



For release 10:00 a.m. (ET) Thursday, April 28, 2022

USDL-22-0711

Technical information: (202) 691-5606 • productivity@bls.gov • www.bls.gov/productivity

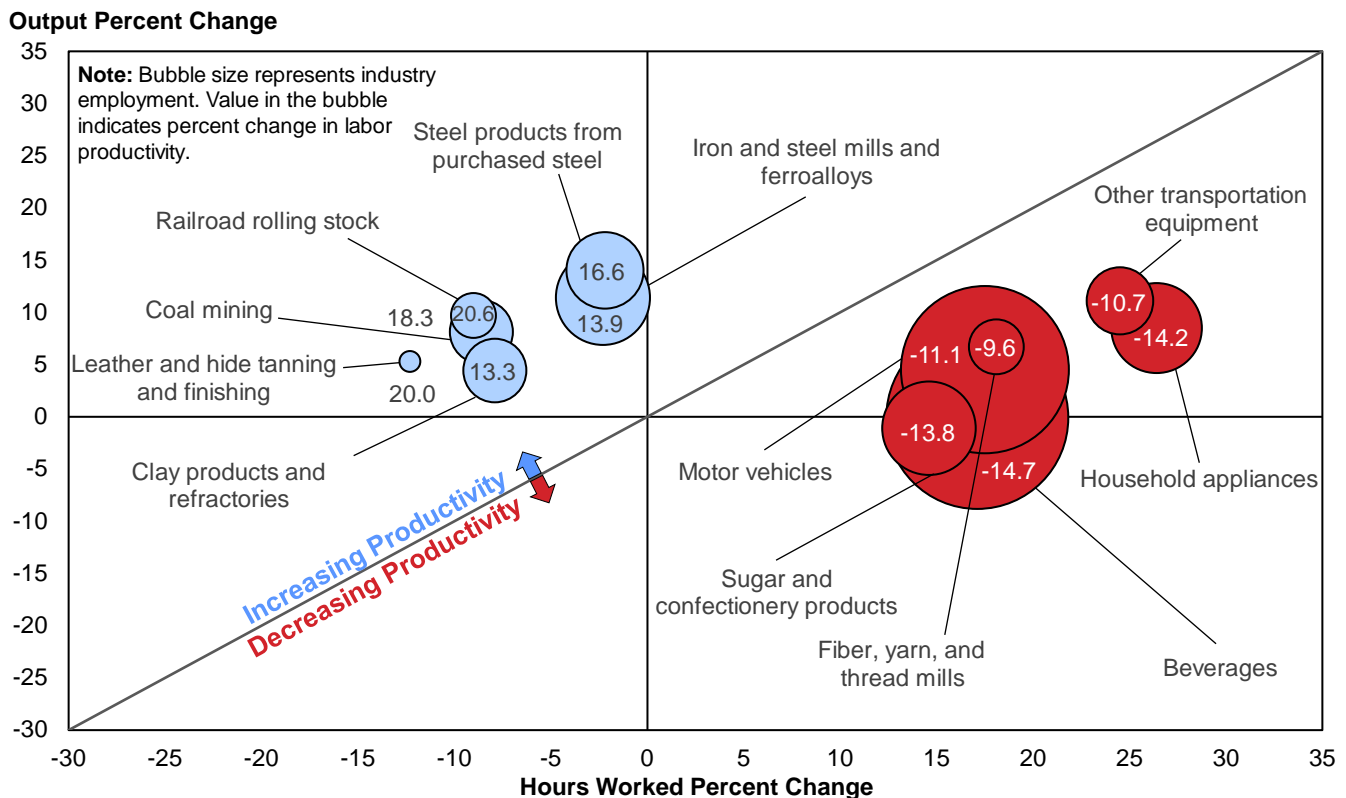
Media contact: (202) 691-5902 • PressOffice@bls.gov

PRODUCTIVITY AND COSTS BY INDUSTRY
MANUFACTURING AND MINING INDUSTRIES – 2021

Labor productivity rose in 47 of the 86 four-digit NAICS manufacturing industries in 2021, the U.S. Bureau of Labor Statistics reported today. The railroad rolling stock industry had the largest productivity gain with an increase of 20.6 percent. (See chart 1.) Four out of the five industries in the mining sector posted productivity gains in 2021 with the greatest increase occurring in the coal mining industry with a gain of 18.3 percent.

Increases in both output and hours worked were widespread among manufacturing and mining industries in 2021. Output rose in approximately three-quarters of detailed industries in 2021 and two-thirds had growth in hours worked. Forty-three industries increased both output and hours worked in 2021. Within this set of industries, almost half had rising labor productivity.

Chart 1. Manufacturing and mining industries with the largest change in productivity, 2021
(Four-digit NAICS industries)



Change in productivity is approximately equal to the change in output minus the change in hours worked. Four of the six industries with the greatest productivity gains (those above the diagonal line) had declines in hours worked greater than 7.0 percent. Two of the six industries with the greatest declining productivity (below the diagonal line) had declining output while all six industries recorded growth in hours worked greater than 14.0 percent. (See chart 1.)

