

# Manufacturers' Shipments, Inventories, and Orders

1992-  
2001

Issued June 2002

M3-1(01)

**Current Industrial Reports**

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

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U.S. Department of Commerce  
Economics and Statistics Administration  
U.S. CENSUS BUREAU



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**U.S. Department of Commerce**  
**Donald L. Evans,**  
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**U.S. CENSUS BUREAU**  
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# Summary of Revisions

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## **SUMMARY**

The revisions to the historical data from the Manufacturers' Shipments, Inventories, and Orders survey, as shown in this publication, are the result of:

- Benchmarking the shipments and inventory data to the 1999 and 2000 Annual Survey of Manufactures (ASM),
- Adjusting new and unfilled orders to be consistent with the benchmarked shipments and inventory data,
- Correcting monthly data for late receipts, reclassification of reported data, and revisions to previously reported data,
- Updating the trading day adjustment factors for the shipments series, and
- Updating the seasonal adjustment factors for all series.

Table A summarizes the results of the first two procedures for 1998 through 2001 in the form of annual level and year-to-year percent change revisions. Table B shows the

revisions attributable to late or revised data and trading day and seasonal adjustment factor updates as they affected the more recent month-to-month trends in the seasonally adjusted data.

## **DATA AVAILABILITY**

The monthly press releases for the M3 survey are issued around the 18th working day of the month following the statistical period for the advance report on durable goods and the 23rd working day for the full report. These monthly reports, as well as this benchmark report are available the day of issue through STAT-USA/Internet at [www.stat-usa.gov](http://www.stat-usa.gov) or through the Manufacturers' Shipments, Inventories, and Orders Web site at [www.census.gov/indicator/www/m3](http://www.census.gov/indicator/www/m3).

In addition to this report, historical SIC data from 1958 through March, 2001 are available on the Internet at [www.census.gov/indicator/www/m3](http://www.census.gov/indicator/www/m3).

# Description of Survey

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The Manufacturers' Shipments, Inventories, and Orders (M3) survey provides broad-based, monthly statistical data on economic conditions in the domestic manufacturing sector. The survey measures current industrial activity and provides an indication of future business trends. Data are used by the Executive Branch of the Government for developing economic, fiscal, and monetary policy; the Bureau of Economic Analysis as components of the gross domestic product estimates; and trade associations, corporate economists, and other members of the business community as an analytical tool for assessing the current and future economic condition of the country.

## COMPOSITION OF INDUSTRY CATEGORIES

There are 89 separately tabulated industry categories in the M3 survey. These categories are groupings of the 473 manufacturing industries as defined in the *1997 North American Industry Classification System (NAICS) Manual*. Appendix B lists these categories.

Because companies provide data on a voluntary basis, reporting in many of these 89 categories is not sufficient to warrant separate publication of the data. Consolidated reporting by some large companies also limits the quality of the data in some categories. A company that reports on a consolidated basis (entire company or a division) is included in the M3 category in which the reporting unit as a whole is classified and has no influence on the movement of the other industries which may be included in its combined report.

As a result, it has been necessary to combine the 89 industry categories into 59 publication levels for shipments and total inventories. For new and unfilled orders and inventories by stage of fabrication, it has been necessary to introduce further combinations because of the lower response rates for those items.

## COMPOSITION OF THE SURVEY PANEL

The monthly M3 estimates are based on information obtained from most manufacturing companies with \$500 million or more in annual shipments. In order to strengthen the sample coverage in individual industry categories, the survey includes selected smaller companies. The sources from which companies are identified for inclusion in the survey panel are the quinquennial economic censuses, manufacturing sector.

For firms that operate in a single M3 industry category, the reporting unit typically comprises all operations of the company. Most large, diversified companies, however, file separate reports for divisions with significant activity in different industrial areas.

The composition of each company or reporting unit of a company in the survey usually includes more than one plant or establishment and frequently includes industry activities outside the M3 category in which it is classified. The survey methodology described later in this chapter assumes that the month-to-month changes of the total operations of the reporting units classified in each industry category effectively represent the month-to-month movements of all establishments that make up the category.

In 1962, the initially selected sample for this survey included all companies with more than 1,000 employees and smaller companies selected with probabilities proportional to their employment size within each industry category. As there was some deterioration in response rates for companies with between 100 and 1,000 employees, in January 1975, the staff selected a supplemental sample of approximately 1,000 companies from the universe of companies in this size range in order to strengthen the estimates. Although the response rate was only about 60 percent for this group, beginning in January 1978 these data were added to the panel and included in the calculations of the monthly estimates. Because of poor response rates, the survey no longer included companies with less than 100 employees; instead, data for these companies were estimated by using overall industry month-to-month movements based on data reported by the larger companies.

In recent years, the size of the value of shipments of the company or reporting unit rather than the employment size has influenced the selection of companies to increase response rates. Using this criterion, census staff visit or otherwise contact large companies that did not report in the survey to request their participation or reconsideration of a previous decision not to participate. Also, staff request large diversified reporting companies to provide additional industry categories not previously provided.

Another method used for improving response has been contacting nonreporting companies by letter. Staff send letters on an ongoing basis to companies in industry categories with low response rates. In 1990, staff selected a

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probability sample and mailed requests to about 400 mid-size companies in the plastics industry. The purpose was to test the viability of probability sampling, especially in industries comprised primarily of smaller, less diversified companies.

As a result of these efforts, we increased response by adding about 45 to 55 percent of the companies contacted to the panel. However, respondent dropouts frequently offset these increases. The current coverage levels in the survey show that reported data represent approximately 60 percent of the shipments estimates at the total manufacturing level.

### **LIMITATIONS OF THE DATA**

The monthly data presented in this publication are subject to both sampling and nonsampling errors. Sampling errors occur because reports are received from a sample rather than from the complete universe of manufacturing companies. Because the present composition of the panel is not based on a probability sample, the amount of sampling error cannot be quantified. Nonsampling errors, on the other hand, are attributable to many sources. The use of company or divisional reports to estimate the monthly change for establishments is one source of nonsampling error. The use primarily of large companies to represent the month-to-month movement of all companies is another potential source. In addition, response and processing errors may be present, although computer edits and analytical review of the data detect the most significant errors of this kind prior to tabulation.

### **MONTHLY ESTIMATION PROCEDURE**

A link relative procedure derives the monthly universe estimates of shipments, unfilled orders, and total inventories for each industry category. The universe estimate for the previous month is multiplied by the monthly ratio of change tabulated for reporting companies in the current month to arrive at a universe estimate for current month.

When an individual company reports unusually large changes from the previous month, or when a particular company has unique data patterns differing substantially from the movement shown by the rest of the reporting panel in a particular industry category, the company is excluded from the ratio of change calculation but included in the universe estimate of level. The effect of this procedure is to restrict the estimation for nonrespondents and firms not in the survey panel to the general trend of the industry.

The universe estimate of new orders is derived from the monthly estimate of shipments plus the change in unfilled orders between the current and prior period. The estimate includes orders that are received and filled in the same month as well as orders that have not yet been filled. It also includes the effects of cancellations and modifications of previously reported orders.

The standard ratio estimate procedure is not followed for new orders because not all companies report new orders, and some that do report this item limit their reporting to specific products for which long lead times are required in the production cycle. These companies, in effect, exclude new orders received for products that are shipped from inventory.

