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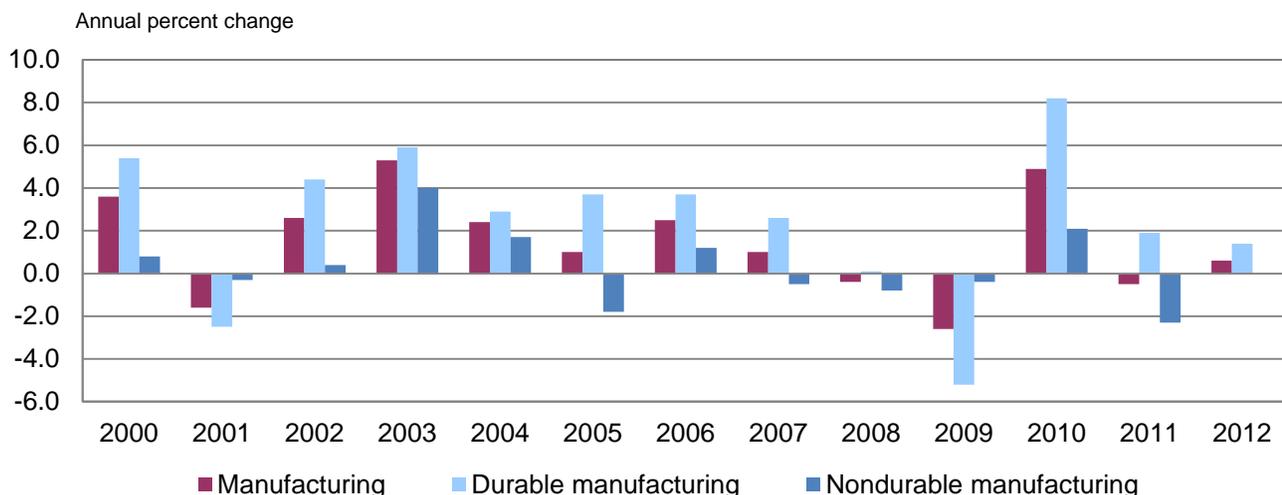
MULTIFACTOR PRODUCTIVITY TRENDS IN MANUFACTURING - 2012

Manufacturing sector multifactor productivity increased at a 0.6 percent annual rate in 2012, the U.S. Bureau of Labor Statistics reported today. This increase offset the 0.5-percent decrease in 2011. The multifactor productivity gain in 2012 reflected a 3.3-percent increase in output and a 2.7-percent increase in combined inputs. (See table A, table 1.)

Multifactor productivity measures the change in output per unit of combined inputs. Multifactor productivity in manufacturing is designed to measure the joint influences on economic growth of technological change, efficiency improvements, returns to scale, reallocation of resources, and other factors, allowing for the effects of capital, labor and intermediate inputs (energy, materials, purchased business services). Multifactor productivity measures differ from labor productivity (output per hour worked) measures that are published quarterly by BLS because multifactor productivity measures include information on capital services and intermediate inputs. Also, data needed to construct multifactor productivity are not available on a quarterly basis.

Durable manufacturing sector multifactor productivity increased 1.4 percent in 2012, following a 1.9-percent increase in 2011. **Nondurable manufacturing sector multifactor productivity** was unchanged in 2012, following a 2.3-percent decrease in 2011. (See table C, table 3.)

Chart 1. Multifactor productivity for the manufacturing, durable manufacturing, and nondurable manufacturing sectors, 2000-2012



NAICS and Index Changes

Beginning with this release, multifactor productivity measures are developed from data based on the 2007 North American Industry Classification System (NAICS). Previous measures were based on the 2002 NAICS. Additionally, the index series have been rebased from 2005=100 to 2009=100.

