

Survey of Plant Capacity

1999

Issued March 2001

MQ-C1(99)

Current Industrial
Reports



U S C E N S U S B U R E A U

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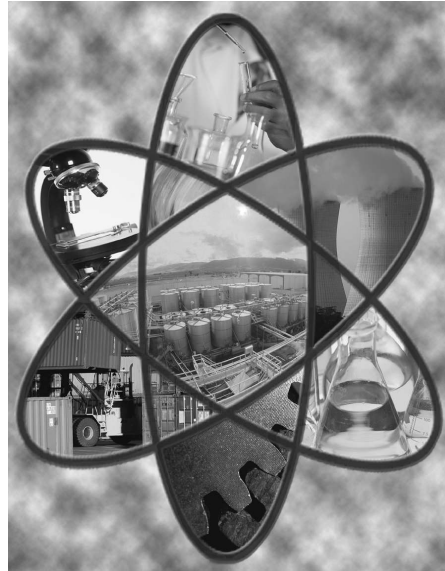
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Introduction

SUMMARY OF 1999 SURVEY RESULTS

U.S. domestic manufacturing plants used an estimated 74 percent (± 1 percentage point) of their full production capacity for the fourth quarter of 1999 and 73 percent (± 1 percentage point) for the fourth quarter of 1998. The durable goods industries fourth quarter 1999 rate of 72 percent (± 1 percentage point) was significantly lower than the rate of 77 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. North American Industry Classification System (NAICS) subsectors 321, 327, 331, 332, 333, 334, 335, 336, 337, and 339 are considered durable goods industries. Nondurable goods industries are manufacturing industries in which products generally have a life expectancy of less than 3 years. NAICS subsectors 311, 312, 313, 314, 315, 316, 322, 323, 324, 325, and 326 are nondurables goods industries.

The advance processing industries fourth quarter rate of 72 percent (± 1 percentage point) was significantly lower than the rate of 77 percent (± 1 percentage point) estimated 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. NAICS subsectors 313, 314, 321, 322, 324, 326, 327, 331, and 323 are classified as the primary processing industries. Advance processing industries are industries in which products are considered finished manufactured items. NAICS subsectors 311, 312, 315, 316, 323, 333, 334, 335, 336, 337, and 339 are advance processing industries.

Among the major industries with the lowest utilization rates of their full production capacity in the fourth quarter of 1999 were machinery manufacturing (NAICS 333) at 66 percent and fabricated metal product manufacturing (NAICS 332) and miscellaneous manufacturing (NAICS 339), both at 70 percent. Among the industries with the highest utilization rates for 1999 were primary metal manufacturing (NAICS 331) and petroleum and coal products manufacturing (NAICS 324), both at 81 percent, and paper manufacturing (NAICS 322) 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 1999 were leather and allied product manufacturing (NAICS 316) at 41 percent and miscellaneous manufacturing (NAICS 339) at 43 percent. Among the industries with the highest utilization rates of 1999 were textile mills (NAICS 313) at 70 percent and paper manufacturing (NAICS 322) at 74 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 of operations to the national emergency production level.

Table 1a summarizes full production utilization rates and table 1b summarizes emergency production utilization rates, at three-, four-, five-, and six-digit NAICS industry levels, for fourth quarters 1997 through 1999. Table 2 shows both full and emergency production utilization rates and standard errors, at the three-, four-, five-, and six-digit NAICS industry levels, for fourth quarters 1997 through 1999. 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.

INDUSTRIAL CLASSIFICATION

The 1999 survey is the first to be sampled on a NAICS basis. Manufacturing plants in prior surveys were selected to represent Standard Industrial Classification (SIC) industries. Both classification systems (NAICS and SIC) were published by the Office of Management and Budget.

SURVEY DESCRIPTION

Data are obtained from manufacturing establishments by means of a mailed questionnaire. Respondents are asked to report their actual production, full production, and national emergency production levels of operation for the fourth quarter of the year in terms of value of production. From these reported dollar values, utilization rates for full production and national emergency production are derived. Year-to-year changes in these rates are affected by changes in the estimated capacity of industrial plants due to factors such as capital expenditures, capital retirements, changes in the workforce, changes in prices, changes in product mix, and changes in respondents' estimates of productivity.

Final estimates are based on information collected from a sample of approximately 16,500 manufacturing establishments. Estimates in this release are based on response from approximately 80 percent of the survey panel.

LIMITATIONS OF THE DATA

For the following reasons, caution should be used when comparing 1997 and 1998 rates with 1999 rates:

- The sample of plants used for 1997 and 1998 was originally selected to represent SIC industries. These plants were tabulated on a NAICS basis.
- A new sampling methodology was used in 1999. See Appendix C.
- A new imputation methodology was used in 1999. See Appendix C.

- Plants used to create 1997 and 1998 SIC estimates in prior publications were classified based on the 1992 Economic Census. For this publication, those plants have been reclassified using the more current 1997 Economic Census.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols appear frequently in the tables:

- Represents zero.
- (D) Withheld to avoid disclosing data for individual companies.
- (NA) Not available.
- NAICS North American Industry Classification System.
- ^a Data cells with a level of imputation exceeding 50 percent.

Table 1a. Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999

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

NAICS code	Industry	Full production rate		
		1999	1998	1997
31-33	Manufacturing	74	73	76
	Durable goods industries	72	72	75
	Nondurable goods industries	77	73	76
	Advanced processing industries	72	71	74
	Primary processing industries	77	76	79
311	Food mfg	74	74	74
3111	Animal food mfg	79	71	73
31111	Animal food mfg	79	71	73
311111	Dog & cat food mfg	77	77	81
311119	Other animal food mfg	80	67	66
3112	Grain & oilseed milling	76	83	84
31121	Flour milling & malt mfg	78	77	82
311211	Flour milling	75	75	82
311212	Rice milling	92	80	81
311213	Malt mfg	74	87	86
31122	Starch & vegetable fats & oils mfg	84	84	90
311221	Wet corn milling	91	86	92
311222	Soybean processing	85	90	95
311223	Other oilseed processing	80	86	90
311225	Fats & oils refining & blending	72	75	83
31123	Breakfast cereal mfg	70	85	80
311230	Breakfast cereal mfg	70	85	80
3113	Sugar & confectionery product mfg	72	71	69
31131	Sugar mfg	92	84	90
311311	Sugarcane mills	98	84	95
311312	Cane sugar refining	85	77	83
311313	Beet sugar mfg	92	90	91
31132	Chocolate & confectionery mfg from cacao beans	75	74	75
311320	Chocolate & confectionery mfg from cacao beans	75	74	75
31133	Confectionery mfg from purchased chocolate	64	67	58
311330	Confectionery mfg from purchased chocolate	64	67	58
31134	Nonchocolate confectionery mfg	74	67	76
311340	Nonchocolate confectionery mfg	74	67	76
3114	Fruit & vegetable preserving & specialty food mfg	69	76	73
31141	Frozen food mfg	82	83	82
311411	Frozen fruit, juice, & vegetable mfg	82	83	83
311412	Frozen specialty food mfg	82	83	80
31142	Fruit & vegetable canning, pickling, & drying	61	62	68
311421	Fruit & vegetable canning	59	76	62
311422	Specialty canning	61	82	78
311423	Dried & dehydrated food mfg	74	69	71
3115	Dairy product mfg	78	78	78
31151	Dairy product (except frozen) mfg	79	81	80
311511	Fluid milk mfg	82	76	78
311512	Creamery butter mfg	81	89	85
311513	Cheese mfg	78	90	89
311514	Dry, condensed, & evaporated dairy product mfg	75	78	77
31152	Ice cream & frozen dessert mfg	69	65	65
311520	Ice cream & frozen dessert mfg	69	65	65
3116	Meat product mfg	85	83	84
31161	Animal slaughtering & processing	85	83	84
311611	Animal (except poultry) slaughtering	88	79	81
311612	Meat processed from carcasses	78	79	84
311613	Rendering & meat byproduct processing	^a 82	86	79
311615	Poultry processing	90	88	87
3117	Seafood product preparation & packaging	62	51	57
31171	Seafood product preparation & packaging	62	51	57
311711	Seafood canning	66	^a 56	64
311712	Fresh & frozen seafood processing	61	51	56
3118	Bakeries & tortilla mfg	73	74	75
31181	Bread & bakery product mfg	76	75	76
311811	Retail bakeries	74	81	(NA)
311812	Commercial bakeries	76	74	76
311813	Frozen cakes, pies, & other pastries mfg	76	76	80
31182	Cookie, cracker, & pasta mfg	67	71	73
311821	Cookie & cracker mfg	63	70	71
311822	Flour mixes & dough mfg from purchased flour	80	79	78
311823	Dry pasta mfg	70	^a 64	^a 76
31183	Tortilla mfg	78	(NA)	(NA)
311830	Tortilla mfg	78	(NA)	(NA)
3119	Other food mfg	68	63	64
31191	Snack food mfg	^a 76	72	78
311911	Roasted nuts & peanut butter mfg	82	72	73
311919	Other snack food mfg	^a 74	72	79
31192	Coffee & tea mfg	77	59	68
311920	Coffee & tea mfg	77	59	68
31193	Flavoring syrup & concentrate mfg	61	53	49
311930	Flavoring syrup & concentrate mfg	61	53	49
31194	Seasoning & dressing mfg	61	67	68
311941	Mayonnaise, dressing, & other prepared sauce mfg	58	70	74
311942	Spice & extract mfg	65	64	61
31199	All other food mfg	68	63	60
311991	Perishable prepared food mfg	67	51	51
311999	All other miscellaneous food mfg	68	68	65

Table 1a. Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.

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

NAICS code	Industry	Full production rate		
		1999	1998	1997
312	Beverage & tobacco product mfg	75	71	71
3121	Beverage mfg	70	68	68
31211	Soft drink & ice mfg	63	59	64
312111	Soft drink mfg	64	61	66
312112	Bottled water mfg	56	45	56
312113	Ice mfg	^{a40} 40	43	31
31212	Breweries	85	82	71
312120	Breweries	85	82	^{a71} 71
31213	Wineries	71	79	80
312130	Wineries	71	79	80
31214	Distilleries	55	63	65
312140	Distilleries	55	63	65
3122	Tobacco mfg	81	73	74
31221	Tobacco stemming & redrying	77	77	79
312210	Tobacco stemming & redrying	77	77	79
31222	Tobacco product mfg	81	73	74
312221	Cigarette mfg	82	71	72
312229	Other tobacco product mfg	73	92	94
313	Textile mills	80	74	82
3131	Fiber, yarn, & thread mills	82	79	85
31311	Fiber, yarn, & thread mills	82	79	85
313111	Yarn spinning mills	83	80	85
313112	Yarn texturing, throwing, & twisting mills	79	76	83
313113	Thread mills	85	(D)	(D)
3132	Fabric mills	81	76	82
31321	Broadwoven fabric mills	85	80	89
313210	Broadwoven fabric mills	85	80	89
31322	Narrow fabric mills & schiffli machine embroidery	75	74	66
313221	Narrow fabric mills	77	74	66
313222	Schiffli machine embroidery	69	73	64
31323	Nonwoven fabric mills	83	79	77
313230	Nonwoven fabric mills	83	79	77
31324	Knit fabric mills	71	63	74
313241	Weft knit fabric mills	73	55	69
313249	Other knit fabric & lace mills	69	73	78
3133	Textile & fabric finishing & fabric coating mills	76	69	82
31331	Textile & fabric finishing mills	77	69	82
313311	Broadwoven fabric finishing mills	79	68	82
313312	Textile & fabric finishing mills	74	74	82
31332	Fabric coating mills	67	64	81
313320	Fabric coating mills	67	64	81
314	Textile product mills	76	76	78
3141	Textile furnishings mills	83	76	80
31411	Carpet & rug mills	83	71	80
314110	Carpet & rug mills	83	71	80
31412	Curtain & linen mills	82	84	80
314121	Curtain & drapery mills	74	76	71
314129	Other household textile product mills	87	88	83
3149	Other textile product mills	66	75	75
31491	Textile bag & canvas mills	60	62	64
314911	Textile bag mills	53	58	62
314912	Canvas & related product mills	65	65	65
31499	All other textile product mills	69	82	80
314991	Rope, cordage, & twine mills	61	69	74
314992	Tire cord & tire fabric mills	89	85	80
314999	All other miscellaneous textile product mills	68	83	81
315	Apparel mfg	77	69	77
3151	Apparel knitting mills	84	73	82
31511	Hosiery & sock mills	81	78	87
315111	Sheer hosiery mills	78	78	80
315119	Other hosiery & sock mills	83	78	91
31519	Other apparel knitting mills	86	69	78
315191	Outerwear knitting mills	90	68	78
315192	Underwear & nightwear knitting mills	72	73	84
3152	Cut & sew apparel mfg	^{a76} 76	68	^{a76} 76
31521	Cut & sew apparel contractors	78	75	76
315211	Men's & boys' cut & sew apparel contractors	75	89	^{a71} 71
315212	Women's, girls', & infants' cut & sew apparel contractors	^{a79} 79	70	^{a78} 78
31522	Men's & boys' cut & sew apparel mfg	^{a81} 81	74	74
315221	Men's & boys' cut & sew underwear & nightwear mfg	^{a69} 69	^{a72} 72	76
315222	Men's & boys' cut & sew suit, coat, & overcoat mfg	83	72	78
315223	Men's & boys' cut & sew shirt (exc work shirt) mfg	69	^{a73} 73	79
315224	Men's & boys' cut & sew trouser, slack, & jean mfg	^{a91} 91	72	67
315225	Men's & boys' cut & sew work clothing mfg	86	86	77
315228	Men's & boys' cut & sew other outerwear mfg	79	74	81
31523	Women's & girls' cut & sew apparel mfg	^{a73} 73	^{a63} 63	^{a77} 77
315231	Women's & girls' cut/sew lingerie & nightwear mfg	73	66	87
315232	Women's & girls' cut & sew blouse & shirt mfg	^{a97} 97	62	^{a74} 74
315233	Women's & girls' cut & sew dress mfg	^{a68} 68	^{a55} 55	^{a81} 81
315234	Women's & girls' cut & sew suit, coat, skirt mfg	^{a40} 40	^{a65} 65	71
315239	Women's & girls' cut & sew other outerwear mfg	^{a98} 98	66	76
31529	Other cut & sew apparel mfg	68	61	83
315291	Infants' cut & sew apparel mfg	79	72	89
315292	Fur & leather apparel mfg	^{a71} 71	66	79
315299	All other cut & sew apparel mfg	61	55	78
3159	Apparel accessories & other apparel mfg	72	69	76
31599	Apparel accessories & other apparel mfg	72	69	76
315991	Hat, cap, & millinery mfg	71	68	77
315992	Glove & mitten mfg	73	64	68
315993	Men's & boys' neckwear mfg	77	74	79
315999	Other apparel accessories & other apparel mfg	71	71	78

Table 1a. Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.

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

NAICS code	Industry	Full production rate		
		1999	1998	1997
316	Leather & allied product mfg	72	69	71
3161	Leather & hide tanning & finishing	74	72	72
31611	Leather & hide tanning & finishing	74	72	72
316110	Leather & hide tanning & finishing	74	72	72
3162	Footwear mfg	67	70	75
31621	Footwear mfg	67	70	75
316211	Rubber & plastics footwear mfg	72	74	75
316212	House slipper mfg	64	61	77
316213	Men's footwear (except athletic) mfg	67	67	75
316214	Women's footwear (except athletic) mfg	54	72	73
316219	Other footwear mfg	83	74	a78
3169	Other leather & allied product mfg	a76	a66	67
31699	Other leather & allied product mfg	a76	a66	67
316991	Luggage mfg	a71	a68	66
316992	Women's handbag & purse mfg	a80	a68	a70
316993	Personal leather good (except women's handbag & purse) mfg	79	a66	63
316999	All other leather good mfg	84	63	68
321	Wood product mfg	74	74	74
3211	Sawmills & wood preservation	80	71	75
32111	Sawmills & wood preservation	80	71	75
321113	Sawmills	81	72	77
321114	Wood preservation	73	60	60
3212	Veneer, plywood, & engineered wood product mfg	81	83	79
32121	Veneer, plywood, & engineered wood product mfg	81	83	79
321211	Hardwood veneer & plywood mfg	83	80	74
321212	Softwood veneer & plywood mfg	83	97	92
321213	Engineered wood member (except truss) mfg	73	81	60
321214	Truss mfg	84	74	74
321219	Reconstituted wood product mfg	79	84	81
3219	Other wood product mfg	69	72	72
32191	Millwork	73	72	68
321911	Wood window & door mfg	78	78	75
321912	Cut stock, resawing lumber, & planing	70	88	78
321918	Other millwork (including flooring)	67	53	52
32192	Wood container & pallet mfg	58	79	81
321920	Wood container & pallet mfg	58	79	81
32199	All other wood product mfg	68	70	75
321991	Manufactured home (mobile home) mfg	69	73	77
321992	Prefabricated wood building mfg	59	70	74
321999	All other miscellaneous wood product mfg	72	64	71
322	Paper mfg	83	83	85
3221	Pulp, paper, & paperboard mills	91	92	95
32211	Pulp mills	91	91	92
322110	Pulp mills	91	91	92
32212	Paper mills	90	93	95
322121	Paper (except newsprint) mills	89	92	94
322122	Newsprint mills	97	(D)	99
32213	Paperboard mills	93	90	95
322130	Paperboard mills	93	90	95
3222	Converted paper product mfg	76	76	78
32221	Paperboard container mfg	75	78	76
322211	Corrugated & solid fiber box mfg	77	80	77
322212	Folding paperboard box mfg	72	79	76
322213	Setup paperboard box mfg	72	66	69
322214	Fiber can, tube, drum, & similar products mfg	71	67	73
322215	Nonfolding sanitary food container mfg	77	72	75
32222	Paper bag & coated & treated paper mfg	76	74	80
322221	Coated & laminated packaging paper & plastics film mfg	68	74	77
322222	Coated & laminated paper mfg	78	73	80
322223	Plastics, foil, & coated paper bag mfg	56	(D)	96
322224	Uncoated paper & multiwall bag mfg	77	73	77
322225	Laminated aluminum foil mfg for flexible packaging uses	82	76	83
322226	Surface-coated paperboard mfg	74	79	83
32223	Stationery product mfg	68	69	74
322231	Die-cut paper & paperboard office supplies mfg	77	75	74
322232	Envelope mfg	79	77	80
322233	Stationery, tablet, & related product mfg	49	54	63
32229	Other converted paper product mfg	83	80	82
322291	Sanitary paper product mfg	88	85	84
322299	All other converted paper product mfg	72	67	76
323	Printing & related support activities	76	74	75
3231	Printing & related support activities	76	74	75
32311	Printing	76	74	75
323110	Commercial lithographic printing	80	76	76
323111	Commercial gravure printing	82	82	83
323112	Commercial flexographic printing	79	82	75
323113	Commercial screen printing	69	70	74
323114	Quick printing	73	84	80
323115	Digital printing	65	77	70
323116	Manifold business form printing	67	71	67
323117	Book printing	72	66	77
323118	Blankbook, looseleaf binder, & device mfg	75	71	78
323119	Other commercial printing	77	68	75
32312	Support activities for printing	76	71	70
323121	Tradebinding & related work	74	68	65
323122	Prepress services	77	73	72
324	Petroleum & coal products mfg	81	78	83
3241	Petroleum & coal products mfg	81	78	83
32411	Petroleum refineries	93	91	91
324110	Petroleum refineries	93	91	91
32412	Asphalt paving, roofing, & saturated materials mfg	55	49	55
324121	Asphalt paving mixture & block mfg	44	39	48
324122	Asphalt shingle & coating materials mfg	a73	72	66
32419	Other petroleum & coal products mfg	67	65	66
324191	Petroleum lubricating oil & grease mfg	64	61	61
324199	All other petroleum & coal products mfg	86	81	86

Table 1a. Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.

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

NAICS code	Industry	Full production rate		
		1999	1998	1997
325	Chemical mfg	76	70	75
3251	Basic chemical mfg	82	80	83
32511	Petrochemical mfg	92	96	95
325110	Petrochemical mfg	92	96	95
32512	Industrial gas mfg	79	82	84
325120	Industrial gas mfg	79	82	84
32513	Dye & pigment mfg	81	85	89
325131	Inorganic dye & pigment mfg	90	90	95
325132	Synthetic organic dye & pigment mfg	70	79	81
32518	Other basic inorganic chemical mfg	74	73	79
325181	Alkalies & chlorine mfg	85	79	87
325182	Carbon black mfg	92	92	94
325188	All other basic inorganic chemical mfg	72	72	77
32519	Other basic organic chemical mfg	87	82	81
325191	Gum & wood chemical mfg	74	86	87
325192	Cyclic crude & intermediate mfg	77	66	^a 80
325193	Ethyl alcohol mfg	85	(D)	(D)
325199	All other basic organic chemical mfg	88	84	81
3252	Resin, syn rubber, & artificial & syn fibers & filaments mfg	87	80	89
32521	Resin & synthetic rubber mfg	87	80	88
325211	Plastics material & resin mfg	89	81	89
325212	Synthetic rubber mfg	72	73	84
32522	Artificial & synthetic fibers & filaments mfg	88	82	92
325221	Cellulosic organic fiber mfg	^a 70	71	87
325222	Noncellulosic organic fiber mfg	90	83	92
3253	Pesticide, fertilizer, & other agricultural chemical mfg	72	77	87
32531	Fertilizer mfg	85	87	83
325311	Nitrogenous fertilizer mfg	93	95	93
325312	Phosphatic fertilizer mfg	89	94	91
325314	Fertilizer (mixing only) mfg	^a 70	67	60
32532	Pesticide & other agricultural chemical mfg	65	72	90
325320	Pesticide & other agricultural chemical mfg	65	72	90
3254	Pharmaceutical & medicine mfg	77	64	69
32541	Pharmaceutical & medicine mfg	77	64	69
325411	Medicinal & botanical mfg	^a 85	71	79
325412	Pharmaceutical preparation mfg	75	63	68
325413	In-vitro diagnostic substance mfg	^a 89	^a 66	^a 72
325414	Biological product (except diagnostic) mfg	77	66	^a 72
3255	Paint, coating, & adhesive mfg	66	60	66
32551	Paint & coating mfg	69	59	67
325510	Paint & coating mfg	69	59	67
32552	Adhesive mfg	59	63	66
325520	Adhesive mfg	59	63	66
3256	Soap, cleaning compound, & toilet preparation mfg	68	61	67
32561	Soap & cleaning compound mfg	71	59	67
325611	Soap & other detergent mfg	69	56	66
325612	Polish & other sanitation good mfg	66	56	61
325613	Surface active agent mfg	84	73	79
32562	Toilet preparation mfg	64	63	68
325620	Toilet preparation mfg	64	63	68
3259	Other chemical product mfg	75	76	79
32591	Printing ink mfg	64	71	67
325910	Printing ink mfg	64	71	67
32592	Explosives mfg	63	63	70
325920	Explosives mfg	63	63	70
32599	All other chemical product & preparation mfg	77	77	81
325991	Custom compounding of purchased resin	80	64	69
325992	Photographic film, paper, plate, & chemical mfg	85	81	88
325998	All other miscellaneous chemical product & preparation mfg	70	81	79
326	Plastics & rubber products mfg	76	76	76
3261	Plastics product mfg	75	74	74
32611	Unsupported plastics film, sheet, & bag mfg	78	78	78
326111	Unsupported plastics bag mfg	78	83	83
326112	Unsupported plastics packaging film & sheet mfg	78	82	78
326113	Unsupported plastics film & sheet (except packaging) mfg	79	75	76
32612	Plastics pipe, pipe fitting, & unsupported profile shape mfg	81	81	83
326121	Unsupported plastics profile shape mfg	76	82	84
326122	Plastics pipe & pipe fitting mfg	88	80	81
32613	Laminated plastics plate, sheet, & shape mfg	63	83	84
326130	Laminated plastics plate, sheet, & shape mfg	63	83	84
32614	Polystyrene foam product mfg	79	77	71
326140	Polystyrene foam product mfg	79	77	71
32615	Urethane & other foam product (except polystyrene) mfg	68	68	65
326150	Urethane & other foam product (except polystyrene) mfg	68	68	65
32616	Plastics bottle mfg	77	73	81
326160	Plastics bottle mfg	77	73	81
32619	Other plastics product mfg	73	73	72
326191	Plastics plumbing fixture mfg	63	73	73
326192	Resilient floor covering mfg	73	68	71
326199	All other plastics product mfg	74	73	72
3262	Rubber product mfg	84	81	82
32621	Tire mfg	93	89	90
326211	Tire mfg (except retreading)	95	90	90
326212	Tire retreading	68	72	(NA)
32622	Rubber & plastics hoses & belting mfg	75	76	77
326220	Rubber & plastics hoses & belting mfg	75	76	77
32629	Other rubber product mfg	79	76	76
326291	Rubber product mfg for mechanical use	81	78	80
326299	All other rubber product mfg	78	75	73

Table 1a. Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.

