U.S. Manufacturers’ Shipments, Inventories, and Orders (M3)

“Providing early broad-based monthly statistical data on current economic conditions and indications of future production commitments in the manufacturing sector”

www.census.gov/M3
Introduction to M3: origin and purpose

- Provides broad-based monthly statistical data on current economic conditions and indications of future production commitments in the manufacturing sector.
- To provide measures of both current and future manufacturing activity in current dollars, both seasonally and not seasonally adjusted, during a calendar month.
- The survey has been conducted monthly by the US Census Bureau since 1957.
- Data are collected on manufacturers' value of shipments, new orders, end-of-month order backlog, end-of-month total inventory, materials and supplies, work-in-process, and finished goods inventories.
Introduction to M3: respondents

- The M3 includes approximately 4,300 reporting units that represent about 3,000 companies. These companies may be:
  - divisions of diversified large companies
  - large homogeneous companies
  - single unit manufacturers

- Data are collected by an aggregated 6-digit NAICS (North American Industry Classification System).

- There are 66 industry categories collected to estimate total durable goods and 23 industry categories to estimate nondurable goods.

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<th>NAICS-based M3 Industry Groups</th>
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Introduction to M3: Authorization and Security

- Data collection is authorized by Title 13 of the United States Code
- All information, including names of participating companies, is confidential under both Title 13 and Title 26 of the United States Code
- All staff are trained and abide by Principal Economic Indicator Policies
DATA Collection: How are participants chosen

- Companies are selected from the quinquennial Economic Census
- Companies are also selected from the Annual Survey of Manufactures (ASM) and the Manufacturers’ Unfilled Orders Survey (M3UFO)
- Domestic manufacturing companies with $500 million or more in annual shipments are chosen.
DATA COLLECTION: How data are collected

- All Electronic data collection
- Internet- “Centurion” – 87%
- Paperless Facsimile Image Reporting System (PFIRS) – 12%
- Secure Messaging Center -- <1%
Data Collection: the m3 form

- Value of Shipments
- New Orders (Net of Cancellations)
- Order Backlogs (Unfilled Orders)
- Total Inventory and its stages of fabrication:
  - Materials and Supplies Inventory
  - Work in Process Inventory
  - Finished Goods Inventory
ESTIMATION: Monthly Estimates

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

- The universe estimate of new orders is derived from the monthly estimate of shipments plus the difference in unfilled orders between the current and prior period.

- A modified procedure also is used to estimate the stages of fabrication inventory. Total inventory estimated data are re-tabulated to their three-digit NAICS level and serve as control totals for the stages of fabrication data.
Estimation: REVISIONS AND Benchmarking

• Monthly Revisions
  • With each monthly release, the prior month data are revised based on receipt of late or revised data provided by respondents

• Annual Benchmarking
  • Benchmark Press Release contains monthly data revised for the current year based on new benchmark levels
  • Is published in May of each year, except for years ending in “4” or “9”, due to the unavailability of new source data
  • Is published 5 months after the benchmark source data are available
    • Source Data:
      • The Annual Survey of Manufactures (ASM)
      • The Economic Census with DOD/Non DOD splits
      • The Manufacturers’ Unfilled Orders Survey
Estimation: Trading day & Seasonality

• For shipments, unfilled orders, and total inventories, two years of data are forecasted at the end of each series, after adjusting for:
  – different number of trading days in each month
  – moving holidays
  – outliers

• The combined effects of trading day and seasonality can then be estimated and removed by producing adjusted estimates.

• Estimates are not adjusted for inflation
Estimation: Combined ADJUSTMENTS

- The adjusted estimates for shipments, unfilled orders, and total inventories are calculated by dividing the unadjusted estimates by combined adjustment factors.
- The combined factors are computed by the X-13ARIMA-SEATS seasonal adjustment program.
- Adjusted new orders are computed by adding the difference between current and prior adjusted unfilled orders to the current month’s adjusted shipments.
- The inventory by stage of fabrication data are seasonally adjusted at the three-digit NAICS subsector level for each stage.
- Staff calculate combined factors concurrently and include the current period observation in the calculation of the combined factors for that month.
- For information on specific measures used in the combined adjustment analysis, as well as the selection of options within the X-13ARIMA-SEATS program, call 301-763-7630.
Manufacturers’ Unfilled Orders Survey (M3UFO)

The Manufacturers’ Unfilled Orders Survey (M3UFO) is a mandatory survey with a sample of approximately 6,000 companies.