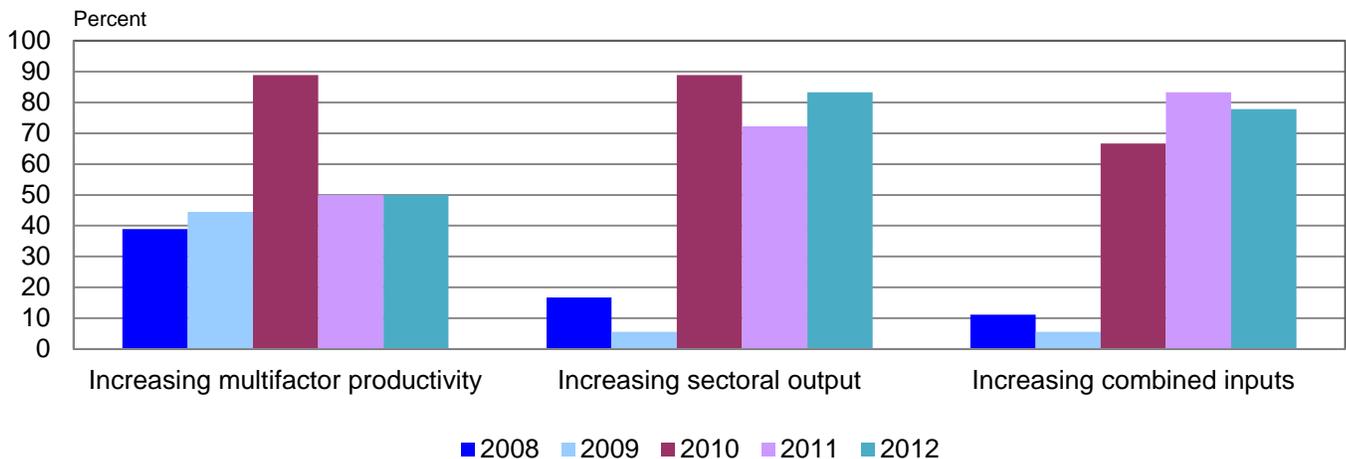
Historical trends in manufacturing

Multifactor productivity in manufacturing grew 1.2 percent annually from 1987 to 2012 with sectoral output increasing at an annual rate of 1.8 percent, faster than the 0.6-percent annual increase in combined inputs. During the same period, output per hour (labor productivity) increased 3.3 percent annually. (See table A.) Of the 3.3 percent growth rate in labor productivity, multifactor productivity contributed 1.2 percent, capital intensity contributed 0.8 percent, materials intensity added 0.7 percent, and purchased business services intensity added 0.4 percent. The contribution of energy intensity was unchanged. (See table B.)

For the 2007-2012 period, multifactor productivity rose at a 0.4 percent annual rate compared to a larger 1.9 percent annual growth rate in the 2000-2007 period. (See table A.) Sectoral output declined 1.2 percent and combined inputs declined 1.6 percent over the 2007-2012 period.

In 2012, more NAICS three-digit manufacturing industries had an increase in sectoral output growth compared to 2011. The number of industries exhibiting an increase in multifactor productivity growth remained steady compared to 2011. In 2012, fewer NAICS three-digit manufacturing industries had an increase in combined inputs compared to 2011. Fourteen industries showed an increase in combined inputs. Fifteen industries showed increasing sectoral output. Nine out of 18 manufacturing industries exhibited an increase in multifactor productivity. (See chart 2.) Nine industries experienced a decline in multifactor productivity growth. Of these nine industries, four were durable manufacturing industries: wood products; nonmetallic mineral products; primary metals; and electrical equipment, appliances, and components. The remaining five industries were in the nondurable manufacturing sector: apparel, leather, and allied products; paper products; printing and related support activities; chemical products; and plastics and rubber products. (See table 3.)

