

Survey of Plant Capacity

1998

Issued March 2000

MQ-C1(98)

Current Industrial Reports



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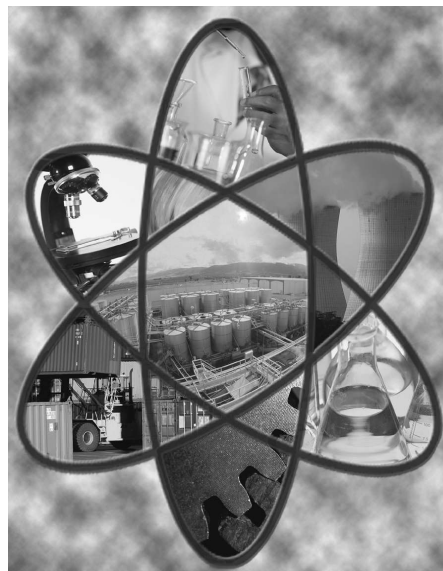
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Introduction

SUMMARY OF 1998 SURVEY RESULTS

U.S. domestic manufacturing plants used an estimated 73 percent (± 1 percentage point) of their full production capacity for the fourth quarter of 1998 and 75 percent (± 1 percentage point) for the fourth quarter of 1997. The durable goods industries fourth quarter 1998 rate of 72 percent (± 1 percentage point) was not significantly lower than the rate of 73 percent (± 1 percentage point) estimated for nondurable goods industries. Durable goods industries are manufacturing industries in which products have a normal life expectancy of 3 years or more. Standard Industrial Classification (SIC) major industries 24, 25, 32, 33, 34, 35, 36, 37, 38, and 39 are considered durable goods industries. Nondurable goods industries are manufacturing industries in which products generally have a life expectancy of less than 3 years. SIC major industries 20, 21, 22, 23, 26, 27, 28, 29, 30, and 31 are nondurable goods industries.

Advance processing industries for 1998 operated at a 5-percent lower rate (± 1 percentage point) than primary processing industries with a full production utilization rate of 71 percent compared with 76 percent for primary processing industries. Primary processing industries are industries in which products are generally the first processed output of raw materials in the manufacturing process. SIC major industries 22, 24, 26, 29, 30, 32, 33, and 34 are classified as the primary processing industries. Advance processing industries are industries in which products are considered finished manufactured items. SIC major industries 20, 21, 23, 25, 27, 31, 35, 36, 37, 38, and 39 are advance processing industries.

Among the major industries with the lowest utilization rates of their full production capacity in the fourth quarter of 1998 were leather and leather products (SIC 31) at 67 percent and miscellaneous manufacturing industries (SIC 39) at 66 percent. Among the industries with the highest utilization rates for 1998 were paper and allied products (SIC 26) at 83 percent and petroleum and coal products (SIC 29) at 83 percent. Full production capacity is broadly defined as the maximum level of production an establishment could attain under normal operating conditions. In this report, the full production utilization rate is a ratio of the actual level of operations to the full production level.

Industries with the lowest utilization rates of their national emergency production capacity in the fourth quarter of 1998 were apparel and other textile products (SIC 23) at 32 percent and leather and leather products (SIC 31)

at 35 percent. Among the industries with the highest utilization rates of 1998 were paper allied products (SIC 26) at 74 percent and petroleum and coal products (SIC 29) at 69 percent. National emergency production is broadly defined as the greatest level of production an establishment can expect to sustain for 1 year or more under national emergency conditions. The national emergency production utilization rate is a ratio of the actual level operations to the national emergency production level. Table 1a summarizes full production utilization rates and table 1b summarizes emergency production utilization rates, at two-, three-, and four-digit SIC industry levels, for fourth quarters 1993 through 1998. Table 2 shows both full and emergency production utilization rates, at the two-, three-, and four-digit SIC industry levels, for fourth quarters 1998 and 1997. Estimates are subject to sampling variability and nonsampling error. The range at which estimates are tested in this report is at the 90-percent confidence level. Appendix A contains reproductions of the survey form and instructions; Appendix B describes the qualification of the data; and Appendix C contains a description of the survey sample and estimating procedure.

REVISIONS TO THE SURVEY OF PLANT CAPACITY UTILIZATION

For the 1990 through 1997 surveys, data were collected at 2-year intervals. Beginning with the 1997 survey, the data are collected on an annual basis.

The reader should note that the Census Bureau used new criteria for defining capacity levels beginning with 1990 Survey of Plant Capacity Utilization. In prior capacity utilization surveys, the Census Bureau used preferred level of operation and practical capacity. Preferred level of operation was defined as a level that a plant preferred not to exceed because of costs or other considerations. Implicit in the preferred level was the idea that there was a level of production at which profits for a plant are maximized. At preferred level of operation, a plant's marginal revenue for its operations would equal its marginal costs. Practical capacity was defined as the maximum level of production that a plant could reasonably expect to attain using a realistic employee work schedule and the machinery and equipment in place during the time period covered by the survey.

In developing new definitions of capacity levels for the Survey of Plant Capacity Utilization, the Census Bureau sought to improve the consistency of reporting across industries for the survey, and also to make it less difficult

for respondents to report estimates of capacity levels in the survey. Due to definitional differences in capacity, care should be taken when comparing the utilization rates from the 1990 through 1997 surveys with previous Census Bureau surveys of plant capacity utilization and other measures of capacity. Other measures of capacity employ different methodologies which may yield different utilization levels.

INDUSTRIAL CLASSIFICATION

Industrial classification definitions are based on the 1987 edition of the Standard Industrial Classification (SIC) Manual published by the Office of Management and Budget. Prior to 1990, industrial classification definitions were based on the 1972 definitions. The 1998 survey will be the last survey year using the 1987 SIC manual. Beginning with the 1999 survey, all data will be tabulated using the

North American Industry Classification System (NAICS). The 1999 survey will contain a retabulation of the 1997 and 1998 data to reflect the NAICS industry coding.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols appear frequently in the tables:

- Represents zero.
- (D) Withheld to avoid disclosing data for individual companies.
- (S) Data suppressed because they did not meet publication standards. This includes data cells with strong evidence of bias or where the level of imputation exceeds 50 percent.
- (X) Not applicable.
- n.e.c. Not elsewhere classified.
- SIC Standard Industrial Classification.

Table 1a. **Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998**

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production rate					
		1998	1997	1996	1995	1994	1993
	All industries	73	75	76	76	80	78
	Durable goods industries	72	75	74	75	78	76
	Nondurable goods industries	74	76	78	78	82	81
	Advanced processing industries	72	74	75	75	78	77
	Primary processing industries	76	78	79	78	84	82
20	Food and kindred products	73	73	75	75	79	79
201	Meat products	83	84	83	85	86	85
2011	Meat packing plants	79	81	82	85	86	84
2013	Sausages and other prepared meats	80	84	77	79	80	84
2015	Poultry slaughtering and processing	88	87	88	89	89	87
202	Dairy products	78	79	80	78	82	82
2021	Creamery butter	88	88	83	81	75	80
2022	Cheese, natural and processed	91	90	91	92	85	88
2023	Dry, condensed, and evaporated dairy products	73	74	78	78	78	73
2024	Ice cream and frozen desserts	72	72	75	73	75	73
2026	Fluid milk	76	78	77	74	86	86
203	Preserved fruits and vegetables	75	73	75	74	77	79
2032	Canned specialties	84	80	78	77	76	78
2033	Canned fruits and vegetables	65	60	65	64	75	78
2034	Dehydrated fruits, vegetables, and soups	72	69	74	68	80	80
2035	Pickles, sauces, and salad dressings	63	71	72	73	71	72
2037	Frozen fruits and vegetables	83	83	89	90	92	91
2038	Frozen specialties, n.e.c.	83	81	82	80	75	80
204	Grain mill products	78	78	81	79	83	83
2041	Flour and other grain mill products	82	85	87	86	91	89
2043	Cereal breakfast foods	86	81	88	83	84	85
2044	Rice milling	82	83	87	87	95	94
2045	Prepared flour mixes and doughs	71	73	70	68	84	86
2046	Wet corn milling	88	92	95	94	96	96
2047	Dog and cat food	76	79	78	77	83	85
2048	Prepared feeds, n.e.c.	66	66	70	69	69	68
205	Bakery products	73	76	76	77	79	81
2051	Bread, cake, and related products	74	76	82	80	80	83
2052	Cookies and crackers	71	73	67	71	77	77
2053	Frozen bakery products, except bread	75	78	78	82	80	90
206	Sugar and confectionery products	72	71	75	76	77	78
2061	Raw cane sugar	87	96	97	97	94	95
2062	Cane sugar refining	80	83	91	89	78	(D)
2063	Beet sugar	100	100	92	93	100	100
2064	Candy and other confectionery products	67	65	71	76	75	78
2066	Chocolate and cocoa products	77	71	77	72	78	79
2067	Chewing gum ¹	(X)	(X)	(X)	(X)	(X)	(X)
2068	Salted and roasted nuts and seeds	73	75	76	66	70	(D)
207	Fats and oils	82	84	80	83	82	81
2074	Cottonseed oil mills	87	94	78	92	95	96
2075	Soybean oil mills	91	97	95	93	87	83
2076	Vegetable oil mills, n.e.c.	84	86	73	84	75	73
2077	Animal and marine fats and oils	94	78	76	73	80	78
2079	Edible fats and oils, n.e.c.	68	75	75	76	74	80
208	Beverages	68	66	70	71	76	73
2082	Malt beverages	82	75	76	76	79	75
2083	Malt	92	99	97	97	100	92
2084	Wines, brandy, and brandy spirits	79	80	73	75	57	56
2085	Distilled and blended liquors	63	65	65	66	76	81
2086	Bottled and canned soft drinks	60	67	71	70	74	72
2087	Flavoring extracts and syrups, n.e.c.	66	51	59	64	83	81
209	Miscellaneous food and kindred products	58	67	67	67	73	72
2091	Canned and cured fish and seafoods	57	62	69	81	70	72
2092	Fresh or frozen prepared fish	51	56	62	63	63	69
2095	Roasted coffee	61	71	66	69	64	60
2096	Potato chips and similar snacks	51	75	75	76	89	83
2097	Manufactured ice	44	31	38	38	(S)	(S)
2098	Macaroni and spaghetti	79	95	81	80	84	90
2099	Food preparations, n.e.c.	65	63	63	61	72	72
21	Tobacco products	73	74	78	81	86	83
211	Cigarettes	71	72	77	80	87	83
2111	Cigarettes	71	72	77	80	87	83
212	Cigars	75	86	86	87	73	64
2121	Cigars	75	86	86	87	73	64
213	Chewing and smoking tobacco	(D)	(D)	(D)	(D)	88	85
2131	Chewing and smoking tobacco	(D)	(D)	(D)	(D)	88	85
214	Tobacco stemming and redrying	83	86	82	74	75	71
2141	Tobacco stemming and redrying	83	86	82	74	75	71
22	Textile mill products	74	81	81	82	87	85
221	Broadwoven fabric mills, cotton	81	89	88	87	97	97
2211	Broadwoven fabric mills, cotton	81	89	88	87	97	97
222	Broadwoven fabric mills, manmade fiber and silk	82	90	88	89	90	88
2221	Broadwoven fabric mills, manmade fiber and silk	82	90	88	89	90	88
223	Broadwoven fabric mills, wool	57	81	77	78	86	85
2231	Broadwoven fabric mills, wool	57	81	77	78	86	85
224	Narrow fabric mills	75	68	74	71	78	81
2241	Narrow fabric mills	75	68	74	71	78	81

See footnotes at end of table.

Table 1a. **Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998—Con.**

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production rate					
		1998	1997	1996	1995	1994	1993
22	Textile mill products—Con.						
225	Knitting mills	69	80	79	81	84	81
2251	Women's hosiery, except socks	78	80	83	85	(S)	(S)
2252	Hosiery, n.e.c.	77	91	92	90	85	85
2253	Knit outerwear mills	70	78	76	79	83	83
2254	Knit underwear mills	70	80	78	85	81	63
2257	Weft knit fabric mills	62	72	71	74	86	(S)
2258	Lace and warp knit fabric mills	70	85	84	83	84	81
2259	Knitting mills, n.e.c.	72	(D)	81	76	90	88
226	Textile finishing, except wool	67	81	82	81	88	87
2261	Finishing plants, cotton	76	87	89	87	91	92
2262	Finishing plants, manmade	59	78	79	79	87	85
2269	Finishing plants, n.e.c.	73	78	79	75	87	86
227	Carpets and rugs	72	80	76	78	84	85
2273	Carpets and rugs	72	80	76	78	84	85
228	Yarn and thread mills	77	83	85	81	90	90
2281	Yarn spinning mills	75	82	85	80	92	90
2282	Throwing and winding mills	84	83	88	85	(S)	(S)
2284	Thread mills	74	89	84	85	79	79
229	Miscellaneous textile goods	79	76	78	81	84	84
2295	Coated fabrics, not rubberized	78	84	79	81	83	82
2296	Tire cord and fabrics	88	81	93	91	92	91
2297	Nonwoven fabrics	78	71	74	79	84	83
2298	Cordage and twine	69	74	70	74	77	80
2299	Textile goods, n.e.c.	82	77	85	83	85	84
23	Apparel and other textile products	71	77	80	79	85	86
231	Men's and boys' suits and coats	68	75	82	80	76	75
2311	Men's and boys' suits and coats	68	75	82	80	76	75
232	Men's and boys' furnishings	78	73	79	84	90	87
2321	Men's and boys' shirts	84	80	78	79	89	88
2322	Men's and boys' underwear and nightwear	79	79	85	86	86	67
2323	Men's and boys' neckwear	71	82	78	78	65	73
2325	Men's and boys' trousers and slacks	81	67	78	92	98	93
2326	Men's and boys' work clothing	83	78	84	85	87	75
2329	Men's and boys' clothing, n.e.c.	65	77	77	75	84	85
233	Women's and misses' outerwear	62	78	81	81	86	89
2331	Women's, misses', and juniors' blouses and shirts	67	79	81	86	95	95
2335	Women's, misses', and juniors' dresses	57	83	84	84	83	87
2337	Women's, misses', and juniors' suits and coats	63	74	85	83	(S)	(S)
2339	Women's, misses', and juniors' outerwear, n.e.c.	63	76	78	76	91	92
234	Women's and children's undergarments	69	83	88	80	89	90
2341	Women's and children's underwear	86	94	95	92	90	92
2342	Brassieres, girdles, and allied garments	56	73	81	70	88	88
235	Hats, caps, and millinery	70	75	78	76	87	86
2353	Hats, caps, and millinery	70	75	78	76	87	86
236	Girls' and children's outerwear	74	76	87	86	86	89
2361	Girls' and children's dresses and blouses	75	75	83	83	78	84
2369	Girls' and children's outerwear, n.e.c.	74	77	89	88	91	93
237	Fur goods	72	91	95	91	(S)	(S)
2371	Fur goods	72	91	95	91	(S)	(S)
238	Miscellaneous apparel and accessories	72	73	73	74	72	78
2381	Fabric dress and work gloves	80	70	73	82	82	84
2384	Robes and dressing gowns	67	75	73	75	(S)	(S)
2385	Waterproof outerwear	89	77	72	76	(S)	92
2386	Leather and sheep-lined clothing	60	79	84	100	85	88
2387	Apparel belts	84	80	67	78	62	64
2389	Apparel and accessories, n.e.c.	61	68	75	65	85	91
239	Miscellaneous fabricated textile products	77	78	78	74	83	83
2391	Curtains and draperies	75	70	79	75	81	83
2392	Housefurnishings, n.e.c.	86	84	81	74	83	88
2393	Textile bags	57	65	71	60	73	75
2394	Canvas and related products	58	65	60	62	60	60
2395	Pleating and stitching	74	69	66	61	(S)	(S)
2396	Automotive and apparel trimmings	69	78	83	78	87	89
2397	Schiffli machine embroideries	78	64	83	86	85	90
2399	Fabricated textile products, n.e.c.	86	82	79	75	88	79
24	Lumber and wood products	75	75	78	77	80	81
241	Logging	96	93	92	89	(S)	(S)
2411	Logging	96	93	92	89	(S)	(S)
242	Sawmills and planing mills	73	76	77	73	79	82
2421	Sawmills and planing mills, general	73	76	77	73	78	81
2426	Hardwood dimension and flooring mills	73	79	76	73	85	87
2429	Special product sawmills, n.e.c.	35	38	59	68	77	59
243	Millwork, plywood, and structural members	73	69	78	77	78	79
2431	Millwork	64	61	74	69	71	71
2434	Wood kitchen cabinets	79	72	78	79	87	89
2435	Hardwood veneer and plywood	86	84	83	81	86	85
2436	Softwood veneer and plywood	91	84	86	95	95	92
2439	Structural wood members, n.e.c.	73	72	77	74	66	66
244	Wood containers	78	79	74	77	73	70
2441	Nailed wood boxes and shook	69	65	57	56	61	58
2448	Wood pallets and skids	83	86	80	83	74	71
2449	Wood containers, n.e.c.	58	62	69	74	86	79

See footnotes at end of table.

Table 1a. **Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998—Con.**

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production rate					
		1998	1997	1996	1995	1994	1993
24	Lumber and wood products—Con.						
245	Wood buildings and mobile homes	73	77	75	79	81	80
2451	Mobile homes	74	77	74	80	83	81
2452	Prefabricated wood buildings	71	74	78	77	79	77
249	Miscellaneous wood products	70	74	75	74	85	79
2491	Wood preserving	60	62	65	67	80	86
2493	Reconstituted wood products	84	82	86	88	92	92
2499	Wood products, n.e.c.	64	72	68	64	78	68
25	Furniture and fixtures	74	77	75	74	81	80
251	Household furniture	73	77	78	78	86	83
2511	Wood household furniture	78	82	83	79	87	84
2512	Upholstered household furniture	77	78	79	83	87	86
2514	Metal household furniture	60	71	69	62	87	82
2515	Mattresses and bedsprings	68	71	70	73	80	77
2517	Wood television and radio cabinets	57	59	68	86	66	63
2519	Household furniture, n.e.c.	64	75	86	84	82	82
252	Office furniture	76	79	71	69	72	74
2521	Wood office furniture	79	80	69	67	65	71
2522	Office furniture, except wood	76	78	71	70	75	74
253	Public building and related furniture	73	79	87	81	85	84
2531	Public building and related furniture	73	79	87	81	85	84
254	Partitions and fixtures	72	74	71	70	82	83
2541	Wood partitions and fixtures	76	71	68	67	79	83
2542	Partitions and fixtures, except wood	69	76	75	74	85	84
259	Miscellaneous furniture and fixtures	76	74	73	72	80	78
2591	Drapery hardware and blinds and shades	83	85	77	74	86	83
2599	Furniture and fixtures, n.e.c.	73	69	71	70	77	75
26	Paper and allied products	83	85	85	85	87	86
261	Pulp mills	91	94	92	90	97	92
2611	Pulp mills	91	94	92	90	97	92
262	Paper mills	92	94	91	92	98	98
2621	Paper mills	92	94	91	92	98	98
263	Paperboard mills	91	96	95	91	99	97
2631	Paperboard mills	91	96	95	91	99	97
265	Paperboard containers and boxes	79	77	77	78	81	79
2652	Setup paperboard boxes	74	72	75	75	77	78
2653	Corrugated and solid fiber boxes	81	78	78	80	82	78
2655	Fiber cans, drums, and similar products	70	76	78	76	77	77
2656	Sanitary food containers	70	72	69	69	80	81
2657	Folding paperboard boxes	79	76	76	78	82	81
267	Miscellaneous converted paper products	78	80	82	82	81	81
2671	Paper coated and laminated, packaging	82	80	82	80	79	79
2672	Paper coated and laminated, n.e.c.	79	87	90	87	79	75
2673	Bags plastics, laminated, and coated	83	80	82	83	70	68
2674	Bags uncoated paper and multiwall	77	81	80	84	90	87
2675	Die-cut paper and board	55	58	64	65	47	49
2676	Sanitary paper products	85	84	84	88	91	92
2677	Envelopes	76	79	76	78	88	90
2678	Stationery products	57	65	71	70	80	76
2679	Converted paper products, n.e.c.	61	72	77	73	90	91
27	Printing and publishing	78	77	81	81	83	83
271	Newspapers	81	77	83	84	78	83
2711	Newspapers	81	77	83	84	78	83
272	Periodicals	78	79	88	92	(S)	(S)
2721	Periodicals	78	79	88	92	(S)	(S)
273	Books	87	88	83	81	86	84
2731	Book publishing	90	89	83	80	(S)	(S)
2732	Book printing	76	83	85	86	87	87
274	Miscellaneous publishing	70	68	77	77	(S)	(S)
2741	Miscellaneous publishing	70	68	77	77	(S)	(S)
275	Commercial printing	78	77	78	80	83	83
2752	Commercial printing, lithographic	77	76	77	79	83	83
2754	Commercial printing, gravure	86	91	90	92	(S)	(S)
2759	Commercial printing, n.e.c.	79	76	81	83	84	82
276	Manifold business forms	68	65	70	73	79	78
2761	Manifold business forms	68	65	70	73	79	78
277	Greeting cards	76	70	75	75	80	73
2771	Greeting cards	76	70	75	75	80	73
278	Blankbooks and bookbinding	73	69	73	72	74	74
2782	Blankbooks and looseleaf binders	74	74	77	74	73	72
2789	Bookbinding and related work	61	58	65	68	77	77
279	Printing trade services	72	73	75	76	81	81
2791	Typesetting	77	73	78	81	(S)	75
2796	Platemaking services	70	73	74	74	82	84
28	Chemicals and allied products	70	75	75	73	78	78
281	Industrial inorganic chemicals	76	81	82	82	83	78
2812	Alkalies and chlorine	82	88	82	86	96	96
2813	Industrial gases	84	84	86	90	69	63
2816	Inorganic pigments	90	95	93	90	87	88
2819	Industrial inorganic chemicals, n.e.c.	73	78	79	78	85	80

See footnotes at end of table.