A modified procedure also is used to estimate the stage of fabrication inventory data. In this procedure, the total inventory data estimated for each tabulated industry category are retabulated to the appropriate three-digit NAICS subsector levels and serve as control totals for the stage of fabrication data. Initial estimates are made for each of the stages of fabrication at the three-digit NAICS level using the ratio estimation procedure. The differences between the sum of the stage of fabrication detail and total inventories at the three-digit NAICS level are then allocated proportionally to the stage of fabrication figures to form the estimates. The reasoning behind this procedure is that a significant number of companies report total inventories but cannot report inventories by stage of fabrication.

### **Trading Day Adjustment**

Variations in the rate of manufacturing activity resulting from different numbers of trading days in the same month for different years and variations in the length of months can be an important cause of month-to-month fluctuations in the shipments data. For many industries, these irregularities can be identified approximately and removed so that the underlying trend cycle stands out clearly.

Many of the shipments series have trading day factors calculated in the trading day regression analysis routine of the X-12 seasonal adjustment software.<sup>1</sup> However, forty-two of the shipments series did not have identifiable trading day patterns and are only being adjusted for leap year and length of month variations. Appendix E includes a more detailed discussion of the methodology.

### **Seasonal Adjustment Methodology**

The monthly data are adjusted for seasonality at the most detailed level tabulated in the survey, using the X-12 ARIMA version of the Census Bureau's seasonal adjustment program.<sup>2</sup> The seasonally adjusted estimates for shipments, unfilled orders, and total inventories for M3 industry categories are calculated by dividing the unadjusted estimates by seasonal adjustment factors computed by the X-12 ARIMA seasonal adjustment program. Seasonally adjusted new orders are computed by adding the changes between current and prior period seasonally adjusted unfilled orders to the current month's seasonally adjusted shipments.

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<sup>1</sup>The X-12 ARIMA Seasonal Adjustment is the program used to calculate trading day weights and to seasonally adjust data in this publication.

<sup>2</sup>ibid.

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The inventory by stage of fabrication data are seasonally adjusted at the three-digit NAICS subsector level for each stage. If the sum of the adjusted stage of fabrication does not equal the major group totals resulting from summing the seasonally adjusted total inventories for the individual industries, the difference is proportionally allocated to the stage of fabrication detail.

Staff calculate seasonal factors concurrently and include the current period observation in the calculation of the seasonal factor for that month. The factors reflected in this report are based on using data from January 1992 through December 2001 for shipments, unfilled orders, and inventories. Appendix F shows reliability measures regarding the adequacy of the seasonal adjustment of specific series. For information on specific measures used in the seasonal adjustment analysis, selection of options within the X-12 program for the individual industry series, and tests for the presence of seasonality, contact the Manufacturing and Construction Division, U.S. Census Bureau, Washington, DC 20233, or call 301-457-4832.

## **BENCHMARK PROCEDURE**

The M3 survey data are benchmarked to reduce both sampling and nonsampling errors. The relatively small monthly sample size as well as the differences that result from collecting the monthly data on a divisional basis as compared to the benchmark data on an establishment basis account for most of the revision. Also, some monthly reports received too late to be included in the monthly publications are added to improve the revised estimates of change of the historical monthly data.

## **DEFINITION OF TERMS**

### **Value of Shipments**

The value of shipments data in the M3 survey represents net selling values, f.o.b. plant to the customer, after discounts and allowances and excluding freight charges and excise taxes. The ASM uses the same definition. However, the data reported in the two surveys frequently are not equal because of differences, discussed earlier, in the reporting unit. For multiestablishment companies, the M3 reports typically are company- or divisional-level reports that encompass groups of plants or products. The data reported are usually net sales and receipts from customers and do not include the value of interplant transfers. The reported sales are used to calculate month-to-month changes which bring forward the universe estimates developed from the ASM.

The value of products made elsewhere under contract from materials owned by the plant is also included in shipments as well as receipts for contract work performed for others, resales, miscellaneous activities such as the sale of scrap and refuse, and installation and repair work performed by employees of the plant.

In the shipbuilding industry, the value of work done in a given year may vary considerably from the value of shipments because of the long lead time between the start and completion of a large vessel. In both the annual survey and the M3, the value of work done during the year, rather than the value of shipments, is requested. The same procedure is followed for aircraft that are accounted for on a progress basis. Aircraft and ships for which shipments are recorded upon delivery are reported in the usual manner. Where value of work done is reported in place of shipments, the work-in-process inventories are normally charged to the customer as costs are incurred and are not accumulated as finished goods inventories by the shipyard or the aircraft producer.

The value of shipments figures developed from the ASM contain duplication at the M3 industry category and higher level aggregates, since the products of some six-digit NAICS industries are used as materials by other industries within the same M3 industry aggregate. The significance of the duplication within the specific M3 industry categories varies depending on their six-digit industry composition. It is most pronounced in a few highly integrated industry areas, such as primary metals and motor vehicles and parts.

## **Inventories**

Inventories in the M3 survey are collected on a current cost or pre-LIFO (last in, first out) basis. Because different inventory valuation methods are reflected in the reported data, the estimates differ slightly from replacement cost estimates. Companies using the LIFO method for valuing inventories report their pre-LIFO value; that is, the adjustment to their base-period prices is excluded. In the ASM, inventories are collected according to this same definition.

Inventory data are requested from respondents by stage of fabrication; that is, finished goods, work in process, and raw materials and supplies. There are several limitations to the quality of these data for two reasons. First, response to the stage of fabrication inquiries is lower than for total inventories because some companies do not keep their data monthly at this level of detail; those companies which do maintain monthly detailed records frequently do not have data for all three stages of fabrication or have quantity (physical volume) data only. Second, a product considered to be a finished good in one industry, such as steel mills shapes, may be reported as a raw material in another industry, such as stamping plants. Therefore, within the three-digit NAICS subsectors, the same type of inventory may be included under different stage of fabrication categories. Like total inventories, stage of fabrication inventories are also benchmarked to the ASM pre-LIFO data, but the stage of fabrication data are benchmarked at the three-digit subsector level.

## Appendix E.

# Notes on Trading Day Adjustment Methodology

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The shipments data in the M3 survey are adjusted for calendar month variations, both length of month and number of trading days per month. The selection of these adjustment factors is based primarily on recognition of patterns contained in the data using the regression and spectral analysis capabilities of the X-12 seasonal adjustment software.

Factors are considered optimal when the daily weights assigned to the industry eliminate or diminish the

peaks in the spectral plots, which are based on calendar frequencies, and lower the absolute value of the month-to-month change in the residual irregular component (I) of the data series.

New orders data in this publication are implicitly trading day adjusted by using the trading day adjusted shipments as input to their derivation. The change in unfilled orders is not trading day adjusted.