Labor Productivity Trends in Three-Digit NAICS Industries, 2021

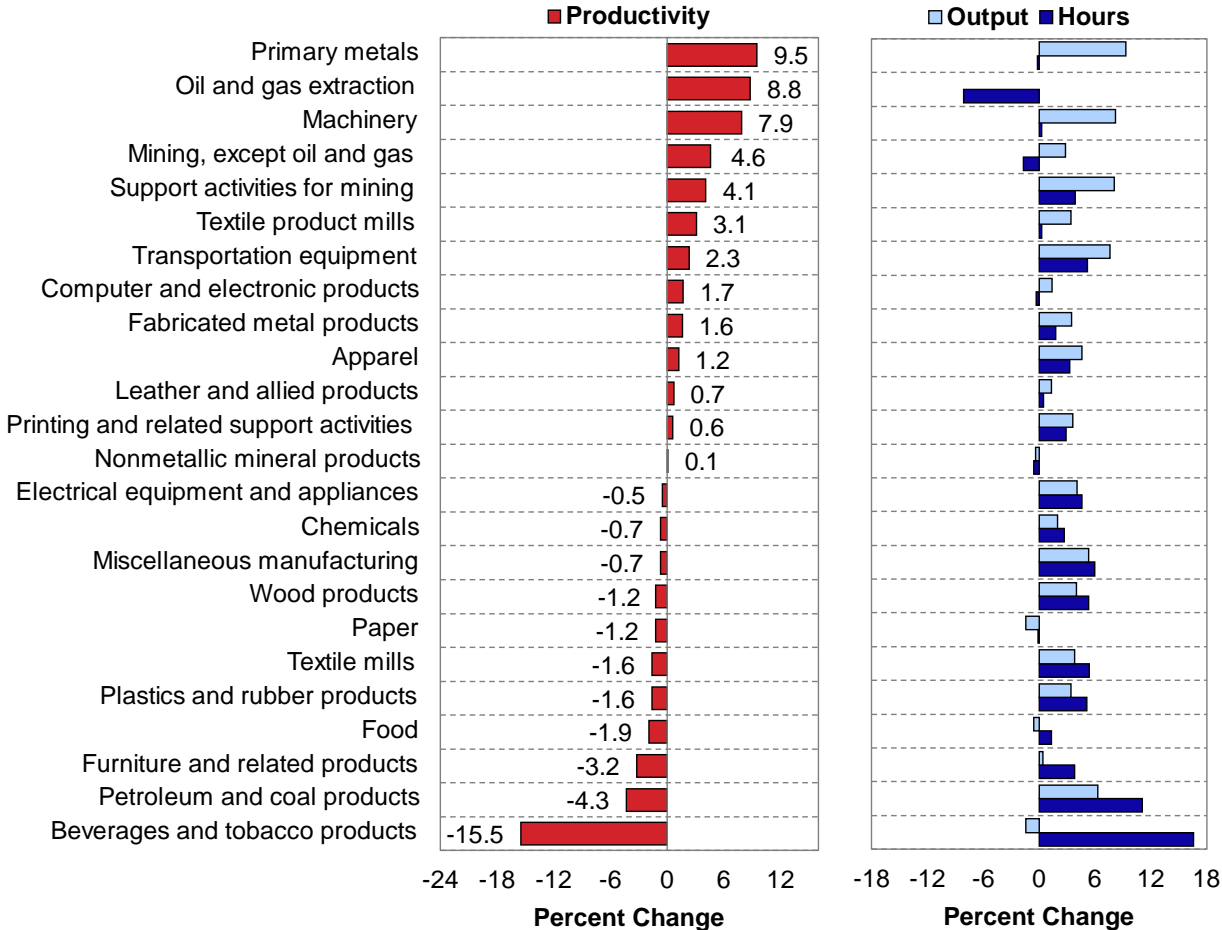
Manufacturing

- Labor productivity increased in 10 of the 21 three-digit NAICS manufacturing industries in 2021. Within this set of industries, all but one had growth in output. (See chart 2.)
- Both output and hours worked increased in 17 industries, respectively. Eight industries had concurrent increases of over 3.0 percent in both output and hours worked.
- The primary metal industry had the largest productivity gain, 9.5 percent.
- Beverage and tobacco products had the largest productivity decline, -15.5 percent.

Mining

- Labor productivity increased in all 3 of the three-digit NAICS mining industries in 2021.
- The productivity gain of 8.8 percent in oil and gas extraction was mostly caused by a decline in hours worked of 8.1 percent.
- The largest increase in output occurred in support activities for mining, 8.1 percent.

Chart 2. Productivity growth in three-digit NAICS manufacturing and mining industries, 2021



Trends in Unit Labor Costs in 2021

Unit labor costs reflect the total labor costs required to produce a unit of output. Unit labor costs increase when hourly compensation growth exceeds productivity growth.

