

# Benchmark Report for Manufacturers' Shipments, Inventories, and Orders: January 2001 Through December 2006

Issued May 2007

M3-3(06)

Current Industrial Reports

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

*Helping You Make Informed Decisions*

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

## ACKNOWLEDGMENTS

This report was prepared under the general direction of **Kimberly P. Moore**, Assistant Division Chief for Special Studies and M3 Programs, Manufacturing and Construction Division. The preparation of this report was performed under the supervision of **John C. Savage**, Chief, Manufacturers' Shipments, Inventories, and Orders Branch, assisted by **Sandra Sollinger** and **Jessica Young**, Section Chiefs. Contributing analysts include **John Albanese, Stephanie Angel, Korrey Blount, Heather Dudash, Clarissa Edwards, Adon Hall, H. Joseph Haurand, Marvella Hawkins, Doris Kling, Jasmine McDowell, Rebecca St. Martin, Adriana Stoica**, and **Alice Miller**. The assistance of **Donna Bowling** and **Christine Meyers** is also appreciated.

**Paul Hsen**, Assistant Division Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Dan Tulp, Jr.**, Section Chief, provided mathematical and statistical assistance. **Bill Ricciardi** provided staff assistance.

The electronic computer programs were developed by the Economic Statistical Methods and Programming Division, under the direction of **Samuel Rozenel**, Chief, Manufacturing and Construction Indicators Branch, assisted by **Jongmin Lee**, Section Chief and **Cheuk Lee**.

The staff of the National Processing Center performed the mailout operations.

**Monique Lindsay, Donna Ruuskanen, Theodora Forgione**, and **Crystal Wade** of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, provided publications and printing management, graphics design and composition, and editorial review for print and electronic media. General direction and production management were provided by **Wanda Cevis**, Chief, Publications Services Branch.

Finally, a special acknowledgment is due to the many businesses whose cooperation was essential to the success of this report.

# Benchmark Report for Manufacturers' Shipments, Inventories, and Orders: January 2001 Through December 2006

Issued May 2007

M3-3(06)

## Current Industrial Reports



**U.S. Department of Commerce**  
**Carlos M. Gutierrez,**  
Secretary

**David A. Sampson,**  
Deputy Secretary

**Economics and Statistics Administration**  
**Cynthia A. Glassman,**  
Under Secretary  
for Economic Affairs

**U.S. CENSUS BUREAU**  
**Charles Louis Kincannon,**  
Director



SUGGESTED CITATION

U.S. Census Bureau,  
*Benchmark Report for Manufacturers'  
Shipments, Inventories, and Orders:  
January 2001 Through December 2006*,  
M3-3(06),  
U.S. Government Printing Office,  
Washington, DC, 2007.



**Economics  
and Statistics  
Administration**

**Cynthia A. Glassman,**  
Under Secretary  
for Economic Affairs



**U.S. CENSUS BUREAU**

**Charles Louis Kincannon,**  
Director

**Preston Jay Waite,**  
Deputy Director and  
Chief Operating Officer

**Thomas L. Mesenbourg,**  
Associate Director  
for Economic Programs

**C. Harvey Monk, Jr.,**  
Assistant Director  
for Economic Programs

**Thomas E. Zabelsky,**  
Chief, Manufacturing  
and Construction Division

CONTENTS

	<b>Page</b>
Summary of Revisions . . . . .	iv
Description of Survey . . . . .	v
<b>Figures</b>	
A. All Manufacturing Industries Shipments, Inventories, and New and Unfilled Orders, Seasonally Adjusted: January 2000–December 2006 . . . . .	x
B. Ratios of Unfilled Orders to Shipments and Inventories to Shipments, Seasonally Adjusted: January 2000–December 2006 . . . . .	xi
C. Manufacturers’ Shipments, Seasonally Adjusted: January 2000–December 2006 . . . . .	xii
D. Manufacturers’ New Orders, Seasonally Adjusted: January 2000–December 2006 . . . . .	xii
E. Manufacturers’ Unfilled Orders, Seasonally Adjusted: January 2000–December 2006 . . . . .	xiii
F. Manufacturers’ Inventories, Seasonally Adjusted: January 2000–December 2006 . . . . .	xiii
<b>Text Tables</b>	
A. Revisions to Manufacturers’ Shipments, Inventories, and Orders: 2001–2006 . . . . .	xiv
B. Manufacturers’ Shipments, Inventories, and Orders Monthly Percent Changes: 2006 . . . . .	xvi
<b>Chapters</b>	
A. Sample of M3 Report Form . . . . .	A–1
B. Composition of Industry Categories in Terms of the North American Industry Classification System (NAICS) . . . . .	B–1
C. Composition of Aggregate Data Series in Terms of M3 Industry Series . . . . .	C–1
D. Benchmarking Procedures Used in Revising Monthly M3 Time Series . . . . .	D–1
E. Notes on Trading Day Adjustment Methodology . . . . .	E–1
F. Summary Measures for Evaluating the Quality of the Seasonal Adjustment of M3 Series . . . . .	F–1
G. Description of the M3 Benchmark Data for Shipments and Inventories . . . . .	G–1

# Summary of Revisions

---

## **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 2005 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, and
- Updating the trading day and seasonal adjustment factors for all series.

Table A summarizes the results of the first two procedures for 2001 through 2006 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 approximately 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, the revised monthly data, 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 and revised monthly data from 1992 through March 2007 on a NAICS basis are available on the Internet at <[www.census.gov/indicator/www/m3](http://www.census.gov/indicator/www/m3)>.

# Description of Survey

---

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 *2002 North American Industry Classification System (NAICS) Manual*. Chapter 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, and the Annual Survey of Manufactures (ASM).

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 probability sample and mailed requests to about 400 midsize 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 62 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-five 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.

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 2006 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 301-763-4832.

### **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.

---

<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.

---

## **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 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.

### **New Orders Received and Unfilled Orders**

New orders, as reported in the monthly survey, are net of order cancellations and include orders received and filled during the month as well as orders received for future delivery. They also include the value of contract changes which increase or decrease the value of the unfilled orders to which they relate. Orders are defined to include those supported by binding legal documents such as signed contracts, letters of award, or letters of intent, although in some industries this

---

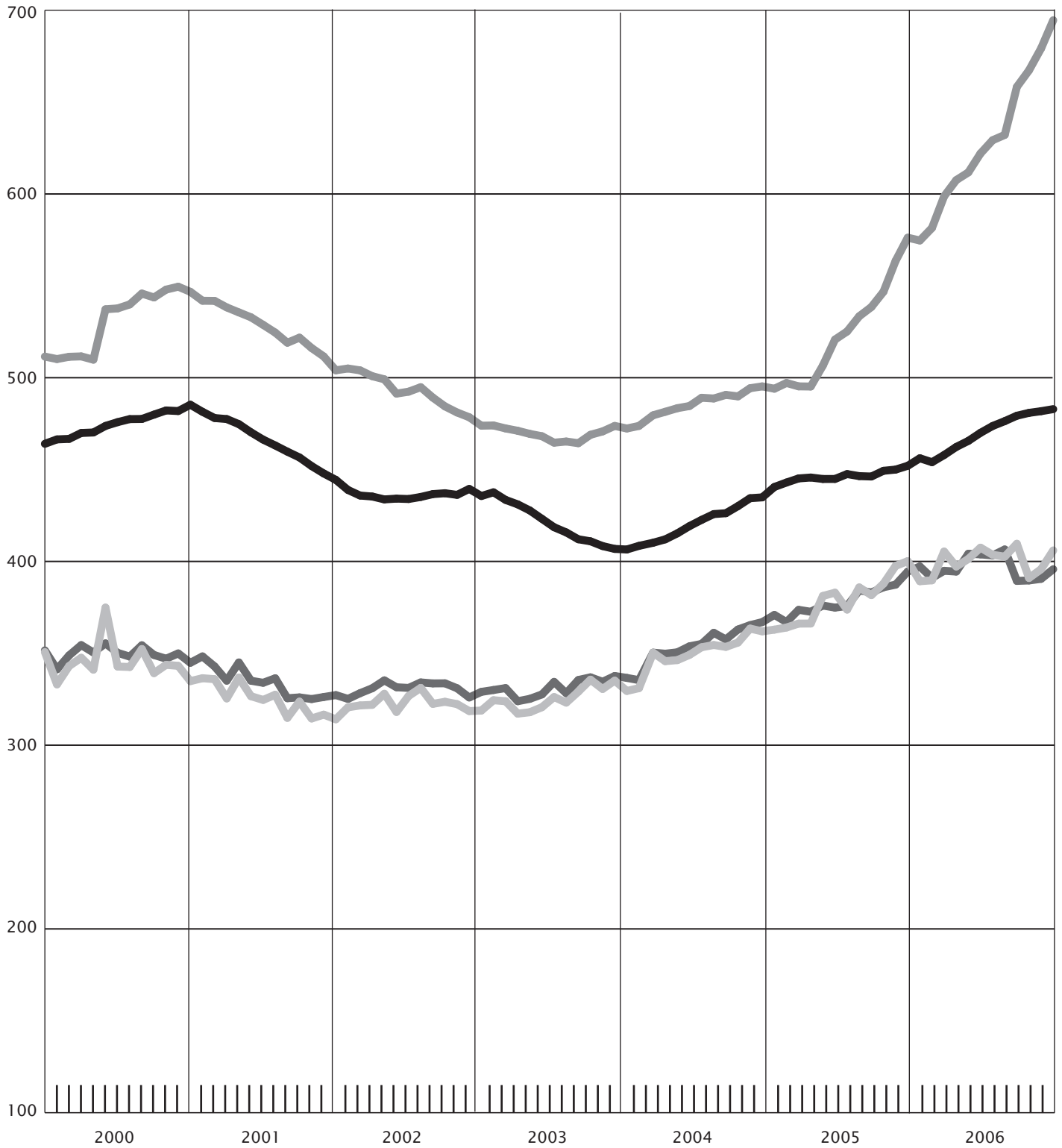
definition may not be strictly applicable. In the case of letters of intent, the full amount of the sales value is included if the parties are in substantial agreement on the amount; otherwise, only the funds specifically authorized to be expended are included.

Unfilled orders include orders (as defined above) that have not been reflected as shipments. Generally, unfilled orders at the end of the reporting period are equal to unfilled orders at the beginning of the period plus net new orders received less net shipments.

Figure A.  
**All Manufacturing Industries Shipments, Inventories,  
 and New and Unfilled Orders, Seasonally Adjusted:  
 January 2000–December 2006**

Billions of dollars

Inventories  
 Shipments  
 Unfilled orders  
 New orders



Source: U.S. Census Bureau, Manufacturers' Shipments, Inventories, and Orders: 2000-2006.

Figure B.  
**Ratios of Unfilled Orders to Shipments and  
 Inventories to Shipments, Seasonally Adjusted:  
 January 2000–December 2006**

Unfilled orders to shipments ratio (left scale)  
 Inventories to shipments ratio (right scale)



Source: U.S. Census Bureau, Manufacturer's Shipments, Inventories, and Orders: 2000-2006.



Figure C.  
**Manufacturers' Shipments, Seasonally Adjusted:  
 January 2000–December 2006**

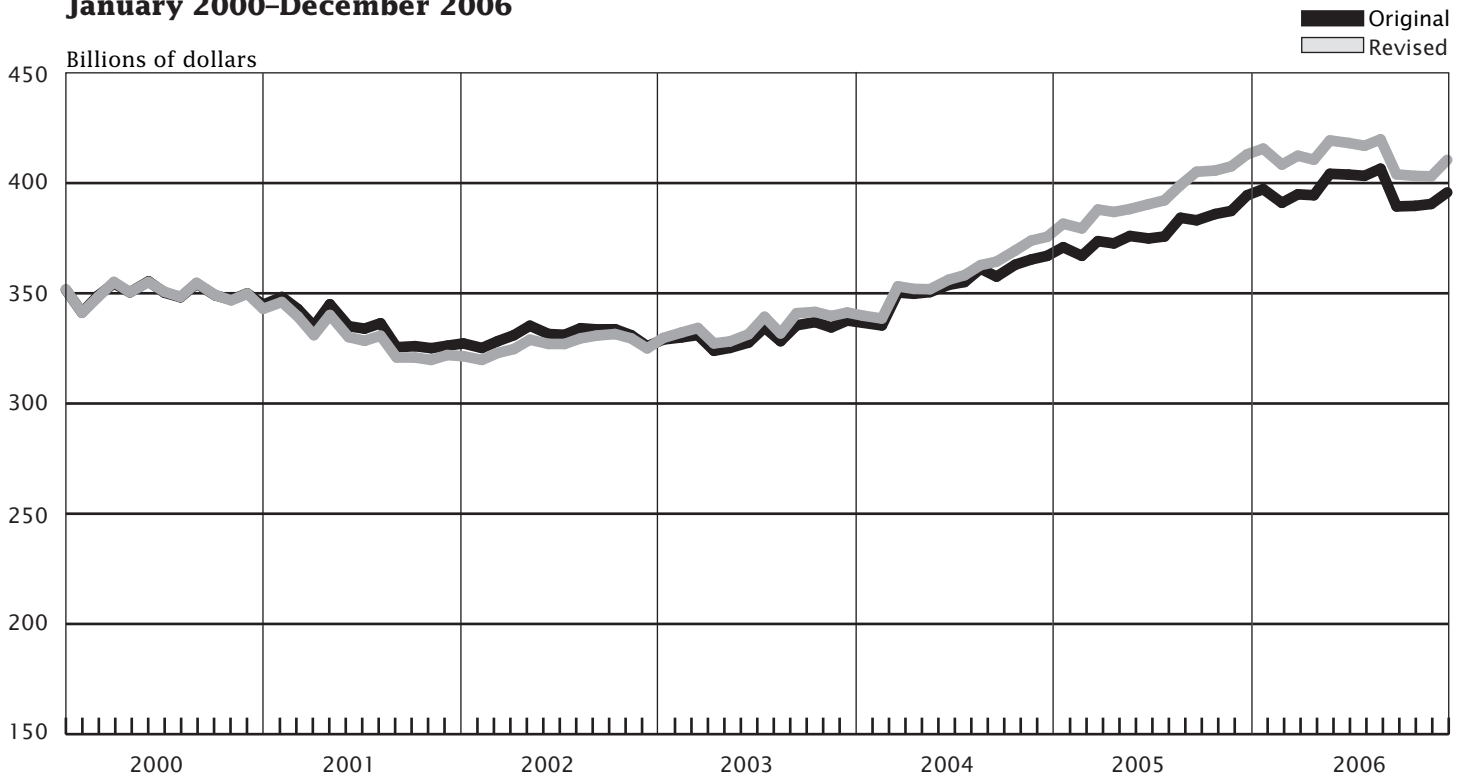
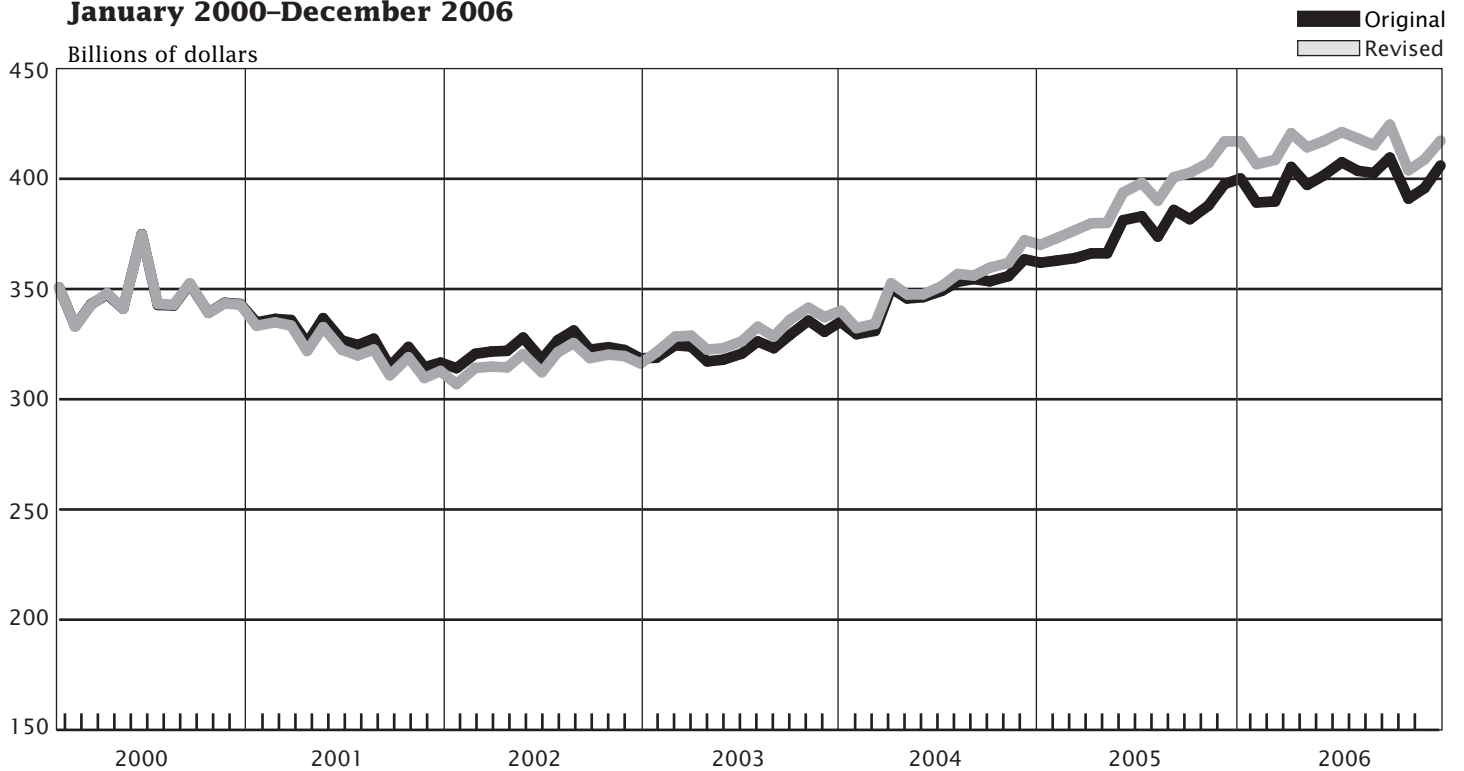


Figure D.  
**Manufacturers' New Orders, Seasonally Adjusted:  
 January 2000–December 2006**



Source: U.S. Census Bureau, Manufacturers' Shipments, Inventories, and Orders: 2000-2006.

Figure E.  
**Manufacturers' Unfilled Orders, Seasonally Adjusted:  
 January 2000–December 2006**

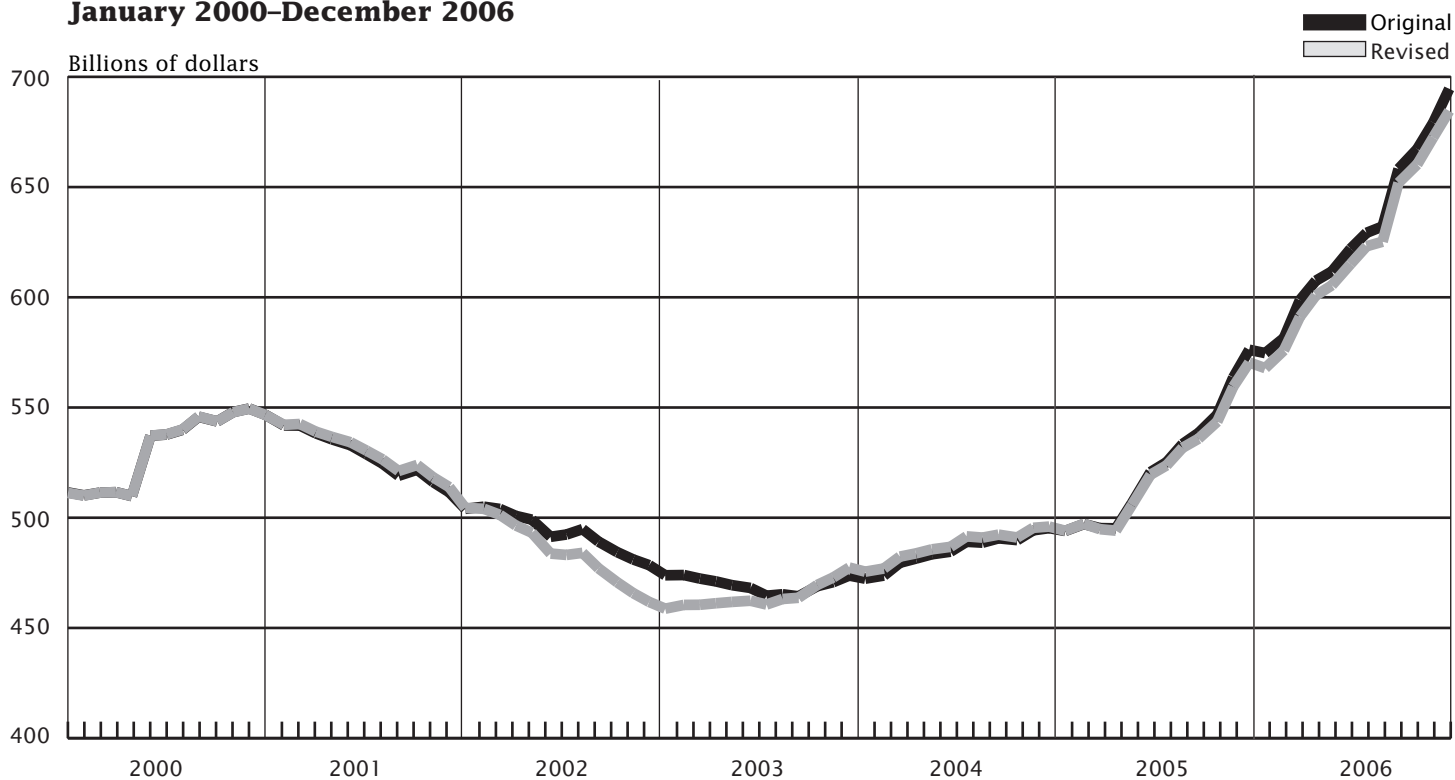
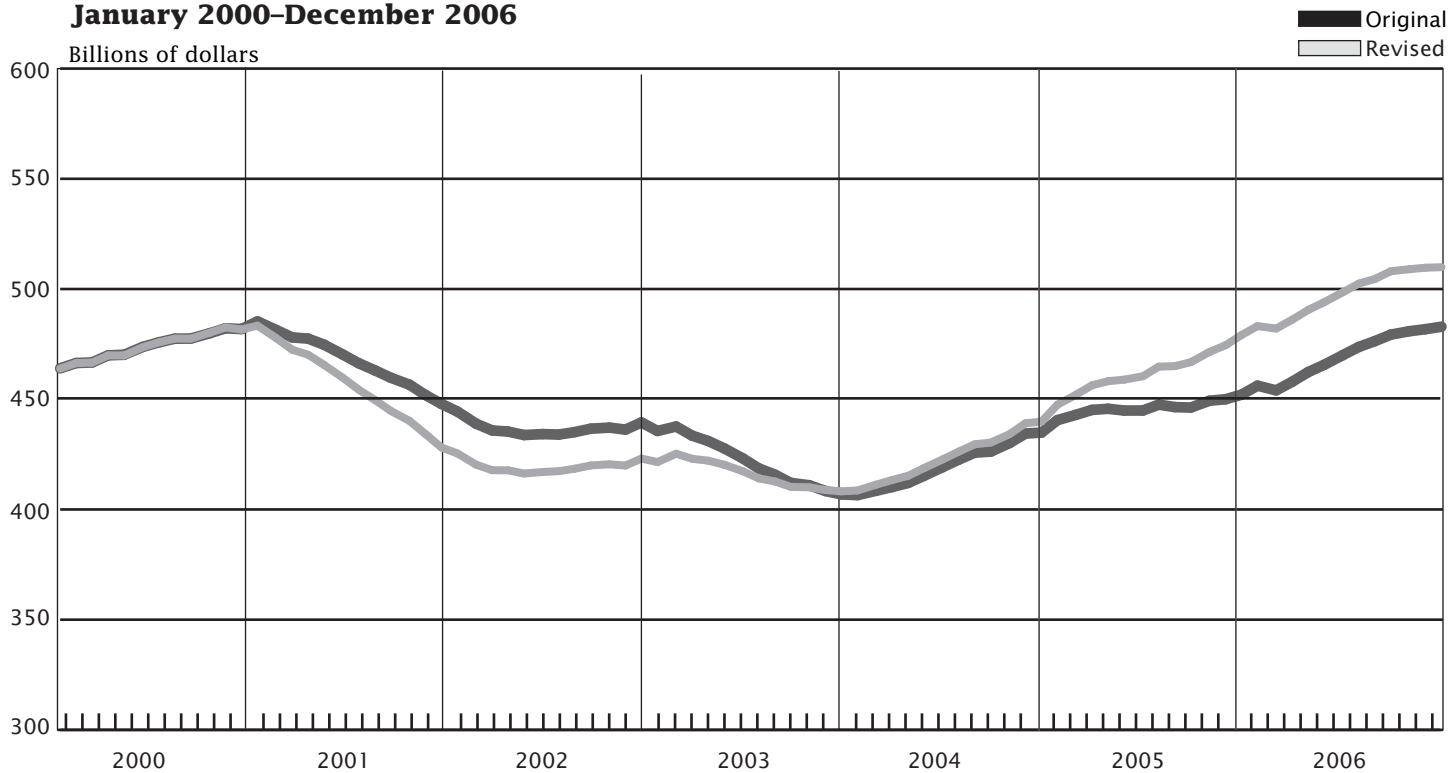


Figure F.  
**Manufacturers' Inventories, Seasonally Adjusted:  
 January 2000–December 2006**



Source: U.S. Census Bureau, Manufacturers' Shipments, Inventories, and Orders: 2000-2006.