Table E-1. Trading Day Diagnostics

Industry	Chi-Square <sup>1</sup>	Industry	Chi-Square <sup>1</sup>
<b>FOOD PRODUCTS</b>		<b>MACHINERY</b>	
Grain and oilseed milling .....	29.72	Farm machinery and equipment .....	11.84
Dairy products .....	10.48	Lawn and garden tractors and equipment .....	(NT)
Meat, poultry, and seafood products .....	21.91	Construction machinery .....	(NT)
Other foods .....	15.00	Mining, oil, and gas field machinery .....	26.06
<b>BEVERAGES AND TOBACCO</b>		Industrial machinery .....	(NT)
Beverages .....	(NT)	Vending, laundry, and other machinery .....	(NT)
Tobacco .....	(NA)	Photographic equipment .....	24.62
<b>Textile Mills</b> .....	(NT)	Ventilation, heating, air-conditioning, and refrigeration equipment .....	16.84
<b>Textile Products</b> .....	10.05	Metalworking machinery .....	(NT)
<b>Apparel</b> .....	(NT)	Turbines and generators .....	(NT)
<b>Leather and Allied products</b> .....	13.30	Other power transmission equipment .....	(NT)
<b>WOOD PRODUCTS</b>		Pumps and compressors .....	(NT)
Wood buildings and mobile homes .....	(NT)	Material handling equipment .....	(NT)
Other wood products .....	22.28	All other machinery .....	(NT)
<b>PAPER PRODUCTS</b>		<b>COMPUTERS AND ELECTRONIC PRODUCTS</b>	
Pulp, paper, and paperboard .....	62.90	Electronic computers .....	(NT)
Paperboard containers .....	25.36	Computer storage devices .....	13.35
Other paper .....	14.82	Other computer peripheral equipment .....	(NT)
<b>Printing</b> .....	(NT)	Communications equipment, nondefense .....	17.91
<b>PETROLEUM AND COAL PRODUCTS</b>		Communications equipment, defense .....	(NT)
Petroleum refineries .....	18.60	Audio and video equipment .....	(NT)
Asphalt paving, roofing, and saturated materials .....	14.46	Semiconductors and related devices .....	(NT)
Other petroleum and coal products .....	20.11	Other electronic components .....	48.19
<b>BASIC CHEMICALS</b>		Search and navigation equipment, nondefense .....	(NT)
Pesticides, fertilizers, and other agricultural chemicals .....	104.32	Search and navigation equipment, defense .....	(NT)
Pharmaceuticals and medicines .....	19.89	Electromedical, measuring, and control instruments .....	(NT)
Paints, coatings, and adhesive .....	21.27	Magnetic and optical media .....	(NT)
Other chemicals .....	80.89	<b>ELECTRICAL EQUIPMENT, APPLIANCES, AND COMPONENTS</b>	
<b>PLASTICS AND RUBBER PRODUCTS</b>		Electric lighting equipment .....	(NT)
Tires .....	11.77	Household appliances .....	13.75
Other plastics and rubber products .....	35.00	Electrical equipment .....	(NT)
<b>Nonmetallic Mineral Products</b> .....	47.37	Batteries .....	(NT)
<b>PRIMARY METALS</b>		Other electrical equipment, appliances, and components .....	12.13
Iron and steel mills and ferroalloy and steel products .....	24.67	<b>TRANSPORTATION EQUIPMENT</b>	
Alumina, aluminum, and nonferrous metal products .....	18.33	Automobiles .....	(NT)
Ferrous metal foundries .....	51.00	Light trucks and utility vehicles .....	(NT)
Nonferrous metal foundries .....	(NT)	Heavy duty trucks .....	10.71
<b>FABRICATED METAL PRODUCTS</b>		Motor vehicle bodies and trailers .....	28.63
Forging and stamping .....	27.53	Motor vehicle parts .....	17.83
Cutlery and handtools .....	(NT)	Aircraft, nondefense .....	(NT)
Boilers, tanks, and shipping containers .....	30.98	Aircraft, defense .....	(NT)
Metal valves .....	(NT)	Aircraft engines and parts, nondefense .....	19.23
Small arms and ordnance, nondefense .....	(NT)	Aircraft engines and parts, defense .....	22.72
Small arms and ordnance, defense .....	13.56	Missiles, space vehicles, and parts, defense .....	(NT)
Other fabricated metal products .....	38.24	Railroad rolling stock .....	(NT)
		Ships and boats, nondefense .....	12.23
		Ships and boats, defense .....	17.38
		Other transportation equipment .....	(NT)
		<b>FURNITURE AND RELATED PRODUCTS</b>	
		Household furniture and kitchen cabinets .....	(NT)
		Office furniture and institutional furniture .....	(NT)
		Other furniture related products .....	13.70
		<b>MISCELLANEOUS PRODUCTS</b>	
		Medical equipment and supplies .....	49.78
		Sporting goods, dolls, toys, and games .....	(NT)
		Office supplies .....	12.70
		Other miscellaneous products .....	145.64

NT Not trading day adjusted. T Trading day adjusted.

<sup>1</sup>The Chi-Square value measures the presence of identifiable trading day patterns.

Note: For all industry categories including those that are not trading-day adjusted, we adjust for leap year effects and for length of month.

# Appendix F.

## Summary Measures for Evaluating the Quality of the Seasonal Adjustment of M3 Series

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The measures shown in the following tables were used in evaluating the current seasonal adjustment procedure. Brief descriptions of the measures follow.

The "O" is the average month-to-month percentage change, without regard to sign, in the original series. The "CI" is the same for the seasonally adjusted series. The "I" is the same for the irregular component, which is obtained by dividing the trend-cycle component into the seasonally adjusted series. The "C" is the same for the trend-cycle component which is a smoothed version of the seasonally adjusted series obtained by means of a moving average.

The "I/C" is the average relative month-to-month change, without regard to sign, of the irregular component divided by the average relative month-to-month change, without regard to sign, of the trend-cycle component. It serves as an indication of the series' relative irregularity.

The M7 value is a function of the F-test assessing the significance of stable seasonality and the F-test assessing the significance of moving seasonality. A value between 0 and 1 is an indicator that the amount of moving seasonality is acceptable relative to the amount of stable seasonality.

The F value presented here measures the presence of stable seasonality. It is the quotient of two variances: (1) the between months variance, which is mainly due to seasonal, and (2) the residual variance, which is mainly due to irregular. A value of 7.0 or greater is used as an indicator of the presence of stable seasonality.

The Q value is a weighted average of 11 different quality control statistics from X-12-ARIMA. It is an indicator of the overall quality of the adjustment. With values greater than 1.0, other measures must be consulted to determine if the seasonal movement in the series can be adequately quantified by the X-12 program.

For series which are not seasonally adjusted in this publication, the original unadjusted values are included in both the seasonally adjusted and unadjusted totals.

Table F-1. Shipments (Seasonal Summary Measures)