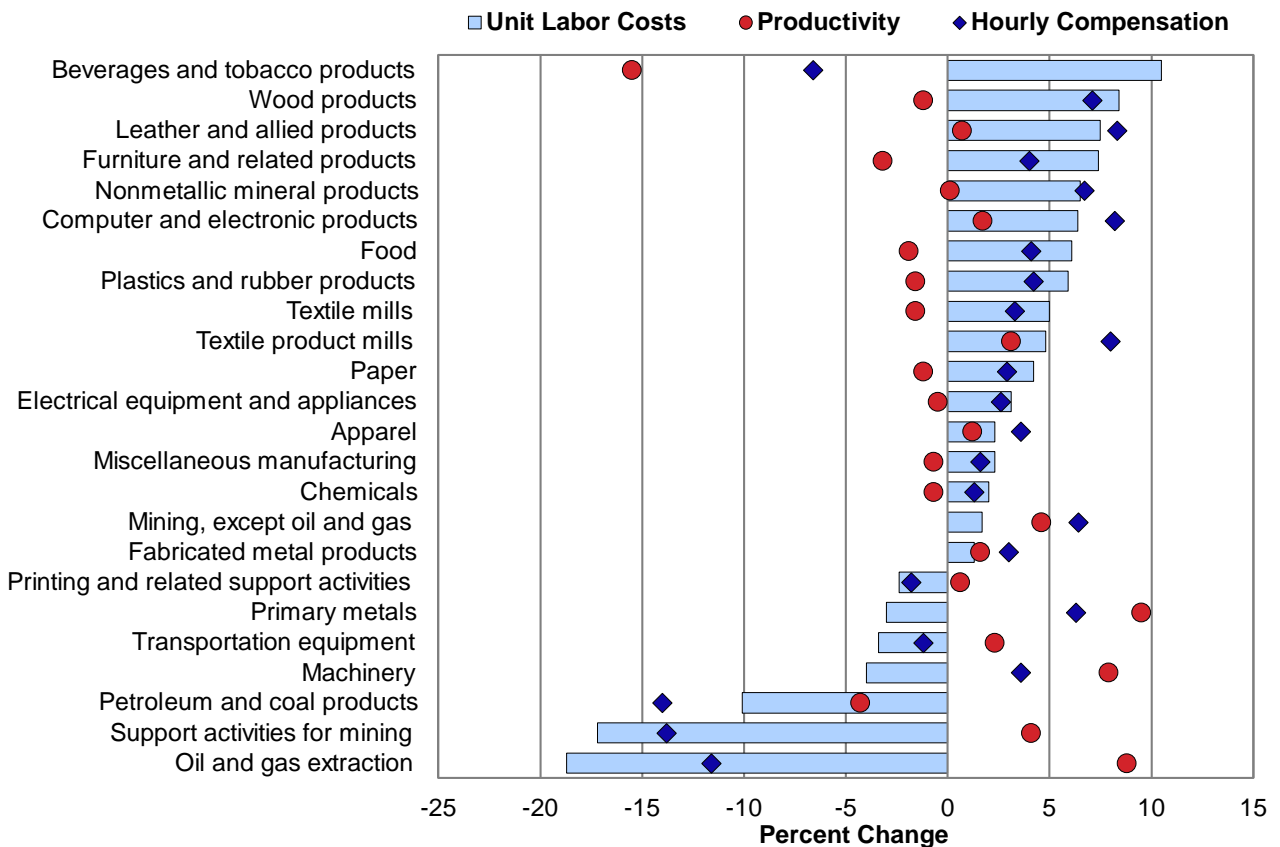
Manufacturing

- In manufacturing, unit labor costs increased in 16 of the 21 three-digit NAICS industries. (See chart 3.) The five industries with declines in unit labor costs all had increases in output, with the largest output gain occurring in primary metals (9.3 percent).
- Twenty-eight four-digit NAICS manufacturing industries had declines in unit labor costs. Of these, twenty-five also recorded growth in productivity. (See table 1.)

Mining

- Unit labor costs recorded double-digit declines in 2 of the 3 three-digit NAICS mining industries: oil and gas extraction (-18.7 percent) and support activities for mining (-17.2 percent).
- Unit labor costs fell in 3 of the 5 four-digit NAICS mining industries. All three of these industries also recorded gains in productivity.

Chart 3. Unit labor costs, productivity, and hourly compensation in three-digit NAICS manufacturing and mining industries, 2021



Long-Term Trends in Labor Productivity and Unit Labor Costs

Chart 4 displays the number of four-digit NAICS manufacturing and mining industries with increases in productivity, output, and hours worked for selected time periods through 2021.

Labor Productivity

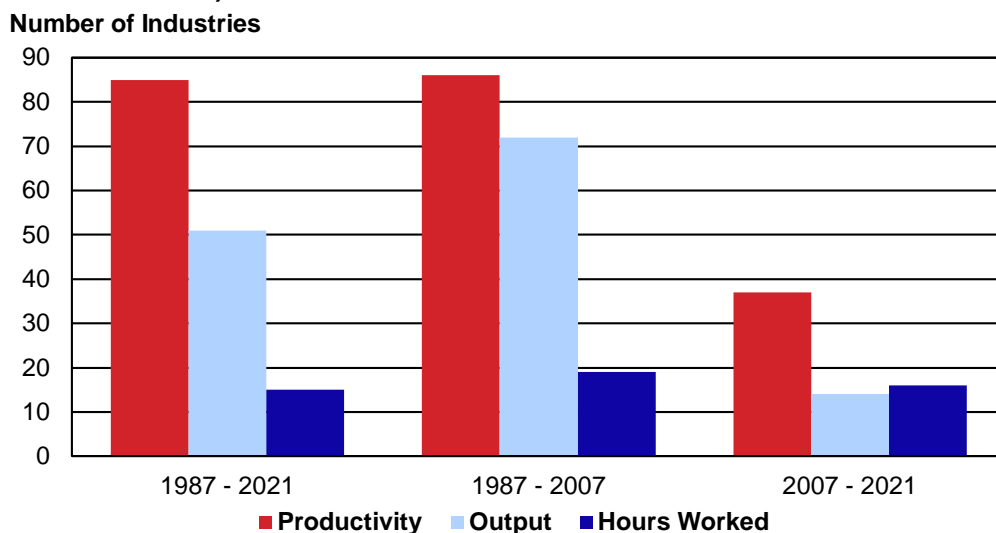
- Over the entire **1987-2021** period, labor productivity rose in 85 of the 91 manufacturing and mining industries. Output rose in 51 industries while hours worked increased in only 15. (See table 2.) In the 15 industries where hours worked increased, they rose at a slow pace, 0.7 percent per year on average.
- During the more recent **2007-2021** period, productivity increased in 37 industries. Of these industries, only two (dairy products, and petroleum and coal products) had simultaneous growth in output as well as hours worked. Oil and gas extraction had the greatest average annual growth in output over this period, 5.5 percent.