Since 2010, the M3UFO has been conducted annually. Prior to 2010, the survey was conducted in 1976, 1986, 1999.

The M3UFO survey provides the annual benchmark for M3’s unfilled orders data. The ASM and Economic Census serve as the annual benchmarks for M3’s shipments and inventory data.

The survey collects 41 industry categories of the 83 M3 industry categories (not accounting for the defense/nondefense industry break-outs).

48% of M3UFO respondents report via Centurion.

The survey is necessary to ensure future accuracy of the new orders data in the M3 and to determine which NAICS industries continue to report unfilled orders.
M3 supplements

- Department Of Defense (DOD) / Non-DOD Splits
- M3 publishes DOD and Non-DOD data for splits for the following industries:
  - Small arms, ordnance, and accessories
  - Communications equipment manufacturing
  - Search and navigation equipment manufacturing
  - Aircraft manufacturing
  - Aircraft engine and parts manufacturing
  - Ship and boat building

- Economists prefer to examine M3 data with and without DOD figures.
- Based on results of a special inquiry on select industries in the Economic Census, M3 will Benchmark the split between these DOD and Non-DOD industries in 2015.
Core products:

- **The Advance Report on Durable Goods Principal Economic Indicator**
  - Available about 18 working days after each month.
  - Data available on the Internet and America’s Economy App.

- **The Full Report Economic Indicator**
  - Durable and Nondurable Goods
  - Available about 23 working days after each month
  - Data available on the Internet, CIDR and America’s Economy App.

- **Manufacturing and Trade Inventories and Sales (MTIS) Report**
  - Data on total manufacturing from the Full Report are included in a joint monthly indicator press release on Manufacturing, Retail and Wholesale Trade.
core products:

U.S. Census Bureau News
U.S. Department of Commerce - Washington, D.C. 20233

FOR IMMEDIATE RELEASE
TUESDAY, JANUARY 28, 2014, AT 8:30 A.M. EST

Chris Savage or Adriana Stinca
Manufacturing and Construction Division
(301) 763-4532

Advance Report on Durable Goods Manufacturers’ Shipments, Inventories and Orders
December 2013

New Orders

New orders for manufactured durable goods in December decreased $10.3 billion or 4.5 percent to $229.3 billion, the U.S. Census Bureau announced today. This decrease, down two of the last three months, followed a 2.6 percent November increase. Excluding transportation, new orders decreased 1.6 percent. Excluding defense, new orders decreased 3.7 percent.

Transportation equipment, also down two of the last three months, led the decrease, $7.2 billion or 9.5 percent to $73.1 billion. This was led by nondefense aircraft and parts, which decreased $3.8 billion.

Shipments

Shipments of manufactured durable goods in December, down following four consecutive monthly increases, decreased $4.5 billion or 1.9 percent to $223.8 billion. This followed a 1.5 percent November increase.

Transportation equipment, also down following four consecutive monthly increases, led the decrease, $4.1 billion or 3.5 percent to $66.5 billion.

Unfilled Orders

Unfilled orders for manufactured durable goods in December, up ten of the last eleven months, increased $2.9 billion or 0.4 percent to $1,061.3 billion. This was at the highest level since the series was first published on a NAICS basis in 2002, and followed a 0.9 percent November increase.

Transportation equipment, up four consecutive months, drove the increase, $3.9 billion or 0.7 percent to $659.1 billion.

Inventories

Inventories of manufactured durable goods in December, up eight of the last nine months, increased $3.0 billion or 0.8 percent to $387.6 billion. This was at the highest level since the series was first published on a NAICS basis, and followed a 0.3 percent November increase.

Transportation equipment, up nineteen of the last twenty months, led the increase, $1.3 billion or 1.1 percent to $122.1 billion.

Capital Goods

Nondefense new orders for capital goods in December decreased $2.3 billion or 1.0 percent to $225.5 billion. Shipments increased $0.6 billion or 0.3 percent to $75.4 billion. Unfilled orders increased $7.1 billion or 1.4 percent to $542.7 billion. Inventories increased $1.2 billion or 0.7 percent to $176.7 billion.

Defense new orders for capital goods in December decreased $1.9 billion or 1.5 percent to $68.8 billion. Shipments increased $1.3 billion or 1.5 percent to $96.6 billion. Unfilled orders decreased $2.8 billion or 1.7 percent to $161.9 billion. Inventories increased $0.5 billion or 0.4 percent to $22.9 billion.