Chart 2. Percent of manufacturing industries with increases in multifactor productivity, sectoral output, and combined inputs, 2008-2012



Revised measures

Previous and revised productivity measures and related data for 2010 and 2011 for the manufacturing, durable manufacturing, and nondurable manufacturing sectors are displayed in table C. In 2011, multifactor productivity growth in the manufacturing sector decreased 0.5 percent, a downward revision from the previously reported 0.8-percent increase. Multifactor productivity in the durable manufacturing sector was 1.9 percent, remaining the same as previously reported. In the nondurable manufacturing sector, multifactor productivity decreased 2.3 percent, a significant downward revision from the previously reported 0.3-percent decrease. The downward revision of multifactor productivity in the manufacturing and nondurable manufacturing sectors was due to a slight downward revision in sectoral output and a large upward revision in combined inputs. These revisions were due to new intra-sector transaction ratios now based on 2007 NAICS and the new inclusion of research and development assets into capital services. In 2010, multifactor productivity in the manufacturing and durable manufacturing sectors was revised upward while the nondurable manufacturing sector was not revised.

Table A. Compound annual growth rates for productivity, sectoral output, and inputs in the manufacturing sector for selected periods, 1987-2012

Percent

	1987-2012	1987-1990	1990-1995	1995-2000	2000-2007	2007-2012	2011-2012
<u>Productivity</u>							
Multifactor Productivity ¹	1.2	0.3	1.1	1.8	1.9	0.4	0.6
Output per hour of all persons	3.3	2.0	3.3	5.2	3.7	1.5	1.0
Output per unit of capital services	-0.5	-0.3	0.5	0.8	-0.7	-2.6	2.1
<u>Sectoral Output</u>							
	1.8	2.4	3.2	5.0	0.5	-1.2	3.3
<u>Inputs</u>							
Combined Inputs ²	0.6	2.1	2.1	3.2	-1.3	-1.6	2.7
Labor hours ³	-1.4	0.4	-0.1	-0.1	-3.1	-2.7	2.3
Capital services	2.3	2.7	2.7	4.2	1.2	1.5	1.2
Energy	-0.2	1.9	1.6	6.6	-2.8	-6.0	6.3
Materials	1.6	2.3	4.0	7.7	-1.6	-2.7	1.6
Purchased business services	1.2	5.5	3.2	1.2	-0.3	-1.1	7.7

¹Output per combined units of hours, capital services, energy, materials, and purchased business services.

²The growth rate of each input is weighted by its share of current dollar costs.

³Hours at work of all persons.

Table B. Compound annual growth rates in output per hour of all persons and the contributions of capital intensity, intermediate inputs intensity, and multifactor productivity in the manufacturing sector for selected periods, 1987-2012

Percent

	1987-2012	1987-1990	1990-1995	1995-2000	2000-2007	2007-2012	2011-2012
<u>Manufacturing</u>							
Output per hour of all persons	3.3	2.0	3.3	5.2	3.7	1.5	1.0
Contribution of capital intensity ¹	0.8	0.5	0.6	0.9	0.9	1.0	-0.3
Contribution of information processing equipment ²	0.1	0.1	0.1	0.2	0.1	0.1	0.0
Contribution of intellectual property products ³	0.4	0.2	0.3	0.4	0.4	0.5	0.0
Contribution of all other capital services	0.3	0.2	0.2	0.3	0.5	0.4	-0.3
Contribution of intermediate inputs ⁴	1.2	1.3	1.6	2.4	0.9	0.1	0.6
Contribution of energy Intensity ⁵	0.0	0.0	0.0	0.2	0.0	-0.1	0.1
Contribution of materials Intensity ⁶	0.7	0.5	1.0	2.0	0.4	0.0	-0.2
Contribution of purchased business services intensity ⁷	0.4	0.7	0.5	0.2	0.5	0.3	0.7
Multifactor productivity ⁸	1.2	0.3	1.1	1.8	1.9	0.4	0.6

¹Capital services per hour multiplied by capital's share of current dollar costs.

²Information processing equipment per hour multiplied by its share of current dollar costs.

³Intellectual property products per hour multiplied by its share of current dollar costs.

