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PRODUCTIVITY AND COSTS BY INDUSTRY
 SELECTED SERVICE-PROVIDING INDUSTRIES – 2017

Labor productivity rose in 20 of 28 selected service-providing industries in 2017, the U.S. Bureau of Labor Statistics reported today, the same as in 2016. Output increased in 19 industries in 2017, fewer than in 2016, while hours increased in more industries.

Long term measures of productivity and cost through 2016 are available for 58 industries.

Chart 1. Selected service-providing industries with the largest change in productivity, 2017

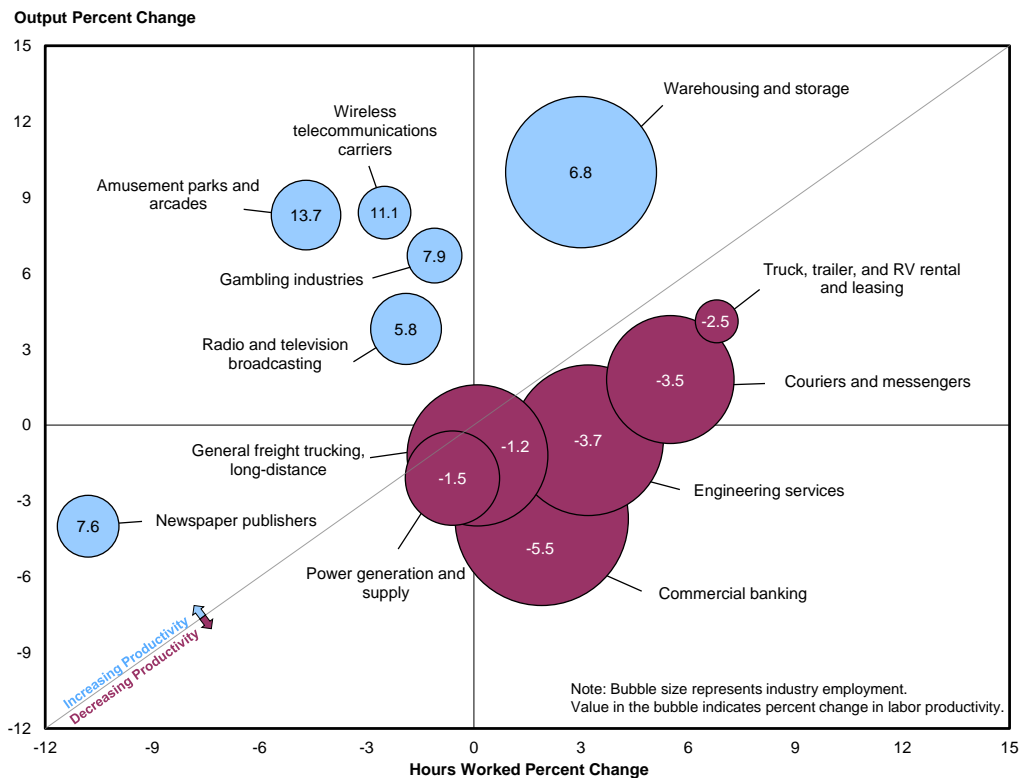


Chart 1 shows the changes in output and hours worked for industries with large changes in productivity. Industries above the diagonal line had productivity growth. In many of these industries, output grew while hours worked declined. This was the case in amusement parks and arcades, the industry that recorded the greatest growth in productivity. Productivity growth also occurred when output growth was