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

NAICS code	Industry	Full production rate		
		1999	1998	1997
327	Nonmetallic mineral product mfg	77	75	77
3271	Clay product & refractory mfg	75	73	74
32711	Pottery, ceramics, & plumbing fixture mfg	76	71	76
327111	Vitreous china plumbing fixture & bathroom accessories mfg	90	89	82
327112	Vitreous china, fine earthenware, & other pottery product mfg	71	73	77
327113	Porcelain electrical supply mfg	71	57	70
32712	Clay building material & refractories mfg	73	74	73
327121	Brick & structural clay tile mfg	89	94	92
327122	Ceramic wall & floor tile mfg	70	76	75
327123	Other structural clay product mfg	70	73	64
327124	Clay refractory mfg	66	55	^a 49
327125	Nonclay refractory mfg	66	71	79
3272	Glass & glass product mfg	85	79	84
32721	Glass & glass product mfg	85	79	84
327211	Flat glass mfg	89	88	93
327212	Other pressed & blown glass & glassware mfg	82	84	86
327213	Glass container mfg	91	95	94
327215	Glass product mfg made of purchased glass	84	67	75
3273	Cement & concrete product mfg	71	73	72
32731	Cement mfg	87	95	93
327310	Cement mfg	87	95	93
32732	Ready-mix concrete mfg	64	65	63
327320	Ready-mix concrete mfg	64	65	63
32733	Concrete pipe, brick, & block mfg	71	73	75
327331	Concrete block & brick mfg	75	69	71
327332	Concrete pipe mfg	66	77	81
32739	Other concrete product mfg	75	73	74
327390	Other concrete product mfg	75	73	74
3274	Lime & gypsum product mfg	87	89	92
32741	Lime mfg	74	71	84
327410	Lime mfg	74	71	84
32742	Gypsum product mfg	92	96	95
327420	Gypsum product mfg	92	96	95
3279	Other nonmetallic mineral product mfg	76	74	76
32791	Abrasive product mfg	67	67	71
327910	Abrasive product mfg	67	67	71
32799	All other nonmetallic mineral product mfg	82	77	79
327991	Cut stone & stone product mfg	67	^a 68	74
327992	Ground or treated mineral & earth mfg	88	70	74
327993	Mineral wool mfg	88	93	87
327999	All other miscellaneous nonmetallic mineral product mfg	73	66	71
331	Primary metal mfg	81	78	84
3311	Iron & steel mills & ferroalloy mfg	89	79	89
33111	Iron & steel mills & ferroalloy mfg	89	79	89
331111	Iron & steel mills	89	79	89
331112	Electrometallurgical ferroalloy product mfg	85	76	78
3312	Steel product mfg from purchased steel	78	74	78
33121	Iron & steel pipes & tubes mfg from purchased steel	77	71	75
331210	Iron & steel pipes & tubes mfg from purchased steel	77	71	75
33122	Rolling & drawing of purchased steel	79	77	81
331221	Cold-rolled steel shape mfg	76	71	82
331222	Steel wire drawing	82	83	79
3313	Alumina & aluminum production & processing	85	84	87
33131	Alumina & aluminum production & processing	85	84	87
331311	Alumina refining	71	83	83
331312	Primary aluminum production	86	87	87
331314	Secondary smelting & alloying of aluminum	85	89	87
331315	Aluminum sheet, plate, & foil mfg	89	85	89
331316	Aluminum extruded product mfg	81	82	84
331319	Other aluminum rolling & drawing	80	71	83
3314	Nonferrous metal (except aluminum) production & processing	76	76	84
33141	Nonferrous metal (except aluminum) smelting & refining	74	74	88
331411	Primary smelting & refining of copper	81	93	97
331419	Other nonferrous metal primary smelting & refining	70	66	82
33142	Copper rolling, drawing, extruding, & alloying	89	86	87
331421	Copper rolling, drawing, & extruding	91	88	91
331422	Copper wire (except mechanical) drawing	93	84	85
331423	Secondary smelting, refining, & alloying of copper	72	^a 77	64
33149	Other nonferrous metal rolling, drawing, extruding, & alloying	70	70	79
331491	Other nonferrous metal rolling, drawing, & extruding	70	70	79
331492	Other nonferrous metal secondary smelting, refining, & alloying	69	72	80
3315	Foundries	74	76	79
33151	Ferrous metal foundries	72	77	80
331511	Iron foundries	76	79	82
331512	Steel investment foundries	66	74	73
331513	Steel foundries (except investment)	66	76	81
33152	Nonferrous metal foundries	76	73	77
331521	Aluminum die-casting foundries	81	73	76
331522	Nonferrous (except aluminum) die-casting foundries	73	71	71
331524	Aluminum foundries (except die-casting)	75	74	78
331525	Copper foundries (except die-casting)	69	69	73
331528	Other nonferrous foundries (except die-casting)	79	76	89
332	Fabricated metal product mfg	70	70	74
3321	Forging & stamping	68	68	72
33211	Forging & stamping	68	68	72
332111	Iron & steel forging	67	73	82
332112	Nonferrous forging	72	75	84
332114	Custom roll forming	64	67	73
332115	Crown & closure mfg	69	73	76
332116	Metal stamping	67	66	67
332117	Powder metallurgy part mfg	81	61	76
3322	Cutlery & handtool mfg	73	71	73
33221	Cutlery & handtool mfg	73	71	73
332211	Cutlery & flatware (except precious) mfg	74	88	86
332212	Hand & edge tool mfg	72	68	70
332213	Saw blade & handsaw mfg	75	70	78
332214	Kitchen utensil, pot, & pan mfg	71	64	62

Table 1a. Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.

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

NAICS code	Industry	Full production rate		
		1999	1998	1997
332	Fabricated metal product mfg—Con.			
3323	Architectural & structural metals mfg	67	67	71
33231	Plate work & fabricated structural product mfg	73	70	77
332311	Prefabricated metal building & component mfg	71	71	77
332312	Fabricated structural metal mfg	76	70	78
332313	Plate work mfg	63	69	73
33232	Ornamental & architectural metal products mfg	64	66	67
332321	Metal window & door mfg	63	65	68
332322	Sheet metal work mfg	64	65	65
332323	Ornamental & architectural metal work mfg	65	74	76
3324	Boiler, tank, & shipping container mfg	71	73	77
33241	Power boiler & heat exchanger mfg	63	73	74
332410	Power boiler & heat exchanger mfg	63	73	74
33242	Metal tank (heavy gauge) mfg	66	68	74
332420	Metal tank (heavy gauge) mfg	66	68	74
33243	Metal can, box, & other metal container (light gauge) mfg	79	76	80
332431	Metal can mfg	84	82	86
332439	Other metal container mfg	66	62	65
3325	Hardware mfg	74	69	72
33251	Hardware mfg	74	69	72
332510	Hardware mfg	74	69	72
3326	Spring & wire product mfg	73	72	74
33261	Spring & wire product mfg	73	72	74
332611	Spring (heavy gauge) mfg	70	61	70
332612	Spring (light gauge) mfg	72	76	80
332618	Other fabricated wire product mfg	74	73	72
3327	Machine shops, turned product, & screw, nut, & bolt mfg	70	73	75
33271	Machine shops	71	72	75
332710	Machine shops	71	72	75
33272	Turned product & screw, nut, & bolt mfg	70	73	74
332721	Precision turned product mfg	67	69	73
332722	Bolt, nut, screw, rivet, & washer mfg	73	78	77
3328	Coating, engraving, heat treating, & allied activities	74	71	74
33281	Coating, engraving, heat treating, & allied activities	74	71	74
332811	Metal heat treating	80	74	79
332812	Metal coating/engraving (exc jewelry/silverware)/allied services	73	74	77
332813	Electroplating, plating, polishing, anodizing, & coloring	71	67	70
3329	Other fabricated metal product mfg	71	72	75
33291	Metal valve mfg	68	71	75
332911	Industrial valve mfg	67	72	74
332912	Fluid power valve & hose fitting mfg	68	72	78
332913	Plumbing fixture fitting & trim mfg	69	68	70
332919	Other metal valve & pipe fitting mfg	74	69	74
33299	All other fabricated metal product mfg	73	72	76
332991	Ball & roller bearing mfg	80	78	83
332992	Small arms ammunition mfg	69	58	66
332993	Ammunition (except small arms) mfg	51	45	46
332994	Small arms mfg	77	74	75
332995	Other ordnance & accessories mfg	66	58	75
332996	Fabricated pipe & pipe fitting mfg	69	71	74
332997	Industrial pattern mfg	77	72	80
332998	Enameled iron & metal sanitary ware mfg	90	82	76
332999	All other miscellaneous fabricated metal product mfg	73	77	81
333	Machinery mfg	66	69	72
3331	Agriculture, construction, & mining machinery mfg	62	71	76
33311	Agricultural implement mfg	59	65	75
333111	Farm machinery & equipment mfg	56	66	81
333112	Lawn & garden tractor & home lawn & garden equipment mfg	71	63	63
33312	Construction machinery mfg	66	78	77
333120	Construction machinery mfg	66	78	77
33313	Mining & oil & gas field machinery mfg	60	72	77
333131	Mining machinery & equipment mfg	64	70	78
333132	Oil & gas field machinery & equipment mfg	59	72	76
3332	Industrial machinery mfg	65	66	70
33321	Sawmill & woodworking machinery mfg	68	68	74
333210	Sawmill & woodworking machinery mfg	68	68	74
33322	Plastics & rubber industry machinery mfg	75	71	75
333220	Plastics & rubber industry machinery mfg	75	71	75
33329	Other industrial machinery mfg	63	66	70
333291	Paper industry machinery mfg	60	^a 70	77
333292	Textile machinery mfg	56	62	65
333293	Printing machinery & equipment mfg	67	69	72
333294	Food product machinery mfg	72	70	72
333295	Semiconductor machinery mfg	^a 59	^a 58	65
333298	All other industrial machinery mfg	68	72	73
3333	Commercial & service industry machinery mfg	66	69	71
33331	Commercial & service industry machinery mfg	66	69	71
333311	Automatic vending machine mfg	64	72	72
333312	Commercial laundry, drycleaning, & pressing machine mfg	69	70	81
333313	Office machinery mfg	65	60	69
333314	Optical instrument & lens mfg	69	59	69
333315	Photographic & photocopying equipment mfg	62	76	74
333319	Other commercial & service industry machinery mfg	69	71	69
3334	Ventilation, heating, AC, & commercial refrigeration equip mfg	67	65	66
33341	Ventilation, heating, AC, & commercial refrigeration equip mfg	67	65	66
333411	Air purification equipment mfg	62	60	63
333412	Industrial & commercial fan & blower mfg	65	60	61
333414	Heating equipment (except warm air furnaces) mfg	67	63	71
333415	AC & warm air heating & commercial/industrial refrig equip mfg	67	67	66
3335	Metalworking machinery mfg	70	71	74
33351	Metalworking machinery mfg	70	71	74
333511	Industrial mold mfg	74	73	72
333512	Machine tool (metal cutting types) mfg	68	71	74
333513	Machine tool (metal forming types) mfg	68	77	83
333514	Special die & tool, die set, jig, & fixture mfg	71	70	72
333515	Cutting tool & machine tool accessory mfg	68	74	78
333516	Rolling mill machinery & equipment mfg	68	63	84
333518	Other metalworking machinery mfg	66	61	72

Table 1a. Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.

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

NAICS code	Industry	Full production rate		
		1999	1998	1997
333	Machinery mfg—Con.			
3336	Engine, turbine, & power transmission equipment mfg	67	68	70
33361	Engine, turbine, & power transmission equipment mfg	67	68	70
333611	Turbine & turbine generator set unit mfg	53	60	56
333612	Speed changer, industrial high-speed drive, & gear mfg	64	67	76
333613	Mechanical power transmission equipment mfg	61	69	76
333618	Other engine equipment mfg	77	72	73
3339	Other general-purpose machinery mfg	67	69	74
33391	Pump & compressor mfg	62	67	73
333911	Pump & pumping equipment mfg	60	68	73
333912	Air & gas compressor mfg	64	66	73
333913	Measuring & dispensing pump mfg	67	69	74
33392	Material handling equipment mfg	71	70	74
333921	Elevator & moving stairway mfg	78	82	74
333922	Conveyor & conveying equipment mfg	71	66	73
333923	Overhead traveling crane, hoist, & monorail system mfg	73	73	75
333924	Industrial truck, tractor, trailer, & stacker machinery mfg	67	69	75
33399	All other general-purpose machinery mfg	68	70	74
333991	Power-driven handtool mfg	80	78	80
333992	Welding & soldering equipment mfg	72	75	75
333993	Packaging machinery mfg	67	72	75
333994	Industrial process furnace & oven mfg	63	66	72
333995	Fluid power cylinder & actuator mfg	67	71	76
333996	Fluid power pump & motor mfg	76	72	78
333997	Scale & balance (except laboratory) mfg	66	60	62
333999	All other miscellaneous general-purpose machinery mfg	62	65	70
334	Computer & electronic product mfg	73	71	74
3341	Computer & peripheral equipment mfg	69	a70	75
33411	Computer & peripheral equipment mfg	69	a70	75
334111	Electronic computer mfg	66	a66	75
334112	Computer storage device mfg	82	79	80
334113	Computer terminal mfg	a45	a70	80
334119	Other computer peripheral equipment mfg	78	77	72
3342	Communications equipment mfg	77	73	71
33421	Telephone apparatus mfg	82	78	70
334210	Telephone apparatus mfg	82	78	70
33422	Radio & TV broadcasting & wireless communications equipment mfg	71	69	72
334220	Radio & TV broadcasting & wireless communications equipment mfg	71	69	72
33429	Other communications equipment mfg	78	66	69
334290	Other communications equipment mfg	78	66	69
3343	Audio & video equipment mfg	58	64	58
33431	Audio & video equipment mfg	58	64	58
334310	Audio & video equipment mfg	58	64	58
3344	Semiconductor & other electronic component mfg	81	a72	79
33441	Semiconductor & other electronic component mfg	81	a72	79
334411	Electron tube mfg	77	76	79
334412	Bare printed circuit board mfg	78	73	74
334413	Semiconductor & related device mfg	a86	a73	a84
334414	Electronic capacitor mfg	83	75	79
334415	Electronic resistor mfg	63	61	68
334416	Electronic coil, transformer, & other inductor mfg	63	61	64
334417	Electronic connector mfg	67	a68	a70
334418	Printed circuit assembly (electronic assembly) mfg	69	a70	70
334419	Other electronic component mfg	68	76	72
3345	Navigational, measuring, medical, & control instruments mfg	64	67	69
33451	Navigational, measuring, medical, & control instruments mfg	64	67	69
334510	Electromedical & electrotherapeutic apparatus mfg	70	79	79
334511	Search, detection, navigation, & guidance instrument mfg	61	66	67
334512	Automatic environmental control mfg	74	69	71
334513	Industrial process control instrument mfg	62	64	65
334514	Totalizing fluid meter & counting device mfg	74	63	70
334515	Electricity measuring & testing instrument mfg	68	(NA)	(NA)
334516	Analytical laboratory instrument mfg	61	64	66
334517	Irradiation apparatus mfg	72	77	73
334518	Watch, clock, & part mfg	62	46	59
334519	Other measuring & controlling device mfg	61	65	71
3346	Mfg & reproducing magnetic & optical media	73	83	78
33461	Mfg & reproducing magnetic & optical media	73	83	78
334611	Software reproducing	a77	87	(NA)
334612	Prerecorded CD (except software), tape, & record reproducing	72	84	78
334613	Magnetic & optical recording media mfg	73	80	78
335	Electrical equipment, appliance, & component mfg	72	72	74
3351	Electric lighting equipment mfg	68	70	73
33511	Electric lamp bulb & part mfg	74	70	71
335110	Electric lamp bulb & part mfg	74	70	71
33512	Lighting fixture mfg	66	70	74
335121	Residential electric lighting fixture mfg	58	63	65
335122	Commercial/industrial/institutional electric lighting fixture mfg	66	70	76
335129	Other lighting equipment mfg	73	76	78
3352	Household appliance mfg	75	73	73
33521	Small electrical appliance mfg	70	65	72
335211	Electric housewares & household fan mfg	66	59	69
335212	Household vacuum cleaner mfg	73	73	76
33522	Major appliance mfg	77	76	74
335221	Household cooking appliance mfg	59	66	61
335222	Household refrigerator & home freezer mfg	81	79	73
335224	Household laundry equipment mfg	87	75	80
335228	Other major household appliance mfg	83	87	84
3353	Electrical equipment mfg	70	69	72
33531	Electrical equipment mfg	70	69	72
335311	Power, distribution, & specialty transformer mfg	78	73	79
335312	Motor & generator mfg	70	67	71
335313	Switchgear & switchboard apparatus mfg	74	77	77
335314	Relay & industrial control mfg	64	64	68

Table 1a. Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.

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

NAICS code	Industry	Full production rate		
		1999	1998	1997
335	Electrical equipment, appliance, & component mfg—Con.			
3359	Other electrical equipment & component mfg	75	74	77
33591	Battery mfg	81	80	81
335911	Storage battery mfg	80	79	81
335912	Primary battery mfg	81	82	83
33592	Communication & energy wire & cable mfg	80	82	83
335921	Fiber optic cable mfg	81	83	79
335929	Other communication & energy wire mfg	80	82	84
33593	Wiring device mfg	74	71	72
335931	Current-carrying wiring device mfg	72	72	68
335932	Noncurrent-carrying wiring device mfg	77	70	78
33599	All other electrical equipment & component mfg	68	66	74
335991	Carbon & graphite product mfg	72	76	85
335999	All other miscellaneous electrical equipment & component mfg	67	63	71
336	Transportation equipment mfg	73	74	76
3361	Motor vehicle mfg	86	83	82
33611	Automobile & light duty motor vehicle mfg	86	85	82
336111	Automobile mfg	85	89	85
336112	Light truck & utility vehicle mfg	87	81	79
33612	Heavy duty truck mfg	92	70	85
336120	Heavy duty truck mfg	92	70	85
3362	Motor vehicle body & trailer mfg	71	68	65
33621	Motor vehicle body & trailer mfg	71	68	65
336211	Motor vehicle body mfg	72	67	67
336212	Truck trailer mfg	77	75	70
336213	Motor home mfg	65	65	60
336214	Travel trailer & camper mfg	67	66	63
3363	Motor vehicle parts mfg	81	76	79
33631	Motor vehicle gasoline engine & engine parts mfg	85	78	78
336311	Carburetor, piston, piston ring, & valve mfg	88	88	86
336312	Gasoline engine & engine parts mfg	85	77	77
33632	Motor vehicle electrical & electronic equipment mfg	79	78	81
336321	Vehicular lighting equipment mfg	79	75	81
336322	Other motor vehicle electrical & electronic equipment mfg	79	78	81
33633	Motor vehicle steering & suspension component (except spring) mfg	82	83	83
336330	Motor vehicle steering & suspension component (except spring) mfg	82	83	83
33634	Motor vehicle brake system mfg	72	58	57
336340	Motor vehicle brake system mfg	72	58	57
33635	Motor vehicle transmission & power train parts mfg	86	85	86
336350	Motor vehicle transmission & power train parts mfg	86	85	86
33636	Motor vehicle seating & interior trim mfg	79	72	80
336360	Motor vehicle seating & interior trim mfg	79	72	80
33637	Motor vehicle metal stamping	82	79	80
336370	Motor vehicle metal stamping	82	79	80
33639	Other motor vehicle parts mfg	80	72	77
336391	Motor vehicle air-conditioning mfg	80	68	78
336399	All other motor vehicle parts mfg	80	72	77
3364	Aerospace product & parts mfg	61	69	71
33641	Aerospace product & parts mfg	61	69	71
336411	Aircraft mfg	68	68	67
336412	Aircraft engine & engine parts mfg	70	75	77
336413	Other aircraft part & auxiliary equipment mfg	68	72	73
336414	Guided missile & space vehicle mfg	^{a37} 66	66	^{a73} 73
336415	Guided missile & space vehicle propulsion unit & parts mfg	48	43	54
336419	Other guided missile & space vehicle parts & auxiliary equip mfg	65	74	70
3365	Railroad rolling stock mfg	76	87	84
33651	Railroad rolling stock mfg	76	87	84
336510	Railroad rolling stock mfg	76	87	84
3366	Ship & boat building	55	62	67
33661	Ship & boat building	55	62	67
336611	Ship building & repairing	53	62	66
336612	Boat building	63	63	68
3369	Other transportation equipment mfg	68	73	74
33699	Other transportation equipment mfg	68	73	74
336991	Motorcycle, bicycle, & parts mfg	79	90	86
336992	Military armored vehicle, tank, & tank component mfg	42	53	^{a58} 58
336999	All other transportation equipment mfg	78	71	71
337	Furniture & related product mfg	73	74	76
3371	Household & institutional furniture & kitchen cabinet mfg	76	74	75
33711	Wood kitchen cabinet & counter top mfg	72	77	72
337110	Wood kitchen cabinet & counter top mfg	72	77	72
33712	Household & institutional furniture mfg	77	73	76
337121	Upholstered household furniture mfg	87	78	79
337122	Nonupholstered wood household furniture mfg	80	74	79
337124	Metal household furniture mfg	58	61	68
337125	Household furniture (except wood & metal) mfg	73	70	76
337127	Institutional furniture mfg	71	70	69
337129	Wood television, radio, & sewing machine cabinet mfg	73	61	67
3372	Office furniture (including fixtures) mfg	69	76	77
33721	Office furniture (including fixtures) mfg	69	76	77
337211	Wood office furniture mfg	70	81	79
337212	Custom architectural woodwork & millwork mfg	78	87	81
337214	Office furniture (except wood) mfg	71	75	79
337215	Showcase, partition, shelving, & locker mfg	64	72	74
3379	Other furniture related product mfg	73	72	75
33791	Mattress mfg	75	67	70
337910	Mattress mfg	75	67	70
33792	Blind & shade mfg	70	83	86
337920	Blind & shade mfg	70	83	86

Table 1a. **Full Production Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.**