⁴Intermediate inputs per hour multiplied by intermediate inputs' share of current dollar costs.

⁵Energy per hour multiplied by energy's share of current dollar costs.

⁶Materials per hour multiplied by materials' share of current dollar costs.

⁷Purchased business services per hour multiplied by purchased business services' share of current dollar costs.

⁸Output per combined units of hours, capital services, energy, materials, and purchased business services.

Table C. Previous and revised multifactor productivity and related measures for the 2010-2011 and 2009-2010 periods

Sector	Multifactor productivity ¹	Sectoral output	Inputs					Purchased business services
			Combined inputs ²	Hours ³	Capital services	Energy	Materials	
Annual percent change, 2010-2011								
<u>Manufacturing</u>								
Previous	0.8	3.1	2.3	2.3	0.1	2.0	6.3	-3.1
Revised	-0.5	2.9	3.4	2.1	1.0	6.5	7.0	1.1
<u>Durable manufacturing</u>								
Previous	1.9	6.3	4.3	3.9	0.0	0.9	13.2	-2.1
Revised	1.9	6.2	4.2	3.8	0.4	-4.9	13.3	1.3
<u>Nondurable manufacturing</u>								
Previous	-0.3	0.5	0.8	-0.4	0.2	2.7	2.7	-4.5
Revised	-2.3	0.3	2.7	-0.6	1.4	14.0	4.3	0.8
Annual percent change, 2009-2010								
<u>Manufacturing</u>								
Previous	4.5	6.3	1.7	0.0	-0.5	1.6	5.0	1.3
Revised	4.9	6.2	1.2	-0.1	0.7	-3.9	3.4	1.3
<u>Durable manufacturing</u>								
Previous	6.8	10.0	3.0	-0.1	-1.6	12.8	14.2	-1.3
Revised	8.2	9.9	1.5	-0.2	-0.8	0.9	10.6	-0.2
<u>Nondurable manufacturing</u>								
Previous	2.1	3.3	1.1	0.1	0.1	-5.1	1.4	4.9
Revised	2.1	3.3	1.1	0.1	1.8	-6.9	1.0	3.0

¹Output per combined units of hours, capital services, energy, materials, and purchased business services.

²The growth rate of each input is weighted by its share of current dollar costs.

³Hours at work of all persons.

Technical Notes

Beginning with this release, historical data for multifactor productivity in all sectors and industries reflect several important changes and revisions to the data sources used to develop these series. In "Preview of the 2013 Comprehensive Revision of the National Income and Product Accounts: Changes in Definitions and Presentations," Survey of Current Business, March 2013, and the 2014 Comprehensive Revision of the Industry Economic Accounts, the Bureau of Economic Analysis (BEA) described several important changes to the national and annual industry accounts. Principal changes include the introduction of research and development and artistic originals as fixed investment, the capitalization of ownership transfer costs of residential fixed assets, and revisions to the annual industry accounts.

Capital Services

Capital services are the services derived from the stock of physical assets and intellectual property assets. There are 90 asset types for fixed business equipment, structures, inventories, land, and intellectual property products. The aggregate capital services measures are obtained by Tornqvist aggregation of the capital stocks for each asset type within each of the eighteen manufacturing NAICS industry groupings using estimated rental prices for each asset type. Each rental price reflects the nominal rate of return to all assets within the industry and rates of economic depreciation and revaluation for the specific asset; rental prices are adjusted for the effects of taxes. Data on investment for fixed assets are obtained from BEA. Data on inventories are estimated using BEA and additional information from IRS Corporation Income Returns. Data for land in the farm sector are obtained from USDA. Nonfarm industry detail for land is based on IRS book value data. Current-dollar value-added data, obtained from BEA, are used in estimating capital rental prices.