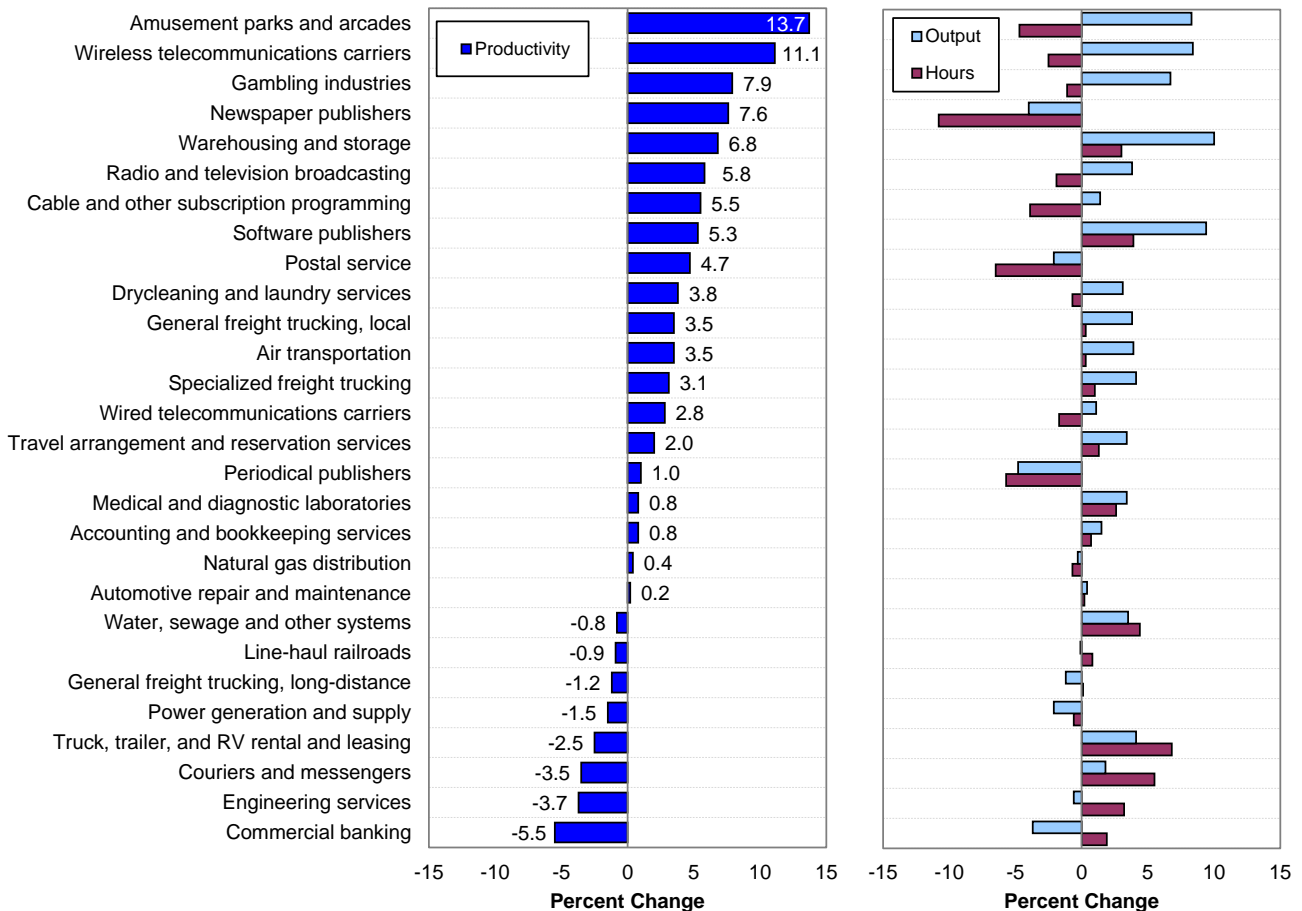
greater than growth in hours worked, as shown in warehousing and storage. In newspaper publishers, productivity grew because hours worked declined more than output.

Industries below the diagonal line exhibited declining productivity. For the most part, hours worked increased in these industries while output declined or grew at a slower rate. In the case of power generation and supply, productivity fell because output declined more than hours worked.