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

NAICS code	Industry	Full production rate		
		1999	1998	1997
339	Miscellaneous mfg	70	69	73
3391	Medical equipment & supplies mfg	71	71	73
33911	Medical equipment & supplies mfg	71	71	73
339111	Laboratory apparatus & furniture mfg	70	73	77
339112	Surgical & medical instrument mfg	66	67	69
339113	Surgical appliance & supplies mfg	76	71	72
339114	Dental equipment & supplies mfg	79	72	77
339115	Ophthalmic goods mfg	73	85	84
339116	Dental laboratories	87	78	84
3399	Other miscellaneous mfg	69	67	73
33991	Jewelry & silverware mfg	69	71	77
339911	Jewelry (except costume) mfg	74	74	77
339912	Silverware & plated ware mfg	64	66	81
339913	Jewelers' material & lapidary work mfg	80	72	76
339914	Costume jewelry & novelty mfg	58	65	74
33992	Sporting & athletic goods mfg	65	58	67
339920	Sporting & athletic goods mfg	65	58	67
33993	Doll, toy, & game mfg	72	63	74
339931	Doll & stuffed toy mfg	62	42	69
339932	Game, toy, & children's vehicle mfg	73	66	75
33994	Office supplies (except paper) mfg	69	68	72
339941	Pen & mechanical pencil mfg	67	67	72
339942	Lead pencil & art good mfg	74	65	71
339943	Marking device mfg	62	77	78
339944	Carbon paper & inked ribbon mfg	71	65	69
33995	Sign mfg	81	72	74
339950	Sign mfg	81	72	74
33999	All other miscellaneous mfg	67	69	75
339991	Gasket, packing, & sealing device mfg	75	75	75
339992	Musical instrument mfg	58	67	74
339993	Fastener, button, needle, & pin mfg	75	75	73
339994	Broom, brush, & mop mfg	68	76	71
339995	Burial casket mfg	71	69	79
339999	All other miscellaneous mfg	63	65	75

Table 1b. **National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999**

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

NAICS code	Industry	National emergency rate		
		1999	1998	1997
31-33	Manufacturing	56	53	56
	Durable goods industries	52	51	53
	Nondurable goods industries	62	56	60
	Advanced processing industries	54	51	54
	Primary processing industries	62	59	61
311	Food mfg	61	58	60
3111	Animal food mfg	64	60	62
31111	Animal food mfg	64	60	62
311111	Dog & cat food mfg	59	75	78
311119	Other animal food mfg	69	51	52
3112	Grain & oilseed milling	69	75	76
31121	Flour milling & malt mfg	70	70	67
311211	Flour milling	71	68	74
311212	Rice milling	86	73	52
311213	Malt mfg	45	82	72
31122	Starch & vegetable fats & oils mfg	82	77	89
311221	Wet corn milling	88	81	92
311222	Soybean processing	84	89	94
311223	Other oilseed processing	74	77	84
311225	Fats & oils refining & blending	71	65	81
31123	Breakfast cereal mfg	61	74	69
311230	Breakfast cereal mfg	61	74	69
3113	Sugar & confectionery product mfg	60	59	58
31131	Sugar mfg	82	71	79
311311	Sugarcane mills	97	80	92
311312	Cane sugar refining	57	52	59
311313	Beet sugar mfg	96	85	86
31132	Chocolate & confectionery mfg from cacao beans	70	65	71
311320	Chocolate & confectionery mfg from cacao beans	70	65	71
31133	Confectionery mfg from purchased chocolate	50	53	49
311330	Confectionery mfg from purchased chocolate	50	53	49
31134	Nonchocolate confectionery mfg	60	57	59
311340	Nonchocolate confectionery mfg	60	57	59
3114	Fruit & vegetable preserving & specialty food mfg	59	60	61
31141	Frozen food mfg	73	72	70
311411	Frozen fruit, juice, & vegetable mfg	76	76	74
311412	Frozen specialty food mfg	70	69	66
31142	Fruit & vegetable canning, pickling, & drying	52	54	56
311421	Fruit & vegetable canning	47	46	48
311422	Specialty canning	58	69	70
311423	Dried & dehydrated food mfg	58	55	58
3115	Dairy product mfg	68	67	69
31151	Dairy product (except frozen) mfg	69	70	73
311511	Fluid milk mfg	73	65	71
311512	Creamery butter mfg	75	84	81
311513	Cheese mfg	74	87	85
311514	Dry, condensed, & evaporated dairy product mfg	58	62	64
31152	Ice cream & frozen dessert mfg	58	49	53
311520	Ice cream & frozen dessert mfg	58	49	53
3116	Meat product mfg	61	60	65
31161	Animal slaughtering & processing	61	60	65
311611	Animal (except poultry) slaughtering	72	51	59
311612	Meat processed from carcasses	43	59	69
311613	Rendering & meat byproduct processing	^{a44}	47	57
311615	Poultry processing	77	70	69
3117	Seafood product preparation & packaging	33	30	44
31171	Seafood product preparation & packaging	33	30	44
311711	Seafood canning	42	^{a43}	53
311712	Fresh & frozen seafood processing	32	29	42
3118	Bakeries & tortilla mfg	62	53	55
31181	Bread & bakery product mfg	65	52	54
311811	Retail bakeries	52	50	(NA)
311812	Commercial bakeries	67	52	53
311813	Frozen cakes, pies, & other pastries mfg	64	47	57
31182	Cookie, cracker, & pasta mfg	58	56	58
311821	Cookie & cracker mfg	55	59	54
311822	Flour mixes & dough mfg from purchased flour	64	62	65
311823	Dry pasta mfg	71	^{a36}	^{a64}
31183	Tortilla mfg	66	(NA)	(NA)
311830	Tortilla mfg	66	(NA)	(NA)
3119	Other food mfg	58	52	51
31191	Snack food mfg	^{a64}	56	61
311911	Roasted nuts & peanut butter mfg	63	61	61
311919	Other snack food mfg	^{a64}	55	62
31192	Coffee & tea mfg	64	51	53
311920	Coffee & tea mfg	64	51	53
31193	Flavoring syrup & concentrate mfg	52	43	37
311930	Flavoring syrup & concentrate mfg	52	43	37
31194	Seasoning & dressing mfg	53	58	58
311941	Mayonnaise, dressing, & other prepared sauce mfg	52	61	64
311942	Spice & extract mfg	53	55	50
31199	All other food mfg	58	53	50
311991	Perishable prepared food mfg	53	43	40
311999	All other miscellaneous food mfg	60	57	55

Table 1b. **National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.**

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

NAICS code	Industry	National emergency rate		
		1999	1998	1997
312	Beverage & tobacco product mfg	62	58	50
3121	Beverage mfg	59	52	50
31211	Soft drink & ice mfg	53	45	44
312111	Soft drink mfg	54	47	50
312112	Bottled water mfg	36	34	15
312113	Ice mfg	^{a33} 19	19	16
31212	Breweries	86	82	57
312120	Breweries	86	82	^{a57} 57
31213	Wineries	49	39	63
312130	Wineries	49	39	63
31214	Distilleries	41	37	44
312140	Distilleries	41	37	44
3122	Tobacco mfg	65	64	51
31221	Tobacco stemming & redrying	65	66	62
312210	Tobacco stemming & redrying	65	66	62
31222	Tobacco product mfg	65	64	50
312221	Cigarette mfg	67	64	52
312229	Other tobacco product mfg	55	61	39
313	Textile mills	70	64	70
3131	Fiber, yarn, & thread mills	77	70	80
31311	Fiber, yarn, & thread mills	77	70	80
313111	Yarn spinning mills	79	69	80
313112	Yarn texturing, throwing, & twisting mills	71	69	77
313113	Thread mills	82	(D)	(D)
3132	Fabric mills	72	64	68
31321	Broadwoven fabric mills	79	77	84
313210	Broadwoven fabric mills	79	77	84
31322	Narrow fabric mills & schiffli machine embroidery	60	49	46
313221	Narrow fabric mills	64	49	46
313222	Schiffli machine embroidery	45	50	45
31323	Nonwoven fabric mills	73	70	70
313230	Nonwoven fabric mills	73	70	70
31324	Knit fabric mills	56	42	48
313241	Weft knit fabric mills	64	33	37
313249	Other knit fabric & lace mills	50	58	67
3133	Textile & fabric finishing & fabric coating mills	65	60	70
31331	Textile & fabric finishing mills	66	62	70
313311	Broadwoven fabric finishing mills	67	62	72
313312	Textile & fabric finishing mills	65	62	67
31332	Fabric coating mills	59	53	66
313320	Fabric coating mills	59	53	66
314	Textile product mills	53	54	53
3141	Textile furnishings mills	58	56	55
31411	Carpet & rug mills	69	64	76
314110	Carpet & rug mills	69	64	76
31412	Curtain & linen mills	48	49	42
314121	Curtain & drapery mills	37	35	28
314129	Other household textile product mills	55	58	49
3149	Other textile product mills	47	49	51
31491	Textile bag & canvas mills	35	42	34
314911	Textile bag mills	29	42	33
314912	Canvas & related product mills	40	42	34
31499	All other textile product mills	54	52	61
314991	Rope, cordage, & twine mills	46	51	58
314992	Tire cord & tire fabric mills	88	64	70
314999	All other miscellaneous textile product mills	53	51	61
315	Apparel mfg	47	28	38
3151	Apparel knitting mills	59	50	70
31511	Hosiery & sock mills	65	63	74
315111	Sheer hosiery mills	64	54	64
315119	Other hosiery & sock mills	65	69	82
31519	Other apparel knitting mills	54	43	67
315191	Outerwear knitting mills	54	41	68
315192	Underwear & nightwear knitting mills	55	56	59
3152	Cut & sew apparel mfg	^{a47} 47	26	^{a34} 34
31521	Cut & sew apparel contractors	40	27	35
315211	Men's & boys' cut & sew apparel contractors	40	25	^{a27} 27
315212	Women's, girls', & infants' cut & sew apparel contractors	^{a40} 40	28	^{a40} 40
31522	Men's & boys' cut & sew apparel mfg	^{a51} 51	25	28
315221	Men's & boys' cut & sew underwear & nightwear mfg	^{a50} 50	^{a28} 28	33
315222	Men's & boys' cut & sew suit, coat, & overcoat mfg	61	38	52
315223	Men's & boys' cut & sew shirt (exc work shirt) mfg	60	^{a28} 28	39
315224	Men's & boys' cut & sew trouser, slack, & jean mfg	^{a63} 63	20	18
315225	Men's & boys' cut & sew work clothing mfg	38	32	37
315228	Men's & boys' cut & sew other outerwear mfg	24	33	47
31523	Women's & girls' cut & sew apparel mfg	^{a51} 51	^{a25} 25	^{a41} 41
315231	Women's & girls' cut/sew lingerie & nightwear mfg	39	37	41
315232	Women's & girls' cut & sew blouse & shirt mfg	^{a57} 57	29	^{a41} 41
315233	Women's & girls' cut & sew dress mfg	^{a65} 65	^{a21} 21	^{a48} 48
315234	Women's & girls' cut & sew suit, coat, skirt mfg	^{a26} 26	^{a30} 30	44
315239	Women's & girls' cut & sew other outerwear mfg	^{a78} 78	22	37
31529	Other cut & sew apparel mfg	29	26	37
315291	Infants' cut & sew apparel mfg	41	42	45
315292	Fur & leather apparel mfg	^{a50} 50	40	49
315299	All other cut & sew apparel mfg	23	19	30
3159	Apparel accessories & other apparel mfg	37	37	42
31599	Apparel accessories & other apparel mfg	37	37	42
315991	Hat, cap, & millinery mfg	40	40	48
315992	Glove & mitten mfg	38	30	34
315993	Men's & boys' neckwear mfg	38	30	32
315999	Other apparel accessories & other apparel mfg	35	39	46

Table 1b. National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.

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

NAICS code	Industry	National emergency rate		
		1999	1998	1997
316	Leather & allied product mfg	41	38	38
3161	Leather & hide tanning & finishing	59	57	57
31611	Leather & hide tanning & finishing	59	57	57
316110	Leather & hide tanning & finishing	59	57	57
3162	Footwear mfg	34	33	37
31621	Footwear mfg	34	33	37
316211	Rubber & plastics footwear mfg	36	37	39
316212	House slipper mfg	33	28	43
316213	Men's footwear (except athletic) mfg	34	30	34
316214	Women's footwear (except athletic) mfg	27	37	40
316219	Other footwear mfg	44	38	a39
3169	Other leather & allied product mfg	a43	a36	34
31699	Other leather & allied product mfg	a43	a36	34
316991	Luggage mfg	a42	a34	30
316992	Women's handbag & purse mfg	a53	a35	a39
316993	Personal leather good (except women's handbag & purse) mfg	34	a36	37
316999	All other leather good mfg	46	40	39
321	Wood product mfg	47	49	47
3211	Sawmills & wood preservation	52	50	48
32111	Sawmills & wood preservation	52	50	48
321113	Sawmills	52	50	48
321114	Wood preservation	57	43	41
3212	Veneer, plywood, & engineered wood product mfg	62	67	64
32121	Veneer, plywood, & engineered wood product mfg	62	67	64
321211	Hardwood veneer & plywood mfg	73	52	52
321212	Softwood veneer & plywood mfg	74	92	87
321213	Engineered wood member (except truss) mfg	60	72	50
321214	Truss mfg	55	53	49
321219	Reconstituted wood product mfg	59	79	77
3219	Other wood product mfg	41	43	41
32191	Millwork	54	53	44
321911	Wood window & door mfg	59	55	47
321912	Cut stock, resawing lumber, & planing	51	66	49
321918	Other millwork (including flooring)	48	41	35
32192	Wood container & pallet mfg	40	47	44
321920	Wood container & pallet mfg	40	47	44
32199	All other wood product mfg	34	36	38
321991	Manufactured home (mobile home) mfg	29	34	36
321992	Prefabricated wood building mfg	35	39	42
321999	All other miscellaneous wood product mfg	52	40	43
322	Paper mfg	74	74	74
3221	Pulp, paper, & paperboard mills	89	90	94
32211	Pulp mills	90	90	90
322110	Pulp mills	90	90	90
32212	Paper mills	89	93	94
322121	Paper (except newsprint) mills	88	92	94
322122	Newsprint mills	97	(D)	99
32213	Paperboard mills	91	84	93
322130	Paperboard mills	91	84	93
3222	Converted paper product mfg	64	63	62
32221	Paperboard container mfg	62	62	60
322211	Corrugated & solid fiber box mfg	62	67	61
322212	Folding paperboard box mfg	66	61	63
322213	Setup paperboard box mfg	51	34	35
322214	Fiber can, tube, drum, & similar products mfg	54	52	55
322215	Nonfolding sanitary food container mfg	62	60	65
32222	Paper bag & coated & treated paper mfg	63	64	66
322221	Coated & laminated packaging paper & plastics film mfg	58	60	62
322222	Coated & laminated paper mfg	66	62	66
322223	Plastics, foil, & coated paper bag mfg	44	(D)	66
322224	Uncoated paper & multiwall bag mfg	62	68	64
322225	Laminated aluminum foil mfg for flexible packaging uses	70	68	73
322226	Surface-coated paperboard mfg	44	74	72
32223	Stationery product mfg	57	55	55
322231	Die-cut paper & paperboard office supplies mfg	56	70	60
322232	Envelope mfg	66	60	62
322233	Stationery, tablet, & related product mfg	46	39	43
32229	Other converted paper product mfg	74	69	67
322291	Sanitary paper product mfg	87	78	77
322299	All other converted paper product mfg	52	53	50
323	Printing & related support activities	58	57	57
3231	Printing & related support activities	58	57	57
32311	Printing	59	57	57
323110	Commercial lithographic printing	64	59	57
323111	Commercial gravure printing	76	66	67
323112	Commercial flexographic printing	64	55	54
323113	Commercial screen printing	44	50	50
323114	Quick printing	48	54	61
323115	Digital printing	48	59	44
323116	Manifold business form printing	50	54	56
323117	Book printing	54	60	70
323118	Blankbook, looseleaf binder, & device mfg	49	50	58
323119	Other commercial printing	59	51	49
32312	Support activities for printing	56	56	52
323121	Tradebinding & related work	55	48	50
323122	Prepress services	57	59	53
324	Petroleum & coal products mfg	68	61	70
3241	Petroleum & coal products mfg	68	61	70
32411	Petroleum refineries	91	85	88
324110	Petroleum refineries	91	85	88
32412	Asphalt paving, roofing, & saturated materials mfg	33	28	32
324121	Asphalt paving mixture & block mfg	24	19	22
324122	Asphalt shingle & coating materials mfg	a59	63	56
32419	Other petroleum & coal products mfg	51	45	48
324191	Petroleum lubricating oil & grease mfg	47	41	42
324199	All other petroleum & coal products mfg	79	75	81

Table 1b. **National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.**

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

NAICS code	Industry	National emergency rate		
		1999	1998	1997
325	Chemical mfg	62	57	63
3251	Basic chemical mfg	77	75	78
32511	Petrochemical mfg	92	88	88
325110	Petrochemical mfg	92	88	88
32512	Industrial gas mfg	64	79	78
325120	Industrial gas mfg	64	79	78
32513	Dye & pigment mfg	75	77	81
325131	Inorganic dye & pigment mfg	86	89	94
325132	Synthetic organic dye & pigment mfg	63	64	68
32518	Other basic inorganic chemical mfg	68	68	74
325181	Alkalies & chlorine mfg	85	74	85
325182	Carbon black mfg	83	87	93
325188	All other basic inorganic chemical mfg	66	67	72
32519	Other basic organic chemical mfg	86	78	78
325191	Gum & wood chemical mfg	72	81	87
325192	Cyclic crude & intermediate mfg	76	65	^a 77
325193	Ethyl alcohol mfg	85	(D)	(D)
325199	All other basic organic chemical mfg	88	80	77
3252	Resin, syn rubber, & artificial & syn fibers & filaments mfg	85	77	86
32521	Resin & synthetic rubber mfg	85	77	85
325211	Plastics material & resin mfg	88	79	88
325212	Synthetic rubber mfg	70	62	70
32522	Artificial & synthetic fibers & filaments mfg	86	78	88
325221	Cellulosic organic fiber mfg	^a 70	70	86
325222	Noncellulosic organic fiber mfg	87	78	88
3253	Pesticide, fertilizer, & other agricultural chemical mfg	57	69	74
32531	Fertilizer mfg	73	73	71
325311	Nitrogenous fertilizer mfg	93	91	93
325312	Phosphatic fertilizer mfg	87	91	90
325314	Fertilizer (mixing only) mfg	^a 45	44	38
32532	Pesticide & other agricultural chemical mfg	50	66	76
325320	Pesticide & other agricultural chemical mfg	50	66	76
3254	Pharmaceutical & medicine mfg	60	47	54
32541	Pharmaceutical & medicine mfg	60	47	54
325411	Medicinal & botanical mfg	^a 61	53	62
325412	Pharmaceutical preparation mfg	58	45	52
325413	In-vitro diagnostic substance mfg	^a 69	^a 52	^a 54
325414	Biological product (except diagnostic) mfg	65	53	^a 58
3255	Paint, coating, & adhesive mfg	44	42	51
32551	Paint & coating mfg	48	45	54
325510	Paint & coating mfg	48	45	54
32552	Adhesive mfg	36	37	43
325520	Adhesive mfg	36	37	43
3256	Soap, cleaning compound, & toilet preparation mfg	54	49	56
32561	Soap & cleaning compound mfg	58	49	55
325611	Soap & other detergent mfg	55	45	56
325612	Polish & other sanitation good mfg	52	48	49
325613	Surface active agent mfg	81	60	63
32562	Toilet preparation mfg	50	50	56
325620	Toilet preparation mfg	50	50	56
3259	Other chemical product mfg	52	59	60
32591	Printing ink mfg	33	34	45
325910	Printing ink mfg	33	34	45
32592	Explosives mfg	32	41	38
325920	Explosives mfg	32	41	38
32599	All other chemical product & preparation mfg	57	65	64
325991	Custom compounding of purchased resin	73	57	50
325992	Photographic film, paper, plate, & chemical mfg	75	72	71
325998	All other miscellaneous chemical product & preparation mfg	43	65	65
326	Plastics & rubber products mfg	65	60	59
3261	Plastics product mfg	64	58	57
32611	Unsupported plastics film, sheet, & bag mfg	74	66	66
326111	Unsupported plastics bag mfg	74	77	76
326112	Unsupported plastics packaging film & sheet mfg	65	77	71
326113	Unsupported plastics film & sheet (except packaging) mfg	75	59	61
32612	Plastics pipe, pipe fitting, & unsupported profile shape mfg	65	58	68
326121	Unsupported plastics profile shape mfg	56	66	65
326122	Plastics pipe & pipe fitting mfg	81	51	74
32613	Laminated plastics plate, sheet, & shape mfg	50	64	65
326130	Laminated plastics plate, sheet, & shape mfg	50	64	65
32614	Polystyrene foam product mfg	74	50	61
326140	Polystyrene foam product mfg	74	50	61
32615	Urethane & other foam product (except polystyrene) mfg	51	61	58
326150	Urethane & other foam product (except polystyrene) mfg	51	61	58
32616	Plastics bottle mfg	77	72	70
326160	Plastics bottle mfg	77	72	70
32619	Other plastics product mfg	61	56	53
326191	Plastics plumbing fixture mfg	51	19	44
326192	Resilient floor covering mfg	64	63	57
326199	All other plastics product mfg	62	60	53
3262	Rubber product mfg	70	70	71
32621	Tire mfg	82	76	84
326211	Tire mfg (except retreading)	88	83	84
326212	Tire retreading	38	32	(NA)
32622	Rubber & plastics hoses & belting mfg	62	66	66
326220	Rubber & plastics hoses & belting mfg	62	66	66
32629	Other rubber product mfg	64	66	63
326291	Rubber product mfg for mechanical use	71	68	71
326299	All other rubber product mfg	58	64	57