Table A. **Revisions to Manufacturers' Shipments, Inventories, and Orders: 2001–2006**

[Billion dollars]

Industry		As revised	As published	Percent revision	Year-to-year percent	
					As revised	As published
<b>ANNUAL SHIPMENTS</b>						
<b>All manufacturing industries</b>	<b>2006...</b>	<b>4,940.0</b>	<b>4,754.0</b>	<b>3.9</b>	<b>4.3</b>	<b>4.6</b>
	2005...	4,735.4	4,544.8	4.2	9.9	6.7
	2004...	4,309.0	4,259.2	1.2	7.3	7.2
	2003...	4,015.4	3,972.1	1.1	2.6	0.2
	2002...	3,914.7	3,965.2	-1.3	-1.4	-1.4
	2001...	3,970.5	4,022.9	-1.3	-5.7	-4.4
Durable goods industries	2006...	2,537.9	2,520.2	0.7	4.9	5.7
	2005...	2,420.3	2,385.4	1.5	6.9	5.9
	2004...	2,264.7	2,251.9	0.6	5.7	5.7
	2003...	2,142.6	2,130.2	0.6	0.9	-1.8
	2002...	2,123.6	2,168.4	-2.1	-2.3	-1.6
	2001...	2,174.4	2,203.1	-1.3	-8.4	-7.2
Nondurable goods industries	2006...	2,402.0	2,233.8	7.5	3.8	3.4
	2005...	2,315.0	2,159.5	7.2	13.2	7.6
	2004...	2,044.3	2,007.3	1.8	9.2	9.0
	2003...	1,872.8	1,841.9	1.7	4.6	2.5
	2002...	1,791.1	1,796.8	-0.3	-0.3	-1.3
	2001...	1,796.1	1,819.8	-1.3	-2.11	-0.8
<b>ANNUAL NEW ORDERS<sup>1</sup></b>						
<b>All manufacturing industries</b>	<b>2006...</b>	<b>4,974.7</b>	<b>4,792.6</b>	<b>3.8</b>	<b>5.1</b>	<b>5.3</b>
	2005...	4,735.0	4,549.6	4.1	11.3	8.1
	2004...	4,255.2	4,208.1	1.1	7.3	7.9
	2003...	3,964.4	3,900.8	1.6	4.3	0.9
	2002...	3,801.7	3,866.9	-1.7	-1.8	-1.3
	2001...	3,872.5	3,917.2	-1.1	-6.9	-5.9
Durable goods industries	2006...	2,572.7	2,558.8	0.5	6.3	7.1
	2005...	2,419.9	2,390.2	1.2	9.5	8.6
	2004...	2,210.9	2,200.8	0.5	5.7	6.9
	2003...	2,091.6	2,058.9	1.6	4.0	-0.5
	2002...	2,010.6	2,070.1	-2.9	-3.2	-1.3
	2001...	2,076.4	2,097.4	-1.0	-10.8	-9.9
Nondurable goods industries	2006...	2,402.0	2,233.8	7.5	3.8	3.4
	2005...	2,315.0	2,159.5	7.2	13.2	7.6
	2004...	2,044.3	2,007.3	1.8	9.2	9.0
	2003...	1,872.8	1,841.9	1.7	4.6	2.5
	2002...	1,791.1	1,796.8	-0.3	-0.3	-1.3
	2001...	1,796.1	1,819.8	-1.3	-2.11	-0.8
<b>END-OF-YEAR UNFILLED ORDERS<sup>1</sup></b>						
<b>All manufacturing industries<sup>2</sup></b>	<b>2006...</b>	<b>681.8</b>	<b>691.4</b>	<b>-1.4</b>	<b>20.2</b>	<b>20.8</b>
	2005...	567.4	572.4	-0.9	15.3	16.5
	2004...	492.3	491.2	0.2	3.9	4.6
	2003...	473.8	469.7	0.9	3.4	-1.0
	2002...	458.1	474.3	-3.4	-10.1	-6.5
	2001...	509.7	507.1	0.5	-6.9	-7.7

See footnotes at end of table.

Table A. **Revisions to Manufacturers' Shipments, Inventories, and Orders: 2001–2006**—Con.

[Billion dollars]

Industry	As revised	As published	Percent revision	Year-to-year percent		
				As revised	As published	
<b>END-OF-YEAR INVENTORIES</b>						
<b>All manufacturing industries</b> . . . . .	<b>2006 . . .</b>	<b>496.1</b>	<b>469.6</b>	<b>5.6</b>	<b>6.4</b>	<b>6.8</b>
	2005 . . .	466.2	439.8	6.0	8.8	3.9
	2004 . . .	428.3	423.2	1.2	7.7	6.9
	2003 . . .	397.6	395.9	0.4	-3.6	-7.5
	2002 . . .	412.3	428.1	-3.7	-1.2	-1.9
	2001 . . .	417.5	436.6	-4.4	-11.2	-7.1
Durable goods industries . . . . .	2006 . . .	300.7	287.7	4.6	7.9	8.6
	2005 . . .	278.6	265.0	5.1	7.7	3.5
	2004 . . .	258.7	256.1	1.0	7.8	7.0
	2003 . . .	239.9	239.4	0.2	-5.2	-9.3
	2002 . . .	253.2	264.0	-4.1	-2.7	-2.7
	2001 . . .	260.3	271.6	-4.2	-12.7	-8.9
Nondurable goods industries . . . . .	2006 . . .	195.4	181.9	7.4	4.2	4.1
	2005 . . .	187.6	174.8	7.3	10.6	4.6
	2004 . . .	169.6	167.1	1.5	7.5	6.8
	2003 . . .	157.7	156.5	0.8	-0.9	-4.6
	2002 . . .	159.1	164.1	-3.0	1.2	-0.5
	2001 . . .	157.2	165.0	-4.7	-8.6	-4.0

<sup>1</sup>Data on new and unfilled orders are not available for the semiconductor industry.

<sup>2</sup>Unfilled orders exist only for durable goods industries.

Note: Percent changes based on unrounded data. Detail may not add to total because of independent rounding.

**Table B. Manufacturers' Shipments, Inventories, and Orders Monthly Percent Changes: 2006**

[Based on seasonally adjusted data]

Industry	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
<b>SHIPMENTS</b>												
<b>ALL MANUFACTURING</b>												
As published .....	0.7	-1.6	1.0	-0.1	2.5	-0.1	-0.1	0.8	-4.2	0.1	0.2	1.3
As revised .....	0.6	-1.7	1.0	-0.4	2.1	-0.3	-0.3	0.7	-3.8	-0.2	-0.1	1.9
<b>Durable Goods Industries</b>												
As published .....	-1.3	0.3	0.3	-1.2	3.0	0.2	-1.3	2.1	-2.7	0.2	0.3	1.2
As revised .....	-0.8	0.0	0.2	-1.5	2.5	0.2	-1.5	2.0	-2.8	0.6	-0.4	1.6
<b>Primary Metals</b>												
As published .....	2.3	-1.6	2.5	0.6	7.8	2.3	2.2	0.0	-3.3	-2.3	-0.7	1.3
As revised .....	3.6	-0.6	1.9	0.3	7.4	1.5	2.1	0.2	-3.6	-2.0	-1.1	1.4
<b>Fabricated Metal Products</b>												
As published .....	2.1	-0.2	0.1	0.3	1.4	0.6	-0.7	1.3	-1.7	-0.5	-0.3	2.3
As revised .....	1.6	0.2	-0.3	-0.3	0.9	0.4	-1.3	1.3	-1.5	-0.4	-0.5	1.7
<b>Machinery</b>												
As published .....	-0.2	-2.6	2.7	0.3	1.3	1.8	0.9	1.7	-1.3	1.6	-1.4	1.3
As revised .....	-2.1	-1.8	2.3	0.9	0.3	1.5	-0.2	1.5	-1.2	1.1	-2.1	2.5
<b>Computers and Electronic Products</b>												
As published .....	-0.9	5.1	-3.3	-1.2	1.6	-0.4	1.3	1.0	-3.4	1.0	2.0	-6.7
As revised .....	0.0	4.0	-1.7	-2.5	2.0	0.6	-0.9	1.0	-1.9	1.6	-0.1	-5.7
<b>Electrical Equipment, Appliances, and Components</b>												
As published .....	3.4	-0.9	1.2	0.7	3.4	-1.7	0.5	0.8	-3.4	0.6	-1.7	2.4
As revised .....	3.1	-1.3	1.0	1.9	3.0	-1.1	0.4	1.4	-3.0	1.3	-1.3	2.8
<b>Transportation Equipment</b>												
As published .....	-7.2	0.1	1.7	-3.5	5.3	-1.0	-5.8	5.6	-4.2	0.9	2.2	4.1
As revised .....	-5.0	-0.9	0.9	-3.4	4.0	-0.8	-4.1	5.3	-5.7	2.0	1.3	4.2
<b>Total Capital Goods</b>												
As published .....	-3.9	0.3	1.7	-0.9	1.7	-0.1	0.2	2.4	-0.9	-1.6	1.6	-0.6
As revised .....	-3.7	0.0	1.7	-1.0	1.0	0.5	-0.3	1.7	-0.8	-0.9	0.7	-0.1
<b>Nondefense Capital Goods</b>												
As published .....	-4.6	1.1	1.5	-1.4	2.1	-0.2	0.6	2.0	-0.4	-2.3	1.8	-0.7
As revised .....	-4.0	0.9	1.0	-1.3	1.3	0.3	0.2	1.2	-0.2	-1.6	0.7	0.0
<b>Defense Capital Goods</b>												
As published .....	1.9	-6.0	4.0	3.2	-1.7	1.2	-3.1	5.9	-4.8	4.6	0.2	0.4
As revised .....	-1.0	-7.1	7.1	0.9	-2.0	2.4	-4.2	6.6	-6.3	5.2	0.9	-0.8
<b>Nondurable Goods Industries</b>												
As published .....	3.0	-3.6	1.8	1.1	1.9	-0.4	1.2	-0.6	-5.9	-0.1	0.1	1.5
As revised .....	2.1	-3.6	1.8	0.7	1.7	-0.7	0.9	-0.6	-4.8	-1.0	0.3	2.2
<b>NEW ORDERS<sup>1</sup></b>												
<b>ALL MANUFACTURING</b>												
As published .....	-2.7	0.1	4.0	-2.0	1.0	1.5	-1.0	-0.3	1.7	-4.5	1.2	2.6
As revised .....	-2.3	0.2	3.3	-1.7	0.8	1.2	-0.7	-0.9	2.1	-5.0	1.3	1.8
<b>Durable Goods Industries</b>												
As published .....	-7.6	3.6	6.0	-4.7	0.3	3.3	-2.8	0.0	8.7	-8.1	2.2	3.5
As revised .....	-6.3	4.1	4.6	-3.8	-0.2	3.2	-2.2	-1.1	8.8	-8.4	2.2	1.5
<b>Primary Metals</b>												
As published .....	0.1	-3.6	4.3	4.5	6.2	0.1	1.6	-2.7	-3.1	-0.7	-1.8	1.7
As revised .....	0.9	-1.9	2.1	4.1	6.4	-0.4	2.3	-3.5	-3.1	0.2	-2.8	2.7
<b>Fabricated Metal Products</b>												
As published .....	2.0	-2.4	2.1	2.4	-0.2	5.3	-6.5	2.7	-2.1	-3.3	0.6	2.3
As revised .....	0.6	0.2	-0.7	1.6	0.2	2.9	-5.2	2.4	-1.0	-3.5	0.4	3.9
<b>Machinery</b>												
As published .....	1.3	-7.4	5.4	-0.1	4.3	0.4	0.6	-1.0	3.4	3.8	-8.6	7.8
As revised .....	0.4	-6.2	4.5	-0.1	3.6	-0.5	0.7	-2.6	3.3	3.7	-9.0	8.0
<b>Computers and Electronic Products</b>												
As published .....	-1.0	6.3	12.0	-11.2	-1.9	5.7	4.1	-2.1	2.2	-9.8	8.0	2.4
As revised .....	3.5	4.8	11.7	-7.9	-4.5	6.4	2.6	-3.7	5.5	-10.2	9.4	-3.4

See footnote at end of table.



Table B. **Manufacturers' Shipments, Inventories, and Orders Monthly Percent Changes: 2006—Con.**

[Based on seasonally adjusted data]

Industry	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
<b>ALL MANUFACTURING—Con.</b>												
<b>Durable Goods Industries—Con.</b>												
Electrical Equipment, Appliances, and Components												
As published .....	6.4	-2.4	-2.9	6.8	2.6	-2.2	0.0	-8.9	4.4	2.2	-2.7	-1.0
As revised .....	4.7	-3.4	-1.5	7.2	2.7	-1.1	-1.5	-8.8	5.8	2.5	-1.6	-0.3
Transportation Equipment												
As published .....	-26.8	17.1	12.3	-12.7	-2.8	7.0	-9.4	3.6	30.0	-20.7	9.9	4.0
As revised .....	-23.8	16.9	10.3	-11.0	-3.2	8.4	-7.0	1.5	27.1	-21.5	10.3	-0.8
Total Capital Goods												
As published .....	-19.2	11.6	12.0	-8.9	-2.5	6.2	-2.7	-0.8	26.5	-17.7	3.3	5.6
As revised .....	-17.2	11.6	11.9	-7.9	-2.7	7.4	-2.4	-3.0	27.6	-19.4	3.5	0.7
Nondefense Capital Goods												
As published .....	-17.7	4.7	11.6	-6.5	-2.0	1.7	-0.9	-2.0	24.6	-14.4	-0.3	10.8
As revised .....	-13.4	3.1	10.5	-5.5	-1.8	2.4	0.3	-5.5	23.9	-13.0	-0.8	7.2
Defense Capital Goods												
As published .....	-38.6	130.7	15.3	-26.8	-7.1	51.7	-15.0	9.1	39.8	-39.1	35.8	-28.7
As revised .....	-60.6	222.8	22.7	-25.1	-10.8	56.7	-19.6	17.9	52.0	-53.7	46.7	-43.2
<b>UNFILLED ORDERS<sup>1</sup></b>												
<b>ALL MANUFACTURING</b>												
As published .....	-0.3	1.2	3.0	1.5	0.7	1.7	1.2	0.5	4.1	1.4	1.8	2.3
As revised .....	-0.4	1.3	2.7	1.6	0.8	1.8	1.5	0.4	4.2	1.2	1.8	1.6
<b>Durable Goods Industries</b>												
As published .....	-0.3	1.2	3.0	1.5	0.7	1.7	1.2	0.5	4.1	1.4	1.8	2.3
As revised .....	-0.4	1.3	2.7	1.6	0.8	1.8	1.5	0.4	4.2	1.2	1.8	1.6
Primary Metals												
As published .....	0.8	-0.7	0.6	3.3	2.2	0.7	0.3	-1.7	-1.4	-0.3	-1.0	-0.8
As revised .....	0.8	-0.1	0.0	2.7	2.0	0.6	0.7	-2.0	-1.6	-0.1	-1.3	-0.4
Fabricated Metal Products												
As published .....	1.0	-0.2	0.8	1.9	1.1	3.4	0.4	1.1	0.9	-0.4	0.0	0.0
As revised .....	0.8	0.8	0.5	1.5	1.1	2.4	0.3	0.9	1.1	-0.4	0.0	1.0
Machinery												
As published .....	2.6	0.4	1.5	1.3	2.5	1.9	1.8	0.6	2.5	3.4	0.3	2.8
As revised .....	2.8	0.7	1.7	1.3	2.6	1.8	2.1	0.4	2.2	3.2	0.3	2.3
Computers and Electronic Products												
As published .....	-1.0	0.5	3.5	-0.1	-0.2	1.0	1.9	1.0	1.8	0.4	1.0	2.2
As revised .....	-0.9	0.5	3.3	0.9	-0.1	1.1	2.0	0.7	2.1	0.4	1.6	1.2
Electrical Equipment, Appliances, and Components												
As published .....	3.7	2.7	0.5	3.6	3.2	2.8	2.5	-2.3	1.3	2.0	1.5	0.0
As revised .....	3.5	2.2	0.8	3.6	3.4	3.3	2.3	-2.8	1.2	1.8	1.6	0.2
Transportation Equipment												
As published .....	-1.1	1.9	4.0	1.7	0.3	1.7	0.9	0.6	6.6	1.6	2.9	2.9
As revised .....	-1.5	1.7	3.7	1.7	0.4	2.1	1.4	0.7	6.7	1.3	2.8	1.9
Total Capital Goods												
As published .....	-0.7	1.2	3.1	1.4	0.6	1.7	1.2	0.6	5.4	1.7	1.9	3.0
As revised .....	-0.9	1.1	3.0	1.5	0.8	2.0	1.6	0.7	5.6	1.4	1.9	2.0
Nondefense Capital Goods												
As published .....	0.5	1.3	3.7	2.2	1.2	1.7	1.3	0.4	5.8	2.3	1.8	4.2
As revised .....	0.6	1.2	3.4	2.2	1.4	1.9	1.9	0.3	5.5	2.3	1.9	3.4
Defense Capital Goods												
As published .....	-3.3	1.0	1.8	-0.5	-0.8	1.9	0.9	1.1	4.4	0.0	2.2	-0.2
As revised .....	-4.0	0.9	1.9	-0.1	-0.7	2.2	0.8	1.6	5.9	-0.6	1.8	-1.4

See footnote at end of table.

Table B. **Manufacturers' Shipments, Inventories, and Orders Monthly Percent Changes: 2006**—Con.

[Based on seasonally adjusted data]

Industry	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
<b>TOTAL INVENTORIES</b>												
<b>ALL MANUFACTURING</b>												
As published .....	0.9	-0.5	0.9	1.0	0.7	0.9	0.8	0.6	0.6	0.3	0.2	0.2
As revised .....	0.9	-0.2	0.8	0.9	0.7	0.9	0.8	0.4	0.7	0.2	0.1	0.0
<b>Durable Goods Industries</b>												
As published .....	0.4	-0.5	1.0	1.2	0.7	0.9	1.1	0.7	1.2	0.8	0.3	0.6
As revised .....	0.1	-0.2	1.0	1.0	0.7	0.8	1.3	0.4	1.2	0.9	0.2	0.3
<b>Primary Metals</b>												
As published .....	1.3	1.2	0.3	1.7	2.7	1.1	2.1	2.0	3.5	1.6	-0.3	0.1
As revised .....	1.7	1.5	0.3	1.8	2.5	1.0	1.9	1.8	3.3	1.8	-0.2	0.0
<b>Fabricated Metal Products</b>												
As published .....	0.7	0.2	0.5	0.9	0.6	1.5	1.2	1.5	1.4	1.0	0.2	1.0
As revised .....	1.4	0.5	0.8	0.8	0.6	1.3	1.1	1.0	1.3	1.0	0.3	0.7
<b>Machinery</b>												
As published .....	0.9	-0.1	1.1	0.7	0.8	-0.1	0.6	0.6	1.6	0.5	0.2	2.1
As revised .....	0.9	0.0	1.1	0.8	0.7	0.2	0.6	0.6	1.7	0.6	-0.6	1.9
<b>Computers and Electronic Products</b>												
As published .....	1.7	-2.3	2.9	1.8	0.0	0.4	0.9	1.5	-0.1	0.5	0.8	1.0
As revised .....	1.7	-2.3	3.1	1.1	0.7	1.2	1.3	1.3	0.0	0.8	1.0	0.0
<b>Electrical Equipment, Appliances, and Components</b>												
As published .....	1.6	-0.1	1.0	0.6	0.2	2.1	2.0	1.8	-0.9	0.7	0.8	1.9
As revised .....	1.7	0.3	1.3	0.5	-0.2	2.1	1.9	1.9	-1.2	0.7	0.6	2.3
<b>Transportation Equipment</b>												
As published .....	-0.8	-0.9	0.8	1.4	0.7	1.3	1.1	-1.1	1.4	1.4	0.5	-0.5
As revised .....	-2.6	-0.5	0.7	1.2	0.7	0.6	1.6	-1.6	1.5	1.3	0.4	-0.8
<b>Total Capital Goods</b>												
As published .....	0.2	-0.1	0.8	0.8	0.0	0.8	1.0	-0.2	1.7	0.6	0.2	1.5
As revised .....	-0.9	0.0	0.8	0.8	0.1	0.6	1.3	-0.4	1.7	0.8	-0.1	1.1
<b>Nondefense Capital Goods</b>												
As published .....	1.0	-0.2	0.8	1.0	0.0	1.1	0.9	-0.1	1.9	0.8	0.3	1.8
As revised .....	1.1	0.0	0.7	1.1	0.1	0.9	1.4	-0.4	1.9	1.0	0.0	1.7
<b>Defense Capital Goods</b>												
As published .....	-5.4	0.1	1.0	-0.9	0.0	-1.4	1.7	-0.4	0.1	-0.5	0.0	-0.9
As revised .....	-11.9	-0.3	1.0	-0.9	0.1	-1.2	1.2	-0.3	0.4	-0.7	-0.6	-3.6
<b>Nondurable Goods Industries</b>												
As published .....	1.6	-0.5	0.7	0.7	0.7	1.1	0.3	0.4	-0.2	-0.4	0.0	-0.3
As revised .....	2.0	-0.3	0.6	0.8	0.7	1.1	0.1	0.5	-0.1	-0.9	0.1	-0.4

<sup>1</sup>Data on new and unfilled orders are not available for the semiconductor industry.

