



For release 10:00 a.m. (EDT) Thursday, June 25, 2020

USDL-20-1276

Technical information: (202) 691-5606 • productivity@bls.gov • www.bls.gov/lpc
 Media contact: (202) 691-5902 • PressOffice@bls.gov

**PRODUCTIVITY AND COSTS BY INDUSTRY:
 MANUFACTURING AND MINING INDUSTRIES – 2019**

Labor productivity declines were widespread among manufacturing industries in 2019, with decreases in 54 of the 86 four-digit NAICS industries. Of the 51 industries in durable manufacturing, 31 had productivity decreases in 2019 led by a 7.8 percent decline in the productivity of the HVAC and commercial refrigeration equipment industry. Nondurable manufacturing also had widespread declines in 2019 with productivity falling in 23 of 35 industries, led by a 13.1-percent decline in the other leather products industry. All four industries in the mining sector posted productivity declines in 2019 led by the coal mining industry with a decrease of 6.6 percent. (See chart 1.)

Chart 1. Manufacturing and mining industries with the largest change in productivity, 2019
 (NAICS 4-digit industries)

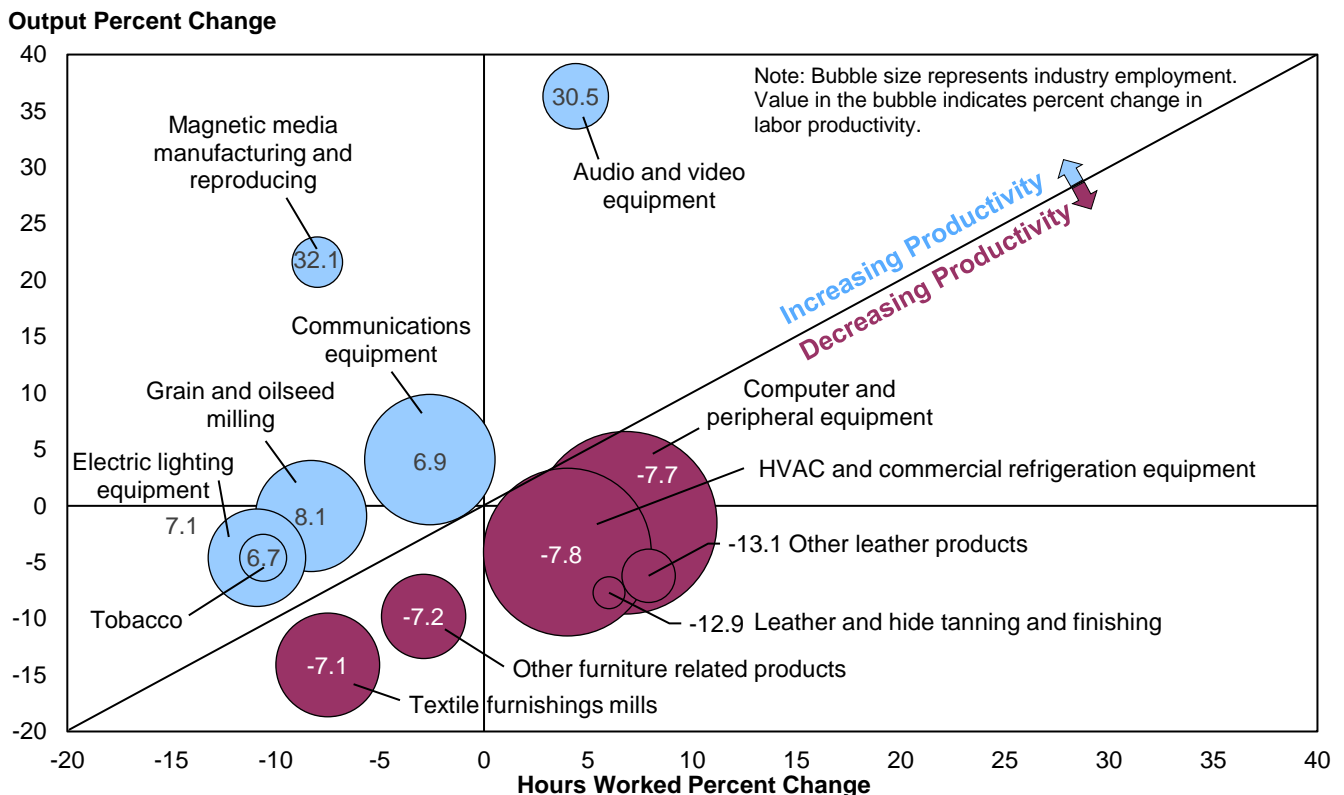


Chart 1 shows the industries with the largest changes in productivity in 2019. Change in productivity is approximately equal to the change in output minus the change in hours worked. Four of the six industries with declining productivity (below the diagonal line) had growth in hours worked with declining output. Of the six industries with productivity gains (those above the diagonal line), only audio and video equipment had growth in both output and hours worked.