Industry	Average percent changes				Ratio of irregular trend-cycle ( $\bar{I}/\bar{C}$ )	Ratio of moving to stable seasonality M7	F-value	Q-value	Seasonal adjustment indicator
	Original series ( $\bar{O}$ )	Seasonally adjusted series ( $\bar{CI}$ )	Irregular series ( $\bar{I}$ )	Trend-cycle series ( $\bar{C}$ )					
<b>Food Products</b>									
Grain and oilseed milling .....	4.61	2.07	1.93	.48	4.04	.43	25.85	.62	(S)
Dairy products .....	5.04	1.69	1.44	.74	1.94	.35	50.22	.61	(S)
Meat, poultry, and seafood products .....	3.41	1.30	1.17	.44	2.66	.33	45.28	.54	(S)
Other foods .....	6.03	1.33	1.32	.25	5.22	.25	122.66	.53	(S)
<b>Beverages and Tobacco</b>									
Beverages .....	5.59	1.75	1.70	.35	4.87	.17	207.52	.39	(S)
Tobacco .....	14.87	10.25	10.23	.53	19.43	2.40	2.78	2.00	(NS)
<b>Textile Mills</b> .....	<b>9.40</b>	<b>1.76</b>	<b>1.65</b>	<b>.59</b>	<b>2.79</b>	<b>.16</b>	<b>231.20</b>	<b>.25</b>	<b>(S)</b>
<b>Textile Products</b> .....	<b>6.64</b>	<b>1.60</b>	<b>1.47</b>	<b>.59</b>	<b>2.48</b>	<b>.24</b>	<b>117.57</b>	<b>.36</b>	<b>(S)</b>
<b>Apparel</b> .....	<b>9.10</b>	<b>1.92</b>	<b>1.83</b>	<b>.50</b>	<b>3.66</b>	<b>.18</b>	<b>181.97</b>	<b>.40</b>	<b>(S)</b>
<b>Leather and Allied Products</b> .....	<b>10.51</b>	<b>2.68</b>	<b>2.43</b>	<b>.96</b>	<b>2.54</b>	<b>.48</b>	<b>31.79</b>	<b>.55</b>	<b>(S)</b>
<b>Wood Products</b>									
Wood buildings and mobile homes .....	6.97	2.50	2.13	1.08	1.98	.19	128.43	.25	(S)
Other wood products .....	4.98	2.40	2.05	.89	2.30	.40	51.66	.40	(S)
<b>Paper Products</b>									
Pulp, paper and paperboard .....	3.20	1.93	1.64	.90	1.82	.59	15.74	.48	(S)
Paperboard containers .....	3.50	1.40	1.17	.75	1.56	.32	51.52	.41	(S)
Other paper .....	4.62	1.81	1.75	.42	4.16	.36	30.07	.71	(S)
<b>Printing</b>									
Printing and related support activities .....	4.55	1.38	1.31	.40	3.24	.19	112.32	.41	(S)
<b>Petroleum and Coal Products</b>									
Petroleum refineries .....	4.43	2.99	2.10	1.91	1.10	.32	56.53	.33	(S)
Asphalt paving, roofing, and saturated materials .....	14.62	3.59	3.27	1.03	3.16	.18	315.93	.34	(S)
Other petroleum and coal products .....	5.09	3.34	3.05	1.34	2.28	.62	16.54	.71	(S)
<b>Basic Chemicals</b>									
Pesticides, fertilizers, and other agricultural chemicals .....	15.66	4.22	3.72	1.28	2.90	.13	333.94	.25	(S)
Pharmaceuticals and medicines .....	7.14	2.43	2.33	.59	3.97	.42	30.09	.68	(S)
Paints, coatings, and adhesives .....	5.36	1.91	1.80	.47	3.80	.26	120.69	.49	(S)
Other chemicals .....	5.18	1.06	.82	.59	1.40	.17	152.91	.22	(S)
<b>Plastics and Rubber Products</b>									
Tires .....	6.51	2.07	1.95	.54	3.61	.26	74.46	.47	(S)
Other plastics and rubber products .....	5.48	1.37	1.20	.54	2.20	.13	217.19	.19	(S)
<b>Nonmetallic Mineral Products</b> .....	<b>5.97</b>	<b>1.55</b>	<b>1.37</b>	<b>.62</b>	<b>2.20</b>	<b>.17</b>	<b>221.50</b>	<b>.27</b>	<b>(S)</b>
<b>Primary Metals</b>									
Iron and steel mills and ferroalloy and steel products .....	5.82	1.97	1.63	.90	1.81	.25	77.72	.28	(S)
Aluminum, aluminum, and nonferrous metal products .....	4.56	1.88	1.63	.87	1.88	.29	61.72	.31	(S)
Ferrous metal foundries .....	9.87	2.13	1.84	.70	2.61	.24	109.11	.36	(S)
Nonferrous metal foundries .....	11.14	2.80	2.49	1.06	2.34	.21	113.39	.32	(S)
<b>Fabricated Metal Products</b>									
Forging and stamping .....	6.71	1.86	1.76	.52	3.41	.24	113.56	.37	(S)
Cutlery and handtools .....	11.47	3.66	3.59	.43	8.30	.39	43.65	.95	(S)
Boilers, tanks, and shipping containers .....	6.77	2.43	2.40	.18	13.25	.27	68.46	.92	(S)
Metal valves .....	6.59	2.35	2.15	.69	3.12	.26	66.52	.44	(S)
Small arms and ordnance, nondefense .....	12.77	6.10	6.06	.74	8.19	.49	22.78	1.14	(S)
Small arms and ordnance, defense .....	24.37	9.62	9.56	1.12	8.55	.56	22.76	1.15	(S)
Other fabricated metal products .....	6.00	1.34	1.11	.63	1.75	.17	155.06	.27	(S)

See footnotes at end of table.

Table F-1. Shipments (Seasonal Summary Measures)—Con.

Industry	Average percent changes				Ratio of irregular trend-cycle ( $\bar{I}/\bar{C}$ )	Ratio of moving to stable seasonality M7	F-value	Q-value	Seasonal adjustment indicator
	Original series ( $\bar{O}$ )	Seasonally adjusted series ( $\bar{CI}$ )	Irregular series ( $\bar{I}$ )	Trend-cycle series ( $\bar{C}$ )					
<b>Machinery</b>									
Farm machinery and equipment .....	12.99	4.92	4.27	1.97	2.17	.25	77.82	.33	(S)
Lawn and garden tractors and equipment .....	24.77	8.61	8.55	1.00	8.55	.15	191.62	.75	(S)
Construction machinery .....	9.21	3.35	3.01	1.25	2.40	.27	75.69	.33	(S)
Mining, oil, and gas field machinery .....	8.45	3.48	3.10	1.24	2.50	.60	25.59	.74	(S)
Industrial machinery .....	16.84	5.33	4.94	1.72	2.88	.36	50.45	.56	(S)
Vending, laundry, and other machinery .....	18.83	7.74	7.62	.78	9.80	.67	27.38	1.32	(S)
Photographic equipment .....	11.01	4.08	3.83	.99	3.87	.34	44.89	.62	(S)
Ventilation, heating, air-conditioning, and refrigeration equipment .....	8.49	2.57	2.39	.74	3.23	.23	101.33	.39	(S)
Metalworking machinery .....	16.26	4.13	3.86	1.01	3.81	.23	88.05	.42	(S)
Turbines and generators .....	76.38	22.74	22.75	1.40	16.22	.47	47.74	1.10	(S)
Other power transmission equipment .....	9.38	2.66	2.56	.80	3.19	.22	98.11	.41	(S)
Pumps and compressors .....	7.21	2.39	2.25	.74	3.06	.22	80.20	.37	(S)
Material handling equipment .....	7.77	3.64	3.39	1.00	3.41	.59	13.43	.80	(S)
All other machinery .....	5.52	2.43	2.35	.59	4.00	.51	23.16	.54	(S)
<b>Computers and Electronic Products</b>									
Electronic computers .....	26.48	4.93	4.57	1.31	3.50	.36	103.13	.53	(S)
Computer storage devices .....	54.22	6.09	5.68	1.51	3.76	.13	366.31	.47	(S)
Other computer peripheral equipment .....	37.24	6.46	6.13	1.46	4.19	.36	90.24	.51	(S)
Communications equipment, nondefense .....	22.39	3.47	2.89	1.47	1.96	.19	243.76	.27	(S)
Communications equipment, defense .....	15.47	7.09	7.02	1.00	7.00	.73	17.77	1.18	(S)
Audio and video equipment .....	11.81	4.78	4.53	1.33	3.41	.27	71.59	.54	(S)
Semiconductors and related devices .....	12.31	4.09	3.63	1.57	2.31	.36	58.47	.36	(S)
Other electronic components .....	7.95	2.46	2.31	.66	3.48	.34	46.45	.57	(S)
Search and navigation equipment, nondefense .....	13.35	5.12	4.97	1.00	4.99	.45	34.00	.87	(S)
Search and navigation equipment, defense .....	12.30	3.51	3.50	.44	7.90	.39	41.14	1.05	(S)
Electromedical, measuring, and control instruments .....	15.51	1.97	1.89	.44	4.25	.23	229.92	.41	(S)
Magnetic and optical media .....	9.81	4.07	3.98	.98	4.08	.33	45.00	.53	(S)
<b>Electrical Equipment, Appliances, and Components</b>									
Electric lighting equipment .....	14.30	3.08	3.04	.41	7.49	.31	77.99	.74	(S)
Household appliances .....	10.08	2.89	2.71	.57	4.76	.24	83.09	.50	(S)
Electrical equipment .....	12.98	2.84	2.78	.47	5.92	.34	74.65	.70	(S)
Batteries .....	14.49	4.43	4.30	.73	5.89	.21	106.19	.55	(S)
Other electrical equipment, appliances, and components .....	8.08	1.95	1.78	.76	2.34	.28	89.94	.34	(S)
<b>Transportation Equipment</b>									
Automobiles .....	17.74	5.12	4.78	1.11	4.33	.23	100.51	.45	(S)
Light trucks and utility vehicles .....	18.25	5.23	4.89	1.48	3.30	.23	87.68	.31	(S)
Heavy duty trucks .....	8.82	3.27	2.94	1.21	2.42	.32	53.81	.34	(S)
Motor vehicle bodies and trailers .....	8.36	3.19	3.08	.96	3.22	.27	70.78	.39	(S)
Motor vehicle parts .....	13.47	3.29	3.06	.87	3.51	.20	145.25	.35	(S)
Aircraft, nondefense .....	29.98	15.26	15.14	1.59	9.51	.49	21.43	1.26	(S)
Aircraft, defense .....	12.84	6.58	6.67	.88	7.56	.58	19.25	1.11	(S)
Aircraft engines and parts, nondefense .....	20.12	5.73	5.61	.93	6.05	.47	34.09	.87	(S)
Aircraft engines and parts, defense .....	24.35	11.98	11.77	1.08	10.91	.40	28.28	1.38	(S)
Missiles, space vehicles, and parts, defense .....	11.90	5.71	5.66	.75	7.51	.58	21.30	1.25	(S)
Railroad rolling stock .....	26.51	11.07	10.84	1.49	7.30	.55	20.35	1.10	(S)
Ships and boats, nondefense .....	15.58	6.95	6.91	.56	12.31	.46	24.83	.92	(S)
Ships and boats, defense .....	12.99	6.96	6.93	.53	13.16	.59	12.99	1.48	(S)
Other transportation equipment .....	15.23	5.08	4.97	1.41	3.53	.48	26.71	.70	(S)
<b>Furniture and Related Products</b>									
Household furniture and kitchen cabinets .....	8.44	2.42	2.29	.57	4.00	.22	96.55	.39	(S)
Office furniture and institutional furniture .....	3.89	2.26	2.09	.75	2.78	.35	43.82	.53	(S)
Other furniture related products .....	5.21	2.41	2.24	.72	3.13	.24	79.64	.45	(S)
<b>Miscellaneous Products</b>									
Medical equipment and supplies .....	7.08	1.32	1.21	.51	2.37	.24	95.35	.34	(S)
Sporting goods, dolls, toys, and games .....	19.05	3.23	2.97	.92	3.24	.25	96.09	.36	(S)
Office supplies .....	14.27	4.70	4.47	1.23	3.64	.27	92.44	.46	(S)
Other miscellaneous products .....	8.24	2.11	1.94	.61	3.17	.28	62.38	.44	(S)