# Chapter A. Sample of M3 Report Form

Industry category description (see Appendix B).

Month and year of report

Prompt reporting ensures the timely receipt of your data.

Name and telephone number of person to contact at the Census Bureau regarding this report.

Name and telephone number of person to contact at your company regarding this report.

Mark the box which best describes current accounting period.

Data for new orders and unfilled orders are only requested for some industry categories

FORM M-3(SD)  
(01-13-2006)

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

**MANUFACTURERS' SHIPMENTS, INVENTORIES, AND ORDERS**  
FORM APPROVED: OMB NO. 0807-0008 EXPIRES APRIL 30, 2009

32240

NOTICE - This report is authorized 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.

Description: **COMPUTER MANUFACTURING**

CENSUS USE RP MC # F FP AI

JANUARY 2007

Please correct any errors in name, address, and ZIP Code.

**PLEASE RETURN YOUR COMPLETED FORM WITHIN 15 DAYS:**  
Fax form to 1-800-272-4096  
or  
Use VRE on 1-800-428-9659  
or  
U.S. Census Bureau  
4600 Silver Hill Rd MCD/M3  
Washington, DC 20233  
www.census.gov/m3

Census contact: CHRIS SAVAGE Area Code 301 Number 763-4804

Your company contact: COMPANY CONTACT Area Code 555 Number 555-5555 Ext 555

Ceased operations  
 Sold to another company - Enter name and date in "Remarks"  
 Acquired another manufacturing operation - Enter name and date in "Remarks"

CFN 1 2 3 4 5 6 0 0 0 0 1 Industry 3 4 A

Description of reporting items (Definitions of terms are provided on the back of the form)	Accounting Period	Report all figures in THOUSANDS of dollars.		
		JAN 2007	DEC 2006	NOV 2006
1 SHADE the ONE circle which best describes each accounting period. If "Other," please describe in "Remarks."	P	<input type="radio"/> Cal. Mo. <input type="radio"/> 4 week <input type="radio"/> 5 week	<input type="radio"/> Other <input type="radio"/> Cal. Mo. <input type="radio"/> 4 week <input type="radio"/> 5 week	<input type="radio"/> Other <input type="radio"/> Cal. Mo. <input type="radio"/> 4 week <input type="radio"/> 5 week
2 Net Shipments, Manufactured in the U.S.	S			
3 New Orders (Net of Cancellations) [If applicable]	N			
4 Order Backlog (Unfilled Orders) [If applicable]	U			
5 Total Inventories (Current Cost or Market)	I			
6 Materials and Supplies Inventory	M			
7 Work-In-Process Inventory	W			
8 Finished-Goods Inventory	F			

Remarks:

This form is substantially accurate and has been prepared in accordance with the instructions.

Title \_\_\_\_\_ Date \_\_\_\_\_  
Signature of authorized person \_\_\_\_\_

Your company's Census File Number, (CFN)

For each item listed, enter the figure in thousands of dollars.

Compare figures for current and previous periods. Correct previous periods if wrong. Explain substantial differences, or large month-to-month fluctuations in the data, in the "Remarks" section.

# Chapter B.

## Composition of Industry Categories in Terms of the North American Industry Classification System (NAICS)

M3/NAICS code	M3 category title with comparable NAICS titles	M3/NAICS code	M3 category title with comparable NAICS titles
	<b>FOOD PRODUCTS</b>		<b>TEXTILE MILLS—Con.</b>
<b>11A</b>	<b>Grain and Oilseed Milling</b>	313230	Nonwoven Fabric
311211	Flour	313241	Weft Knit Fabric
311212	Rice	313249	Other Knit Fabric and Lace
311213	Malt	313311	Broadwoven Fabric Finishing
311221	Wet Corn	313312	Textile and Fabric Finishing (Except Broadwoven Fabric)
311222	Soybean Processing	313320	Fabric Coating
311223	Other Oilseed Processing		
311225	Fats and Oils Refining and Blending		
311230	Breakfast Cereals		
<b>11B</b>	<b>Dairy Product Manufacturing</b>	<b>14A</b>	<b>Textile Product Mills</b>
311511	Fluid Milk	314110	Carpets and Rugs
311512	Creamery Butter	314121	Curtains and Draperies
311513	Cheese	314129	Other Household Textile Products
311514	Dry, Condensed, and Evaporated Milk	314911	Textile Bags
311520	Ice Cream and Frozen Desserts	314912	Canvas and Related Products
<b>11C</b>	<b>Meat, Poultry, and Seafood Product Processing</b>	314991	Rope, Cordage, and Twine
311611	Animal (Except Poultry) Slaughtering	314992	Tire Cord and Tire Fabrics
311612	Meat Processed From Carcasses	314999	All Other Miscellaneous Textile Products
311613	Rendering and Meat Byproducts		
311615	Poultry Processing		
311711	Seafood Canning		
311712	Fresh and Frozen Seafood		
<b>11D</b>	<b>Other Food Manufacturing</b>	<b>15A</b>	<b>Apparel</b>
311111	Dog and Cat Food	315111	<b>Apparel Manufacturing</b>
311119	Other Animal Food	315119	Sheer Hosiery
311311	Sugarcane	315191	Other Hosiery and Socks
311312	Cane Sugar Refining	315192	Outerwear Knitting
311313	Beet Sugar	315211	Underwear and Nightwear Knitting
311320	Chocolate and Confectionery From Cacao Beans	315212	Men's and Boys' Cut and Sew Apparel Contractors
311330	Confectionery From Purchased Chocolate	315221	Women's, Girls', and Infants' Cut and Sew Apparel Contractors
311340	Nonchocolate Confectionery	315222	Men's and Boys' Cut and Sew Underwear and Nightwear
311411	Frozen Fruits, Juices, and Vegetables	315223	Men's and Boys' Cut and Sew Suits, Coats, and Overcoats
311412	Frozen Specialty Foods	315224	Men's and Boys' Cut and Sew Shirts (Except Work Shirts)
311421	Fruit and Vegetable Canning	315225	Men's and Boys' Cut and Sew Trousers, Slacks, and Jeans
311422	Specialty Canning	315228	Men's and Boys' Cut and Sew Work Clothing
311423	Dried and Dehydrated Foods	315231	Men's and Boys' Cut and Sew Other Outerwear
311811	Retail Bakeries	315232	Women's and Girls' Cut and Sew Lingerie, Loungewear, and Nightwear
311812	Commercial Bakeries	315233	Women's and Girls' Cut and Sew Blouses and Shirts
311813	Frozen Cakes, Pies, and Other Pastries	315234	Women's and Girls' Cut and Sew Dresses
311821	Cookies and Crackers		Women's and Girls' Cut and Sew Suits, Coats, Tailored Jackets, and Skirts
311822	Flour Mixes and Dough From Purchased Flour	315239	Women's and Girls' Cut and Sew Other Outerwear
311823	Dry Pasta	315291	Infants' Cut and Sew Apparel
311830	Tortillas	315292	Fur and Leather Apparel
311911	Roasted Nuts and Peanut Butter	315299	All Other Cut and Sew Apparel
311919	Other Snack Foods	315991	Hats, Caps, and Millinery
311920	Coffee and Tea	315992	Gloves and Mittens
311930	Flavoring Syrups and Concentrates	315993	Men's and Boys' Neckwear
311941	Mayonnaise, Dressing, and Other Prepared Sauces	315999	Other Apparel Accessories and Other Apparel
311942	Spices and Extracts		
311991	Perishable Prepared Foods		
311999	All Other Miscellaneous Foods		
	<b>BEVERAGE AND TOBACCO PRODUCTS</b>	<b>16A</b>	<b>Leather and Allied Product Manufacturing</b>
<b>12A</b>	<b>Beverage Manufacturing</b>	316110	Leather and Hide Tanning and Finishing
312111	Soft Drinks	316211	Rubber and Plastics Footwear
312112	Bottled Water	316212	House Slippers
312113	Ice	316213	Men's Footwear (Except Athletic)
312120	Breweries	316214	Women's Footwear (Except Athletic)
312130	Wineries	316219	Other Footwear
312140	Distilleries	316991	Luggage
<b>12B</b>	<b>Tobacco Manufacturing</b>	316992	Women's Handbags and Purses
312210	Tobacco Stemming and Redrying	316993	Personal Leather Goods (Except Women's Handbags and Purses)
312221	Cigarettes	316999	All Other Leather Goods
312229	Other Tobacco Products		
	<b>TEXTILE MILLS</b>	<b>21A</b>	<b>WOOD PRODUCTS</b>
<b>13A</b>	<b>Textile Mills</b>	321991	<b>Wood Building and Mobile Home Manufacturing</b>
313111	Yarn Spinning	321992	Manufactured Homes (Mobile Homes)
313112	Yarn Texturing, Throwing, and Twisting		Prefabricated Wood Buildings
313113	Thread	<b>21B</b>	<b>Other Wood Product Manufacturing</b>
313210	Broadwoven Fabric	321113	Sawmills
313221	Narrow Fabric	321114	Wood Preservation
313222	Schiffli Machine Embroidery	321211	Hardwood Veneer and Plywood
		321212	Softwood Veneer and Plywood
		321213	Engineered Wood Members (Except Trusses)
		321214	Trusses
		321219	Reconstituted Wood Products

M3/NAICS code	M3 category title with comparable NAICS titles	M3/NAICS code	M3 category title with comparable NAICS titles
	<b>WOOD PRODUCTS—Con.</b>		<b>CHEMICAL PRODUCTS—Con.</b>
321911	Wood Windows and Doors	325199	All Other Basic Organic Chemicals
321912	Cut Stock, Resawing Lumber, and Planing	325211	Plastics Material and Resins
321918	Other Millwork (Including Flooring)	325212	Synthetic Rubber
321920	Wood Containers and Pallets	325221	Cellulosic Organic Fibers
321999	All Other Miscellaneous Wood Products	325222	Noncellulosic Organic Fibers
	<b>PAPER PRODUCTS</b>	325611	Soaps and Detergents
	<b>Pulp, Paper, and Paperboard Mills</b>	325612	Polish and Other Sanitation Goods
322110	Pulp	325613	Surface Active Agents
322121	Paper (Except Newsprint)	325620	Toilet Preparations
322122	Newsprint	325910	Printing Inks
322130	Paperboard	325920	Explosives
	<b>Paperboard Container Manufacturing</b>	325991	Custom Compounding of Purchased Resins
322211	Corrugated and Solid Fiber Boxes	325992	Photographic Film, Paper, Plates, and Chemicals
322212	Folding Paperboard Boxes	325998	All Other Miscellaneous Chemical Products and Preparations
322213	Setup Paperboard Boxes		
322214	Fiber Cans, Tubes, Drums, and Similar Products	<b>26A</b>	<b>PLASTICS AND RUBBER PRODUCTS</b>
322215	Nonfolding Sanitary Food Containers	326211	<b>Tire Manufacturing</b>
	<b>Other Paper Manufacturing</b>	326212	Tires (Except Retreading)
322221	Coated and Laminated Packaging Paper and Plastics Film		Tire Retreading
322222	Coated and Laminated Paper	<b>26B</b>	<b>Other Plastics and Rubber Product Manufacturing</b>
322223	Plastics, Foil, and Coated Paper Bags	326111	Unsupported Plastics Bags
322224	Uncoated Paper and Multiwall Bags	326112	Unsupported Plastics Packaging Film and Sheets
322225	Laminated Aluminum Foil for Flexible Packaging Uses	326113	Unsupported Plastics Film and Sheets (Except Packaging)
322226	Surface-Coated Paperboard	326121	Unsupported Plastics Profile Shapes
322231	Die-Cut Paper and Paperboard Office Supplies	326122	Plastics Pipe and Pipe Fitting
322232	Envelopes	326130	Laminated Plastics Plate, Sheet, and Shapes
322233	Stationery, Tablets, and Related Products	326140	Polystyrene Foam Products
322291	Sanitary Paper Products	326150	Urethane and Other Foam Products (Except Polystyrene)
322299	All Other Converted Paper Products	326160	Plastics Bottles
	<b>PRINTING</b>	326191	Plastics Plumbing Fixtures
	<b>Printing and Related Support Activities</b>	326192	Resilient Floor Coverings
323110	Commercial Lithographic	326199	All Other Plastics Products
323111	Commercial Gravure	326220	Rubber and Plastics Hoses and Belting
323112	Commercial Flexographic	326291	Rubber Product for Mechanical Use
323113	Commercial Screen	326299	All Other Rubber Products
323114	Quick		
323115	Digital	<b>27A</b>	<b>NONMETALLIC MINERAL PRODUCTS</b>
323116	Manifold Business Forms	327111	<b>Nonmetallic Mineral Product Manufacturing</b>
323117	Books	327112	Vitreous China Plumbing Fixture and China and Earthenware Bathroom Accessories
323118	Blankbook, Looseleaf Binders, and Devices	327113	Vitreous China, Fine Earthenware, and Other Pottery Products
323119	Other Commercial	327121	Porcelain Electrical Supplies
323121	Tradebinding and Related Work	327122	Brick and Structural Clay Tiles
323122	Prepress Services	327123	Ceramic Wall and Floor Tiles
	<b>PETROLEUM AND COAL PRODUCTS</b>	327124	Other Structural Clay Products
	<b>Petroleum Refineries</b>	327125	Clay Refractories
324110	Petroleum	327211	Nonclay Refractories
	<b>Asphalt Paving, Roofing, and Saturated Materials Manufacturing</b>	327212	Flat Glass
324121	Asphalt Paving Mixtures and Blocks	327213	Other Pressed and Blown Glass and Glassware
324122	Asphalt Shingle and Coating Materials	327215	Glass Containers
	<b>Other Petroleum and Coal Products Manufacturing</b>	327310	Glass Product Made of Purchased Glass
324191	Petroleum Lubricating Oils and Greases	327320	Cement
324199	All Other Petroleum and Coal Products	327331	Ready-Mix Concrete
	<b>CHEMICAL PRODUCTS</b>	327332	Concrete Block and Brick
	<b>Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing</b>	327390	Concrete Pipe
325311	Nitrogenous Fertilizer	327410	Other Concrete Products
325312	Phosphatic Fertilizer	327420	Lime
325314	Fertilizer (Mixing Only)	327910	Gypsum Products
325320	Pesticides and Agricultural Chemicals	327991	Abrasive Products
	<b>Pharmaceutical and Medicine Manufacturing</b>	327992	Cut Stone and Stone Products
325411	Medicinals and Botanicals	327993	Ground or Treated Mineral and Earth
325412	Pharmaceutical Preparations	327999	Mineral Wool
325413	In-Vitro Diagnostic Substances		All Other Miscellaneous Nonmetallic Mineral Products
325414	Biological Products (Except Diagnostic)	<b>31A</b>	<b>PRIMARY METALS</b>
	<b>Paint, Coating, and Adhesive Manufacturing</b>	331111	<b>Iron and Steel Mills and Ferrous and Ferroalloy and Steel Products Manufacturing</b>
325510	Paints and Coatings	331112	Iron and Steel
325520	Adhesives	331210	Electrometallurgical Ferroalloy Products
	<b>Other Chemical Manufacturing</b>	331221	Iron and Steel Pipes and Tubes From Purchased Steel
325110	Petrochemicals	331222	Rolled Steel Shapes
325120	Industrial Gases		Steel Wire Drawing
325131	Inorganic Dyes and Pigments	<b>31B</b>	<b>Alumina, Aluminum, and Nonferrous Metal Production and Processing</b>
325132	Synthetic Organic Dyes and Pigments	331311	Alumina Refining
325181	Alkalies and Chlorines	331312	Primary Aluminum Production
325182	Carbon Black	331314	Secondary Smelting and Alloying of Aluminum
325188	All Other Basic Inorganic Chemicals	331315	Aluminum Sheet, Plate, and Foil
325191	Gum and Wood Chemicals	331316	Aluminum Extruded Products
325192	Cyclic Crudes and Intermediates	331319	Other Aluminum Rolling and Drawing
325193	Ethyl Alcohol	331411	Primary Smelting and Refining of Copper
		331419	Primary Smelting and Refining of Nonferrous Metal (Except Copper and Aluminum)
		331421	Copper Rolling, Drawing, and Extruding
		331422	Copper Wire (Except Mechanical) Drawing
		331423	Secondary Smelting, Refining, and Alloying of Copper



M3/NAICS code	M3 category title with comparable NAICS titles	M3/NAICS code	M3 category title with comparable NAICS titles
	<b>PRIMARY METALS—Con.</b>		<b>MACHINERY—Con.</b>
331491	Nonferrous Metal (Except Copper and Aluminum) Rolling, Drawing, Extruding, and Alloying	333210	Sawmill and Woodworking Machinery
331492	Secondary Smelting, Refining, and Alloying of Nonferrous Metal (Except Copper and Aluminum)	333220	Plastics and Rubber Industry Machinery
<b>31C</b>	<b>Ferrous Metal Foundries</b>	333291	Paper Industry Machinery
331511	Iron	333292	Textile Machinery
331512	Steel Investment	333293	Printing Machinery and Equipment
331513	Steel (Except Investment)	333294	Food Product Machinery
<b>31D</b>	<b>Nonferrous Metal Foundries</b>	333295	Semiconductor Machinery
331521	Aluminum Die-Casting	333298	All Other Industrial Machinery
331522	Nonferrous (Except Aluminum) Die-Casting	<b>33F</b>	<b>Vending, Laundry, and Other Machinery Manufacturing</b>
331524	Aluminum (Except Die-Casting)	333311	Automatic Vending Machines
331525	Copper (Except Die-Casting)	333312	Commercial Laundry, Drycleaning, and Pressing Machines
331528	Other Nonferrous (Except Die-Casting)	333319	Other Commercial and Service Industry Machinery
	<b>FABRICATED METAL PRODUCTS</b>	<b>33G</b>	<b>Photographic Equipment Manufacturing</b>
<b>32A</b>	<b>Forging and Stamping</b>	333313	Office Machinery
332111	Iron and Steel Forging	333314	Optical Instruments and Lenses
332112	Nonferrous Forging	333315	Photographic and Photocopying Equipment
332114	Custom Roll Forming	<b>33H</b>	<b>Ventilation, Heating, Air-Conditioning, and Refrigeration Equipment Manufacturing</b>
332115	Crowns and Closures	333411	Air Purification Equipment
332116	Metal Stampings	333412	Industrial and Commercial Fans and Blowers
332117	Powder Metallurgy Parts	333414	Heating Equipment (Except Warm Air Furnaces)
<b>32B</b>	<b>Cutlery and Handtool Manufacturing</b>	333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment
332211	Cutlery and Flatware (Except Precious)	<b>33I</b>	<b>Metalworking Machinery Manufacturing</b>
332212	Hand and Edge Tools	333511	Industrial Molds
332213	Saw Blades and Handsaws	333512	Machine Tools (Metal Cutting Types)
332214	Kitchen Utensils, Pots, and Pans	333513	Machine Tools (Metal Forming Types)
<b>32C</b>	<b>Boiler, Tank, and Shipping Container Manufacturing</b>	333514	Special Dies and Tools, Die Sets, Jigs, and Fixtures
332410	Power Boilers and Heat Exchangers	333515	Cutting Tools and Machine Tool Accessories
332420	Metal Tanks (Heavy Gauge)	333516	Rolling Mill Machinery and Equipment
332431	Metal Cans	333518	Other Metalworking Machinery
332439	Other Metal Containers	<b>33J</b>	<b>Turbine and Generator Manufacturing</b>
<b>32D</b>	<b>Metal Valve Manufacturing</b>	333611	Turbines and Turbine Generator Set Units
332911	Industrial Valves	<b>33K</b>	<b>Other Power Transmission Equipment Manufacturing</b>
332912	Fluid Power Valves and Hose Fittings	333612	Speed Changers, Industrial High-Speed Drives, and Gears
332913	Plumbing Fixture Fittings and Trim	333613	Mechanical Power Transmission Equipment
332919	Other Metal Valve and Pipe Fittings	333618	Other Engine Equipment
<b>32E</b>	<b>Small Arms and Ordnance Manufacturing, Nondefense</b>	<b>33L</b>	<b>Pump and Compressor Manufacturing</b>
332992	Small Arms Ammunition	333911	Pumps and Pumping Equipment
332993	Ammunition (Except Small Arms)	333912	Air and Gas Compressors
332994	Small Arms	333913	Measuring and Dispensing Pumps
332995	Other Ordnance and Accessories	<b>33M</b>	<b>Material Handling Equipment Manufacturing</b>
<b>32F</b>	<b>Small Arms and Ordnance Manufacturing, Defense</b>	333921	Elevators and Moving Stairways
332992	Small Arms Ammunition	333922	Conveyors and Conveying Equipment
332993	Ammunition (Except Small Arms)	333923	Overhead Traveling Cranes, Hoists, and Monorail Systems
332994	Small Arms	333924	Industrial Trucks, Tractors, Trailers, and Stacker Machinery
332995	Other Ordnance and Accessories	<b>33N</b>	<b>All Other Machinery Manufacturing</b>
<b>32G</b>	<b>Other Fabricated Metal Product Manufacturing</b>	333991	Power-Driven Handtools
332311	Prefabricated Metal Buildings and Components	333992	Welding and Soldering Equipment
332312	Fabricated Structural Metal	333993	Packaging Machinery
332313	Plate Work	333994	Industrial Process Furnaces and Ovens
332321	Metal Windows and Doors	333995	Fluid Power Cylinders and Actuators
332322	Sheet Metal Work	333996	Fluid Power Pumps and Motors
332323	Ornamental and Architectural Metal Work	333997	Scales and Balances (Except Laboratory)
332510	Hardware	333999	All Other Miscellaneous General Purpose Machinery
332611	Spring (Heavy Gauge)		<b>COMPUTERS AND ELECTRONIC PRODUCTS</b>
332612	Spring (Light Gauge)	<b>34A</b>	<b>Computer Manufacturing</b>
332618	Other Fabricated Wire Products	334111	Computers
332710	Machine Shops	<b>34B</b>	<b>Computer Storage Device Manufacturing</b>
332721	Precision Turned Products	334112	Computer Storage Devices
332722	Bolts, Nuts, Screws, Rivets, and Washers	<b>34C</b>	<b>Other Computer Peripheral Equipment Manufacturing</b>
332811	Metal Heat Treating	334113	Computer Terminals
332812	Metal Coating, Engraving (Except Jewelry and Silverware), and Allied Services to Manufacturers	334119	Other Computer Peripheral Equipment
332813	Electroplating, Plating, Polishing, Anodizing, and Coloring	<b>34D</b>	<b>Communications Equipment Manufacturing, Nondefense</b>
332991	Ball and Roller Bearings	334210	Telephone Apparatus
332996	Fabricated Pipe and Pipe Fittings	334220	Radio and Television Broadcasting and Wireless Communications Equipment
332997	Industrial Patterns		Other Communications Equipment
332998	Enameled Iron and Metal Sanitary Ware	<b>34E</b>	<b>Communications Equipment Manufacturing, Defense</b>
332999	All Other Miscellaneous Fabricated Metal Products	334210	Telephone Apparatus
	<b>MACHINERY</b>	334220	Radio and Television Broadcasting and Wireless Communications Equipment
<b>33A</b>	<b>Farm Machinery and Equipment Manufacturing</b>	334290	Other Communications Equipment
333111	Farm Machinery and Equipment	<b>34F</b>	<b>Audio and Video Equipment Manufacturing</b>
<b>33B</b>	<b>Lawn and Garden Tractors and Equipment Manufacturing</b>	334310	Audio and Video Equipment
333112	Lawn and Garden Tractors and Home Lawn and Garden Equipment	<b>34G</b>	<b>Semiconductor and Related Device Manufacturing</b>
<b>33C</b>	<b>Construction Machinery Manufacturing</b>	334413	Semiconductors and Related Devices
333120	Construction Machinery	<b>34H</b>	<b>Other Electronic Component Manufacturing</b>
<b>33D</b>	<b>Mining, Oil, and Gas Field Machinery Manufacturing</b>	334411	Electron Tubes
333131	Mining Machinery and Equipment	334412	Bare Printed Circuit Boards
333132	Oil and Gas Field Machinery and Equipment	334414	Electronic Capacitors
<b>33E</b>	<b>Industrial Machinery Manufacturing</b>	334415	Electronic Resistors