Labor Productivity Trends in NAICS 3-Digit Industries, 2019

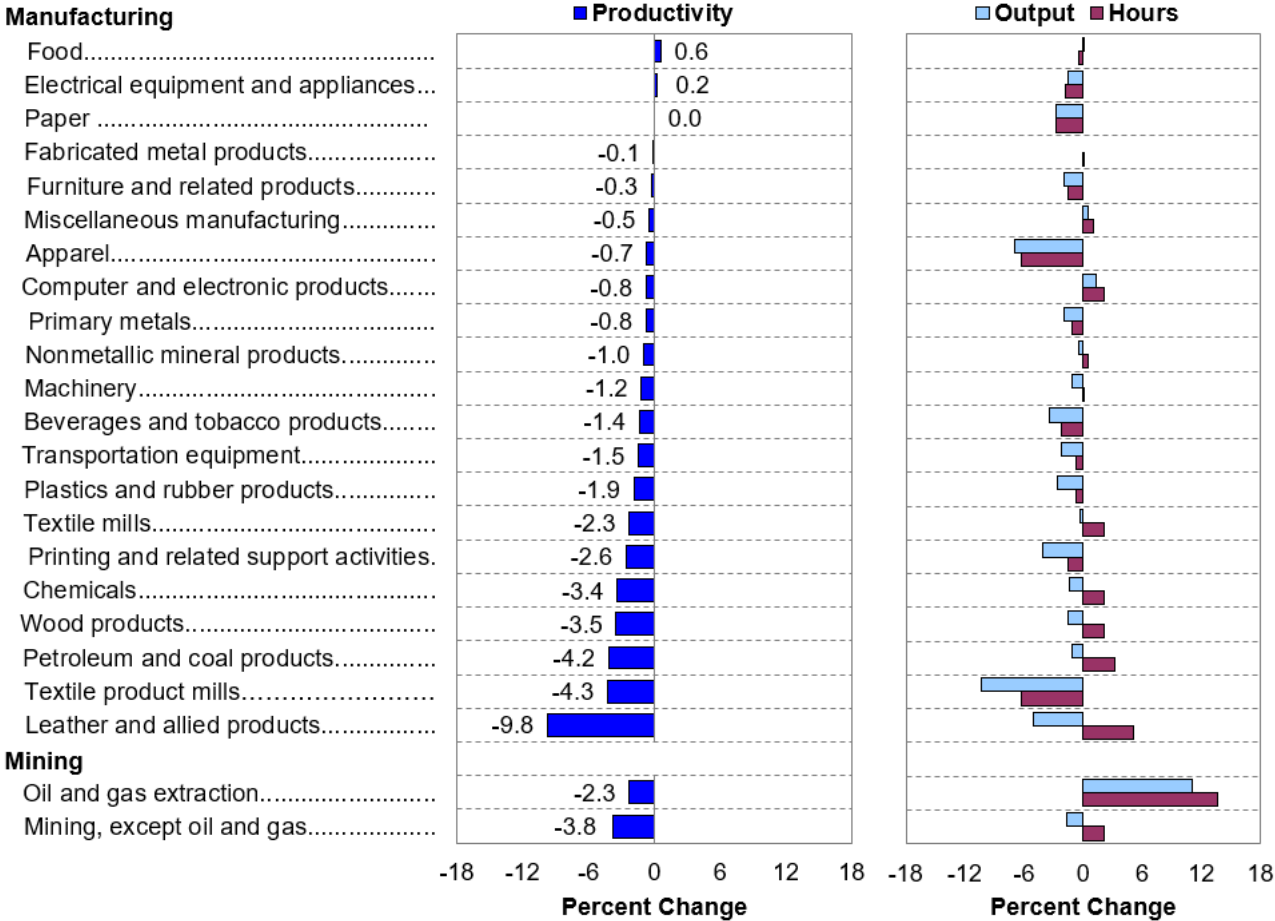
Manufacturing

- Labor productivity decreased in 18 of the 21 NAICS 3-digit manufacturing industries in 2019, as output declined in 17 industries and hours worked rose in 10. (See chart 2.)
- The food industry had the largest productivity gain, 0.6 percent, as output increased and hours decreased.
- The leather and allied products industry had the largest productivity decline, 9.8 percent, as output fell and hours worked increased, each by 5.1 percent.

Mining

- Labor productivity declined 2.3 percent in the oil and gas extraction industry where an increase in hours worked outpaced growth in output. (See chart 2.)
- The mining, except oil and gas industry had a productivity decline of 3.8 percent, as hours worked increased while output declined.

Chart 2. Productivity growth in NAICS 3-digit manufacturing and mining industries, 2019



Trends in Unit Labor Costs in 2019

Unit labor costs, which reflect the total labor costs required to produce a unit of output, rose in 77 of the 86 NAICS 4-digit manufacturing industries. Of the 51 industries in durable manufacturing, 45 experienced rising unit labor costs, led by the railroad rolling stock industry which increased 10.7 percent. Nondurable manufacturing also experienced widespread increases in unit labor costs with 32 of the 35 industries recording an increase, led by the textile furnishings mills industry with a rise of 17.6 percent. Of the four industries in the mining sector, three had increases in unit labor costs led by the coal mining industry which increased 7.0 percent. (See table 1.)