NS Not seasonally adjusted. S Seasonally adjusted.

Table F-2. Unfilled Orders (Seasonal Summary Measures)

Industry	Average percent changes				Ratio of irregular trend-cycle ( $\bar{I}/\bar{C}$ )	Ratio of moving to stable seasonality M7	F-value	Q-value	Seasonal adjustment indicator
	Original series ( $\bar{O}$ )	Seasonally adjusted series ( $\bar{C}$ )	Irregular series ( $\bar{I}$ )	Trend-cycle series ( $\bar{C}$ )					
<b>Primary Metals</b>									
Iron and steel mills and ferroalloy and steel products .....	3.01	1.87	1.07	1.37	.78	.37	83.69	.26	(S)
Alumina, aluminum, and nonferrous metal products .....	2.55	1.77	.84	1.50	.56	.52	58.62	.41	(S)
Ferrous metal foundries .....	2.19	1.65	1.30	.93	1.40	.45	22.40	.56	(S)
Nonferrous metal foundries .....	2.76	2.08	1.50	1.29	1.16	.55	17.83	.39	(S)
<b>Fabricated Metal Products</b>									
Forging and stamping .....	1.69	1.41	.88	1.12	.78	.55	15.26	.38	(S)
Boilers, tanks, and shipping containers .....	1.87	1.32	1.07	.61	1.77	1.13	5.60	.82	(NS)
Metal valves .....	2.22	1.48	1.27	.95	1.33	.48	36.03	.47	(S)
Small arms and ordnance, nondefense .....	8.53	5.48	4.43	2.34	1.90	.31	50.81	.35	(S)
Small arms and ordnance, defense .....	2.13	1.73	1.47	.94	1.58	.70	7.71	.70	(NS)
Other fabricated metal products .....	1.25	.95	.47	.79	.60	.32	45.59	.31	(S)
<b>Machinery</b>									
Construction machinery .....	4.06	2.57	1.69	1.65	1.02	.47	56.98	.36	(S)
Mining, oil, and gas field machinery .....	3.19	2.88	1.80	2.05	.88	.91	4.70	.59	(NS)
Industrial machinery .....	3.05	2.16	1.23	1.83	.67	.53	25.27	.32	(S)
Vending, laundry, and other machinery .....	3.49	2.64	2.15	1.21	1.77	1.11	6.36	.82	(NS)
Photographic equipment .....	3.40	2.00	1.69	1.28	1.32	.71	15.34	.69	(S)
Ventilation, heating, and air-conditioning, and refrigeration equipment .....	2.56	1.68	1.31	.89	1.46	.84	15.78	.66	(S)
Metalworking machinery .....	2.10	1.68	1.04	1.30	.80	.35	42.10	.26	(S)
Turbines and generators .....	2.20	2.04	1.36	1.44	.95	.91	6.03	.57	(NS)
Other power transmission equipment .....	5.71	2.20	1.48	1.52	.97	.42	120.62	.30	(S)
Pumps and compressors .....	1.98	1.23	.80	.79	1.02	.30	72.08	.24	(S)
Material handling equipment .....	2.11	1.75	1.22	1.17	1.04	.58	24.13	.34	(S)
All other machinery .....	2.01	1.40	.97	.88	1.10	.51	18.34	.44	(S)
<b>Computers and Electronic Products</b>									
Electronic computers .....	3.28	2.28	1.79	1.27	1.41	.55	18.15	.52	(S)
Communications equipment, nondefense .....	2.29	1.96	1.33	1.50	.89	.54	15.12	.41	(S)
Communications equipment, defense .....	2.71	2.34	1.88	1.27	1.48	1.33	3.90	.86	(NS)
Semiconductors and related devices .....	9.51	5.29	4.54	2.27	2.00	.99	10.60	.68	(S)
Other electronic components .....	2.08	1.71	.87	1.30	.67	.71	10.44	.62	(S)
Search and navigation equipment, nondefense ..	1.82	1.65	.73	1.35	.54	.45	20.20	.42	(S)
Search and navigation equipment, defense .....	1.25	.78	.58	.44	1.31	.35	34.48	.41	(S)
Electromedical, measuring, and control instruments .....	1.45	.85	.61	.46	1.33	.34	38.24	.35	(S)
<b>Electrical Equipment, Appliances, and Components</b>									
Electric lighting equipment .....	2.17	1.38	1.11	.67	1.65	.81	15.41	.60	(S)
Household appliances .....	9.91	6.38	5.77	1.76	3.28	.55	24.04	.75	(S)
Electrical equipment .....	1.52	.98	.79	.47	1.68	.64	15.67	.67	(S)
Other electrical equipment, appliances, and components .....	2.37	1.98	1.21	1.51	.80	.52	16.20	.39	(S)
<b>Transportation Equipment</b>									
Motor vehicle bodies and trailers .....	3.80	2.54	1.61	1.80	.90	.42	67.08	.30	(S)
Motor vehicle parts .....	2.17	1.40	1.16	.73	1.58	.39	28.49	.38	(S)
Aircraft, nondefense .....	1.63	1.49	1.02	1.02	1.00	.94	5.21	.53	(NS)
Aircraft, defense .....	1.90	1.55	1.21	.77	1.56	.51	19.09	.60	(S)
Aircraft engines and parts, nondefense .....	1.41	1.13	.74	.76	.97	1.18	7.94	.77	(S)
Aircraft engines and parts, defense .....	2.56	1.86	1.52	.89	1.71	.76	20.41	.58	(S)
Missiles, space vehicles, and parts, defense .....	1.85	1.41	1.01	.85	1.18	.51	42.30	.43	(S)
Railroad rolling stock .....	3.89	2.93	2.27	1.62	1.40	1.29	3.55	.87	(NS)
Ships and boats, nondefense .....	4.15	3.25	2.54	1.83	1.39	1.44	3.03	1.25	(NS)
Ships and boats, defense .....	2.71	1.89	1.40	1.26	1.11	.51	28.97	.40	(S)
Other transportation equipment .....	3.25	2.83	2.20	1.53	1.43	2.98	.80	1.43	(NS)
<b>Furniture and Related Products</b>									
Household furniture and kitchen cabinets .....	3.95	2.24	1.84	1.04	1.77	.41	26.94	.53	(S)
Office furniture and institutional furniture .....	3.25	1.82	1.24	1.29	.96	.28	60.22	.39	(S)
<b>Miscellaneous Products</b>									
Sporting goods, dolls, toys, and games .....	9.99	5.11	4.13	2.31	1.79	1.88	5.99	1.22	(NS)