Unit Labor Costs

- During the **1987-2021** period, unit labor costs increased in 80 of the 86 four-digit NAICS manufacturing industries and in all five mining industries. (See table 2.)
- From **2007 to 2021**, unit labor costs increased in all 86 manufacturing industries, but in just 3 of the 5 mining industries. Unit labor costs rose the most in the audio and video equipment industry.

The computer and peripheral equipment industry recorded the largest productivity gain as well as the largest unit labor cost decline during the 1987-2021 period. However, between 2007 and 2021, 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 (Four-digit NAICS industries)



Additional Information

Manufacturing industry output measures for 2020 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 2020 Annual Survey of Manufactures. Manufacturing industry output for 2021 is estimated based on historical relationships between BLS sectoral output, BLS price indexes, and data on industrial production from the Federal Reserve Board.

Mining industry output measures are constructed primarily using data from the U.S. Energy Information Administration and the U.S. Geological Survey's Mineral Commodity Summaries and Mineral Yearbooks. The data from the U.S. Energy Information Administration are usually revised on a monthly schedule while the U.S. Geological Survey's publications are released annually.

Access productivity data at www.bls.gov/productivity/tables/labor-productivity-detailed-industries.xlsx for:

- Additional industries and sectors
- Detailed data series: indexes of productivity and related measures; rates of change; and levels of industry employment, hours worked, sectoral output, and labor compensation

Subscribe to productivity news releases on the BLS website at <https://public.govdelivery.com/accounts/USDOLBLS/subscriber/new>.

If you are deaf, hard of hearing, or have a speech disability, please dial 7-1-1 to access telecommunications relay services.

Technical Note

Labor Productivity: Labor productivity describes the relationship between 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 real 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. Output is the measure of what is produced by an industry, 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 2021 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	2021 Employment (thousands)	Percent change, 2020-2021					
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compen- sation	Hourly compen- sation
Mining								
Mining.....	21	532.7	1.0	-10.6	0.6	-0.4	-10.0	-9.7
Oil and gas extraction.....	211	118.3	8.8	-18.7	0.0	-8.1	-18.8	-11.6
Oil and gas extraction.....	2111	118.3	8.8	-18.7	0.0	-8.1	-18.8	-11.6
Mining, except oil and gas.....	212	176.4	4.6	1.7	2.8	-1.7	4.6	6.4
Coal mining.....	2121	36.6	18.3	-13.7	8.1	-8.6	-6.7	2.1
Metal ore mining.....	2122	42.7	-2.8	14.5	-0.6	2.4	13.9	11.3
Nonmetallic mineral mining and quarrying.....	2123	97.1	3.6	2.2	3.0	-0.5	5.3	5.9
Support activities for mining.....	213	238.0	4.1	-17.2	8.1	3.9	-10.5	-13.8
Support activities for mining.....	2131	238.0	4.1	-17.2	8.1	3.9	-10.5	-13.8
Nondurable Manufacturing								
Food.....	311	1,683.1	-1.9	6.1	-0.6	1.3	5.5	4.1
Animal food.....	3111	71.0	-3.1	6.6	-1.6	1.5	4.9	3.3
Grain and oilseed milling.....	3112	63.1	3.8	5.7	-0.4	-4.0	5.3	9.7
Sugar and confectionery products.....	3113	78.7	-13.8	7.4	-1.1	14.6	6.2	-7.4
Fruit and vegetable preserving and specialty.....	3114	174.4	-2.2	8.1	-1.6	0.6	6.4	5.8
Dairy products.....	3115	154.9	-2.6	6.1	-0.6	2.1	5.5	3.4
Animal slaughtering and processing.....	3116	532.6	1.7	3.1	-0.1	-1.7	3.0	4.8
Seafood product preparation and packaging.....	3117	33.0	-7.4	11.7	-2.5	5.2	8.9	3.4
Bakeries and tortilla products.....	3118	335.5	-3.1	7.3	0.1	3.3	7.4	4.0
Other food products.....	3119	239.9	-3.8	7.9	-0.7	3.3	7.1	3.7
Beverages and tobacco products.....	312	306.9	-15.5	10.5	-1.4	16.6	8.9	-6.6
Beverages.....	3121	296.3	-14.7	9.6	-0.1	17.1	9.6	-6.4
Tobacco.....	3122	10.6	-6.9	3.3	-4.2	2.9	-1.0	-3.8
Textile mills.....	313	101.3	-1.6	5.0	3.8	5.4	8.9	3.3
Fiber, yarn, and thread mills.....	3131	27.2	-9.6	12.1	6.7	18.1	19.6	1.3
Fabric mills.....	3132	47.7	-1.6	5.2	1.8	3.4	7.1	3.5
Textile and fabric finishing mills.....	3133	26.4	8.8	-0.6	5.5	-3.1	4.8	8.2
Textile product mills.....	314	113.0	3.1	4.8	3.4	0.3	8.4	8.0
Textile furnishings mills.....	3141	47.6	7.7	0.3	7.4	-0.3	7.7	8.0
Other textile product mills.....	3149	65.4	-2.2	10.5	-1.4	0.8	8.9	8.1
Apparel.....	315	100.7	1.2	2.3	4.6	3.3	7.0	3.6
Apparel knitting mills.....	3151	7.9	9.5	-3.4	6.4	-2.8	2.7	5.7
Cut and sew apparel.....	3152	80.3	1.2	2.0	4.3	3.1	6.4	3.2
Accessories and other apparel.....	3159	12.5	-4.1	8.7	5.6	10.1	14.8	4.3
Leather and allied products.....	316	29.5	0.7	7.5	1.3	0.5	8.9	8.3
Leather and hide tanning and finishing.....	3161	4.2	20.0	-4.1	5.3	-12.3	1.0	15.1
Footwear.....	3162	11.4	-5.8	9.8	-0.5	5.6	9.2	3.4
Other leather products.....	3169	13.9	0.1	10.9	0.6	0.5	11.5	11.0
Paper.....	322	348.9	-1.2	4.2	-1.4	-0.1	2.8	2.9
Pulp, paper, and paperboard mills.....	3221	88.4	2.2	-1.1	-0.8	-3.0	-2.0	1.1
Converted paper products.....	3222	260.5	-2.7	6.9	-1.7	1.0	5.0	4.0
Printing and related support activities.....	323	390.6	0.6	-2.4	3.6	2.9	1.0	-1.8
Printing and related support activities.....	3231	390.6	0.6	-2.4	3.6	2.9	1.0	-1.8
Petroleum and coal products.....	324	105.9	-4.3	-10.1	6.3	11.1	-4.4	-14.0
Petroleum and coal products.....	3241	105.9	-4.3	-10.1	6.3	11.1	-4.4	-14.0
Chemicals.....	325	883.2	-0.7	2.0	2.0	2.7	4.0	1.3
Basic chemicals.....	3251	148.4	3.5	-0.9	2.6	-0.8	1.6	2.5
Resin, rubber, and artificial fibers.....	3252	90.1	0.5	5.4	-0.9	-1.4	4.4	6.0
Agricultural chemicals.....	3253	38.4	-5.9	8.5	-3.4	2.6	4.9	2.2
Pharmaceuticals and medicines.....	3254	337.3	-1.9	-0.2	5.6	7.6	5.3	-2.2
Paints, coatings, and adhesives.....	3255	65.1	0.4	3.0	1.5	1.0	4.5	3.5