Revised November Data

Revised seasonally adjusted November figures for all manufacturing industries were: new orders, $495.9 billion (revised from $497.9 billion); shipments, $493.6 billion (revised from $494.6 billion); unfilled orders, $1,057.6 billion (revised from $1,058.3 billion); and total inventories, $333.8 billion (revised from $333.4 billion).

Figures in text are seasonally adjusted at annual rates, not seasonally adjusted. Figures on new and unfilled orders exclude data for cannon and nonmanufacturing. For data, call (202) 763-6767 or go to http://www.census.gov/mfg/. Revised and more detailed statistics, plus historical data, will be published on February 14, 2014, at 8:30 a.m. EST. The Advance Report on durable goods for January in scheduled for February 18, 2014, at 8:30 a.m. EST. Queries or comments should be directed to the Manufacturing and Construction Division, U.S. Census Bureau. For more information about the U.S. Census Bureau’s economic statistics through the Economic Indicators Webinar Series, each of the 10 annual Webinars in the webinar series will provide an in-depth description of how critical the economic data are collected and how you can access and use these statistics. Topics include construction, housing, international trade, retail trade and more. For more information go to www.census.gov/econ/webinars.

U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU
Core products: Full Report

- Table 1-Value of Manufacturers Shipments for Industry Groups
- Table 2-Value of Manufacturers New Orders for Industry Groups
- Table 3-Value of Manufacturers Unfilled Orders for Industry Groups
- Table 4-Value of Manufacturers Total Inventories for Industry Groups
- Table 5- Value of Manufacturers’ Shipments, New Orders, Unfilled Orders and Total Inventory for Topical Series
- Table 6- Value of Manufacturers’ Inventories, by Stage of Fabrication, by Industry Group
Value of Shipments of Manufacturing Industries: January 1996 - December 2013

Billions of Dollars, Seasonally Adjusted

$600
$500
$400
$300
$200
$100
$0


Source: U.S. Census Bureau, Manufacturers' Shipments, Inventories, and Orders Survey, 1996-2013
Shipments of Food products, Petroleum and Coal Products, and Chemical Products: January 1996 – December 2013

Billions of Dollars, Seasonally Adjusted

Source: U.S. Census Bureau, Manufacturers’ Shipments, Inventories, and Orders Survey, 1996-2013

United States Census Bureau
Economics and Statistics Administration
U.S. CENSUS BUREAU
Shipments of Primary Metals and Transportation Equipment:
January 1996 – December 2013

Billions of Dollars, Seasonally Adjusted

Source: U.S. Census Bureau, Manufacturers’ Shipments, Inventories, and Orders Survey, 1996-2013
Retail Sales and Manufacturing Shipments of Motor Vehicles and Parts:
January 1996 - December 2013

Billion Dollars, Seasonally Adjusted

Retail Sales

$81.7 Billion
$50.4 Billion
$30.8 Billion

Shipments of Motor Vehicles and Parts

$45.3 Billion

Recession

Shipments and New Orders of Machinery: January 1996 – December 2013

Billions of Dollars, Seasonally Adjusted


$0 $5 $10 $15 $20 $25 $30 $35 $40

$20.9 Billion

$21.1 Billion

$35.3 Billion

$36.2 Billion

Shipments

New Orders

Recession

Source: U.S. Census Bureau, Manufacturers' Shipments, Inventories, and Orders Survey, 1996-2013
Data Users

• Federal Government for developing economic policy:
  • Federal Reserve Board (monetary policy)
  • Council of Economic Advisers (Presidential advisers)
  • Bureau of Economic Analysis (primary component of the Gross Domestic Product)
• Conference Board for preparing the Index of Leading Economic Indicators
• Trade Associations, Corporate Economists, and Academia
• Stock market and other members of the business community
America’s Economy: Mobile App

Indicators Available:

- Advance Monthly Retail Sales
- Advance Report Durable Goods
- Business Inventories
- Construction Spending
- Consumer Price Index
- Homeownership Rate
- International Trade
- Manufacturers’ Goods
- Monthly Wholesale
- New Residential Construction
- New Residential Sales
- Nonfarm Payroll
- Personal Income
- Producer Price Index
- QFR–Manufacturing
- QFR–Retail Trade
- Quarterly Services Survey
- Real Gross Domestic Product
- Unemployment Rate

www.census.gov/mobile
Available for iPhone, iPad, and Android devices

United States Census Bureau
Economics and Statistics Administration
U.S. CENSUS BUREAU
For More Information

Manufacturers’ Shipments, Inventories and Orders (M3) Branch

U.S. Census Bureau – Economic Statistics

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