M3/NAICS code	M3 category title with comparable NAICS titles	M3/NAICS code	M3 category title with comparable NAICS titles
	<b>COMPUTERS AND ELECTRONIC PRODUCTS—Con.</b>		<b>TRANSPORTATION EQUIPMENT—Con.</b>
334416	Electronic Coils, Transformers, and Other Inductors	336360	Motor Vehicle Seating and Interior Trim
334417	Electronic Connectors	336370	Motor Vehicle Metal Stamping
334418	Printed Circuit Assemblies (Electronic Assemblies)	336391	Motor Vehicle Air-Conditioning
334419	Other Electronic Components	336399	All Other Motor Vehicle Parts
<b>34I</b>	<b>Search and Navigation Equipment Manufacturing, Nondefense</b>	<b>36F</b>	<b>Aircraft Manufacturing, Nondefense</b>
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instruments	336411	Aircraft
<b>34J</b>	<b>Search and Navigation Equipment Manufacturing, Defense</b>	<b>36G</b>	<b>Aircraft Manufacturing, Defense</b>
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instruments	336411	Aircraft
<b>34K</b>	<b>Electromedical, Measuring, and Control Instrument Manufacturing</b>	<b>36H</b>	<b>Aircraft Engine and Parts Manufacturing, Nondefense</b>
334510	Electromedical and Electrotherapeutic Apparatus	336412	Aircraft Engines and Engine Parts
334512	Automatic Environmental Controls for Residential, Commercial, and Appliance Use	336413	Other Aircraft Parts and Auxiliary Equipment
334513	Instruments and Related Products for Measuring, Displaying, and Controlling Industrial Process Variables	<b>36I</b>	<b>Aircraft Engine and Parts Manufacturing, Defense</b>
334514	Totalizing Fluid Meters and Counting Devices	336412	Aircraft Engines and Engine Parts
334515	Instruments for Measuring and Testing Electricity and Electrical Signals	336413	Other Aircraft Parts and Auxiliary Equipment
334516	Analytical Laboratory Instruments	<b>36J</b>	<b>Missile, Space Vehicle, and Parts Manufacturing, Defense</b>
334517	Irradiation Apparatus	336414	Guided Missiles and Space Vehicles
334518	Watches, Clocks, and Parts	336415	Guided Missiles and Space Vehicle Propulsion Units and Propulsion Unit Parts
334519	Other Measuring and Controlling Devices	336419	Other Guided Missiles and Space Vehicle Parts and Auxiliary Equipment
<b>34L</b>	<b>Manufacturing and Reproducing Magnetic and Optical Media</b>	<b>36K</b>	<b>Railroad Rolling Stock</b>
334611	Software Reproducing	336510	Railroad Rolling Stock
334612	Prerecorded Compact Discs (Except Software), Tapes, and Record Reproducing	<b>36L</b>	<b>Ship and Boat Building, Nondefense</b>
334613	Magnetic and Optical Recording Media	336611	Ship Building and Repairing
	<b>ELECTRICAL EQUIPMENT, APPLIANCES, AND COMPONENTS</b>	336612	Boat Building
<b>35A</b>	<b>Electric Lighting Equipment Manufacturing</b>	<b>36M</b>	<b>Ship and Boat Building, Defense</b>
335110	Electric Lamp Bulbs and Parts	336611	Ship Building and Repairing
335121	Residential Electric Lighting Fixtures	336612	Boat Building
335122	Commercial, Industrial, and Institutional Electric Lighting Fixtures	<b>36N</b>	<b>Other Transportation Equipment</b>
335129	Other Lighting Equipment	336991	Motorcycles, Bicycles, and Parts
<b>35B</b>	<b>Household Appliance Manufacturing</b>	336992	Military Armored Vehicles, Tanks, and Tank Components
335211	Electric Housewares and Household Fans	336999	All Other Transportation Equipment
335212	Household Vacuum Cleaners		
335221	Household Cooking Appliances	<b>37A</b>	<b>Household Furniture and Kitchen Cabinet Manufacturing</b>
335222	Household Refrigerators and Home Freezers	337110	Wood Kitchen Cabinets and Counter Tops
335224	Household Laundry Equipment	337121	Upholstered Household Furniture
335228	Other Major Household Appliances	337122	Wood Household Furniture (Except Upholstered)
<b>35C</b>	<b>Electrical Equipment Manufacturing</b>	337124	Metal Household Furniture
335311	Power, Distribution, and Specialty Transformers	337125	Household Furniture (Except Wood and Metal)
335312	Motors and Generators	337129	Wood Television, Radio, and Sewing Machine Cabinets
335313	Switchgear and Switchboard Apparatus	<b>37B</b>	<b>Office Furniture and Institutional Furniture Manufacturing</b>
335314	Relays and Industrial Controls	337127	Institutional Furniture
<b>35D</b>	<b>Battery Manufacturing</b>	337211	Wood Office Furniture
335911	Storage Batteries	337212	Custom Architectural Woodwork and Millwork
335912	Primary Batteries	337214	Office Furniture (Except Wood)
<b>35E</b>	<b>Other Electrical Equipment, Appliance, and Component Manufacturing</b>	337215	Showcases, Partitions, Shelving, and Lockers
335921	Fiber Optic Cables	<b>37C</b>	<b>Other Furniture Related Product Manufacturing</b>
335929	Other Communication and Energy Wires	337910	Mattresses
335931	Current-Carrying Wiring Devices	337920	Blinds and Shades
335932	Noncurrent-Carrying Wiring Devices		
335991	Carbon and Graphite Products	<b>39A</b>	<b>Medical Equipment and Supplies Manufacturing</b>
335999	All Other Miscellaneous Electrical Equipment and Components	339111	Laboratory Apparatus and Furniture
	<b>TRANSPORTATION EQUIPMENT</b>	339112	Surgical and Medical Instruments
<b>36A</b>	<b>Automobile Manufacturing</b>	339113	Surgical Appliances and Supplies
336111	Automobiles	339114	Dental Equipment and Supplies
<b>36B</b>	<b>Light Truck and Utility Vehicle Manufacturing</b>	339115	Ophthalmic Goods
336112	Light Trucks and Utility Vehicles	339116	Dental Laboratories
<b>36C</b>	<b>Heavy Duty Truck Manufacturing</b>	<b>39B</b>	<b>Sporting Goods, Doll, Toy, and Game Manufacturing</b>
336120	Heavy Duty Trucks	339920	Sporting and Athletic Goods
<b>36D</b>	<b>Motor Vehicle Body and Trailer Manufacturing</b>	339931	Dolls and Stuffed Toys
336211	Motor Vehicle Bodies	339932	Games, Toys, and Children's Vehicles
336212	Truck Trailers	<b>39C</b>	<b>Office Supplies (Except Paper) Manufacturing</b>
336213	Motor Homes	339941	Pens and Mechanical Pencils
336214	Travel Trailers and Campers	339942	Lead Pencils and Art Goods
<b>36E</b>	<b>Motor Vehicle Parts Manufacturing</b>	339943	Marking Devices
336311	Carburetors, Pistons, Piston Rings, and Valves	339944	Carbon Paper and Inked Ribbons
336312	Gasoline Engines and Engine Parts	<b>39D</b>	<b>Other Miscellaneous Manufacturing</b>
336321	Vehicular Lighting Equipment	339911	Jewelry (Except Costume)
336322	Other Motor Vehicle Electrical and Electronic Equipment	339912	Silverware and Holloware
336330	Motor Vehicle Steering and Suspension Components (Except Spring)	339913	Jewelers' Material and Lapidary Work
336340	Motor Vehicle Brake Systems	339914	Costume Jewelry and Novelties
336350	Motor Vehicle Transmission and Power Train Parts	339950	Signs
		339991	Gaskets, Packing, and Sealing Devices
		339992	Musical Instruments
		339993	Fasteners, Buttons, Needles, and Pins
		339994	Brooms, Brushes, and Mops
		339995	Burial Caskets
		339999	All Other Miscellaneous Products

# Chapter C.

## Composition of Aggregate Data Series in Terms of M3 Industry Series

---

<b>NONDEFENSE CAPITAL GOODS</b>	<b>CONSUMER NONDURABLE GOODS</b>
32E Small arms and ordnance manufacturing, nondefense	11A Grain and oilseed milling
33A Farm machinery and equipment manufacturing	11B Dairy product manufacturing
33C Construction machinery manufacturing	11C Meat, poultry, and seafood product processing
33D Mining, oil, and gas field machinery manufacturing	11D Other food manufacturing
33E Industrial machinery manufacturing	12A Beverage manufacturing
33F Vending, laundry, and other machinery manufacturing	12B Tobacco manufacturing
33G Photographic equipment manufacturing	14A Textile product mills
33I Metalworking machinery manufacturing	15A Apparel manufacturing
33J Turbine and generator manufacturing	16A Leather and allied product manufacturing
33K Other power transmission equipment manufacturing	22A Pulp, paper, and paperboard mills
33L Pump and compressor manufacturing	22C Other paper manufacturing
33M Material handling equipment manufacturing	24A Petroleum refining
33N All other machinery manufacturing	24C Other petroleum and coal products manufacturing
34A Computer manufacturing	25B Pharmaceutical and medicine manufacturing
34B Computer storage device manufacturing	
34C Other computer peripheral equipment manufacturing	<b>CONSTRUCTION MATERIALS AND SUPPLIES</b>
34D Communications equipment manufacturing, nondefense	21B Other wood product manufacturing
34I Search and navigation equipment manufacturing, nondefense	24B Asphalt paving, roofing, and saturated materials manufacturing
34K Electromedical, measuring, and control instrument manufacturing	25C Paint, coating, and adhesive manufacturing
35C Electrical equipment manufacturing	27A Nonmetallic mineral product manufacturing
35E Other electrical equipment, appliance, and component manufacturing	32G Other fabricated metal product manufacturing
36C Heavy duty truck manufacturing	33H Ventilation, heating, air-conditioning, and refrigeration equipment manufacturing
36F Aircraft manufacturing, nondefense	35A Electric lighting equipment manufacturing
36K Railroad rolling stock	
36L Ship and boat building, nondefense	<b>INFORMATION TECHNOLOGY INDUSTRIES</b>
37B Office furniture and institutional furniture manufacturing	33G Photographic equipment manufacturing
39A Medical equipment and supplies manufacturing	34A Computer manufacturing
	34B Computer storage device manufacturing
<b>DEFENSE CAPITAL GOODS</b>	34C Other computer peripheral equipment manufacturing
32F Small arms and ordnance manufacturing, defense	34D Communications equipment manufacturing, nondefense
34E Communications equipment manufacturing, defense	34E Communications equipment manufacturing, defense
34J Search and navigation equipment manufacturing, defense	34F Audio and video equipment
36G Aircraft manufacturing, defense	34I Search and navigation equipment, nondefense
36J Missile, space vehicle, and parts manufacturing, defense	34J Search and navigation equipment, defense
36M Ship and boat building, defense	34K Electromedical, measuring, and control instrument manufacturing
	34L Manufacturing and reproducing magnetic and optical media
<b>CONSUMER DURABLE GOODS</b>	35E Other electrical equipment, appliance, and component manufacturing
21A Wood building and mobile home manufacturing	
32B Cutlery and handtool manufacturing	<b>COMPUTERS AND RELATED PRODUCTS</b>
33B Lawn and garden tractors and equipment manufacturing	34A Computer manufacturing
34F Audio and video equipment manufacturing	34B Computer storage device manufacturing
35B Household appliance manufacturing	34C Other computer peripheral equipment manufacturing
36A Automobile manufacturing	
36B Light truck and utility vehicle manufacturing	<b>MOTOR VEHICLES AND PARTS</b>
37A Household furniture and kitchen cabinet manufacturing	36A Automobile manufacturing
37C Other furniture related product manufacturing	36B Light truck and utility vehicle manufacturing
39B Sporting goods, doll, toy, and game manufacturing	36C Heavy duty truck manufacturing
39C Office supplies (except paper) manufacturing	36D Motor vehicle body and trailer manufacturing
39D Other miscellaneous manufacturing	36E Motor vehicle parts manufacturing

# Chapter D.

## Benchmarking Procedures Used in Revising Monthly M3 Time Series

---

The mathematical technique used in benchmarking data in the M3 survey generally follows a trend revision minimization approach with constraints determined by annual benchmarks. The objective function F

$$F = \sum_{i=0}^{n-1} [(Y_{i+1}/Y_i) - (X_{i+1}/X_i)]^2$$

defines the sum of squared differences in the month-to-month trend between the original (X values) and revised (Y values) data. In the objective function, the value  $i = 0$  corresponds to the link or anchor month. The anchor month's value is not revised by the benchmarking procedure. The value  $n$  determines the span of months, beginning with the anchor month, to be considered in the benchmarking procedure. All months within this span, except for the anchor month, are revised based on constraints defined below. Since the count begins with  $i = 0$ , the last month in the span is represented by  $i = n-1$ .

For shipments and inventories, the anchor month is December 2000. The value  $n$  is 61 and represents the 61-month period ranging from December 2000 to December 2005. For unfilled orders, the anchor month is December 2000. The value  $n$  is 61 and represents the 61 months from December 2000 to December 2005. Therefore, when benchmarking,

December 2000 corresponds to  $i = 0$  for shipments, inventories, and unfilled orders,

December 2005 corresponds to  $i = n-1 = 60$  for shipments and inventories and to  $i = n-1 = 60$  for unfilled orders,

$Y_{i+1}/Y_i$  is the revised ratio of change from month  $i$  to month  $i + 1$ , and

$X_{i+1}/X_i$  is the original ratio of change from month  $i$  to month  $i + 1$ .

For shipments, inventories, and unfilled orders, monthly data for the 89 M3 industry categories are benchmarked using the trend minimization function F.

When benchmarking shipments, the constraints are:

$$\sum Y_i = 2001 \text{ ASM benchmark: } i \in 2001$$

$$\sum Y_i = 2002 \text{ Economic Census benchmark: } i \in 2002$$

$$\sum Y_i = 2003 \text{ ASM benchmark: } i \in 2003$$

$$\sum Y_i = 2004 \text{ ASM benchmark: } i \in 2004$$

$$\sum Y_i = 2005 \text{ ASM benchmark: } i \in 2005$$

When benchmarking inventories, the constraints are:

$$Y_{12} = 2002 \text{ Economic Census beginning inventories benchmark: } i \in 2001$$

$$Y_{24} = 2002 \text{ Economic Census ending inventories benchmark: } i \in 2002$$

$$Y_{36} = 2004 \text{ ASM beginning inventories benchmark: } i \in 2003$$

$$Y_{48} = 2004 \text{ ASM ending inventories benchmark: } i \in 2004$$

$$Y_{60} = 2005 \text{ ASM ending inventories benchmark: } i \in 2005$$

---

When benchmarking unfilled orders, the constraints are:

- $Y_{12}$  = December 2001 unfilled orders benchmark
- $Y_{24}$  = December 2002 unfilled orders benchmark
- $Y_{36}$  = December 2003 unfilled orders benchmark
- $Y_{48}$  = December 2004 unfilled orders benchmark
- $Y_{60}$  = December 2005 unfilled orders benchmark

All benchmarks for unfilled orders are derived since the item is not collected in the ASM or Economic Census. It is derived each year by assuming that the ratio of the benchmark value to the original December unfilled orders value is the same as the ratio of the shipments benchmark value to the sum of the monthly original shipments values.

The three stages of fabrication inventories (finished goods, work in process, and materials and supplies) are benchmarked in similar fashion to total inventories. However, stage of fabrication inventories are tabulated only at three-digit NAICS subsector levels. Therefore, the monthly benchmarked results are summed across industry categories to the subsector level. If, after benchmarking, the sum of the three detail values does not equal the total inventories value for a given month at the subsector level, then the imbalance is eliminated by raking the difference across the stages. The raking is performed by adjusting each original (i.e., benchmarked) detail value by the ratio of total inventories for the month to the sum of the original details.

Monthly new orders estimates are derived consistent with the benchmarked shipments and unfilled orders monthly data using the following formula:

$$X_i = S_i + (Y_i - Y_{i-1})$$

for  $i = 1$  through  $n-1 = 60$ , and where

- $i = 1$  corresponds to January 2001,
- $i = 60$  corresponds to December 2005,
- $X_i$  is benchmarked new orders for month  $i$ ,
- $S_i$  is benchmarked shipments for month  $i$ , and
- $Y_{i-1}$  is benchmarked unfilled orders for month  $i-1$ .



Table D-1. **Benchmark Data for Shipments for M3 Industry Categories: 2001–2005**

[Million dollars]

Industry category	Shipments				
	2001	2002	2003	2004	2005
<b>All manufacturing industries</b> .....	<b>3,970,499</b>	<b>3,914,719</b>	<b>4,015,388</b>	<b>4,308,970</b>	<b>4,735,385</b>
<b>Durable goods industries</b> .....	<b>2,174,406</b>	<b>2,123,623</b>	<b>2,142,588</b>	<b>2,264,667</b>	<b>2,420,344</b>
<b>Wood products</b> .....	<b>87,250</b>	<b>89,020</b>	<b>92,069</b>	<b>104,135</b>	<b>112,017</b>
Wood building and mobile home manufacturing .....	10,647	10,468	9,693	10,553	11,811
Other wood product manufacturing .....	76,603	78,552	82,376	93,582	100,206
<b>Nonmetallic mineral products</b> .....	<b>94,861</b>	<b>95,064</b>	<b>96,945</b>	<b>102,880</b>	<b>114,321</b>
<b>Primary metals</b> .....	<b>138,246</b>	<b>139,436</b>	<b>138,270</b>	<b>181,602</b>	<b>201,835</b>
Iron and steel mills and ferroalloy and steel product manufacturing .....	60,559	62,543	63,116	94,629	102,389
Alumina, aluminum, and nonferrous metal production and processing .....	49,712	50,327	49,694	58,834	68,924
Ferrous metal foundries .....	16,668	15,016	14,574	16,845	18,739
Nonferrous metal foundries .....	11,307	11,550	10,886	11,294	11,783
<b>Fabricated metal products</b> .....	<b>253,113</b>	<b>246,847</b>	<b>245,340</b>	<b>261,101</b>	<b>288,068</b>
Forging and stamping .....	24,601	21,362	21,870	25,236	28,181
Cutlery and handtool manufacturing .....	11,916	11,035	10,498	9,966	10,680
Boiler, tank, and shipping container manufacturing .....	22,272	22,984	22,723	23,179	24,940
Metal valve manufacturing .....	21,752	21,571	21,421	22,101	24,007
Small arms and ordnance manufacturing .....	4,600	5,116	5,975	6,574	6,386
Other fabricated metal product manufacturing .....	167,972	164,779	162,853	174,045	193,874
<b>Machinery</b> .....	<b>266,554</b>	<b>255,321</b>	<b>257,429</b>	<b>272,123</b>	<b>302,202</b>
Farm machinery and equipment manufacturing .....	14,060	14,803	15,527	17,725	20,091
Lawn and garden tractors and equipment manufacturing .....	6,733	7,081	7,905	8,023	8,346
Construction machinery manufacturing .....	20,588	19,064	20,190	25,029	31,083
Mining, oil, and gas field machinery manufacturing .....	8,478	7,484	7,735	8,864	10,717
Industrial machinery manufacturing .....	35,211	33,051	31,267	34,141	34,242
Vending, laundry, and other machinery manufacturing .....	12,794	13,203	13,003	13,200	13,786
Photographic equipment manufacturing .....	9,530	7,357	6,944	7,412	7,656
Ventilation, heating, air-conditioning, and refrigeration equipment manufacturing .....	33,139	32,185	32,740	34,374	38,073
Metalworking machinery manufacturing .....	26,684	24,852	24,033	24,592	26,949
Turbine and generator manufacturing .....	12,449	14,966	13,631	6,255	6,825
Other power transmission equipment manufacturing .....	24,781	23,507	25,284	28,893	32,279
Pump and compressor manufacturing .....	14,098	12,691	13,732	14,842	17,037
Material handling equipment manufacturing .....	18,116	16,103	16,668	18,776	22,207
All other machinery manufacturing .....	29,893	28,974	28,770	29,997	32,911
<b>Computers and electronic products</b> .....	<b>429,471</b>	<b>357,324</b>	<b>352,272</b>	<b>365,545</b>	<b>373,932</b>
Computer manufacturing .....	55,869	47,730	45,893	41,045	43,531
Computer storage device manufacturing .....	14,063	9,458	8,443	6,761	8,128
Other computer peripheral equipment manufacturing .....	19,597	16,619	14,737	15,464	16,810
Communications equipment manufacturing .....	102,004	65,065	60,943	61,369	59,060
Audio and video equipment manufacturing .....	8,942	8,649	8,359	10,549	10,371
Semiconductor and related device manufacturing .....	63,173	61,435	66,608	72,356	75,491
Other electronic component manufacturing .....	61,042	48,800	46,590	43,831	44,615
Search and navigation equipment manufacturing .....	35,345	32,250	33,024	39,455	36,875
Electromedical, measuring, and control instrument manufacturing .....	61,824	59,768	60,045	66,706	71,348
Manufacturing and reproducing magnetic and optical media .....	7,612	7,550	7,631	8,009	7,703
<b>Electrical equipment, appliances, and components</b> .....	<b>114,068</b>	<b>102,845</b>	<b>99,906</b>	<b>105,084</b>	<b>112,007</b>
Electric lighting equipment manufacturing .....	12,498	12,402	11,701	12,278	13,053
Household appliance manufacturing .....	22,299	22,270	23,026	23,989	24,620
Electrical equipment manufacturing .....	33,934	31,399	30,083	31,729	33,708
Battery manufacturing .....	6,886	6,421	6,286	6,021	6,662
Other electrical equipment, appliance, and component manufacturing .....	38,451	30,353	28,810	31,067	33,964
<b>Transportation equipment</b> .....	<b>602,495</b>	<b>636,711</b>	<b>655,871</b>	<b>662,000</b>	<b>687,289</b>
Automobile manufacturing .....	87,046	88,127	86,236	86,847	86,761
Light truck and utility vehicle manufacturing .....	116,468	137,070	162,241	154,769	147,634
Heavy duty truck manufacturing .....	12,613	15,503	14,954	20,284	25,073
Motor vehicle body and trailer manufacturing .....	24,209	24,342	25,989	30,025	33,515
Motor vehicle parts manufacturing .....	186,839	204,519	202,293	202,642	206,342
Aircraft manufacturing .....	67,853	64,307	58,767	59,971	65,413
Aircraft engine and parts manufacturing .....	50,373	44,332	44,164	45,879	48,572
Missile, space vehicle, and parts manufacturing .....	16,641	16,047	18,042	15,132	23,120
Railroad rolling stock .....	8,604	7,880	7,401	7,906	9,205
Ship and boat building .....	19,042	21,235	22,078	24,005	25,516
Other transportation equipment .....	12,807	13,349	13,706	14,540	16,138

See footnote at end of table.