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

Industry	2017 NAICS code	2021 Employment (thousands)	Percent change, 2020-2021					
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compen- sation	Hourly compen- sation
Soaps, cleaning compounds, and toiletries.....	3256	123.4	0.7	2.8	-1.2	-1.9	1.6	3.6
Other chemical products and preparations.....	3259	80.5	-3.7	4.1	-0.7	3.1	3.3	0.2
Plastics and rubber products.....	326	733.8	-1.6	5.9	3.4	5.1	9.5	4.2
Plastics products.....	3261	600.3	-1.9	6.6	2.7	4.7	9.4	4.5
Rubber products.....	3262	133.5	0.3	2.5	7.1	6.7	9.7	2.8
Durable Manufacturing								
Wood products.....	321	437.0	-1.2	8.4	4.0	5.3	12.8	7.1
Sawmills and wood preservation.....	3211	99.8	-2.4	10.4	0.3	2.7	10.8	7.8
Plywood and engineered wood products.....	3212	82.9	3.2	4.5	6.1	2.8	10.8	7.8
Other wood products.....	3219	254.3	-2.0	8.8	5.2	7.3	14.5	6.7
Nonmetallic mineral products.....	327	417.1	0.1	6.5	-0.4	-0.6	6.0	6.7
Clay products and refractories.....	3271	36.6	13.3	1.4	4.4	-7.9	5.8	14.9
Glass and glass products.....	3272	86.7	-0.9	5.4	0.9	1.8	6.3	4.4
Cement and concrete products.....	3273	198.6	-3.4	8.8	-2.9	0.5	5.6	5.1
Lime and gypsum products.....	3274	15.0	7.2	0.4	1.9	-4.9	2.3	7.6
Other nonmetallic mineral products.....	3279	80.2	2.8	6.2	1.6	-1.1	7.9	9.1
Primary metals.....	331	352.3	9.5	-3.0	9.3	-0.2	6.0	6.3
Iron and steel mills and ferroalloys.....	3311	79.7	13.9	-0.3	11.4	-2.3	11.0	13.6
Steel products from purchased steel.....	3312	53.3	16.6	-5.6	14.0	-2.2	7.6	10.1
Alumina and aluminum production.....	3313	58.2	6.5	-5.1	10.2	3.5	4.6	1.1
Other nonferrous metal production.....	3314	56.9	5.4	-1.3	1.6	-3.7	0.3	4.1
Foundries.....	3315	104.2	4.2	-2.3	6.7	2.3	4.2	1.8
Fabricated metal products.....	332	1,410.6	1.6	1.3	3.5	1.8	4.9	3.0
Forging and stamping.....	3321	91.3	8.2	-10.1	15.2	6.5	3.5	-2.8
Cutlery and handtools.....	3322	37.3	-5.6	10.4	0.0	5.9	10.4	4.2
Architectural and structural metals.....	3323	396.1	-0.9	4.9	0.7	1.6	5.6	4.0
Boilers, tanks, and shipping containers.....	3324	87.1	10.5	-3.6	6.3	-3.8	2.5	6.5
Hardware.....	3325	24.4	6.5	-7.0	11.4	4.6	3.6	-0.9
Spring and wire products.....	3326	41.0	1.2	0.8	7.2	5.9	8.0	2.1
Machine shops and threaded products.....	3327	334.7	2.9	-2.3	3.9	0.9	1.5	0.6
Coating, engraving, and heat treating metals.....	3328	128.3	-1.2	2.2	-0.4	0.9	1.8	0.9
Other fabricated metal products.....	3329	270.4	-1.1	7.3	1.7	2.8	9.1	6.1
Machinery.....	333	1,059.3	7.9	-4.0	8.2	0.3	3.9	3.6
Agriculture, construction, and mining machinery...	3331	197.9	12.3	-14.5	13.7	1.2	-2.8	-4.0
Industrial machinery.....	3332	122.4	8.3	-1.3	13.9	5.1	12.4	6.9
Commercial and service industry machinery.....	3333	87.1	-0.8	5.6	-1.6	-0.7	3.9	4.7
HVAC and commercial refrigeration equipment...	3334	136.9	4.0	3.8	5.6	1.6	9.7	7.9
Metalworking machinery.....	3335	160.3	6.8	-1.5	4.8	-1.9	3.2	5.2
Turbine and power transmission equipment.....	3336	87.0	6.1	-4.7	4.5	-1.5	-0.5	1.1
Other general purpose machinery.....	3339	267.7	8.5	-2.9	7.3	-1.1	4.2	5.3
Computer and electronic products.....	334	1,068.8	1.7	6.4	1.4	-0.3	7.9	8.2
Computer and peripheral equipment.....	3341	158.6	2.5	10.7	1.6	-0.9	12.5	13.5
Communications equipment.....	3342	85.5	11.8	-0.2	1.8	-9.0	1.6	11.6
Audio and video equipment.....	3343	19.3	11.8	47.5	4.1	-6.9	53.6	64.9
Semiconductors and electronic components.....	3344	373.3	2.4	7.6	1.5	-1.0	9.1	10.2
Electronic instruments.....	3345	419.5	-1.5	0.9	1.2	2.7	2.1	-0.6
Magnetic media manufacturing and reproducing...	3346	12.6	1.0	15.0	0.2	-0.8	15.3	16.2
Electrical equipment and appliances.....	335	399.3	-0.5	3.1	4.1	4.6	7.2	2.6
Electric lighting equipment.....	3351	42.6	4.6	-2.1	8.0	3.2	5.7	2.4
Household appliances.....	3352	73.3	-14.2	5.2	8.5	26.4	14.1	-9.7
Electrical equipment.....	3353	139.9	0.8	2.6	0.1	-0.7	2.7	3.4
Other electrical equipment and components.....	3359	143.5	2.6	5.4	3.9	1.2	9.5	8.2
Transportation equipment.....	336	1,653.1	2.3	-3.4	7.6	5.2	4.0	-1.2
Motor vehicles.....	3361	250.4	-11.1	8.1	4.5	17.5	12.9	-3.9

