strips; cold rolled bars, wire rods were independently allocated to different uses on the basis of shipments of 54 major companies in 1929, analyzed by 17 types of steel product and 22 [different] consumer groups (*Iron Age*, January 2, 1930, p. 11). The percentages are based on cumulated values of different products, each analyzed in the manner described.

f *Nonferrous metal alloys and products* (I2I2)

See note g. Same distribution used as for copper.

g *Smelting and refining: copper* (I2I5)

The nonferrous metals are inextricably mixed. The Census industry, 'Smelting and refining: copper,' covers all nonferrous metals found in the copper ore. The percentages reported in the *Census of Mines, 1930* for copper are accepted: 93.5, copper; .5, lead; .9, zinc; 2.4, gold; 2.7, silver. The .5 per cent lead is divided .2 C15a and .3 C3; the .9 zinc is classified C3. The 2.4 per cent gold is divided 1.3 C12 (54.5 per cent of all gold used in arts) and 1.1 C3. The 2.7 per cent silver is divided .2 C12, .8 C13, 1.7 C3 on the basis of data in *Consumption of Silver in the Arts and Industries of the United States* (Economic Paper 14, Bureau of Mines, 1932), and an estimate of 50 per cent used for monetary purposes (C3), *Mineral Resources, 1929*, I, 878. Finally, the 93.7 per cent of the industry's product considered to be copper was apportioned in accordance with detailed estimates for 22 purposes reported in the *Yearbook of American Bureau of Metal Statistics, 1930*, p. 37. The cumulated fractional percentages give the figures in the table.

h *Smelting and refining: lead* (I2I6)

The method described in note g was used. Census of Mines gives the following percentages at the mine: copper 2.0 (classed as C3); lead 74.0; zinc 11.5; gold 1.8; (divided C12, C3); silver 10.6. The 74.0 per cent identified as lead was allocated on the basis of data for 17 consumer divisions, *Yearbook of American Bureau of Metal Statistics, 1930*. Two of these divisions, relating to uses of white lead and red lead and litharge

(except battery lead), were further apportioned on the basis of data in *Mineral Resources, 1929, I, 511 ff.* The 11.5 per cent classed as zinc was allocated in accordance with similar estimates for this metal (cf. note j); the 10.6 per cent in silver was divided as for copper (cf. note g).

i *Smelting and refining: metals other than gold, silver, or platinum, not from the ore (I217)*

Lead, copper, zinc as reported in tons were allocated according to commodity (cf. notes g, h, j). Tin was divided on the basis of Bureau of Mines *Information Circular: Tin and Facts and Figures of Automobile Industry*. Of the tin total, 60 per cent was classed as C42; 24 per cent as C15a, and the rest as C3. Brass and bronze were apportioned according to data compiled for zinc (cf. note j). Bearing metals were divided equally between C15a and C3; solders C42; type metals C3. Cumulated totals give the percentages of the table.

j *Smelting and refining: zinc (I218)*

See also notes g and h. The contents of zinc ore are reported by the Census of Mines to be copper 1.0 per cent (C3), lead 17.4 per cent (cf. note h), zinc 79.5 per cent, gold 0.6 per cent (C12), silver 1.5 per cent (cf. note g). The allocation of zinc according to its various uses is based on detailed consumption estimates for 1928 by W. R. Ingalls, *World Survey of the Zinc Industry, 1931*. Among these data are estimates for uses of brass and castings referred to in note i.

k *Motor vehicles (I408)*

All passenger motor vehicles other than buses or taxicabs were classed as consumption goods in the absence of data on the extent of their use by business concerns.