Table D-1. **Benchmark Data for Shipments for M3 Industry Categories: 2001–2005—Con.**

[Million dollars]

Industry category	Shipments				
	2001	2002	2003	2004	2005
<b>Durable goods industries—Con.</b>					
<b>Furniture and related products</b> .....	<b>72,147</b>	<b>75,841</b>	<b>75,275</b>	<b>78,280</b>	<b>84,291</b>
Household furniture and kitchen cabinet manufacturing .....	37,400	39,902	39,393	40,680	43,571
Office furniture and institutional furniture manufacturing .....	27,111	28,032	27,965	28,934	31,303
Other furniture-related product manufacturing .....	7,636	7,907	7,917	8,666	9,417
<b>Miscellaneous products</b> .....	<b>116,201</b>	<b>125,212</b>	<b>129,211</b>	<b>131,917</b>	<b>144,382</b>
Medical equipment and supplies manufacturing .....	57,766	61,768	65,658	66,777	75,207
Sporting goods, doll, toy, and game manufacturing .....	15,234	15,909	15,974	15,237	16,181
Office supplies manufacturing .....	3,835	4,214	3,991	3,853	3,840
Other miscellaneous manufacturing .....	39,366	43,321	43,588	46,050	49,154
<b>Nondurable goods industries</b> .....	<b>1,796,093</b>	<b>1,791,102</b>	<b>1,872,799</b>	<b>2,044,303</b>	<b>2,315,041</b>
<b>Food products</b> .....	<b>451,385</b>	<b>458,206</b>	<b>488,518</b>	<b>512,339</b>	<b>534,879</b>
Grain and oilseed milling .....	46,176	47,199	53,822	58,983	59,480
Dairy product manufacturing .....	65,512	66,212	67,774	73,446	76,926
Meat, poultry, and seafood product manufacturing .....	134,243	131,625	143,064	151,010	160,582
Other food manufacturing .....	205,454	213,170	223,858	228,900	237,891
<b>Beverage and tobacco products</b> .....	<b>118,786</b>	<b>105,456</b>	<b>109,080</b>	<b>113,737</b>	<b>123,636</b>
Beverage manufacturing .....	65,688	65,843	70,082	74,898	80,922
Tobacco manufacturing .....	53,098	39,613	38,998	38,839	42,714
<b>Textile mills</b> .....	<b>45,681</b>	<b>45,497</b>	<b>42,653</b>	<b>40,898</b>	<b>41,149</b>
<b>Textile products</b> .....	<b>31,971</b>	<b>32,082</b>	<b>31,256</b>	<b>33,636</b>	<b>36,706</b>
<b>Apparel</b> .....	<b>54,598</b>	<b>41,901</b>	<b>38,645</b>	<b>32,873</b>	<b>31,650</b>
<b>Leather and allied products</b> .....	<b>8,834</b>	<b>5,906</b>	<b>5,807</b>	<b>5,812</b>	<b>6,013</b>
<b>Paper products</b> .....	<b>155,845</b>	<b>153,755</b>	<b>151,098</b>	<b>155,380</b>	<b>162,848</b>
Pulp, paper, and paperboard mills .....	71,987	69,967	68,316	71,625	75,428
Paperboard container manufacturing .....	45,817	43,531	43,436	44,507	46,127
Other paper manufacturing .....	38,041	40,257	39,346	39,248	41,293
<b>Printing</b> .....	<b>100,792</b>	<b>95,612</b>	<b>92,553</b>	<b>93,595</b>	<b>97,095</b>
<b>Petroleum and coal products</b> .....	<b>219,074</b>	<b>215,513</b>	<b>247,119</b>	<b>330,439</b>	<b>476,075</b>
Petroleum refineries .....	199,909	193,528	223,700	305,331	445,910
Asphalt paving, roofing, and saturated materials manufacturing .....	11,724	13,644	14,506	15,666	17,345
Other petroleum and coal products manufacturing .....	7,441	8,341	8,913	9,442	12,820
<b>Chemical products</b> .....	<b>438,410</b>	<b>462,499</b>	<b>487,742</b>	<b>540,884</b>	<b>604,501</b>
Pesticide, fertilizer, and other agricultural chemical manufacturing .....	19,289	19,307	21,272	24,265	27,827
Pharmaceutical and medicine manufacturing .....	130,021	142,978	151,927	157,610	165,969
Paint, coating, and adhesive manufacturing .....	27,720	27,382	28,062	30,323	32,802
Other chemical manufacturing .....	261,380	272,832	286,481	328,686	377,903
<b>Plastics and rubber products</b> .....	<b>170,717</b>	<b>174,675</b>	<b>178,328</b>	<b>184,710</b>	<b>200,489</b>
Tire manufacturing .....	14,531	14,743	15,352	15,861	16,375
Other plastics and rubber product manufacturing .....	156,186	159,932	162,976	168,849	184,114

Note: Detail may not add to total because of independent rounding.

Table D-2. **Benchmark Data for Total Inventories for M3 Industry Categories: 2001–2005**

[Million dollars]

Industry category	Inventories				
	2001	2002	2003	2004	2005
<b>All manufacturing industries</b> .....	<b>417,487</b>	<b>412,328</b>	<b>397,631</b>	<b>428,321</b>	<b>466,171</b>
<b>Durable goods industries</b> .....	<b>260,271</b>	<b>253,198</b>	<b>239,946</b>	<b>258,736</b>	<b>278,602</b>
<b>Wood products</b> .....	<b>9,304</b>	<b>9,502</b>	<b>9,605</b>	<b>10,836</b>	<b>11,829</b>
Wood building and mobile home manufacturing .....	592	596	605	716	884
Other wood product manufacturing .....	8,712	8,906	9,000	10,120	10,945
<b>Nonmetallic mineral products</b> .....	<b>9,280</b>	<b>9,488</b>	<b>9,171</b>	<b>9,726</b>	<b>10,373</b>
<b>Primary metals</b> .....	<b>19,717</b>	<b>19,620</b>	<b>18,566</b>	<b>24,563</b>	<b>26,437</b>
Iron and steel mills and ferroalloy and steel product manufacturing .....	10,655	10,976	9,920	14,534	15,010
Alumina, aluminum, and nonferrous metal production and processing .....	6,443	6,072	6,150	7,150	8,173
Ferrous metal foundries .....	1,607	1,584	1,544	1,879	2,171
Nonferrous metal foundries .....	1,012	988	952	1,000	1,083
<b>Fabricated metal products</b> .....	<b>30,821</b>	<b>30,650</b>	<b>29,189</b>	<b>33,090</b>	<b>36,358</b>
Forging and stamping .....	2,839	2,785	2,792	3,357	3,616
Cutlery and handtool manufacturing .....	1,816	1,823	1,540	1,538	1,643
Boiler, tank, and shipping container manufacturing .....	2,495	2,379	2,255	2,568	2,871
Metal valve manufacturing .....	4,016	3,886	3,382	3,646	3,916
Small arms and ordnance manufacturing .....	899	1,005	1,195	1,227	1,072
Other fabricated metal product manufacturing .....	18,756	18,772	18,025	20,754	23,240
<b>Machinery</b> .....	<b>41,954</b>	<b>40,955</b>	<b>37,653</b>	<b>40,071</b>	<b>44,065</b>
Farm machinery and equipment manufacturing .....	2,145	2,110	1,923	2,229	2,331
Lawn and garden tractors and equipment manufacturing .....	1,087	997	1,103	1,096	1,269
Construction machinery manufacturing .....	3,431	3,137	2,714	3,323	3,975
Mining, oil, and gas field machinery manufacturing .....	2,192	2,134	2,108	2,189	2,584
Industrial machinery manufacturing .....	6,793	7,302	6,009	6,215	6,376
Vending, laundry, and other machinery manufacturing .....	1,867	1,840	1,720	1,765	1,786
Photographic equipment manufacturing .....	1,137	1,131	1,131	1,131	1,183
Ventilation, heating, air-conditioning, and refrigeration equipment manufacturing .....	3,575	3,310	3,163	3,514	3,773
Metalworking machinery manufacturing .....	4,606	4,351	3,822	4,115	4,497
Turbine and generator manufacturing .....	1,924	1,607	1,413	1,025	1,089
Other power transmission equipment manufacturing .....	2,932	2,953	2,873	3,197	3,697
Pump and compressor manufacturing .....	2,334	2,323	2,311	2,407	2,585
Material handling equipment manufacturing .....	2,283	2,199	2,044	2,351	2,563
All other machinery manufacturing .....	5,648	5,561	5,319	5,514	6,357
<b>Computers and electronic products</b> .....	<b>49,429</b>	<b>44,608</b>	<b>39,779</b>	<b>41,597</b>	<b>38,819</b>
Computer manufacturing .....	1,819	1,962	1,576	1,259	1,108
Computer storage device manufacturing .....	1,211	1,207	827	777	1,038
Other computer peripheral equipment manufacturing .....	2,261	2,106	1,709	1,919	1,959
Communications equipment manufacturing .....	13,316	11,329	9,914	10,560	7,296
Audio and video equipment manufacturing .....	804	790	703	838	901
Semiconductor and related device manufacturing .....	5,584	5,518	4,841	4,996	5,520
Other electronic component manufacturing .....	8,091	6,941	5,928	6,189	6,101
Search and navigation equipment manufacturing .....	5,780	4,668	4,754	5,149	4,643
Electromedical, measuring, and control instrument manufacturing .....	10,121	9,694	9,079	9,460	9,807
Manufacturing and reproducing magnetic and optical media .....	442	393	448	450	446
<b>Electrical equipment, appliances, and components</b> .....	<b>12,614</b>	<b>12,100</b>	<b>11,359</b>	<b>11,897</b>	<b>12,413</b>
Electric lighting equipment manufacturing .....	1,493	1,462	1,411	1,479	1,590
Household appliance manufacturing .....	1,828	1,793	1,695	1,748	1,633
Electrical equipment manufacturing .....	4,164	3,891	3,800	3,886	4,211
Battery manufacturing .....	577	534	497	474	523
Other electrical equipment, appliance, and component manufacturing .....	4,552	4,420	3,956	4,310	4,456
<b>Transportation equipment</b> .....	<b>62,065</b>	<b>61,198</b>	<b>59,783</b>	<b>60,745</b>	<b>69,721</b>
Automobile manufacturing .....	1,628	1,583	1,659	1,809	1,808
Light truck and utility vehicle manufacturing .....	1,905	2,087	2,365	2,387	2,632
Heavy duty truck manufacturing .....	849	916	949	1,167	1,334
Motor vehicle body and trailer manufacturing .....	2,950	3,142	2,985	3,498	3,861
Motor vehicle parts manufacturing .....	12,536	13,162	12,837	13,130	13,690
Aircraft manufacturing .....	26,514	25,035	24,006	22,154	25,869
Aircraft engine and parts manufacturing .....	8,818	8,247	7,786	8,953	8,676
Missile, space vehicle, and parts manufacturing .....	1,686	1,924	1,832	1,860	5,914
Railroad rolling stock .....	1,429	1,373	1,400	1,550	1,389
Ship and boat building .....	2,220	2,257	2,516	2,739	2,798
Other transportation equipment .....	1,530	1,472	1,448	1,498	1,750

See footnote at end of table.

Table D-2. **Benchmark Data for Total Inventories for M3 Industry Categories: 2001–2005—Con.**

[Million dollars]

Industry category	Inventories				
	2001	2002	2003	2004	2005
<b>Durable goods industries—Con.</b>					
<b>Furniture and related products</b> .....	<b>7,407</b>	<b>7,703</b>	<b>7,298</b>	<b>7,912</b>	<b>8,321</b>
Household furniture and kitchen cabinet manufacturing .....	4,286	4,589	4,368	4,647	4,849
Office furniture and institutional furniture manufacturing .....	2,512	2,519	2,375	2,670	2,800
Other furniture-related product manufacturing .....	609	595	555	595	672
<b>Miscellaneous products</b> .....	<b>17,680</b>	<b>17,374</b>	<b>17,543</b>	<b>18,299</b>	<b>20,266</b>
Medical equipment and supplies manufacturing .....	7,960	7,714	8,305	8,458	9,267
Sporting goods, doll, toy, and game manufacturing .....	2,549	2,539	2,478	2,581	2,917
Office supplies manufacturing .....	568	510	477	487	518
Other miscellaneous manufacturing .....	6,603	6,611	6,283	6,773	7,564
<b>Nondurable goods industries</b> .....	<b>157,216</b>	<b>159,130</b>	<b>157,685</b>	<b>169,585</b>	<b>187,569</b>
<b>Food products</b> .....	<b>30,308</b>	<b>31,334</b>	<b>31,465</b>	<b>31,776</b>	<b>33,494</b>
Grain and oilseed milling .....	3,036	3,373	3,615	3,452	3,670
Dairy product manufacturing .....	3,106	3,266	3,522	3,621	3,941
Meat, poultry, and seafood product manufacturing .....	5,216	5,356	5,486	5,785	6,327
Other food manufacturing .....	18,950	19,339	18,842	18,918	19,556
<b>Beverage and tobacco products</b> .....	<b>14,731</b>	<b>14,882</b>	<b>14,717</b>	<b>15,234</b>	<b>14,598</b>
Beverage manufacturing .....	9,412	9,719	9,670	10,316	10,037
Tobacco manufacturing .....	5,319	5,163	5,047	4,918	4,561
<b>Textile mills</b> .....	<b>5,142</b>	<b>4,759</b>	<b>4,261</b>	<b>4,139</b>	<b>4,190</b>
<b>Textile products</b> .....	<b>4,354</b>	<b>3,397</b>	<b>3,229</b>	<b>3,256</b>	<b>3,557</b>
<b>Apparel</b> .....	<b>5,746</b>	<b>5,462</b>	<b>4,474</b>	<b>4,333</b>	<b>4,079</b>
<b>Leather and allied products</b> .....	<b>943</b>	<b>829</b>	<b>773</b>	<b>777</b>	<b>864</b>
<b>Paper products</b> .....	<b>14,027</b>	<b>14,286</b>	<b>13,444</b>	<b>14,237</b>	<b>14,781</b>
Pulp, paper, and paperboard mills .....	5,934	6,496	6,177	6,385	6,780
Paperboard container manufacturing .....	3,998	3,912	3,658	4,053	3,952
Other paper manufacturing .....	4,095	3,878	3,609	3,799	4,049
<b>Printing</b> .....	<b>5,816</b>	<b>5,775</b>	<b>5,500</b>	<b>5,781</b>	<b>6,128</b>
<b>Petroleum and coal products</b> .....	<b>12,611</b>	<b>14,258</b>	<b>15,786</b>	<b>19,431</b>	<b>27,783</b>
Petroleum refineries .....	11,089	12,681	14,214	17,624	25,609
Asphalt paving, roofing, and saturated materials manufacturing .....	767	839	827	1,005	1,087
Other petroleum and coal products manufacturing .....	755	738	745	802	1,087
<b>Chemical products</b> .....	<b>47,959</b>	<b>48,328</b>	<b>48,295</b>	<b>53,210</b>	<b>58,935</b>
Pesticide, fertilizer, and other agricultural chemical manufacturing .....	2,448	2,259	2,038	2,265	2,717
Pharmaceutical and medicine manufacturing .....	16,605	17,351	18,201	19,334	20,815
Paint, coating, and adhesive manufacturing .....	2,622	2,570	2,476	2,604	2,737
Other chemical manufacturing .....	26,284	26,148	25,580	29,007	32,666
<b>Plastics and rubber products</b> .....	<b>15,579</b>	<b>15,820</b>	<b>15,741</b>	<b>17,411</b>	<b>19,160</b>
Tire manufacturing .....	1,194	1,132	1,122	1,244	1,333
Other plastics and rubber product manufacturing .....	14,385	14,688	14,619	16,167	17,827

Note: Detail may not add to total because of independent rounding.

Table D-3. **Benchmark Data for Inventories by Stage of Fabrication for M3 Industry Categories: 2001-2005**

[Million dollars]

Industry category	2001	2002	2003	2004	2005
<b>ALL MANUFACTURING INDUSTRIES</b>					
Materials and supplies .....	146,006	144,056	138,104	152,874	165,539
Work-in-process .....	116,668	115,886	111,662	115,607	127,962
Finished goods .....	154,813	152,386	147,865	159,840	172,670
<b>Durable Goods Industries</b>					
Materials and supplies .....	90,737	88,050	81,908	92,585	98,791
Work-in-process .....	90,262	88,788	85,300	87,240	95,611
Finished goods .....	79,272	76,360	72,738	78,911	84,200
<b>Wood Products</b>					
Materials and supplies .....	3,787	3,897	4,032	4,675	5,057
Work-in-process .....	1,821	1,827	1,863	2,090	2,277
Finished goods .....	3,696	3,778	3,710	4,071	4,495
<b>Nonmetallic Mineral Products</b>					
Materials and supplies .....	3,429	3,471	3,381	3,704	4,034
Work-in-process .....	1,195	1,240	1,123	1,086	1,079
Finished goods .....	4,656	4,777	4,667	4,936	5,260
<b>Primary Metals</b>					
Materials and supplies .....	6,841	6,884	6,279	9,550	10,007
Work-in-process .....	6,457	6,422	5,915	7,135	8,083
Finished goods .....	6,419	6,314	6,372	7,878	8,347
<b>Fabricated Metal Products</b>					
Materials and supplies .....	10,705	10,637	10,416	12,357	13,998
Work-in-process .....	8,865	8,843	8,147	9,078	9,879
Finished goods .....	11,251	11,170	10,626	11,655	12,481
<b>Machinery</b>					
Materials and supplies .....	14,767	15,047	13,609	14,813	16,733
Work-in-process .....	12,937	11,971	11,005	11,372	12,233
Finished goods .....	14,250	13,937	13,039	13,886	15,099
<b>Computers and Electronic Products</b>					
Materials and supplies .....	20,030	17,738	15,058	15,435	15,343
Work-in-process .....	17,690	17,086	16,451	17,587	14,482
Finished goods .....	11,709	9,784	8,270	8,575	8,994
<b>Electrical Equipment, Appliances, and Components</b>					
Materials and supplies .....	5,104	4,953	4,684	5,065	5,389
Work-in-process .....	2,900	2,704	2,409	2,482	2,530
Finished goods .....	4,610	4,443	4,266	4,350	4,494
<b>Transportation Equipment</b>					
Materials and supplies .....	16,437	15,825	15,258	17,312	17,663
Work-in-process .....	34,111	34,372	34,165	31,895	40,357
Finished goods .....	11,517	11,001	10,360	11,538	11,701
<b>Furniture and Related Products</b>					
Materials and supplies .....	3,358	3,468	3,218	3,472	3,671
Work-in-process .....	1,408	1,436	1,387	1,499	1,542
Finished goods .....	2,641	2,799	2,693	2,941	3,108
<b>Miscellaneous Products</b>					
Materials and supplies .....	6,279	6,130	5,973	6,202	6,896
Work-in-process .....	2,878	2,887	2,835	3,016	3,149
Finished goods .....	8,523	8,357	8,735	9,081	10,221
<b>Nondurable Goods Industries</b>					
Materials and supplies .....	55,269	56,006	56,196	60,289	66,748
Work-in-process .....	26,406	27,098	26,362	28,367	32,351
Finished goods .....	75,541	76,026	75,127	80,929	88,470
<b>Food Products</b>					
Materials and supplies .....	9,971	10,315	11,149	11,145	12,036
Work-in-process .....	2,609	2,720	2,683	2,747	2,947
Finished goods .....	17,728	18,299	17,633	17,884	18,511

See footnote at end of table.