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

Industry	2017 NAICS code	2021 Employment (thousands)	Percent change, 2020-2021					
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compen- sation	Hourly compen- sation
Motor vehicle bodies and trailers.....	3362	164.5	9.3	5.4	17.1	7.0	23.4	15.3
Motor vehicle parts.....	3363	549.3	6.4	-1.9	9.9	3.3	7.9	4.4
Aerospace products and parts.....	3364	482.3	8.3	-12.9	9.5	1.1	-4.6	-5.6
Railroad rolling stock.....	3365	18.3	20.6	-23.1	9.7	-9.0	-15.6	-7.3
Ship and boat building.....	3366	147.9	-1.9	6.2	2.2	4.1	8.5	4.2
Other transportation equipment.....	3369	40.4	-10.7	5.1	11.1	24.5	16.8	-6.2
Furniture and related products.....	337	397.6	-3.2	7.4	0.4	3.8	7.9	4.0
Household and institutional furniture.....	3371	257.8	-3.4	10.9	0.4	3.9	11.3	7.1
Office furniture and fixtures.....	3372	101.6	-1.2	-2.1	0.4	1.7	-1.6	-3.3
Other furniture related products.....	3379	38.2	-8.1	19.5	0.8	9.7	20.5	9.9
Miscellaneous manufacturing.....	339	651.2	-0.7	2.3	5.3	6.0	7.7	1.6
Medical equipment and supplies.....	3391	331.9	-0.2	2.5	3.8	4.0	6.4	2.4
Other miscellaneous manufacturing.....	3399	319.3	-0.7	2.3	7.4	8.2	9.8	1.5