Table 1a. **Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998—Con.**

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production rate					
		1998	1997	1996	1995	1994	1993
28	Chemicals and allied products—Con.						
282	Plastics materials and synthetics	80	89	86	86	87	85
2821	Plastics materials and resins	81	89	83	84	86	84
2822	Synthetic rubber	75	81	87	89	91	84
2823	Cellulosic manmade fibers	(D)	(D)	(D)	(D)	73	75
2824	Organic fibers, noncellulosic	81	92	92	89	91	88
283	Drugs	67	71	70	68	70	72
2833	Medicinals and botanicals	85	87	84	90	80	89
2834	Pharmaceutical preparations	64	69	67	63	67	70
2835	Diagnostic substances	65	76	72	74	73	70
2836	Biological products, except diagnostic	66	72	86	99	94	97
284	Soaps, cleaners, and toilet goods	60	66	67	63	78	75
2841	Soap and other detergents	58	66	58	57	72	70
2842	Polishes and sanitation goods	51	60	69	57	76	75
2843	Surface active agents	72	79	79	78	82	71
2844	Toilet preparations	63	67	72	68	82	78
285	Paints and allied products	59	66	69	68	69	67
2851	Paints and allied products	59	66	69	68	69	67
286	Industrial organic chemicals	80	79	85	84	89	90
2861	Gum and wood chemicals	87	90	90	81	73	65
2865	Cyclic crudes and intermediates	80	82	85	84	88	86
2869	Industrial organic chemicals, n.e.c.	80	78	84	84	89	91
287	Agricultural chemicals	77	87	91	87	88	84
2873	Nitrogenous fertilizers	95	92	96	97	93	90
2874	Phosphatic fertilizers	96	94	98	99	87	84
2875	Fertilizers, mixing only	52	50	71	70	77	77
2879	Agricultural chemicals, n.e.c.	74	90	90	83	88	83
289	Miscellaneous chemical products	70	71	73	72	82	83
2891	Adhesives and sealants	64	67	71	71	82	78
2892	Explosives	65	72	71	75	78	81
2893	Printing ink	69	66	72	64	77	79
2895	Carbon black	92	94	92	96	99	98
2899	Chemical preparations, n.e.c.	72	72	72	73	82	86
29	Petroleum and coal products	83	83	83	80	89	87
291	Petroleum refining	91	91	90	88	95	93
2911	Petroleum refining	91	91	90	88	95	93
295	Asphalt paving and roofing materials	51	55	57	53	70	70
2951	Asphalt paving mixtures and blocks	39	47	49	44	62	64
2952	Asphalt felts and coatings	71	68	73	70	80	78
299	Miscellaneous petroleum and coal products	70	69	66	65	69	71
2992	Lubricating oils and greases	67	66	63	61	66	68
2999	Petroleum and coal products, n.e.c.	83	87	83	85	89	90
30	Rubber and miscellaneous plastics products	75	75	79	78	85	83
301	Tires and inner tubes	90	90	92	92	94	92
3011	Tires and inner tubes	90	90	92	92	94	92
302	Rubber and plastics footwear	77	76	71	74	73	84
3021	Rubber and plastics footwear	77	76	71	74	73	84
305	Hose and belting and gaskets and packing	76	76	76	76	80	83
3052	Rubber and plastics hose and belting	77	79	76	78	87	80
3053	Gaskets, packing, and sealing devices	75	74	75	75	76	84
306	Fabricated rubber products, n.e.c.	69	74	76	74	76	76
3061	Mechanical rubber goods	67	80	77	73	63	69
3069	Fabricated rubber products, n.e.c.	73	69	75	75	89	83
308	Miscellaneous plastics products, n.e.c.	74	73	78	77	86	83
3081	Unsupported plastics film and sheet	76	78	84	83	88	90
3082	Unsupported plastics profile shapes	73	75	81	81	89	89
3083	Laminated plastics plate, sheet, and profile shapes	81	80	85	79	89	85
3084	Plastics pipe	78	82	88	86	88	89
3085	Plastics bottles	73	81	85	83	89	88
3086	Plastics foam products	76	71	72	73	79	78
3087	Custom compounding of purchased plastics resins	65	69	75	75	85	80
3088	Plastics plumbing fixtures	75	74	72	74	69	63
3089	Plastics products, n.e.c.	73	72	77	76	87	82
31	Leather and leather products	67	71	75	76	78	77
311	Leather tanning and finishing	72	73	78	75	83	78
3111	Leather tanning and finishing	72	73	78	75	83	78
313	Footwear cut stock	65	70	77	67	69	77
3131	Footwear cut stock	65	70	77	67	69	77
314	Footwear, except rubber	67	74	74	81	80	79
3142	House slippers	57	66	73	76	81	76
3143	Men's footwear, except athletic	66	74	70	79	76	78
3144	Women's footwear, except athletic	76	73	84	86	86	83
3149	Footwear, except rubber, n.e.c.	73	76	78	80	89	82
315	Leather gloves and mittens	48	68	72	74	87	88
3151	Leather gloves and mittens	48	68	72	74	87	88
316	Luggage	69	65	71	73	64	61
3161	Luggage	69	65	71	73	64	61
317	Handbags and personal leather goods	64	68	76	63	88	90
3171	Women's handbags and purses	61	63	79	72	89	(S)
3172	Personal leather goods, n.e.c.	68	73	73	57	88	91

See footnotes at end of table.

Table 1a. **Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998—Con.**

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production rate					
		1998	1997	1996	1995	1994	1993
31	Leather and leather products—Con.						
319	Leather goods, n.e.c.	56	67	75	76	77	77
3199	Leather goods, n.e.c.	56	67	75	76	77	77
32	Stone, clay, and glass products	76	78	78	78	81	78
321	Flat glass	87	91	87	86	99	98
3211	Flat glass	87	91	87	86	99	98
322	Glass and glassware, pressed or blown	88	90	87	91	93	90
3221	Glass containers	95	94	90	90	93	93
3229	Pressed and blown glass, n.e.c.	84	87	86	92	93	88
323	Products of purchased glass	67	74	77	77	84	81
3231	Products of purchased glass	67	74	77	77	84	81
324	Cement, hydraulic	94	92	86	86	97	91
3241	Cement, hydraulic	94	92	86	86	97	91
325	Structural clay products	77	72	78	75	87	83
3251	Brick and structural clay tile	94	92	87	83	89	83
3253	Ceramic wall and floor tile	77	75	83	77	95	95
3255	Clay refractories	54	49	61	63	80	75
3259	Structural clay products, n.e.c.	75	71	64	68	69	64
326	Pottery and related products	72	75	77	80	82	80
3261	Vitreous plumbing fixtures	89	82	86	83	97	92
3262	Vitreous china table and kitchenware	83	93	85	90	90	87
3263	Semivitreous table and kitchenware	(D)	76	83	86	86	83
3264	Porcelain electrical supplies	65	68	69	76	69	68
3269	Pottery products, n.e.c.	68	71	77	77	80	79
327	Concrete, gypsum, and plaster products	72	74	72	70	69	66
3271	Concrete block and brick	72	71	77	80	81	72
3272	Concrete products, n.e.c.	73	75	74	73	81	82
3273	Ready-mixed concrete	66	70	65	62	58	55
3274	Lime	71	84	81	81	89	81
3275	Gypsum products	96	95	96	94	95	91
328	Cut stone and stone products	68	73	76	77	80	79
3281	Cut stone and stone products	68	73	76	77	80	79
329	Miscellaneous nonmetallic mineral products	76	79	81	81	84	82
3291	Abrasive products	67	71	74	73	84	84
3292	Asbestos products	(X)	(X)	(X)	(X)	74	(D)
3295	Minerals, ground or treated	72	76	80	82	82	79
3296	Mineral wool	96	91	91	90	88	87
3297	Nonclay refractories	72	78	82	81	75	71
3299	Nonmetallic mineral products, n.e.c.	76	82	81	80	82	(D)
33	Primary metal industries	79	84	84	84	87	83
331	Blast furnace and basic steel products	78	86	85	85	90	86
3312	Blast furnaces and steel mills	79	89	87	88	92	87
3313	Electrometallurgical products	82	82	80	81	78	81
3315	Steel wire and related products	81	79	81	79	86	86
3316	Cold finishing of steel shapes	71	82	77	79	85	82
3317	Steel pipe and tubes	69	73	78	79	87	82
332	Iron and steel foundries	78	80	81	81	81	75
3321	Gray and ductile iron foundries	80	82	83	85	84	78
3322	Malleable iron foundries	83	86	84	82	88	83
3324	Steel investment foundries	74	73	75	72	72	66
3325	Steel foundries, n.e.c.	76	81	80	80	79	75
333	Primary nonferrous metals	83	89	87	87	88	84
3331	Primary copper	95	92	88	86	92	86
3334	Primary aluminum	85	87	88	88	85	84
3339	Primary nonferrous metals, n.e.c.	71	88	84	88	86	83
334	Secondary nonferrous metals	88	84	86	87	89	88
3341	Secondary nonferrous metals	88	84	86	87	89	88
335	Nonferrous rolling and drawing	81	85	85	84	85	83
3351	Copper rolling and drawing	88	91	92	91	91	86
3353	Aluminum sheet, plate, and foil	88	91	89	86	91	81
3354	Aluminum extruded products	82	85	83	83	84	76
3355	Aluminum rolling and drawing, n.e.c.	72	82	80	85	89	(D)
3356	Nonferrous rolling and drawing, n.e.c.	66	75	76	72	81	(D)
3357	Nonferrous wire drawing and insulating	82	84	85	86	82	89
336	Nonferrous foundries (castings)	73	77	78	78	82	80
3363	Aluminum die-castings	78	79	77	81	85	83
3364	Nonferrous die-castings, except aluminum	67	72	82	79	83	79
3365	Aluminum foundries	71	75	78	76	77	75
3366	Copper foundries	67	69	76	75	83	81
3369	Nonferrous foundries, n.e.c.	84	86	81	76	83	83
339	Miscellaneous primary metal products	79	80	79	77	82	81
3398	Metal heat treating	80	80	79	74	83	77
3399	Primary metal products, n.e.c.	77	80	79	81	81	86
34	Fabricated metal products	71	74	74	73	79	78
341	Metal cans and shipping containers	79	84	85	81	87	86
3411	Metal cans	82	86	87	82	89	88
3412	Metal barrels, drums, and pails	62	66	73	72	75	74
342	Cutlery, handtools, and hardware	71	75	77	76	85	83
3421	Cutlery	86	86	90	89	90	92
3423	Hand and edge tools, n.e.c.	69	71	72	74	81	76
3425	Saw blades and handsaws	70	77	81	75	86	84
3429	Hardware, n.e.c.	71	74	76	75	86	86

See footnotes at end of table.

Table 1a. **Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998—Con.**

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production rate					
		1998	1997	1996	1995	1994	1993
34	Fabricated metal products—Con.						
343	Plumbing and heating, except electric.....	67	72	71	70	80	77
3431	Metal sanitary ware.....	73	71	75	75	89	89
3432	Plumbing fixture fittings and trim.....	71	73	71	70	75	74
3433	Heating equipment, except electric.....	61	71	71	68	84	81
344	Fabricated structural metal products.....	68	72	73	71	75	75
3441	Fabricated structural metal.....	75	80	78	70	71	68
3442	Metal doors, sash, and trim.....	65	67	74	71	78	78
3443	Fabricated plate work (boiler shops).....	67	73	71	72	77	82
3444	Sheet metal work.....	63	66	69	70	76	74
3446	Architectural metal work.....	73	72	73	72	72	73
3448	Prefabricated metal buildings.....	71	77	75	77	79	78
3449	Miscellaneous metal work.....	73	75	76	74	71	69
345	Screw machine products, bolts, etc.....	74	75	73	74	82	80
3451	Screw machine products.....	70	72	69	70	80	79
3452	Bolts, nuts, rivets, and washers.....	78	78	77	79	84	81
346	Metal forgings and stampings.....	73	75	74	73	80	78
3462	Iron and steel forgings.....	73	83	78	70	73	73
3463	Nonferrous forgings.....	76	82	81	81	79	77
3465	Automotive stampings.....	80	81	73	75	87	88
3466	Crowns and closures.....	71	70	76	73	78	80
3469	Metal stampings, n.e.c.....	64	66	74	71	73	69
347	Metal services, n.e.c.....	69	73	73	72	80	77
3471	Plating and polishing.....	70	72	72	71	84	79
3479	Metal coating and allied services.....	69	75	74	74	76	74
348	Ordnance and accessories, n.e.c.....	71	70	61	61	69	67
3482	Small arms ammunition.....	58	66	67	68	58	52
3483	Ammunition, except for small arms, n.e.c.....	53	57	52	49	66	61
3484	Small arms.....	77	73	71	84	91	87
3489	Ordnance and accessories, n.e.c.....	90	86	59	57	67	76
349	Miscellaneous fabricated metal products.....	72	75	75	75	78	78
3491	Industrial valves.....	74	76	73	74	77	82
3492	Fluid power valves and hose fittings.....	73	78	77	77	81	78
3493	Steel springs, except wire.....	60	69	60	67	72	68
3494	Valves and pipe fittings, n.e.c.....	61	70	71	68	86	85
3495	Wire springs.....	74	78	80	80	84	84
3496	Miscellaneous fabricated wire products.....	71	68	72	72	83	82
3497	Metal foil and leaf.....	83	89	87	86	70	83
3498	Fabricated pipe and fittings.....	71	73	76	76	78	75
3499	Fabricated metal products, n.e.c.....	74	75	76	77	76	71
35	Industrial machinery and equipment	70	73	72	73	79	76
351	Engines and turbines.....	68	70	73	71	85	79
3511	Turbines and turbine generator sets.....	60	56	68	60	85	84
3519	Internal combustion engines, n.e.c.....	72	77	75	77	86	75
352	Farm and garden machinery.....	66	76	74	72	76	77
3523	Farm machinery and equipment.....	67	81	76	72	78	77
3524	Lawn and garden equipment.....	63	62	67	73	73	78
353	Construction and related machinery.....	73	76	76	74	79	74
3531	Construction machinery.....	76	79	81	75	81	74
3532	Mining machinery.....	66	71	76	76	63	62
3533	Oil and gas field machinery.....	72	75	71	66	77	78
3534	Elevators and moving stairways.....	81	75	71	69	73	72
3535	Conveyors and conveying equipment.....	70	73	74	74	84	78
3536	Hoists, cranes, and monorails.....	68	72	75	75	82	82
3537	Industrial trucks and tractors.....	68	75	72	76	75	73
354	Metalworking machinery.....	72	74	74	76	81	78
3541	Machine tools, metal cutting types.....	72	73	74	76	79	65
3542	Machine tools, metal forming types.....	76	86	76	80	76	77
3543	Industrial patterns.....	70	81	74	79	78	71
3544	Special dies, tools, jigs, and fixtures.....	71	72	74	75	82	85
3545	Machine tool accessories.....	74	78	76	77	82	78
3546	Power-driven handtools.....	79	80	77	80	76	69
3547	Rolling mill machinery.....	77	83	87	91	69	85
3548	Welding apparatus.....	78	78	79	74	86	86
3549	Metalworking machinery, n.e.c.....	65	75	80	74	79	72
355	Special industry machinery.....	67	70	71	73	79	75
3552	Textile machinery.....	60	63	67	64	73	79
3553	Woodworking machinery.....	66	72	67	69	69	69
3554	Paper industries machinery.....	73	79	87	92	89	82
3555	Printing trades machinery.....	70	72	74	74	87	79
3556	Food products machinery.....	68	72	71	71	80	81
3559	Special industry machinery, n.e.c.....	67	69	69	72	78	72
356	General industrial machinery.....	68	73	73	74	79	76
3561	Pumps and pumping equipment.....	68	73	70	68	77	77
3562	Ball and roller bearings.....	78	83	81	83	91	80
3563	Air and gas compressors.....	65	73	75	72	82	75
3564	Blowers and fans.....	61	63	65	66	73	75
3565	Packaging machinery.....	71	73	77	81	83	84
3566	Speed changers, drives, and gears.....	68	77	76	82	77	76
3567	Industrial furnaces and ovens.....	65	73	71	73	68	64
3568	Power transmission equipment, n.e.c.....	71	77	76	72	81	78
3569	General industrial machinery, n.e.c.....	64	70	73	73	73	72
357	Computer and office equipment.....	71	75	73	77	77	77
3571	Electronic computers.....	68	75	69	74	73	73
3572	Computer storage devices.....	83	88	96	85	86	94
3575	Computer terminals.....	65	77	85	88	(S)	78
3577	Computer peripheral equipment, n.e.c.....	79	72	69	82	82	77
3578	Calculating and accounting equipment.....	72	71	82	78	78	74
3579	Office machines, n.e.c.....	56	65	76	79	85	88

See footnotes at end of table.

Table 1a. **Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998—Con.**

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production rate					
		1998	1997	1996	1995	1994	1993
35	Industrial machinery and equipment—Con.						
358	Refrigeration and service machinery	68	68	67	68	79	76
3581	Automatic vending machines	74	65	67	70	80	73
3582	Commercial laundry equipment	70	83	77	82	89	93
3585	Refrigeration and heating equipment	67	68	65	67	79	77
3586	Measuring and dispensing pumps	70	73	74	79	76	73
3589	Service industry machinery, n.e.c.	69	67	68	69	78	72
359	Industrial machinery, n.e.c.	71	75	72	72	77	77
3592	Carburetors, pistons, rings, and valves	87	82	83	79	93	82
3593	Fluid power cylinders and actuators	66	72	71	68	67	64
3594	Fluid power pumps and motors	72	79	78	76	84	79
3596	Scales and balances, except laboratory	60	62	68	71	85	83
3599	Industrial machinery, n.e.c.	71	75	72	71	76	77
36	Electronic and other electric equipment	71	75	75	77	81	79
361	Electric distribution equipment	75	78	78	76	72	70
3612	Transformers, except electronic	73	78	74	73	77	76
3613	Switchgear and switchboard apparatus	77	78	80	79	69	67
362	Electrical industrial apparatus	67	73	76	76	84	80
3621	Motors and generators	68	74	80	80	82	79
3624	Carbon and graphite products	76	85	85	87	89	86
3625	Relays and industrial controls	65	71	71	71	84	79
3629	Electrical industrial apparatus, n.e.c.	66	70	76	74	85	83
363	Household appliances	72	73	76	79	82	84
3631	Household cooking equipment	65	61	66	66	72	72
3632	Household refrigerators and freezers	80	73	69	79	80	82
3633	Household laundry equipment	75	80	81	83	89	(D)
3634	Electric housewares and fans	60	69	74	74	88	88
3635	Household vacuum cleaners	76	77	83	82	70	75
3639	Household appliances, n.e.c.	88	85	93	90	92	(D)
364	Electric lighting and wiring equipment	71	73	73	73	81	80
3641	Electric lamp bulbs and tubes	70	70	70	71	85	85
3643	Current-carrying wiring devices	73	69	74	70	83	83
3644	Noncurrent-carrying wiring devices	71	78	74	71	80	79
3645	Residential lighting fixtures	67	68	74	74	74	73
3646	Commercial lighting fixtures	65	73	71	73	80	76
3647	Vehicular lighting equipment	74	80	78	82	81	81
3648	Lighting equipment, n.e.c.	78	77	74	73	78	78
365	Household audio and video equipment	72	70	73	74	85	86
3651	Household audio and video equipment	67	65	69	69	85	86
3652	Prerecorded records and tapes	83	79	79	84	84	86
366	Communications equipment	70	70	70	72	75	74
3661	Telephone and telegraph apparatus	79	71	71	75	79	80
3663	Radio and television communications equipment	63	70	68	71	70	67
3669	Communications equipment, n.e.c.	65	69	73	66	84	81
367	Electronic components and accessories	72	79	78	81	84	81
3671	Electron tubes	75	79	86	84	69	69
3672	Printed circuit boards	73	76	77	81	83	78
3674	Semiconductors and related devices	72	83	80	84	90	87
3675	Electronic capacitors	73	79	82	86	88	85
3676	Electronic resistors	58	70	61	65	60	60
3677	Electronic coils and transformers	65	68	67	71	76	73
3678	Electronic connectors	68	67	70	69	68	62
3679	Electronic components, n.e.c.	72	69	74	73	79	77
369	Miscellaneous electrical equipment and supplies	71	76	78	78	80	76
3691	Storage batteries	79	80	78	86	80	77
3692	Primary batteries, dry and wet	83	83	79	79	86	83
3694	Engine electrical equipment	72	76	78	77	92	91
3695	Magnetic and optical recording media	78	79	87	87	91	89
3699	Electrical equipment and supplies, n.e.c.	61	68	71	70	61	54
37	Transportation equipment	75	75	72	72	73	72
371	Motor vehicles and equipment	78	79	77	81	82	79
3711	Motor vehicles and car bodies	81	82	77	85	82	80
3713	Truck and bus bodies	63	65	69	73	70	66
3714	Motor vehicle parts and accessories	76	77	79	79	84	80
3715	Truck trailers	74	73	75	77	89	81
3716	Motor homes	67	60	54	52	59	59
372	Aircraft and parts	71	70	65	58	60	63
3721	Aircraft	68	67	61	54	55	59
3724	Aircraft engines and engine parts	73	74	80	70	66	66
3728	Aircraft parts and equipment, n.e.c.	73	73	67	59	67	70
373	Ship and boat building and repairing	63	67	70	69	67	69
3731	Ship building and repairing	62	66	72	73	67	71
3732	Boat building and repairing	63	68	65	62	66	64
374	Railroad equipment	92	86	80	81	82	82
3743	Railroad equipment	92	86	80	81	82	82
375	Motorcycles, bicycles, and parts	90	86	89	88	88	88
3751	Motorcycles, bicycles, and parts	90	86	89	88	88	88
376	Guided missiles, space vehicles, parts	64	72	65	66	66	62
3761	Guided missiles and space vehicles	68	78	69	74	71	67
3764	Space propulsion units and parts	52	59	53	47	51	45
3769	Space vehicle equipment, n.e.c.	64	59	60	59	65	67
379	Miscellaneous transportation equipment	64	60	62	61	70	71
3792	Travel trailers and campers	65	60	62	63	71	72
3795	Tanks and tank components	45	47	50	46	53	56
3799	Transportation equipment, n.e.c.	69	69	72	74	91	87

See footnotes at end of table.

Table 1a. Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998—Con.