Unit Labor Cost Trends in NAICS 3-Digit Industries, 2019

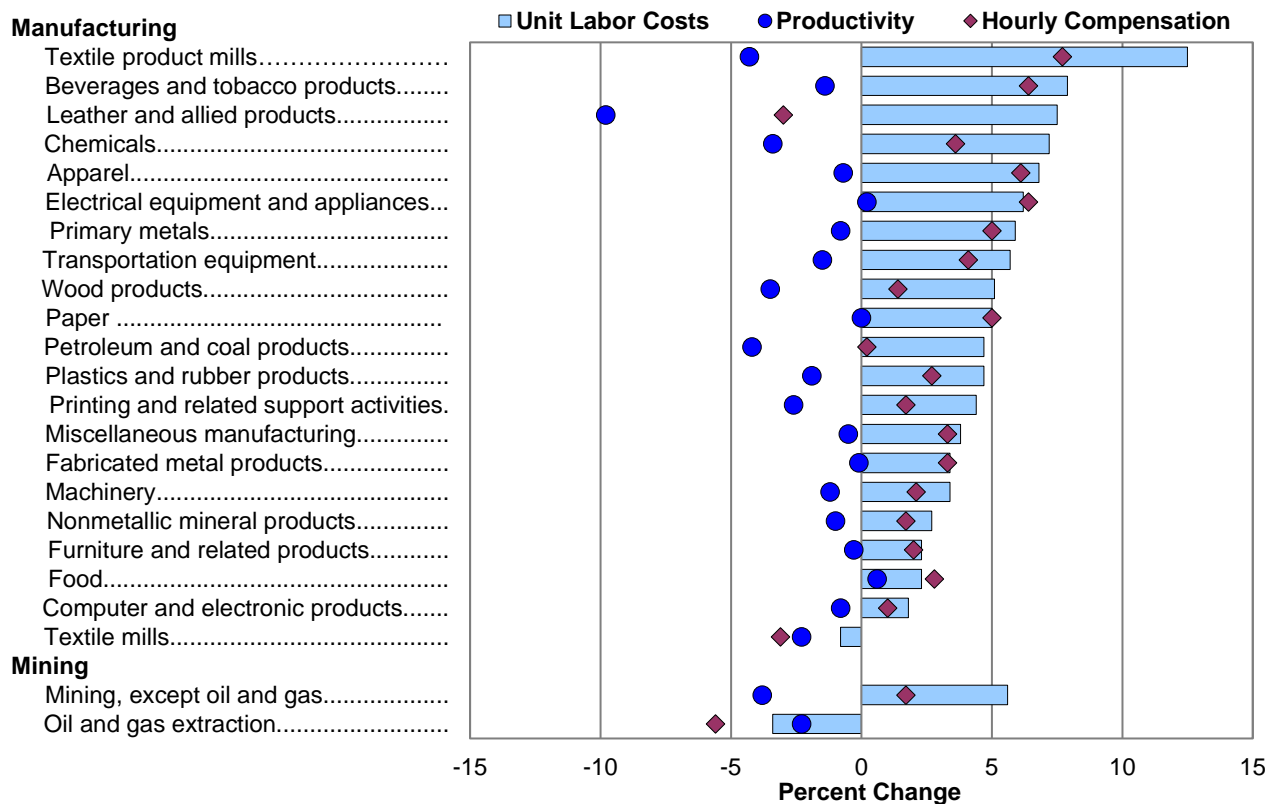
Manufacturing

- Employers experience increased unit labor costs when hourly compensation growth exceeds productivity growth. Unit labor costs increased in 20 of the 21 manufacturing industries, as hourly compensation growth outpaced that of productivity. Textile mills was the exception and had a decrease in unit labor costs due to hourly compensation declines that exceeded productivity declines. (See chart 3.)

Mining

- Unit labor costs declined in the oil and gas extraction industry 3.4 percent, as productivity decreased 2.3 percent and hourly compensation decreased 5.6 percent. (See chart 3.)
- The mining, except oil and gas industry saw a 5.6-percent increase in unit labor costs, as hourly compensation rose 1.7 percent while productivity dropped 3.8 percent.

Chart 3. Unit labor costs, productivity, and hourly compensation in NAICS 3-digit manufacturing and mining industries, 2019



Long-Term Trends in Labor Productivity and Unit Labor Costs

Chart 4 displays the number of NAICS 4-digit manufacturing and mining industries with increases in productivity, output, and hours worked for selected time periods through 2019.

Labor Productivity

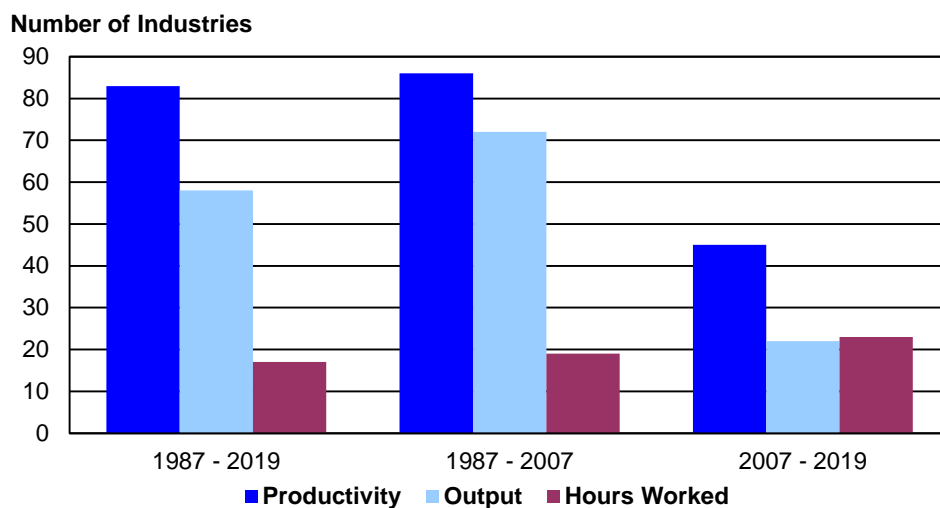
- Over the entire **1987-2019** period, labor productivity rose in 83 of the 91 manufacturing and mining industries. Output rose in 58 industries, while hours worked increased in only 17. In the 17 industries where hours worked increased, they rose at a slow pace, 0.7 percent per year on average.
- During the more recent **2007-19** period, which included the Great Recession of 2007-09, productivity increased in 45 industries. These increases are predominantly the result of a decline in hours worked rather than an increase in output, as hours worked fell in 35 of these industries while output increased in only 18.

Unit Labor Costs

- During the **1987-2019** period, unit labor costs increased in 76 of the 86 NAICS 4-digit manufacturing industries. All five mining industries saw an increase in unit labor costs.
- From **2007 to 2019**, unit labor costs increased in 79 of the 86 manufacturing industries and in 3 of the 5 mining industries. Unit labor costs increased the most in the beverages industry.

The computer and peripheral equipment industry recorded the largest productivity gain as well as the largest unit labor cost decline during both the 1987-2019 and 1987-2007 periods. However, between 2007 and 2019, the oil and gas extraction industry posted the greatest productivity growth and the largest unit labor cost decline.

Chart 4. Manufacturing and mining industries with increases in labor productivity, output, and hours worked
(NAICS 4-digit industries)



Additional Information

Time periods for data covered by this release precede, and are therefore not impacted by, the COVID-19 pandemic.

Manufacturing industry output measures for 2018 and earlier years are constructed primarily using data from the economic censuses and annual surveys of the U.S. Census Bureau together with data on price changes primarily from BLS. These measures have been revised due to the release of the 2017 Economic Census and the 2018 Annual Survey of Manufactures. Manufacturing industry output for 2019 is estimated based on historical relationships between BLS sectoral output, BLS price indexes, and data on industrial production from the Federal Reserve Board.

Want to know more?

Find data at www.bls.gov/lpc for:

- Additional industries and sectors
- Detailed data series: indexes of productivity and related measures; rates of change; and levels of industry employment, hours worked, nominal value of production, and labor compensation
- Additional years and long-term data

Questions?