Labor Hours

The construction of the hours measures follows the methodology described in USDL 14-0529, *Multifactor Productivity Trends, 2012*, http://www.bls.gov/news.release/archives/prod3_04032014.pdf. Hours in manufacturing are directly aggregated and do not include the effects of labor composition. Hours data for the manufacturing multifactor productivity measures include hours for all persons working in the manufacturing sector – wage and salary workers, the self-employed and unpaid family workers. The primary source of hours data is the BLS Current Employment Statistics (CES) survey. Hours paid of production workers are also obtained primarily from the CES survey. The hours of these employees are then converted to an at-work basis by using information from the Employment Cost Index (ECI) of the National Compensation Survey (NCS) and the BLS Hours at Work Survey. Hours at work for nonproduction workers are derived using data from the Current Population Survey (CPS), the CES, and the NCS. The hours at work of proprietors are derived from the CPS.

Hours at work data are based on underlying hours data published in the February 6, 2014, USDL-14-0167, *Productivity and Costs*, http://www.bls.gov/news.release/archives/prod2_02062014.pdf. Therefore, the data do not reflect the benchmark revisions to the CES and other revisions to hours released on March 6, 2014.

Intermediate Inputs

In manufacturing, intermediate inputs consist of energy, materials, and purchased business services, and represent a large share of production costs. Research has shown that substitution among inputs, including intermediate inputs, affects productivity change. Therefore, it is important to account for intermediate inputs in productivity measures at the level of manufacturing. In contrast, the more aggregate productivity measures compare "value-added" output with two classes of inputs, capital and labor. Because of these differences in concepts and methodology, productivity change in manufacturing cannot be directly compared with changes in private business or private nonfarm business.

Data on intermediate inputs are obtained from BEA based on BEA annual input-output tables. Tornqvist indexes of each of these three input classes are derived at the three-digit NAICS level and then aggregated to total manufacturing. Materials inputs are adjusted to exclude transactions between establishments within the same sector.

Combined Inputs

The five input indexes (capital services, hours, energy, materials, and purchased business services) are combined using chained superlative Tornqvist aggregation, applying weights that represent each component's share of total costs. Total costs are defined as the current dollar value of manufacturing sectoral output. Most taxes on production and imports, such as excise taxes, are excluded from costs; however, property and motor vehicle taxes remain in total costs.

Capital Intensity

Capital intensity is the ratio of capital services to hours worked in the production process. The higher the capital to hours ratio, the more capital intensive the production process is.

In a production process, profit maximizing/cost-minimizing firms adjust the factor proportions of capital and labor if the price of one factor falls relative to the price of the other factor; there would be a tendency for the firms to substitute the less expensive factor for the more expensive one. In the short run, changes in hours worked are more variable than changes in capital services. Changes in hours worked in business cycles can result in volatility of the capital intensity ratio over short periods of time. In the long run an increase in wages relative to the price of capital will induce the firm to substitute capital for labor, resulting in an increase in capital intensity.

Rising labor costs are, in fact, an incentive for firms to introduce automated production processes. Industry estimates of capital to hours ratios can be obtained at <http://www.bls.gov/mfp/mprdownload.htm>.

Sectoral Output

The output concept used for multifactor productivity in manufacturing is “sectoral output”. Sectoral output equals gross output (sales, receipts, and other operating income, plus commodity taxes plus changes in inventories), excluding transactions between establishments within the same sector. In contrast, the output concept used for private business and private nonfarm business is “real value-added”. Real value-added output in private business equals gross domestic product less general government, government enterprises, private households (including the rental value of owner-occupied real estate), and non-profit institutions. Real value-added output excludes intermediate transactions between businesses.

The output index for manufacturing is constructed using a chained superlative index (Tornqvist) of three-digit NAICS industry outputs. Industry output is measured as sectoral output, the total value of goods and services leaving the industry. The indexes of industry output are calculated with the Tornqvist index formula. This index formula aggregates the growth rates of the various industry outputs between two periods, using their relative shares in industry value of production averaged over the two periods as weights. BLS industry output measures for manufacturing industries are constructed using data from the economic censuses and annual surveys of the Bureau of the Census, U.S. Department of Commerce, together with information on price changes, primarily from BLS.