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production rate					
		1998	1997	1996	1995	1994	1993
38	Instruments and related products	69	72	71	71	71	70
381	Search and navigation equipment	67	69	58	60	56	56
3812	Search and navigation equipment	67	69	58	60	56	56
382	Measuring and controlling devices	63	67	70	71	75	73
3821	Laboratory apparatus and furniture	64	69	81	83	75	76
3822	Environmental controls	66	68	73	72	70	66
3823	Process control instruments	61	63	64	66	68	66
3824	Fluid meters and counting devices	75	81	81	73	92	86
3825	Instruments to measure electricity	59	66	72	73	74	73
3826	Analytical instruments	64	67	68	71	83	81
3827	Optical instruments and lenses	62	75	72	72	79	77
3829	Measuring and controlling devices, n.e.c.	65	67	67	65	76	70
384	Medical instruments and supplies	72	72	77	75	75	75
3841	Surgical and medical instruments	69	69	73	71	65	64
3842	Surgical appliances and supplies	71	72	76	77	87	85
3843	Dental equipment and supplies	73	76	76	74	78	78
3844	X-ray apparatus and tubes	77	73	81	74	81	80
3845	Electromedical equipment	80	80	83	81	78	79
385	Ophthalmic goods	87	85	78	79	84	83
3851	Ophthalmic goods	87	85	78	79	84	83
386	Photographic equipment and supplies	79	83	82	83	92	85
3861	Photographic equipment and supplies	79	83	82	83	92	85
387	Watches, clocks, watchcases, and parts	52	70	67	65	67	61
3873	Watches, clocks, watchcases, and parts	52	70	67	65	67	61
39	Miscellaneous manufacturing industries	68	73	74	76	75	75
391	Jewelry, silverware, and plated ware	74	79	83	81	83	81
3911	Jewelry, precious metal	75	78	82	80	89	86
3914	Silverware and plated ware	66	82	86	90	78	83
3915	Jewelers' materials and lapidary work	76	79	79	75	63	65
393	Musical instruments	67	73	79	80	86	78
3931	Musical instruments	67	73	79	80	86	78
394	Toys and sporting goods	61	69	68	72	72	72
3942	Dolls and stuffed toys	47	58	63	69	56	71
3944	Games, toys, and children's vehicles	62	71	66	70	70	73
3949	Sporting and athletic goods, n.e.c.	61	68	69	73	73	72
395	Pens, pencils, office, and art supplies	73	77	79	81	73	70
3951	Pens and mechanical pencils	67	71	78	79	60	57
3952	Lead pencils and art goods	78	83	85	87	92	90
3953	Marking devices	85	82	80	81	85	86
3955	Carbon paper and inked ribbons	71	76	72	76	64	63
396	Costume jewelry and notions	67	73	72	74	74	75
3961	Costume jewelry	64	72	71	75	70	74
3965	Fasteners, buttons, needles, and pins	79	76	75	72	83	76
399	Miscellaneous manufactures	72	74	76	76	75	75
3991	Brooms and brushes	74	67	68	71	61	59
3993	Signs and advertising specialties	76	75	74	72	77	75
3995	Burial caskets	69	81	85	87	90	90
3996	Hard surface floor coverings, n.e.c.	68	71	76	76	88	85
3999	Manufacturing industries, n.e.c.	68	75	78	80	73	76

¹SIC 2067, Chewing Gum is combined with SIC 2064 as of 1995.

Note: Some data are revised to include additional information. See Introduction for a discussion of the revision.

Table 1b. **National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998**

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	National emergency rate					
		1998	1997	1996	1995	1994	1993
	All industries	53	56	57	57	63	61
	Durable goods industries	52	53	54	54	59	57
	Nondurable goods industries	56	59	60	60	67	67
	Advanced processing industries	51	54	55	54	60	59
	Primary processing industries	59	60	61	61	69	67
20	Food and kindred products	57	58	60	61	66	66
201	Meat products	60	65	63	64	74	74
2011	Meat packing plants	51	59	62	66	76	74
2013	Sausages and other prepared meats	58	69	58	59	71	74
2015	Poultry slaughtering and processing	70	69	67	65	76	75
202	Dairy products	67	71	69	68	74	74
2021	Creamery butter	84	87	68	65	63	68
2022	Cheese, natural and processed	88	86	84	86	80	81
2023	Dry, condensed, and evaporated dairy products	58	62	67	68	71	67
2024	Ice cream and frozen desserts	59	60	59	57	65	66
2026	Fluid milk	67	72	68	66	78	78
203	Preserved fruits and vegetables	61	60	55	60	63	65
2032	Canned specialties	75	71	71	69	57	64
2033	Canned fruits and vegetables	46	47	36	48	57	58
2034	Dehydrated fruits, vegetables, and soups	59	54	55	52	61	57
2035	Pickles, sauces, and salad dressings	55	57	55	55	61	60
2037	Frozen fruits and vegetables	76	74	82	82	86	86
2038	Frozen specialties, n.e.c.	70	67	69	66	68	73
204	Grain mill products	66	66	69	67	72	71
2041	Flour and other grain mill products	78	67	85	84	85	82
2043	Cereal breakfast foods	71	68	80	76	72	68
2044	Rice milling	78	52	80	75	93	93
2045	Prepared flour mixes and doughs	52	56	55	53	70	72
2046	Wet corn milling	83	92	67	66	96	96
2047	Dog and cat food	74	76	76	75	79	83
2048	Prepared feeds, n.e.c.	51	54	55	53	54	53
205	Bakery products	54	55	62	64	67	69
2051	Bread, cake, and related products	53	53	69	70	65	70
2052	Cookies and crackers	56	58	51	56	70	67
2053	Frozen bakery products, except bread	55	63	61	64	68	70
206	Sugar and confectionery products	63	60	62	63	64	65
2061	Raw cane sugar	86	95	95	96	94	95
2062	Cane sugar refining	46	59	78	66	71	(D)
2063	Beet sugar	100	100	92	93	96	95
2064	Candy and other confectionery products	58	53	56	60	59	59
2066	Chocolate and cocoa products	71	67	72	69	67	78
2067	Chewing gum ¹	(X)	(X)	(X)	(X)	(X)	(X)
2068	Salted and roasted nuts and seeds	61	63	62	53	60	(D)
207	Fats and oils	65	72	66	72	74	70
2074	Cottonseed oil mills	79	92	69	85	95	95
2075	Soybean oil mills	88	96	94	92	86	83
2076	Vegetable oil mills, n.e.c.	74	74	69	80	58	51
2077	Animal and marine fats and oils	53	51	52	55	65	72
2079	Edible fats and oils, n.e.c.	56	72	59	61	58	59
208	Beverages	53	50	55	56	59	58
2082	Malt beverages	82	67	74	73	74	72
2083	Malt	92	88	97	97	99	91
2084	Wines, brandy, and brandy spirits	39	63	61	64	44	45
2085	Distilled and blended liquors	37	43	38	38	38	39
2086	Bottled and canned soft drinks	47	47	53	55	62	60
2087	Flavoring extracts and syrups, n.e.c.	51	36	43	44	53	51
209	Miscellaneous food and kindred products	43	53	53	53	59	57
2091	Canned and cured fish and seafoods	49	54	59	70	61	68
2092	Fresh or frozen prepared fish	27	42	40	41	44	46
2095	Roasted coffee	58	55	59	60	61	58
2096	Potato chips and similar snacks	41	57	61	61	68	61
2097	Manufactured ice	20	16	31	31	(S)	(S)
2098	Macaroni and spaghetti	24	85	77	76	79	84
2099	Food preparations, n.e.c.	54	53	50	49	57	55
21	Tobacco products	64	52	70	72	78	75
211	Cigarettes	64	52	72	74	81	78
2111	Cigarettes	64	52	72	74	81	78
212	Cigars	53	65	57	59	47	40
2121	Cigars	53	65	57	59	47	40
213	Chewing and smoking tobacco	(D)	(D)	(D)	(D)	60	58
2131	Chewing and smoking tobacco	(D)	(D)	(D)	(D)	60	58
214	Tobacco stemming and redrying	70	42	74	67	57	54
2141	Tobacco stemming and redrying	70	42	74	67	57	54
22	Textile mill products	60	69	67	69	79	77
221	Broadwoven fabric mills, cotton	79	85	83	83	97	96
2211	Broadwoven fabric mills, cotton	79	85	83	83	97	96
222	Broadwoven fabric mills, manmade fiber and silk	80	84	81	84	88	87
2221	Broadwoven fabric mills, manmade fiber and silk	80	84	81	84	88	87
223	Broadwoven fabric mills, wool	47	66	58	59	77	76
2231	Broadwoven fabric mills, wool	47	66	58	59	77	76
224	Narrow fabric mills	48	47	56	60	71	75
2241	Narrow fabric mills	48	47	56	60	71	75

See footnotes at end of table.

Table 1b. **National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998—Con.**

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	National emergency rate					
		1998	1997	1996	1995	1994	1993
22	Textile mill products—Con.						
225	Knitting mills	47	61	58	61	77	72
2251	Women's hosiery, except socks	55	65	73	74	(S)	(S)
2252	Hosiery, n.e.c.	69	82	63	67	74	72
2253	Knit outerwear mills	42	69	55	57	79	75
2254	Knit underwear mills	46	52	45	51	63	46
2257	Weft knit fabric mills	41	42	53	57	82	(S)
2258	Lace and warp knit fabric mills	50	70	70	70	77	70
2259	Knitting mills, n.e.c.	42	(D)	64	71	85	84
226	Textile finishing, except wool	63	75	75	73	83	82
2261	Finishing plants, cotton	71	76	79	77	83	83
2262	Finishing plants, manmade	56	74	74	71	82	81
2269	Finishing plants, n.e.c.	70	76	76	72	86	85
227	Carpets and rugs	64	76	68	71	72	74
2273	Carpets and rugs	64	76	68	71	72	74
228	Yarn and thread mills	71	77	71	69	88	88
2281	Yarn spinning mills	69	77	67	64	91	89
2282	Throwing and winding mills	78	75	80	81	(S)	(S)
2284	Thread mills	71	85	81	83	79	79
229	Miscellaneous textile goods	59	61	63	67	70	68
2295	Coated fabrics, not rubberized	60	65	54	66	50	46
2296	Tire cord and fabrics	63	71	89	85	83	82
2297	Nonwoven fabrics	63	61	61	65	82	81
2298	Cordage and twine	55	58	51	52	65	65
2299	Textile goods, n.e.c.	52	58	77	74	76	75
23	Apparel and other textile products	32	38	45	44	53	55
231	Men's and boys' suits and coats	34	43	42	40	54	54
2311	Men's and boys' suits and coats	34	43	42	40	54	54
232	Men's and boys' furnishings	27	26	38	40	43	45
2321	Men's and boys' shirts	35	40	35	33	40	41
2322	Men's and boys' underwear and nightwear	62	43	40	52	35	61
2323	Men's and boys' neckwear	36	34	42	40	55	61
2325	Men's and boys' trousers and slacks	21	18	42	50	38	41
2326	Men's and boys' work clothing	34	35	34	34	49	43
2329	Men's and boys' clothing, n.e.c.	27	31	36	36	63	68
233	Women's and misses' outerwear	25	47	52	50	65	63
2331	Women's, misses', and juniors' blouses and shirts	44	68	64	72	94	95
2335	Women's, misses', and juniors' dresses	19	48	68	71	68	80
2337	Women's, misses', and juniors' suits and coats	31	46	47	38	(S)	(S)
2339	Women's, misses', and juniors' outerwear, n.e.c.	23	42	42	40	59	53
234	Women's and children's undergarments	40	49	53	49	74	74
2341	Women's and children's underwear	33	45	46	48	75	77
2342	Brassieres, girdles, and allied garments	54	57	68	50	72	71
235	Hats, caps, and millinery	40	46	40	40	58	48
2353	Hats, caps, and millinery	40	46	40	40	58	48
236	Girls' and children's outerwear	29	41	39	43	57	62
2361	Girls' and children's dresses and blouses	32	39	34	35	65	64
2369	Girls' and children's outerwear, n.e.c.	27	42	42	50	54	61
237	Fur goods	46	68	62	60	(S)	(S)
2371	Fur goods	46	68	62	60	(S)	(S)
238	Miscellaneous apparel and accessories	31	28	33	35	49	52
2381	Fabric dress and work gloves	48	40	39	45	38	38
2384	Robes and dressing gowns	19	28	26	27	(S)	(S)
2385	Waterproof outerwear	42	33	40	41	(S)	64
2386	Leather and sheep-lined clothing	44	76	70	88	68	76
2387	Apparel belts	30	20	27	30	48	55
2389	Apparel and accessories, n.e.c.	26	31	36	33	63	54
239	Miscellaneous fabricated textile products	50	47	48	42	52	53
2391	Curtains and draperies	35	28	31	29	55	58
2392	Housefurnishings, n.e.c.	59	49	53	47	51	54
2393	Textile bags	40	36	38	34	43	49
2394	Canvas and related products	42	38	37	42	46	44
2395	Pleating and stitching	51	42	46	40	(S)	(S)
2396	Automotive and apparel trimmings	49	49	52	46	57	58
2397	Schiffli machine embroideries	51	42	74	82	80	87
2399	Fabricated textile products, n.e.c.	52	58	46	39	49	46
24	Lumber and wood products	51	47	52	52	53	54
241	Logging	87	59	80	75	(S)	(S)
2411	Logging	87	59	80	75	(S)	(S)
242	Sawmills and planing mills	48	46	48	46	43	44
2421	Sawmills and planing mills, general	49	49	49	47	42	43
2426	Hardwood dimension and flooring mills	44	36	41	42	49	51
2429	Special product sawmills, n.e.c.	25	25	39	41	54	51
243	Millwork, plywood, and structural members	53	47	53	53	54	55
2431	Millwork	48	43	53	50	49	52
2434	Wood kitchen cabinets	51	43	43	43	45	42
2435	Hardwood veneer and plywood	51	46	67	67	62	57
2436	Softwood veneer and plywood	84	78	76	85	94	92
2439	Structural wood members, n.e.c.	52	49	52	49	57	56
244	Wood containers	45	43	42	42	56	53
2441	Nailed wood boxes and shook	33	46	34	36	41	32
2448	Wood pallets and skids	52	45	44	43	61	61
2449	Wood containers, n.e.c.	29	32	44	48	46	41

See footnotes at end of table.

Table 1b. **National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998—Con.**

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	National emergency rate					
		1998	1997	1996	1995	1994	1993
24	Lumber and wood products—Con.						
245	Wood buildings and mobile homes	35	36	38	42	44	44
2451	Mobile homes	34	36	35	41	42	43
2452	Prefabricated wood buildings	40	39	50	44	47	47
249	Miscellaneous wood products	52	52	59	60	71	68
2491	Wood preserving	44	44	41	43	58	68
2493	Reconstituted wood products	79	78	79	81	86	85
2499	Wood products, n.e.c.	41	41	53	51	61	56
25	Furniture and fixtures	45	42	47	46	52	52
251	Household furniture	39	36	45	43	55	52
2511	Wood household furniture	39	32	47	43	60	57
2512	Upholstered household furniture	38	37	43	46	52	52
2514	Metal household furniture	41	48	51	44	56	49
2515	Mattresses and bedsprings	40	38	37	37	46	44
2517	Wood television and radio cabinets	39	42	46	58	39	38
2519	Household furniture, n.e.c.	42	57	68	71	71	70
252	Office furniture	53	53	53	53	42	45
2521	Wood office furniture	55	44	47	47	29	33
2522	Office furniture, except wood	53	56	55	55	49	51
253	Public building and related furniture	52	53	55	54	67	64
2531	Public building and related furniture	52	53	55	54	67	64
254	Partitions and fixtures	50	45	45	45	57	56
2541	Wood partitions and fixtures	45	38	38	41	50	52
2542	Partitions and fixtures, except wood	55	53	53	51	66	61
259	Miscellaneous furniture and fixtures	46	44	44	46	50	49
2591	Drapery hardware and blinds and shades	50	50	57	52	42	40
2599	Furniture and fixtures, n.e.c.	45	42	40	43	58	56
26	Paper and allied products	74	74	74	74	78	77
261	Pulp mills	88	92	92	90	96	92
2611	Pulp mills	88	92	92	90	96	92
262	Paper mills	91	94	89	91	93	95
2621	Paper mills	91	94	89	91	93	95
263	Paperboard mills	85	95	93	89	97	95
2631	Paperboard mills	85	95	93	89	97	95
265	Paperboard containers and boxes	63	61	59	60	66	64
2652	Setup paperboard boxes	44	43	37	38	42	43
2653	Corrugated and solid fiber boxes	68	62	59	64	71	67
2655	Fiber cans, drums, and similar products	49	56	56	54	44	45
2656	Sanitary food containers	61	64	59	60	65	64
2657	Folding paperboard boxes	61	63	61	58	72	72
267	Miscellaneous converted paper products	68	66	69	68	72	71
2671	Paper coated and laminated, packaging	74	69	69	66	74	74
2672	Paper coated and laminated, n.e.c.	70	77	84	76	65	62
2673	Bags plastics, laminated, and coated	77	70	70	72	65	63
2674	Bags uncoated paper and multiwall	72	67	62	67	78	76
2675	Die-cut paper and board	45	47	54	55	34	36
2676	Sanitary paper products	77	78	76	79	86	85
2677	Envelopes	60	61	61	55	78	79
2678	Stationery products	40	43	45	42	70	66
2679	Converted paper products, n.e.c.	46	45	57	54	79	78
27	Printing and publishing	51	54	54	53	66	68
271	Newspapers	40	52	48	50	62	64
2711	Newspapers	40	52	48	50	62	64
272	Periodicals	64	58	55	45	(S)	(S)
2721	Periodicals	64	58	55	45	(S)	(S)
273	Books	79	61	68	67	76	71
2731	Book publishing	81	58	68	66	(S)	(S)
2732	Book printing	68	74	71	72	81	81
274	Miscellaneous publishing	41	36	38	37	(S)	(S)
2741	Miscellaneous publishing	41	36	38	37	(S)	(S)
275	Commercial printing	57	57	56	59	64	64
2752	Commercial printing, lithographic	57	57	56	59	67	68
2754	Commercial printing, gravure	69	82	79	86	(S)	(S)
2759	Commercial printing, n.e.c.	57	53	55	54	52	49
276	Manifold business forms	51	52	56	59	65	66
2761	Manifold business forms	51	52	56	59	65	66
277	Greeting cards	25	64	69	68	62	56
2771	Greeting cards	25	64	69	68	62	56
278	Blankbooks and bookbinding	52	55	58	56	55	53
2782	Blankbooks and looseleaf binders	56	61	62	57	53	50
2789	Bookbinding and related work	43	43	50	53	60	59
279	Printing trade services	59	54	54	56	62	62
2791	Typesetting	62	58	56	62	(S)	50
2796	Platemaking services	57	52	53	53	68	70
28	Chemicals and allied products	56	63	62	60	66	65
281	Industrial inorganic chemicals	71	76	77	78	62	55
2812	Alkalies and chlorine	78	87	83	83	96	96
2813	Industrial gases	79	78	78	88	68	61
2816	Inorganic pigments	89	94	90	89	80	80
2819	Industrial inorganic chemicals, n.e.c.	67	72	74	74	57	49

See footnotes at end of table.

Table 1b. **National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998—Con.**

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	National emergency rate					
		1998	1997	1996	1995	1994	1993
28	Chemicals and allied products—Con.						
282	Plastics materials and synthetics	73	83	78	78	84	80
2821	Plastics materials and resins	74	82	76	76	81	77
2822	Synthetic rubber	66	71	71	71	91	82
2823	Cellulosic manmade fibers	(D)	(D)	(D)	(D)	73	74
2824	Organic fibers, noncellulosic	76	89	82	86	90	88
283	Drugs	49	56	53	51	58	63
2833	Medicinals and botanicals	65	77	82	89	80	88
2834	Pharmaceutical preparations	46	54	50	47	55	60
2835	Diagnostic substances	53	57	48	48	59	56
2836	Biological products, except diagnostic	54	61	85	99	90	91
284	Soaps, cleaners, and toilet goods	48	54	55	51	56	54
2841	Soap and other detergents	46	53	49	48	52	51
2842	Polishes and sanitation goods	41	46	60	45	43	42
2843	Surface active agents	60	63	61	59	54	42
2844	Toilet preparations	51	57	58	55	68	64
285	Paints and allied products	46	55	49	48	57	58
2851	Paints and allied products	46	55	49	48	57	58
286	Industrial organic chemicals	75	75	80	80	86	88
2861	Gum and wood chemicals	84	90	90	81	72	64
2865	Cyclic crudes and intermediates	74	77	71	69	86	84
2869	Industrial organic chemicals, n.e.c.	75	74	82	82	87	89
287	Agricultural chemicals	67	74	77	73	78	70
2873	Nitrogenous fertilizers	89	92	96	97	92	87
2874	Phosphatic fertilizers	96	93	97	97	98	83
2875	Fertilizers, mixing only	30	29	41	40	61	60
2879	Agricultural chemicals, n.e.c.	68	77	76	70	73	64
289	Miscellaneous chemical products	48	52	55	56	65	65
2891	Adhesives and sealants	39	49	54	54	65	60
2892	Explosives	43	40	49	51	70	75
2893	Printing ink	34	44	45	42	50	52
2895	Carbon black	87	93	92	93	96	94
2899	Chemical preparations, n.e.c.	61	56	58	60	67	69
29	Petroleum and coal products	69	70	73	70	77	76
291	Petroleum refining	86	89	88	86	92	90
2911	Petroleum refining	86	89	88	86	92	90
295	Asphalt paving and roofing materials	29	29	39	35	48	49
2951	Asphalt paving mixtures and blocks	19	21	29	26	37	39
2952	Asphalt felts and coatings	64	56	64	61	69	65
299	Miscellaneous petroleum and coal products	52	52	51	50	43	47
2992	Lubricating oils and greases	47	48	47	46	39	42
2999	Petroleum and coal products, n.e.c.	77	82	79	81	82	82
30	Rubber and miscellaneous plastics products	60	58	59	58	71	69
301	Tires and inner tubes	83	83	83	83	87	85
3011	Tires and inner tubes	83	83	83	83	87	85
302	Rubber and plastics footwear	37	39	62	60	60	66
3021	Rubber and plastics footwear	37	39	62	60	60	66
305	Hose and belting and gaskets and packing	62	63	65	65	68	72
3052	Rubber and plastics hose and belting	67	66	65	67	80	75
3053	Gaskets, packing, and sealing devices	60	61	65	64	63	71
306	Fabricated rubber products, n.e.c.	59	61	58	56	68	65
3061	Mechanical rubber goods	59	71	60	55	58	57
3069	Fabricated rubber products, n.e.c.	60	54	56	57	78	73
308	Miscellaneous plastics products, n.e.c.	58	55	56	56	70	68
3081	Unsupported plastics film and sheet	60	66	74	74	79	81
3082	Unsupported plastics profile shapes	53	47	67	69	80	77
3083	Laminated plastics plate, sheet, and profile shapes	63	61	72	67	78	74
3084	Plastics pipe	49	73	79	77	77	78
3085	Plastics bottles	72	70	79	77	69	69
3086	Plastics foam products	54	62	59	61	51	51
3087	Custom compounding of purchased plastics resins	57	50	67	68	74	68
3088	Plastics plumbing fixtures	21	45	55	64	38	40
3089	Plastics products, n.e.c.	62	53	50	50	73	70
31	Leather and leather products	36	39	44	42	57	55
311	Leather tanning and finishing	53	55	52	50	68	63
3111	Leather tanning and finishing	53	55	52	50	68	63
313	Footwear cut stock	43	40	51	33	31	34
3131	Footwear cut stock	43	40	51	33	31	34
314	Footwear, except rubber	31	36	37	37	55	54
3142	House slippers	25	26	52	52	54	54
3143	Men's footwear, except athletic	33	34	35	35	56	56
3144	Women's footwear, except athletic	30	42	43	41	53	54
3149	Footwear, except rubber, n.e.c.	30	39	39	40	55	44
315	Leather gloves and mittens	22	28	34	36	50	49
3151	Leather gloves and mittens	22	28	34	36	50	49
316	Luggage	34	32	50	52	51	47
3161	Luggage	34	32	50	52	51	47
317	Handbags and personal leather goods	34	36	53	46	77	74
3171	Women's handbags and purses	29	25	54	47	75	(S)
3172	Personal leather goods, n.e.c.	38	57	52	46	78	76

See footnotes at end of table.