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Technical Note

Labor Productivity: Labor productivity describes the relationship between real output and the labor hours involved in its production. These measures show the changes from period to period in the amount of goods and services produced per hour worked. Although the labor productivity measures relate output in an industry to hours worked of all persons in that industry, they do not measure the specific contribution of labor to growth in output. Rather, they reflect the joint effects of many influences, including: changes in technology; capital investment; utilization of capacity, energy, and materials; the use of purchased services inputs, including contract employment services; the organization of production; the characteristics and effort of the workforce; and managerial skill.

Unit Labor Costs: Unit labor costs represent the cost of labor required to produce one unit of output. The unit labor cost indexes are computed by dividing an index of nominal industry labor compensation by an index of real industry output. Unit labor costs also describe the relationship between compensation per hour worked (hourly compensation) and real output per hour worked (labor productivity). When hourly compensation growth outpaces productivity, unit labor costs increase. Alternatively, when productivity growth exceeds hourly compensation, unit labor costs decrease.

Output: Industry output is measured as an annual-weighted index of the changes in the various products (in real terms) provided for sale outside the industry. Real industry output is usually derived by deflating nominal sales or values of production using BLS price indexes, but for some industries it is measured by physical quantities of output. Industry output reflects sectoral value of production, derived by adjusting shipments for changes in inventories and removing intra-industry transactions. Industry output measures are constructed primarily using data from the economic censuses and annual surveys of the Census Bureau, U.S. Department of Commerce, together with data on price changes primarily from BLS. Data from the Bureau of Economic Analysis at the U.S. Department of Commerce is used in part to construct intra-industry transactions. Other data sources include the Energy Information Administration at the U.S. Department of Energy and the U.S. Geological Survey at the U.S. Department of the Interior. Manufacturing industry output for 2019 is estimated based on historical relationships between BLS sectoral output, BLS price indexes, and data on industrial production from the Federal Reserve Board.

Labor Hours: Labor hours are measured as annual hours worked by all employed persons in an industry. Data on industry employment and hours come primarily from the BLS Current Employment Statistics (CES) survey and Current Population Survey (CPS). CES data on the number of total and production worker jobs held by wage and salary workers in nonfarm establishments are supplemented with CPS data on self-employed and unpaid family workers to estimate industry employment. Hours worked estimates are derived using CES and CPS employment, CES data on the average weekly hours paid of production workers, CPS data on hours of nonproduction, self-employed, and unpaid family workers, and ratios of hours worked to hours paid based on data from the National Compensation Survey (NCS). For some industries, employment and hours data are supplemented or further disaggregated using data from the BLS Quarterly Census of Employment and Wages (QCEW), the Census Bureau, or other sources. Hours worked are estimated separately for different types of workers and then are directly aggregated; no adjustments for labor composition are made.

Labor Compensation: Labor compensation, defined as payroll plus supplemental payments, is a measure of the cost to the employer of securing the services of labor. Payroll includes salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind. Supplemental payments include both legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation, such as the employer portion of private health insurance and pension plans. Industry compensation measures are constructed primarily using data from the BLS QCEW and the economic censuses of the Census Bureau at the U.S. Department of Commerce.