Trends in Labor Productivity in 2017

- Labor productivity increased in 20 of 28 industries in 2017. (See chart 2.) Among those with increasing productivity, output grew in 16 industries.
- Hours worked grew in 16 of the 28 industries.
- Productivity gains of at least 7.0 percent occurred in 3 industries where output increases coincided with declines in hours worked: amusement parks and arcades (13.7 percent), wireless telecommunications carriers (11.1 percent), and gambling industries (7.9 percent).
- Hours worked increased in 7 out of the 8 industries which recorded declines in productivity. Of these, the largest gains in hours worked were in truck, trailer, and RV rental and leasing (6.8 percent); couriers and messengers (5.5 percent); and water, sewage and other systems (4.4 percent).

Chart 2. Labor productivity growth in selected service-providing industries, 2017

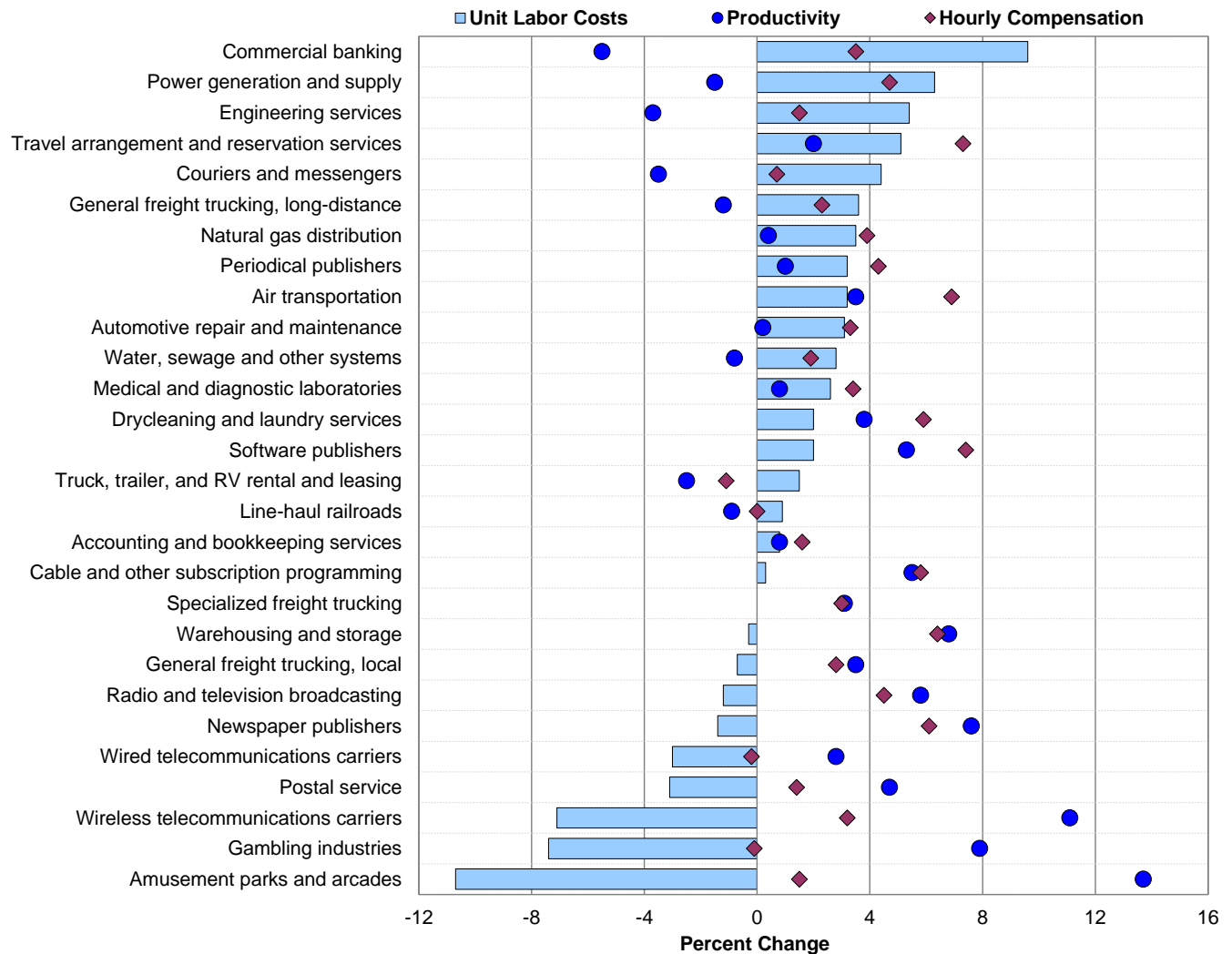