Table 1b. **National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998—Con.**

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	National emergency rate					
		1998	1997	1996	1995	1994	1993
31	Leather and leather products—Con.						
319	Leather goods, n.e.c.	35	34	39	39	50	51
3199	Leather goods, n.e.c.	35	34	39	39	50	51
32	Stone, clay, and glass products	48	51	58	56	66	65
321	Flat glass	83	84	83	82	95	95
3211	Flat glass	83	84	83	82	95	95
322	Glass and glassware, pressed or blown	86	88	86	89	89	87
3221	Glass containers	91	91	87	85	88	90
3229	Pressed and blown glass, n.e.c.	83	85	85	92	90	84
323	Products of purchased glass	57	57	59	60	78	76
3231	Products of purchased glass	57	57	59	60	78	76
324	Cement, hydraulic	91	86	83	83	91	86
3241	Cement, hydraulic	91	86	83	83	91	86
325	Structural clay products	68	59	68	66	78	76
3251	Brick and structural clay tile	92	82	84	80	84	79
3253	Ceramic wall and floor tile	71	63	78	71	91	90
3255	Clay refractories	39	45	44	46	66	63
3259	Structural clay products, n.e.c.	71	41	55	61	48	44
326	Pottery and related products	62	61	66	69	67	66
3261	Vitreous plumbing fixtures	89	82	86	83	79	74
3262	Vitreous china table and kitchenware	64	59	74	77	61	59
3263	Semivitreous table and kitchenware	(D)	64	67	84	50	50
3264	Porcelain electrical supplies	57	54	57	62	65	64
3269	Pottery products, n.e.c.	50	56	61	63	62	64
327	Concrete, gypsum, and plaster products	30	35	43	41	51	51
3271	Concrete block and brick	60	45	65	67	65	57
3272	Concrete products, n.e.c.	47	53	46	44	65	68
3273	Ready-mixed concrete	19	23	32	32	39	40
3274	Lime	69	82	79	78	73	66
3275	Gypsum products	91	92	88	86	95	91
328	Cut stone and stone products	54	55	46	41	60	64
3281	Cut stone and stone products	54	55	46	41	60	64
329	Miscellaneous nonmetallic mineral products	64	65	70	67	66	62
3291	Abrasive products	55	57	65	60	71	70
3292	Asbestos products	(X)	(X)	(X)	(X)	74	(D)
3295	Minerals, ground or treated	65	59	66	68	68	65
3296	Mineral wool	91	88	87	86	67	61
3297	Nonclay refractories	54	62	66	63	53	48
3299	Nonmetallic mineral products, n.e.c.	54	54	54	52	59	(D)
33	Primary metal industries	69	75	74	74	78	75
331	Blast furnace and basic steel products	73	82	80	80	85	82
3312	Blast furnaces and steel mills	76	88	85	86	89	85
3313	Electrometallurgical products	70	68	67	68	69	72
3315	Steel wire and related products	70	70	72	70	80	76
3316	Cold finishing of steel shapes	67	76	69	71	80	80
3317	Steel pipe and tubes	56	60	61	63	68	67
332	Iron and steel foundries	60	62	63	64	70	66
3321	Gray and ductile iron foundries	61	64	63	65	72	69
3322	Malleable iron foundries	59	60	58	57	84	80
3324	Steel investment foundries	55	48	62	60	64	58
3325	Steel foundries, n.e.c.	63	69	65	64	65	60
333	Primary nonferrous metals	79	86	81	84	82	76
3331	Primary copper	92	92	87	85	89	83
3334	Primary aluminum	85	87	88	87	85	84
3339	Primary nonferrous metals, n.e.c.	63	80	66	75	65	62
334	Secondary nonferrous metals	79	74	76	75	83	81
3341	Secondary nonferrous metals	79	74	76	75	83	81
335	Nonferrous rolling and drawing	73	77	75	75	73	72
3351	Copper rolling and drawing	84	87	89	88	85	80
3353	Aluminum sheet, plate, and foil	80	84	82	79	86	74
3354	Aluminum extruded products	75	78	76	76	82	75
3355	Aluminum rolling and drawing, n.e.c.	71	82	68	65	82	(D)
3356	Nonferrous rolling and drawing, n.e.c.	55	62	60	58	73	(D)
3357	Nonferrous wire drawing and insulating	73	77	74	74	63	69
336	Nonferrous foundries (castings)	56	58	62	62	67	63
3363	Aluminum die-castings	67	68	66	70	77	73
3364	Nonferrous die-castings, except aluminum	49	53	57	53	56	53
3365	Aluminum foundries	51	53	61	60	63	59
3366	Copper foundries	44	44	48	48	60	58
3369	Nonferrous foundries, n.e.c.	69	65	67	64	66	65
339	Miscellaneous primary metal products	63	68	66	64	74	74
3398	Metal heat treating	66	69	67	63	76	72
3399	Primary metal products, n.e.c.	58	65	65	65	72	78
34	Fabricated metal products	50	53	52	53	61	59
341	Metal cans and shipping containers	67	72	73	69	77	76
3411	Metal cans	73	78	77	74	84	83
3412	Metal barrels, drums, and pails	43	45	49	48	48	49
342	Cutlery, handtools, and hardware	54	56	58	56	65	62
3421	Cutlery	66	59	74	73	85	87
3423	Hand and edge tools, n.e.c.	48	54	52	52	69	64
3425	Saw blades and handsaws	57	69	71	67	73	70
3429	Hardware, n.e.c.	54	55	57	54	58	57

See footnotes at end of table.

Table 1b. **National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998—Con.**

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	National emergency rate					
		1998	1997	1996	1995	1994	1993
34	Fabricated metal products—Con.						
343	Plumbing and heating, except electric	46	51	50	49	54	52
3431	Metal sanitary ware	37	54	56	55	84	85
3432	Plumbing fixture fittings and trim	55	53	52	52	55	52
3433	Heating equipment, except electric	42	47	46	44	47	46
344	Fabricated structural metal products	45	49	47	47	55	55
3441	Fabricated structural metal	48	57	51	47	50	49
3442	Metal doors, sash, and trim	43	46	48	46	62	62
3443	Fabricated plate work (boiler shops)	47	52	53	53	63	64
3444	Sheet metal work	44	44	41	43	52	53
3446	Architectural metal work	43	44	40	40	51	50
3448	Prefabricated metal buildings	43	59	54	55	53	54
3449	Miscellaneous metal work	46	43	47	46	57	54
345	Screw machine products, bolts, etc.	54	52	50	51	59	58
3451	Screw machine products	51	49	49	50	53	53
3452	Bolts, nuts, rivets, and washers	57	55	51	53	65	64
346	Metal forgings and stampings	50	54	53	56	69	66
3462	Iron and steel forgings	52	61	56	50	65	65
3463	Nonferrous forgings	63	59	57	69	68	67
3465	Automotive stampings	66	66	57	59	78	76
3466	Crowns and closures	54	57	63	59	71	75
3469	Metal stampings, n.e.c.	35	40	48	52	59	55
347	Metal services, n.e.c.	54	56	54	53	62	59
3471	Plating and polishing	52	53	52	51	60	57
3479	Metal coating and allied services	57	59	56	56	65	61
348	Ordnance and accessories, n.e.c.	42	38	44	46	51	51
3482	Small arms ammunition	45	52	50	52	41	37
3483	Ammunition, except for small arms, n.e.c.	21	21	34	34	54	53
3484	Small arms	53	42	51	63	71	66
3489	Ordnance and accessories, n.e.c.	67	71	48	47	42	47
349	Miscellaneous fabricated metal products	51	57	57	57	60	58
3491	Industrial valves	53	56	55	56	69	67
3492	Fluid power valves and hose fittings	56	61	62	61	52	49
3493	Steel springs, except wire	52	58	49	54	71	67
3494	Valves and pipe fittings, n.e.c.	49	59	60	56	73	71
3495	Wire springs	57	65	62	62	71	72
3496	Miscellaneous fabricated wire products	60	55	52	51	62	59
3497	Metal foil and leaf	77	82	79	78	64	66
3498	Fabricated pipe and fittings	36	56	53	54	59	58
3499	Fabricated metal products, n.e.c.	47	49	54	55	51	48
35	Industrial machinery and equipment	49	52	52	53	61	59
351	Engines and turbines	55	59	57	58	78	64
3511	Turbines and turbine generator sets	56	55	63	56	82	60
3519	Internal combustion engines, n.e.c.	55	61	55	59	75	67
352	Farm and garden machinery	49	54	59	56	68	69
3523	Farm machinery and equipment	55	60	63	57	72	72
3524	Lawn and garden equipment	38	42	48	54	60	63
353	Construction and related machinery	50	54	54	53	61	56
3531	Construction machinery	56	60	58	55	69	63
3532	Mining machinery	30	49	52	51	44	42
3533	Oil and gas field machinery	63	59	56	51	49	47
3534	Elevators and moving stairways	62	52	52	51	52	56
3535	Conveyors and conveying equipment	44	48	51	52	60	50
3536	Hoists, cranes, and monorails	37	43	44	46	66	67
3537	Industrial trucks and tractors	39	46	46	49	56	57
354	Metalworking machinery	47	55	54	53	62	61
3541	Machine tools, metal cutting types	55	55	56	59	64	54
3542	Machine tools, metal forming types	56	61	58	61	51	50
3543	Industrial patterns	47	55	51	55	63	52
3544	Special dies, tools, jigs, and fixtures	38	51	51	52	62	65
3545	Machine tool accessories	57	55	44	46	67	67
3546	Power-driven handtools	63	65	58	60	61	55
3547	Rolling mill machinery	63	64	64	67	49	56
3548	Welding apparatus	54	58	53	50	68	67
3549	Metalworking machinery, n.e.c.	49	47	58	54	59	57
355	Special industry machinery	41	45	42	43	56	52
3552	Textile machinery	31	41	39	38	49	49
3553	Woodworking machinery	42	47	46	48	42	44
3554	Paper industries machinery	49	48	61	65	76	75
3555	Printing trades machinery	41	44	45	46	51	45
3556	Food products machinery	43	50	46	47	58	55
3559	Special industry machinery, n.e.c.	40	44	39	39	56	52
356	General industrial machinery	51	52	54	54	60	57
3561	Pumps and pumping equipment	56	54	56	53	72	62
3562	Ball and roller bearings	68	73	69	72	86	78
3563	Air and gas compressors	47	54	56	54	65	59
3564	Blowers and fans	43	39	43	43	55	56
3565	Packaging machinery	47	46	49	51	51	53
3566	Speed changers, drives, and gears	51	56	58	64	65	64
3567	Industrial furnaces and ovens	40	45	41	43	41	38
3568	Power transmission equipment, n.e.c.	56	61	58	53	67	63
3569	General industrial machinery, n.e.c.	49	49	55	55	48	49
357	Computer and office equipment	50	55	57	60	57	56
3571	Electronic computers	50	62	60	64	57	56
3572	Computer storage devices	56	60	73	65	65	63
3575	Computer terminals	36	31	56	66	(S)	47
3577	Computer peripheral equipment, n.e.c.	56	52	49	52	59	51
3578	Calculating and accounting equipment	36	33	33	32	47	50
3579	Office machines, n.e.c.	42	42	54	54	53	62

See footnotes at end of table.

Table 1b. National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998—Con.

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	National emergency rate					
		1998	1997	1996	1995	1994	1993
35	Industrial machinery and equipment—Con.						
358	Refrigeration and service machinery	51	51	48	49	67	62
3581	Automatic vending machines	63	56	54	55	60	55
3582	Commercial laundry equipment	54	50	50	53	74	71
3585	Refrigeration and heating equipment	51	52	51	52	71	67
3586	Measuring and dispensing pumps	55	48	46	49	64	62
3589	Service industry machinery, n.e.c.	50	47	41	41	56	51
359	Industrial machinery, n.e.c.	49	47	50	50	62	62
3592	Carburetors, pistons, rings, and valves	78	72	71	71	89	78
3593	Fluid power cylinders and actuators	44	50	47	46	55	50
3594	Fluid power pumps and motors	49	66	62	60	80	76
3596	Scales and balances, except laboratory	42	42	44	47	53	54
3599	Industrial machinery, n.e.c.	48	45	49	48	60	61
36	Electronic and other electric equipment	56	59	58	59	63	60
361	Electric distribution equipment	57	56	58	57	56	55
3612	Transformers, except electronic	53	56	53	55	65	65
3613	Switchgear and switchboard apparatus	61	56	61	59	51	51
362	Electrical industrial apparatus	48	51	55	54	58	53
3621	Motors and generators	49	54	64	66	59	57
3624	Carbon and graphite products	69	72	72	74	81	80
3625	Relays and industrial controls	45	48	50	47	58	50
3629	Electrical industrial apparatus, n.e.c.	41	44	45	44	44	42
363	Household appliances	57	54	56	57	71	73
3631	Household cooking equipment	50	39	47	46	64	64
3632	Household refrigerators and freezers	60	52	48	54	58	61
3633	Household laundry equipment	68	74	70	72	84	(D)
3634	Electric housewares and fans	46	49	52	52	70	71
3635	Household vacuum cleaners	62	65	66	65	64	66
3639	Household appliances, n.e.c.	67	61	65	61	89	(D)
364	Electric lighting and wiring equipment	51	54	51	50	58	58
3641	Electric lamp bulbs and tubes	49	51	44	44	66	65
3643	Current-carrying wiring devices	58	55	60	55	64	63
3644	Noncurrent-carrying wiring devices	54	63	50	48	55	54
3645	Residential lighting fixtures	43	43	43	42	36	34
3646	Commercial lighting fixtures	48	51	55	54	56	61
3647	Vehicular lighting equipment	52	63	57	60	75	75
3648	Lighting equipment, n.e.c.	45	48	45	45	57	58
365	Household audio and video equipment	61	56	57	57	67	64
3651	Household audio and video equipment	54	49	52	50	61	58
3652	Prerecorded records and tapes	79	74	69	73	81	82
366	Communications equipment	57	55	53	52	54	52
3661	Telephone and telegraph apparatus	68	56	54	57	61	61
3663	Radio and television communications equipment	49	56	53	50	50	46
3669	Communications equipment, n.e.c.	46	43	51	45	41	41
367	Electronic components and accessories	57	68	64	66	71	67
3671	Electron tubes	69	70	72	69	64	62
3672	Printed circuit boards	49	62	53	56	68	65
3674	Semiconductors and related devices	57	76	69	71	84	80
3675	Electronic capacitors	65	70	73	80	76	72
3676	Electronic resistors	40	51	45	48	40	39
3677	Electronic coils and transformers	46	45	47	49	60	58
3678	Electronic connectors	56	57	55	54	57	58
3679	Electronic components, n.e.c.	62	55	59	56	58	52
369	Miscellaneous electrical equipment and supplies	53	52	56	58	61	60
3691	Storage batteries	67	57	67	71	78	77
3692	Primary batteries, dry and wet	72	69	54	56	66	66
3694	Engine electrical equipment	55	54	60	59	67	68
3695	Magnetic and optical recording media	72	76	80	82	71	84
3699	Electrical equipment and supplies, n.e.c.	37	37	40	42	41	38
37	Transportation equipment	54	54	54	52	54	53
371	Motor vehicles and equipment	56	57	55	58	61	60
3711	Motor vehicles and car bodies	57	56	52	58	62	59
3713	Truck and bus bodies	41	37	44	43	52	48
3714	Motor vehicle parts and accessories	56	61	63	63	61	62
3715	Truck trailers	55	57	53	51	78	72
3716	Motor homes	39	30	30	27	32	32
372	Aircraft and parts	54	54	56	42	44	46
3721	Aircraft	55	56	58	51	44	48
3724	Aircraft engines and engine parts	51	54	58	45	48	47
3728	Aircraft parts and equipment, n.e.c.	56	49	53	30	41	42
373	Ship and boat building and repairing	43	47	43	45	51	50
3731	Ship building and repairing	46	50	44	49	50	50
3732	Boat building and repairing	38	41	41	38	53	53
374	Railroad equipment	70	58	59	60	48	50
3743	Railroad equipment	70	58	59	60	48	50
375	Motorcycles, bicycles, and parts	59	54	63	62	74	73
3751	Motorcycles, bicycles, and parts	59	54	63	62	74	73
376	Guided missiles, space vehicles, parts	49	51	47	48	54	49
3761	Guided missiles and space vehicles	58	61	50	53	57	53
3764	Space propulsion units and parts	31	33	39	35	48	37
3769	Space vehicle equipment, n.e.c.	49	45	40	42	41	45
379	Miscellaneous transportation equipment	36	34	41	42	32	35
3792	Travel trailers and campers	39	36	38	38	25	33
3795	Tanks and tank components	31	28	35	34	31	31
3799	Transportation equipment, n.e.c.	36	38	47	51	42	40

See footnotes at end of table.

Table 1b. **National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1993 Through 1998—Con.**

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	National emergency rate					
		1998	1997	1996	1995	1994	1993
38	Instruments and related products	45	49	50	50	51	50
381	Search and navigation equipment	46	45	43	42	42	42
3812	Search and navigation equipment	46	45	43	42	42	42
382	Measuring and controlling devices	38	43	46	47	49	48
3821	Laboratory apparatus and furniture	42	47	44	51	49	53
3822	Environmental controls	45	49	49	48	42	45
3823	Process control instruments	35	37	43	44	48	47
3824	Fluid meters and counting devices	49	53	56	49	62	62
3825	Instruments to measure electricity	39	46	47	49	50	50
3826	Analytical instruments	35	39	47	49	44	42
3827	Optical instruments and lenses	28	43	48	47	48	52
3829	Measuring and controlling devices, n.e.c.	43	45	46	45	52	46
384	Medical instruments and supplies	46	51	52	53	52	52
3841	Surgical and medical instruments	52	55	57	55	51	52
3842	Surgical appliances and supplies	38	43	51	53	50	49
3843	Dental equipment and supplies	53	56	51	50	50	52
3844	X-ray apparatus and tubes	51	54	57	52	55	59
3845	Electromedical equipment	50	53	45	50	59	59
385	Ophthalmic goods	75	70	62	63	64	65
3851	Ophthalmic goods	75	70	62	63	64	65
386	Photographic equipment and supplies	68	68	70	71	74	67
3861	Photographic equipment and supplies	68	68	70	71	74	67
387	Watches, clocks, watchcases, and parts	33	31	40	37	59	54
3873	Watches, clocks, watchcases, and parts	33	31	40	37	59	54
39	Miscellaneous manufacturing industries	40	44	48	45	53	54
391	Jewelry, silverware, and plated ware	51	45	56	49	53	52
3911	Jewelry, precious metal	53	47	48	47	55	57
3914	Silverware and plated ware	50	47	67	69	48	47
3915	Jewelers' materials and lapidary work	42	36	46	44	48	41
393	Musical instruments	37	39	41	42	42	44
3931	Musical instruments	37	39	41	42	42	44
394	Toys and sporting goods	30	41	45	43	56	57
3942	Dolls and stuffed toys	41	39	57	62	50	63
3944	Games, toys, and children's vehicles	42	44	50	53	51	56
3949	Sporting and athletic goods, n.e.c.	27	40	42	39	60	57
395	Pens, pencils, office, and art supplies	47	44	52	51	53	51
3951	Pens and mechanical pencils	49	56	59	58	32	30
3952	Lead pencils and art goods	47	49	42	42	89	87
3953	Marking devices	35	34	49	46	82	84
3955	Carbon paper and inked ribbons	55	40	47	69	56	59
396	Costume jewelry and notions	43	41	50	50	64	64
3961	Costume jewelry	41	37	43	46	59	61
3965	Fasteners, buttons, needles, and pins	52	50	70	63	77	69
399	Miscellaneous manufactures	46	46	47	44	51	54
3991	Brooms and brushes	50	41	39	41	47	44
3993	Signs and advertising specialties	46	46	51	43	49	51
3995	Burial caskets	42	38	48	50	74	73
3996	Hard surface floor coverings, n.e.c.	63	60	67	69	79	72
3999	Manufacturing industries, n.e.c.	42	44	42	41	46	52

¹SIC 2067, Chewing Gum is combined with SIC 2064 as of 1995.