Table 1. Recent labor productivity, unit labor costs, and related data

Industry	2017 NAICS code	2019 Employment (thousands)	Percent change, 2018-2019					
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compen- sation	Hourly compen- sation
Mining								
Mining.....	21	699.0	5.4	-1.7	8.2	2.6	6.3	3.6
Oil and gas extraction.....	211	151.1	-2.3	-3.4	11.0	13.6	7.3	-5.6
Oil and gas extraction.....	2111	151.1	-2.3	-3.4	11.0	13.6	7.3	-5.6
Mining, except oil and gas.....	212	194.9	-3.8	5.6	-1.7	2.1	3.8	1.7
Coal mining.....	2121	51.9	-6.6	7.0	-6.4	0.1	0.1	-0.1
Metal ore mining.....	2122	42.3	-3.2	5.7	-3.0	0.1	2.5	2.4
Nonmetallic mineral mining and quarrying.....	2123	100.7	-1.7	5.1	2.2	4.0	7.4	3.3
Nondurable Manufacturing								
Food.....	311	1,684.3	0.6	2.3	0.1	-0.4	2.4	2.8
Animal food.....	3111	64.5	-6.3	1.6	-0.5	6.2	1.1	-4.8
Grain and oilseed milling.....	3112	60.7	8.1	3.2	-0.9	-8.3	2.3	11.6
Sugar and confectionery products.....	3113	79.2	3.8	5.4	-1.1	-4.7	4.3	9.4
Fruit and vegetable preserving and specialty.....	3114	175.8	0.3	5.1	-0.9	-1.2	4.2	5.5
Dairy products.....	3115	157.1	-6.8	5.7	-0.4	6.9	5.3	-1.5
Animal slaughtering and processing.....	3116	534.4	3.4	2.3	2.4	-1.0	4.7	5.8
Seafood product preparation and packaging.....	3117	35.5	-0.9	6.1	-0.4	0.5	5.7	5.1
Bakeries and tortilla products.....	3118	347.3	-0.4	1.5	-1.0	-0.6	0.5	1.1
Other food products.....	3119	229.8	0.8	-3.1	-0.6	-1.4	-3.7	-2.3
Beverages and tobacco products.....	312	289.1	-1.4	7.9	-3.5	-2.2	4.1	6.4
Beverages.....	3121	278.3	-1.2	7.9	-3.0	-1.8	4.6	6.6
Tobacco.....	3122	10.8	6.7	1.9	-4.6	-10.6	-2.8	8.8
Textile mills.....	313	113.5	-2.3	-0.8	-0.3	2.1	-1.1	-3.1
Fiber, yarn, and thread mills.....	3131	28.6	-2.4	-0.6	-3.3	-0.9	-3.9	-3.1
Fabric mills.....	3132	55.0	-0.3	-6.1	5.7	6.0	-0.7	-6.3
Textile and fabric finishing mills.....	3133	29.9	-6.9	9.6	-8.4	-1.6	0.4	2.1
Textile product mills.....	314	123.3	-4.3	12.5	-10.3	-6.3	0.9	7.7
Textile furnishings mills.....	3141	52.9	-7.1	17.6	-14.1	-7.5	1.0	9.2
Other textile product mills.....	3149	70.4	0.3	6.1	-4.9	-5.2	0.9	6.4
Apparel.....	315	124.1	-0.7	6.8	-6.9	-6.3	-0.6	6.1
Apparel knitting mills.....	3151	10.3	0.4	4.0	-7.8	-8.2	-4.1	4.4
Cut and sew apparel.....	3152	100.4	0.1	6.3	-7.1	-7.2	-1.2	6.4
Accessories and other apparel.....	3159	13.4	-6.9	13.1	-4.6	2.5	7.9	5.2
Leather and allied products.....	316	32.4	-9.8	7.5	-5.1	5.1	1.9	-3.0
Leather and hide tanning and finishing.....	3161	5.0	-12.9	9.8	-7.7	6.0	1.4	-4.3
Footwear.....	3162	13.4	-4.8	7.0	-2.5	2.4	4.3	1.9
Other leather products.....	3169	14.0	-13.1	6.0	-6.2	7.9	-0.6	-7.9
Paper.....	322	366.0	0.0	5.0	-2.8	-2.8	2.0	5.0
Pulp, paper, and paperboard mills.....	3221	96.8	-5.7	5.0	-3.6	2.3	1.2	-1.0
Converted paper products.....	3222	269.2	2.4	5.1	-2.5	-4.8	2.4	7.6
Printing and related support activities.....	323	445.7	-2.6	4.4	-4.1	-1.5	0.1	1.7
Printing and related support activities.....	3231	445.7	-2.6	4.4	-4.1	-1.5	0.1	1.7
Petroleum and coal products.....	324	115.2	-4.2	4.7	-1.2	3.2	3.4	0.2
Petroleum and coal products.....	3241	115.2	-4.2	4.7	-1.2	3.2	3.4	0.2
Chemicals.....	325	864.2	-3.4	7.2	-1.4	2.1	5.8	3.6
Basic chemicals.....	3251	153.8	-4.1	6.5	-2.5	1.7	3.9	2.1
Resin, rubber, and artificial fibers.....	3252	96.3	-0.1	4.4	-0.8	-0.6	3.6	4.3
Agricultural chemicals.....	3253	36.6	-2.8	5.3	-1.4	1.4	3.8	2.4
Pharmaceuticals and medicines.....	3254	309.7	-6.7	9.1	-1.1	5.9	7.8	1.8
Paints, coatings, and adhesives.....	3255	65.4	-2.9	5.9	-0.8	2.2	5.1	2.8
Soaps, cleaning compounds, and toiletries.....	3256	116.2	2.4	9.0	-1.6	-4.0	7.2	11.6
Other chemical products and preparations.....	3259	86.2	-0.7	0.5	1.0	1.7	1.5	-0.2

Table 1. Recent labor productivity, unit labor costs, and related data — Continued