NS Not seasonally adjusted. S Seasonally adjusted.

Table F-3. Total Inventories (Seasonal Summary Measures)

Industry	Average percent changes				Ratio of irregular trend-cycle ( $\bar{I}/\bar{C}$ )	Ratio of moving to stable seasonality M7	F-value	Q-value	Seasonal adjustment indicator
	Original series ( $\bar{O}$ )	Seasonally adjusted series ( $\bar{CI}$ )	Irregular series ( $\bar{I}$ )	Trend-cycle series ( $\bar{C}$ )					
<b>Food Products</b>									
Grain and oilseed milling .....	3.52	1.70	1.40	.82	1.71	.25	93.44	.29	(S)
Dairy products .....	2.79	1.28	1.10	.57	1.93	.31	50.25	.43	(S)
Meat, poultry, and seafood products .....	1.76	.94	.69	.58	1.20	.37	32.85	.32	(S)
Other foods .....	2.65	.61	.50	.31	1.63	.19	419.75	.25	(S)
<b>Beverages and Tobacco</b>									
Beverages .....	1.29	.86	.58	.60	.98	.48	28.73	.33	(S)
Tobacco .....	3.09	1.55	1.28	.67	1.91	.44	91.53	.37	(S)
<b>Textile Mills</b> .....	<b>1.73</b>	<b>.73</b>	<b>.39</b>	<b>.56</b>	<b>.70</b>	<b>.27</b>	<b>118.37</b>	<b>.22</b>	<b>(S)</b>
<b>Textile Products</b> .....	<b>1.44</b>	<b>.74</b>	<b>.42</b>	<b>.60</b>	<b>.70</b>	<b>.25</b>	<b>118.49</b>	<b>.20</b>	<b>(S)</b>
<b>Apparel</b> .....	<b>2.13</b>	<b>.98</b>	<b>.43</b>	<b>.84</b>	<b>.51</b>	<b>.27</b>	<b>164.10</b>	<b>.27</b>	<b>(S)</b>
<b>Leather and Allied Products</b> .....	<b>2.06</b>	<b>1.20</b>	<b>.96</b>	<b>.67</b>	<b>1.44</b>	<b>.43</b>	<b>35.46</b>	<b>.55</b>	<b>(S)</b>
<b>Wood Products</b>									
Wood buildings and mobile homes .....	4.67	2.07	1.70	1.16	1.47	.39	36.31	.35	(S)
Other wood products .....	1.52	1.05	.81	.61	1.32	.62	24.99	.52	(S)
<b>Paper Products</b>									
Pulp, paper, and paperboard .....	1.00	.74	.40	.56	.71	.35	35.73	.30	(S)
Paperboard containers .....	1.37	1.16	.63	.93	.68	.64	14.44	.49	(S)
Other paper .....	1.35	.98	.87	.40	2.19	.74	12.91	.74	(S)
<b>Printing</b>									
Printing and related support activities .....	2.58	1.37	1.15	.67	1.73	.21	90.63	.31	(S)
<b>Petroleum and Coal Products</b>									
Petroleum refineries .....	2.43	1.73	1.23	1.13	1.09	.50	31.51	.40	(S)
Asphalt paving, roofing, and saturated materials .....	4.69	1.93	1.65	.77	2.14	.24	134.51	.31	(S)
Other petroleum and coal products .....	5.87	4.90	4.62	1.42	3.25	.58	13.27	.94	(S)
<b>Basic Chemicals</b>									
Pesticides, fertilizers, and other agricultural chemicals .....	5.21	1.69	1.25	.92	1.36	.11	385.45	.26	(S)
Pharmaceuticals and medicines .....	1.64	1.16	.92	.73	1.26	.39	32.75	.41	(S)
Paints, coatings, and adhesives .....	1.33	.66	.58	.30	1.93	.20	102.12	.36	(S)
Other chemicals .....	.91	.61	.36	.49	.74	.52	22.82	.35	(S)
<b>Plastics and Rubber Products</b>									
Tires .....	1.92	.96	.58	.70	.83	.34	115.55	.35	(S)
Other plastics and rubber products .....	.89	.66	.37	.52	.71	.23	119.65	.21	(S)
<b>Nonmetallic Mineral Products</b> .....	<b>1.21</b>	<b>.66</b>	<b>.42</b>	<b>.45</b>	<b>.94</b>	<b>.19</b>	<b>112.55</b>	<b>.19</b>	<b>(S)</b>
<b>Primary Metals</b>									
Iron and steel mills and ferroalloy and steel products .....	1.25	.83	.46	.64	.72	.34	43.07	.25	(S)
Alumina, aluminum, and nonferrous metal products .....	1.28	.96	.63	.65	.96	1.10	4.76	.73	(NS)
Ferrous metal foundries .....	1.34	.87	.70	.45	1.56	.31	64.02	.45	(S)
Nonferrous metal foundries .....	2.65	1.90	1.63	1.02	1.60	.64	12.74	.57	(S)
<b>Fabricated Metal Products</b>									
Forging and stamping .....	1.35	.98	.78	.60	1.29	.47	30.36	.42	(S)
Cutlery and handtools .....	2.17	1.31	1.04	.60	1.74	.59	34.96	.55	(S)
Boilers, tanks, and shipping containers .....	2.72	1.70	1.31	.87	1.50	.30	58.65	.37	(S)
Metal valves .....	.91	.66	.41	.48	.86	.65	15.42	.40	(S)
Small arms and ordnance, nondefense .....	2.63	1.56	1.04	.94	1.11	.32	72.48	.26	(S)
Small arms and ordnance, defense .....	4.73	2.52	2.08	1.22	1.71	1.03	10.61	.97	(S)
Other fabricated metal products .....	.88	.66	.40	.49	.82	.41	46.05	.30	(S)

See footnotes at end of table.