Note: Some data are revised to include additional information. See Introduction for a discussion of the revision.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1998 and 1997

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production		National emergency production		Standard errors ¹					
		1998	1997	1998	1997	Full production			National emergency production		
						Level		1997 to 1998 change	Level		1997 to 1998 change
						1998	1997		1998	1997	
	All industries	73	75	53	56	1	1	1	1	1	1
	Durable goods industries	72	75	52	53	1	1	1	1	1	1
	Nondurable goods industries	74	76	56	59	1	1	1	2	1	2
	Advanced processing industries	72	74	51	54	1	1	1	1	1	1
	Primary processing industries	76	78	59	60	1	1	1	1	1	1
20	Food and kindred products	73	73	57	58	1	1	2	2	2	2
201	Meat products	83	84	60	65	2	2	2	5	3	6
2011	Meat packing plants	79	81	51	59	3	3	4	11	5	12
2013	Sausages and other prepared meats	80	84	58	69	3	2	3	3	6	7
2015	Poultry slaughtering and processing	88	87	70	69	3	3	4	3	3	5
202	Dairy products	78	79	67	71	2	2	3	3	2	3
2021	Creamery butter	88	88	84	87	3	1	3	2	1	2
2022	Cheese, natural and processed	91	90	88	86	3	2	3	3	3	4
2023	Dry, condensed, and evaporated dairy products	73	74	58	62	4	4	5	6	5	8
2024	Ice cream and frozen desserts	72	72	59	60	3	3	4	3	3	4
2026	Fluid milk	76	78	67	72	3	3	4	4	4	5
203	Preserved fruits and vegetables	75	73	61	60	2	3	3	3	3	4
2032	Canned specialties	84	80	75	71	3	3	4	5	4	6
2033	Canned fruits and vegetables	65	60	46	47	4	6	8	5	6	7
2034	Dehydrated fruits, vegetables, and soups	72	69	59	54	6	4	7	4	3	5
2035	Pickles, sauces, and salad dressings	63	71	55	57	5	3	6	5	4	6
2037	Frozen fruits and vegetables	83	83	76	74	3	5	6	4	4	6
2038	Frozen specialties, n.e.c.	83	81	70	67	4	3	5	4	3	5
204	Grain mill products	78	78	66	66	2	2	3	2	2	3
2041	Flour and other grain mill products	82	85	78	67	3	4	5	3	11	11
2043	Cereal breakfast foods	86	81	71	68	1	2	2	3	2	3
2044	Rice milling	82	83	78	52	2	4	4	3	6	6
2045	Prepared flour mixes and doughs	71	73	52	56	6	3	7	7	6	10
2046	Wet corn milling	88	92	83	92	2	1	2	2	1	2
2047	Dog and cat food	76	79	74	76	2	3	3	2	3	3
2048	Prepared feeds, n.e.c.	66	66	51	54	7	6	9	5	5	7
205	Bakery products	73	76	54	55	2	3	3	7	9	11
2051	Bread, cake, and related products	74	76	53	53	3	4	5	11	12	17
2052	Cookies and crackers	71	73	56	58	2	3	4	3	4	5
2053	Frozen bakery products, except bread	75	78	55	63	3	3	4	4	4	5
206	Sugar and confectionery products	72	71	63	60	4	5	6	3	4	5
2061	Raw cane sugar	87	96	86	95	7	2	7	6	2	7
2062	Cane sugar refining	80	83	46	59	3	3	4	6	6	8
2063	Beet sugar	100	100	100	100	1	-	1	1	-	1
2064	Candy and other confectionery products	67	65	58	53	5	6	8	4	5	7
2066	Chocolate and cocoa products	77	71	71	67	3	3	4	3	2	3
2067	Chewing gum ²	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
2068	Salted and roasted nuts and seeds	73	75	61	63	6	6	8	8	8	11
207	Fats and oils	82	84	65	72	4	2	4	5	5	7
2074	Cottonseed oil mills	87	94	79	92	5	3	6	9	3	10
2075	Soybean oil mills	91	97	88	96	2	1	2	2	1	3
2076	Vegetable oil mills, n.e.c.	84	86	74	74	2	2	2	6	7	9
2077	Animal and marine fats and oils	94	78	53	51	7	5	8	11	11	16
2079	Edible fats and oils, n.e.c.	68	75	56	72	6	4	7	7	4	8
208	Beverages	68	66	53	50	3	2	4	3	3	4
2082	Malt beverages	82	75	82	67	2	3	3	2	5	5
2083	Malt	92	99	92	88	4	1	4	4	3	9
2084	Wines, brandy, and brandy spirits	79	80	39	63	4	4	5	8	3	9
2085	Distilled and blended liquors	63	65	37	43	3	3	4	1	2	2
2086	Bottled and canned soft drinks	60	67	47	47	5	5	7	3	6	7
2087	Flavoring extracts and syrups, n.e.c.	66	51	51	36	6	4	7	6	2	6
209	Miscellaneous food and kindred products	58	67	43	53	5	3	6	4	3	5
2091	Canned and cured fish and seafoods	57	62	49	54	5	3	5	7	4	8
2092	Fresh or frozen prepared fish	51	56	27	42	9	7	11	7	8	10
2095	Roasted coffee	61	71	58	55	5	5	7	5	4	6
2096	Potato chips and similar snacks	51	75	41	57	10	9	13	8	7	10
2097	Manufactured ice	44	31	20	16	8	3	9	6	7	9
2098	Macaroni and spaghetti	79	95	24	85	6	2	6	7	5	9
2099	Food preparations, n.e.c.	65	63	54	53	5	4	6	4	4	6
21	Tobacco products	73	74	64	52	2	2	2	1	3	3
211	Cigarettes	71	72	64	52	2	2	2	2	3	3
2111	Cigarettes	71	72	64	52	2	2	2	2	3	3
212	Cigars	75	86	53	65	3	3	4	2	3	3
2121	Cigars	75	86	53	65	3	3	4	2	3	3
213	Chewing and smoking tobacco	(D)	(D)	(D)	(D)	(X)	(X)	(X)	(X)	(X)	(X)
2131	Chewing and smoking tobacco	(D)	(D)	(D)	(D)	(X)	(X)	(X)	(X)	(X)	(X)
214	Tobacco stemming and redrying	83	86	70	42	2	2	3	3	10	10
2141	Tobacco stemming and redrying	83	86	70	42	2	2	3	3	10	10
22	Textile mill products	74	81	60	69	2	1	2	2	2	3
221	Broadwoven fabric mills, cotton	81	89	79	85	3	2	4	3	3	4
2211	Broadwoven fabric mills, cotton	81	89	79	85	3	2	4	3	3	4
222	Broadwoven fabric mills, manmade fiber and silk	82	90	80	84	4	3	4	3	4	5
2221	Broadwoven fabric mills, manmade fiber and silk	82	90	80	84	4	3	4	3	4	5
223	Broadwoven fabric mills, wool	57	81	47	66	3	3	4	4	4	5
2231	Broadwoven fabric mills, wool	57	81	47	66	3	3	4	4	4	5

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1998 and 1997—Con.

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production		National emergency production		Standard errors ¹					
		1998	1997	1998	1997	Full production		National emergency production			
						Level		1997 to 1998 change	Level		1997 to 1998 change
						1998	1997		1998	1997	
22	Textile mill products—Con.										
224	Narrow fabric mills	75	68	48	47	5	4	6	7	7	10
2241	Narrow fabric mills	75	68	48	47	5	4	6	7	7	10
225	Knitting mills	69	80	47	61	4	2	5	5	4	6
2251	Women's hosiery, except socks	78	80	55	65	8	7	11	6	7	9
2252	Hosiery, n.e.c.	77	91	69	82	6	3	7	5	5	7
2253	Knit outerwear mills	70	78	42	69	10	5	11	8	6	9
2254	Knit underwear mills	70	80	46	52	3	1	3	4	6	7
2257	Wet knit fabric mills	62	72	41	42	7	5	8	11	8	13
2258	Lace and warp knit fabric mills	70	85	50	70	9	3	9	11	1	11
2259	Knitting mills, n.e.c.	72	(D)	42	(D)	9	(X)	(X)	5	(X)	(X)
226	Textile finishing, except wool	67	81	63	75	4	2	5	3	2	4
2261	Finishing plants, cotton	76	87	71	76	7	2	7	5	4	6
2262	Finishing plants, manmade	59	78	56	74	6	3	7	5	3	6
2269	Finishing plants, n.e.c.	73	78	70	76	3	3	4	4	3	5
227	Carpets and rugs	72	80	64	76	4	3	5	3	4	5
2273	Carpets and rugs	72	80	64	76	4	3	5	3	4	5
228	Yarn and thread mills	77	83	71	77	4	3	5	4	3	5
2281	Yarn spinning mills	75	82	69	77	5	3	6	6	4	7
2282	Throwing and winding mills	84	83	78	75	2	2	3	3	3	4
2284	Thread mills	74	89	71	85	4	1	4	4	2	5
229	Miscellaneous textile goods	79	76	59	61	2	2	3	4	4	5
2295	Coated fabrics, not rubberized	78	84	60	65	5	3	6	5	7	8
2296	Tire cord and fabrics	88	81	63	71	3	6	7	15	10	18
2297	Nonwoven fabrics	78	71	63	61	4	4	6	7	7	9
2298	Cordage and twine	69	74	55	58	4	5	6	4	4	5
2299	Textile goods, n.e.c.	82	77	52	58	4	4	5	7	6	9
23	Apparel and other textile products	71	77	32	38	2	1	3	3	2	3
231	Men's and boys' suits and coats	68	75	34	43	5	6	7	3	4	5
2311	Men's and boys' suits and coats	68	75	34	43	5	6	7	3	4	5
232	Men's and boys' furnishings	78	73	27	26	4	3	5	2	2	2
2321	Men's and boys' shirts	84	80	35	40	7	3	8	3	5	6
2322	Men's and boys' underwear and nightwear	79	79	62	43	2	5	5	5	9	10
2323	Men's and boys' neckwear	71	82	36	34	4	6	7	3	8	8
2325	Men's and boys' trousers and slacks	81	67	21	18	9	5	10	2	2	2
2326	Men's and boys' work clothing	83	78	34	35	3	3	4	3	3	4
2329	Men's and boys' clothing, n.e.c.	65	77	27	31	8	7	11	5	3	6
233	Women's and misses' outerwear	62	78	25	47	5	3	6	6	4	7
2331	Women's, misses', and juniors' blouses and shirts	67	79	44	68	10	9	13	10	8	13
2335	Women's, misses', and juniors' dresses	57	83	19	48	12	4	12	7	10	12
2337	Women's, misses', and juniors' suits and coats	63	74	31	46	10	6	11	4	5	7
2339	Women's, misses', and juniors' outerwear, n.e.c.	63	76	23	42	8	5	9	9	4	9
234	Women's and children's undergarments	69	83	40	49	2	3	3	3	5	6
2341	Women's and children's underwear	86	94	33	45	2	2	2	4	6	7
2342	Brassieres, girdles, and allied garments	56	73	54	57	1	3	3	1	1	2
235	Hats, caps, and millinery	70	75	40	46	4	5	6	3	4	5
2353	Hats, caps, and millinery	70	75	40	46	4	5	6	3	4	5
236	Girls' and children's outerwear	74	76	29	41	3	3	4	3	3	4
2361	Girls' and children's dresses and blouses	75	75	32	39	5	4	6	2	3	4
2369	Girls' and children's outerwear, n.e.c.	74	77	27	42	2	3	3	4	5	6
237	Fur goods	72	91	46	68	9	4	10	6	5	7
2371	Fur goods	72	91	46	68	9	4	10	6	5	7
238	Miscellaneous apparel and accessories	72	73	31	28	3	4	5	3	3	4
2381	Fabric dress and work gloves	80	70	48	40	4	8	9	6	8	9
2384	Robes and dressing gowns	67	75	19	28	12	11	16	7	11	13
2385	Waterproof outerwear	89	77	42	33	2	5	5	7	5	9
2386	Leather and sheep-lined clothing	60	79	44	76	8	5	10	12	6	13
2387	Apparel belts	84	80	30	20	2	5	6	3	3	3
2389	Apparel and accessories, n.e.c.	61	68	26	31	5	6	8	6	6	8
239	Miscellaneous fabricated textile products	77	78	50	47	2	2	3	3	3	4
2391	Curtains and draperies	75	70	35	28	4	3	5	5	4	6
2392	Housefurnishings, n.e.c.	86	84	59	49	5	3	6	8	8	11
2393	Textile bags	57	65	40	36	8	5	10	6	4	7
2394	Canvas and related products	58	65	42	38	8	6	10	5	6	7
2395	Pleating and stitching	74	69	51	42	4	8	9	8	13	15
2396	Automotive and apparel trimmings	69	78	49	49	5	3	6	4	7	7
2397	Schiffli machine embroideries	78	64	51	42	8	9	12	3	8	8
2399	Fabricated textile products, n.e.c.	86	82	52	58	3	4	5	6	5	8
24	Lumber and wood products	75	75	51	47	3	3	4	2	2	3
241	Logging	96	93	87	59	3	3	4	8	12	14
2411	Logging	96	93	87	59	3	3	4	8	12	14
242	Sawmills and planing mills	73	76	48	46	5	4	6	3	4	5
2421	Sawmills and planing mills, general	73	76	49	49	5	4	7	4	5	6
2426	Hardwood dimension and flooring mills	75	79	44	36	3	4	5	3	4	5
2429	Special product sawmills, n.e.c.	35	38	25	25	11	8	13	8	4	9
243	Millwork, plywood, and structural members	73	69	53	47	7	6	9	4	4	5
2431	Millwork	64	61	48	43	13	12	17	7	6	9
2434	Wood kitchen cabinets	79	72	51	43	4	5	6	5	6	8
2435	Hardwood veneer and plywood	86	84	51	46	3	3	4	12	6	13
2436	Softwood veneer and plywood	91	84	84	78	4	7	8	5	7	8
2439	Structural wood members, n.e.c.	73	72	52	49	5	4	6	5	4	6

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1998 and 1997—Con.

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production		National emergency production		Standard errors ¹						
		1998	1997	1998	1997	Full production			National emergency production		1997 to 1998 change	
						Level		1997 to 1998 change	Level			
						1998	1997		1998	1997		
24	Lumber and wood products—Con.											
244	Wood containers	78	79	45	43	2	3	4	3	4	5	8
2441	Nailed wood boxes and shooks	69	65	33	46	6	5	8	5	7	7	8
2448	Wood pallets and skids	83	86	52	45	3	3	4	5	5	7	7
2449	Wood containers, n.e.c.	58	62	29	32	4	8	9	1	1	2	2
245	Wood buildings and mobile homes	73	77	35	36	3	2	4	2	3	4	4
2451	Mobile homes	74	77	34	36	4	3	5	3	3	4	4
2452	Prefabricated wood buildings	71	74	40	39	4	3	5	3	4	5	5
249	Miscellaneous wood products	70	74	52	52	3	3	4	4	3	4	4
2491	Wood preserving	60	62	44	44	6	6	8	5	5	7	7
2493	Reconstituted wood products	84	82	79	78	6	6	8	6	5	8	8
2499	Wood products, n.e.c.	64	72	41	41	4	4	6	4	3	5	5
25	Furniture and fixtures	74	77	45	42	2	1	2	2	2	3	3
251	Household furniture	73	77	39	36	3	2	3	2	3	4	4
2511	Wood household furniture	78	82	39	32	5	3	6	3	5	6	6
2512	Upholstered household furniture	77	78	38	37	6	3	6	3	4	5	5
2514	Metal household furniture	60	71	41	48	5	5	7	4	4	5	5
2515	Mattresses and bedspings	68	71	40	38	5	7	9	4	4	5	5
2517	Wood television and radio cabinets	57	59	39	42	4	8	9	1	8	8	8
2519	Household furniture, n.e.c.	64	75	42	57	5	6	8	6	4	9	11
252	Office furniture	76	79	53	53	2	2	3	3	3	4	4
2521	Wood office furniture	79	80	55	44	4	4	5	5	6	8	8
2522	Office furniture, except wood	76	78	53	56	3	2	3	3	3	4	4
253	Public building and related furniture	73	79	52	53	3	3	4	3	4	4	4
2531	Public building and related furniture	73	79	52	53	3	3	4	3	4	4	4
254	Partitions and fixtures	72	74	50	45	5	3	6	5	4	6	6
2541	Wood partitions and fixtures	76	71	45	38	5	4	7	8	6	9	9
2542	Partitions and fixtures, except wood	69	76	55	53	8	3	8	5	4	7	7
259	Miscellaneous furniture and fixtures	76	74	46	44	4	3	5	5	3	6	6
2591	Drapery hardware and blinds and shades	83	85	50	50	4	3	4	10	7	12	12
2599	Furniture and fixtures, n.e.c.	73	69	45	42	5	4	7	5	3	6	6
26	Paper and allied products	83	85	74	74	1	1	2	1	2	2	2
261	Pulp mills	91	94	88	92	3	2	4	4	3	5	5
2611	Pulp mills	91	94	88	92	3	2	4	4	3	5	5
262	Paper mills	92	94	91	94	2	3	3	2	3	4	4
2621	Paper mills	92	94	91	94	2	3	3	2	3	4	4
263	Paperboard mills	91	96	85	95	2	1	3	4	2	4	4
2631	Paperboard mills	91	96	85	95	2	1	3	4	2	4	4
265	Paperboard containers and boxes	79	77	63	61	2	2	2	2	2	3	3
2652	Setup paperboard boxes	74	72	44	43	4	3	5	7	7	10	10
2653	Corrugated and solid fiber boxes	81	78	68	62	2	2	3	3	3	4	4
2655	Fiber cans, drums, and similar products	70	76	49	56	4	4	6	4	5	6	6
2656	Sanitary food containers	70	72	61	64	3	4	5	6	6	8	8
2657	Folding paperboard boxes	79	76	61	63	3	3	4	5	4	6	6
267	Miscellaneous converted paper products	78	80	68	66	2	2	3	2	2	3	3
2671	Paper coated and laminated, packaging	82	80	74	69	5	4	6	7	6	9	9
2672	Paper coated and laminated, n.e.c.	79	87	70	77	4	4	5	7	5	8	8
2673	Bags plastics, laminated, and coated	83	80	77	70	2	4	4	3	4	5	5
2674	Bags uncoated paper and multiwall	77	81	72	67	4	4	6	5	6	8	8
2675	Die-cut paper and board	55	58	45	47	8	9	12	8	8	11	11
2676	Sanitary paper products	85	84	77	78	4	3	5	3	3	4	4
2677	Envelopes	76	79	60	61	4	5	6	4	8	9	9
2678	Stationery products	57	65	40	43	4	3	5	5	5	7	7
2679	Converted paper products, n.e.c.	61	72	46	45	6	4	7	5	5	7	7
27	Printing and publishing	78	77	51	54	2	2	3	5	3	6	6
271	Newspapers	81	77	40	52	4	5	7	11	7	13	13
2711	Newspapers	81	77	40	52	4	5	7	11	7	13	13
272	Periodicals	78	79	64	58	7	7	10	7	8	10	10
2721	Periodicals	78	79	64	58	7	7	10	7	8	10	10
273	Books	87	88	79	61	6	5	8	10	9	13	13
2731	Book publishing	90	89	81	58	7	7	10	12	10	16	16
2732	Book printing	76	83	68	74	5	2	5	4	2	5	5
274	Miscellaneous publishing	70	68	41	36	8	6	10	4	4	6	6
2741	Miscellaneous publishing	70	68	41	36	8	6	10	4	4	6	6
275	Commercial printing	78	77	57	57	3	2	4	3	3	4	4
2752	Commercial printing, lithographic	77	76	57	57	4	3	4	3	4	5	5
2754	Commercial printing, gravure	86	91	69	82	3	2	4	8	5	9	9
2759	Commercial printing, n.e.c.	79	76	57	53	4	5	6	4	5	7	7
276	Manifold business forms	68	65	51	52	3	2	4	3	3	4	4
2761	Manifold business forms	68	65	51	52	3	2	4	3	3	4	4
277	Greeting cards	76	70	25	64	4	4	5	12	4	13	13
2771	Greeting cards	76	70	25	64	4	4	5	12	4	13	13
278	Blankbooks and bookbinding	73	69	52	55	4	3	5	3	3	4	4
2782	Blankbooks and looseleaf binders	78	74	56	61	4	4	6	3	4	5	5
2789	Bookbinding and related work	61	58	43	43	6	5	8	6	4	7	7
279	Printing trade services	72	73	59	54	4	3	5	5	4	6	6
2791	Typesetting	77	73	62	58	5	4	6	4	6	7	7
2796	Platemaking services	70	73	57	52	5	4	7	6	4	8	8

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1998 and 1997—Con.

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production		National emergency production		Standard errors ¹					
		1998	1997	1998	1997	Full production			National emergency production		
						Level		1997 to 1998 change	Level		1997 to 1998 change
						1998	1997		1998	1997	
28	Chemicals and allied products	70	75	56	63	2	2	2	2	2	3
281	Industrial inorganic chemicals	76	81	71	76	3	3	4	4	3	5
2812	Alkalies and chlorine	82	88	78	87	3	3	4	5	3	5
2813	Industrial gases	84	84	79	76	6	4	7	5	6	8
2816	Inorganic pigments	90	95	89	94	3	2	3	3	2	3
2819	Industrial inorganic chemicals, n.e.c.	73	78	67	72	4	4	5	5	5	6
282	Plastics materials and synthetics	80	89	73	83	3	2	3	3	3	4
2821	Plastics materials and resins	81	89	74	82	4	2	4	5	5	7
2822	Synthetic rubber	75	81	66	71	3	4	5	5	7	8
2823	Cellulosic manmade fibers	(D)	(D)	(D)	(D)	(X)	(X)	(X)	(X)	(X)	(X)
2824	Organic fibers, noncellulosic	81	92	76	89	2	2	3	2	2	3
283	Drugs	67	71	49	56	3	3	4	4	3	5
2833	Medicinals and botanicals	85	87	65	77	3	2	4	4	6	7
2834	Pharmaceutical preparations	64	69	46	54	4	4	5	5	4	6
2835	Diagnostic substances	65	76	53	57	7	5	8	7	6	9
2836	Biological products, except diagnostic	66	72	54	61	8	5	9	14	8	16
284	Soaps, cleaners, and toilet goods	60	66	48	54	3	2	3	3	3	4
2841	Soap and other detergents	58	66	46	53	4	5	6	3	4	5
2842	Polishes and sanitation goods	51	60	41	46	8	4	9	7	6	9
2843	Surface active agents	72	79	60	63	4	4	5	8	9	12
2844	Toilet preparations	63	67	51	57	3	3	4	4	4	5
285	Paints and allied products	59	66	46	55	4	4	5	3	3	4
2851	Paints and allied products	59	66	46	55	4	4	5	3	3	4
286	Industrial organic chemicals	80	79	75	75	5	6	8	6	7	9
2861	Gum and wood chemicals	87	90	84	90	3	2	4	3	2	4
2865	Cyclic crudes and intermediates	80	82	74	77	5	6	7	8	8	11
2869	Industrial organic chemicals, n.e.c.	80	78	75	74	6	7	9	8	8	11
287	Agricultural chemicals	77	87	67	74	3	2	4	5	4	6
2873	Nitrogenous fertilizers	95	92	89	92	2	2	3	3	2	4
2874	Phosphatic fertilizers	96	94	96	93	1	3	3	1	3	3
2875	Fertilizers, mixing only	52	50	30	29	9	5	10	6	5	8
2879	Agricultural chemicals, n.e.c.	74	90	68	77	3	2	4	5	6	8
289	Miscellaneous chemical products	70	71	48	52	3	3	4	5	3	5
2891	Adhesives and sealants	64	67	39	49	5	5	7	10	7	12
2892	Explosives	65	72	43	40	3	2	4	4	5	7
2893	Printing ink	69	66	34	44	4	3	5	5	4	6
2895	Carbon black	92	94	87	93	1	2	3	2	2	3
2899	Chemical preparations, n.e.c.	72	72	61	56	4	4	5	4	4	6
29	Petroleum and coal products	83	83	69	70	2	2	3	3	3	4
291	Petroleum refining	91	91	86	89	2	2	3	4	2	5
2911	Petroleum refining	91	91	86	89	2	2	3	4	2	5
295	Asphalt paving and roofing materials	51	55	29	29	4	3	5	4	3	5
2951	Asphalt paving mixtures and blocks	39	47	19	21	5	4	6	3	3	4
2952	Asphalt felts and coatings	71	68	64	56	8	3	9	7	4	8
299	Miscellaneous petroleum and coal products	70	69	52	52	3	3	5	3	4	5
2992	Lubricating oils and greases	67	66	47	48	4	3	5	3	4	5
2999	Petroleum and coal products, n.e.c.	83	87	77	82	3	3	4	4	3	5
30	Rubber and miscellaneous plastics products	75	75	60	58	2	2	2	3	3	4
301	Tires and inner tubes	90	90	83	83	3	3	4	4	4	6
3011	Tires and inner tubes	90	90	83	83	3	3	4	4	4	6
302	Rubber and plastics footwear	77	76	37	39	3	4	5	4	4	5
3021	Rubber and plastics footwear	77	76	37	39	3	4	5	4	4	5
305	Hose and belting and gaskets and packing	76	76	62	63	2	3	3	3	3	4
3052	Rubber and plastics hose and belting	77	79	67	66	3	3	4	3	3	4
3053	Gaskets, packing, and sealing devices	75	74	60	61	3	3	4	4	4	5
306	Fabricated rubber products, n.e.c.	69	74	59	61	5	3	6	4	4	6
3061	Mechanical rubber goods	67	80	59	71	8	2	8	7	3	7
3069	Fabricated rubber products, n.e.c.	73	69	60	54	4	5	6	5	5	7
308	Miscellaneous plastics products, n.e.c.	74	73	58	55	2	2	3	3	4	5
3081	Unsupported plastics film and sheet	76	78	60	66	4	4	5	8	7	10
3082	Unsupported plastics profile shapes	73	75	53	47	7	8	10	13	13	18
3083	Laminated plastics plate, sheet, and profile shapes	81	80	63	61	4	4	5	5	5	7
3084	Plastics pipe	78	82	49	73	6	4	7	13	5	14
3085	Plastics bottles	73	81	72	70	6	4	8	7	7	10
3086	Plastics foam products	76	71	54	62	5	4	6	7	4	8
3087	Custom compounding of purchased plastics resins	65	69	57	50	7	5	8	6	9	11
3088	Plastics plumbing fixtures	75	74	21	45	4	3	5	13	4	14
3089	Plastics products, n.e.c.	73	72	62	53	3	3	4	4	5	7
31	Leather and leather products	67	71	36	39	2	2	3	2	2	3
311	Leather tanning and finishing	72	73	53	55	4	6	7	4	4	6
3111	Leather tanning and finishing	72	73	53	55	4	6	7	4	4	6
313	Footwear cut stock	65	70	43	40	9	7	11	7	2	7
3131	Footwear cut stock	65	70	43	40	9	7	11	7	2	7
314	Footwear, except rubber	67	74	31	36	3	3	4	3	3	4
3142	House slippers	57	66	25	26	4	4	6	2	2	3
3143	Men's footwear, except athletic	66	74	33	34	4	4	6	5	4	6
3144	Women's footwear, except athletic	76	73	30	42	2	9	9	2	7	7
3149	Footwear, except rubber, n.e.c.	73	76	30	39	2	2	3	2	2	3
315	Leather gloves and mittens	48	68	22	28	8	5	10	4	2	5
3151	Leather gloves and mittens	48	68	22	28	8	5	10	4	2	5

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1998 and 1997—Con.