Unit labor costs declined in 9 industries in 2017. Each of the industries with declines in unit labor cost also recorded increases in productivity. Increases in labor productivity counter the impact of rising hourly compensation on unit labor costs facing employers.

Trends in Unit Labor Costs in 2017

- Unit labor costs fell in 9 industries in 2017. (See chart 3.)
- All unit labor cost declines occurred in industries where productivity rose.
- Each of the industries where productivity fell also recorded an increase in unit labor costs.
- Hourly compensation rose in 24 of the 28 industries measured.

Chart 3. Unit labor costs, productivity, and hourly compensation costs in selected service-providing industries, 2017



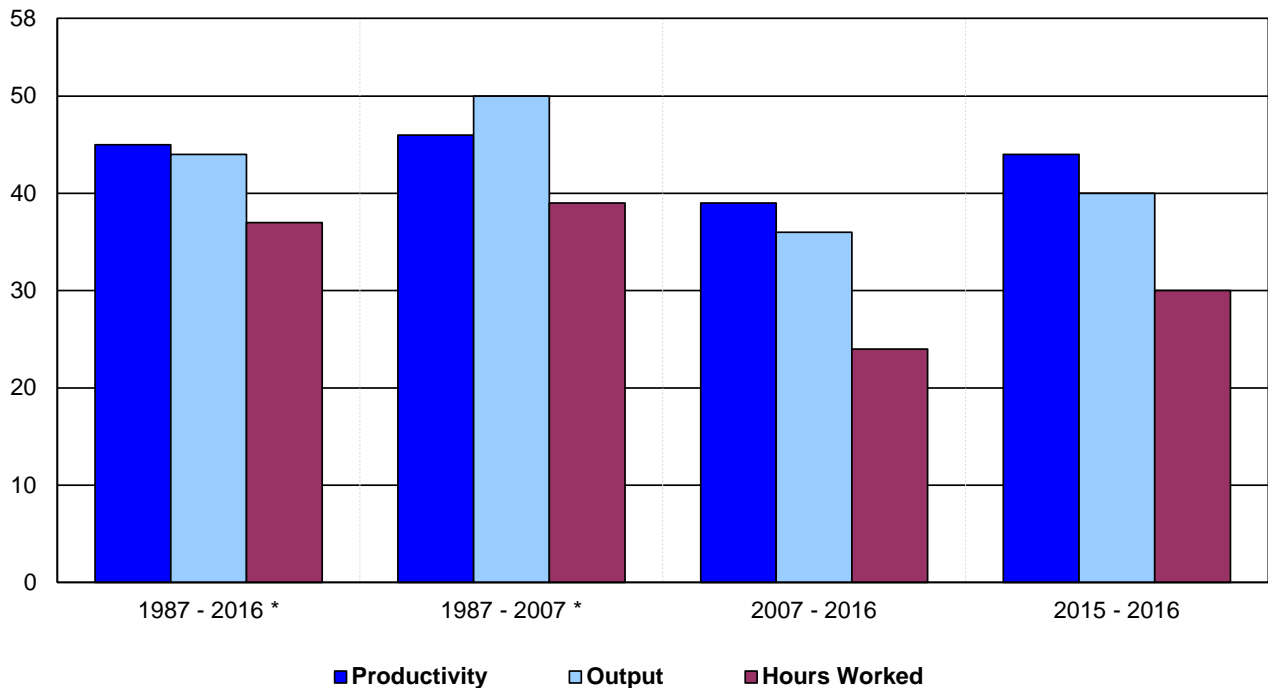
Long Term Productivity Trends

Chart 4 displays the number of industries with increases in productivity, output, and hours worked for selected time periods through 2016, the latest year for which data are available for all 58 selected service-providing industries published on the BLS website.