Table F-3. Total Inventories (Seasonal Summary Measures)—Con.

Industry	Average percent changes				Ratio of irregular trend-cycle ( $\bar{I}/\bar{C}$ )	Ratio of moving to stable seasonality M7	F-value	Q-value	Seasonal adjustment indicator
	Original series ( $\bar{O}$ )	Seasonally adjusted series ( $\bar{CI}$ )	Irregular series ( $\bar{I}$ )	Trend-cycle series ( $\bar{C}$ )					
<b>Machinery</b>									
Farm machinery and equipment .....	2.57	1.45	.99	.98	1.01	.17	153.46	.19	(S)
Lawn and garden tractors and equipment .....	10.22	3.87	2.76	2.23	1.24	.29	136.55	.27	(S)
Construction machinery .....	1.33	.95	.73	.54	1.35	.73	14.51	.59	(S)
Mining, oil, and gas field machinery .....	1.53	1.06	.62	.83	.75	.44	45.64	.33	(S)
Industrial machinery .....	2.14	1.13	.66	.84	.79	.40	34.34	.29	(S)
Vending, laundry, and other machinery .....	2.73	1.63	1.45	.72	2.01	.82	10.08	.79	(S)
Photographic equipment .....	2.54	1.27	1.05	.58	1.80	.48	39.02	.37	(S)
Ventilation, heating, air-conditioning, and refrigeration equipment .....	2.16	1.17	.86	.75	1.14	.36	57.16	.44	(S)
Metalworking machinery .....	2.33	1.18	.93	.67	1.38	.30	74.06	.33	(S)
Turbines and generators .....	7.08	2.99	2.61	1.20	2.17	.31	53.79	.51	(S)
Other power transmission equipment .....	1.42	1.07	.71	.72	.98	.80	16.35	.50	(S)
Pumps and compressors .....	1.25	.72	.61	.40	1.51	.43	31.14	.38	(S)
Material handling equipment .....	1.58	1.24	.88	.86	1.02	.61	15.75	.48	(S)
All other machinery .....	1.26	.87	.59	.57	1.03	.64	29.49	.46	(S)
<b>Computers and Electronic Products</b>									
Electronic computers .....	5.76	2.51	1.73	1.73	1.00	.39	36.20	.32	(S)
Computer storage devices .....	7.86	3.07	2.31	1.94	1.19	.53	26.30	.48	(S)
Other computer peripheral equipment .....	4.89	1.84	1.42	.95	1.50	.38	52.99	.44	(S)
Communications equipment, nondefense .....	3.01	1.86	1.01	1.48	.69	.45	24.77	.28	(S)
Communications equipment, defense .....	4.05	3.25	2.56	1.65	1.56	.91	5.29	.77	(NS)
Audio and video equipment .....	4.75	2.83	1.91	1.64	1.17	.33	51.40	.33	(S)
Semiconductors and related devices .....	2.43	1.52	.99	.99	1.00	.65	11.78	.60	(S)
Other electronic components .....	1.96	1.54	.82	1.22	.67	.68	27.45	.41	(S)
Search and navigation equipment, nondefense .....	2.03	1.41	1.17	.71	1.65	.69	10.60	.59	(S)
Search and navigation equipment, defense .....	2.11	1.64	1.41	.62	2.27	.52	15.23	.65	(S)
Electromedical, measuring, and control instruments .....	1.50	.81	.58	.49	1.18	.41	40.67	.30	(S)
Magnetic and optical media .....	3.31	2.02	1.75	.92	1.91	.77	17.77	.68	(S)
<b>Electrical Equipment, Appliances, and Components</b>									
Electric lighting equipment .....	2.61	1.09	.94	.47	2.02	.38	44.54	.44	(S)
Household appliances .....	3.85	1.24	.85	.76	1.12	.30	149.77	.30	(S)
Electrical equipment .....	2.29	1.01	.82	.55	1.48	.65	10.45	.79	(S)
Batteries .....	2.82	1.35	1.10	.76	1.45	.39	60.15	.35	(S)
Other electrical equipment, appliances, and components .....	1.26	.87	.50	.66	.76	.34	46.81	.30	(S)
<b>Transportation Equipment</b>									
Automobiles .....	4.18	2.46	2.19	.86	2.54	.89	10.46	.79	(S)
Light trucks and utility vehicles .....	5.73	3.27	2.72	1.23	2.21	.68	10.47	.74	(S)
Heavy duty trucks .....	2.78	1.85	1.42	.93	1.53	.52	16.48	.67	(S)
Motor vehicle bodies and trailers .....	2.74	1.83	1.50	.86	1.75	.78	12.26	.72	(S)
Motor vehicle parts .....	1.49	1.03	.76	.63	1.21	.53	22.56	.35	(S)
Aircraft, nondefense .....	2.61	1.60	1.23	.97	1.27	.74	17.73	.49	(S)
Aircraft, defense .....	2.70	2.33	1.88	1.38	1.36	.83	8.28	.71	(S)
Aircraft engines and parts, nondefense .....	2.21	1.51	1.34	.76	1.77	.80	9.59	.74	(S)
Aircraft engines and parts, defense .....	5.09	3.34	2.89	1.55	1.86	.59	12.67	.68	(S)
Missiles, space vehicles, and parts, defense .....	3.34	3.03	2.55	1.36	1.87	.83	6.78	.82	(S)
Railroad rolling stock .....	4.58	2.58	2.15	1.23	1.75	.78	11.91	.90	(S)
Ships and boats, nondefense .....	3.76	2.18	1.78	1.18	1.51	.55	19.21	.51	(S)
Ships and boats, defense .....	3.07	2.53	2.35	.74	3.19	.94	6.37	1.09	(NS)
Other transportation equipment .....	3.04	1.99	1.71	.95	1.81	.80	8.46	.63	(S)
<b>Furniture and Related Products</b>									
Household furniture and kitchen cabinets .....	1.20	.75	.51	.52	.98	.36	39.10	.36	(S)
Office furniture and institutional furniture .....	1.42	1.07	.75	.72	1.05	.36	37.22	.28	(S)
Other furniture related products .....	1.86	1.56	1.32	.72	1.84	.94	5.82	.76	(NS)
<b>Miscellaneous Products</b>									
Medical equipment and supplies .....	1.21	.68	.51	.40	1.25	.49	25.82	.32	(S)
Sporting goods, dolls, toys, and games .....	2.63	1.27	1.02	.65	1.57	.47	22.80	.51	(S)
Office supplies .....	3.49	1.48	1.05	.98	1.07	.32	107.40	.31	(S)
Other miscellaneous products .....	1.62	1.06	.89	.57	1.56	.67	16.54	.60	(S)

NS Not seasonally adjusted. S Seasonally adjusted.