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

Industry	2017 NAICS code	2021 Employment (thousands)	Average annual percent change, 1987-2021					
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compen- sation	Hourly compen- sation
Mining								
Mining.....	21	532.7	2.0	1.4	1.4	-0.6	2.8	3.4
Oil and gas extraction.....	211	118.3	3.4	1.2	1.7	-1.6	2.9	4.6
Oil and gas extraction.....	2111	118.3	3.4	1.2	1.7	-1.6	2.9	4.6
Mining, except oil and gas.....	212	176.4	1.2	1.7	-0.2	-1.5	1.4	2.9
Coal mining.....	2121	36.6	1.9	0.7	-2.0	-3.9	-1.4	2.6
Metal ore mining.....	2122	42.7	0.2	3.6	0.4	0.2	4.0	3.8
Nonmetallic mineral mining and quarrying.....	2123	97.1	1.2	2.1	0.8	-0.3	3.0	3.3
Support activities for mining.....	213	238.0	1.8	1.8	2.7	0.9	4.6	3.6
Support activities for mining.....	2131	238.0	1.8	1.8	2.7	0.9	4.6	3.6
Nondurable Manufacturing								
Food.....	311	1,683.1	0.6	2.1	1.1	0.5	3.2	2.7
Animal food.....	3111	71.0	1.1	2.1	1.6	0.5	3.7	3.3
Grain and oilseed milling.....	3112	63.1	1.9	1.4	1.0	-0.9	2.4	3.3
Sugar and confectionery products.....	3113	78.7	0.7	2.2	0.4	-0.3	2.6	2.9
Fruit and vegetable preserving and specialty.....	3114	174.4	0.9	2.0	0.8	-0.1	2.8	2.9
Dairy products.....	3115	154.9	1.0	2.1	1.2	0.2	3.4	3.1
Animal slaughtering and processing.....	3116	532.6	0.4	2.2	1.5	1.1	3.7	2.6
Seafood product preparation and packaging.....	3117	33.0	0.8	3.0	-0.1	-0.9	2.8	3.8
Bakeries and tortilla products.....	3118	335.5	0.1	1.9	0.3	0.2	2.2	2.0
Other food products.....	3119	239.9	0.1	2.4	1.9	1.8	4.3	2.5
Beverages and tobacco products.....	312	306.9	-1.1	3.1	-0.4	0.7	2.7	1.9
Beverages.....	3121	296.3	-0.4	2.5	0.8	1.3	3.3	2.0
Tobacco.....	3122	10.6	2.0	1.7	-2.6	-4.6	-1.0	3.7
Textile mills.....	313	101.3	1.9	0.4	-2.6	-4.4	-2.2	2.4
Fiber, yarn, and thread mills.....	3131	27.2	1.4	0.2	-2.2	-3.6	-2.0	1.6
Fabric mills.....	3132	47.7	2.4	0.6	-2.8	-5.1	-2.3	2.9
Textile and fabric finishing mills.....	3133	26.4	1.0	1.0	-3.1	-4.0	-2.1	2.0
Textile product mills.....	314	113.0	0.5	2.5	-1.8	-2.3	0.6	3.0
Textile furnishings mills.....	3141	47.6	0.4	2.3	-2.4	-2.8	-0.2	2.7
Other textile product mills.....	3149	65.4	1.1	2.3	-0.7	-1.8	1.5	3.4
Apparel.....	315	100.7	0.0	1.6	-6.3	-6.2	-4.8	1.5
Apparel knitting mills.....	3151	7.9	0.2	1.6	-7.1	-7.3	-5.6	1.8
Cut and sew apparel.....	3152	80.3	0.2	1.5	-6.2	-6.4	-4.8	1.6
Accessories and other apparel.....	3159	12.5	-2.6	2.7	-5.7	-3.3	-3.2	0.1
Leather and allied products.....	316	29.5	0.5	2.4	-4.0	-4.4	-1.6	2.9
Leather and hide tanning and finishing.....	3161	4.2	0.8	1.1	-3.0	-3.7	-1.9	1.9
Footwear.....	3162	11.4	0.5	2.8	-5.0	-5.5	-2.3	3.4
Other leather products.....	3169	13.9	-0.2	2.8	-3.3	-3.1	-0.6	2.6
Paper.....	322	348.9	1.3	1.7	-0.5	-1.7	1.2	3.0
Pulp, paper, and paperboard mills.....	3221	88.4	2.0	1.0	-0.9	-2.8	0.1	3.0
Converted paper products.....	3222	260.5	0.7	2.5	-0.5	-1.2	1.9	3.2
Printing and related support activities.....	323	390.6	1.2	1.1	-0.9	-2.0	0.2	2.3
Printing and related support activities.....	3231	390.6	1.2	1.1	-0.9	-2.0	0.2	2.3
Petroleum and coal products.....	324	105.9	1.7	2.5	0.8	-0.9	3.3	4.2
Petroleum and coal products.....	3241	105.9	1.7	2.5	0.8	-0.9	3.3	4.2
Chemicals.....	325	883.2	0.9	2.3	0.6	-0.3	2.9	3.2
Basic chemicals.....	3251	148.4	1.7	1.7	0.3	-1.3	2.0	3.4
Resin, rubber, and artificial fibers.....	3252	90.1	1.4	2.3	0.0	-1.4	2.3	3.8
Agricultural chemicals.....	3253	38.4	1.6	2.2	0.4	-1.1	2.7	3.9
Pharmaceuticals and medicines.....	3254	337.3	-0.8	3.8	1.1	1.9	4.9	2.9
Paints, coatings, and adhesives.....	3255	65.1	0.4	2.6	-0.3	-0.8	2.2	3.0