- Over the long term, productivity rose in 45 out of 58 service-providing industries. For the majority of the industries studied, this period extends from 1987 to 2016.
- Median long term productivity growth for all 58 industries was approximately 1.7 percent per year.
- Output increased over the long term in 44 industries while hours worked increased in 37 industries.
- Productivity increased in 39 of the 58 industries in the period from 2007 to 2016 that began with a severe recession. Only 36 industries had increases in output and 24 experienced growth in hours worked.

Chart 4. Number of selected service-providing industries with increases in labor productivity, output, and hours worked

Number of Industries



* Note: Measures for 44 industries begin in 1987 while measures for 14 additional industries begin in later years.

Want to know more?

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- 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

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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 and real output per hour (labor productivity). Increases in hourly compensation increase unit labor costs; increases in labor productivity offset compensation increases and reduce unit labor costs.

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 measures are constructed primarily using data from the economic censuses and annual surveys of the U.S. Census Bureau, U.S. Department of Commerce, together with information on price changes from BLS. Other data sources include: the Energy Information Administration, U.S. Department of Energy; the Bureau of Transportation Statistics, U.S. Department of Transportation; the U.S. Geological Survey, U.S. Department of the Interior; the U.S. Postal Service; the Postal Rate Commission; and the Federal Deposit Insurance Corporation. Data from the Quarterly Service Survey from the Census Bureau are used to construct preliminary output measures for 2017 for some industries.

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 self-employed and unpaid family worker data 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. Additional sources of employment and hours data for certain service industries include the Association of American Railroads, the U.S. Department of Transportation, and the U.S. Postal Service. 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 economic censuses and annual surveys of the Census Bureau, U.S. Department of Commerce. The estimates for 2017 are constructed using data from the BLS Quarterly Census of Employment and Wages (QCEW).