Table D-3. **Benchmark Data for Inventories by Stage of Fabrication for M3 Industry Categories: 2001–2005—Con.**

[Million dollars]

Industry category	2001	2002	2003	2004	2005
<b>ALL MANUFACTURING INDUSTRIES—Con.</b>					
<b>Nondurable Goods Industries—Con.</b>					
<b>Beverage and Tobacco Products</b>					
Materials and supplies .....	5,659	5,666	5,355	5,342	4,914
Work-in-process .....	4,380	4,405	4,324	4,402	4,711
Finished goods .....	4,692	4,811	5,038	5,490	4,973
<b>Textile Mills</b>					
Materials and supplies .....	1,430	1,347	1,291	1,306	1,282
Work-in-process .....	1,382	1,253	1,121	1,070	1,076
Finished goods .....	2,330	2,159	1,849	1,763	1,832
<b>Textile Products</b>					
Materials and supplies .....	1,614	1,265	1,218	1,276	1,357
Work-in-process .....	670	571	508	503	591
Finished goods .....	2,070	1,561	1,503	1,477	1,609
<b>Apparel</b>					
Materials and supplies .....	1,594	1,529	1,214	1,232	1,121
Work-in-process .....	1,042	1,038	822	737	677
Finished goods .....	3,110	2,895	2,438	2,364	2,281
<b>Leather and Allied Products</b>					
Materials and supplies .....	286	249	250	266	298
Work-in-process .....	154	132	117	114	110
Finished goods .....	503	448	406	397	456
<b>Paper Products</b>					
Materials and supplies .....	6,720	6,906	6,357	6,838	7,072
Work-in-process .....	1,197	1,225	1,161	1,163	1,263
Finished goods .....	6,110	6,155	5,926	6,236	6,446
<b>Printing</b>					
Materials and supplies .....	2,711	2,715	2,570	2,761	2,874
Work-in-process .....	1,490	1,491	1,417	1,441	1,527
Finished goods .....	1,615	1,569	1,513	1,579	1,727
<b>Petroleum and Coal Products</b>					
Materials and supplies .....	3,497	3,855	5,187	6,537	10,080
Work-in-process .....	3,162	3,520	3,070	3,788	5,792
Finished goods .....	5,952	6,883	7,529	9,106	11,912
<b>Chemical Products</b>					
Materials and supplies .....	15,825	16,109	15,533	16,538	17,816
Work-in-process .....	8,377	8,871	9,334	10,429	11,503
Finished goods .....	23,757	23,348	23,428	26,243	29,616
<b>Plastics and Rubber Products</b>					
Materials and supplies .....	5,962	6,050	6,072	7,048	7,898
Work-in-process .....	1,943	1,872	1,805	1,973	2,154
Finished goods .....	7,674	7,898	7,864	8,390	9,108

Note: Detail may not add to total because of independent rounding.

Table D-4. **Annual Shipments as Originally Published and as Revised: 2001–2006**

[Million dollars]

Industry category	2001	2002	2003	2004	2005	2006
<b>ALL MANUFACTURING INDUSTRIES</b>						
As published .....	4,022,901	3,965,245	3,972,114	4,259,207	4,544,839	4,753,965
As revised .....	3,970,499	3,914,723	4,015,388	4,308,970	4,735,385	4,939,953
<b>Durable Goods Industries</b>						
As published .....	2,203,102	2,168,434	2,130,238	2,251,915	2,385,367	2,520,211
As revised .....	2,174,406	2,123,621	2,142,589	2,264,667	2,420,344	2,537,908
<b>Wood Products</b>						
As published .....	88,550	90,120	91,240	103,420	105,030	98,996
As revised .....	87,250	89,020	92,069	104,135	112,017	104,970
<b>Nonmetallic Mineral Products</b>						
As published .....	94,460	93,755	96,349	101,870	112,321	119,276
As revised .....	94,861	95,064	96,945	102,880	114,321	120,851
<b>Primary Metals</b>						
As published .....	137,469	137,789	136,839	178,996	194,247	223,845
As revised .....	138,246	139,436	138,270	181,602	201,835	232,809
<b>Fabricated Metal Products</b>						
As published .....	258,918	257,475	244,662	259,874	275,301	294,658
As revised .....	253,113	246,847	245,340	261,101	288,068	305,268
<b>Machinery</b>						
As published .....	268,457	256,215	253,600	269,203	295,315	327,197
As revised .....	266,554	255,321	257,429	272,123	302,202	327,886
<b>Computers and Electronic Products</b>						
As published .....	434,427	391,274	353,667	361,938	394,644	419,984
As revised .....	429,471	357,324	352,273	365,545	373,932	393,953
<b>Electrical Equipment, Appliances, and Components</b>						
As published .....	116,919	105,393	101,770	104,244	112,096	120,788
As revised .....	114,068	102,845	99,906	105,084	112,007	122,693
<b>Transportation Equipment</b>						
As published .....	613,837	634,614	645,759	659,930	666,790	673,423
As revised .....	602,495	636,711	655,871	662,000	687,289	690,493
<b>Furniture and Related Products</b>						
As published .....	70,885	72,898	76,621	80,153	87,079	90,835
As revised .....	72,147	75,841	75,275	78,280	84,291	87,208
<b>Miscellaneous Products</b>						
As published .....	119,180	128,901	129,731	132,287	142,544	151,209
As revised .....	116,201	125,212	129,211	131,917	144,382	151,777
<b>Nondurable Goods Industries</b>						
As published .....	1,819,799	1,796,811	1,841,876	2,007,292	2,159,472	2,233,754
As revised .....	1,796,093	1,791,102	1,872,799	2,044,303	2,315,041	2,402,045
<b>Food Products</b>						
As published .....	456,692	467,353	482,815	511,450	532,496	532,395
As revised .....	451,385	458,206	488,518	512,339	534,879	537,879
<b>Beverage and Tobacco Products</b>						
As published .....	117,422	104,579	106,873	112,270	114,800	119,353
As revised .....	118,786	105,456	109,080	113,737	123,636	128,639
<b>Textile Mills</b>						
As published .....	45,141	43,152	42,557	40,258	36,012	33,559
As revised .....	45,681	45,497	42,653	40,898	41,149	37,295
<b>Textile Products</b>						
As published .....	34,165	34,933	30,827	33,254	34,326	34,164
As revised .....	31,971	32,082	31,256	33,636	36,706	36,614
<b>Apparel</b>						
As published .....	56,545	53,201	40,624	33,495	33,879	35,415
As revised .....	54,598	41,901	38,645	32,873	31,650	32,712

See footnote at end of table.



Table D-4. **Annual Shipments as Originally Published and as Revised: 2001–2006**—Con.

[Million dollars]

Industry category	2001	2002	2003	2004	2005	2006
<b>ALL MANUFACTURING INDUSTRIES—Con.</b>						
<b>Nondurable Goods Industries—Con.</b>						
Leather and Allied Products						
As published .....	8,108	8,718	6,003	5,757	5,630	5,745
As revised .....	8,834	5,906	5,807	5,812	6,013	6,366
Paper Products						
As published .....	159,150	157,834	149,271	153,969	158,053	164,609
As revised .....	155,845	153,755	151,098	155,380	162,848	168,602
Printing						
As published .....	99,303	96,045	92,191	93,193	89,822	91,413
As revised .....	100,792	95,612	92,553	93,595	97,095	101,015
Petroleum and Coal Products						
As published .....	222,356	211,910	237,010	312,884	404,591	437,048
As revised .....	219,074	215,513	247,119	330,439	476,075	514,901
Chemical Products						
As published .....	442,790	441,494	477,360	528,215	553,657	576,750
As revised .....	438,410	462,499	487,742	540,884	604,501	630,363
Plastics and Rubber Products						
As published .....	178,127	177,592	176,345	182,547	196,206	203,303
As revised .....	170,717	174,675	178,328	184,710	200,489	207,659

Note: Detail may not add to total because of independent rounding.



**Table D-5. Total Inventories as Originally Published and as Revised: 2001–2006**

[Million dollars]

Industry category	2001	2002	2003	2004	2005	2006
<b>ALL MANUFACTURING INDUSTRIES</b>						
As published .....	436,622	428,086	395,920	423,197	439,763	469,603
As revised .....	417,487	412,328	397,631	428,321	466,171	496,115
<b>Durable Goods Industries</b>						
As published .....	271,597	264,010	239,411	256,144	264,976	287,695
As revised .....	260,271	253,198	239,946	258,736	278,602	300,664
<b>Wood Products</b>						
As published .....	9,146	9,150	9,398	10,663	11,776	10,861
As revised .....	9,304	9,502	9,605	10,836	11,829	10,872
<b>Nonmetallic Mineral Products</b>						
As published .....	9,009	8,746	9,114	9,570	9,925	11,143
As revised .....	9,280	9,488	9,171	9,726	10,373	11,737
<b>Primary Metals</b>						
As published .....	19,887	19,603	18,622	24,410	25,295	30,062
As revised .....	19,717	19,620	18,566	24,563	26,437	31,412
<b>Fabricated Metal Products</b>						
As published .....	31,070	31,368	29,844	33,087	33,631	37,394
As revised .....	30,821	30,650	29,189	33,090	36,358	40,464
<b>Machinery</b>						
As published .....	45,966	43,964	37,467	39,914	42,026	45,933
As revised .....	41,954	40,955	37,653	40,071	44,065	47,940
<b>Computers and Electronic Products</b>						
As published .....	52,001	47,614	39,309	41,073	41,131	44,837
As revised .....	49,429	44,608	39,779	41,597	38,819	42,882
<b>Electrical Equipment, Appliances, and Components</b>						
As published .....	13,307	12,112	11,027	11,694	12,354	13,981
As revised .....	12,614	12,100	11,359	11,897	12,413	14,044
<b>Transportation Equipment</b>						
As published .....	66,633	65,631	59,490	59,488	62,280	65,497
As revised .....	62,065	61,198	59,783	60,745	69,721	71,303
<b>Furniture and Related Products</b>						
As published .....	7,216	7,399	7,316	7,878	8,111	8,419
As revised .....	7,407	7,703	7,298	7,912	8,321	8,612
<b>Miscellaneous Products</b>						
As published .....	17,362	18,423	17,824	18,367	18,447	19,568
As revised .....	17,680	17,374	17,543	18,299	20,266	21,398
<b>Nondurable Goods Industries</b>						
As published .....	165,025	164,076	156,509	167,053	174,787	181,908
As revised .....	157,216	159,130	157,685	169,585	187,569	195,451
<b>Food Products</b>						
As published .....	33,273	34,061	31,223	31,680	32,479	34,903
As revised .....	30,308	31,334	31,465	31,776	33,494	35,711
<b>Beverage and Tobacco Products</b>						
As published .....	14,696	14,335	14,765	14,961	15,779	15,538
As revised .....	14,731	14,882	14,717	15,234	14,598	14,520
<b>Textile Mills</b>						
As published .....	5,586	4,906	4,147	3,854	3,473	3,404
As revised .....	5,142	4,759	4,261	4,139	4,190	3,939
<b>Textile Products</b>						
As published .....	4,401	4,441	3,185	2,886	2,991	2,943
As revised .....	4,354	3,397	3,229	3,256	3,557	3,494
<b>Apparel</b>						
As published .....	7,889	7,322	4,596	4,261	4,406	4,037
As revised .....	5,746	5,462	4,474	4,333	4,079	3,715

See footnote at end of table.

Table D-5. **Total Inventories as Originally Published and as Revised: 2001–2006—Con.**

[Million dollars]

Industry category	2001	2002	2003	2004	2005	2006
<b>ALL MANUFACTURING INDUSTRIES—Con.</b>						
<b>Nondurable Goods Industries—Con.</b>						
Leather and Allied Products						
As published .....	1,603	1,814	759	757	780	759
As revised .....	943	829	773	777	864	861
Paper Products						
As published .....	14,604	14,414	13,448	14,083	14,008	14,426
As revised .....	14,027	14,286	13,444	14,237	14,781	15,239
Printing						
As published .....	5,811	5,737	5,508	5,765	5,550	5,547
As revised .....	5,816	5,775	5,500	5,781	6,128	6,250
Petroleum and Coal Products						
As published .....	11,179	11,614	15,466	18,675	23,303	25,960
As revised .....	12,611	14,258	15,786	19,431	27,783	30,844
Chemical Products						
As published .....	49,567	49,768	47,902	53,052	53,916	55,738
As revised .....	47,959	48,328	48,295	53,210	58,935	61,071
Plastics and Rubber Products						
As published .....	16,416	15,664	15,510	17,079	18,102	18,653
As revised .....	15,579	15,820	15,741	17,411	19,160	19,807

Note: Detail may not add to total because of independent rounding.

Table D-6. **End-of-Year Unfilled Orders as Originally Published and as Revised: 2001–2006**

[Million dollars]

Industry category	2001	2002	2003	2004	2005	2006
<b>ALL MANUFACTURING INDUSTRIES<sup>1</sup></b>						
As published .....	507,149	474,349	469,686	491,237	572,428	691,355
As revised .....	509,681	458,127	473,770	492,344	567,405	681,842
<b>Primary Metals</b>						
As published .....	16,688	15,320	17,511	21,782	25,274	25,805
As revised .....	16,767	15,345	17,712	22,003	26,240	26,692
<b>Fabricated Metal Products</b>						
As published .....	40,226	36,560	36,233	40,723	47,105	51,883
As revised .....	39,364	34,855	35,734	40,497	48,128	53,125
<b>Machinery</b>						
As published .....	54,971	44,987	49,532	52,065	61,705	76,775
As revised .....	57,004	46,009	50,548	52,334	62,271	76,888
<b>Computers and Electronic Products<sup>1</sup></b>						
As published .....	115,833	106,380	100,792	101,320	107,575	121,516
As revised .....	118,102	94,430	96,084	100,132	97,090	110,192
<b>Electrical Equipment, Appliances, and Components</b>						
As published .....	14,903	14,355	13,894	14,979	17,834	22,019
As revised .....	14,701	14,267	13,706	15,139	17,639	21,736
<b>Transportation Equipment</b>						
As published .....	254,203	246,808	240,049	247,847	301,140	381,430
As revised .....	253,387	242,462	247,873	249,333	303,953	380,998
<b>Furniture and Related Products</b>						
As published .....	6,212	5,416	6,050	6,667	7,040	6,619
As revised .....	6,351	6,073	6,323	6,922	7,200	6,788

<sup>1</sup>Data on unfilled orders are not available for the semiconductor industry.

Note: Detail may not add to total because of independent rounding.

Table D-7. **Annual New Orders as Originally Published and as Revised: 2001–2006**

[Million dollars]

Industry category	2001	2002	2003	2004	2005	2006
<b>ALL MANUFACTURING INDUSTRIES<sup>1</sup></b>						
As published .....	3,917,225	3,866,899	3,900,807	4,208,065	4,549,636	4,792,596
As revised .....	3,872,490	3,801,734	3,964,423	4,255,188	4,734,955	4,974,738
<b>Durable Goods Industries</b>						
As published .....	2,097,426	2,070,088	2,058,931	2,200,773	2,390,164	2,558,842
As revised .....	2,076,397	2,010,632	2,091,624	2,210,885	2,419,914	2,572,693
<b>Primary Metals</b>						
As published .....	135,902	136,421	139,030	183,267	197,739	224,376
As revised .....	136,758	138,014	140,637	185,893	206,072	233,261
<b>Fabricated Metal Products</b>						
As published .....	255,179	253,809	244,335	264,364	281,683	299,436
As revised .....	248,512	242,338	246,219	265,864	295,699	310,265
<b>Machinery</b>						
As published .....	263,754	246,231	258,145	271,736	304,955	342,267
As revised .....	263,884	244,326	261,968	273,909	312,139	342,503
<b>Computers and Electronic Products<sup>1</sup></b>						
As published .....	352,220	316,275	281,435	289,773	324,505	353,629
As revised .....	354,668	272,217	287,319	297,237	295,399	327,403
<b>Electrical Equipment, Appliances, and Components</b>						
As published .....	113,930	104,845	101,309	105,329	114,951	124,973
As revised .....	110,877	102,411	99,345	106,517	114,507	126,790
<b>Transportation Equipment</b>						
As published .....	605,854	627,219	639,000	667,728	720,083	753,713
As revised .....	593,696	625,786	661,282	663,460	741,909	767,538
<b>Furniture and Related Products</b>						
As published .....	70,270	72,102	77,255	80,770	87,452	90,414
As revised .....	71,671	75,563	75,525	78,879	84,569	86,796

<sup>1</sup>Data on unfilled orders are not available for the semiconductor industry.  
 Note: Detail may not add to total because of independent rounding.

# Chapter E.

## Notes on Trading Day Adjustment Methodology

---

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 ( $\bar{I}$ ) 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 . . . . .	53.03	Farm machinery and equipment . . . . .	22.91
Dairy products . . . . .	22.63	Lawn and garden tractors and equipment . . . . .	10.49
Meat, poultry, and seafood products . . . . .	19.82	Construction machinery . . . . .	39.69
Other foods . . . . .	11.36	Mining, oil, and gas field machinery . . . . .	17.10
<b>Beverages and Tobacco</b>		Industrial machinery . . . . .	12.22
Beverages . . . . .	21.84	Vending, laundry, and other machinery . . . . .	9.64
Tobacco . . . . .	(NA)	Photographic equipment . . . . .	17.78
<b>Textile Mills</b> . . . . .	<b>16.43</b>	Ventilation, heating, air-conditioning, and refrigeration equipment . . . . .	19.73
<b>Textile Products</b> . . . . .	<b>15.11</b>	Metalworking machinery . . . . .	1.64
<b>Apparel</b> . . . . .	<b>5.51</b>	Turbines and generators . . . . .	(NA)
<b>Leather and Allied Products</b> . . . . .	<b>10.86</b>	Other power transmission equipment . . . . .	5.72
<b>Wood Products</b>		Pumps and compressors . . . . .	13.33
Wood buildings and mobile homes . . . . .	7.62	Material handling equipment . . . . .	40.24
Other wood products . . . . .	26.46	All other machinery . . . . .	22.18
<b>Paper Products</b>		<b>Computers and Electronic Products</b>	
Pulp, paper, and paperboard . . . . .	30.16	Computers . . . . .	32.86
Paperboard containers . . . . .	114.45	Computer storage devices . . . . .	10.89
Other paper . . . . .	32.67	Other computer peripheral equipment . . . . .	22.63
<b>Printing</b> . . . . .	<b>12.97</b>	Communications equipment, nondefense . . . . .	22.06
<b>Petroleum and Coal Products</b>		Communications equipment, defense . . . . .	17.10
Petroleum refineries . . . . .	80.42	Audio and video equipment . . . . .	4.24
Asphalt paving, roofing, and saturated materials . . . . .	21.88	Semiconductors and related devices . . . . .	15.49
Other petroleum and coal products . . . . .	34.37	Other electronic components . . . . .	21.78
<b>Chemical Products</b>		Search and navigation equipment, nondefense . . . . .	6.06
Pesticides, fertilizers, and other agricultural chemicals . . . . .	26.53	Search and navigation equipment, defense . . . . .	7.26
Pharmaceuticals and medicines . . . . .	24.16	Electromedical, measuring, and control instruments . . . . .	14.98
Paints, coatings, and adhesives . . . . .	55.77	Magnetic and optical media . . . . .	6.23
Other chemicals . . . . .	100.57	<b>Electrical Equipment, Appliances, and Components</b>	
<b>Plastics and Rubber Products</b>		Electric lighting equipment . . . . .	13.97
Tires . . . . .	34.53	Household appliances . . . . .	31.52
Other plastics and rubber products . . . . .	105.61	Electrical equipment . . . . .	3.95
<b>Nonmetallic Mineral Products</b> . . . . .	<b>159.22</b>	Batteries . . . . .	13.25
<b>Primary Metals</b>		Other electrical equipment, appliances, and components . . . . .	14.51
Iron and steel mills and ferroalloy and steel products . . . . .	67.44	<b>Transportation Equipment</b>	
Alumina, aluminum, and nonferrous metal products . . . . .	33.97	Automobiles . . . . .	30.76
Ferrous metal foundries . . . . .	59.44	Light trucks and utility vehicles . . . . .	32.42
Nonferrous metal foundries . . . . .	14.22	Heavy duty trucks . . . . .	23.33
<b>Fabricated Metal Products</b>		Motor vehicle bodies and trailers . . . . .	48.24
Forging and stamping . . . . .	39.72	Motor vehicle parts . . . . .	64.10
Cutlery and hand tools . . . . .	16.66	Aircraft, nondefense . . . . .	10.35
Boilers, tanks, and shipping containers . . . . .	32.52	Aircraft, defense . . . . .	15.32
Metal valves . . . . .	8.36	Aircraft engines and parts, nondefense . . . . .	25.51
Small arms and ordnance, nondefense . . . . .	10.49	Aircraft engines and parts, defense . . . . .	17.21
Small arms and ordnance, defense . . . . .	21.40	Missiles, space vehicles, and parts, defense . . . . .	2.82
Other fabricated metal products . . . . .	68.24	Railroad rolling stock . . . . .	3.30
		Ships and boats, nondefense . . . . .	10.19
		Ships and boats, defense . . . . .	11.36
		Other transportation equipment . . . . .	29.66
		<b>Furniture and Related Products</b>	
		Household furniture and kitchen cabinets . . . . .	18.03
		Office furniture and institutional furniture . . . . .	11.46
		Other furniture-related products . . . . .	26.83
		<b>Miscellaneous Products</b>	
		Medical equipment and supplies . . . . .	78.61
		Sporting goods, dolls, toys, and games . . . . .	17.09
		Office supplies . . . . .	12.53
		Other miscellaneous products . . . . .	41.37

NA Not available.

<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.