Table 1b. **National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.**

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

NAICS code	Industry	National emergency rate		
		1999	1998	1997
327	Nonmetallic mineral product mfg	58	46	46
3271	Clay product & refractory mfg	62	61	62
32711	Pottery, ceramics, & plumbing fixture mfg	63	60	61
327111	Vitreous china plumbing fixture & bathroom accessories mfg	90	89	82
327112	Vitreous china, fine earthenware, & other pottery product mfg	53	56	56
327113	Porcelain electrical supply mfg	61	49	55
32712	Clay building material & refractories mfg	61	62	62
327121	Brick & structural clay tile mfg	90	92	82
327122	Ceramic wall & floor tile mfg	47	70	63
327123	Other structural clay product mfg	57	67	42
327124	Clay refractory mfg	49	39	^a 46
327125	Nonclay refractory mfg	59	55	62
3272	Glass & glass product mfg	78	73	73
32721	Glass & glass product mfg	78	73	73
327211	Flat glass mfg	85	83	86
327212	Other pressed & blown glass & glassware mfg	78	83	85
327213	Glass container mfg	87	91	91
327215	Glass product mfg made of purchased glass	72	59	58
3273	Cement & concrete product mfg	47	31	30
32731	Cement mfg	74	81	85
327310	Cement mfg	74	81	85
32732	Ready-mix concrete mfg	36	20	19
327320	Ready-mix concrete mfg	36	20	19
32733	Concrete pipe, brick, & block mfg	47	42	43
327331	Concrete block & brick mfg	44	50	42
327332	Concrete pipe mfg	50	36	43
32739	Other concrete product mfg	60	48	49
327390	Other concrete product mfg	60	48	49
3274	Lime & gypsum product mfg	82	83	80
32741	Lime mfg	71	69	82
327410	Lime mfg	71	69	82
32742	Gypsum product mfg	85	87	79
327420	Gypsum product mfg	85	87	79
3279	Other nonmetallic mineral product mfg	60	63	58
32791	Abrasive product mfg	48	55	57
327910	Abrasive product mfg	48	55	57
32799	All other nonmetallic mineral product mfg	69	67	59
327991	Cut stone & stone product mfg	46	^a 53	54
327992	Ground or treated mineral & earth mfg	86	61	57
327993	Mineral wool mfg	77	88	64
327999	All other miscellaneous nonmetallic mineral product mfg	59	54	55
331	Primary metal mfg	68	68	74
3311	Iron & steel mills & ferroalloy mfg	77	76	87
33111	Iron & steel mills & ferroalloy mfg	77	76	87
331111	Iron & steel mills	78	76	88
331112	Electrometallurgical ferroalloy product mfg	73	69	64
3312	Steel product mfg from purchased steel	71	65	67
33121	Iron & steel pipes & tubes mfg from purchased steel	67	59	61
331210	Iron & steel pipes & tubes mfg from purchased steel	67	59	61
33122	Rolling & drawing of purchased steel	75	70	73
331221	Cold-rolled steel shape mfg	73	67	76
331222	Steel wire drawing	76	72	70
3313	Alumina & aluminum production & processing	78	79	82
33131	Alumina & aluminum production & processing	78	79	82
331311	Alumina refining	71	80	81
331312	Primary aluminum production	86	87	87
331314	Secondary smelting & alloying of aluminum	83	81	77
331315	Aluminum sheet, plate, & foil mfg	85	78	83
331316	Aluminum extruded product mfg	63	75	77
331319	Other aluminum rolling & drawing	77	69	82
3314	Nonferrous metal (except aluminum) production & processing	67	66	74
33141	Nonferrous metal (except aluminum) smelting & refining	65	64	78
331411	Primary smelting & refining of copper	75	89	97
331419	Other nonferrous metal primary smelting & refining	60	55	69
33142	Copper rolling, drawing, extruding, & alloying	84	80	82
331421	Copper rolling, drawing, & extruding	89	87	87
331422	Copper wire (except mechanical) drawing	81	74	77
331423	Secondary smelting, refining, & alloying of copper	62	^a 62	58
33149	Other nonferrous metal rolling, drawing, extruding, & alloying	59	60	67
331491	Other nonferrous metal rolling, drawing, & extruding	59	58	66
331492	Other nonferrous metal secondary smelting, refining, & alloying	59	63	69
3315	Foundries	54	58	60
33151	Ferrous metal foundries	52	59	61
331511	Iron foundries	53	60	64
331512	Steel investment foundries	50	52	49
331513	Steel foundries (except investment)	49	63	67
33152	Nonferrous metal foundries	57	57	58
331521	Aluminum die-casting foundries	72	65	64
331522	Nonferrous (except aluminum) die-casting foundries	58	56	55
331524	Aluminum foundries (except die-casting)	50	54	60
331525	Copper foundries (except die-casting)	43	43	44
331528	Other nonferrous foundries (except die-casting)	70	61	63
332	Fabricated metal product mfg	50	49	51
3321	Forging & stamping	52	41	45
33211	Forging & stamping	52	41	45
332111	Iron & steel forging	51	54	60
332112	Nonferrous forging	57	61	61
332114	Custom roll forming	47	40	45
332115	Crown & closure mfg	37	49	61
332116	Metal stamping	53	36	39
332117	Powder metallurgy part mfg	70	37	59
3322	Cutlery & handtool mfg	56	49	52
33221	Cutlery & handtool mfg	56	49	52
332211	Cutlery & flatware (except precious) mfg	62	66	59
332212	Hand & edge tool mfg	53	47	47
332213	Saw blade & handsaw mfg	66	57	69
332214	Kitchen utensil, pot, & pan mfg	56	31	50

Table 1b. **National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.**

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

NAICS code	Industry	National emergency rate		
		1999	1998	1997
332	Fabricated metal product mfg—Con.			
3323	Architectural & structural metals mfg	45	45	48
33231	Plate work & fabricated structural product mfg	46	44	54
332311	Prefabricated metal building & component mfg	52	40	53
332312	Fabricated structural metal mfg	47	48	54
332313	Plate work mfg	38	36	56
33232	Ornamental & architectural metal products mfg	44	45	45
332321	Metal window & door mfg	49	44	46
332322	Sheet metal work mfg	42	46	44
332323	Ornamental & architectural metal work mfg	46	45	46
3324	Boiler, tank, & shipping container mfg	53	56	58
33241	Power boiler & heat exchanger mfg	42	48	53
332410	Power boiler & heat exchanger mfg	42	48	53
33242	Metal tank (heavy gauge) mfg	49	51	50
332420	Metal tank (heavy gauge) mfg	49	51	50
33243	Metal can, box, & other metal container (light gauge) mfg	63	63	66
332431	Metal can mfg	73	73	77
332439	Other metal container mfg	45	45	43
3325	Hardware mfg	47	50	51
33251	Hardware mfg	47	50	51
332510	Hardware mfg	47	50	51
3326	Spring & wire product mfg	54	57	60
33261	Spring & wire product mfg	54	57	60
332611	Spring (heavy gauge) mfg	52	53	58
332612	Spring (light gauge) mfg	61	55	63
332618	Other fabricated wire product mfg	51	59	60
3327	Machine shops, turned product, & screw, nut, & bolt mfg	46	51	47
33271	Machine shops	47	52	45
332710	Machine shops	47	52	45
33272	Turned product & screw, nut, & bolt mfg	45	50	51
332721	Precision turned product mfg	41	44	47
332722	Bolt, nut, screw, rivet, & washer mfg	50	57	57
3328	Coating, engraving, heat treating, & allied activities	57	56	60
33281	Coating, engraving, heat treating, & allied activities	57	56	60
332811	Metal heat treating	62	63	69
332812	Metal coating/engraving (exc jewelry/silverware)/allied services	60	64	65
332813	Electroplating, plating, polishing, anodizing, & coloring	53	47	52
3329	Other fabricated metal product mfg	54	48	53
33291	Metal valve mfg	53	53	56
332911	Industrial valve mfg	48	54	56
332912	Fluid power valve & hose fitting mfg	55	53	58
332913	Plumbing fixture fitting & trim mfg	55	50	50
332919	Other metal valve & pipe fitting mfg	62	53	59
33299	All other fabricated metal product mfg	55	45	50
332991	Ball & roller bearing mfg	75	68	73
332992	Small arms ammunition mfg	56	45	52
332993	Ammunition (except small arms) mfg	30	17	17
332994	Small arms mfg	56	49	44
332995	Other ordnance & accessories mfg	59	38	47
332996	Fabricated pipe & pipe fitting mfg	41	38	55
332997	Industrial pattern mfg	52	50	55
332998	Enameled iron & metal sanitary ware mfg	64	39	58
332999	All other miscellaneous fabricated metal product mfg	57	51	54
333	Machinery mfg	46	47	51
3331	Agriculture, construction, & mining machinery mfg	46	51	56
33311	Agricultural implement mfg	42	48	53
333111	Farm machinery & equipment mfg	42	52	59
333112	Lawn & garden tractor & home lawn & garden equipment mfg	42	39	42
33312	Construction machinery mfg	50	56	58
333120	Construction machinery mfg	50	56	58
33313	Mining & oil & gas field machinery mfg	47	49	57
333131	Mining machinery & equipment mfg	47	31	52
333132	Oil & gas field machinery & equipment mfg	47	63	60
3332	Industrial machinery mfg	39	41	45
33321	Sawmill & woodworking machinery mfg	35	46	49
333210	Sawmill & woodworking machinery mfg	35	46	49
33322	Plastics & rubber industry machinery mfg	53	44	45
333220	Plastics & rubber industry machinery mfg	53	44	45
33329	Other industrial machinery mfg	38	41	45
333291	Paper industry machinery mfg	38	^a 48	46
333292	Textile machinery mfg	29	34	44
333293	Printing machinery & equipment mfg	42	41	45
333294	Food product machinery mfg	43	46	38
333295	Semiconductor machinery mfg	^a 36	^a 37	47
333298	All other industrial machinery mfg	38	42	46
3333	Commercial & service industry machinery mfg	45	46	45
33331	Commercial & service industry machinery mfg	45	46	45
333311	Automatic vending machine mfg	36	71	61
333312	Commercial laundry, drycleaning, & pressing machine mfg	59	51	47
333313	Office machinery mfg	47	42	35
333314	Optical instrument & lens mfg	45	28	34
333315	Photographic & photocopying equipment mfg	43	62	58
333319	Other commercial & service industry machinery mfg	47	46	45
3334	Ventilation, heating, AC, & commercial refrigeration equip mfg	46	47	48
33341	Ventilation, heating, AC, & commercial refrigeration equip mfg	46	47	48
333411	Air purification equipment mfg	42	43	44
333412	Industrial & commercial fan & blower mfg	43	40	36
333414	Heating equipment (except warm air furnaces) mfg	49	44	49
333415	AC & warm air heating & commercial/industrial refig equip mfg	47	49	49
3335	Metalworking machinery mfg	49	49	51
33351	Metalworking machinery mfg	49	49	51
333511	Industrial mold mfg	46	47	49
333512	Machine tool (metal cutting types) mfg	49	50	53
333513	Machine tool (metal forming types) mfg	48	57	60
333514	Special die & tool, die set, jig, & fixture mfg	47	48	50
333515	Cutting tool & machine tool accessory mfg	57	55	56
333516	Rolling mill machinery & equipment mfg	45	52	70
333518	Other metalworking machinery mfg	48	37	42

Table 1b. National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.

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

NAICS code	Industry	National emergency rate		
		1999	1998	1997
333	Machinery mfg—Con.			
3336	Engine, turbine, & power transmission equipment mfg	53	54	57
33361	Engine, turbine, & power transmission equipment mfg	53	54	57
333611	Turbine & turbine generator set unit mfg	49	55	53
333612	Speed changer, industrial high-speed drive, & gear mfg	53	50	54
333613	Mechanical power transmission equipment mfg	45	55	60
333618	Other engine equipment mfg	57	54	58
3339	Other general-purpose machinery mfg	45	45	52
33391	Pump & compressor mfg	46	52	54
333911	Pump & pumping equipment mfg	47	55	52
333912	Air & gas compressor mfg	44	47	55
333913	Measuring & dispensing pump mfg	50	57	56
33392	Material handling equipment mfg	45	45	48
333921	Elevator & moving stairway mfg	56	62	52
333922	Conveyor & conveying equipment mfg	42	43	47
333923	Overhead traveling crane, hoist, & monorail system mfg	44	49	51
333924	Industrial truck, tractor, trailer, & stacker machinery mfg	45	42	47
33399	All other general-purpose machinery mfg	45	43	53
333991	Power-driven handtool mfg	68	65	67
333992	Welding & soldering equipment mfg	47	52	57
333993	Packaging machinery mfg	41	49	49
333994	Industrial process furnace & oven mfg	42	39	42
333995	Fluid power cylinder & actuator mfg	43	51	55
333996	Fluid power pump & motor mfg	46	60	66
333997	Scale & balance (except laboratory) mfg	44	44	44
333999	All other miscellaneous general-purpose machinery mfg	43	31	49
334	Computer & electronic product mfg	56	54	58
3341	Computer & peripheral equipment mfg	50	a51	57
33411	Computer & peripheral equipment mfg	50	a51	57
334111	Electronic computer mfg	49	a50	62
334112	Computer storage device mfg	43	51	55
334113	Computer terminal mfg	a33	a51	64
334119	Other computer peripheral equipment mfg	59	53	49
3342	Communications equipment mfg	61	60	55
33421	Telephone apparatus mfg	70	65	54
334210	Telephone apparatus mfg	70	65	54
33422	Radio & TV broadcasting & wireless communications equipment mfg	54	57	59
334220	Radio & TV broadcasting & wireless communications equipment mfg	54	57	59
33429	Other communications equipment mfg	53	45	42
334290	Other communications equipment mfg	53	45	42
3343	Audio & video equipment mfg	39	44	41
33431	Audio & video equipment mfg	39	44	41
334310	Audio & video equipment mfg	39	44	41
3344	Semiconductor & other electronic component mfg	69	a57	70
33441	Semiconductor & other electronic component mfg	69	a57	70
334411	Electron tube mfg	63	69	70
334412	Bare printed circuit board mfg	60	48	61
334413	Semiconductor & related device mfg	a84	a58	a77
334414	Electronic capacitor mfg	77	67	70
334415	Electronic resistor mfg	40	44	52
334416	Electronic coil, transformer, & other inductor mfg	46	42	42
334417	Electronic connector mfg	50	a55	a59
334418	Printed circuit assembly (electronic assembly) mfg	54	a56	58
334419	Other electronic component mfg	37	65	54
3345	Navigational, measuring, medical, & control instruments mfg	45	45	46
33451	Navigational, measuring, medical, & control instruments mfg	45	45	46
334510	Electromedical & electrotherapeutic apparatus mfg	54	49	52
334511	Search, detection, navigation, & guidance instrument mfg	46	46	45
334512	Automatic environmental control mfg	56	51	55
334513	Industrial process control instrument mfg	42	37	37
334514	Totalizing fluid meter & counting device mfg	53	42	51
334515	Electricity measuring & testing instrument mfg	45	(NA)	(NA)
334516	Analytical laboratory instrument mfg	34	41	41
334517	Irradiation apparatus mfg	44	58	57
334518	Watch, clock, & part mfg	31	33	36
334519	Other measuring & controlling device mfg	37	43	49
3346	Mfg & reproducing magnetic & optical media	62	78	74
33461	Mfg & reproducing magnetic & optical media	62	78	74
334611	Software reproducing	a47	82	(NA)
334612	Prerecorded CD (except software), tape, & record reproducing	63	80	74
334613	Magnetic & optical recording media mfg	71	73	74
335	Electrical equipment, appliance, & component mfg	56	53	54
3351	Electric lighting equipment mfg	49	48	50
33511	Electric lamp bulb & part mfg	59	52	55
335110	Electric lamp bulb & part mfg	59	52	55
33512	Lighting fixture mfg	45	46	48
335121	Residential electric lighting fixture mfg	39	42	42
335122	Commercial/industrial/institutional electric lighting fixture mfg	47	50	52
335129	Other lighting equipment mfg	49	45	48
3352	Household appliance mfg	57	57	53
33521	Small electrical appliance mfg	51	51	54
335211	Electric housewares & household fan mfg	55	45	48
335212	Household vacuum cleaner mfg	48	60	65
33522	Major appliance mfg	59	60	53
335221	Household cooking appliance mfg	43	51	38
335222	Household refrigerator & home freezer mfg	59	56	52
335224	Household laundry equipment mfg	75	68	74
335228	Other major household appliance mfg	64	67	61
3353	Electrical equipment mfg	54	48	51
33531	Electrical equipment mfg	54	48	51
335311	Power, distribution, & specialty transformer mfg	63	55	60
335312	Motor & generator mfg	61	45	50
335313	Switchgear & switchboard apparatus mfg	58	58	51
335314	Relay & industrial control mfg	44	44	48

Table 1b. **National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.**

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

NAICS code	Industry	National emergency rate		
		1999	1998	1997
335	Electrical equipment, appliance, & component mfg—Con.			
3359	Other electrical equipment & component mfg	61	57	59
33591	Battery mfg	68	69	62
335911	Storage battery mfg	67	68	57
335912	Primary battery mfg	69	70	70
33592	Communication & energy wire & cable mfg	73	72	75
335921	Fiber optic cable mfg	73	73	74
335929	Other communication & energy wire mfg	72	72	76
33593	Wiring device mfg	58	55	59
335931	Current-carrying wiring device mfg	55	57	56
335932	Noncurrent-carrying wiring device mfg	63	54	63
33599	All other electrical equipment & component mfg	50	44	46
335991	Carbon & graphite product mfg	63	70	73
335999	All other miscellaneous electrical equipment & component mfg	47	40	40
336	Transportation equipment mfg	54	55	55
3361	Motor vehicle mfg	62	58	56
33611	Automobile & light duty motor vehicle mfg	61	59	55
336111	Automobile mfg	57	54	56
336112	Light truck & utility vehicle mfg	64	63	55
33612	Heavy duty truck mfg	70	49	71
336120	Heavy duty truck mfg	70	49	71
3362	Motor vehicle body & trailer mfg	43	44	39
33621	Motor vehicle body & trailer mfg	43	44	39
336211	Motor vehicle body mfg	46	42	36
336212	Truck trailer mfg	54	56	55
336213	Motor home mfg	34	38	30
336214	Travel trailer & camper mfg	38	41	39
3363	Motor vehicle parts mfg	64	58	63
33631	Motor vehicle gasoline engine & engine parts mfg	66	58	61
336311	Carburetor, piston, piston ring, & valve mfg	64	80	77
336312	Gasoline engine & engine parts mfg	66	56	58
33632	Motor vehicle electrical & electronic equipment mfg	65	60	62
336321	Vehicular lighting equipment mfg	66	56	68
336322	Other motor vehicle electrical & electronic equipment mfg	64	60	60
33633	Motor vehicle steering & suspension component (except spring) mfg	69	74	74
336330	Motor vehicle steering & suspension component (except spring) mfg	69	74	74
33634	Motor vehicle brake system mfg	59	47	49
336340	Motor vehicle brake system mfg	59	47	49
33635	Motor vehicle transmission & power train parts mfg	75	49	73
336350	Motor vehicle transmission & power train parts mfg	75	49	73
33636	Motor vehicle seating & interior trim mfg	58	49	49
336360	Motor vehicle seating & interior trim mfg	58	49	49
33637	Motor vehicle metal stamping	65	67	66
336370	Motor vehicle metal stamping	65	67	66
33639	Other motor vehicle parts mfg	59	64	61
336391	Motor vehicle air-conditioning mfg	61	64	73
336399	All other motor vehicle parts mfg	59	64	60
3364	Aerospace product & parts mfg	45	53	52
33641	Aerospace product & parts mfg	45	53	52
336411	Aircraft mfg	51	54	56
336412	Aircraft engine & engine parts mfg	41	52	56
336413	Other aircraft part & auxiliary equipment mfg	53	57	50
336414	Guided missile & space vehicle mfg	^{a32} 53	53	^{a51} 50
336415	Guided missile & space vehicle propulsion unit & parts mfg	25	28	33
336419	Other guided missile & space vehicle parts & auxiliary equip mfg	45	53	37
3365	Railroad rolling stock mfg	64	66	60
33651	Railroad rolling stock mfg	64	66	60
336510	Railroad rolling stock mfg	64	66	60
3366	Ship & boat building	40	43	47
33661	Ship & boat building	40	43	47
336611	Ship building & repairing	42	46	49
336612	Boat building	38	38	42
3369	Other transportation equipment mfg	48	42	43
33699	Other transportation equipment mfg	48	42	43
336991	Motorcycle, bicycle, & parts mfg	54	59	54
336992	Military armored vehicle, tank, & tank component mfg	37	34	^{a34} 38
336999	All other transportation equipment mfg	49	36	38
337	Furniture & related product mfg	46	45	42
3371	Household & institutional furniture & kitchen cabinet mfg	49	41	38
33711	Wood kitchen cabinet & counter top mfg	56	48	44
337110	Wood kitchen cabinet & counter top mfg	56	48	44
33712	Household & institutional furniture mfg	47	39	36
337121	Upholstered household furniture mfg	48	38	36
337122	Nonupholstered wood household furniture mfg	50	39	32
337124	Metal household furniture mfg	40	36	38
337125	Household furniture (except wood & metal) mfg	46	40	50
337127	Institutional furniture mfg	41	45	45
337129	Wood television, radio, & sewing machine cabinet mfg	46	38	51
3372	Office furniture (including fixtures) mfg	45	54	50
33721	Office furniture (including fixtures) mfg	45	54	50
337211	Wood office furniture mfg	41	60	53
337212	Custom architectural woodwork & millwork mfg	39	67	50
337214	Office furniture (except wood) mfg	50	52	54
337215	Showcase, partition, shelving, & locker mfg	42	50	47
3379	Other furniture related product mfg	42	44	43
33791	Mattress mfg	40	41	39
337910	Mattress mfg	40	41	39
33792	Blind & shade mfg	46	50	52
337920	Blind & shade mfg	46	50	52

Table 1b. **National Emergency Capacity Utilization Rates by Industry: Fourth Quarters 1997 Through 1999—Con.**

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

NAICS code	Industry	National emergency rate		
		1999	1998	1997
339	Miscellaneous mfg	44	43	47
3391	Medical equipment & supplies mfg	45	46	50
33911	Medical equipment & supplies mfg	45	46	50
339111	Laboratory apparatus & furniture mfg	39	48	51
339112	Surgical & medical instrument mfg	46	51	55
339113	Surgical appliance & supplies mfg	63	36	43
339114	Dental equipment & supplies mfg	53	53	57
339115	Ophthalmic goods mfg	17	74	68
339116	Dental laboratories	61	45	43
3399	Other miscellaneous mfg	43	40	45
33991	Jewelry & silverware mfg	41	49	43
339911	Jewelry (except costume) mfg	42	52	47
339912	Silverware & plated ware mfg	51	50	47
339913	Jewelers' material & lapidary work mfg	40	49	33
339914	Costume jewelry & novelty mfg	33	40	37
33992	Sporting & athletic goods mfg	39	26	39
339920	Sporting & athletic goods mfg	39	26	39
33993	Doll, toy, & game mfg	47	45	49
339931	Doll & stuffed toy mfg	56	20	27
339932	Game, toy, & children's vehicle mfg	46	51	52
33994	Office supplies (except paper) mfg	49	48	48
339941	Pen & mechanical pencil mfg	53	50	53
339942	Lead pencil & art good mfg	53	50	49
339943	Marking device mfg	46	41	36
339944	Carbon paper & inked ribbon mfg	42	46	49
33995	Sign mfg	53	46	44
339950	Sign mfg	53	46	44
33999	All other miscellaneous mfg	42	46	48
339991	Gasket, packing, & sealing device mfg	49	62	62
339992	Musical instrument mfg	29	37	36
339993	Fastener, button, needle, & pin mfg	60	55	52
339994	Broom, brush, & mop mfg	38	52	44
339995	Burial casket mfg	49	42	39
339999	All other miscellaneous mfg	40	41	46