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production		National emergency production		Standard errors ¹						
		1998	1997	1998	1997	Full production			National emergency production		1997 to 1998 change	
						Level		1997 to 1998 change	Level			
						1998	1997		1998	1997		
31	Leather and leather products—Con.											
316	Luggage	69	65	34	32	8	5	9	5	5	7	7
3161	Luggage	69	65	34	32	8	5	9	5	5	7	7
317	Handbags and personal leather goods	64	68	34	36	10	7	12	5	5	7	
3171	Women's handbags and purses	61	63	29	25	6	8	10	2	3	4	4
3172	Personal leather goods, n.e.c.	68	73	38	57	18	12	22	11	11	15	15
319	Leather goods, n.e.c.	56	67	35	34	3	4	5	3	5	6	6
3199	Leather goods, n.e.c.	56	67	35	34	3	4	5	3	5	6	6
32	Stone, clay, and glass products	76	78	48	51	2	1	2	4	4	6	
321	Flat glass	87	91	83	84	3	4	5	3	3	4	4
3211	Flat glass	87	91	83	84	3	4	5	3	3	4	4
322	Glass and glassware, pressed or blown	88	90	86	88	2	3	3	2	3	3	3
3221	Glass containers	95	94	91	91	2	2	2	2	2	2	2
3229	Pressed and blown glass, n.e.c.	84	87	83	85	3	4	5	3	4	5	5
323	Products of purchased glass	67	74	57	57	7	4	8	6	5	8	8
3231	Products of purchased glass	67	74	57	57	7	4	8	6	5	8	8
324	Cement, hydraulic	94	92	91	86	2	2	2	2	3	4	4
3241	Cement, hydraulic	94	92	91	86	2	2	2	2	3	4	4
325	Structural clay products	77	72	68	59	2	2	3	3	5	6	6
3251	Brick and structural clay tile	94	92	92	82	2	2	3	2	8	9	9
3253	Ceramic wall and floor tile	77	75	71	63	4	3	5	4	7	8	8
3255	Clay refractories	54	49	39	45	4	3	5	4	1	4	4
3259	Structural clay products, n.e.c.	75	71	71	41	4	4	5	5	11	12	12
326	Pottery and related products	72	75	62	61	4	2	4	4	3	5	5
3261	Vitreous plumbing fixtures	89	82	89	82	2	2	3	2	2	3	3
3262	Vitreous china table and kitchenware	83	93	64	59	1	1	1	10	8	12	12
3263	Semivitreous table and kitchenware	(D)	76	(D)	64	(X)	2	(X)	(X)	2	(X)	(X)
3264	Porcelain electrical supplies	65	68	57	54	6	3	6	5	5	7	7
3269	Pottery products, n.e.c.	68	71	50	56	4	5	6	6	7	10	10
327	Concrete, gypsum, and plaster products	72	74	30	35	3	2	4	5	5	7	7
3271	Concrete block and brick	72	71	60	45	4	6	7	5	6	7	7
3272	Concrete products, n.e.c.	73	75	47	53	4	3	5	5	5	7	7
3273	Ready-mixed concrete	66	70	19	23	5	4	6	4	6	7	7
3274	Lime	71	84	69	82	3	3	4	3	3	4	4
3275	Gypsum products	96	95	91	92	2	2	3	4	4	5	5
328	Cut stone and stone products	68	73	54	55	6	4	7	4	6	7	7
3281	Cut stone and stone products	68	73	54	55	6	4	7	4	6	7	7
329	Miscellaneous nonmetallic mineral products	76	79	64	65	3	3	4	3	3	3	3
3291	Abrasive products	67	71	55	57	6	6	8	4	3	5	5
3292	Asbestos products	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
3295	Minerals, ground or treated	72	76	65	59	6	3	7	5	6	8	8
3296	Mineral wool	96	91	91	88	3	3	4	2	3	3	3
3297	Nonclay refractories	72	78	54	62	2	6	6	6	7	9	9
3299	Nonmetallic mineral products, n.e.c.	76	82	54	54	3	3	4	5	7	8	8
33	Primary metal industries	79	84	69	75	1	1	2	1	1	2	
331	Blast furnace and basic steel products	78	86	73	82	3	3	4	3	2	3	3
3312	Blast furnaces and steel mills	79	89	76	88	3	3	5	3	3	5	5
3313	Electrometallurgical products	78	82	70	68	3	2	4	4	3	5	5
3315	Steel wire and related products	81	79	70	70	2	4	5	3	4	5	5
3316	Cold finishing of steel shapes	71	82	67	76	4	2	4	5	4	6	6
3317	Steel pipe and tubes	69	73	56	60	4	4	5	4	4	5	5
332	Iron and steel foundries	78	80	60	62	2	2	2	2	3	3	3
3321	Gray and ductile iron foundries	80	82	61	64	2	2	3	3	2	4	4
3322	Malleable iron foundries	83	86	59	60	2	2	3	3	1	3	3
3324	Steel investment foundries	74	73	55	48	3	5	6	5	7	9	9
3325	Steel foundries, n.e.c.	76	81	63	69	2	2	3	2	2	3	3
333	Primary nonferrous metals	83	89	79	86	2	2	3	2	2	3	3
3331	Primary copper	95	92	92	92	1	7	7	2	7	7	7
3334	Primary aluminum	85	87	85	87	2	2	3	2	2	3	3
3339	Primary nonferrous metals, n.e.c.	71	88	63	80	4	3	5	4	4	6	6
334	Secondary nonferrous metals	88	84	79	74	2	4	5	5	5	7	7
3341	Secondary nonferrous metals	88	84	79	74	2	4	5	5	5	7	7
335	Nonferrous rolling and drawing	81	85	73	77	1	1	2	2	2	2	2
3351	Copper rolling and drawing	88	91	84	87	2	1	2	3	1	3	3
3353	Aluminum sheet, plate, and foil	88	91	80	84	3	2	3	2	2	3	3
3354	Aluminum extruded products	82	85	75	78	3	2	3	3	3	4	4
3355	Aluminum rolling and drawing, n.e.c.	72	82	71	82	2	5	5	2	5	5	5
3356	Nonferrous rolling and drawing, n.e.c.	66	75	55	62	3	4	5	4	5	6	6
3357	Nonferrous wiredrawing and insulating	82	84	73	77	2	2	3	2	2	3	3
336	Nonferrous foundries (castings)	73	77	56	58	2	2	3	2	3	4	4
3363	Aluminum die-castings	78	79	67	68	4	4	5	5	7	8	8
3364	Nonferrous die-castings, except aluminum	67	72	49	53	7	4	8	5	3	5	5
3365	Aluminum foundries	71	75	51	53	3	3	4	4	4	5	5
3366	Copper foundries	67	69	44	44	3	4	4	3	3	4	4
3369	Nonferrous foundries, n.e.c.	84	86	69	65	2	2	3	4	4	6	6
339	Miscellaneous primary metal products	79	80	63	68	3	2	3	4	2	5	5
3398	Metal heat treating	80	80	66	69	3	2	3	3	2	4	4
3399	Primary metal products, n.e.c.	77	80	58	65	5	3	6	9	4	10	10

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1998 and 1997—Con.

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production		National emergency production		Standard errors ¹					
		1998	1997	1998	1997	Full production			National emergency production		
						Level		1997 to 1998 change	Level		1997 to 1998 change
						1998	1997		1998	1997	
34	Fabricated metal products	71	74	50	53	1	1	1	1	1	2
341	Metal cans and shipping containers	79	84	67	72	3	2	3	3	3	4
3411	Metal cans	82	86	73	78	3	2	3	4	3	5
3412	Metal barrels, drums, and pails	62	66	43	45	4	3	5	3	2	4
342	Cutlery, handtools, and hardware	71	75	54	56	2	2	3	2	2	3
3421	Cutlery	86	86	66	59	3	2	4	3	4	5
3423	Hand and edge tools, n.e.c.	69	71	48	54	3	4	5	3	2	4
3425	Saw blades and handsaws	70	77	57	69	4	2	4	4	4	6
3429	Hardware, n.e.c.	71	74	54	55	3	3	4	3	4	5
343	Plumbing and heating, except electric	67	72	46	51	2	1	2	3	2	3
3431	Metal sanitary ware	73	71	37	54	5	2	6	11	2	12
3432	Plumbing fixture fittings and trim	71	73	55	53	1	2	2	1	2	2
3433	Heating equipment, except electric	61	71	42	47	3	2	4	3	3	4
344	Fabricated structural metal products	68	72	45	49	2	1	2	2	1	2
3441	Fabricated structural metal	75	80	48	57	3	2	3	5	3	6
3442	Metal doors, sash, and trim	65	67	43	46	5	2	5	3	2	4
3443	Fabricated plate work (boiler shops)	67	73	47	52	3	3	4	3	4	4
3444	Sheet metal work	63	66	44	44	3	2	4	3	2	4
3446	Architectural metal work	73	72	43	44	2	2	3	3	3	4
3448	Prefabricated metal buildings	71	77	43	59	3	2	3	6	3	6
3449	Miscellaneous metal work	73	75	46	43	2	3	3	3	3	4
345	Screw machine products, bolts, etc.	74	75	54	52	2	2	3	3	2	3
3451	Screw machine products	70	72	51	49	4	2	4	4	3	5
3452	Bolts, nuts, rivets, and washers	78	78	57	55	2	2	3	3	3	4
346	Metal forgings and stampings	73	75	50	54	2	2	3	4	4	5
3462	Iron and steel forgings	73	83	52	61	3	2	4	5	4	6
3463	Nonferrous forgings	76	82	63	59	2	2	3	3	8	8
3465	Automotive stampings	80	81	68	66	3	2	4	3	4	5
3466	Crowns and closures	71	70	54	57	3	3	4	1	1	2
3469	Metal stampings, n.e.c.	64	66	35	40	4	3	4	5	6	8
347	Metal services, n.e.c.	69	73	54	56	2	2	3	3	3	4
3471	Plating and polishing	70	72	52	53	3	3	4	3	4	5
3479	Metal coating and allied services	69	75	57	59	3	2	4	4	3	5
348	Ordnance and accessories, n.e.c.	71	70	42	38	3	2	3	4	5	7
3482	Small arms ammunition	58	66	45	52	—	2	2	1	1	1
3483	Ammunition, except for small arms, n.e.c.	53	57	21	21	4	4	5	5	6	7
3484	Small arms	77	73	53	42	3	3	4	4	3	5
3489	Ordnance and accessories, n.e.c.	90	86	67	71	9	6	10	9	8	12
349	Miscellaneous fabricated metal products	72	75	51	57	1	1	2	2	2	2
3491	Industrial valves	74	76	53	56	2	2	3	3	3	4
3492	Fluid power valves and hose fittings	73	78	56	61	2	2	2	2	2	3
3493	Steel springs, except wire	60	69	52	58	2	2	3	2	2	3
3494	Valves and pipe fittings, n.e.c.	61	70	49	59	5	4	6	5	5	6
3495	Wire springs	74	78	57	65	5	3	6	4	3	5
3496	Miscellaneous fabricated wire products	71	68	60	55	3	3	4	3	3	4
3497	Metal foil and leaf	83	89	77	82	2	1	2	1	1	2
3498	Fabricated pipe and fittings	71	73	36	56	2	2	3	2	3	3
3499	Fabricated metal products, n.e.c.	74	75	47	49	3	3	4	4	4	6
35	Industrial machinery and equipment	70	73	49	52	1	1	1	1	1	2
351	Engines and turbines	68	70	55	59	4	2	4	3	2	3
3511	Turbines and turbine generator sets	60	56	56	55	9	3	10	7	2	7
3519	Internal combustion engines, n.e.c.	72	77	55	61	3	2	3	2	2	3
352	Farm and garden machinery	66	76	49	54	3	3	4	3	2	4
3523	Farm machinery and equipment	67	81	55	60	4	3	5	3	3	4
3524	Lawn and garden equipment	63	62	38	42	4	3	5	4	3	5
353	Construction and related machinery	73	76	50	54	2	2	2	2	2	3
3531	Construction machinery	76	79	56	60	2	3	4	4	4	5
3532	Mining machinery	66	71	30	49	3	4	5	11	3	11
3533	Oil and gas field machinery	72	75	63	59	4	2	4	4	2	5
3534	Elevators and moving stairways	81	75	62	52	5	3	6	7	2	7
3535	Conveyors and conveying equipment	70	73	44	48	3	4	5	3	4	5
3536	Hoists, cranes, and monorails	68	72	37	43	4	4	5	6	3	6
3537	Industrial trucks and tractors	68	75	39	46	1	3	3	3	2	4
354	Metalworking machinery	72	74	47	55	1	2	2	5	2	6
3541	Machine tools, metal cutting types	72	73	55	55	3	2	3	3	2	4
3542	Machine tools, metal forming types	76	86	56	61	2	2	2	3	3	4
3543	Industrial patterns	70	81	47	55	2	2	3	2	2	3
3544	Special dies, tools, jigs, and fixtures	71	72	38	51	2	2	3	8	3	9
3545	Machine tool accessories	74	78	57	55	2	3	3	3	4	5
3546	Power-driven handtools	79	80	63	65	2	1	2	2	2	2
3547	Rolling mill machinery	77	83	63	64	3	3	5	4	4	6
3548	Welding apparatus	78	78	63	58	3	3	4	3	2	4
3549	Metalworking machinery, n.e.c.	65	75	49	47	3	3	4	3	2	3
355	Special industry machinery	67	70	41	45	2	2	3	3	2	3
3552	Textile machinery	60	63	31	41	3	2	4	2	2	3
3553	Woodworking machinery	66	72	42	47	2	1	2	2	2	3
3554	Paper industries machinery	73	79	49	48	4	4	5	4	4	6
3555	Printing trades machinery	72	70	41	44	4	2	4	4	2	4
3556	Food products machinery	68	72	43	50	3	4	5	3	4	5
3559	Special industry machinery, n.e.c.	67	69	40	44	3	2	4	4	3	4

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1998 and 1997—Con.

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production		National emergency production		Standard errors ¹					
		1998	1997	1998	1997	Full production		National emergency production			
						Level		1997 to 1998 change	Level		1997 to 1998 change
						1998	1997		1998	1997	
35	Industrial machinery and equipment—Con.										
356	General industrial machinery	68	73	51	52	1	1	2	1	1	2
3561	Pumps and pumping equipment	68	73	56	54	3	4	4	3	3	4
3562	Ball and roller bearings	78	83	68	73	2	2	2	2	2	2
3563	Air and gas compressors	65	73	47	54	1	2	2	3	4	5
3564	Blowers and fans	61	63	43	39	3	4	5	3	4	5
3565	Packaging machinery	71	73	47	46	3	3	4	3	3	4
3566	Speed changers, drives, and gears	68	77	51	56	2	2	2	2	4	4
3567	Industrial furnaces and ovens	65	73	40	45	2	2	3	2	3	3
3568	Power transmission equipment, n.e.c.	71	77	56	61	2	2	3	3	3	4
3569	General industrial machinery, n.e.c.	64	70	49	49	3	3	4	4	3	5
357	Computer and office equipment	71	75	50	55	3	1	3	3	2	3
3571	Electronic computers	68	75	50	62	4	1	4	4	1	4
3572	Computer storage devices	83	88	56	60	7	3	8	11	9	14
3575	Computer terminals	65	77	36	31	2	3	4	2	2	3
3577	Computer peripheral equipment, n.e.c.	79	72	56	52	3	3	4	4	4	5
3578	Calculating and accounting equipment	72	71	36	33	3	2	3	3	2	4
3579	Office machines, n.e.c.	56	65	42	42	1	5	5	2	2	3
358	Refrigeration and service machinery	68	68	51	51	2	2	3	3	3	4
3581	Automatic vending machines	74	65	63	56	7	6	9	4	4	6
3582	Commercial laundry equipment	70	83	54	50	2	3	3	2	5	5
3585	Refrigeration and heating equipment	67	68	51	52	3	3	4	4	4	5
3586	Measuring and dispensing pumps	70	73	55	48	4	4	6	2	8	9
3589	Service industry machinery, n.e.c.	69	67	50	47	4	3	5	3	3	4
359	Industrial machinery, n.e.c.	71	75	49	47	2	2	2	3	3	4
3592	Carburetors, pistons, rings, and valves	87	82	78	72	3	2	3	3	3	4
3593	Fluid power cylinders and actuators	66	72	44	50	3	2	3	2	3	4
3594	Fluid power pumps and motors	72	79	49	66	3	4	5	9	3	10
3596	Scales and balances, except laboratory	60	62	42	42	7	7	10	5	3	6
3599	Industrial machinery, n.e.c.	71	75	48	45	2	2	3	3	3	5
36	Electronic and other electric equipment	71	75	56	59	1	1	2	2	1	2
361	Electric distribution equipment	75	78	57	56	2	1	2	3	2	4
3612	Transformers, except electronic	73	78	53	56	2	2	3	4	4	6
3613	Switchgear and switchboard apparatus	77	78	61	56	2	1	3	4	2	4
362	Electrical industrial apparatus	67	73	48	51	2	2	3	4	3	5
3621	Motors and generators	68	74	49	54	3	2	3	8	7	10
3624	Carbon and graphite products	76	85	69	72	3	3	4	4	5	6
3625	Relays and industrial controls	65	71	45	48	3	3	4	4	4	5
3629	Electrical industrial apparatus, n.e.c.	66	70	41	44	3	2	3	2	2	3
363	Household appliances	72	73	57	54	2	1	2	2	2	2
3631	Household cooking equipment	65	61	50	39	1	2	3	1	3	3
3632	Household refrigerators and freezers	80	73	60	52	2	2	2	2	2	3
3633	Household laundry equipment	75	80	68	74	3	3	4	2	2	2
3634	Electric housewares and fans	60	69	46	49	6	3	7	6	3	6
3635	Household vacuum cleaners	76	77	62	65	5	5	6	3	4	5
3639	Household appliances, n.e.c.	88	85	67	61	2	2	3	5	5	7
364	Electric lighting and wiring equipment	71	73	51	54	1	2	2	2	2	3
3641	Electric lamp bulbs and tubes	70	70	49	51	1	4	4	4	8	9
3643	Current-carrying wiring devices	73	69	58	55	3	3	4	3	4	5
3644	Noncurrent-carrying wiring devices	71	78	54	63	2	2	3	4	3	4
3645	Residential lighting fixtures	67	68	43	43	4	3	5	3	3	4
3646	Commercial lighting fixtures	65	73	48	51	3	2	4	3	3	4
3647	Vehicular lighting equipment	74	80	52	63	4	3	5	6	6	8
3648	Lighting equipment, n.e.c.	78	77	45	48	1	2	2	4	3	5
365	Household audio and video equipment	72	70	61	56	2	2	3	3	1	4
3651	Household audio and video equipment	67	65	54	49	3	2	3	4	2	4
3652	Prerecorded records and tapes	83	79	79	74	2	2	2	1	2	2
366	Communications equipment	70	70	57	55	1	1	2	2	2	2
3661	Telephone and telegraph apparatus	79	71	68	56	2	2	2	2	3	3
3663	Radio and television communications equipment	63	70	49	56	2	2	2	3	2	3
3669	Communications equipment, n.e.c.	65	69	46	43	3	2	4	2	2	3
367	Electronic components and accessories	72	79	57	68	2	2	3	3	2	4
3671	Electron tubes	75	79	69	70	3	4	5	3	3	4
3672	Printed circuit boards	73	76	49	62	3	3	4	6	5	7
3674	Semiconductors and related devices	72	83	57	76	3	2	3	3	4	5
3675	Electronic capacitors	73	79	65	70	3	2	4	3	2	3
3676	Electronic resistors	58	70	40	51	6	3	6	5	3	5
3677	Electronic coils and transformers	65	68	46	45	2	2	3	2	3	3
3678	Electronic connectors	68	67	56	57	2	3	4	2	3	4
3679	Electronic components, n.e.c.	72	69	62	55	6	3	7	8	3	9
369	Miscellaneous electrical equipment and supplies	71	76	53	52	2	2	2	2	2	3
3691	Storage batteries	79	80	67	57	2	2	3	3	3	4
3692	Primary batteries, dry and wet	83	83	72	69	3	1	3	2	3	4
3694	Engine electrical equipment	72	76	55	54	2	3	4	2	5	6
3695	Magnetic and optical recording media	78	79	72	76	3	3	4	3	3	4
3699	Electrical equipment and supplies, n.e.c.	61	68	37	37	2	2	3	2	2	3
37	Transportation equipment	75	75	54	54	2	2	2	2	2	2
371	Motor vehicles and equipment	78	79	56	57	2	2	3	2	2	3
3711	Motor vehicles and car bodies	81	82	57	56	3	3	4	3	4	4
3713	Truck and bus bodies	63	65	41	37	3	3	4	3	2	3
3714	Motor vehicle parts and accessories	76	77	56	61	3	2	4	3	3	4
3715	Truck trailers	74	73	55	57	3	3	4	3	3	4
3716	Motor homes	67	60	39	30	3	2	4	2	1	2

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1998 and 1997—Con.