Industry	2017 NAICS code	2019 Employment (thousands)	Percent change, 2018-2019					
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compen- sation	Hourly compen- sation
Plastics and rubber products.....	326	741.6	-1.9	4.7	-2.6	-0.7	1.9	2.7
Plastics products.....	3261	602.8	-2.6	4.5	-2.4	0.1	2.0	1.9
Rubber products.....	3262	138.8	0.9	5.2	-3.4	-4.2	1.7	6.2
Durable Manufacturing								
Wood products.....	321	445.1	-3.5	5.1	-1.5	2.1	3.5	1.4
Sawmills and wood preservation.....	3211	106.3	-4.0	1.7	-0.1	4.1	1.6	-2.4
Plywood and engineered wood products.....	3212	83.0	-5.0	7.0	-1.9	3.2	5.0	1.7
Other wood products.....	3219	255.8	-3.1	6.1	-2.3	0.8	3.7	2.8
Nonmetallic mineral products.....	327	435.9	-1.0	2.7	-0.5	0.5	2.2	1.7
Clay products and refractories.....	3271	45.6	-2.8	-6.1	6.0	9.1	-0.4	-8.7
Glass and glass products.....	3272	87.4	2.0	5.4	-4.0	-5.9	1.2	7.6
Cement and concrete products.....	3273	203.9	-1.0	1.7	1.7	2.8	3.5	0.7
Lime and gypsum products.....	3274	16.6	-1.3	6.6	-1.9	-0.6	4.6	5.3
Other nonmetallic mineral products.....	3279	82.4	-1.2	4.3	-3.5	-2.3	0.7	3.1
Primary metals.....	331	385.2	-0.8	5.9	-1.9	-1.1	3.9	5.0
Iron and steel mills and ferroalloys.....	3311	86.4	-1.1	6.4	-1.1	0.0	5.2	5.2
Steel products from purchased steel.....	3312	57.7	2.1	3.2	-1.1	-3.1	2.2	5.4
Alumina and aluminum production.....	3313	59.9	0.4	7.0	-0.9	-1.3	6.1	7.5
Other nonferrous metal production.....	3314	62.0	-3.6	9.2	-4.5	-0.8	4.3	5.2
Foundries.....	3315	119.2	-2.0	5.0	-2.8	-0.8	2.0	2.9
Fabricated metal products.....	332	1,513.3	-0.1	3.4	0.0	0.1	3.4	3.3
Forging and stamping.....	3321	101.1	-1.4	5.9	-3.0	-1.6	2.7	4.4
Cutlery and handtools.....	3322	38.1	0.9	6.2	-4.7	-5.6	1.2	7.2
Architectural and structural metals.....	3323	401.9	0.5	1.6	2.1	1.6	3.8	2.1
Boilers, tanks, and shipping containers.....	3324	96.3	-0.6	4.3	0.6	1.2	5.0	3.7
Hardware.....	3325	25.9	1.5	3.4	-2.5	-4.0	0.8	5.0
Spring and wire products.....	3326	44.5	0.5	3.6	-2.1	-2.6	1.4	4.1
Machine shops and threaded products.....	3327	375.1	-1.7	5.2	-2.2	-0.6	2.9	3.5
Coating, engraving, and heat treating metals.....	3328	142.0	-0.4	1.8	1.8	2.3	3.6	1.4
Other fabricated metal products.....	3329	288.4	1.3	3.0	1.0	-0.2	4.1	4.3
Machinery.....	333	1,135.7	-1.2	3.4	-1.1	0.1	2.2	2.1
Agriculture, construction, and mining machinery...	3331	221.7	3.1	0.9	1.9	-1.2	2.8	4.0
Industrial machinery.....	3332	119.2	-2.9	4.1	-5.0	-2.2	-1.1	1.1
Commercial and service industry machinery.....	3333	94.7	-1.9	6.4	-1.8	0.1	4.5	4.4
HVAC and commercial refrigeration equipment....	3334	138.3	-7.8	9.3	-4.1	4.0	4.8	0.7
Metalworking machinery.....	3335	184.6	-2.2	1.7	-2.0	0.2	-0.3	-0.5
Turbine and power transmission equipment.....	3336	99.8	1.2	-2.1	1.9	0.7	-0.2	-0.9
Other general purpose machinery.....	3339	277.4	-2.1	6.5	-2.0	0.1	4.3	4.2
Computer and electronic products.....	334	1,088.5	-0.8	1.8	1.3	2.1	3.1	1.0
Computer and peripheral equipment.....	3341	163.8	-7.7	6.0	-1.5	6.8	4.4	-2.2
Communications equipment.....	3342	83.6	6.9	-0.5	4.1	-2.6	3.6	6.4
Audio and video equipment.....	3343	21.1	30.5	-24.5	36.3	4.4	2.9	-1.5
Semiconductors and electronic components.....	3344	379.6	-0.1	0.9	-0.2	0.0	0.7	0.8
Electronic instruments.....	3345	427.9	-2.3	3.9	1.0	3.4	5.0	1.5
Magnetic media manufacturing and reproducing...	3346	12.5	32.1	-25.4	21.6	-8.0	-9.3	-1.4
Electrical equipment and appliances.....	335	409.0	0.2	6.2	-1.5	-1.8	4.5	6.4
Electric lighting equipment.....	3351	46.7	7.1	2.0	-4.6	-10.9	-2.6	9.3
Household appliances.....	3352	63.0	2.0	7.2	-4.7	-6.6	2.2	9.3
Electrical equipment.....	3353	148.1	0.6	5.7	0.7	0.1	6.5	6.4
Other electrical equipment and components.....	3359	151.2	-2.3	6.9	-1.1	1.2	5.7	4.5
Transportation equipment.....	336	1,742.8	-1.5	5.7	-2.2	-0.7	3.4	4.1
Motor vehicles.....	3361	237.5	-2.1	4.0	-1.7	0.4	2.2	1.8
Motor vehicle bodies and trailers.....	3362	167.0	-5.4	5.9	-8.5	-3.3	-3.2	0.1
Motor vehicle parts.....	3363	599.3	-0.6	4.9	-4.7	-4.1	-0.1	4.2

Table 1. Recent labor productivity, unit labor costs, and related data — Continued

Industry	2017 NAICS code	2019 Employment (thousands)	Percent change, 2018-2019					
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compen- sation	Hourly compen- sation
Aerospace products and parts.....	3364	534.9	-2.2	6.8	0.2	2.4	6.9	4.4
Railroad rolling stock.....	3365	24.3	4.2	10.7	-1.9	-5.9	8.6	15.3
Ship and boat building.....	3366	142.7	-6.7	5.1	-0.8	6.4	4.3	-2.0
Other transportation equipment.....	3369	37.1	0.4	9.7	-3.2	-3.6	6.1	10.1
Furniture and related products.....	337	410.1	-0.3	2.3	-1.9	-1.6	0.3	2.0
Household and institutional furniture.....	3371	260.6	3.0	-0.6	-0.4	-3.3	-1.0	2.4
Office furniture and fixtures.....	3372	114.6	-4.1	4.5	-1.3	2.9	3.2	0.2
Other furniture related products.....	3379	34.9	-7.2	9.4	-9.8	-2.9	-1.3	1.6
Miscellaneous manufacturing.....	339	677.8	-0.5	3.8	0.5	1.0	4.3	3.3
Medical equipment and supplies.....	3391	332.5	0.9	3.7	1.8	0.9	5.6	4.7
Other miscellaneous manufacturing.....	3399	345.3	-2.4	3.8	-1.3	1.1	2.4	1.3