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1997 through 1999

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

NAICS code	Industry	Full production			National emergency production			Standard errors ¹						
		1999	1998	1997	1999	1998	1997	Full production			National emergency production			
								1999	1998	1997	1999	1998	1997	
31-33	Manufacturing	74	73	76	56	53	56	1	1	1	1	1	1	1
	Durable goods industries	72	72	75	52	51	53	1	1	1	1	1	1	1
	Nondurable goods industries	77	73	76	62	56	60	1	1	1	1	1	1	1
	Advanced processing industries	72	71	74	54	51	54	1	1	1	1	1	1	1
	Primary processing industries	77	76	79	62	59	61	1	1	1	1	1	1	1
311	Food mfg	74	74	74	61	58	60	1	1	1	2	2	2	2
3111	Animal food mfg	79	71	73	64	60	62	2	3	4	7	3	3	3
31111	Animal food mfg	79	71	73	64	60	62	2	3	4	7	3	3	3
311111	Dog & cat food mfg	77	77	81	59	75	78	2	2	2	11	2	2	2
311119	Other animal food mfg	80	67	66	69	51	52	4	5	5	4	4	4	4
3112	Grain & oilseed milling	76	83	84	69	75	76	2	2	1	2	2	2	2
31121	Flour milling & malt mfg	78	77	82	70	70	67	3	4	3	5	5	5	5
311211	Flour milling	75	75	82	71	68	74	3	5	5	3	7	7	7
311212	Rice milling	92	80	81	86	73	52	1	2	3	3	2	2	5
311213	Malt mfg	74	87	86	45	82	72	12	4	5	20	5	7	7
31122	Starch & vegetable fats & oils mfg	84	84	90	82	77	89	3	2	1	3	3	1	1
311221	Wet corn milling	91	86	92	88	81	92	2	2	1	2	2	3	3
311222	Soybean processing	85	90	95	84	89	94	6	2	1	6	2	2	2
311223	Other oilseed processing	80	86	90	74	77	84	4	2	2	6	4	5	5
311225	Fats & oils refining & blending	72	75	83	71	65	81	6	5	4	6	6	3	3
31123	Breakfast cereal mfg	70	85	80	61	74	69	2	2	2	1	3	2	2
311230	Breakfast cereal mfg	70	85	80	61	74	69	2	2	2	1	3	2	2
3113	Sugar & confectionery product mfg	72	71	69	60	59	58	2	3	4	1	3	4	4
31131	Sugar mfg	92	84	90	82	71	79	2	2	2	1	3	3	3
311311	Sugarcane mills	98	84	95	97	80	92	1	5	3	1	6	4	4
311312	Cane sugar refining	85	77	83	57	52	59	1	2	3	1	5	6	6
311313	Beet sugar mfg	92	90	91	96	85	86	4	3	3	2	4	4	4
31132	Chocolate & confectionery mfg from cacao beans	75	74	75	70	65	71	1	2	4	1	4	5	5
311320	Chocolate & confectionery mfg from cacao beans	75	74	75	70	65	71	1	2	4	1	4	5	5
31133	Confectionery mfg from purchased chocolate	64	67	58	50	53	49	3	5	6	2	4	7	7
311330	Confectionery mfg from purchased chocolate	64	67	58	50	53	49	3	5	6	2	4	7	7
31134	Nonchocolate confectionery mfg	74	67	76	60	57	59	2	5	8	2	5	5	5
311340	Nonchocolate confectionery mfg	74	67	76	60	57	59	2	5	8	2	5	5	5
3114	Fruit & vegetable preserving & specialty food mfg	69	76	73	59	60	61	5	2	3	5	2	3	3
31141	Frozen food mfg	82	83	82	73	72	70	3	3	2	3	3	2	2
311411	Frozen fruit, juice, & vegetable mfg	82	83	83	76	76	74	2	3	3	3	4	3	3
311412	Frozen specialty food mfg	82	83	80	70	69	66	4	4	3	5	4	3	3
31142	Fruit & vegetable canning, pickling, & drying	61	72	68	52	54	56	6	2	4	6	3	4	4
311421	Fruit & vegetable canning	59	66	62	47	46	48	9	5	5	9	4	5	5
311422	Specialty canning	61	82	78	58	69	70	7	3	2	6	4	4	4
311423	Dried & dehydrated food mfg	74	69	71	58	55	58	3	5	5	4	5	3	3
3115	Dairy product mfg	78	78	78	68	67	69	2	2	2	2	2	2	2
31151	Dairy product (except frozen) mfg	79	81	80	69	70	73	2	2	2	2	2	2	2
311511	Fluid milk mfg	82	76	78	73	65	71	3	3	3	3	3	3	3
311512	Creamery butter mfg	81	89	85	75	84	81	1	3	2	1	2	3	3
311513	Cheese mfg	78	90	89	74	87	85	3	2	2	3	3	3	3
311514	Dry, condensed, & evaporated dairy product mfg	75	78	77	58	62	64	5	3	3	2	5	5	5
31152	Ice cream & frozen dessert mfg	69	65	65	58	49	53	3	6	5	3	6	5	5
311520	Ice cream & frozen dessert mfg	69	65	65	58	49	53	3	6	5	3	6	5	5
3116	Meat product mfg	85	83	84	61	60	65	2	2	2	5	4	3	3
31161	Animal slaughtering & processing	85	83	84	61	60	65	2	2	2	5	4	3	3
311611	Animal (except poultry) slaughtering	88	79	81	72	51	59	2	3	3	4	11	6	6
311612	Meat processed from carcasses	78	79	84	43	59	69	3	2	2	9	3	6	6
311613	Rendering & meat byproduct processing	^a 82	86	79	^a 44	47	57	3	4	3	4	8	4	4
311615	Poultry processing	90	88	87	77	70	69	2	3	3	3	3	3	3
3117	Seafood product preparation & packaging	62	51	57	33	30	44	6	5	5	6	4	6	6
31171	Seafood product preparation & packaging	62	51	57	33	30	44	6	5	5	6	4	6	6
311711	Seafood canning	66	^a 56	64	42	^a 43	53	5	1	2	3	3	3	3
311712	Fresh & frozen seafood processing	61	51	56	32	29	42	7	5	6	7	4	6	6
3118	Bakeries & tortilla mfg	73	74	75	62	53	55	3	2	2	3	6	7	7
31181	Bread & bakery product mfg	76	75	76	65	52	54	2	3	3	3	9	11	11
311811	Retail bakeries	74	81	(NA)	52	50	(NA)	2	3	(NA)	2	8	(NA)	(NA)
311812	Commercial bakeries	76	74	76	67	52	53	3	4	4	3	11	11	11
311813	Frozen cakes, pies, & other pastries mfg	76	76	80	64	47	57	2	3	2	4	5	5	5
31182	Cookie, cracker, & pasta mfg	67	71	73	58	56	58	6	2	2	4	3	3	3
311821	Cookie & cracker mfg	63	70	71	55	59	54	8	2	2	6	2	4	4
311822	Flour mixes & dough mfg from purchased flour	80	79	78	64	62	65	4	2	3	5	4	4	4
311823	Dry pasta mfg	70	^a 64	^a 76	71	^a 36	^a 64	3	3	4	4	8	4	4
31183	Tortilla mfg	78	(NA)	(NA)	66	(NA)	(NA)	3	(NA)	(NA)	2	(NA)	(NA)	(NA)
311830	Tortilla mfg	78	(NA)	(NA)	66	(NA)	(NA)	3	(NA)	(NA)	2	(NA)	(NA)	(NA)

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1997 through 1999—Con.

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

NAICS code	Industry	Full production			National emergency production			Standard errors ¹					
								Full production			National emergency production		
		1999	1998	1997	1999	1998	1997	1999	1998	1997	1999	1998	1997
311	Food mfg—Con.												
3119	Other food mfg	68	63	64	58	52	51	3	3	2	2	2	2
31191	Snack food mfg	^a 76	72	78	^a 64	56	61	4	4	4	4	3	3
311911	Roasted nuts & peanut butter mfg	82	72	73	63	61	61	5	5	5	5	6	7
311919	Other snack food mfg	^a 74	72	79	^a 64	55	62	5	4	5	4	4	4
31192	Coffee & tea mfg	77	59	68	64	51	53	3	3	4	3	2	3
311920	Coffee & tea mfg	77	59	68	64	51	53	3	3	4	3	2	3
31193	Flavoring syrup & concentrate mfg	61	53	49	52	43	37	7	7	4	4	4	2
311930	Flavoring syrup & concentrate mfg	61	53	49	52	43	37	7	7	4	4	5	2
31194	Seasoning & dressing mfg	61	67	68	53	58	58	4	4	3	4	4	3
311941	Mayonnaise, dressing, & other prepared sauce mfg	58	70	74	52	61	64	4	5	2	4	6	3
311942	Spice & extract mfg	65	64	61	53	55	50	7	6	5	7	6	5
31199	All other food mfg	68	63	60	58	53	50	3	4	5	3	4	5
311991	Perishable prepared food mfg	67	51	51	53	43	40	5	10	10	5	9	9
311999	All other miscellaneous food mfg	68	68	65	60	57	55	3	3	4	3	3	4
312	Beverage & tobacco product mfg	75	71	71	62	58	50	2	2	2	2	2	2
3121	Beverage mfg	70	68	68	59	52	50	3	2	2	3	2	2
31211	Soft drink & ice mfg	63	59	64	53	45	44	4	3	4	3	2	4
312111	Soft drink mfg	64	61	66	54	47	50	4	3	4	3	2	3
312112	Bottled water mfg	56	45	56	36	34	15	7	13	8	7	8	10
312113	Ice mfg	^a 40	43	31	^a 33	19	16	5	7	2	2	5	4
31212	Breweries	85	82	71	86	82	57	3	2	2	3	2	2
312120	Breweries	85	82	^a 71	86	82	^a 57	3	2	2	3	2	2
31213	Wineries	71	79	80	49	39	63	8	4	4	9	8	3
312130	Wineries	71	79	80	49	39	63	8	4	4	9	8	3
31214	Distilleries	55	63	65	41	37	44	6	4	3	5	1	2
312140	Distilleries	55	63	65	41	37	44	6	4	3	5	1	2
3122	Tobacco mfg	81	73	74	65	64	51	1	2	2	1	2	3
31221	Tobacco stemming & redrying	77	77	79	65	66	62	1	1	1	1	1	2
312210	Tobacco stemming & redrying	77	77	79	65	66	62	1	1	1	1	1	2
31222	Tobacco product mfg	81	73	74	65	64	50	1	2	2	1	2	3
312221	Cigarette mfg	82	71	72	67	64	52	1	2	2	1	2	3
312229	Other tobacco product mfg	73	92	94	55	61	39	4	1	1	5	2	7
313	Textile mills	80	74	82	70	64	70	1	2	1	2	2	2
3131	Fiber, yarn, & thread mills	82	79	85	77	70	80	3	3	2	4	4	3
31311	Fiber, yarn, & thread mills	82	79	85	77	70	80	3	3	2	4	4	3
313111	Yarn spinning mills	83	80	85	79	69	80	3	3	3	3	5	3
313112	Yarn texturing, throwing, & twisting mills	79	76	83	71	69	77	5	6	4	9	7	4
313113	Thread mills	85	(D)	(D)	82	(D)	(D)	2	(D)	(D)	1	(D)	(D)
3132	Fabric mills	81	76	82	72	64	68	2	2	2	2	4	3
31321	Broadwoven fabric mills	85	80	89	79	77	84	3	2	2	3	2	2
313210	Broadwoven fabric mills	85	80	89	79	77	84	3	2	2	3	2	2
31322	Narrow fabric mills & schiffli machine embroidery	75	74	66	60	49	46	2	3	3	3	5	4
313221	Narrow fabric mills	77	74	66	64	49	46	3	4	3	3	6	5
313222	Schiffli machine embroidery	69	73	64	45	50	45	4	6	8	4	2	5
31323	Nonwoven fabric mills	83	79	77	73	70	70	4	3	3	7	3	6
313230	Nonwoven fabric mills	83	79	77	73	70	70	4	3	3	7	3	6
31324	Knit fabric mills	71	63	74	56	42	48	2	5	3	2	8	5
313241	Weft knit fabric mills	73	55	69	64	33	37	4	8	5	4	9	6
313249	Other knit fabric & lace mills	69	73	78	50	58	67	2	5	2	2	5	2
3133	Textile & fabric finishing & fabric coating mills	76	69	82	65	60	70	2	2	1	3	2	2
31331	Textile & fabric finishing mills	77	69	82	66	62	70	2	2	1	4	2	2
313311	Broadwoven fabric finishing mills	79	68	82	67	62	72	3	3	2	5	3	2
313312	Textile & fabric finishing mills	74	74	82	65	62	67	4	2	2	3	3	4
31332	Fabric coating mills	67	64	81	59	53	66	3	6	4	3	4	5
313320	Fabric coating mills	67	64	81	59	53	66	3	6	4	3	4	5
314	Textile product mills	76	76	78	53	54	53	3	2	2	2	2	3
3141	Textile furnishings mills	83	76	80	58	56	55	2	2	2	3	3	3
31411	Carpet & rug mills	83	71	80	69	64	76	2	3	3	3	3	3
314110	Carpet & rug mills	83	71	80	69	64	76	2	3	3	3	3	3
31412	Curtain & linen mills	82	84	80	48	49	42	2	3	2	4	5	4
314121	Curtain & drapery mills	74	76	71	37	35	28	4	3	2	4	4	3
314129	Other household textile product mills	87	88	83	55	58	49	2	4	3	6	7	7
3149	Other textile product mills	66	75	75	47	49	51	5	2	2	3	2	3
31491	Textile bag & canvas mills	60	62	64	35	42	34	4	4	4	3	3	3
314911	Textile bag mills	53	58	62	29	42	33	5	4	4	3	4	3
314912	Canvas & related product mills	65	65	65	40	42	34	6	6	6	5	4	5
31499	All other textile product mills	69	82	80	54	52	61	8	2	2	5	3	4
314991	Rope, cordage, & twine mills	61	69	74	46	51	58	6	4	4	5	4	4
314992	Tire cord & tire fabric mills	89	85	80	88	64	70	3	2	4	3	10	6
314999	All other miscellaneous textile product mills	68	83	81	53	51	61	9	2	3	6	3	4
315	Apparel mfg	77	69	77	47	28	38	1	2	2	1	2	1
3151	Apparel knitting mills	84	73	82	59	50	70	1	5	3	2	4	3
31511	Hosiery & sock mills	81	78	87	65	63	74	2	4	4	3	4	4
315111	Shear hosiery mills	78	78	80	64	54	64	3	9	8	3	6	7
315119	Other hosiery & sock mills	83	78	91	65	69	82	2	5	3	3	4	5
31519	Other apparel knitting mills	86	69	78	54	43	67	1	7	3	2	6	4
315191	Outerwear knitting mills	90	68	78	54	41	68	2	8	4	3	6	5
315192	Underwear & nightwear knitting mills	72	73	84	55	56	59	1	5	2	2	8	8

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1997 through 1999—Con.

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

NAICS code	Industry	Full production			National emergency production			Standard errors ¹					
								Full production			National emergency production		
		1999	1998	1997	1999	1998	1997	1999	1998	1997	1999	1998	1997
315	Apparel mfg—Con.												
3152	Cut & sew apparel mfg	^a 76	68	^a 76	^a 47	26	^a 34	2	2	2	2	2	2
31521	Cut & sew apparel contractors	78	75	76	40	27	35	3	5	4	2	2	3
315211	Men's & boys' cut & sew apparel contractors	75	89	^a 71	40	25	^a 27	4	10	9	5	2	4
315212	Women's, girls', & infants' cut & sew apparel contractors	^a 79	70	^a 78	^a 40	28	^a 40	3	5	3	2	2	4
31522	Men's & boys' cut & sew apparel mfg ..	^a 81	74	74	^a 51	25	28	3	3	3	2	1	2
315221	Men's & boys' cut & sew underwear & nightwear mfg	^a 69	^a 72	76	^a 50	^a 28	33	1	2	4	2	1	2
315222	Men's & boys' cut & sew suit, coat, & overcoat mfg	83	72	78	61	38	52	2	3	3	5	4	4
315223	Men's & boys' cut & sew shirt (exc work shirt) mfg	69	^a 73	79	60	^a 28	39	6	4	3	3	2	6
315224	Men's & boys' cut & sew trouser, slack, & jean mfg	^a 91	72	67	^a 63	20	18	3	5	6	5	2	2
315225	Men's & boys' cut & sew work clothing mfg	86	86	77	38	32	37	3	3	3	4	3	4
315228	Men's & boys' cut & sew other outerwear mfg	79	74	81	24	33	47	4	2	2	3	3	5
31523	Women's & girls' cut & sew apparel mfg	^a 73	^a 63	^a 77	^a 51	^a 25	^a 41	2	3	2	3	3	2
315231	Women's & girls' cut/sew lingerie & nightwear mfg	73	66	87	39	37	41	6	3	4	6	3	5
315232	Women's & girls' cut & sew blouse & shirt mfg	^a 97	62	^a 74	^a 57	29	^a 41	1	10	5	2	3	5
315233	Women's & girls' cut & sew dress mfg	^a 68	^a 55	^a 81	^a 65	^a 21	^a 48	4	2	3	4	2	3
315234	Women's & girls' cut & sew suit, coat, skirt mfg	^a 40	^a 65	71	^a 26	^a 30	44	4	4	6	3	3	6
315239	Women's & girls' cut & sew other outerwear mfg	^a 98	66	76	^a 78	22	37	2	3	3	7	6	2
31529	Other cut & sew apparel mfg	68	61	83	29	26	37	4	8	4	3	7	4
315291	Infants' cut & sew apparel mfg	79	72	89	41	42	45	4	13	6	5	4	6
315292	Fur & leather apparel mfg	^a 71	66	79	^a 50	40	49	3	5	4	3	5	6
315299	All other cut & sew apparel mfg	61	55	78	23	19	30	6	11	5	3	7	5
3159	Apparel accessories & other apparel mfg	72	69	76	37	37	42	2	4	3	3	2	3
31599	Apparel accessories & other apparel mfg	72	69	76	37	37	42	2	4	3	3	2	3
315991	Hat, cap, & millinery mfg	71	68	77	40	40	48	4	4	5	2	2	4
315992	Glove & mitten mfg	73	64	68	38	30	34	4	5	4	7	3	4
315993	Men's & boys' neckwear mfg	77	74	79	38	30	32	3	3	4	3	2	5
315999	Other apparel accessories & other apparel mfg	71	71	78	35	39	46	3	7	4	4	5	5
316	Leather & allied product mfg	72	69	71	41	38	38	2	2	2	2	2	2
3161	Leather & hide tanning & finishing	74	72	72	59	57	57	4	3	5	4	4	4
31611	Leather & hide tanning & finishing	74	72	72	59	57	57	4	3	5	4	4	4
316110	Leather & hide tanning & finishing	74	72	72	59	57	57	4	3	5	4	4	4
3162	Footwear mfg	67	70	75	34	33	37	2	2	2	3	2	3
31621	Footwear mfg	67	70	75	34	33	37	2	2	2	3	2	3
316211	Rubber & plastics footwear mfg	72	74	75	36	37	39	3	3	4	6	3	3
316212	House slipper mfg	64	61	77	33	28	43	1	2	1	1	1	3
316213	Men's footwear (except athletic) mfg	67	67	75	34	30	34	3	3	4	5	3	4
316214	Women's footwear (except athletic) mfg	54	72	73	27	37	40	3	2	4	2	5	5
316219	Other footwear mfg	83	74	^a 78	44	38	^a 39	3	2	2	1	3	2
3169	Other leather & allied product mfg	^a 76	^a 66	67	^a 43	^a 36	34	3	2	2	2	2	3
31699	Other leather & allied product mfg	^a 76	^a 66	67	^a 43	^a 36	34	3	2	2	2	2	3
316991	Luggage mfg	^a 71	^a 68	66	^a 42	^a 34	30	5	4	3	3	3	4
316992	Women's handbag & purse mfg	^a 80	^a 68	^a 70	^a 53	^a 35	^a 39	2	1	1	3	2	1
316993	Personal leather good (except women's handbag & purse) mfg	79	^a 66	63	34	^a 36	37	3	6	7	4	4	4
316999	All other leather good mfg	84	63	68	46	40	39	2	3	3	5	3	5
321	Wood product mfg	74	74	74	47	49	47	2	2	2	2	2	2
3211	Sawmills & wood preservation	80	71	75	52	50	48	3	4	4	5	3	4
32111	Sawmills & wood preservation	80	71	75	52	50	48	3	4	4	5	3	4
321113	Sawmills	81	72	77	52	50	48	4	4	4	5	3	4
321114	Wood preservation	73	60	60	57	43	41	3	6	5	3	4	4
3212	Veneer, plywood, & engineered wood product mfg	81	83	79	62	67	64	3	3	3	6	3	2
32121	Veneer, plywood, & engineered wood product mfg	81	83	79	62	67	64	3	3	3	6	3	2
321211	Hardwood veneer & plywood mfg	83	80	74	73	52	52	3	4	7	3	10	4
321212	Softwood veneer & plywood mfg	83	97	92	74	92	87	5	2	2	6	3	2
321213	Engineered wood member (except truss) mfg	73	81	60	60	72	50	4	11	7	4	10	6
321214	Truss mfg	84	74	74	55	53	49	3	4	4	3	3	3
321219	Reconstituted wood product mfg	79	84	81	59	79	77	6	6	6	14	6	5
3219	Other wood product mfg	69	72	72	41	43	41	2	3	3	2	2	2
32191	Millwork	73	72	68	54	53	44	3	6	5	3	4	3
321911	Wood window & door mfg	78	78	75	59	55	47	3	4	4	3	5	6
321912	Cut stock, resawing lumber, & planing	70	88	78	51	66	49	4	6	5	4	12	5
321918	Other millwork (including flooring) ..	67	53	52	48	41	35	7	13	12	5	6	4
32192	Wood container & pallet mfg	58	79	81	40	47	44	10	2	2	5	3	2
321920	Wood container & pallet mfg	58	79	81	40	47	44	10	2	2	5	3	2
32199	All other wood product mfg	68	70	75	34	36	38	2	3	2	3	2	2
321991	Manufactured home (mobile home) mfg	69	73	77	29	34	36	3	4	2	3	3	3
321992	Prefabricated wood building mfg	59	70	74	35	39	42	6	4	3	4	4	4
321999	All other miscellaneous wood product mfg	72	64	71	52	40	43	3	4	3	3	4	3

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1997 through 1999—Con.