# Chapter F.

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

---

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

The " $\bar{O}$ " is the average month-to-month percentage change, without regard to sign, in the original series. The " $\bar{C}_I$ " is the same for the seasonally adjusted series. The " $\bar{I}$ " is the same for the irregular component, which is obtained by dividing the trend-cycle component into the seasonally adjusted series. The " $\bar{C}$ " 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 " $\bar{I}/\bar{C}$ " 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 moving seasonality and the F-test assessing the significance of stable 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 examined 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 to trend cycle ( $\bar{T}/\bar{C}$ )	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 ( $\bar{T}$ )	Trend-cycle series ( $\bar{C}$ )					
<b>Food Products</b>									
Grain and oilseed milling	4.69	2.30	2.12	0.66	3.24	0.40	26.78	0.55	(S)
Dairy products	4.98	1.65	1.53	0.53	2.89	0.34	50.45	0.87	(S)
Meat, poultry, and seafood products	3.41	1.38	1.26	0.49	2.57	0.33	54.05	0.52	(S)
Other foods	5.79	1.43	1.35	0.32	4.16	0.21	163.85	0.44	(S)
<b>Beverages and Tobacco</b>									
Beverages	5.18	1.69	1.65	0.35	4.72	0.16	255.02	0.38	(S)
Tobacco	12.34	7.99	7.93	0.61	13.05	2.30	4.47	1.77	(NS)
<b>Textile Mills</b>	<b>8.54</b>	<b>1.80</b>	<b>1.64</b>	<b>0.60</b>	<b>2.74</b>	<b>0.21</b>	<b>167.47</b>	<b>0.35</b>	<b>(S)</b>
<b>Textile Products</b>	<b>6.22</b>	<b>1.71</b>	<b>1.54</b>	<b>0.68</b>	<b>2.28</b>	<b>0.19</b>	<b>177.60</b>	<b>0.25</b>	<b>(S)</b>
<b>Apparel</b>	<b>8.51</b>	<b>2.13</b>	<b>1.90</b>	<b>0.71</b>	<b>2.69</b>	<b>0.22</b>	<b>157.15</b>	<b>0.37</b>	<b>(S)</b>
<b>Leather and Allied Products</b>	<b>9.63</b>	<b>3.11</b>	<b>2.95</b>	<b>1.02</b>	<b>2.90</b>	<b>0.48</b>	<b>36.97</b>	<b>0.51</b>	<b>(S)</b>
<b>Wood Products</b>									
Wood buildings and mobile homes	7.06	2.87	2.51	1.23	2.04	0.15	187.04	0.22	(S)
Other wood products	5.23	2.31	1.92	0.92	2.09	0.30	101.76	0.39	(S)
<b>Paper Products</b>									
Pulp, paper, and paperboard	3.32	1.67	1.38	0.84	1.64	0.50	18.31	0.56	(S)
Paperboard containers	4.00	1.55	1.37	0.66	2.06	0.27	59.31	0.49	(S)
Other paper	4.56	1.93	1.82	0.52	3.51	0.49	20.54	0.90	(S)
<b>Printing</b>	<b>4.51</b>	<b>1.12</b>	<b>1.03</b>	<b>0.36</b>	<b>2.85</b>	<b>0.18</b>	<b>133.17</b>	<b>0.42</b>	<b>(S)</b>
<b>Petroleum and Coal Products</b>									
Petroleum refineries	4.74	3.52	2.77	1.90	1.45	0.47	35.22	0.57	(S)
Asphalt paving, roofing, and saturated materials	14.14	3.83	3.37	1.30	2.60	0.12	527.36	0.25	(S)
Other petroleum and coal products	5.89	3.97	3.73	1.29	2.90	0.63	11.39	0.86	(S)
<b>Chemical Products</b>									
Pesticides, fertilizers, and other agricultural chemicals	15.00	4.72	4.34	1.20	3.61	0.16	343.20	0.40	(S)
Pharmaceuticals and medicines	7.03	2.47	2.30	0.68	3.40	0.50	17.55	0.91	(S)
Paints, coatings, and adhesives	5.37	2.12	1.98	0.64	3.07	0.18	200.64	0.43	(S)
Other chemicals	4.81	1.30	1.07	0.71	1.52	0.24	80.56	0.34	(S)
<b>Plastics and Rubber Products</b>									
Tires	6.80	2.25	2.19	0.35	6.23	0.31	64.82	0.77	(S)
Other plastics and rubber products	5.44	1.26	1.11	0.51	2.18	0.15	203.82	0.23	(S)
<b>Nonmetallic Mineral Products</b>	<b>5.80</b>	<b>1.41</b>	<b>1.23</b>	<b>0.61</b>	<b>2.01</b>	<b>0.15</b>	<b>259.35</b>	<b>0.25</b>	<b>(S)</b>
<b>Primary Metals</b>									
Iron and steel mills and ferroalloy and steel products	5.90	1.96	1.46	1.04	1.40	0.19	134.22	0.25	(S)
Alumina, aluminum, and nonferrous metal products	4.92	1.97	1.60	1.02	1.57	0.31	51.35	0.37	(S)
Ferrous metal foundries	9.22	2.15	1.89	0.69	2.72	0.23	131.07	0.37	(S)
Nonferrous metal foundries	11.39	2.95	2.67	1.05	2.53	0.16	184.27	0.27	(S)
<b>Fabricated Metal Products</b>									
Forging and stamping	6.51	1.83	1.59	0.88	1.81	0.20	128.73	0.33	(S)
Cutlery and handtools	10.43	3.77	3.66	0.54	6.75	0.35	51.02	0.72	(S)
Boilers, tanks, and shipping containers	6.20	2.49	2.46	0.27	8.98	0.22	97.15	0.88	(S)
Metal valves	6.51	2.49	2.38	0.62	3.84	0.32	74.45	0.54	(S)
Small arms and ordnance, nondefense	10.90	5.24	4.98	1.22	4.08	0.44	37.53	0.60	(S)
Small arms and ordnance, defense	21.80	9.18	9.05	1.16	7.77	0.50	30.05	1.01	(S)
Other fabricated metal products	5.81	1.33	1.09	0.61	1.80	0.16	163.78	0.23	(S)
<b>Machinery</b>									
Farm machinery and equipment	12.28	4.59	4.02	1.64	2.46	0.21	103.08	0.29	(S)
Lawn and garden tractors and equipment	23.61	7.09	6.99	0.72	9.65	0.14	289.65	0.74	(S)
Construction machinery	9.04	3.39	2.98	1.31	2.27	0.22	93.97	0.33	(S)
Mining, oil, and gas field machinery	8.95	3.57	3.36	1.14	2.94	0.49	32.45	0.70	(S)
Industrial machinery	17.44	6.79	6.55	1.79	3.65	0.42	45.76	0.64	(S)
Vending, laundry, and other machinery	15.84	5.90	5.88	0.63	9.30	0.74	25.32	1.26	(S)
Photographic equipment	11.02	3.60	3.35	1.19	2.83	0.23	83.59	0.46	(S)
Ventilation, heating, air-conditioning, and refrigeration equipment	9.27	2.21	1.97	0.73	2.69	0.24	88.57	0.38	(S)
Metalworking machinery	15.14	4.46	4.30	0.98	4.40	0.29	63.08	0.63	(S)
Turbines and generators	67.15	19.53	19.24	1.54	12.45	0.55	37.18	1.27	(NS)
Other power transmission equipment	8.70	3.17	2.95	0.90	3.29	0.25	83.20	0.42	(S)
Pumps and compressors	7.24	2.53	2.42	0.66	3.68	0.25	87.52	0.48	(S)
Material handling equipment	7.76	2.64	2.45	0.96	2.55	0.40	28.30	0.71	(S)
All other machinery	5.67	2.62	2.59	0.41	6.33	0.46	33.59	0.73	(S)

See footnotes at end of table.



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

Industry	Average percent changes				Ratio of irregular to trend cycle ( $\bar{T}/\bar{C}$ )	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 ( $\bar{T}$ )	Trend-cycle series ( $\bar{C}$ )					
<b>Computers and Electronic Products</b>									
Computers .....	23.59	4.39	4.21	1.12	3.77	0.64	37.01	0.74	(S)
Computer storage devices .....	60.45	7.00	6.66	1.88	3.53	0.24	254.83	0.43	(S)
Other computer peripheral equipment .....	33.91	6.50	6.34	0.99	6.43	0.25	172.12	0.62	(S)
Communications equipment, nondefense .....	21.89	4.09	3.76	1.38	2.73	0.15	263.85	0.33	(S)
Communications equipment, defense .....	15.21	9.13	9.11	1.03	8.82	0.80	13.34	1.22	(S)
Audio and video equipment .....	11.87	4.84	4.46	1.52	2.94	0.26	65.58	0.49	(S)
Semiconductors and related devices .....	11.69	4.27	3.84	1.53	2.51	0.40	50.39	0.49	(S)
Other electronic components .....	9.26	2.46	2.33	0.84	2.77	0.33	50.22	0.51	(S)
Search and navigation equipment, nondefense .....	13.41	5.10	5.00	0.89	5.62	0.35	55.49	0.91	(S)
Search and navigation equipment, defense .....	11.75	3.42	3.28	0.76	4.34	0.36	55.85	0.72	(S)
Electromedical, measuring, and control instruments .....	18.70	2.17	2.03	0.57	3.58	0.57	125.29	0.63	(S)
Magnetic and optical media .....	10.23	4.75	4.43	1.40	3.17	0.28	56.83	0.59	(S)
<b>Electrical Equipment, Appliances, and Components</b>									
Electric lighting equipment .....	13.48	3.00	2.93	0.48	6.13	0.28	101.56	0.68	(S)
Household appliances .....	10.41	2.64	2.46	0.66	3.71	0.27	74.22	0.51	(S)
Electrical equipment .....	12.43	2.51	2.40	0.57	4.22	0.29	102.39	0.55	(S)
Batteries .....	14.66	4.26	4.05	0.91	4.45	0.19	143.97	0.46	(S)
Other electrical equipment, appliances, and components .....	7.15	2.09	1.94	0.72	2.68	0.26	73.97	0.46	(S)
<b>Transportation Equipment</b>									
Automobiles .....	17.52	4.61	4.52	0.64	7.10	0.19	127.78	0.60	(S)
Light trucks and utility vehicles .....	19.41	5.21	4.88	1.47	3.33	0.21	101.46	0.40	(S)
Heavy duty trucks .....	8.58	4.40	3.91	1.69	2.31	0.30	51.66	0.39	(S)
Motor vehicle bodies and trailers .....	8.71	3.37	3.14	1.08	2.92	0.26	66.49	0.46	(S)
Motor vehicle parts .....	13.34	2.94	2.76	0.70	3.92	0.14	259.95	0.33	(S)
Aircraft, nondefense .....	31.81	14.82	14.76	1.57	9.40	0.42	37.50	1.22	(S)
Aircraft, defense .....	14.21	7.85	7.81	0.88	8.88	0.55	21.79	1.14	(S)
Aircraft engines and parts, nondefense .....	18.58	5.88	5.75	1.00	5.73	0.42	39.40	0.89	(S)
Aircraft engines and parts, defense .....	24.20	11.18	11.10	1.11	10.00	0.36	43.30	1.21	(S)
Missiles, space vehicles, and parts, defense .....	12.16	6.12	5.93	1.34	4.42	0.47	30.79	0.89	(S)
Railroad rolling stock .....	29.19	12.08	11.96	1.11	10.80	0.45	33.02	1.33	(S)
Ships and boats, nondefense .....	14.25	6.59	6.52	0.70	9.27	0.47	30.34	1.15	(S)
Ships and boats, defense .....	12.81	7.24	7.23	0.67	10.82	0.50	17.64	1.23	(S)
Other transportation equipment .....	14.82	5.69	5.43	1.47	3.69	0.43	33.71	0.73	(S)
<b>Furniture and Related Products</b>									
Household furniture and kitchen cabinets .....	7.56	1.69	1.55	0.53	2.92	0.34	99.27	0.41	(S)
Office furniture and institutional furniture .....	4.25	2.33	2.16	0.69	3.13	0.33	57.29	0.51	(S)
Other furniture-related products .....	4.80	2.07	1.86	0.73	2.55	0.40	52.00	0.51	(S)
<b>Miscellaneous Products</b>									
Medical equipment and supplies .....	7.04	1.74	1.64	0.58	2.82	0.27	90.11	0.52	(S)
Sporting goods, dolls, toys, and games .....	18.12	3.42	3.19	0.92	3.48	0.30	79.81	0.44	(S)
Office supplies .....	16.49	4.50	4.42	0.52	8.54	0.36	79.82	0.80	(S)
Other miscellaneous products .....	8.93	2.09	1.91	0.68	2.81	0.35	69.68	0.41	(S)

NS Not seasonally adjusted. S Seasonally adjusted.

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

Industry	Average percent changes				Ratio of irregular to trend cycle ( $\bar{T}/\bar{C}$ )	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 ( $\bar{T}$ )	Trend-cycle series ( $\bar{C}$ )					
<b>Primary Metals</b>									
Iron and steel mills and ferroalloy and steel products .....	3.09	2.21	1.09	1.78	0.61	0.48	59.44	0.37	(S)
Alumina, aluminum, and nonferrous metal products .....	2.59	1.81	1.00	1.45	0.69	0.41	71.72	0.28	(S)
Ferrous metal foundries .....	2.17	1.87	1.54	0.96	1.60	0.30	41.67	0.35	(S)
Nonferrous metal foundries .....	3.47	2.86	2.45	1.31	1.87	0.48	23.74	0.45	(S)
<b>Fabricated Metal Products</b>									
Forging and stamping .....	1.97	1.76	1.03	1.52	0.68	0.80	7.32	0.47	(S)
Boilers, tanks, and shipping containers .....	2.32	1.89	1.58	0.98	1.61	1.50	3.77	0.92	(NS)
Metal valves .....	2.23	1.59	1.12	1.08	1.04	0.46	39.40	0.32	(S)
Small arms and ordnance, nondefense .....	8.63	6.23	5.06	2.90	1.75	0.30	61.14	0.39	(S)
Small arms and ordnance, defense .....	2.05	1.87	1.49	1.00	1.50	0.54	13.29	0.51	(S)
Other fabricated metal products .....	1.40	1.05	0.59	0.85	0.69	0.31	73.53	0.26	(S)
<b>Machinery</b>									
Construction machinery .....	4.56	3.23	2.17	2.10	1.04	0.33	68.87	0.28	(S)
Mining, oil, and gas field machinery .....	3.60	3.32	1.85	2.56	0.72	0.59	15.37	0.32	(S)
Industrial machinery .....	3.06	2.19	1.39	1.68	0.83	0.44	32.29	0.24	(S)
Vending, laundry, and other machinery .....	3.51	2.37	1.90	1.10	1.73	0.89	14.58	0.82	(S)
Photographic equipment .....	3.66	2.73	2.34	1.53	1.53	0.68	9.86	0.60	(S)
Ventilation, heating, and air-conditioning, and refrigeration equipment .....	2.67	1.96	1.50	1.13	1.33	0.66	20.71	0.55	(S)
Metalworking machinery .....	2.12	1.79	1.10	1.38	0.79	0.37	35.76	0.24	(S)
Turbines and generators .....	2.75	2.54	1.41	2.00	0.71	0.79	12.65	0.47	(S)
Other power transmission equipment .....	4.82	2.22	1.24	1.79	0.69	1.67	19.32	0.69	(NS)
Pumps and compressors .....	2.15	1.37	0.88	0.89	0.99	0.38	58.15	0.32	(S)
Material handling equipment .....	2.25	1.86	1.27	1.30	0.98	0.36	51.35	0.25	(S)
All other machinery .....	1.87	1.36	1.10	0.71	1.56	0.52	22.06	0.48	(S)
<b>Computers and Electronic Products</b>									
Computers .....	3.74	2.96	2.55	1.39	1.84	1.01	5.33	0.72	(NS)
Communications equipment, nondefense .....	2.26	2.02	1.36	1.41	0.97	0.56	12.64	0.35	(S)
Communications equipment, defense .....	2.73	2.39	1.88	1.25	1.50	0.83	8.39	0.59	(S)
Other electronic components .....	2.13	1.90	1.10	1.49	0.74	0.61	13.97	0.41	(S)
Search and navigation equipment, nondefense .....	2.05	1.82	1.08	1.37	0.79	0.48	22.70	0.38	(S)
Search and navigation equipment, defense .....	1.36	0.92	0.61	0.60	1.01	0.34	53.72	0.30	(S)
Electromedical, measuring, and control instruments .....	1.46	1.05	0.71	0.70	1.02	0.43	34.17	0.28	(S)
<b>Electrical Equipment, Appliances, and Components</b>									
Electric lighting equipment .....	2.66	2.11	1.73	1.03	1.68	0.77	16.68	0.57	(S)
Household appliances .....	11.22	6.44	6.21	1.43	4.35	0.40	33.62	0.74	(S)
Electrical equipment .....	1.50	1.07	0.89	0.58	1.55	0.53	18.42	0.48	(S)
Other electrical equipment, appliances, and components .....	2.40	2.09	1.35	1.49	0.91	0.41	31.10	0.26	(S)
<b>Transportation Equipment</b>									
Motor vehicle bodies and trailers .....	3.78	2.58	1.48	1.92	0.77	0.36	85.42	0.32	(S)
Motor vehicle parts .....	2.22	1.47	1.22	0.68	1.80	0.40	26.35	0.45	(S)
Aircraft, nondefense .....	1.63	1.49	0.92	1.16	0.79	0.57	18.99	0.28	(S)
Aircraft, defense .....	2.00	1.61	1.06	0.98	1.08	0.37	52.47	0.40	(S)
Aircraft engines and parts, nondefense .....	1.45	1.31	0.91	0.87	1.05	0.71	12.90	0.46	(S)
Aircraft engines and parts, defense .....	2.20	1.72	1.28	0.96	1.32	0.34	50.51	0.48	(S)
Missiles, space vehicles, and parts, defense .....	2.00	1.61	1.05	1.10	0.95	0.34	64.25	0.28	(S)
Railroad rolling stock .....	3.58	3.11	2.44	1.61	1.52	1.83	1.82	1.00	(NS)
Ships and boats, nondefense .....	3.06	2.72	1.48	1.98	0.75	1.81	3.51	0.85	(NS)
Ships and boats, defense .....	2.92	1.96	1.58	1.06	1.49	0.49	40.38	0.47	(S)
Other transportation equipment .....	3.41	2.86	1.94	1.75	1.11	1.34	3.83	0.71	(NS)
<b>Furniture and Related Products</b>									
Household furniture and kitchen cabinets .....	4.09	2.50	2.06	1.13	1.82	0.45	23.74	0.61	(S)
Office furniture and institutional furniture .....	3.43	1.98	1.55	1.19	1.30	0.34	47.93	0.34	(S)
<b>Miscellaneous Products</b>									
Sporting goods, dolls, toys, and games .....	7.66	3.68	2.87	1.83	1.57	2.38	2.99	1.10	(NS)

NS Not seasonally adjusted. S Seasonally adjusted.

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

Industry	Average percent changes				Ratio of irregular to trend cycle ( $\bar{T}/\bar{C}$ )	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 ( $\bar{T}$ )	Trend-cycle series ( $\bar{C}$ )					
<b>Food Products</b>									
Grain and oilseed milling .....	3.59	1.97	1.63	0.94	1.73	0.24	92.30	0.37	(S)
Dairy products .....	2.69	1.38	1.10	0.71	1.54	0.25	87.74	0.35	(S)
Meat, poultry, and seafood products .....	1.64	0.88	0.66	0.46	1.44	0.39	33.66	0.55	(S)
Other foods .....	2.63	0.68	0.57	0.32	1.77	0.19	369.49	0.21	(S)
<b>Beverages and Tobacco</b>									
Beverages .....	1.56	0.94	0.77	0.50	1.53	0.47	39.32	0.48	(S)
Tobacco .....	2.58	1.19	0.95	0.59	1.63	0.44	96.27	0.43	(S)
<b>Textile Mills</b> .....	<b>1.67</b>	<b>0.79</b>	<b>0.51</b>	<b>0.54</b>	<b>0.93</b>	<b>0.23</b>	<b>136.49</b>	<b>0.19</b>	<b>(S)</b>
<b>Textile Products</b> .....	<b>1.48</b>	<b>0.81</b>	<b>0.47</b>	<b>0.64</b>	<b>0.72</b>	<b>0.26</b>	<b>107.38</b>	<b>0.20</b>	<b>(S)</b>
<b>Apparel</b> .....	<b>2.18</b>	<b>1.10</b>	<b>0.43</b>	<b>0.99</b>	<b>0.43</b>	<b>0.26</b>	<b>114.30</b>	<b>0.34</b>	<b>(S)</b>
<b>Leather and Allied Products</b> .....	<b>2.26</b>	<b>1.49</b>	<b>0.89</b>	<b>1.08</b>	<b>0.83</b>	<b>0.50</b>	<b>29.95</b>	<b>0.42</b>	<b>(S)</b>
<b>Wood Products</b>									
Wood buildings and mobile homes .....	4.09	2.13	1.75	1.15	1.53	0.54	28.52	0.49	(S)
Other wood products .....	1.54	1.19	0.89	0.67	1.33	0.54	22.36	0.64	(S)
<b>Paper Products</b>									
Pulp, paper, and paperboard .....	1.06	0.79	0.43	0.63	0.68	0.34	49.52	0.28	(S)
Paperboard containers .....	1.36	1.20	0.70	0.89	0.78	0.58	17.95	0.37	(S)
Other paper .....	1.43	0.97	0.82	0.42	1.93	0.53	21.74	0.65	(S)
<b>Printing</b> .....	<b>2.58</b>	<b>1.29</b>	<b>1.10</b>	<b>0.57</b>	<b>1.94</b>	<b>0.20</b>	<b>130.27</b>	<b>0.28</b>	<b>(S)</b>
<b>Petroleum and Coal Products</b>									
Petroleum refineries .....	2.90	2.03	1.41	1.37	1.03	0.50	39.99	0.40	(S)
Asphalt paving, roofing, and saturated materials .....	5.18	2.32	1.88	1.14	1.65	0.22	125.8	0.35	(S)
Other petroleum and coal products .....	4.88	4.16	3.70	1.36	2.72	0.60	16.89	0.78	(S)
<b>Chemical Products</b>									
Pesticides, fertilizers, and other agricultural chemicals .....	5.40	1.59	1.03	1.08	0.95	0.09	581.78	0.14	(S)
Pharmaceuticals and medicines .....	1.81	1.34	1.11	0.78	1.43	0.36	38.30	0.44	(S)
Paints, coatings, and adhesives .....	1.37	0.67	0.53	0.37	1.45	0.19	172.60	0.26	(S)
Other chemicals .....	0.89	0.65	0.36	0.50	0.73	0.37	43.57	0.22	(S)
<b>Plastics and Rubber Products</b>									
Tires .....	2.00	1.02	0.65	0.71	0.92	0.26	103.45	0.29	(S)
Other plastics and rubber products .....	0.99	0.73	0.37	0.61	0.61	0.30	112.89	0.25	(S)
<b>Nonmetallic Mineral Products</b> .....	<b>1.22</b>	<b>0.70</b>	<b>0.43</b>	<b>0.53</b>	<b>0.81</b>	<b>0.17</b>	<b>167.26</b>	<b>0.16</b>	<b>(S)</b>
<b>Primary Metals</b>									
Iron and steel mills and ferroalloy and steel products .....	1.31	1.03	0.48	0.91	0.53	0.25	96.25	0.19	(S)
Alumina, aluminum, and nonferrous metal products .....	1.18	1.02	0.64	0.72	0.89	0.71	10.32	0.47	(S)
Ferrous metal foundries .....	1.47	1.02	0.64	0.69	0.94	0.20	125.36	0.25	(S)
Nonferrous metal foundries .....	2.12	1.64	1.47	0.72	2.04	0.54	19.08	0.62	(S)
<b>Fabricated Metal Products</b>									
Forging and stamping .....	1.39	1.15	0.84	0.76	1.10	0.36	39.28	0.27	(S)
Cutlery and handtools .....	2.28	1.33	1.07	0.65	1.66	0.40	51.21	0.46	(S)
Boilers, tanks, and shipping containers .....	2.75	1.50	1.14	0.77	1.47	0.22	111.05	0.34	(S)
Metal valves .....	0.96	0.81	0.48	0.62	0.78	0.74	12.55	0.41	(S)
Small arms and ordnance, nondefense .....	2.37	1.41	0.86	1.05	0.82	0.32	116.59	0.25	(S)
Small arms and ordnance, defense .....	4.72	3.20	2.76	1.20	2.31	1.57	3.75	1.17	(NS)
Other fabricated metal products .....	0.95	0.71	0.31	0.60	0.52	0.38	73.81	0.31	(S)

See footnotes at end of table.