Multifactor Productivity

The manufacturing multifactor productivity measures describe the relationship between output in real terms and the inputs involved in its production. Manufacturing multifactor productivity measures exclude intermediate inputs between manufacturing establishments from both output and inputs. Multifactor productivity measures are not intended to measure the specific contributions of labor, capital, or intermediate inputs. Rather, they are designed to measure the joint influences on economic growth of technological change, efficiency improvements, returns to scale, reallocation of resources and other factors of economic growth, allowing for the effects of capital, labor, and intermediate inputs. The multifactor productivity indexes are derived by dividing an output index by an index of the combined inputs of labor hours, capital services, energy, non-energy materials, and purchased business services.

Other information

Comprehensive tables containing more detailed data than that which is published in this press release are available upon request at 202-691-5606 or at <http://www.bls.gov/mfp/mprdload.htm>. More detailed information on methods, limitations, and data sources of capital and labor are provided in BLS Bulletin 2178 (September 1983), *Trends in Multifactor Productivity, 1948-81* and on the BLS Multifactor Productivity website under the title “Technical Information About the BLS Multifactor Productivity Measures” for Major Sectors and 18 NAICS 3-digit Manufacturing Industries at <http://www.bls.gov/mfp/mprtech.pdf>. General information is available on the BLS Multifactor Productivity website at <http://www.bls.gov/mfp/mprover.htm>. Additional data not contained in the release can be obtained in print or at <http://www.bls.gov/mfp>. A number of comprehensive tables set up as zip files can be obtained at <http://www.bls.gov/mfp/mprdload.htm>. Methods for measuring manufacturing multifactor productivity are discussed in “Measurement of productivity growth in U.S. manufacturing” in the July 1995 issue of the *Monthly Labor Review*. See <http://www.bls.gov/mfp/mprgul95.pdf>.

Table 1. Manufacturing sector: productivity and related measures for the 1987-2012 period

Annual percent change from previous year

Year	Productivity			Sectoral Output	Inputs					
	Output per hour of all persons	Output per unit of capital services	Multifactor Productivity ¹		Hours ²	Capital Services	Energy	Materials	Purchased business services	Combined units of all Inputs ³
1988	2.3	2.9	2.2	5.4	3.0	2.4	4.2	0.5	8.9	3.1
1989	1.4	-0.7	-0.4	2.1	0.6	2.8	-0.2	3.2	6.1	2.5
1990	2.4	-3.1	-1.0	-0.2	-2.5	3.0	1.9	3.0	1.6	0.8
1991	2.7	-4.1	-0.7	-1.6	-4.2	2.6	-0.4	0.5	-0.7	-0.9
1992	3.4	0.3	-0.7	2.9	-0.5	2.5	-1.0	8.9	7.4	3.6
1993	2.3	1.2	2.4	3.7	1.3	2.4	3.2	0.3	0.5	1.2
1994	3.5	3.3	2.7	5.9	2.3	2.5	3.5	4.2	3.8	3.1
1995	4.8	2.0	2.0	5.5	0.6	3.5	2.9	6.3	5.1	3.5
1996	3.6	-0.8	0.0	3.4	-0.2	4.2	-2.8	11.2	-0.5	3.5
1997	5.7	2.7	2.5	7.6	1.8	4.8	-2.3	10.4	3.9	4.9
1998	6.0	0.8	1.1	5.7	-0.3	4.8	4.8	10.4	4.7	4.5
1999	5.2	0.4	1.6	4.4	-0.7	4.0	23.6	6.2	0.4	2.8
2000	5.4	0.8	3.6	4.1	-1.3	3.2	12.0	0.9	-2.1	0.5
2001	2.5	-6.2	-1.6	-4.2	-6.6	2.1	14.9	-6.6	2.1	-2.6
2002	7.7	-1.1	2.6	0.1	-7.1	1.2	-25.4	3.6	-1.4	-2.5
2003	5.5	-0.2	5.3	0.4	-4.9	0.5	-10.7	-7.6	-5.3	-4.6
2004	2.5	1.7	2.4	1.9	-0.6	0.1	-5.0	3.2	-6.4	-0.6
2005	4.2	2.0	1.0	3.0	-1.1	1.0	7.0	2.7	7.2	2.0
2006	0.4	-0.3	2.5	1.2	0.7	1.4	-6.8	-3.7	-3.0	-1.3
2007	3.3	-0.6	1.0	1.6	-1.6	2.2	12.8	-2.2	5.7	0.6
2008	0.0	-6.8	-0.4	-4.0	-4.0	3.0	-6.9	-3.8	-11.2	-3.6
2009	-0.3	-14.3	-2.6	-13.2	-13.0	1.3	-27.5	-19.3	-3.2	-10.8
2010	6.2	5.4	4.9	6.2	-0.1	0.7	-3.9	3.4	1.3	1.2
2011	0.7	1.9	-0.5	2.9	2.1	1.0	6.5	7.0	1.1	3.4
2012	1.0	2.1	0.6	3.3	2.3	1.2	6.3	1.6	7.7	2.7