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

NAICS code	Industry	Full production			National emergency production			Standard errors ¹					
		1999	1998	1997	1999	1998	1997	Full production			National emergency production		
								1999	1998	1997	1999	1998	1997
322	Paper mfg	83	83	85	74	74	74	2	1	1	2	1	2
3221	Pulp, paper, & paperboard mills	91	92	95	89	90	94	2	2	2	2	2	2
32211	Pulp mills	91	91	92	90	90	90	2	3	3	2	3	3
322110	Pulp mills	91	91	92	90	90	90	2	3	3	2	3	3
32212	Paper mills	90	93	95	89	93	94	3	2	3	3	2	3
322121	Paper (except newsprint) mills	89	92	94	88	92	94	3	2	3	3	2	3
322122	Newsprint mills	97	(D)	99	97	(D)	99	1	(D)	1	1	(D)	1
32213	Paperboard mills	93	90	95	91	84	93	3	2	1	3	4	2
322130	Paperboard mills	93	90	95	91	84	93	3	2	1	3	4	2
3222	Converted paper product mfg	76	76	78	64	63	62	2	1	1	2	2	2
32221	Paperboard container mfg	75	78	76	62	62	60	3	2	2	3	2	2
322211	Corrugated & solid fiber box mfg	77	80	77	62	67	61	5	2	2	5	2	3
322212	Folding paperboard box mfg	72	79	76	66	61	63	3	2	2	3	5	3
322213	Setup paperboard box mfg	72	66	69	51	34	35	6	4	3	3	4	5
322214	Fiber can, tube, drum, & similar products mfg	71	67	73	54	52	55	4	4	5	5	5	4
322215	Nonfolding sanitary food container mfg	77	72	75	62	60	65	2	3	3	2	7	5
32222	Paper bag & coated & treated paper mfg	76	74	80	63	64	66	4	3	3	4	4	4
322221	Coated & laminated packaging paper & plastics film mfg	68	74	77	58	60	62	4	7	5	5	11	10
322222	Coated & laminated paper mfg	78	73	80	66	62	66	5	4	4	6	5	5
322223	Plastics, foil, & coated paper bag mfg	56	(D)	96	44	(D)	66	4	(D)	1	5	(D)	4
322224	Uncoated paper & multiwall bag mfg	77	73	77	62	68	64	3	4	3	5	4	4
322225	Laminated aluminum foil mfg for flexible packaging uses	82	76	83	70	68	73	2	2	2	1	2	1
322226	Surface-coated paperboard mfg	74	79	83	44	74	72	4	3	6	13	5	7
32223	Stationery product mfg	68	69	74	57	55	55	3	2	3	4	3	4
322231	Die-cut paper & paperboard office supplies mfg	77	75	74	56	70	60	4	5	4	9	5	7
322232	Envelope mfg	79	77	80	66	60	62	3	3	5	3	3	8
322233	Stationery, tablet, & related product mfg	49	54	63	46	39	43	5	3	4	5	5	5
32229	Other converted paper product mfg	83	80	82	74	69	67	2	3	2	4	3	3
322291	Sanitary paper product mfg	88	85	84	87	78	77	3	4	3	3	3	3
322299	All other converted paper product mfg	72	67	76	52	53	50	5	4	3	7	4	4
323	Printing & related support activities	76	74	75	58	57	57	2	2	2	2	2	2
3231	Printing & related support activities	76	74	75	58	57	57	2	2	2	2	2	2
32311	Printing	76	74	75	59	57	57	2	2	2	2	2	2
323110	Commercial lithographic printing	80	76	76	64	59	57	3	3	3	3	4	3
323111	Commercial gravure printing	82	82	83	76	66	67	4	5	6	10	7	7
323112	Commercial flexographic printing	79	82	75	64	55	54	4	4	7	5	6	6
323113	Commercial screen printing	69	70	74	44	50	50	6	7	5	6	7	7
323114	Quick printing	73	84	80	48	54	61	4	4	4	4	8	7
323115	Digital printing	65	77	70	48	59	44	6	3	7	5	9	14
323116	Manifold business form printing	67	71	67	50	54	56	3	3	2	3	2	2
323117	Book printing	72	66	77	54	60	70	5	7	4	7	6	3
323118	Blankbook, looseleaf binder, & device mfg	75	71	78	49	50	58	3	4	2	4	4	2
323119	Other commercial printing	77	68	75	59	51	49	5	6	4	5	6	8
32312	Support activities for printing	76	71	70	56	56	52	2	4	3	3	4	3
323121	Tradebinding & related work	74	68	65	55	48	50	3	7	5	3	7	5
323122	Prepress services	77	73	72	57	59	53	3	4	3	4	5	4
324	Petroleum & coal products mfg	81	78	83	68	61	70	2	2	2	2	3	2
3241	Petroleum & coal products mfg	81	78	83	68	61	70	2	2	2	2	3	2
32411	Petroleum refineries	93	91	91	91	85	88	2	2	2	2	3	2
324110	Petroleum refineries	93	91	91	91	85	88	2	2	2	2	3	2
32412	Asphalt paving, roofing, & saturated materials mfg	55	49	55	33	28	32	3	3	3	3	3	3
324121	Asphalt paving mixture & block mfg	44	39	48	24	19	22	3	3	3	3	2	2
324122	Asphalt shingle & coating materials mfg	^a 73	72	66	^a 59	63	56	2	5	3	6	6	3
32419	Other petroleum & coal products mfg ..	67	65	66	51	45	48	3	4	4	2	3	4
324191	Petroleum lubricating oil & grease mfg	64	61	61	47	41	42	4	5	4	3	3	4
324199	All other petroleum & coal products mfg	86	81	86	79	75	81	3	4	3	4	4	3
325	Chemical mfg	76	70	75	62	57	63	1	2	1	2	2	2
3251	Basic chemical mfg	82	80	83	77	75	78	2	2	3	2	2	3
32511	Petrochemical mfg	92	96	95	92	88	88	2	2	3	2	4	5
325110	Petrochemical mfg	92	96	95	92	88	88	2	2	3	2	4	5
32512	Industrial gas mfg	79	82	84	64	79	78	4	5	2	7	5	4
325120	Industrial gas mfg	79	82	84	64	79	78	4	5	2	7	5	4
32513	Dye & pigment mfg	81	85	89	75	77	81	3	4	3	3	9	6
325131	Inorganic dye & pigment mfg	90	90	95	86	89	94	2	3	2	2	3	2
325132	Synthetic organic dye & pigment mfg	70	79	81	63	64	68	4	6	5	5	14	11
32518	Other basic inorganic chemical mfg ..	74	73	79	68	68	74	4	3	3	3	3	3
325181	Alkalies & chlorine mfg	85	79	87	85	74	85	4	3	3	4	6	3
325182	Carbon black mfg	92	92	94	83	87	93	1	1	2	3	2	2
325188	All other basic inorganic chemical mfg	72	72	77	66	67	72	4	3	4	3	3	4
32519	Other basic organic chemical mfg	87	82	81	86	78	78	2	3	5	2	3	4
325191	Gum & wood chemical mfg	74	86	87	72	81	87	6	4	4	6	4	4
325192	Cyclic crude & intermediate mfg	77	66	^a 80	76	65	^a 77	3	3	2	3	2	1
325193	Ethyl alcohol mfg	85	(D)	(D)	85	(D)	(D)	2	(D)	(D)	2	(D)	(D)
325199	All other basic organic chemical mfg ..	88	84	81	88	80	77	2	3	5	2	3	5

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1997 through 1999—Con.

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

NAICS code	Industry	Full production			National emergency production			Standard errors ¹					
								Full production			National emergency production		
		1999	1998	1997	1999	1998	1997	1999	1998	1997	1999	1998	1997
325	Chemical mfg—Con.												
3252	Resin, syn rubber, & artificial & syn fibers & filaments mfg.....	87	80	89	85	77	86	2	3	2	2	3	2
32521	Resin & synthetic rubber mfg.....	87	80	88	85	77	85	2	3	2	2	3	2
325211	Plastics material & resin mfg.....	89	81	89	88	79	88	2	4	2	3	4	2
325212	Synthetic rubber mfg.....	72	73	84	70	62	70	3	4	2	3	6	6
32522	Artificial & synthetic fibers & filaments mfg.....	88	82	92	86	78	88	2	3	2	2	3	2
325221	Cellulosic organic fiber mfg.....	^a 70	71	87	^a 70	70	86	—	—	1	—	1	1
325222	Noncellulosic organic fiber mfg.....	90	83	92	87	78	88	2	3	2	2	3	2
3253	Pesticide, fertilizer, & other agricultural chemical mfg.....	72	77	87	57	69	74	4	2	2	3	4	3
32531	Fertilizer mfg.....	85	87	83	73	73	71	2	3	2	4	4	3
325311	Nitrogenous fertilizer mfg.....	93	95	93	93	91	93	3	2	2	3	3	2
325312	Phosphatic fertilizer mfg.....	89	94	91	87	91	90	1	2	3	1	3	3
325314	Fertilizer (mixing only) mfg.....	^a 70	67	60	^a 45	44	38	4	6	4	6	6	4
32532	Pesticide & other agricultural chemical mfg.....	65	72	90	50	66	76	5	3	2	3	5	5
325320	Pesticide & other agricultural chemical mfg.....	65	72	90	50	66	76	5	3	2	3	5	5
3254	Pharmaceutical & medicine mfg.....	77	64	69	60	47	54	3	3	3	3	4	3
32541	Pharmaceutical & medicine mfg.....	77	64	69	60	47	54	3	3	3	3	4	3
325411	Medicinal & botanical mfg.....	^a 85	71	79	^a 61	53	62	2	3	3	2	3	3
325412	Pharmaceutical preparation mfg.....	75	63	68	58	45	52	3	4	3	3	4	3
325413	In-vitro diagnostic substance mfg.....	^a 89	^a 66	^a 72	^a 69	^a 52	^a 54	2	4	2	2	4	3
325414	Biological product (except diagnostic) mfg.....	77	66	^a 72	65	53	^a 58	2	7	2	6	12	3
3255	Paint, coating, & adhesive mfg.....	66	60	66	44	42	51	3	3	3	5	3	3
32551	Paint & coating mfg.....	69	59	67	48	45	54	4	3	3	5	3	3
325510	Paint & coating mfg.....	69	59	67	48	45	54	4	3	3	5	3	3
32552	Adhesive mfg.....	59	63	66	36	37	43	5	4	4	8	5	5
325520	Adhesive mfg.....	59	63	66	36	37	43	5	4	4	8	5	5
3256	Soap, cleaning compound, & toilet preparation mfg.....	68	61	67	54	49	56	3	2	2	3	2	2
32561	Soap & cleaning compound mfg.....	71	59	67	58	49	55	3	2	3	4	3	3
325611	Soap & other detergent mfg.....	69	56	66	55	45	56	4	3	4	6	3	4
325612	Polish & other sanitation good mfg.....	66	56	61	52	48	49	2	4	3	5	5	4
325613	Surface active agent mfg.....	84	73	79	81	60	63	2	3	3	2	7	7
32562	Toilet preparation mfg.....	64	63	68	50	50	56	4	4	3	4	3	3
325620	Toilet preparation mfg.....	64	63	68	50	50	56	4	4	3	4	3	3
3259	Other chemical product mfg.....	75	76	79	52	59	60	2	2	3	5	3	3
32591	Printing ink mfg.....	64	71	67	33	34	45	4	3	3	10	4	3
325910	Printing ink mfg.....	64	71	67	33	34	45	4	3	3	10	4	3
32592	Explosives mfg.....	63	63	70	32	41	38	3	3	2	2	4	5
325920	Explosives mfg.....	63	63	70	32	41	38	3	3	2	2	4	5
32599	All other chemical product & preparation mfg.....	77	77	81	57	65	64	2	3	3	5	3	4
325991	Custom compounding of purchased resin.....	80	64	69	73	57	50	3	6	5	3	6	9
325992	Photographic film, paper, plate, & chemical mfg.....	85	81	88	75	72	71	2	2	4	3	3	3
325998	All other miscellaneous chemical product & preparation mfg.....	70	81	79	43	65	65	3	3	5	7	4	5
326	Plastics & rubber products mfg.....	76	76	76	65	60	59	2	2	2	2	3	3
3261	Plastics product mfg.....	75	74	74	64	58	57	2	2	2	3	3	3
32611	Unsupported plastics film, sheet, & bag mfg.....	78	78	78	74	66	66	3	3	3	4	5	5
326111	Unsupported plastics bag mfg.....	78	83	83	74	77	76	8	2	3	9	2	5
326112	Unsupported plastics packaging film & sheet mfg.....	78	82	78	65	77	71	8	5	4	10	5	4
326113	Unsupported plastics film & sheet (except packaging) mfg.....	79	75	76	75	59	61	3	4	4	5	7	6
32612	Plastics pipe, pipe fitting, & unsupported profile shape mfg.....	81	81	83	65	58	68	3	3	3	8	6	4
326121	Unsupported plastics profile shape mfg.....	76	82	84	56	66	65	4	3	4	10	5	6
326122	Plastics pipe & pipe fitting mfg.....	88	80	81	81	51	74	2	5	4	4	10	4
32613	Laminated plastics plate, sheet, & shape mfg.....	63	83	84	50	64	65	11	3	2	7	5	4
326130	Laminated plastics plate, sheet, & shape mfg.....	63	83	84	50	64	65	11	3	2	7	5	4
32614	Polystyrene foam product mfg.....	79	77	71	74	50	61	3	5	4	3	7	5
326140	Polystyrene foam product mfg.....	79	77	71	74	50	61	3	5	4	3	7	5
32615	Urethane & other foam product (except polystyrene) mfg.....	68	68	65	51	61	58	7	5	4	6	4	5
326150	Urethane & other foam product (except polystyrene) mfg.....	68	68	65	51	61	58	7	5	4	6	4	5
32616	Plastics bottle mfg.....	77	73	81	77	72	70	3	5	4	3	5	6
326160	Plastics bottle mfg.....	77	73	81	77	72	70	3	5	4	3	5	6
32619	Other plastics product mfg.....	73	73	72	61	56	53	3	2	2	3	4	4
326191	Plastics plumbing fixture mfg.....	63	73	73	51	19	44	5	4	3	5	8	4
326192	Resilient floor covering mfg.....	73	68	71	64	63	57	2	4	4	3	4	4
326199	All other plastics product mfg.....	74	73	72	62	60	53	3	3	3	4	3	4
3262	Rubber product mfg.....	84	81	82	70	70	71	1	2	2	2	2	2
32621	Tire mfg.....	93	89	90	82	76	84	2	3	3	2	4	4
326211	Tire mfg (except retreading).....	95	90	90	88	83	84	2	3	3	2	4	4
326212	Tire retreading.....	68	72	(NA)	38	32	(NA)	2	3	(NA)	2	3	(NA)
32622	Rubber & plastics hoses & belting mfg.....	75	76	77	62	66	66	4	2	3	6	2	3
326220	Rubber & plastics hoses & belting mfg.....	75	76	77	62	66	66	4	2	3	6	2	3
32629	Other rubber product mfg.....	79	76	76	64	66	63	2	2	3	3	3	3
326291	Rubber product mfg for mechanical use.....	81	78	80	71	68	71	2	3	2	2	3	2
326299	All other rubber product mfg.....	78	75	73	58	64	57	3	3	4	4	4	4

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1997 through 1999—Con.

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

NAICS code	Industry	Full production			National emergency production			Standard errors ¹					
		1999	1998	1997	1999	1998	1997	Full production			National emergency production		
								1999	1998	1997	1999	1998	1997
327	Nonmetallic mineral product mfg	77	75	77	58	46	46	2	2	2	2	3	4
3271	Clay product & refractory mfg	75	73	74	62	61	62	3	2	2	4	2	2
32711	Pottery, ceramics, & plumbing fixture mfg	76	71	76	63	60	61	3	3	2	5	3	3
327111	Vitreous china plumbing fixture & bathroom accessories mfg	90	89	82	90	89	82	2	2	2	2	2	2
327112	Vitreous china, fine earthenware, & other pottery product mfg	71	73	77	53	56	56	4	2	3	8	5	5
327113	Porcelain electrical supply mfg	71	57	70	61	49	55	4	6	3	4	6	5
32712	Clay building material & refractories mfg	73	74	73	61	62	62	4	2	2	6	2	3
327121	Brick & structural clay tile mfg	89	94	92	90	92	82	6	2	2	4	2	6
327122	Ceramic wall & floor tile mfg	70	76	75	47	70	63	4	4	3	18	4	5
327123	Other structural clay product mfg	70	73	64	57	67	42	5	4	2	7	4	9
327124	Clay refractory product mfg	66	55	^a 49	49	39	^a 46	5	3	4	5	3	2
327125	Nonclay refractory mfg	66	71	79	59	55	62	8	2	6	4	5	7
3272	Glass & glass product mfg	85	79	84	78	73	73	3	3	2	3	3	3
32721	Glass & glass product mfg	85	79	84	78	73	73	3	3	2	3	3	3
327211	Flat glass mfg	89	88	93	85	83	86	3	4	3	3	3	3
327212	Other pressed & blown glass & glassware mfg	82	84	86	78	83	85	5	2	4	5	2	3
327213	Glass container mfg	91	95	94	87	91	91	3	2	2	3	2	2
327215	Glass product mfg made of purchased glass	84	67	75	72	59	58	3	6	4	4	5	4
3273	Cement & concrete product mfg	71	73	72	47	31	30	2	2	3	3	4	4
32731	Cement mfg	87	95	93	74	81	85	4	2	2	10	10	3
327310	Cement mfg	87	95	93	74	81	85	4	2	2	10	10	3
32732	Ready-mix concrete mfg	64	65	63	36	20	19	3	4	4	4	4	4
327320	Ready-mix concrete mfg	64	65	63	36	20	19	3	4	4	4	4	4
32733	Concrete pipe, brick, & block mfg	71	73	75	47	42	43	4	4	3	4	7	6
327331	Concrete block & brick mfg	75	69	71	44	50	42	5	4	4	5	7	5
327332	Concrete pipe mfg	66	77	81	50	36	43	6	8	5	5	10	11
32739	Other concrete product mfg	75	73	74	60	48	49	4	3	3	4	4	8
327390	Other concrete product mfg	75	73	74	60	48	49	4	3	3	4	4	8
3274	Lime & gypsum product mfg	87	89	92	82	83	80	2	2	2	5	3	7
32741	Lime mfg	74	71	84	71	69	82	4	3	3	4	3	3
327410	Lime mfg	74	71	84	71	69	82	4	3	3	4	3	3
32742	Gypsum product mfg	92	96	95	85	87	79	3	2	2	7	4	8
327420	Gypsum product mfg	92	96	95	85	87	79	3	2	2	7	4	8
3279	Other nonmetallic mineral product mfg	76	74	76	60	63	58	3	3	3	4	2	5
32791	Abrasive product mfg	67	67	71	48	55	57	5	5	5	8	4	3
327910	Abrasive product mfg	67	67	71	48	55	57	5	5	5	8	4	3
32799	All other nonmetallic mineral product mfg	82	77	79	69	67	59	2	2	2	3	2	7
327991	Cut stone & stone product mfg	67	^a 68	74	46	^a 53	54	3	4	2	4	2	4
327992	Ground or treated mineral & earth mfg	88	70	74	86	61	57	3	4	4	4	4	4
327993	Mineral wool mfg	88	93	87	77	88	64	3	3	3	6	3	16
327999	All other miscellaneous nonmetallic mineral product mfg	73	66	71	59	54	55	4	6	6	5	5	5
331	Primary metal mfg	81	78	84	68	68	74	1	1	2	2	1	1
3311	Iron & steel mills & ferroalloy mfg	89	79	89	77	76	87	3	3	3	7	3	3
33111	Iron & steel mills & ferroalloy mfg	89	79	89	77	76	87	3	3	3	7	3	3
331111	Iron & steel mills	89	79	89	78	76	88	3	3	3	7	3	3
331112	Electrometallurgical ferroalloy product mfg	85	76	78	73	69	64	2	4	3	2	5	4
3312	Steel product mfg from purchased steel	78	74	78	71	65	67	2	2	2	2	2	2
33121	Iron & steel pipes & tubes mfg from purchased steel	77	71	75	67	59	61	2	3	2	2	3	3
331210	Iron & steel pipes & tubes mfg from purchased steel	77	71	75	67	59	61	2	3	2	2	3	3
33122	Rolling & drawing of purchased steel	79	77	81	75	70	73	2	2	3	3	3	3
331221	Cold-rolled steel shape mfg	76	71	82	73	67	76	4	4	3	5	5	4
331222	Steel wire drawing	82	83	79	72	70	70	2	2	2	2	3	4
3313	Alumina & aluminum production & processing	85	84	87	78	79	82	1	2	1	2	2	2
33131	Alumina & aluminum production & processing	85	84	87	78	79	82	1	2	1	2	2	2
331311	Alumina refining	71	83	83	71	80	81	—	4	2	—	5	3
331312	Primary aluminum production	86	87	87	86	87	87	4	2	2	4	2	2
331314	Secondary smelting & alloying of aluminum	85	89	87	83	81	77	2	2	6	2	5	6
331315	Aluminum sheet, plate, & foil mfg	89	85	89	85	78	83	1	3	2	1	2	2
331316	Aluminum extruded product mfg	81	82	84	63	75	77	2	3	3	3	3	3
331319	Other aluminum rolling & drawing	80	71	83	77	69	82	2	3	7	1	2	6
3314	Nonferrous metal (except aluminum) production & processing	76	76	84	67	66	74	2	2	2	2	2	3
33141	Nonferrous metal (except aluminum) smelting & refining	74	74	88	65	64	78	3	3	4	4	5	7
331411	Primary smelting & refining of copper	81	93	97	75	89	97	1	1	1	1	2	1
331419	Other nonferrous metal primary smelting & refining	70	66	82	60	55	69	5	4	6	5	6	9
33142	Copper rolling, drawing, extruding, & alloying	89	86	87	84	80	82	2	2	2	2	2	2
331421	Copper rolling, drawing, & extruding	91	88	91	89	84	87	3	2	1	3	3	2
331422	Copper wire (except mechanical) drawing	93	84	85	81	74	77	2	3	3	2	4	2
331423	Secondary smelting, refining, & alloying of copper	72	^a 77	64	62	^a 62	58	4	5	9	4	7	6
33149	Other nonferrous metal rolling, drawing, extruding, & alloying	70	70	79	59	60	67	1	3	3	3	3	3
331491	Other nonferrous metal rolling, drawing, & extruding	70	70	79	59	58	66	1	3	3	3	3	4
331492	Other nonferrous metal secondary smelting, refining, & alloying	69	72	80	59	63	69	3	5	2	3	5	3

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1997 through 1999—Con.