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

Industry	2017 NAICS code	2021 Employment (thousands)	Average annual percent change, 1987-2021					
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compen- sation	Hourly compen- sation
Soaps, cleaning compounds, and toiletries.....	3256	123.4	1.0	1.5	0.9	-0.2	2.3	2.5
Other chemical products and preparations.....	3259	80.5	1.6	1.4	-0.2	-1.8	1.2	3.0
Plastics and rubber products.....	326	733.8	1.4	1.7	1.1	-0.3	2.8	3.1
Plastics products.....	3261	600.3	1.3	1.8	1.3	0.0	3.2	3.1
Rubber products.....	3262	133.5	1.5	1.4	0.2	-1.4	1.6	2.9
Durable Manufacturing								
Wood products.....	321	437.0	0.9	2.2	0.0	-0.9	2.2	3.1
Sawmills and wood preservation.....	3211	99.8	1.6	1.6	0.2	-1.4	1.8	3.2
Plywood and engineered wood products.....	3212	82.9	0.3	2.1	-0.2	-0.5	1.9	2.4
Other wood products.....	3219	254.3	0.8	2.5	0.1	-0.8	2.6	3.4
Nonmetallic mineral products.....	327	417.1	0.7	2.0	0.0	-0.7	2.0	2.7
Clay products and refractories.....	3271	36.6	0.8	1.8	-1.6	-2.3	0.2	2.6
Glass and glass products.....	3272	86.7	1.8	1.1	0.1	-1.6	1.2	2.9
Cement and concrete products.....	3273	198.6	-0.2	2.5	0.1	0.2	2.6	2.4
Lime and gypsum products.....	3274	15.0	1.2	3.0	-0.5	-1.6	2.5	4.2
Other nonmetallic mineral products.....	3279	80.2	1.1	2.0	0.9	-0.2	2.9	3.1
Primary metals.....	331	352.3	2.0	0.7	0.1	-1.9	0.8	2.8
Iron and steel mills and ferroalloys.....	3311	79.7	3.1	-0.3	0.6	-2.4	0.3	2.8
Steel products from purchased steel.....	3312	53.3	1.1	1.7	0.2	-0.9	1.9	2.8
Alumina and aluminum production.....	3313	58.2	1.8	1.2	-0.1	-1.8	1.1	3.0
Other nonferrous metal production.....	3314	56.9	1.2	2.2	-0.6	-1.9	1.6	3.5
Foundries.....	3315	104.2	1.2	1.4	-0.9	-2.0	0.5	2.6
Fabricated metal products.....	332	1,410.6	0.9	1.8	0.5	-0.4	2.3	2.7
Forging and stamping.....	3321	91.3	1.9	0.6	0.8	-1.0	1.4	2.5
Cutlery and handtools.....	3322	37.3	0.9	1.7	-1.1	-2.0	0.6	2.7
Architectural and structural metals.....	3323	396.1	0.5	2.3	0.8	0.3	3.2	2.8
Boilers, tanks, and shipping containers.....	3324	87.1	1.2	1.4	0.5	-0.7	1.9	2.7
Hardware.....	3325	24.4	0.9	1.1	-1.7	-2.6	-0.6	2.1
Spring and wire products.....	3326	41.0	1.6	1.5	-0.3	-1.9	1.2	3.2
Machine shops and threaded products.....	3327	334.7	1.5	1.5	1.7	0.2	3.2	2.9
Coating, engraving, and heat treating metals.....	3328	128.3	1.4	1.3	1.3	-0.1	2.6	2.7
Other fabricated metal products.....	3329	270.4	0.4	2.1	-0.2	-0.6	1.9	2.5
Machinery.....	333	1,059.3	1.6	1.3	0.8	-0.8	2.1	2.9
Agriculture, construction, and mining machinery...	3331	197.9	1.8	0.8	1.5	-0.3	2.3	2.6
Industrial machinery.....	3332	122.4	1.5	1.2	1.1	-0.4	2.3	2.8
Commercial and service industry machinery.....	3333	87.1	1.0	1.5	-0.7	-1.6	0.8	2.5
HVAC and commercial refrigeration equipment...	3334	136.9	1.2	1.7	0.7	-0.5	2.4	2.9
Metalworking machinery.....	3335	160.3	1.7	1.1	0.1	-1.6	1.2	2.8
Turbine and power transmission equipment.....	3336	87.0	1.1	1.1	0.2	-0.8	1.4	2.2
Other general purpose machinery.....	3339	267.7	1.6	1.9	0.9	-0.6	2.8	3.5
Computer and electronic products.....	334	1,068.8	7.6	-4.2	5.6	-1.9	1.2	3.1
Computer and peripheral equipment.....	3341	158.6	12.7	-11.0	9.3	-3.0	-2.7	0.3
Communications equipment.....	3342	85.5	4.7	-1.1	1.6	-2.9	0.5	3.5
Audio and video equipment.....	3343	19.3	2.8	2.4	-0.9	-3.7	1.4	5.3
Semiconductors and electronic components.....	3344	373.3	11.1	-7.1	9.6	-1.4	1.8	3.2
Electronic instruments.....	3345	419.5	2.5	0.6	1.1	-1.3	1.8	3.1
Magnetic media manufacturing and reproducing...	3346	12.6	-0.9	1.2	-4.5	-3.7	-3.4	0.3
Electrical equipment and appliances.....	335	399.3	1.5	1.5	0.0	-1.5	1.5	3.0
Electric lighting equipment.....	3351	42.6	1.4	1.5	-0.5	-1.9	1.0	3.0
Household appliances.....	3352	73.3	2.5	0.0	0.7	-1.7	0.7	2.5
Electrical equipment.....	3353	139.9	1.3	1.6	-0.5	-1.8	1.2	3.0
Other electrical equipment and components.....	3359	143.5	0.9	2.2	0.0	-0.9	2.2	3.1
Transportation equipment.....	336	1,653.1	2.1	0.3	1.3	-0.8	1.6	2.4
Motor vehicles.....	3361	250.4	2.1	0.3	1.5	-0.6	1.8	2.4

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

Industry	2017 NAICS code	2021 Employment (thousands)	Average annual percent change, 1987-2021					
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compen- sation	Hourly compen- sation
Motor vehicle bodies and trailers.....	3362	164.5	1.5	2.5	2.0	0.5	4.6	4.1
Motor vehicle parts.....	3363	549.3	2.5	-0.6	2.1	-0.4	1.4	1.9
Aerospace products and parts.....	3364	482.3	1.4	1.1	-0.1	-1.5	1.0	2.5
Railroad rolling stock.....	3365	18.3	2.2	0.5	1.7	-0.5	2.3	2.7
Ship and boat building.....	3366	147.9	1.8	1.8	0.9	-0.9	2.7	3.6
Other transportation equipment.....	3369	40.4	2.9	0.2	3.3	0.4	3.5	3.2
Furniture and related products.....	337	397.6	0.9	2.0	-0.5	-1.4	1.5	2.9
Household and institutional furniture.....	3371	257.8	0.7	2.1	-0.8	-1.5	1.3	2.8
Office furniture and fixtures.....	3372	101.6	0.9	1.9	-0.3	-1.1	1.6	2.8
Other furniture related products.....	3379	38.2	1.6	1.6	0.6	-1.0	2.2	3.2
Miscellaneous manufacturing.....	339	651.2	1.5	1.6	1.2	-0.3	2.8	3.1
Medical equipment and supplies.....	3391	331.9	1.9	1.4	2.6	0.7	4.0	3.3
Other miscellaneous manufacturing.....	3399	319.3	1.0	1.7	0.0	-1.0	1.7	2.7