Table 2. Long run labor productivity, unit labor costs, and related data

Industry	2017 NAICS code	2019 Employment (thousands)	Average annual percent change, 1987-2019					
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compen- sation	Hourly compen- sation
Mining								
Mining.....	21	699.0	1.5	2.3	1.7	0.2	4.0	3.8
Oil and gas extraction.....	211	151.1	2.9	2.0	2.0	-0.9	4.0	4.9
Oil and gas extraction.....	2111	151.1	2.9	2.0	2.0	-0.9	4.0	4.9
Mining, except oil and gas.....	212	194.9	1.3	1.6	0.1	-1.2	1.7	2.9
Coal mining.....	2121	51.9	1.5	1.1	-1.5	-2.9	-0.4	2.6
Metal ore mining.....	2122	42.3	0.5	3.2	0.7	0.2	4.0	3.7
Nonmetallic mineral mining and quarrying.....	2123	100.7	1.3	2.0	1.0	-0.2	3.1	3.4
Support activities for mining ¹	213	352.6	2.9	1.5	5.0	2.1	6.5	4.4
Support activities for mining ¹	2131	352.6	2.9	1.5	5.0	2.1	6.5	4.4
Nondurable Manufacturing								
Food.....	311	1,684.3	0.7	1.8	1.2	0.5	3.0	2.5
Animal food.....	3111	64.5	1.4	1.8	1.6	0.2	3.5	3.3
Grain and oilseed milling.....	3112	60.7	1.7	1.3	0.9	-0.8	2.1	3.0
Sugar and confectionery products.....	3113	79.2	1.1	2.1	0.5	-0.6	2.7	3.3
Fruit and vegetable preserving and specialty.....	3114	175.8	0.8	1.9	0.9	0.0	2.8	2.8
Dairy products.....	3115	157.1	1.0	2.1	1.2	0.2	3.3	3.1
Animal slaughtering and processing.....	3116	534.4	0.6	1.7	1.8	1.1	3.5	2.4
Seafood product preparation and packaging.....	3117	35.5	1.2	2.6	0.3	-0.9	2.9	3.8
Bakeries and tortilla products.....	3118	347.3	0.0	1.8	0.2	0.3	2.0	1.7
Other food products.....	3119	229.8	0.1	2.0	2.0	1.9	4.1	2.1
Beverages and tobacco products.....	312	289.1	-0.6	2.8	-0.3	0.3	2.6	2.2
Beverages.....	3121	278.3	0.1	2.2	1.1	0.9	3.2	2.3
Tobacco.....	3122	10.8	2.4	1.8	-2.7	-5.0	-1.0	4.2
Textile mills.....	313	113.5	2.5	-0.1	-2.2	-4.6	-2.3	2.4
Fiber, yarn, and thread mills.....	3131	28.6	2.3	-0.6	-1.7	-3.9	-2.3	1.6
Fabric mills.....	3132	55.0	2.9	0.0	-2.4	-5.1	-2.3	2.9
Textile and fabric finishing mills.....	3133	29.9	1.1	1.1	-3.1	-4.2	-2.1	2.1
Textile product mills.....	314	123.3	0.2	2.6	-2.0	-2.3	0.5	2.8
Textile furnishings mills.....	3141	52.9	0.0	2.6	-2.8	-2.8	-0.2	2.6
Other textile product mills.....	3149	70.4	1.0	2.2	-0.8	-1.8	1.4	3.2
Apparel.....	315	124.1	-0.3	1.9	-6.5	-6.2	-4.7	1.6
Apparel knitting mills.....	3151	10.3	-0.3	2.1	-7.4	-7.1	-5.4	1.8
Cut and sew apparel.....	3152	100.4	-0.1	1.8	-6.4	-6.3	-4.7	1.7
Accessories and other apparel.....	3159	13.4	-2.5	2.7	-5.8	-3.4	-3.3	0.2
Leather and allied products.....	316	32.4	0.6	2.2	-4.0	-4.6	-1.9	2.9
Leather and hide tanning and finishing.....	3161	5.0	0.6	0.9	-3.0	-3.6	-2.1	1.5
Footwear.....	3162	13.4	0.8	2.5	-4.8	-5.6	-2.4	3.3
Other leather products.....	3169	14.0	-0.1	2.8	-3.7	-3.5	-1.0	2.6
Paper.....	322	366.0	1.5	1.5	-0.3	-1.8	1.2	3.1
Pulp, paper, and paperboard mills.....	3221	96.8	2.1	1.2	-0.7	-2.8	0.4	3.3
Converted paper products.....	3222	269.2	1.4	1.8	0.1	-1.3	1.8	3.2
Printing and related support activities.....	323	445.7	1.1	1.2	-0.7	-1.8	0.5	2.4
Printing and related support activities.....	3231	445.7	1.1	1.2	-0.7	-1.8	0.5	2.4
Petroleum and coal products.....	324	115.2	1.9	2.5	1.2	-0.7	3.7	4.5
Petroleum and coal products.....	3241	115.2	1.9	2.5	1.2	-0.7	3.7	4.5
Chemicals.....	325	864.2	1.0	2.2	0.7	-0.4	2.9	3.3
Basic chemicals.....	3251	153.8	1.8	1.6	0.5	-1.3	2.1	3.5
Resin, rubber, and artificial fibers.....	3252	96.3	2.1	1.8	0.6	-1.5	2.5	4.0
Agricultural chemicals.....	3253	36.6	1.6	2.1	0.5	-1.1	2.6	3.7
Pharmaceuticals and medicines.....	3254	309.7	-0.8	3.8	1.0	1.8	4.8	3.0
Paints, coatings, and adhesives.....	3255	65.4	0.4	2.6	-0.1	-0.5	2.5	3.0

See footnotes at end of table.

Table 2. Long run labor productivity, unit labor costs, and related data — Continued