¹Output per combined units of hours, capital services, energy, materials, and purchased business services.²Hours at work of all persons.³Combined units of hours, capital services, energy, materials, and purchased business services, chained superlative index.

Source: The Bureau of Labor Statistics (BLS) develops productivity measures using output data published by the Bureau of the Census, U.S. Department of Commerce, and modified by BLS. Compensation and hours data are from the BLS. Capital measures are based on data supplied by the BEA, U.S. Department of Commerce. See also Technical Notes in this release.

Table 2. Manufacturing sector: indexes of productivity and related measures, 1987-2012

Indexes 2009=100

Year	Productivity			Sectoral Output	Inputs					
	Output per hour of all persons	Output per unit of capital services	Multifactor Productivity ¹		Hours ²	Capital Services	Energy	Materials	Purchased business services	Combined units of all Inputs ³
1987	48.2	124.3	77.9	71.7	148.8	57.7	114.5	76.4	81.2	92.1
1988	49.3	127.8	79.6	75.6	153.3	59.1	119.3	76.8	88.4	94.9
1989	50.0	127.0	79.3	77.1	154.3	60.8	119.0	79.3	93.8	97.3
1990	51.2	123.1	78.5	77.0	150.4	62.6	121.3	81.7	95.3	98.1
1991	52.6	118.0	78.0	75.8	144.1	64.2	120.9	82.1	94.7	97.2
1992	54.4	118.4	77.4	78.0	143.4	65.9	119.7	89.4	101.7	100.7
1993	55.7	119.8	79.3	80.8	145.3	67.5	123.4	89.7	102.2	102.0
1994	57.6	123.8	81.4	85.6	148.7	69.1	127.8	93.5	106.1	105.1
1995	60.3	126.2	83.0	90.3	149.6	71.5	131.4	99.4	111.4	108.8
1996	62.5	125.2	83.0	93.4	149.4	74.6	127.8	110.5	110.8	112.6
1997	66.1	128.6	85.1	100.5	152.0	78.1	124.9	122.1	115.1	118.1
1998	70.1	129.7	86.1	106.2	151.6	81.9	130.9	134.7	120.6	123.4
1999	73.7	130.3	87.5	111.0	150.6	85.2	161.7	143.1	121.1	126.9
2000	77.7	131.3	90.6	115.5	148.7	87.9	181.2	144.4	118.5	127.4
2001	79.6	123.2	89.1	110.6	138.9	89.8	208.2	134.8	121.0	124.1
2002	85.8	121.8	91.5	110.7	129.1	90.9	155.4	139.6	119.4	121.1
2003	90.5	121.7	96.3	111.2	122.9	91.4	138.7	129.0	113.1	115.4
2004	92.7	123.8	98.7	113.3	122.2	91.5	131.7	133.1	105.8	114.8
2005	96.6	126.2	99.6	116.7	120.8	92.4	141.0	136.8	113.5	117.1
2006	97.1	125.9	102.1	118.1	121.7	93.8	131.4	131.8	110.1	115.6
2007	100.3	125.2	103.1	120.0	119.7	95.8	148.3	128.8	116.3	116.3
2008	100.3	116.7	102.7	115.2	114.9	98.7	138.0	124.0	103.3	112.1
2009	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2010	106.2	105.4	104.9	106.2	99.9	100.7	96.1	103.4	101.3	101.2
2011	107.0	107.3	104.4	109.2	102.1	101.7	102.4	110.6	102.4	104.6
2012	108.0	109.6	105.0	112.8	104.4	103.0	108.8	112.4	110.3	107.4