[For meaning of abbreviations and symbols, see introductory text]

SIC code	Industry	Full production		National emergency production		Standard errors ¹						
		1998	1997	1998	1997	Full production			National emergency production		1997 to 1998 change	
						Level		1997 to 1998 change	Level			
						1998	1997		1998	1997		
37	Transportation equipment—Con.											
372	Aircraft and parts	71	70	54	54	2	3	3	2	3	3	3
3721	Aircraft	68	67	55	56	4	4	6	5	4	6	6
3724	Aircraft engines and engine parts	73	74	51	54	3	3	4	3	3	4	4
3728	Aircraft parts and equipment, n.e.c.	73	73	56	49	2	2	2	3	3	4	4
373	Ship and boat building and repairing	63	67	43	47	2	2	3	3	2	3	3
3731	Ship building and repairing	62	66	46	50	3	2	3	3	3	4	4
3732	Boat building and repairing	63	68	38	41	3	2	4	4	3	4	4
374	Railroad equipment	92	86	70	58	2	1	2	3	3	4	4
3743	Railroad equipment	92	86	70	58	2	1	2	3	3	4	4
375	Motorcycles, bicycles, and parts	90	86	59	54	4	5	6	3	11	11	11
3751	Motorcycles, bicycles, and parts	90	86	59	54	4	5	6	3	11	11	11
376	Guided missiles, space vehicles, parts	64	72	49	51	5	4	6	3	2	4	4
3761	Guided missiles and space vehicles	68	78	58	61	6	5	8	5	3	6	6
3764	Space propulsion units and parts	52	59	31	33	3	2	4	2	2	3	3
3769	Space vehicle equipment, n.e.c.	64	59	49	45	3	2	3	4	3	5	5
379	Miscellaneous transportation equipment	64	60	36	34	3	2	3	3	2	4	4
3792	Travel trailers and campers	65	60	39	36	3	4	5	3	2	4	4
3795	Tanks and tank components	45	47	31	28	3	4	5	4	4	5	5
3799	Transportation equipment, n.e.c.	69	69	36	38	4	2	4	5	1	5	5
38	Instruments and related products	69	72	45	49	1	1	2	2	2	3	3
381	Search and navigation equipment	67	69	46	45	3	3	4	4	6	7	7
3812	Search and navigation equipment	67	69	46	45	3	3	4	4	6	7	7
382	Measuring and controlling devices	63	67	38	43	1	2	2	2	2	2	2
3821	Laboratory apparatus and furniture	64	69	42	47	3	2	4	3	3	4	4
3822	Environmental controls	66	68	45	49	3	3	4	4	4	6	6
3823	Process control instruments	61	63	35	37	4	3	4	3	2	4	4
3824	Fluid meters and counting devices	75	81	49	53	4	3	5	4	7	8	8
3825	Instruments to measure electricity	59	66	39	46	2	4	4	2	2	3	3
3826	Analytical instruments	64	67	35	39	3	3	4	3	4	5	5
3827	Optical instruments and lenses	62	75	28	43	5	5	7	5	6	7	7
3829	Measuring and controlling devices, n.e.c.	65	67	43	45	4	2	4	5	3	6	6
384	Medical instruments and supplies	72	72	46	51	2	2	2	4	2	5	5
3841	Surgical and medical instruments	69	69	52	55	2	2	3	2	2	3	3
3842	Surgical appliances and supplies	71	72	38	43	3	3	4	8	2	9	9
3843	Dental equipment and supplies	73	76	53	56	1	2	2	2	3	3	3
3844	X-ray apparatus and tubes	77	73	51	54	2	2	3	5	5	7	7
3845	Electromedical equipment	80	80	50	53	3	3	4	4	4	5	5
385	Ophthalmic goods	87	85	75	70	2	2	3	3	3	4	4
3851	Ophthalmic goods	87	85	75	70	2	2	3	3	3	4	4
386	Photographic equipment and supplies	79	83	68	68	2	4	4	2	2	3	3
3861	Photographic equipment and supplies	79	83	68	68	2	4	4	2	2	3	3
387	Watches, clocks, watchcases, and parts	52	70	33	31	2	3	4	1	2	2	2
3873	Watches, clocks, watchcases, and parts	52	70	33	31	2	3	4	1	2	2	2
39	Miscellaneous manufacturing industries	68	73	40	44	2	2	2	2	2	3	3
391	Jewelry, silverware, and plated ware	74	79	51	45	3	2	4	3	3	4	4
3911	Jewelry, precious metal	75	78	53	47	4	3	5	4	4	5	5
3914	Silverware and plated ware	66	82	50	47	7	1	7	5	4	6	6
3915	Jewelers' materials and lapidary work	76	79	42	36	5	5	7	4	4	6	6
393	Musical instruments	67	73	37	39	3	3	4	2	3	4	4
3931	Musical instruments	67	73	37	39	3	3	4	2	3	4	4
394	Toys and sporting goods	61	69	30	41	3	3	5	3	4	5	5
3942	Dolls and stuffed toys	47	58	41	39	5	7	9	7	6	9	9
3944	Games, toys, and children's vehicles	62	71	42	44	5	4	6	9	5	10	10
3949	Sporting and athletic goods, n.e.c.	61	68	27	40	4	4	6	3	5	6	6
395	Pens, pencils, office, and art supplies	73	77	47	44	3	3	4	4	3	5	5
3951	Pens and mechanical pencils	67	71	49	56	2	2	3	5	2	5	5
3952	Lead pencils and art goods	78	83	47	49	5	4	6	8	9	12	12
3953	Marking devices	85	82	35	34	5	5	7	6	4	7	7
3955	Carbon paper and inked ribbons	71	76	55	40	6	9	11	9	4	10	10
396	Costume jewelry and notions	67	73	43	41	4	3	4	3	4	5	5
3961	Costume jewelry	64	72	41	37	4	3	5	4	4	6	6
3965	Fasteners, buttons, needles, and pins	79	76	52	50	6	5	8	7	5	9	9
399	Miscellaneous manufactures	72	74	46	46	2	2	3	2	3	4	4
3991	Brooms and brushes	74	67	50	41	4	5	6	7	7	9	9
3993	Signs and advertising specialties	76	75	46	46	3	4	5	4	4	6	6
3995	Burial caskets	69	81	42	38	5	2	5	4	3	5	5
3996	Hard surface floor coverings, n.e.c.	68	71	63	60	4	4	5	4	4	6	6
3999	Manufacturing industries, n.e.c.	68	75	42	44	4	5	6	4	6	7	7

¹A description of the standard error is given in appendix B, "Qualifications of the Data" of the report.

²SIC 2067, Chewing Gum is combined with SIC 2064 as of 1995.

Note: Some data are revised to include additional information. See introduction for a discussion of the revision.

Appendix A.

MQ-C1 Report Form and Instructions

The MQ-C1 form and instructions are shown on the following pages.

**SURVEY OF PLANT CAPACITY UTILIZATION
FOURTH QUARTER 1998 (October-December)**

NOTICE – Response to this inquiry is required by law (title 13, United States Code). By section 9 of the same law, your report to the Census Bureau is **confidential**. It may be seen only by sworn Census employees and may be used only for statistical purposes. The law also provides that copies retained in your files are immune from legal process.

In correspondence pertaining to this report refer to the **CENSUS FILE NUMBER (CFN) (11 digits)**

IMPORTANT

PLEASE READ INSTRUCTIONS AND DEFINITIONS BEFORE COMPLETING FORM

Please correct errors in name, address, and ZIP Code. ENTER street and number if not shown.

Item 1 OPERATIONAL STATUS

Mark (X) ONE box which best describes this establishment at the end of 1998. See instructions for reporting.

- 12 In operation – Complete items 2 through 6.
- 13 Temporarily idle – See instruction sheet – Complete items 2–6.

- 14 Sold or leased to another company
See instruction sheet
- 15 Permanently ceased operations –
See instruction sheet.

} Give ¹⁶ date sold or closed	Month	Year

Item 2 VALUE OF PRODUCTION

a. Report market value of **actual production** for the 4th quarter of 1998 23

ACTUAL PRODUCTION					
		4th QTR. 1998		4th QTR. 1997	
		Mil.	Thou.	Mil.	Thou.
\$					

b. Estimate the market value of production of this plant as if it had been operating at **full production capability** in the 4th quarter of 1998. 34

FULL PRODUCTION CAPABILITY					
		4th QTR. 1998		4th QTR. 1997	
		Mil.	Thou.	Mil.	Thou.
\$					

- Assume:
- only machinery and equipment **in place and ready to operate.**
 - **normal** downtime.
 - availability of labor, materials, utilities, etc. **ARE NOT** limiting factors.
 - the number of shifts, hours of operation, and overtime pay that can be **sustained** under **normal** conditions and a **realistic** work schedule in the long run.
 - the **same product mix** as in the fourth quarter.

Is your estimate of actual production divided by full production a reasonable estimate of your sustainable capacity use in the 4th quarter? Yes No – Please review your full production estimate

c. If your estimate of 1998 fourth quarter **full production capability** has changed compared to 1997, mark (X) the primary reasons.

- 35 Building capital expenditures
- 36 Machinery capital expenditures – Include new, replaced, or enhanced machinery
- 37 Building retirements
- 38 Machinery retirements
- 39 Price changed but product mix is the same
- 40 Revised estimation assumption with no change in plant or operations
- 41 Change in method of operation
- 42 Change in product mix or product specifications
- 43 Change in material input
- 48 Other – Specify
- 49 _____

Item 3 WORK PATTERNS OF FOURTH QUARTER OPERATIONS 1998

Column (1-3) – Report work patterns for each shift of **actual operations** in the **4th quarter of 1998**.
If the plant did not operate a second or third shift, do not complete the corresponding columns.

Column (4) – Report work patterns as if the plant operated at **full production capability** as defined in item 2b.

	Actual Operations									Full Production Capability			
	Shift one (1)			Shift two (2)			Shift three (3)			Number of shifts (4)			
90													
a. Days per week in operation	91												
b. Plant hours per week in operation.	92												
c. Weeks in operation in the quarter.	93												
d. Total number of production workers	94												
e. Temporary production workers included in line d (not on the payroll and hired through temporary agencies or as their own agent; see instructions).	95												
f. Total hours worked by production workers	96	Mil.	Thou.	Hrs.	Mil.	Thou.	Hrs.	Mil.	Thou.	Hrs.	Mil.	Thou.	Hrs.
g. Hours worked by temporary production workers (included in line f)	97												
h. Overtime hours worked by production workers (included in line f)	98												

Item 4 FOURTH QUARTER ACTUAL OPERATIONS VS FULL PRODUCTION CAPABILITY FOR 1998

a. If this plant's **actual** production in the 4th quarter was **less** than **full production capability**, mark (X) the primary reasons:

- | | | |
|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------|
| 51 <input type="checkbox"/> Not most profitable to operate at full production capability | 55 <input type="checkbox"/> Lack of sufficient fuel or electric energy | 60 <input type="checkbox"/> Strike or work stoppage |
| 52 <input type="checkbox"/> Insufficient supply of materials | 56 <input type="checkbox"/> Equipment limitations | 61 <input type="checkbox"/> Seasonal operations |
| 53 <input type="checkbox"/> Insufficient orders | 57 <input type="checkbox"/> Storage limitations | 62 <input type="checkbox"/> Environmental restrictions |
| 54 <input type="checkbox"/> Insufficient supply of local labor force/skills | 58 <input type="checkbox"/> Logistics/transportation constraints | 68 <input type="checkbox"/> Other – <i>Specify</i> ↗ |
| | 59 <input type="checkbox"/> Sufficient inventory of finished goods on hand | 69 _____ |

b. If **actual** operations in the 4th quarter were **less** than **full production capability**, how quickly could you increase to that level, if necessary? Assume sufficient demand for your product. Mark (X) the shortest amount of time you would require.

- 71 Less than 3 months 72 3 to 6 months 73 7 to 12 months 74 More than one year

Item 5 NATIONAL EMERGENCY PRODUCTION

	NATIONAL EMERGENCY PRODUCTION			
	4th QTR. 1998		4th QTR. 1997	
\$	Mil.	Thou.	Mil.	Thou.
99				

a. Estimate the value of production for this plant as if it had been operating under **national emergency** conditions in the 4th quarter of 1998.

Assume:

- full use of **all** your machinery and equipment, including that requiring reconditioning.
- plant production **as close to 168 hours per week as possible**, including extra shifts.
- **minimal** downtime.
- funding, labor, materials, components, utilities, etc., **are fully available to you and your suppliers.**
- your product mix **is** permitted to change.
- you can sell **all** of your output

See the instruction sheet for additional guidance.

b. If **actual** operations in the 4th quarter were **less** than **national emergency production**, how quickly could you increase to the national emergency production level if given emergency priority by the government? Mark (X) the shortest amount of time you would require.

- 82 Less than 3 months 83 3 to 6 months 84 7 to 12 months 85 More than one year

911 Remarks

Item 6 PERSON TO BE CONTACTED REGARDING THIS REPORT – Print name and telephone number.

Name	Telephone →	Area code	Number
	()		

RETURN COMPLETED FORM TO

**BUREAU OF THE CENSUS
1201 EAST 10TH STREET
JEFFERSONVILLE, IN 47132-0001**

INSTRUCTIONS AND DEFINITIONS 1998 SURVEY OF PLANT CAPACITY UTILIZATION

AUTHORITY AND CONFIDENTIALITY – Response to this inquiry is required by law (Title 13, U.S. Code). By section 9, of Title 13, U.S. Code, your report to the Census Bureau is confidential. It may be seen only by sworn Census Bureau employees and may be used only for statistical purposes. Copies of your report retained in your files are immune from legal process. Response is not required to any information collection form unless it displays a valid approval number from the Office of Management and Budget. This 8-digit number appears in the upper right corner of the form.

PLEASE READ CAREFULLY BEFORE COMPLETING FORM

PUBLIC REPORTING

Public reporting burden for this collection of information is estimated to average 3 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Associate Director for Administration/Comptroller, Attn: Paperwork Reduction Project 0607-0175, Room 3104, FB-3, Bureau of the Census, Washington, DC 20233.

WHO SHOULD REPORT?

This report covers the manufacturing plant named in the address box of the form. If your company operates more than one location, **REPORT ONLY FOR THOSE PLANTS SELECTED FOR THIS SAMPLE SURVEY**. A report form and instruction sheet are enclosed for each plant selected.

Since some of the information necessary to complete this form may not be in your records, **CONSULT THE PLANT MANAGER** on questions regarding full production capability and emergency production.

WHAT TO REPORT?

This survey form primarily asks for 3 levels of operating capability of this plant in the fourth quarter of 1998:

- (1) the market value of actual goods produced;
- (2) the value of products that could have been produced if the plant was operating at full capacity in the fourth quarter; and
- (3) the value of products that could have been produced if required in a national emergency.

The instructions and definitions on this sheet offer more detail and guidance to help you respond.

If 1997 data are NOT printed on the form, you do not need to enter data for that period. Comparable data for 1997 are printed on the form if the plant was selected to participate in the 1997 survey.

WHEN TO REPORT

Complete the survey form and return it in the enclosed return envelope by the date printed on the top of the form. If you have misplaced the return envelope, mail the completed form to:

Bureau of the Census
1201 East 10th Street
Jeffersonville, IN 47132-0001

HOW TO REPORT

Answer all questions on the report form. Follow the instructions for each item given on this sheet.

Report market value of production figures in **thousands of dollars**. For example, if value of production is 1,125,788 dollars, enter the figure as follows:

Mil.	Thou.
1	126

For information concerning the possible use of reporting formats other than the form provided, such as computer diskettes or printouts, contact Mr. Ron Taylor at (301) 457-4701.

NAME AND ADDRESS

Review the name and address of this plant printed in the top right corner of the report form. Line out any errors and make any necessary corrections or additions in the address box.

Item 1 – OPERATIONAL STATUS

Report the status of operations at this plant at the end of 1998 by marking the appropriate box. If:

In Operation – Complete items 2 through 6.

Idle Plants – Complete items 2 through 6.

- a. If this plant was temporarily idle during the **entire fourth quarter** report actual operations as zero where appropriate.
- b. If this plant was temporarily idle during **only part of the fourth quarter** report the actual operations for the time the plant was in operation.

Item 1 – OPERATIONAL STATUS – Continued

For both cases, report full production and emergency production capabilities based on the plant's **peak** quarterly production during 1998.

Sold or Leased Plant – If this plant was sold or leased to another company, indicate the month and year this action took place.

- a. If you still maintain records for this plant, complete items 2 through 6.
- b. If you do not have 4th quarter information about this plant, complete item 6 only and return the form.

Permanently Ceased Operations – Indicate the month and year when operations ceased at this plant. If the plant was in operation at ANY time during the fourth quarter of 1998, complete items 2 through 6. Report full production and emergency production capabilities, as if the plant operated the **entire** quarter.

SPECIAL NOTE:

Seasonal Operations

- a. If this plant is usually temporarily idle during the fourth quarter *due to seasonal factors*, report as instructed for idle plants.
- b. If this plant was not temporarily idle during the fourth quarter, but its operations vary substantially from quarter to quarter, *due to seasonal factors*, complete items 2 through 6, and report full production and national emergency production capabilities based on the plant's **peak** quarterly production during the year.

For both types of seasonal operations, check "Seasonal Operations" in item 4a if actual operations are less than full production capability.

Item 2 – VALUE OF PRODUCTION

Item 2a – MARKET VALUE OF PRODUCTION

Report the value of production based on estimated sales price(s) of what was produced during the fourth quarter, not fourth quarter sales. If production at this plant consists of only interplant transfers, use method (2) below to calculate market value of production.

Three methods – to estimate market value of goods produced during the fourth quarter:

- (1) Estimate the sales price(s) of item(s) produced, then multiply the sales price(s) by the total number of items produced during the fourth quarter.
- (2) Use book figures of actual production costs plus an estimate of markup to cover overhead and profit.
- (3) Use fourth quarter value of shipments f.o.b. (freight on board) from the plant (including the value of interplant transfers within a company,

in addition to direct costs of production, but excluding resales and miscellaneous receipts) plus any additions or subtractions to the finished stock of inventories present before the fourth quarter (excluding materials and supplies). [Value of production = value of shipments + value of ending inventory – value of beginning inventory].

SPECIAL NOTE:

Do **not** include manufacturing contracted to others. If you contract out all of your manufacturing, please state this in the "Remarks" section, complete item 6, and return the form.

Job shops and custom orders: For actual production, report value of work done in the fourth quarter of 1998.

Publishing/printing plants: For actual production, report your printing sales only (NOT advertising sales) for the location named in the address box of the form. Do not include any printing that is contracted out.

Item 2b – FULL PRODUCTION CAPABILITY

Read the definition and assumptions regarding full production capability. Estimate your market value of products that would have been produced if the plant was operating at full capacity in the fourth quarter. Use one of the two methods suggested below or your own computations.

Be careful to distinguish between full production that **COULD** be sustained in the long run and emergency production levels which would **NOT** be sustainable in the long run.

Full Production Capability – The maximum level of production that this establishment could reasonably expect to attain under **normal** and **realistic** operating conditions. In estimating market value at full production capability, consider the following:

- Assume **only** the machinery and equipment in place and ready to operate will be utilized. Do not include facilities or equipment that would require extensive reconditioning before they can be made operable.
- Assume **normal** downtime, maintenance, repair, and cleanup. If full production requires additional shifts or hours of operation, then appropriate downtime should be considered in the estimate.
- Assume number of shifts, hours of plant operations, and overtime pay that can be sustained under **normal** conditions and a **realistic** work schedule.
- Assume availability of labor, materials, utilities, etc., are **not** limiting factors.
- Assume a product mix that was **typical** or representative of your production during the fourth quarter. If your plant is subject to short-run variation assume the product mix of the current period.

Item 2b – FULL PRODUCTION CAPABILITY – Continued

- Do not assume increased use of productive facilities outside the plant for services (such as contracting out subassembly work) in excess of the proportion that would be normal during the fourth quarter.

SPECIAL NOTE:

Job shops and custom orders: For full production, estimate the market value of work that you could have accomplished under sustainable operating conditions and if you had sufficient orders.

Publishing/printing plants: For full production, report printing sales for this location as if it were running at peak circulation.

Two Methods to estimate market value of production when operating at full production capability:

- (1) If you have a reliable or accurate estimate of your plant's sustainable capacity utilization rate: **Divide** your market value of production at **actual** operations (item 2c) by your current **rate of capacity** utilization (in decimal form). For example, if your value of actual operations for the fourth quarter is \$1,200,000 and your plant is currently at 80% capacity, divide \$1,200,000 by 0.80 for a full production capability of \$1,500,000.

$$\text{Actual Value of Production} / \text{Capacity Utilization Rate} = \text{Market value of production at Full Capacity}$$

Your plant's capacity utilization rate should be based on a capacity output measure that your plant could have sustained under **normal**, not emergency, conditions.

- (2) For each product, estimate the number of items that could have been produced if operating at full production, as defined by the assumptions given. Multiply the number of items produced by its sales price (or market value). For example, if you can produce 25,000 items in the fourth quarter, under full production criteria, and the sales price (market value) for each item is \$4.50, then multiply 25,000 times \$4.50 for a full production capability of \$112,500.

$$\text{Number of items produced} \times \text{Sales price (Market Value)} = \text{Market value of production at Full Capacity}$$

If producing **more than one product**, **sum** the market values of production at full production estimated for each product (assuming the same product mix) for a **total** value of full production for the plant.

Enter your estimate for value of full production in item 2b.