Industry	2017 NAICS code	2019 Employment (thousands)	Average annual percent change, 1987-2019					
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compen- sation	Hourly compen- sation
Soaps, cleaning compounds, and toiletries.....	3256	116.2	1.2	1.5	1.0	-0.2	2.6	2.8
Other chemical products and preparations.....	3259	86.2	2.0	1.0	0.2	-1.7	1.2	3.0
Plastics and rubber products.....	326	741.6	1.4	1.4	1.2	-0.2	2.6	2.8
Plastics products.....	3261	602.8	1.2	1.5	1.4	0.1	2.9	2.8
Rubber products.....	3262	138.8	1.8	1.1	0.4	-1.3	1.5	2.9
Durable Manufacturing								
Wood products.....	321	445.1	0.8	2.1	-0.1	-0.9	2.0	2.9
Sawmills and wood preservation.....	3211	106.3	1.6	1.2	0.4	-1.2	1.6	2.8
Plywood and engineered wood products.....	3212	83.0	0.5	1.9	-0.1	-0.6	1.8	2.4
Other wood products.....	3219	255.8	0.6	2.5	-0.2	-0.8	2.3	3.1
Nonmetallic mineral products.....	327	435.9	0.7	1.9	0.1	-0.5	2.0	2.6
Clay products and refractories.....	3271	45.6	1.1	1.3	-1.0	-2.1	0.3	2.4
Glass and glass products.....	3272	87.4	1.9	1.0	0.3	-1.6	1.3	3.0
Cement and concrete products.....	3273	203.9	-0.1	2.3	0.3	0.4	2.6	2.2
Lime and gypsum products.....	3274	16.6	0.8	3.3	-0.6	-1.3	2.7	4.1
Other nonmetallic mineral products.....	3279	82.4	0.6	2.0	0.7	0.0	2.7	2.6
Primary metals.....	331	385.2	2.0	0.8	0.3	-1.7	1.1	2.9
Iron and steel mills and ferroalloys.....	3311	86.4	3.2	-0.4	1.0	-2.2	0.6	2.9
Steel products from purchased steel.....	3312	57.7	0.6	2.1	0.1	-0.5	2.2	2.8
Alumina and aluminum production.....	3313	59.9	2.0	1.2	0.2	-1.7	1.4	3.2
Other nonferrous metal production.....	3314	62.0	1.3	2.3	-0.3	-1.5	1.9	3.5
Foundries.....	3315	119.2	1.5	1.2	-0.4	-1.8	0.8	2.7
Fabricated metal products.....	332	1,513.3	0.9	1.7	0.8	-0.1	2.5	2.7
Forging and stamping.....	3321	101.1	2.1	0.7	1.1	-1.0	1.8	2.8
Cutlery and handtools.....	3322	38.1	1.1	1.6	-1.1	-2.2	0.4	2.7
Architectural and structural metals.....	3323	401.9	0.6	2.2	1.0	0.4	3.2	2.8
Boilers, tanks, and shipping containers.....	3324	96.3	1.0	1.5	0.6	-0.4	2.1	2.5
Hardware.....	3325	25.9	0.7	1.4	-2.0	-2.7	-0.6	2.2
Spring and wire products.....	3326	44.5	1.9	1.3	0.0	-1.9	1.3	3.2
Machine shops and threaded products.....	3327	375.1	1.6	1.3	2.3	0.6	3.6	2.9
Coating, engraving, and heat treating metals.....	3328	142.0	1.6	1.0	1.9	0.3	3.0	2.6
Other fabricated metal products.....	3329	288.4	0.4	2.0	0.0	-0.5	2.0	2.5
Machinery.....	333	1,135.7	1.7	1.1	1.1	-0.6	2.2	2.8
Agriculture, construction, and mining machinery...	3331	221.7	1.8	1.0	1.8	0.0	2.8	2.8
Industrial machinery.....	3332	119.2	1.5	1.3	0.8	-0.7	2.1	2.7
Commercial and service industry machinery.....	3333	94.7	1.1	1.2	-0.4	-1.4	0.8	2.2
HVAC and commercial refrigeration equipment....	3334	138.3	1.1	1.5	0.6	-0.5	2.1	2.6
Metalworking machinery.....	3335	184.6	1.7	0.8	0.6	-1.1	1.4	2.5
Turbine and power transmission equipment.....	3336	99.8	1.8	0.3	1.6	-0.2	1.9	2.1
Other general purpose machinery.....	3339	277.4	1.7	1.7	1.3	-0.4	3.1	3.5
Computer and electronic products.....	334	1,088.5	8.4	-4.8	6.3	-1.9	1.2	3.1
Computer and peripheral equipment.....	3341	163.8	13.2	-11.9	10.1	-2.8	-3.1	-0.3
Communications equipment.....	3342	83.6	5.1	-1.2	1.8	-3.1	0.6	3.9
Audio and video equipment.....	3343	21.1	3.2	0.4	-0.2	-3.3	0.2	3.7
Semiconductors and electronic components.....	3344	379.6	12.0	-7.9	10.4	-1.5	1.7	3.2
Electronic instruments.....	3345	427.9	3.0	0.5	1.6	-1.4	2.1	3.5
Magnetic media manufacturing and reproducing...	3346	12.5	1.3	-0.4	-2.4	-3.7	-2.8	0.9
Electrical equipment and appliances.....	335	409.0	1.7	1.4	0.0	-1.6	1.4	3.0
Electric lighting equipment.....	3351	46.7	1.9	1.3	-0.2	-2.1	1.1	3.2
Household appliances.....	3352	63.0	3.0	-0.1	0.3	-2.6	0.2	2.9
Electrical equipment.....	3353	148.1	1.7	1.3	0.0	-1.7	1.3	3.1
Other electrical equipment and components.....	3359	151.2	0.7	2.1	-0.1	-0.8	2.0	2.9
Transportation equipment.....	336	1,742.8	2.4	0.1	1.7	-0.6	1.8	2.4
Motor vehicles.....	3361	237.5	2.5	0.1	1.9	-0.6	2.0	2.6

See footnotes at end of table.

Table 2. Long run labor productivity, unit labor costs, and related data — Continued

Industry	2017 NAICS code	2019 Employment (thousands)	Average annual percent change, 1987-2019					
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compen- sation	Hourly compen- sation
Motor vehicle bodies and trailers.....	3362	167.0	1.1	2.2	1.7	0.6	3.9	3.3
Motor vehicle parts.....	3363	599.3	2.7	-0.9	2.5	-0.2	1.6	1.7
Aerospace products and parts.....	3364	534.9	2.1	0.7	0.7	-1.3	1.4	2.7
Railroad rolling stock.....	3365	24.3	3.0	0.7	3.0	0.1	3.7	3.7
Ship and boat building.....	3366	142.7	1.5	1.8	0.8	-0.7	2.6	3.3
Other transportation equipment.....	3369	37.1	3.8	-0.2	3.6	-0.1	3.4	3.5
Furniture and related products.....	337	410.1	1.3	1.6	-0.1	-1.4	1.5	2.9
Household and institutional furniture.....	3371	260.6	1.1	1.6	-0.5	-1.6	1.2	2.8
Office furniture and fixtures.....	3372	114.6	1.3	1.7	0.3	-1.0	2.1	3.1
Other furniture related products.....	3379	34.9	1.7	1.3	0.4	-1.2	1.7	3.0
Miscellaneous manufacturing.....	339	677.8	1.7	1.4	1.5	-0.1	3.0	3.1
Medical equipment and supplies.....	3391	332.5	2.2	1.2	3.1	0.9	4.3	3.4
Other miscellaneous manufacturing.....	3399	345.3	1.1	1.6	0.1	-0.9	1.7	2.7

¹ For NAICS industry 2131 average annual percent changes are for 1987-2018. Employment is for 2018.