¹Output per combined units of hours, capital services, energy, materials, and purchased business services.²Hours at work of all persons.³Combined units of hours, capital services, energy, materials, and purchased business services, chained superlative index.

Source: The Bureau of Labor Statistics (BLS) develops productivity measures using output data published by the Bureau of the Census, U.S. Department of Commerce, and modified by BLS. Compensation and hours data are from the BLS. Capital measures are based on data supplied by the BEA, U.S. Department of Commerce. See also Technical Notes in this release.

Table 3. Multifactor productivity measures for manufacturing industries in selected periods, 1987-2012

Compound annual growth rates

	1987-2012	1987-1990	1990-1995	1995-2000	2000-2007	2007-2012	2011-2012
Manufacturing	1.2	0.3	1.1	1.8	1.9	0.4	0.6
<u>Nondurable manufacturing</u>	0.1	-0.3	0.5	-0.3	0.6	-0.3	0.0
Food, beverage, and tobacco products	0.0	-1.5	1.4	-1.7	0.9	0.0	2.6
Textile mills and textile product mills	0.9	1.2	0.7	1.5	1.2	-0.1	3.0
Apparel, leather, and allied products	1.8	0.2	3.0	1.0	2.8	0.9	-6.2
Paper products	-0.6	0.4	-1.7	-1.7	0.5	-0.7	-0.5
Printing and related support activities	1.0	1.0	-0.2	0.2	2.7	0.8	-1.5
Petroleum and coal products	0.7	1.0	0.9	1.6	0.0	0.5	0.2
Chemical products	-0.5	-1.0	-1.0	-0.4	0.8	-1.5	-2.6
Plastics and rubber products	0.6	0.9	0.5	1.4	0.2	0.4	-0.2
<u>Durable manufacturing</u>	2.1	0.7	1.5	3.3	2.9	1.2	1.4
Wood products	0.3	1.2	-1.7	-0.4	0.9	1.4	-0.8
Nonmetallic mineral products	0.1	0.0	0.8	0.3	0.1	-0.7	-0.5
Primary metals	0.4	1.1	0.0	0.7	0.7	-0.2	-2.2
Fabricated metal products	0.2	-0.1	0.9	-0.2	0.6	-0.6	2.2
Machinery	0.0	1.1	-2.0	-1.0	1.6	0.2	0.4
Computer and electronic products	8.4	4.9	9.1	13.8	7.9	5.2	1.8
Electrical equipment, appliances, and components	-0.7	-2.0	-2.5	-2.6	2.0	0.1	-0.6
Transportation equipment	0.4	-1.8	-0.4	0.3	2.2	0.0	1.5
Furniture and related products	0.2	-0.6	0.6	0.5	0.5	-0.1	1.8
Miscellaneous manufacturing	1.2	2.3	-0.2	0.9	1.1	2.4	3.5

Note: Multifactor productivity measures by industry do not sum up to aggregate manufacturing measures because industry measures exclude transactions only within the specific industry while the aggregate manufacturing measures also exclude transactions between all manufacturing industries.