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

NAICS code	Industry	Full production			National emergency production			Standard errors ¹						
		1999	1998	1997	1999	1998	1997	Full production			National emergency production			
								1999	1998	1997	1999	1998	1997	
331	Primary metal mfg—Con.													
3315	Foundries	74	76	79	54	58	60	2	1	1	2	2	2	2
33151	Ferrous metal foundries	72	77	80	52	59	61	3	1	2	3	2	2	2
331511	Iron foundries	76	79	82	53	60	64	4	2	2	4	3	2	2
331512	Steel investment foundries	66	74	73	50	52	49	1	1	5	3	4	7	7
331513	Steel foundries (except investment)	66	76	81	49	63	67	2	2	2	3	2	2	2
33152	Nonferrous metal foundries	76	73	77	57	57	58	2	2	2	3	2	3	3
331521	Aluminum die-casting foundries	81	73	76	72	65	64	3	5	5	3	5	7	7
331522	Nonferrous (except aluminum) die-casting foundries	73	71	71	58	56	55	3	2	2	3	2	2	2
331524	Aluminum foundries (except die-casting)	75	74	78	50	54	60	3	2	2	6	3	3	3
331525	Copper foundries (except die-casting)	69	69	73	43	43	44	2	1	2	3	2	3	3
331528	Other nonferrous foundries (except die-casting)	79	76	89	70	61	63	2	6	2	3	4	4	4
332	Fabricated metal product mfg	70	70	74	50	49	51	1	1	1	1	1	1	1
3321	Forging & stamping	68	68	72	52	41	45	2	2	2	2	4	4	4
33211	Forging & stamping	68	68	72	52	41	45	2	2	2	2	4	4	4
332111	Iron & steel forging	67	73	82	51	54	60	2	2	2	3	6	4	4
332112	Nonferrous forging	72	75	84	57	61	61	3	2	2	3	4	6	6
332114	Custom roll forming	64	67	73	47	40	45	2	4	2	2	4	3	3
332115	Crown & closure mfg	69	73	76	37	49	61	4	3	3	11	4	3	6
332116	Metal stamping	67	66	67	53	36	39	2	3	2	3	5	6	3
332117	Powder metallurgy part mfg	81	61	76	70	37	59	2	10	3	3	12	6	6
3322	Cutlery & handtool mfg	73	71	73	56	49	52	2	3	3	2	3	4	4
33221	Cutlery & handtool mfg	73	71	73	56	49	52	2	3	3	2	3	4	4
332211	Cutlery & flatware (except precious metal)	74	88	86	62	66	59	4	4	2	4	3	4	4
332212	Hand & edge tool mfg	72	68	70	53	47	47	3	3	4	3	5	5	5
332213	Saw blade & handsaw mfg	75	70	78	66	57	69	3	3	3	3	3	4	4
332214	Kitchen utensil, pot, & pan mfg	71	64	62	56	31	50	6	6	6	2	2	4	4
3323	Architectural & structural metals mfg	67	67	71	45	45	48	2	2	1	2	2	1	1
33231	Plate work & fabricated structural product mfg	73	70	77	46	44	54	2	2	2	2	3	2	2
332311	Prefabricated metal building & component mfg	71	71	77	52	40	53	3	2	2	3	4	3	3
332312	Fabricated structural metal mfg	76	70	78	47	48	54	2	3	2	3	4	3	3
332313	Plate work mfg	63	69	73	38	36	56	3	4	4	3	9	3	3
33232	Ornamental & architectural metal products mfg	64	66	67	44	45	45	2	2	2	2	2	2	2
332321	Metal window & door mfg	63	65	68	49	44	46	4	4	2	3	3	2	2
332322	Sheet metal work mfg	64	65	65	42	46	44	2	3	2	2	3	2	2
332323	Ornamental & architectural metal work mfg	65	74	76	46	45	46	3	2	2	3	3	3	3
3324	Boiler, tank, & shipping container mfg	71	73	77	53	56	58	2	2	2	2	2	2	2
33241	Power boiler & heat exchanger mfg	63	73	74	42	48	53	2	3	3	3	4	3	3
332410	Power boiler & heat exchanger mfg	63	73	74	42	48	53	2	3	3	3	4	3	3
33242	Metal tank (heavy gauge) mfg	66	68	74	49	51	50	3	5	3	2	4	5	5
332420	Metal tank (heavy gauge) mfg	66	68	74	49	51	50	3	5	3	2	4	5	5
33243	Metal can, box, & other metal container (light gauge) mfg	79	76	80	63	63	66	2	3	2	3	2	2	2
332431	Metal can mfg	84	82	86	73	73	77	2	3	2	3	3	3	3
332439	Other metal container mfg	66	62	65	45	45	43	5	5	5	4	3	3	3
3325	Hardware mfg	74	69	72	47	50	51	2	3	3	4	3	4	4
33251	Hardware mfg	74	69	72	47	50	51	2	3	3	4	3	4	4
332510	Hardware mfg	74	69	72	47	50	51	2	3	3	4	3	4	4
3326	Spring & wire product mfg	73	72	74	54	57	60	2	2	2	3	2	2	2
33261	Spring & wire product mfg	73	72	74	54	57	60	2	2	2	3	2	2	2
332611	Spring (heavy gauge) mfg	70	61	70	52	53	58	2	2	2	3	2	2	2
332612	Spring (light gauge) mfg	72	76	80	61	55	63	3	5	2	3	5	4	4
332618	Other fabricated wire product mfg	74	73	72	51	59	60	2	3	3	4	3	3	3
3327	Machine shops, turned product, & screw, nut, & bolt mfg	70	73	75	46	51	47	2	1	1	2	2	2	2
33271	Machine shops	71	72	75	47	52	45	2	2	2	3	2	3	3
332710	Machine shops	71	72	75	47	52	45	2	2	2	3	2	3	3
33272	Turned product & screw, nut, & bolt mfg	70	73	74	45	50	51	2	2	2	3	3	3	3
332721	Precision turned product mfg	67	69	73	41	44	47	3	3	2	3	4	4	4
332722	Bolt, nut, screw, rivet, & washer mfg	73	78	77	50	57	57	2	2	2	4	3	3	3
3328	Coating, engraving, heat treating, & allied activities	74	71	74	57	56	60	2	2	2	3	2	2	2
33281	Coating, engraving, heat treating, & allied activities	74	71	74	57	56	60	2	2	2	3	2	2	2
332811	Metal heat treating	80	74	79	62	63	69	2	5	2	5	4	3	3
332812	Metal coating/engraving (exc jewelry/silverware)/allied services	73	74	77	60	64	65	4	2	2	4	3	2	2
332813	Electroplating, plating, polishing, anodizing, & coloring	71	67	70	53	47	52	3	2	3	3	3	3	3
3329	Other fabricated metal product mfg	71	72	75	54	48	53	1	1	1	1	2	2	2
33291	Metal valve mfg	68	71	75	53	53	56	1	2	1	2	2	1	1
332911	Industrial valve mfg	67	72	74	48	54	56	2	2	1	2	3	2	2
332912	Fluid power valve & hose fitting mfg	68	72	78	55	53	58	2	1	1	2	4	2	2
332913	Plumbing fixture fitting & trim mfg	69	68	70	55	50	50	2	2	2	2	2	2	2
332919	Other metal valve & pipe fitting mfg	74	69	74	62	53	59	2	4	3	2	4	4	4
33299	All other fabricated metal product mfg	73	72	76	55	45	50	1	2	1	2	2	3	3
332991	Ball & roller bearing mfg	80	78	83	75	68	73	3	1	2	3	1	2	2
332992	Small arms ammunition mfg	69	58	66	56	45	52	4	1	2	3	1	1	1
332993	Ammunition (except small arms) mfg	51	45	46	30	17	17	5	6	3	4	4	4	4
332994	Small arms mfg	77	74	75	56	49	44	3	3	3	5	3	3	3
332995	Other ordnance & accessories mfg	66	58	75	59	38	47	1	8	2	1	6	6	6
332996	Fabricated pipe & pipe fitting mfg	69	71	74	41	38	55	3	2	2	2	2	4	4
332997	Industrial pattern mfg	77	72	80	52	50	55	2	2	3	3	3	2	2
332998	Enameled iron & metal sanitary ware mfg	90	82	76	64	39	58	3	2	2	6	12	2	2

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1997 through 1999—Con.

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

NAICS code	Industry	Full production			National emergency production			Standard errors ¹					
								Full production			National emergency production		
		1999	1998	1997	1999	1998	1997	1999	1998	1997	1999	1998	1997
332	Fabricated metal product mfg—Con.												
3329	Other fabricated metal product mfg—Con.												
33299	All other fabricated metal product mfg—Con.												
332999	All other miscellaneous fabricated metal product mfg	73	77	81	57	51	54	2	2	2	4	3	4
333	Machinery mfg	66	69	72	46	47	51	1	1	1	1	1	1
3331	Agriculture, construction, & mining machinery mfg	62	71	76	46	51	56	2	2	2	1	2	2
33311	Agricultural implement mfg	59	65	75	42	48	53	3	3	3	2	2	2
333111	Farm machinery & equipment mfg ..	56	66	81	42	52	59	3	4	3	2	3	3
333112	Lawn & garden tractor & home lawn & garden equipment mfg	71	63	63	42	39	42	1	3	3	1	3	3
33312	Construction machinery mfg	66	78	77	50	56	58	2	2	3	2	4	4
333120	Construction machinery mfg	66	78	77	50	56	58	2	2	3	2	4	4
33313	Mining & oil & gas field machinery mfg.	60	72	77	47	49	57	2	3	2	2	7	2
333131	Mining machinery & equipment mfg .	64	70	78	47	31	52	3	3	3	3	9	4
333132	Oil & gas field machinery & equipment mfg	59	72	76	47	63	60	2	4	2	3	5	2
3332	Industrial machinery mfg	65	66	70	39	41	45	1	2	1	2	2	1
33321	Sawmill & woodworking machinery mfg	68	68	74	35	46	49	2	2	2	6	2	2
333210	Sawmill & woodworking machinery mfg	68	68	74	35	46	49	2	2	2	6	2	2
33322	Plastics & rubber industry machinery mfg	75	71	75	53	44	45	2	3	3	4	5	3
333220	Plastics & rubber industry machinery mfg	75	71	75	53	44	45	2	3	3	4	5	3
33329	Other industrial machinery mfg	63	66	70	38	41	45	1	2	1	2	2	1
333291	Paper industry machinery mfg	60	^a 70	77	38	^a 48	46	3	3	3	3	3	3
333292	Textile machinery mfg	56	62	65	29	34	44	3	2	3	2	2	3
333293	Printing machinery & equipment mfg	67	69	72	42	41	45	3	4	2	3	3	2
333294	Food product machinery mfg	72	70	72	43	46	38	3	2	3	3	3	2
333295	Semiconductor machinery mfg	^a 59	^a 58	65	^a 36	^a 37	47	2	2	2	2	2	2
333298	All other industrial machinery mfg ...	68	72	73	38	42	46	3	4	2	4	4	3
3333	Commercial & service industry machinery mfg	66	69	71	45	46	45	1	2	2	2	2	2
33331	Commercial & service industry machinery mfg	66	69	71	45	46	45	1	2	2	2	2	2
333311	Automatic vending machine mfg	64	72	72	36	71	61	1	5	7	1	20	7
333312	Commercial laundry, drycleaning, & pressing machine mfg	69	70	81	59	51	47	4	1	2	2	2	4
333313	Office machinery mfg	65	60	69	47	42	35	2	2	4	3	4	3
333314	Optical instrument & lens mfg	69	59	69	45	28	34	3	3	4	3	4	5
333315	Photographic & photocopying equipment mfg	62	76	74	43	62	58	1	3	3	3	5	3
333319	Other commercial & service industry machinery mfg	69	71	69	47	46	45	3	3	2	3	3	3
3334	Ventilation, heating, AC, & commercial refrigeration equip mfg	67	65	66	46	47	48	3	2	3	3	2	3
33341	Ventilation, heating, AC, & commercial refrigeration equip mfg	67	65	66	46	47	48	3	2	3	3	2	3
333411	Air purification equipment mfg	62	60	63	42	43	44	2	3	4	3	3	3
333412	Industrial & commercial fan & blower mfg	65	60	61	43	40	36	2	4	5	2	4	4
333414	Heating equipment (except warm air furnaces) mfg	67	63	71	49	44	49	3	3	2	3	2	3
333415	AC & warm air heating & commercial/industrial refig equip mfg	67	67	66	47	49	49	5	3	3	4	3	4
3335	Metalworking machinery mfg	70	71	74	49	49	51	2	1	2	2	2	2
33351	Metalworking machinery mfg	70	71	74	49	49	51	2	1	2	2	2	2
333511	Industrial mold mfg	74	73	72	46	47	49	2	3	3	3	3	4
333512	Machine tool (metal cutting types) mfg	68	71	74	49	50	53	2	2	2	2	4	2
333513	Machine tool (metal forming types) mfg	68	77	83	48	57	60	2	2	2	3	3	2
333514	Special die & tool, die set, jig, & fixture mfg	71	70	72	47	48	50	2	2	3	2	3	3
333515	Cutting tool & machine tool accessory mfg	68	74	78	57	55	56	6	2	3	6	3	4
333516	Rolling mill machinery & equipment mfg	68	63	84	45	52	70	12	3	3	15	3	3
333518	Other metalworking machinery mfg ..	66	61	72	48	37	42	2	4	3	2	9	5
3336	Engine, turbine, & power transmission equipment mfg	67	68	70	53	54	57	2	3	3	2	2	2
33361	Engine, turbine, & power transmission equipment mfg	67	68	70	53	54	57	2	3	3	2	2	2
333611	Turbine & turbine generator set unit mfg	53	60	56	49	55	53	2	9	3	3	7	2
333612	Speed changer, industrial high-speed drive, & gear mfg	64	67	76	53	50	54	2	2	2	2	2	4
333613	Mechanical power transmission equipment mfg	61	69	76	45	55	60	5	2	3	4	3	3
333618	Other engine equipment mfg	77	72	73	57	54	58	3	2	4	3	2	3
3339	Other general-purpose machinery mfg ...	67	69	74	45	45	52	1	1	1	1	4	1
33391	Pump & compressor mfg	62	67	73	46	52	54	2	1	2	3	2	2
333911	Pump & pumping equipment mfg ...	60	68	73	47	55	52	4	2	3	5	2	3
333912	Air & gas compressor mfg	64	66	73	44	47	55	2	1	2	3	3	4
333913	Measuring & dispensing pump mfg ..	67	69	74	50	57	56	2	4	1	3	2	2

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1997 through 1999—Con.

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

NAICS code	Industry	Full production			National emergency production			Standard errors ¹						
		1999	1998	1997	1999	1998	1997	Full production			National emergency production			
								1999	1998	1997	1999	1998	1997	
333	Machinery mfg—Con.													
3339	Other general-purpose machinery mfg—Con.													
33392	Material handling equipment mfg.....	71	70	74	45	45	48	2	2	2	2	2	2	2
333921	Elevator & moving stairway mfg.....	78	82	74	56	62	52	2	4	3	2	6	2	2
333922	Conveyor & conveying equipment mfg.....	71	66	73	42	43	47	3	2	3	4	2	3	3
333923	Overhead traveling crane, hoist, & monorail system mfg.....	73	73	75	44	49	51	2	2	3	5	5	5	5
333924	Industrial truck, tractor, trailer, & stacker machinery mfg.....	67	69	75	45	42	47	3	2	2	4	3	2	2
33399	All other general-purpose machinery mfg.....	68	70	74	45	43	53	1	1	1	2	6	2	2
333991	Power-driven handtool mfg.....	80	78	80	68	65	67	1	2	1	2	2	2	2
333992	Welding & soldering equipment mfg.....	72	75	75	47	52	57	4	3	4	5	3	2	2
333993	Packaging machinery mfg.....	67	72	75	41	49	49	4	2	2	3	2	2	2
333994	Industrial process furnace & oven mfg.....	63	66	72	42	39	42	3	2	1	2	1	4	4
333995	Fluid power cylinder & actuator mfg.....	67	71	76	43	51	55	2	2	2	3	2	3	3
333996	Fluid power pump & motor mfg.....	76	72	78	46	60	66	2	3	4	4	3	3	3
333997	Scale & balance (except laboratory) mfg.....	66	60	62	44	44	44	1	8	7	4	6	3	3
333999	All other miscellaneous general-purpose machinery mfg.....	62	65	70	43	31	49	2	3	3	3	10	3	3
334	Computer & electronic product mfg.....	73	71	74	56	54	58	1	1	1	1	1	1	1
3341	Computer & peripheral equipment mfg.....	69	^{a70}	75	50	^{a51}	57	2	2	1	2	2	2	2
33411	Computer & peripheral equipment mfg.....	69	^{a70}	75	50	^{a51}	57	2	2	1	2	2	2	2
334111	Electronic computer mfg.....	66	^{a66}	75	49	^{a50}	62	2	2	1	1	2	1	1
334112	Computer storage device mfg.....	82	79	80	43	51	55	4	6	3	4	8	6	6
334113	Computer terminal mfg.....	^{a45}	^{a70}	80	^{a33}	^{a51}	64	4	3	1	8	2	6	6
334119	Other computer peripheral equipment mfg.....	78	77	72	59	53	49	3	2	2	4	2	3	3
3342	Communications equipment mfg.....	77	73	71	61	60	55	1	1	1	2	2	2	2
33421	Telephone apparatus mfg.....	82	78	70	70	65	54	2	2	2	2	3	3	3
334210	Telephone apparatus mfg.....	82	78	70	70	65	54	2	2	2	2	3	3	3
33422	Radio & TV broadcasting & wireless communications equipment mfg.....	71	69	72	54	57	59	2	1	2	3	3	2	2
334220	Radio & TV broadcasting & wireless communications equipment mfg.....	71	69	72	54	57	59	2	1	2	3	3	2	2
33429	Other communications equipment mfg.....	78	66	69	53	45	42	2	3	2	2	2	2	2
334290	Other communications equipment mfg.....	78	66	69	53	45	42	2	3	2	2	2	2	2
3343	Audio & video equipment mfg.....	58	64	58	39	44	41	5	2	3	3	4	2	2
33431	Audio & video equipment mfg.....	58	64	58	39	44	41	5	2	3	3	4	2	2
334310	Audio & video equipment mfg.....	58	64	58	39	44	41	5	2	3	3	4	2	2
3344	Semiconductor & other electronic component mfg.....	81	^{a72}	79	69	^{a57}	70	2	1	1	2	1	1	1
33441	Semiconductor & other electronic component mfg.....	81	^{a72}	79	69	^{a57}	70	2	1	1	2	1	1	1
334411	Electron tube mfg.....	77	76	79	63	69	70	4	3	3	9	2	3	3
334412	Bare printed circuit board mfg.....	78	73	74	60	48	61	2	3	3	3	5	4	4
334413	Semiconductor & related device mfg.....	^{a86}	^{a73}	^{a84}	^{a84}	^{a58}	^{a77}	2	1	1	2	1	1	1
334414	Electronic capacitor mfg.....	83	75	79	77	67	70	1	3	2	4	4	2	2
334415	Electronic resistor mfg.....	63	61	68	40	44	52	2	5	2	3	4	2	2
334416	Electronic coil, transformer, & other inductor mfg.....	67	61	64	46	42	42	3	4	5	3	3	3	3
334417	Electronic connector mfg.....	67	^{a68}	^{a70}	50	^{a55}	^{a59}	3	2	2	2	2	2	2
334418	Printed circuit assembly (electronic assembly) mfg.....	69	^{a70}	70	54	^{a56}	58	2	2	3	3	2	3	3
334419	Other electronic component mfg.....	68	76	72	37	65	54	3	8	4	3	12	4	4
3345	Navigational, measuring, medical, & control instruments mfg.....	64	67	69	45	45	46	2	1	1	1	2	2	2
33451	Navigational, measuring, medical, & control instruments mfg.....	64	67	69	45	45	46	2	1	1	1	2	2	2
334510	Electromedical & electrotherapeutic apparatus mfg.....	70	79	79	54	49	52	2	2	3	3	3	4	4
334511	Search, detection, navigation, & guidance instrument mfg.....	61	66	67	46	46	45	3	2	1	2	3	3	3
334512	Automatic environmental control mfg.....	74	69	71	56	51	55	2	2	2	3	2	2	2
334513	Industrial process control instrument mfg.....	62	64	65	42	37	37	2	4	3	2	3	2	2
334514	Totalizing fluid meter & counting device mfg.....	74	63	70	53	42	51	1	2	3	2	2	2	2
334515	Electricity measuring & testing instrument mfg.....	68	(NA)	(NA)	45	(NA)	(NA)	4	(NA)	(NA)	3	(NA)	(NA)	(NA)
334516	Analytical laboratory instrument mfg.....	61	64	66	34	38	41	7	2	3	3	2	2	2
334517	Irradiation apparatus mfg.....	72	77	73	44	54	57	3	2	2	3	4	3	3
334518	Watch, clock, & part mfg.....	62	46	59	31	33	36	2	6	10	2	4	4	4
334519	Other measuring & controlling device mfg.....	61	65	71	37	43	49	3	5	3	2	5	4	4
3346	Mfg & reproducing magnetic & optical media.....	73	83	78	62	78	74	3	2	2	4	2	2	2
33461	Mfg & reproducing magnetic & optical media.....	73	83	78	62	78	74	3	2	2	4	2	2	2
334611	Software reproducing.....	^{a77}	87	(NA)	^{a47}	82	(NA)	3	4	(NA)	9	5	(NA)	(NA)
334612	Prerecorded CD (except software), tape, & record reproducing.....	72	84	78	63	80	74	2	1	1	4	1	2	2
334613	Magnetic & optical recording media mfg.....	73	80	78	71	73	74	7	3	3	7	3	4	4

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1997 through 1999—Con.

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

NAICS code	Industry	Full production			National emergency production			Standard errors ¹					
								Full production			National emergency production		
		1999	1998	1997	1999	1998	1997	1999	1998	1997	1999	1998	1997
335	Electrical equipment, appliance, & component mfg	72	72	74	56	53	54	1	1	1	1	1	1
3351	Electric lighting equipment mfg	68	70	73	49	48	50	2	2	2	3	2	2
33511	Electric lamp bulb & part mfg	74	70	71	59	52	55	2	1	3	3	1	7
335110	Electric lamp bulb & part mfg	74	70	71	59	52	55	2	1	3	3	1	7
33512	Lighting fixture mfg	66	70	74	45	46	48	2	2	1	3	2	2
335121	Residential electric lighting fixture mfg	58	63	65	39	42	42	2	3	2	3	2	2
335122	Commercial/industrial/institutional electric lighting fixture mfg	66	70	76	47	50	52	4	4	2	6	3	3
335129	Other lighting equipment mfg	73	76	78	49	45	48	2	2	2	4	3	3
3352	Household appliance mfg	75	73	73	57	57	53	1	2	1	1	2	2
33521	Small electrical appliance mfg	70	65	72	51	51	54	3	4	3	2	4	2
335211	Electric housewares & household fan mfg	66	59	69	55	45	48	4	5	3	2	5	3
335212	Household vacuum cleaner mfg	73	73	76	48	60	65	4	4	4	3	3	4
33522	Major appliance mfg	77	76	74	59	60	53	1	1	1	1	2	2
335221	Household cooking appliance mfg	59	66	61	43	51	38	3	1	3	2	1	3
335222	Household refrigerator & home freezer mfg	81	79	73	59	56	52	2	2	2	2	4	2
335224	Household laundry equipment mfg	87	75	80	75	68	74	1	3	3	1	2	2
335228	Other major household appliance mfg	83	87	84	64	67	61	1	2	2	2	5	5
3353	Electrical equipment mfg	70	69	72	54	48	51	1	2	2	2	3	3
33531	Electrical equipment mfg	70	69	72	54	48	51	1	2	2	2	3	3
335311	Power, distribution, & specialty transformer mfg	78	73	79	63	55	60	2	2	1	3	2	3
335312	Motor & generator mfg	70	67	71	61	45	50	2	2	3	2	5	6
335313	Switchgear & switchboard apparatus mfg	74	77	77	58	58	51	2	2	2	4	3	3
335314	Relay & industrial control mfg	64	64	68	44	44	48	3	3	3	2	4	4
3359	Other electrical equipment & component mfg	75	74	77	61	57	59	1	1	1	2	1	1
33591	Battery mfg	81	80	81	68	69	62	2	2	2	1	2	2
335911	Storage battery mfg	80	79	81	67	68	57	2	2	2	2	3	3
335912	Primary battery mfg	81	82	83	69	70	70	3	3	1	2	2	1
33592	Communication & energy wire & cable mfg	80	82	83	73	72	75	2	2	2	2	2	2
335921	Fiber optic cable mfg	81	83	79	73	73	74	1	1	1	1	3	2
335929	Other communication & energy wire mfg	80	82	84	72	72	76	2	2	2	2	2	2
33593	Wiring device mfg	74	71	72	58	55	59	2	2	2	3	2	3
335931	Current-carrying wiring device mfg	72	72	68	55	57	56	3	2	3	5	3	4
335932	Noncurrent-carrying wiring device mfg	77	70	78	63	54	63	2	2	2	3	3	2
33599	All other electrical equipment & component mfg	68	66	74	50	44	46	1	1	1	2	2	2
335991	Carbon & graphite product mfg	72	76	85	63	70	73	2	3	3	4	3	5
335999	All other miscellaneous electrical equipment & component mfg	67	63	71	47	40	40	1	2	2	3	2	2
336	Transportation equipment mfg	73	74	76	54	55	55	1	1	1	1	1	2
3361	Motor vehicle mfg	86	83	82	62	58	56	2	2	3	2	2	4
33611	Automobile & light duty motor vehicle mfg	86	85	82	61	59	55	2	2	4	2	2	4
336111	Automobile mfg	85	89	85	57	54	56	3	5	2	3	2	2
336112	Light truck & utility vehicle mfg	87	81	79	64	63	55	1	2	6	3	3	7
33612	Heavy duty truck mfg	92	70	85	70	49	71	1	10	7	1	9	4
336120	Heavy duty truck mfg	92	70	85	70	49	71	1	10	7	1	9	4
3362	Motor vehicle body & trailer mfg	71	68	65	43	44	39	2	2	2	1	2	1
33621	Motor vehicle body & trailer mfg	71	68	65	43	44	39	2	2	2	1	2	1
336211	Motor vehicle body mfg	72	67	67	46	42	36	3	3	3	2	3	2
336212	Truck trailer mfg	77	75	70	54	56	55	2	3	3	4	3	3
336213	Motor home mfg	65	65	60	34	38	30	1	3	2	2	2	1
336214	Travel trailer & camper mfg	67	66	63	38	41	39	3	2	3	1	2	2
3363	Motor vehicle parts mfg	81	76	79	64	58	63	1	2	1	2	2	2
33631	Motor vehicle gasoline engine & engine parts mfg	85	78	78	66	58	61	1	3	3	3	3	3
336311	Carburetor, piston, piston ring, & valve mfg	88	88	86	64	80	77	4	3	3	13	3	3
336312	Gasoline engine & engine parts mfg	85	77	77	66	56	58	1	3	3	1	3	4
33632	Motor vehicle electrical & electronic equipment mfg	79	78	81	65	60	62	1	2	2	1	3	3
336321	Vehicular lighting equipment mfg	79	75	81	66	56	68	4	3	3	3	3	4
336322	Other motor vehicle electrical & electronic equipment mfg	79	78	81	64	60	60	1	2	2	1	4	4
33633	Motor vehicle steering & suspension component (except spring) mfg	82	83	83	69	74	74	2	2	2	3	2	3
336330	Motor vehicle steering & suspension component (except spring) mfg	82	83	83	69	74	74	2	2	2	3	2	3
33634	Motor vehicle brake system mfg	72	58	57	59	47	49	2	6	7	3	5	6
336340	Motor vehicle brake system mfg	72	58	57	59	47	49	2	6	7	3	5	6
33635	Motor vehicle transmission & power train parts mfg	86	85	86	75	49	73	2	2	2	2	3	3
336350	Motor vehicle transmission & power train parts mfg	86	85	86	75	49	73	2	2	2	2	3	3
33636	Motor vehicle seating & interior trim mfg	79	72	80	58	49	49	3	2	2	3	2	4
336360	Motor vehicle seating & interior trim mfg	79	72	80	58	49	49	3	2	2	3	2	4
33637	Motor vehicle metal stamping	82	79	80	65	67	66	2	3	2	2	3	4
336370	Motor vehicle metal stamping	82	79	80	65	67	66	2	3	2	2	3	4
33639	Other motor vehicle parts mfg	80	72	77	59	64	61	1	5	3	4	7	4
336391	Motor vehicle air-conditioning mfg	80	68	78	61	64	73	2	7	1	1	6	2
336399	All other motor vehicle parts mfg	80	72	77	59	64	60	1	5	3	4	8	4

See footnotes at end of table.