Divide your estimate for actual production by full production capability. **Is this a reasonable percentage of your sustainable capacity use in the 4th quarter of 1998?** Mark (X) yes or no. If no, please review your full production capability estimate. If yes, continue with the next item.

Item 2c – Comparing full production capability between fourth quarters of 1997 and 1998

If the value of full production for the fourth quarter of 1998 differs from 1997, mark (X) the primary reasons for the change.

Item 3 – WORK PATTERNS OF FOURTH QUARTER OPERATIONS

Actual Operations – In columns 1 through 3, report work patterns for the following characteristics covering each *production shift* of actual operations in the 4th quarter of 1998. Report based on the average number of shifts per day in the fourth quarter. Do not consider maintenance, administrative, or support operations as additional shifts. Do not consider overtime hours as additional shifts. If the plant did not operate a second or third shift, do not complete the corresponding columns.

a. Days per week in operation – Report the typical number of days per week in operation for each shift during the fourth quarter. If your plant has departments or assembly lines that operate varied number of days *within a shift*, report days per week in operation for the department operating the greatest number of days per week for that shift. For example, if one production line operates 7 days per week during the first shift and a second production line operates 5 days per week during the first shift, report that the first shift operates 7 days per week.

b. Plant hours per week – Report the typical number of hours the plant was in production for each shift during a single week. If your plant has departments or assembly lines that operate at varied periods of time *within a shift*, report hours per week in operation for the production department operating the greatest number of hours per week for that shift. Do not report the number of person hours worked (see below).

c. Weeks in operation in the quarter – Report the total number of weeks the plant operated each shift during the fourth quarter. NOTE: The fourth quarter of the year covers 13 weeks.

d. Total number of production workers – Report the total number of production workers at this establishment, by shift including both permanent (payroll) and temporary employees who were paid during the pay period which included November 12. Include all persons on paid sick leave, paid holidays, paid vacation during this pay period.

NOTE: **Include** workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial, guard services, product development, auxiliary production for plant's own use (e.g., power plant), record keeping, and other closely associated services. Include truck drivers delivering ready-mixed concrete.

Item 3 – WORK PATTERNS OF FOURTH QUARTER OPERATIONS – Continued

Exclude nonproduction personnel, including those engaged in supervision above line-supervisor level, sales, sales delivery (truck drivers and helpers), advertising, credit, collection, installation and servicing of own product, clerical and routine office functions, executive, purchasing, finance, legal, personnel (including cafeteria, etc.), professional and technical.

e. Number of temporary production workers –

Report the number of *temporary production workers* **not** on the payroll (hired through temporary help agencies or as their own agent) and working during the pay period including November 12. Include temporary production workers who perform the same tasks as listed above. Do not include part-time workers.

f. Total hours worked by production workers –

Report number of hours worked during each shift by all production workers in the fourth quarters (both those on the payroll and temporary production workers). Include overtime hours, but excluded paid vacations, holidays, and sick leave.

g. Hours worked by temporary production workers –

Report number of hours worked by temporary production workers included in the total hours worked by production workers (line f). Include overtime hours worked by temporary production workers.

h. Overtime hours worked by production workers –

Report number of overtime hours included in the total hours worked by production workers (line f).

Full production capability – In column 4, report work patterns for each characteristic as if the plant operated at full production capability in the 4th quarter of 1998. Use the criteria defined for Full Production Capability in item 2b.

See example of responses to item 3 on pages 5 and 6.

Item 4 – ACTUAL OPERATIONS VS. FULL PRODUCTION CAPABILITY

Compare the actual value of production in the fourth quarter of 1998 to the estimated value of full production.

Item 4a – Mark (X) reasons why your actual operations were less than the estimated value of full production capability, if appropriate.

Item 4b – Select a time period that would have been reasonable to increase output to full production level.

Item 5 – NATIONAL EMERGENCY PRODUCTION

Read the definition and assumptions regarding national emergency production. Estimate your value of production under national emergency conditions for the fourth quarter of 1998. Use your own computations or methods similar to those described for estimating full production capability.

SPECIAL NOTE: Your value of production at national emergency levels should be **greater than or equal to** your value of full production capability. If it is less than your full production capability, please review your computations.

National Emergency Production – The maximum level of production that this plant could expect to attain and sustain for one year or more under national emergency conditions.

National emergency conditions are situations, such as a military mobilization or natural disaster, which are likely to create widespread excess demand requiring additional work shifts.

For example, military mobilization may require increased production of food, clothing, building supplies, and conversion of plants to produce alternative products in addition to traditional defense hardware. Devastation from natural disasters, such as hurricanes, floods, earthquakes, or fire, may require increased production of similar goods as well as increased production to compensate for plants damaged or destroyed.

In estimating national emergency production, consider the following:

- Assume full use of **all** machinery and equipment in place (including machinery and equipment that would require extensive reconditioning before they could be made operable).
- Assume minimal downtime and **multi-work shift** operations.
- Assume plant production as close to 168 hours per week as possible, including extra shifts (e.g., operating 7 days per week, 24 hours per day less minimal downtime).
- Assume overtime pay, availability of labor, materials, utilities, etc., are **fully available** to you and your suppliers.
- Assume you can sell all your output.
- Assume your product mix can change.
- Assume increased use of productive facilities outside the plant for services (such as contracting out subassembly work) in excess of the proportion that would be normal during the fourth quarter.

SPECIAL NOTE

Jobs shops and custom orders: For national emergency production, estimate the market value of work that could have been done if you received additional orders assuming maximum number of employees working multiple shifts that the facility can accommodate.

Publishing/printing plants: For national emergency production, report value of printing if operating machinery as close to 168 hours/week as possible.

Item 5b – Select a time period that would have been reasonable to increase output to emergency production level, if required.

If you have any questions concerning the definitions or instructions, please contact the Special Studies Branch of the Manufacturing and Construction Division on (301) 457-4667.

Example 1. A plant in Continuous Operation

- a. Days per week in operation
- b. Plant hours per week in operation.
- c. Weeks in operation in the quarter
- d. **Total number of production workers**
- e. **Temporary** production workers **included** in line d (not on the payroll and hired through temporary agencies or as their own agent; see instructions)
- f. **Total hours worked by production workers**
- g. Hours worked by temporary production workers (**included** in line f)
- h. Overtime hours worked by production workers (**included** in line f)

Actual Operations									Full Production Capability		
Shift one (1)			Shift two (2)			Shift three (3)			Number of shifts (4)		
7			7			7			7		
56			56			56			168		
13			13			13			13		
360			360			200			1080		
0			0			0			0		
Mil.	Thou.	Hrs.	Mil.	Thou.	Hrs.	Mil.	Thou.	Hrs.	Mil.	Thou.	Hrs.
	168	480		168	480		104	000		505	440
		0			0			0			0
		200			200			0			0

Example 2. A plant with one 8-hour shift operating 5 days/week

- a. Days per week in operation
- b. Plant hours per week in operation.
- c. Weeks in operation in the quarter
- d. **Total number of production workers**
- e. **Temporary** production workers **included** in line d (not on the payroll and hired through temporary agencies or as their own agent; see instructions)
- f. **Total hours worked by production workers**
- g. Hours worked by temporary production workers (**included** in line f)
- h. Overtime hours worked by production workers (**included** in line f)

Actual Operations									Full Production Capability		
Shift one (1)			Shift two (2)			Shift three (3)			Number of shifts (4)		
5									7		
40									56		
13									13		
32									44		
2									4		
Mil.	Thou.	Hrs.	Mil.	Thou.	Hrs.	Mil.	Thou.	Hrs.	Mil.	Thou.	Hrs.
	15	880								17	680
		240									600
		0									0

Example 3. A plant that can sustain one shift five days/week under normal conditions and a realistic work schedule

- a. Days per week in operation
- b. Plant hours per week in operation.
- c. Weeks in operation in the quarter
- d. **Total number of production workers**
- e. **Temporary** production workers **included** in line d (not on the payroll and hired through temporary agencies or as their own agent; see instructions)
- f. **Total hours worked by production workers**
- g. Hours worked by temporary production workers (**included** in line f)
- h. Overtime hours worked by production workers (**included** in line f)

Actual Operations									Full Production Capability		
Shift one (1)			Shift two (2)			Shift three (3)			Number of shifts (4)		
5									5		
40									40		
13									13		
89									100		
2									0		
Mil.	Thou.	Hrs.	Mil.	Thou.	Hrs.	Mil.	Thou.	Hrs.	Mil.	Thou.	Hrs.
	46	040								52	000
		800									0
		0									0

Example 4. A plant with Two Production Shifts and One Maintenance Shift

a. Days per week in operation	7	5		7
b. Plant hours per week in operation	56	40		112
c. Weeks in operation in the quarter	13	13		13
d. Total number of production workers	110	50		210
e. Temporary production workers included in line d (not on the payroll and hired through temporary agencies or as their own agent; see instructions)	10	0		0
f. Total hours worked by production workers	53	200	24	800
g. Hours worked by temporary production workers (included in line f)	1	200		0
h. Overtime hours worked by production workers (included in line f)		0		0

Actual Operations									Full Production Capability		
Shift one (1)			Shift two (2)			Shift three (3)			Number of shifts (4)		
											2

Example 5. A plant with One Week of Paid Holiday Downtime* and Operations That Vary by Shift

a. Days per week in operation	7	7	5	7
b. Plant hours per week in operation	56	56	20	168
c. Weeks in operation in the quarter	12 *	12 *	12 *	12 *
d. Total number of production workers.	150	150	110	450
e. Temporary production workers included in line d (not on the payroll and hired through temporary agencies or as their own agent; see instructions)	0	0	0	0
f. Total hours worked by production workers	64	800	63	175
g. Hours worked by temporary production workers (included in line f)		0		0
h. Overtime hours worked by production workers (included in line f)		0		0

Actual Operations									Full Production Capability		
Shift one (1)			Shift two (2)			Shift three (3)			Number of shifts (4)		
											3

Appendix B.

Qualifications of the Data

DEFINITIONS AND CONCEPTS

Although survey respondents were provided detailed instructions for estimating full production capacity and national emergency production capacity (see Appendix A), it is extremely difficult to translate the concept of plant capacity into a working definition which is applicable to all industries and situations. A host of problems are inherent in any attempt to measure capacity. Following are some of the more significant:

1. Telephone conversations with respondents have revealed that there are a variety of methods by which plants can measure their capacity. For example, it is customary for petroleum refineries to use an engineering concept of capacity based on maximum throughput during around-the-clock operations, with allowance made for maintenance or other necessary downtime. Other industries use different methods. They might base capacity on the maximum number of work hours of their labor force, on a past peak performance period, or on any number of other methods.

In order to improve the consistency of reporting across industries, the Census Bureau made an attempt to prescribe a standardized method for calculating levels of capacity and capacity utilization. Respondents across industries were asked to report production by the plant for actual, full production, and national emergency levels of production, in terms of market value of production, and given specific assumptions to follow in estimating each level of production (see Appendix A). The capacity utilization rates estimates produced in this report are calculated as a ratio of actual value of production to full production and national emergency values of production.

2. Full production limitations. Respondents were instructed as follows when estimating full production capacity: "Do not consider overtime pay, availability of labor, materials, utilities, etc., to be limiting factors." However, some respondents appear to be unrealistic in reporting their full production operations. For example, some establishments defined full production capacity as continuous operations (7 days a week, 24 hours a day) even though they were currently operating a single shift and admitted they could not expect realistically to operate continuously with their present plant and equipment or within their industry or locality. Census staff members have discussed the most questionable estimates with respondents and adjusted

the reports were appropriate; however, there is a distinct element of subjectivity, and it is apparent that not all plants have defined full production capacity in realistic terms.

3. National emergency production limitations. Some individual plants do not differentiate between their full production capacity and national emergency capacity, while some do. Therefore, for some individual plants, the levels of capacity and capacity utilization rates calculated for full production and national emergency are the same. For these plants, no measurable difference between full production and national emergency capacity levels or capacity utilization can be obtained.

Census staff members have discussed the most questionable estimates with respondents and adjusted the reports where appropriate; however, there is a distinct element of subjectivity, and it is apparent that not all plants have defined national emergency capacity in realistic terms.

4. Year-to-year variations in reported data. There is considerable year-to-year change in reported capacity and capacity utilization for individual plants. Some of this reflects real change in capacity due to additions or retirements of plant and equipment, change in product mix, or change in productivity. Other changes, however, are the result of response variations which are part of the nonsampling errors described in the following section on sampling and nonsampling errors. These variations, which often result from different personnel completing the form, include different judgmental decisions about work patterns and what plant and equipment to include in estimating capacity. At the summary levels, the individual establishment changes (either up or down) have a tendency to cancel each other.

SAMPLING AND NONSAMPLING ERRORS

The survey estimates presented in this report are subject to both sampling and nonsampling errors. Nonsampling errors include various response and operational errors; errors of collection, reporting, transcription, and bias due to nonresponse, etc. These errors would also occur if a complete canvass were conducted under the same conditions as this survey. Most of the important operational errors were detected and corrected in the course of the review of the data for reasonableness and consistency.

However, because of the definitional and conceptual problems associated with this survey, it is likely that the response errors are greater in magnitude than for other manufacturing surveys in which respondents are asked to report data that are generally kept as a matter of record. Explicit measures of the nonsampling errors are not available. As derived, the estimated standard errors, which are discussed below, include part of the effect of these nonsampling errors. The total error, though, will exceed the standard errors shown and, for particular estimates, may exceed the standard errors by a considerable amount.

The panel selected for this survey was sampled using probabilities proportionate (pps) to size whereby each sampling unit was given an independent chance of selection. The particular sample selected was but one of many similar probability samples that could have resulted using this sampling methodology. Probabilities were assigned so that an expected sample size of approximately 17,000 would result, but the independent feature of the sample design does not preclude samples being drawn of a size other than 17,000. Each of the possible samples would yield somewhat different sets of results. The sampling errors—the differences between the estimates obtained from the sample actually selected and the results theoretically obtainable from a comparable complete canvass of the same target universe—are unknown. However, the estimated standard error of the level of the utilization rate and the estimated standard error for the year-to-year change are guides to the potential size of the sampling error.

The estimated standard error of a utilization rate, or of a year-to-year change in a utilization rate, may be used to

define a confidence interval about that rate or change such that the complete coverage result will be included within that interval with known probability. As examples:

1. The interval defined by one standard error below the estimate of level or change to one standard error above contains the complete coverage result with approximately 67 percent confidence.
2. The interval defined by two standard errors below and above the estimate of level or change contains the complete coverage result with approximately 95 percent confidence.
3. The interval defined by three standard errors below and above the estimate of level or change contains the complete coverage result with approximately 99 percent confidence.

Thus, an inference that the complete coverage result lies within the indicated intervals would, with the prescribed confidences, be correct. For example, if an estimated utilization rate is shown as 80 percent, with an associated standard error of 3 percent, there is approximately 67-percent confidence that the interval 77 percent to 83 percent includes the complete coverage rate, about 95-percent confidence that the interval 74 percent to 86 percent would include the complete coverage rate, and approximately 99 percent confidence that the interval 71 percent to 89 percent would include the complete coverage rate.

Note that the estimates of the standard errors are derived from the sample and are also subject to sampling error.

Appendix C.

Description of Survey Sample and Estimating Procedure

SURVEY SAMPLE

The estimates presented in this report are derived from a probability sample which initially contained approximately 17,000 manufacturing establishments. The 1998 panel was essentially a continuation of the panel first selected for the 1996 survey year. The 1996 panel was originally selected from a frame created from the 1992 Census of Manufactures and supplemented with new manufacturing plants that began operating since 1992, i.e., from 1993 through 1995. For the 1997 survey, the 1996 panel was augmented with a sample of new plants in 1996. A sample of dental labs (SIC 8072) was also selected to supplement this panel. This was done because dental labs were newly classified in manufacturing under the North American Industry Classification System (NAICS). Dental labs represented the only incoming activity to manufacturing which was clearly defined by an SIC four-digit industry code, so this was the only incoming NAICS industry sampled at this time.

The 1998 survey year will be the last year for this continuing panel. Since newly operating plants generally do not respond at a high level during their first year, it was decided not to supplement the 1997 panel with 1997 births since this would likely be their only year in the survey. A slight bias in the 1998 estimates results from this decision. However, the 1997 panel was supplemented with an additional sample of plants that under NAICS were newly classified as manufacturing. Their 1998 data, along with the dental lab data collected since 1997, will not be tabulated until survey year 1999 when the Survey of Plant Capacity will be sampled and published for the first time on the NAICS basis. The number of incoming NAICS manufacturing plants was determined so as to offset the attrition rate from the 1997 sample, thus the total sample size was maintained at about 17,000 establishments.

The 1992 Census of Manufactures universe contained about 370,000 establishments. Approximately 237,000 records were mailed a census form while the remainder were imputed based on administrative data obtained from Internal Revenue Service and/or Social Security Administration records. These small administrative record cases were not part of the sampling frame for the Survey of Plant Capacity Utilization. All major manufacturing industry groups are represented in the survey.

For the original sampling operation, probabilities of selection were assigned proportionate to census of manufactures' total value of shipments. Actual probabilities were based upon predetermined reliability constraints on

industry total value of shipments. The manufacturing industries were split into two basic groups. One group was the 188 industries identified by the Department of Defense (DOD) for the 1994 survey as primary industries. The remaining manufacturing industries comprised the second group. For each group five priority categories were defined. The five categories corresponded to levels of improvement desired in the industry relative standard errors obtained in the 1994 survey. These levels of improvement were determined by examining how actual, observed relative standard errors *on 1994 industry utilization rates* compared with the relative standard error constraints on industry shipments that were used to control the sample allocation by industry in 1994. We defined the categories based on a judgement of how much, if at all, the previous relative standard error constraints should be reduced. The categories ranged from priority category 1 (industries in need of most improvement over their 1994 relative standard errors) to priority category 5 (industries in need of no improvement over their 1994 relative standard errors). Based on this priority category, the sample control constraints were adjusted to achieve the desired level of improvement. For the same category, DOD industry constraints were tightened more than non-DOD industry constraints. This was the case even for category 5, where the DOD industry constraints were tightened slightly and the non-DOD constraints were not changed. The constraints assigned to these categories were made subject to the overall limitation of the sample size being about 17,000 establishments.

The original panel and the subsequent supplemented panels were all sampled with independent probability proportionate to size (pps) sampling. The independent feature implied that the number of selected cases varied slightly from the expected sample size. The incoming NAICS manufacturing plants sampled for the 1998 survey were selected using a different pps sampling procedure. This procedure insured that the expected sample size was realized. In both procedures, an establishment's sample weight was the inverse of its probability of selection. Sample weights for the original sampling operation were not allowed to exceed 120. If the inverses of originally assigned probabilities were greater than 120, the probabilities were adjusted (increased) prior to sampling so that the inverses were exactly 120. Similarly, for the birth and NAICS sampling, sample weights were not allowed to exceed 50.

ESTIMATING PROCEDURE

The estimated full production rates shown in this report for the four-digit SIC industries in Table 1 were computed in the following manner:

$$R_j = \frac{\sum_i WT_{ij} VPA_{ij}}{\sum_i WT_{ij} VPF_{ij}}$$

where R_j is the utilization rate for the j th four-digit SIC industry, WT_{ij} is the sampling weight for establishment i in four-digit industry j ; VPA_{ij} is the actual value of production for establishment i in four-digit industry j ; VPF_{ij} is the value of production at the full production level; and the summations are for those establishments reporting value of production at both actual and full production level. (National emergency production rates are computed similarly, by substituting national emergency production (VPE) for VPF in the above formula.) This method does not require the estimation of data for individual nonrespondents. The process assumes that utilization rates for nonrespondents are the same as the average rates for respondents.

The estimated rates for the level of utilization shown in this report for the three- and two-digit SIC industries were computed in the following manner:

$$R_{(K)} = \frac{\sum_j VA_j}{\sum_j \left(\frac{VA_j}{R_j} \right)}$$

where $R_{(K)}$ is the utilization for the K th industry group (K can be three- or two-digit SIC or U.S. total); VA_j is the value added for the j th four-digit industry as published in the most recent ASM or census of manufactures; and VA_j/R_j is the value added for the j th four-digit industry adjusted to full production or national emergency production levels of operation.

Value added is defined as the difference between sales values and the cost of merchandise sold without further manufacture, processing, or assembly.

Value added is used when aggregating three- and two-digit SIC industry measures to avoid duplication in figures of production that result when products of some establishments are also input materials for other establishments.

Most users of industrial data consider value added to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas. Therefore, using value added in the methodology to derive utilization rate measures should provide better estimates.

Estimates of the variances on these estimates for utilization rates of four-digit SIC industries were computed as:

$$\sigma^2(R_j) = \sigma^2(A_j/B_j) = \frac{1}{B_j^2} [\sigma^2(A_j) + R_j^2 \sigma^2(B_j) - 2R_j \sigma(A_j B_j)]$$

where $A_j = \sum_i (WT_{ij}) (VPA_{ij})$

$$B_j = \sum_i (WT_{ij}) (VPF_{ij})$$

$$\sigma^2(A_j) = \text{Variance of } A_j = \sum_i (WT_{ij}) (WT_{ij} - 1) (VPA_{ij})^2$$

$$\sigma^2(B_j) = \text{Variance of } B_j = \sum_i (WT_{ij}) (WT_{ij} - 1) (VPF_{ij})^2$$

$$\sigma(A_j B_j) = \text{Covariance of } A_j \text{ and } B_j = \sum_i (WT_{ij}) (WT_{ij} - 1) (VPA_{ij})(VPF_{ij})$$

Estimates of variances of higher level aggregates $R_{(K)}$ were computed as follows:

$$\sigma^2(R_{(K)}) = \frac{1}{\left[\sum_j \left(\frac{VA_j}{R_j} \right) \right]^2} \left[\sum_j \sigma^2(VA_j) + R_{(K)}^2 \left[\sum_j \left(\frac{VA_j^2}{R_j^4} \right) (\sigma^2(R_j)) \right] - 2R_{(K)} \sum_j \left(\frac{1}{R_j} \sigma^2(VA_j) \right) \right]$$

where $\sigma^2(VA_j)$ is the ASM estimate of variance for value added in industry j , and where the summations range over the set of four-digit industries comprising the higher level industry group K . When census year value added data are utilized, then the variance terms $\sigma^2(VA_j)$ reduce to zero.

Estimates of the year-to-year change in the utilization rates at all SIC levels are the difference between the 2 yearly rates. We have not directly calculated estimates of the variances of the year-to-year change. For this publication, we assumed no correlation between the yearly rates. This assumption almost certainly results in an overstatement of the actual variances of change. Estimates of the variances of the year-to-year change between 1998 and 1997 were computed as:

$$\sigma_{98-97} = \sqrt{\sigma_{98}^2 + \sigma_{97}^2}$$

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