Table F-4. **Materials and Supplies Inventories (Seasonal Summary Measures)**

Industry	Average percent changes				Ratio of irregular trend-cycle ( $\bar{I}/\bar{C}$ )	Ratio of moving to stable seasonality M7	F-value	Q-value	Seasonal adjustment indicator
	Original series ( $\bar{O}$ )	Seasonally adjusted series ( $\bar{CI}$ )	Irregular series ( $\bar{I}$ )	Trend-cycle series ( $\bar{C}$ )					
Food products .....	1.63	.84	.76	.32	2.37	.41	57.46	.51	(S)
Beverages and tobacco .....	2.01	.86	.73	.39	1.88	.17	180.87	.31	(S)
Textile mills .....	1.81	1.27	1.03	.68	1.52	.55	16.98	.58	(S)
Textile products .....	1.78	1.45	1.01	.81	1.24	.53	20.94	.40	(S)
Apparel .....	2.04	1.55	.94	1.10	.85	.33	44.35	.26	(S)
Leather and allied products .....	2.66	2.15	1.87	.95	1.96	.80	10.53	.73	(S)
Wood products .....	3.88	1.41	.97	.93	1.05	.20	239.39	.21	(S)
Paper products .....	.86	.76	.45	.57	.80	.73	10.34	.50	(S)
Printing .....	3.01	2.34	1.95	1.16	1.68	.52	15.03	.56	(S)
Petroleum and coal products .....	3.00	2.53	2.17	1.31	1.65	.58	15.12	.55	(S)
Basic chemicals .....	.87	.74	.65	.31	2.10	.96	5.24	.86	(NS)
Plastics and rubber products .....	1.11	.86	.52	.66	.78	.57	14.33	.43	(S)
Nonmetallic mineral products .....	.98	.83	.70	.41	1.68	.54	18.54	.52	(S)
Primary metals .....	1.63	1.00	.68	.71	.94	.23	107.57	.23	(S)
Fabricated metal products .....	1.29	1.00	.83	.52	1.58	.60	13.11	.50	(S)
Machinery .....	1.48	.85	.58	.57	1.02	.49	19.66	.43	(S)
Computers and electronic products .....	2.16	1.73	1.21	1.18	1.03	.55	16.78	.44	(S)
Electrical equipment, appliances, and components .....	1.44	.95	.59	.71	.83	.74	10.44	.55	(S)
Transportation equipment .....	1.65	1.12	.90	.53	1.69	.56	16.77	.62	(S)
Furniture and related products .....	1.18	1.05	.83	.55	1.50	1.44	2.36	1.00	(NS)
Miscellaneous products .....	1.11	.80	.70	.38	1.86	.79	8.96	.76	(S)

NS Not seasonally adjusted. S Seasonally adjusted.

Table F-5. **Work-in-Process Inventories (Seasonal Summary Measures)**

Industry	Average percent changes				Ratio of irregular trend-cycle ( $\bar{I}/\bar{C}$ )	Ratio of moving to stable seasonality M7	F-value	Q-value	Seasonal adjustment indicator
	Original series	Seasonally adjusted series	Irregular series	Trend-cycle series					
	( $\bar{O}$ )	( $\bar{CI}$ )	( $\bar{I}$ )	( $\bar{C}$ )					
Food products .....	5.72	1.88	1.75	.56	3.10	.19	185.57	.30	(S)
Beverages and tobacco .....	3.54	1.75	1.33	1.03	1.29	.21	161.60	.20	(S)
Textile mills .....	1.69	.97	.61	.64	.95	.38	28.04	.33	(S)
Textile products .....	2.19	1.35	1.19	.62	1.92	.43	26.22	.54	(S)
Apparel .....	2.98	1.61	1.10	1.08	1.02	.27	61.67	.28	(S)
Leather and allied products .....	3.46	2.58	1.94	1.35	1.43	.74	10.67	.70	(S)
Wood products .....	1.88	1.44	1.27	.58	2.20	.87	8.54	1.13	(S)
Paper products .....	2.08	1.32	1.14	.64	1.79	.57	14.34	.57	(S)
Printing .....	6.36	2.71	2.47	.82	3.01	.25	68.43	.46	(S)
Petroleum and coal products .....	3.53	2.57	2.27	1.25	1.82	.52	18.47	.59	(S)
Basic chemicals .....	1.78	1.20	1.06	.43	2.48	.61	16.17	.80	(S)
Plastics and rubber products .....	1.49	1.03	.91	.44	2.06	.47	20.73	.49	(S)
Nonmetallic mineral products .....	2.55	1.34	1.06	.71	1.50	.25	69.00	.39	(S)
Primary metals .....	1.28	.97	.67	.60	1.12	1.16	6.48	.58	(NS)
Fabricated metal products .....	1.24	.78	.64	.42	1.51	.41	33.36	.49	(S)
Machinery .....	1.99	.84	.68	.38	1.81	.33	49.36	.42	(S)
Computers and electronic products .....	2.35	1.16	.90	.65	1.38	.48	27.36	.41	(S)
Electrical equipment, appliances, and components .....	1.96	1.03	.85	.42	2.02	.36	34.78	.46	(S)
Transportation equipment .....	1.80	1.08	.95	.50	1.91	.49	26.98	.50	(S)
Furniture and related products .....	1.39	1.17	.94	.62	1.52	1.45	2.72	1.16	(NS)
Miscellaneous products .....	2.00	1.23	1.13	.43	2.61	.40	31.83	.59	(S)

NS Not seasonally adjusted. S Seasonally adjusted.

Table F-6. **Finished Goods Inventories (Seasonal Summary Measures)**

Industry	Average percent changes				Ratio of irregular trend-cycle ( $\bar{I}/\bar{C}$ )	Ratio of moving to stable seasonality M7	F-value	Q-value	Seasonal adjustment indicator
	Original series	Seasonally adjusted series	Irregular series	Trend-cycle series					
	( $\bar{O}$ )	( $\bar{CI}$ )	( $\bar{I}$ )	( $\bar{C}$ )					
Food products .....	2.42	.74	.63	.30	2.09	.24	163.20	.28	(S)
Beverages and tobacco .....	4.21	2.63	2.41	.92	2.62	.80	12.27	.70	(S)
Textile mills .....	2.72	1.16	.86	.73	1.18	.22	124.29	.32	(S)
Textile products .....	1.90	1.07	.69	.74	.92	.27	71.16	.19	(S)
Apparel .....	3.08	1.36	.93	.89	1.05	.36	64.17	.45	(S)
Leather and allied products .....	3.03	1.79	1.51	.73	2.06	.64	21.34	.70	(S)
Wood products .....	2.94	1.82	1.55	.72	2.14	.58	33.03	.55	(S)
Paper products .....	1.55	.96	.66	.59	1.10	.48	44.44	.34	(S)
Printing .....	3.83	2.16	1.92	.86	2.22	.90	30.71	.98	(S)
Petroleum and coal products .....	3.02	1.96	1.57	1.05	1.49	.42	34.35	.50	(S)
Basic chemicals .....	1.19	.80	.57	.46	1.26	.33	44.02	.27	(S)
Plastics and rubber products .....	1.46	.74	.46	.56	.82	.20	159.94	.19	(S)
Nonmetallic mineral products .....	1.93	.99	.80	.50	1.60	.21	110.82	.28	(S)
Primary metals .....	1.51	1.17	.95	.52	1.84	.60	16.00	.58	(S)
Fabricated metal products .....	1.64	.77	.52	.51	1.01	.29	91.99	.32	(S)
Machinery .....	1.70	.82	.69	.46	1.52	.29	58.02	.47	(S)
Computers and electronic products .....	4.72	1.99	1.59	1.07	1.49	.44	36.71	.36	(S)
Electrical equipment, appliances, and components .....	2.95	.84	.68	.40	1.69	.34	65.93	.43	(S)
Transportation equipment .....	2.87	1.47	1.29	.50	2.58	.53	25.35	.72	(S)
Furniture and related products .....	2.13	1.14	.94	.60	1.56	.30	48.32	.40	(S)
Miscellaneous products .....	1.69	.91	.76	.45	1.68	.51	17.76	.61	(S)

NS Not seasonally adjusted. S Seasonally adjusted.