Table 2. Capacity Utilization Rates by Industry: Fourth Quarters 1997 through 1999—Con.

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

NAICS code	Industry	Full production			National emergency production			Standard errors ¹						
		1999	1998	1997	1999	1998	1997	Full production			National emergency production			
								1999	1998	1997	1999	1998	1997	
336	Transportation equipment mfg—Con.													
3364	Aerospace product & parts mfg	61	69	71	45	53	52	1	2	2	1	2	2	2
33641	Aerospace product & parts mfg	61	69	71	45	53	52	1	2	2	1	2	2	2
336411	Aircraft mfg	68	68	67	51	54	56	2	4	4	1	4	4	4
336412	Aircraft engine & engine parts mfg ..	70	75	77	41	52	56	2	2	2	4	3	3	3
336413	Other aircraft part & auxiliary equipment mfg	68	72	73	53	57	50	2	2	2	2	3	3	3
336414	Guided missile & space vehicle mfg ..	*37	66	*73	*32	53	*51	1	2	1	1	2	1	1
336415	Guided missile & space vehicle propulsion unit & parts mfg	48	43	54	25	28	33	2	7	4	1	3	2	2
336419	Other guided missile & space vehicle parts & auxiliary equip mfg	65	74	70	45	53	37	2	5	6	2	10	6	6
3365	Railroad rolling stock mfg	76	87	84	64	66	60	2	3	2	2	2	3	3
33651	Railroad rolling stock mfg	76	87	84	64	66	60	2	3	2	2	2	3	3
336510	Railroad rolling stock mfg	76	87	84	64	66	60	2	3	2	2	2	3	3
3366	Ship & boat building	55	62	67	40	43	47	2	2	2	1	2	2	2
33661	Ship & boat building	55	62	67	40	43	47	2	2	2	1	2	2	2
336611	Ship building & repairing	53	62	66	42	46	49	1	2	2	1	2	3	3
336612	Boat building	63	63	68	38	38	42	4	2	2	3	3	3	3
3369	Other transportation equipment mfg	68	73	74	48	42	43	2	2	2	2	3	3	3
33699	Other transportation equipment mfg	68	73	74	48	42	43	2	2	2	2	3	3	3
336991	Motorcycle, bicycle, & parts mfg	79	90	86	54	59	54	3	4	4	6	3	10	10
336992	Military armored vehicle, tank, & tank component mfg	42	53	*58	37	34	*34	2	2	2	2	3	4	4
336999	All other transportation equipment mfg	78	71	71	49	36	38	1	4	3	2	5	2	2
337	Furniture & related product mfg	73	74	76	46	45	42	2	2	2	2	2	2	2
3371	Household & institutional furniture & kitchen cabinet mfg	76	74	75	49	41	38	2	2	2	3	2	3	3
33711	Wood kitchen cabinet & counter top mfg	72	77	72	56	48	44	5	3	4	5	4	4	4
337110	Wood kitchen cabinet & counter top mfg	72	77	72	56	48	44	5	3	4	5	4	4	4
33712	Household & institutional furniture mfg ..	77	73	76	47	39	36	2	2	2	3	2	3	3
337121	Upholstered household furniture mfg	87	78	79	48	38	36	4	5	3	8	3	3	3
337122	Nonupholstered wood household furniture mfg	80	74	79	50	39	32	4	4	3	4	3	5	5
337124	Metal household furniture mfg	58	61	68	40	36	38	4	6	5	4	5	5	5
337125	Household furniture (except wood & metal) mfg	73	70	76	46	40	50	6	5	5	7	4	7	7
337127	Institutional furniture mfg	71	70	69	41	45	45	4	3	3	3	4	3	3
337129	Wood television, radio, & sewing machine cabinet mfg	73	61	67	46	38	51	3	6	11	5	1	10	10
3372	Office furniture (including fixtures) mfg ...	69	76	77	45	54	50	3	3	2	2	2	2	2
33721	Office furniture (including fixtures) mfg ..	69	76	77	45	54	50	3	3	2	2	2	2	2
337211	Wood office furniture mfg	70	81	79	41	60	53	5	3	3	3	5	4	4
337212	Custom architectural woodwork & millwork mfg	78	87	81	39	67	50	3	6	4	7	9	10	10
337214	Office furniture (except wood) mfg ..	71	75	79	50	52	54	3	3	2	3	3	3	3
337215	Showcase, partition, shelving, & locker mfg	64	72	74	42	50	47	6	5	3	4	4	3	3
3379	Other furniture related product mfg	73	72	75	42	44	43	2	3	4	4	3	3	3
33791	Mattress mfg	75	67	70	40	41	39	3	4	5	5	4	3	3
337910	Mattress mfg	75	67	70	40	41	39	3	4	5	5	4	3	3
33792	Blind & shade mfg	70	83	86	46	50	52	3	3	2	5	7	6	6
337920	Blind & shade mfg	70	83	86	46	50	52	3	3	2	5	7	6	6
339	Miscellaneous mfg	70	69	73	44	43	47	1	1	1	2	2	1	1
3391	Medical equipment & supplies mfg	71	71	73	45	46	50	1	2	1	2	4	1	1
33911	Medical equipment & supplies mfg	71	71	73	45	46	50	1	2	1	2	4	1	1
339111	Laboratory apparatus & furniture mfg	70	73	77	39	48	51	2	2	2	2	3	3	3
339112	Surgical & medical instrument mfg ..	66	67	69	46	51	55	2	2	2	2	2	2	2
339113	Surgical appliance & supplies mfg	76	71	72	63	36	43	2	3	2	3	7	2	2
339114	Dental equipment & supplies mfg	79	72	77	53	53	57	1	1	1	3	2	2	2
339115	Ophthalmic goods mfg	73	85	84	17	74	68	2	2	2	2	5	3	3
339116	Dental laboratories	87	78	84	61	45	43	2	3	3	3	4	3	3
3399	Other miscellaneous mfg	69	67	73	43	40	45	2	2	1	3	2	2	2
33991	Jewelry & silverware mfg	69	71	77	41	49	43	3	2	2	3	2	2	2
339911	Jewelry (except costume) mfg	74	74	77	42	52	47	5	3	2	4	3	3	3
339912	Silverware & plated ware mfg	64	66	81	51	50	47	4	7	1	3	5	3	3
339913	Jewelers' material & lapidary work mfg	80	72	76	40	49	33	6	3	3	3	4	5	5
339914	Costume jewelry & novelty mfg	58	65	74	33	40	37	3	3	3	3	2	3	3
33992	Sporting & athletic goods mfg	65	58	67	39	26	39	6	3	3	6	2	3	3
339920	Sporting & athletic goods mfg	65	58	67	39	26	39	6	3	3	6	2	3	3
33993	Doll, toy, & game mfg	72	63	74	47	45	49	5	2	3	6	4	3	3
339931	Doll & stuffed toy mfg	62	42	69	56	20	27	1	7	2	1	7	7	7
339932	Game, toy, & children's vehicle mfg ..	73	66	75	46	51	52	5	2	4	6	2	3	3
33994	Office supplies (except paper) mfg	69	68	72	49	48	48	2	2	2	4	3	2	2
339941	Pen & mechanical pencil mfg	67	67	72	53	50	53	1	2	2	6	5	2	2
339942	Lead pencil & art good mfg	74	65	71	53	50	49	4	3	2	3	3	4	4
339943	Marking device mfg	62	77	78	46	41	36	3	6	5	3	3	2	2
339944	Carbon paper & inked ribbon mfg	71	65	69	42	46	49	4	6	7	10	6	7	7
33995	Sign mfg	81	72	74	53	46	44	4	4	3	6	3	3	3
339950	Sign mfg	81	72	74	53	46	44	4	4	3	6	3	3	3
33999	All other miscellaneous mfg	67	69	75	42	46	48	2	2	2	4	2	2	2
339991	Gasket, packing, & sealing device mfg	75	75	75	49	62	62	3	3	3	8	3	3	3
339992	Musical instrument mfg	58	67	74	29	37	36	4	3	4	2	2	3	3
339993	Fastener, button, needle, & pin mfg ..	75	75	73	60	55	52	4	6	7	8	8	7	7
339994	Broom, brush, & mop mfg	68	76	71	38	52	44	5	3	4	6	5	5	5
339995	Burial casket mfg	71	69	79	42	49	39	4	4	2	3	4	3	3
339999	All other miscellaneous mfg	63	65	75	40	41	46	3	4	3	8	3	3	3

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

Appendix A.

MQ-C1 Report Form and Instructions

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

FORM **MQ-C1**
(11-17-99)

U.S. DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. CENSUS BUREAU

**SURVEY OF PLANT CAPACITY UTILIZATION
FOURTH QUARTER 1999 (October–December)**

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

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.

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 1999. 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 date sold or closed	Month	Year

Item 2 VALUE OF PRODUCTION

ACTUAL PRODUCTION

		4th QTR. 1999		4th QTR. 1998	
		Mil.	Thou.	Mil.	Thou.
\$					
23	Report market value of actual production for the 4th quarter of 1999				

FULL PRODUCTION CAPABILITY

		4th QTR. 1999		4th QTR. 1998	
		Mil.	Thou.	Mil.	Thou.
\$					
34	Estimate the market value of production of this plant as if it had been operating at full production capability in the 4th quarter of 1999. 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.				

c. Divide your actual production estimate by your full production estimate. Multiply this ratio by 100 to get a percentage. Enter this percentage in the box.

Capacity Utilization:

Is this a reasonable estimate of your sustainable capacity use in the 4th quarter?

Yes No – Please review your full production estimate

d. If your estimate of 1999 fourth quarter full production capability has changed compared to 1998, mark (X) the primary reasons.

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

Item 3 WORK PATTERNS OF FOURTH QUARTER OPERATIONS 1999

Column (1-3) – Report work patterns for each shift of **actual operations** in the **4th quarter of 1999**.
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 1999

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. 1999		4th QTR. 1998	
\$	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 1999.

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
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RETURN COMPLETED FORM TO

**U.S. CENSUS BUREAU
1201 EAST 10TH STREET
JEFFERSONVILLE, IN 47132-0001**

INSTRUCTIONS FOR THE SURVEY OF PLANT CAPACITY UTILIZATION DURING THE FOURTH QUARTER 1999

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Changes for the 1999 Survey

A. Implementation of North American Industrial Classification System (NAICS)

The North American Industrial Classification System is a new classification system developed in partnership between United States, Canada, and Mexico to more accurately describe and reflect our ever-changing economy. It replaces the Standard Industrial Classification system (SIC). As a result of this change, there has been a considerable amount of movement of activities into the manufacturing sector that previously, under the SIC system were not considered manufacturing. If you are interested in learning more about NAICS and what it means to your business please visit the web site www.ntis.gov/naics

The following industries are a sample of those in which some or all of the activities are now classified in the manufacturing sector and hence included in the Survey of Plant Capacity Utilization:

- | | |
|---|---|
| <p>0723 — Crop Preparation Services for Market, Except Cotton Ginning</p> <p>0751 — Livestock Services, Except Veterinary</p> <p>5147 — Meats and Meat Products</p> <p>5149 — Groceries and Related Products, Not Elsewhere Classified</p> <p>5441 — Candy, Nut, and Confectionery Stores</p> <p>5461 — Retail Bakeries</p> <p>5699 — Miscellaneous Apparel and Accessory Stores</p> <p>5712 — Furniture Stores</p> | <p>5714 — Drapery, Curtain, and Upholstery Stores</p> <p>5995 — Optical Goods Stores</p> <p>7334 — Photocopying and Duplicating Services</p> <p>7389 — Business Services, Not Elsewhere Classified</p> <p>7379 — Computer Related Services, Not Elsewhere Classified</p> <p>7534 — Tire Retreading and Repair Shops</p> <p>7819 — Services Allied to Motion Pictures Production</p> |
|---|---|

Since this is the first time that the data will be collected and published for these industries, special care should be taken to read the instructions thoroughly to ensure accurate reporting. If after reading the instructions you have any questions about Plant Capacity Utilization, please call 301-457-4667 or visit us on the internet at www.census.gov/ftp/pub/cir/www/plantfaq.html

B. Capacity Utilization Rate: a box has been added to **Item 2c – CAPACITY UTILIZATION** to assist you in computing your plant utilization rate.

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 1999:

- (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 1998 data are NOT printed on the form, you do not need to enter data for that period. Comparable data for 1998 are printed on the form if the plant was selected to participate in the 1998 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 1999 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 1999.

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 1999, 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 1999.

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.

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

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.

Item 2c – CAPACITY UTILIZATION

- (1) Divide your estimate for actual production (Item 2a) by full production (Item 2b) capability. Multiply this number by 100. Enter this percentage in the box.
- (2) **Is this a reasonable percentage of your sustainable capacity use in the 4th quarter of 1999?** Mark (X) yes or no. If no, please review your full production capability estimate. If yes, continue with the next item.

Item 2d – Comparing full production capability between fourth quarters of 1998 and 1999

If the value of full production for the fourth quarter of 1999 differs from 1998, 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 1999. 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 1999. Use the criteria defined for Full Production Capability in item 2b.

Enter the number of shifts at full capacity in the box provided in the upper right hand corner. **See examples of responses to item 3 on page 6.**

Item 4 – FOURTH QUARTER ACTUAL OPERATIONS VS. FULL PRODUCTION CAPABILITY

Compare the actual value of production in the fourth quarter of 1999 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 1999. 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) ↘ 3		
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) ↘ 1		
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 with Two Production Shifts and One Maintenance Shift

- 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) ↘ 2		
7			5						7		
56			40						112		
13			13						13		
110			50						210		
10			0						0		
Mil.	Thou.	Hrs.	Mil.	Thou.	Hrs.	Mil.	Thou.	Hrs.	Mil.	Thou.	Hrs.
	53	200		24	800					117	000
	1	200			0						0
		0			0						0

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 error provides a measure of sampling error only. The total error will most likely exceed the standard errors shown.

The panel selected for this survey was sampled using probabilities proportionate to size (pps). Independent samples were chosen for each NAICS industry. Probabilities were assigned to control sampling variation by industry subject to the constraint that the specified total sample size could not be exceeded. These probabilities determined an expected sample size for each industry. The sampling procedure used ensured that this expected sample size was exactly realized. The particular sample selected was but one of many similar probability samples that could have resulted using this sampling methodology. 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 1999 estimates presented in this report are derived from a probability sample of about 17,000 manufacturing establishments. The 1999 panel was a newly selected panel and was the first panel to be wholly selected using the North American Industry Classification System (NAICS).¹ Previous panels were designed to provide estimates by Standard Industrial Classifications (SIC). The sampling frame for the 1999 panel was created from the 1997 Economic Census, Manufacturing sector and from new businesses starting after 1997 identified subsequent to the census. The economic census manufacturing sector, which was also on a NAICS basis for the first time, contained almost 400,000 establishments. However, only about 230,000 establishments were mailed a census form; the remainder were imputed based on administrative data obtained from Internal Revenue Service and/or Social Security Administrative records. These small administrative record cases were not part of the sampling frame for the Survey of Plant Capacity Utilization. Thus, including new businesses starting after 1997, the final frame consisted of nearly 232,000 establishments.

The conversion to NAICS resulted in two major differences from previous survey frames. Some activities were newly classified as manufacturing under NAICS and were in the scope of the survey for the first time. Similarly, some SIC manufacturing activities became nonmanufacturing under NAICS and were no longer in scope. The logging industry fell into the latter category. However, because of a special request to collect logging statistics for the 1999 survey, the panel cases from the previous survey panel were mailed with the newly selected panel.

For sampling purposes, probabilities of selection were assigned to each sampling unit proportionate to its total value of shipments. For new businesses that started after 1997 on the frame, total value of shipments (either reported or imputed) were obtained from the 1998 Annual

Survey of Manufactures (ASM) and were used to assign probabilities of selection. Selected units were assigned sampling weights equal to the inverse of their probability of selection.

Sampling was conducted independently for each NAICS industry, so actual probabilities of selection were dependent on the final sample size determined for each industry. This determination was based upon a priority assigned to a given industry and the constraint that the total sample size was limited to about 17,000 establishments. Industry priority was based upon the grouping of SIC industries provided by the Department of Defense (DOD) prior to the sampling operation for the 1994 survey.

The DOD identified 188 SIC industries as primary industries and the remainder as nonpriority. The Census Bureau further split each of these groups into five priority categories and allocated the sample accordingly. For the 1996 sampling operation these same categorical breaks were maintained, but the sampling allocation was modified based on the survey results observed for the 1994 panel. For 1999, the DOD partition and the categorical breaks within were again maintained to the extent possible by mapping the SIC-4 codes to NAICS-6 codes. However, this was not a one-to-one mapping, so the final allocation of the sample had to be modified to remain within the total sample size constraint. For the incoming (new) manufacturing industries (see footnote 1), the allocation parameters used in 1997 and 1998, respectively, were maintained.

The 1999 panel selection was accomplished using a probability proportionate to size (pps) sampling methodology that insured that the sample size desired for each industry was realized. In previous panel selections, sampling was conducted independently by unit, which meant that over repeated applications, the resultant sample size would vary about the expected size. This property results in larger variances for the survey estimates. The fixed sample size methodology was used in 1998 to select the incoming NAICS manufacturing industries but was not used for the overall sample selection that year. Prior to sampling, an adjustment was made to all assigned probabilities that fell below a certain minimum value. This adjustment, which reset the original probabilities to this minimum value, guarded against exceedingly large sample weights (the inverse of the probability of selection) being assigned selected companies. When this occurred and the

¹In 1997 dental labs (SIC 8072) were sampled, and this panel was canvassed in both the 1997 and 1998 survey years. At the time, dental labs were the only new manufacturing activity under NAICS that could be completely identified by a unique SIC industry code. In 1998 the remaining 20 new manufacturing industries (under NAICS) were sampled and mailed as part of the 1998 survey. Data were collected for these respective industries in anticipation of the 1999 publication, which is the first to present NAICS-based estimates.

sample unit reported data in excess of what was anticipated based on the unit measure of size, the survey estimates might have been adversely affected. For the priority industries, the minimum probability value was set to 0.02 (maximum weight 50); for the nonpriority industries, the minimum probability was set to 0.01 (maximum weight 100). These minimum probability rules resulted in a slight increase in the originally allocated industry sample sizes.

The 1998 and 1997 NAICS estimates presented in this report are based on the previous survey panel. That panel, first selected for survey year 1996, was designed to produce SIC-based estimates. In order to produce NAICS estimates, it was necessary to recode the sample establishments to NAICS industry codes. Since there is not a one-to-one correspondence between SIC and NAICS industry codes, this meant there was no control on the allocation of the sample by NAICS industry. Each industry sample is representative, but some of the resulting estimates may be of low reliability. Also, 20 NAICS industries new to manufacturing were not independently selected for 1997, and therefore no 1997 estimates are available for them.

ESTIMATING PROCEDURE

The estimated full production rates shown in this report for the six-digit NAICS 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 six-digit NAICS industry, WT_{ij} is the sampling weight for establishment i in six-digit industry j ; VPA_{ij} is the actual value of production for establishment i in six-digit industry j ; VPF_{ij} is the value of production at the full production level; and the summations are for those establishments with reported or imputed 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.) Unlike previous years, imputed nonrespondent data were included because the utilization rates for nonrespondents were not necessarily imputed at the average rate for nonrespondents.

The estimated utilization rates for the higher level industry groupings (total manufacturing, five-, four-, and three-digit NAICS, durable good industries nondurable goods industries, advance processing industries, and primary processing 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 rate for the K th industry group, VA_j is the value added for the j th six-digit industry as published in the most recent ASM or economic census,

Manufacturing sector; and VA_j/R_j represents the value added for the j th six-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 to higher levels 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.

The estimated variances for the 1999 sample estimates where the fixed sample size methodology was used is shown below. The equations shown refer to full production utilization rate variances. Similar calculations for emergency utilization rate variances are computed by substituting VPE for VPF. The Y_i is an establishment variable that arises from the use of the fixed sample size method. For the six-digit NAICS industries, the rates were computed as:

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

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

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

$$\sigma^2(A_j) = \sum_i \gamma_i \left(\sum_{i=1}^i (WT_{ij} VPA_{ij})^2 - \left(\sum_{i=1}^i WT_{ij} VPA_{ij} \right)^2 \right)$$

$$\sigma^2(B_j) = \sum_i \gamma_i \left(\sum_{i=1}^i (WT_{ij} VPF_{ij})^2 - \left(\sum_{i=1}^i WT_{ij} VPF_{ij} \right)^2 \right)$$

$$\sigma^2(A_j B_j) = \sum_i \gamma_i \left(\sum_{i=1}^i WT_{ij}^2 VPA_{ij} VPF_{ij} - \left(\sum_{i=1}^i WT_{ij} VPA_{ij} \right) \left(\sum_{i=1}^i WT_{ij} VPF_{ij} \right) \right)$$

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

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

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 six-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.

Equations (1) and (2) hold as well for the variances estimated for the 1998 and 1997 utilization rates. However, because those estimates were based on the previous panel that was sampled using independent pps sampling, the component variances and covariances have a different

form. For full production rate variances, this form is as follows:

$$\sigma^2(A_i) = \sum_i WT_{ij}(WT_{ij} - 1)VPA_{ij}^2$$

$$\sigma^2(B_i) = \sum_i WT_{ij}(WT_{ij} - 1)VPF_{ij}^2$$

$$\sigma^2(A_i B_i) = \sum_i WT_{ij}(WT_{ij} - 1)VPA_{ij}^2 VPF_{ij}^2$$

Again, replace VPF with VPE to obtain corresponding calculations for the emergency utilization rate variances.

Finally, because Table 2 was expanded to include a second year of historical data, it was decided not to show estimated variances of year-to-year change in utilization rates in that table, as has been the case in past years. It is planned for these statistics to be shown in subsequent survey years.

IMPUTATION

A new imputation methodology was implemented for the 1999 survey. The intention of the new methodology was to utilize reported data from a plant in the previous survey to impute data for 1999 if the plant's response was not received in time to meet publication deadlines. Prior to 1999, the estimates for these cases were derived using industry averages and, therefore, were treated as if they had the same characteristics as plants with reported data.

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