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

Industry	Average percent changes				Ratio of irregular to trend cycle ( $\bar{T}/\bar{C}$ )	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 ( $\bar{T}$ )	Trend-cycle series ( $\bar{C}$ )					
<b>Machinery</b>									
Farm machinery and equipment . . . . .	2.60	1.27	0.82	0.87	0.94	0.17	200.88	0.17	(S)
Lawn and garden tractors and equipment . . . . .	9.18	3.05	2.31	1.48	1.56	0.42	92.22	0.36	(S)
Construction machinery . . . . .	1.48	1.20	0.74	0.84	0.87	0.37	33.71	0.31	(S)
Mining, oil, and gas field machinery . . . . .	1.77	1.30	0.72	1.01	0.71	0.32	75.41	0.29	(S)
Industrial machinery . . . . .	2.28	1.23	0.74	0.90	0.82	0.43	44.39	0.31	(S)
Vending, laundry, and other machinery . . . . .	2.31	1.63	1.46	0.73	2.00	0.87	8.92	0.70	(S)
Photographic equipment . . . . .	2.72	1.40	1.17	0.74	1.58	0.43	41.02	0.36	(S)
Ventilation, heating, air-conditioning, and refrigeration equipment . . . . .	2.42	1.14	0.68	0.83	0.81	0.27	105.23	0.23	(S)
Metalworking machinery . . . . .	2.24	1.33	0.97	0.80	1.22	0.25	80.57	0.28	(S)
Turbines and generators . . . . .	6.83	2.84	2.48	1.16	2.14	0.32	57.17	0.52	(S)
Other power transmission equipment . . . . .	1.50	1.15	0.80	0.82	0.97	0.59	38.84	0.35	(S)
Pumps and compressors . . . . .	1.39	0.83	0.66	0.49	1.35	0.47	29.43	0.41	(S)
Material handling equipment . . . . .	1.72	1.37	0.99	0.90	1.10	0.55	13.62	0.41	(S)
All other machinery . . . . .	1.54	1.06	0.73	0.68	1.07	0.51	40.28	0.33	(S)
<b>Computers and Electronic Products</b>									
Computers . . . . .	5.76	3.04	2.48	1.82	1.36	0.45	24.20	0.35	(S)
Computer storage devices . . . . .	8.72	2.82	2.04	1.90	1.07	0.40	60.16	0.34	(S)
Other computer peripheral equipment . . . . .	4.90	1.90	1.57	0.93	1.69	0.28	82.01	0.33	(S)
Communications equipment, nondefense . . . . .	3.27	1.88	1.18	1.40	0.84	0.54	21.58	0.34	(S)
Communications equipment, defense . . . . .	3.93	3.44	2.90	1.44	2.01	0.70	9.31	0.76	(S)
Audio and video equipment . . . . .	5.48	2.95	2.06	1.72	1.20	0.39	48.69	0.40	(S)
Other electronic components . . . . .	2.25	1.77	1.11	1.23	0.90	0.62	22.84	0.32	(S)
Search and navigation equipment, nondefense . . . . .	1.80	1.50	1.15	0.87	1.32	0.55	19.84	0.50	(S)
Search and navigation equipment, defense . . . . .	2.23	1.84	1.57	0.76	2.07	0.52	16.53	0.63	(S)
Electromedical, measuring, and control instruments . . . . .	1.86	0.84	0.69	0.49	1.42	0.35	44.3	0.39	(S)
Magnetic and optical media . . . . .	3.52	2.65	2.19	1.26	1.74	0.48	26.87	0.62	(S)
<b>Electrical Equipment, Appliances, and Components</b>									
Electric lighting equipment . . . . .	2.35	1.09	0.93	0.51	1.83	0.34	54.31	0.50	(S)
Household appliances . . . . .	3.87	1.24	0.93	0.64	1.45	0.29	165.19	0.34	(S)
Electrical equipment . . . . .	2.18	1.01	0.80	0.63	1.28	0.62	10.70	0.67	(S)
Batteries . . . . .	3.08	1.51	1.22	0.85	1.44	0.34	68.37	0.33	(S)
Other electrical equipment, appliances, and components . . . . .	1.17	0.80	0.42	0.63	0.67	0.29	75.94	0.24	(S)
<b>Transportation Equipment</b>									
Automobiles . . . . .	5.35	3.54	3.33	0.88	3.79	0.84	13.33	0.83	(S)
Light trucks and utility vehicles . . . . .	6.15	3.94	3.52	1.22	2.89	0.53	15.98	0.87	(S)
Heavy duty trucks . . . . .	2.64	1.89	1.48	0.95	1.56	0.53	15.75	0.54	(S)
Motor vehicle bodies and trailers . . . . .	2.84	1.97	1.60	1.07	1.50	0.66	14.43	0.68	(S)
Motor vehicle parts . . . . .	1.39	1.03	0.84	0.54	1.55	0.65	20.20	0.58	(S)
Aircraft, nondefense . . . . .	2.52	1.73	1.43	0.96	1.49	0.52	23.17	0.35	(S)
Aircraft, defense . . . . .	2.45	2.16	1.77	1.20	1.48	1.39	3.25	0.88	(NS)
Aircraft engines and parts, nondefense . . . . .	2.63	1.75	1.44	0.87	1.65	0.63	20.19	0.60	(S)
Aircraft engines and parts, defense . . . . .	4.32	3.18	2.81	1.36	2.07	0.49	22.08	0.54	(S)
Missiles, space vehicles, and parts, defense . . . . .	4.03	3.83	2.16	2.81	0.77	0.55	17.31	0.34	(S)
Railroad rolling stock . . . . .	5.01	2.55	2.22	1.11	2.00	0.51	27.99	0.56	(S)
Ships and boats, nondefense . . . . .	3.44	2.03	1.65	1.09	1.51	0.92	15.30	0.67	(S)
Ships and boats, defense . . . . .	3.17	2.63	2.39	0.86	2.79	0.69	9.32	0.85	(S)
Other transportation equipment . . . . .	3.12	2.08	1.81	1.00	1.81	0.62	13.12	0.54	(S)
<b>Furniture and Related Products</b>									
Household furniture and kitchen cabinets . . . . .	1.24	0.71	0.50	0.49	1.01	0.38	37.55	0.34	(S)
Office furniture and institutional furniture . . . . .	1.66	1.02	0.82	0.55	1.50	0.57	36.65	0.44	(S)
Other furniture-related products . . . . .	2.08	1.68	1.39	0.76	1.83	0.69	12.81	0.67	(S)
<b>Miscellaneous Products</b>									
Medical equipment and supplies . . . . .	1.26	0.79	0.63	0.43	1.47	0.44	27.16	0.45	(S)
Sporting goods, dolls, toys, and games . . . . .	2.54	1.40	1.11	0.69	1.61	0.38	34.79	0.49	(S)
Office supplies . . . . .	3.89	1.83	1.38	1.01	1.37	0.22	108.29	0.41	(S)
Other miscellaneous products . . . . .	1.76	1.07	0.88	0.57	1.54	0.53	33.66	0.60	(S)

NS Not seasonally adjusted. S Seasonally adjusted.

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

Subsector	Average percent changes				Ratio of irregular to trend cycle ( $\bar{T}/\bar{C}$ )	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 ( $\bar{T}$ )	Trend-cycle series ( $\bar{C}$ )					
Food products .....	1.70	1.01	0.87	0.39	2.23	0.33	68.01	0.46	(S)
Beverages and tobacco .....	1.98	0.99	0.86	0.40	2.15	0.37	71.93	0.47	(S)
Textile mills .....	1.85	1.40	1.15	0.64	1.79	0.43	24.47	0.51	(S)
Textile products .....	1.59	1.24	0.82	0.81	1.02	0.33	46.05	0.26	(S)
Apparel .....	1.85	1.52	0.91	1.10	0.83	0.60	28.79	0.39	(S)
Leather and allied products .....	2.71	2.29	1.98	0.92	2.16	0.78	9.49	0.75	(S)
Wood products .....	3.44	1.26	0.96	0.83	1.16	0.32	196.65	0.26	(S)
Paper products .....	0.89	0.79	0.52	0.59	0.87	0.53	15.09	0.41	(S)
Printing .....	2.82	2.18	1.88	0.99	1.90	0.32	39.99	0.41	(S)
Petroleum and coal products .....	3.57	3.06	2.65	1.46	1.82	0.52	22.16	0.41	(S)
Chemical products .....	1.00	0.89	0.78	0.40	1.95	0.73	10.66	0.69	(S)
Plastics and rubber products .....	1.23	1.04	0.65	0.82	0.79	0.53	15.77	0.31	(S)
Nonmetallic mineral products .....	0.90	0.80	0.65	0.40	1.61	0.67	10.51	0.63	(S)
Primary metals .....	1.73	1.26	0.74	0.98	0.75	0.34	73.83	0.26	(S)
Fabricated metal products .....	1.36	1.13	0.80	0.73	1.10	0.70	13.32	0.45	(S)
Machinery .....	1.41	0.94	0.65	0.65	0.99	0.47	26.36	0.35	(S)
Computers and electronic products .....	2.07	1.71	1.19	1.16	1.02	0.48	19.05	0.37	(S)
Electrical equipment, appliances, and components .....	1.43	0.98	0.66	0.67	1.00	0.62	14.68	0.49	(S)
Transportation equipment .....	1.67	1.18	0.94	0.62	1.53	0.58	18.21	0.52	(S)
Furniture and related products .....	1.15	1.00	0.82	0.52	1.59	1.13	4.35	0.79	(NS)
Miscellaneous products .....	1.19	0.85	0.72	0.43	1.66	0.59	14.51	0.54	(S)

NS Not seasonally adjusted. S Seasonally adjusted.

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

Subsector	Average percent changes				Ratio of irregular to trend cycle ( $\bar{T}/\bar{C}$ )	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 ( $\bar{T}$ )	Trend-cycle series ( $\bar{C}$ )					
Food products .....	5.60	1.74	1.56	0.64	2.43	0.12	353.00	0.21	(S)
Beverages and tobacco .....	3.62	1.63	1.33	0.83	1.60	0.16	225.90	0.25	(S)
Textile mills .....	1.79	1.10	0.88	0.56	1.58	0.43	28.37	0.59	(S)
Textile products .....	2.40	1.38	1.10	0.82	1.34	0.29	61.87	0.38	(S)
Apparel .....	3.01	1.80	1.09	1.28	0.85	0.39	57.76	0.29	(S)
Leather and allied products .....	3.87	3.29	2.59	1.61	1.61	0.70	11.67	0.56	(S)
Wood products .....	1.76	1.50	1.21	0.75	1.60	0.86	9.36	0.76	(NS)
Paper products .....	1.77	1.38	1.22	0.62	1.97	0.54	20.17	0.55	(S)
Printing .....	6.53	2.59	2.39	0.85	2.80	0.31	71.61	0.41	(S)
Petroleum and coal products .....	4.53	3.41	2.99	1.36	2.20	0.67	16.37	0.72	(S)
Chemical products .....	2.07	1.62	1.41	0.65	2.17	0.50	21.50	0.66	(S)
Plastics and rubber products .....	1.83	1.41	1.19	0.64	1.87	0.51	18.90	0.51	(S)
Nonmetallic mineral products .....	2.41	1.26	0.99	0.59	1.68	0.20	132.65	0.33	(S)
Primary metals .....	1.31	1.10	0.66	0.83	0.79	0.68	9.37	0.43	(S)
Fabricated metal products .....	1.32	0.91	0.66	0.58	1.14	0.37	37.64	0.33	(S)
Machinery .....	2.19	0.86	0.58	0.56	1.03	0.23	130.25	0.24	(S)
Computers and electronic products .....	2.46	1.30	0.92	0.85	1.09	0.28	75.38	0.22	(S)
Electrical equipment, appliances, and components .....	2.02	1.00	0.72	0.52	1.39	0.38	52.44	0.44	(S)
Transportation equipment .....	1.89	1.33	1.08	0.72	1.49	0.45	25.92	0.36	(S)
Furniture and related products .....	1.42	1.25	1.06	0.60	1.76	1.05	5.07	0.82	(NS)
Miscellaneous products .....	2.22	1.52	1.39	0.58	2.40	0.33	36.05	0.62	(S)

NS Not seasonally adjusted. S Seasonally adjusted.

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

Subsector	Average percent changes				Ratio of irregular to trend cycle ( $\bar{T}/\bar{C}$ )	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 ( $\bar{T}$ )	Trend-cycle series ( $\bar{C}$ )					
Food products .....	2.31	0.79	0.66	0.36	1.84	0.23	144.12	0.37	(S)
Beverages and tobacco .....	3.79	1.92	1.76	0.75	2.35	0.55	18.50	0.62	(S)
Textile mills .....	2.52	1.35	0.98	0.78	1.25	0.29	82.15	0.25	(S)
Textile products .....	1.98	1.27	0.92	0.78	1.19	0.30	54.87	0.28	(S)
Apparel .....	3.03	1.48	0.85	1.15	0.74	0.27	88.82	0.25	(S)
Leather and allied products .....	3.17	2.10	1.37	1.43	0.96	0.67	18.17	0.44	(S)
Wood products .....	3.08	2.01	1.65	0.84	1.95	0.28	91.86	0.35	(S)
Paper products .....	1.58	1.00	0.78	0.55	1.42	0.30	79.49	0.27	(S)
Printing .....	3.78	2.10	1.82	0.87	2.10	0.67	35.60	0.62	(S)
Petroleum and coal products .....	3.28	2.22	1.81	1.17	1.55	0.44	42.06	0.47	(S)
Chemical products .....	1.23	0.86	0.61	0.55	1.11	0.26	73.68	0.20	(S)
Plastics and rubber products .....	1.53	0.82	0.53	0.62	0.86	0.14	211.74	0.17	(S)
Nonmetallic mineral products .....	1.78	0.85	0.64	0.53	1.22	0.13	321.76	0.18	(S)
Primary metals .....	1.64	1.20	0.98	0.59	1.67	0.78	17.93	0.49	(S)
Fabricated metal products .....	1.62	0.86	0.58	0.53	1.09	0.32	120.40	0.30	(S)
Machinery .....	1.66	0.78	0.62	0.48	1.30	0.19	120.33	0.29	(S)
Computers and electronic products .....	4.28	1.97	1.56	1.09	1.43	0.40	47.20	0.31	(S)
Electrical equipment, appliances, and components .....	2.86	0.91	0.69	0.50	1.37	0.28	107.65	0.30	(S)
Transportation equipment .....	3.25	1.57	1.35	0.63	2.14	0.56	37.00	0.62	(S)
Furniture and related products .....	2.21	1.20	1.02	0.61	1.68	0.24	74.24	0.37	(S)
Miscellaneous products .....	1.65	0.97	0.83	0.46	1.81	0.40	25.95	0.54	(S)

S Seasonally adjusted.

# Chapter G.

## Description of the M3 Benchmark Data for Shipments and Inventories

---

### GENERAL

The estimates for the 2005 Annual Survey of Manufactures (ASM) are based on reports from a representative sample of approximately 50,000 manufacturing establishments and administrative record information for small employers and new businesses. These estimates represent the portion of the manufacturing population accounted for by establishments with paid employees. Nonemployers are defined as out-of-scope of the ASM. The 2005 tables provide 2005, 2004, 2003, and 2002 estimates for employment, plant hours, payrolls, value added by manufacture, capital expenditures, cost of materials, inventories, value of industry shipments, and fuels and electric energy consumed for most manufacturing industries. Establishments are classified in manufacturing industries by industry definitions described in the 2002 North American Industry Classification System (NAICS) manual<sup>1</sup>.

### SCOPE AND USE OF ANNUAL SURVEY

The 2005 ASM provides the key measures of manufacturing activity for industry groups and important industries for intercensal years. These key measures, as well as other detailed statistics for manufacturing, were collected in the economic censuses; the three most recent censuses covered the years 2002, 1997, and 1992. An annual survey was conducted for each of the years between censuses starting with 1949.

During intercensal periods, these annual surveys provide a continuous series of basic statistics for industries and furnish benchmarks for current business indicators and for measures of industrial production and productivity. The survey also provides significant data in connection with planning for industrial mobilization.

### DESCRIPTION OF THE SURVEY SAMPLE

In 2002 there were approximately 346,000 active manufacturing establishments. For sample efficiency and cost considerations, the 2002 manufacturing population is partitioned into two groups: (1) establishments eligible to be mailed a questionnaire and (2) establishments not eligible to be mailed a questionnaire. The following is a description of the 2004 ASM sample design:

1. Establishments that are eligible to be sent a report form:

This is defined as the mail stratum. It is comprised of larger single-location manufacturing companies and all manufacturing establishments of multi-location companies. The mail stratum is comprised of approximately 128,000 establishments. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multi-location companies identified from the Census Bureau's Company Organization Survey (COS).

The 2004–2008 ASM sample design differs from the 1999–2003 sample design. For most economic surveys, a number of units are included in the sample with certainty: i.e., their probability of selection for the surveys is 1.00. Remaining units are generally assigned a probability that is consistent with their relative importance in the industry or other key aggregations.

---

<sup>1</sup>**North American Industry Classification System (NAICS) United States, 2002.** To order the 1,419-page manual in print or on CD-ROM, call (800) 553-6847.



---

For the 2004 ASM, both the “certainty” criteria and the methodology for deriving the probabilities of selection are revised. The ASM is an establishment-based survey; the establishment serves as both the sample unit and the collection unit. Establishments in the 2002 Economic Census—Manufacturing that satisfied any of the following criteria are included in the sample with certainty: (1) the total employment for the establishment for 2002 is greater than or equal to 1,000; (2) the establishment is identified as one of the 10 largest establishments within the industry (employment); (3) the establishment is classified within an industry with fewer than 20 establishments; (4) the establishment is classified in the computer or flat-glass industry, or (5) the establishment is located within a state where there are fewer than 20 additional establishments in the same North American Industry Classification System (NAICS) group. (NAICS) group is defined as the set of NAICS industries that have the same first four digits). Collectively, there are approximately 9,700 establishments that are selected with certainty. These establishments accounted for approximately 44 percent of the total value of shipments in the 2002 Economic Census—Manufacturing.

Smaller establishments in the remaining portion of the mail stratum are sampled with probabilities ranging from .05 to 1.00. Each of the 473 industries and 1,450 product classes are considered to be a separate population. Using variable reliability constraints, each establishment within a given population is assigned an initial probability of selection that reflects its relative importance within the population. Establishments producing products in multiple product classes receive multiple initial probabilities. The final probability of selection for a specific establishment is defined as the largest of their initial probabilities. This method of assigning probabilities is motivated by the Census Bureau’s primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables are also well represented. For sample selection purposes, each establishment is assigned to an industry stratum. Within each of the 473 industry strata, an independent sample is selected using the final probability of selection associated with the establishments classified within the stratum. A fixed-sample size methodology is used to assure that the desired sample size is realized.

2. Establishments not eligible to be sent a report form:

- a. This is defined as the nonmail stratum. The nonmail stratum consists of small and medium sized single-establishment companies from the Economic Census—Manufacturing. The initial nonmail stratum of the 2004 sample contained approximately 218,000 single-establishment companies from the 2002 Economic Census—Manufacturing. This is significantly higher than previous cycles of the survey and is motivated by the desire to reduce the reporting burden on this segment of the universe.

The nonmail stratum is supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS). Data for establishments included in the nonmail stratum are estimated using information obtained from the administrative records of the IRS and Social Security Administration (SSA), and are included in the published ASM estimates. This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

- b. All nonemployers, i.e., all firms subject to federal income tax, with no paid employees during 2004, are excluded as in previous ASM. Data for nonemployers are not included in this report, but are released in the annual Nonemployer Statistics series.

The report forms, frequently asked questions, and instructions used to collect information from establishments in the ASM are available at <http://help.econ.census.gov/BHS/ASM/index.html>. The ASM reports to review on line are available at <http://www.census.gov/mcd/asmhome.html>.

### **COMPARABILITY WITH HISTORIC DATA**

Both the 2002 Economic Census and the 1997 Economic Census present data based on the North American Industry Classification System (NAICS). While there were revisions to selected industries for 2002, this sector is not affected by those revisions.

---

## **ESTABLISHMENT BASIS OF REPORTING**

The Annual Survey of Manufactures (ASM) is conducted on an establishment basis. Reports are filed for those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports, if the plant records permit such a separation and if the activities are substantial in size. Estimates are based on the reports from a representative sample of manufacturing establishments. These estimates represent the portion of the manufacturing population accounted for by establishments with paid employees. Nonemployers are defined as out-of-scope of the ASM. The tables provide estimates for employment, plant hours, payrolls, value added by manufacture, capital expenditures, cost of materials, inventories, value of industry shipments, and fuels and electric energy consumed for most manufacturing industries.

The ASM excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

## **RELIABILITY OF DATA**

All estimates produced in the Annual Survey of Manufactures (ASM) are subject to both sampling and nonsampling errors. Sampling error is inherent to all sample surveys and reflects the natural variability in the estimates that occurs because data are only collected from a subset of the population. The estimates are also subject to various types of nonsampling error. Examples of nonsampling error include measurement error and processing error. Nonsampling error is inherent to all surveys, including complete censuses.

1. **Estimating Procedure.** Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding historical data values. At each level of aggregation, an estimate of the difference between the current reference period and the base reference period is computed for each item from the sample and added to the corresponding base-year values. This difference can be positive or negative. For the 2003–2006 ASM estimates, the 2002 Economic Census— Manufacturing values serve as the base year.

Due to these positive year-to-year correlations, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll are directly tabulated from the administrative record data provided by the Internal Revenue Service (IRS) and the Social Security Administration (SSA). Estimates of the other data variables are developed from industry averages. Although the nonmail stratum contained approximately 207,000 individual establishments in 2004, it accounted for less than 7 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

2. **Data Qualifications.** The estimates developed from the sample are likely to differ from the results of a complete canvassing of all eligible establishments in the population. The particular sample selected for the ASM is one of many probability samples that could have been selected under identical circumstances. Each of the possible samples would yield a slightly different set of results. The derived standard errors are measures of the variation of all of the possible sample estimates around the true population statistic. Estimates with low standard errors are generally felt to be more accurate than those associated with high standard errors.

---

Estimates of the standard errors are computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard error divided by the corresponding estimate).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

- From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.
- From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.
- From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors are detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors are detected too late to correct the estimates, the data are suppressed or are specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

## **EXPLANATION OF TERMS**

### **Value of Shipments**

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

---

In the case of multiestablishment companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

### **End-of-Year Inventories**

Respondents were asked to report their end-of-year inventories at cost or market. When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by another establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for individual industries, industry groups, and manufacturing totals, which are aggregates of figures reported by establishments in specified industries.