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

Industry	2012 NAICS code	2017 Employment (thousands)	Percent change, 2016-2017				
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compensation
Utilities							
Utilities.....	22	554.8	-1.4	5.8	-1.7	-0.2	4.0
Utilities.....	221	554.8	-1.4	5.8	-1.7	-0.2	4.0
Power generation and supply.....	2211	391.0	-1.5	6.3	-2.1	-0.6	4.1
Natural gas distribution.....	2212	113.3	0.4	3.5	-0.3	-0.7	3.2
Water, sewage and other systems.....	2213	50.5	-0.8	2.8	3.5	4.4	6.4
Transportation and Warehousing							
Air transportation.....	481	468.2	3.5	3.2	3.9	0.3	7.2
Line-haul railroads.....	482111	167.8	-0.9	0.9	-0.1	0.8	0.7
Truck transportation.....	484	1,664.2	0.8	1.8	1.1	0.4	3.0
General freight trucking.....	4841	1,192.1	-0.4	2.9	-0.3	0.1	2.6
General freight trucking, local.....	48411	317.8	3.5	-0.7	3.8	0.3	3.1
General freight trucking, long-distance.....	48412	874.3	-1.2	3.6	-1.2	0.1	2.4
Specialized freight trucking.....	4842	472.1	3.1	0.0	4.1	1.0	4.1
Postal service.....	491	615.3	4.7	-3.1	-2.1	-6.5	-5.2
Postal service.....	4911	615.3	4.7	-3.1	-2.1	-6.5	-5.2
Couriers and messengers.....	492	716.3	-3.5	4.4	1.8	5.5	6.2
Warehousing and storage.....	493	1,003.2	6.8	-0.3	10.0	3.0	9.7
Warehousing and storage.....	4931	1,003.2	6.8	-0.3	10.0	3.0	9.7
Information							
Publishing.....	511	754.9	7.8	0.7	6.0	-1.7	6.7
Newspaper publishers.....	51111	168.0	7.6	-1.4	-4.0	-10.8	-5.3
Periodical publishers.....	51112	103.1	1.0	3.2	-4.8	-5.7	-1.7
Software publishers.....	5112	374.8	5.3	2.0	9.4	3.9	11.6
Broadcasting, except Internet.....	515	274.0	4.6	0.1	2.2	-2.3	2.3
Radio and television broadcasting.....	5151	221.1	5.8	-1.2	3.8	-1.9	2.6
Cable and other subscription programming.....	5152	52.9	5.5	0.3	1.4	-3.9	1.7
Wired telecommunications carriers.....	5171	587.5	2.8	-3.0	1.1	-1.7	-1.9
Wireless telecommunications carriers.....	5172	121.6	11.1	-7.1	8.4	-2.5	0.6
Finance and Insurance							
Commercial banking.....	52211	1,323.6	-5.5	9.6	-3.7	1.9	5.5
Real Estate and Rental and Leasing							
Truck, trailer, and RV rental and leasing.....	53212	80.2	-2.5	1.5	4.1	6.8	5.6
Professional and Technical Services							
Accounting and bookkeeping services.....	5412	1,146.8	0.8	0.8	1.5	0.7	2.3
Accounting and bookkeeping services.....	54121	1,146.8	0.8	0.8	1.5	0.7	2.3
Engineering services.....	54133	995.3	-3.7	5.4	-0.6	3.2	4.7
Administrative and Waste Services							
Travel arrangement and reservation services.....	5615	245.0	2.0	5.1	3.4	1.3	8.7
Health Care and Social Assistance							
Medical and diagnostic laboratories.....	6215	283.0	0.8	2.6	3.4	2.6	6.1
Arts, Entertainment, and Recreation							
Amusement parks and arcades.....	7131	212.2	13.7	-10.7	8.3	-4.7	-3.3
Gambling industries.....	7132	131.5	7.9	-7.4	6.7	-1.1	-1.2
Other Services							
Automotive repair and maintenance.....	8111	1,126.7	0.2	3.1	0.4	0.2	3.5
Drycleaning and laundry services.....	8123	314.5	3.8	2.0	3.1	-0.7	5.2

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

Industry	2012 NAICS code	2016 Employment (thousands)	Average annual percent change, 1987-2016				
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compensation
Utilities							
Utilities.....	22	556.4	2.2	1.5	1.4	-0.8	2.9
Utilities.....	221	556.4	2.2	1.5	1.4	-0.8	2.9
Power generation and supply.....	2211	394.2	3.0	0.6	2.1	-0.9	2.7
Natural gas distribution.....	2212	112.9	0.7	3.6	-0.3	-1.0	3.3
Water, sewage and other systems.....	2213	49.3	-1.7	4.6	0.7	2.5	5.4
Transportation and Warehousing							
Air transportation.....	481	448.1	3.0	0.8	2.7	-0.3	3.5
Line-haul railroads.....	482111	173.1	3.6	-0.4	1.7	-1.8	1.3
Truck transportation ¹	484	1,665.2	0.6	1.0	1.9	1.4	3.0
General freight trucking ¹	4841	1,197.8	1.0	1.1	2.3	1.2	3.4
General freight trucking, local ¹	48411	317.3	2.5	0.3	3.6	1.1	3.9
General freight trucking, long-distance.....	48412	880.5	1.1	0.5	2.2	1.1	2.7
Specialized freight trucking ²	4842	467.4	0.8	1.9	1.9	1.1	3.8
Used household and office goods moving.....	48421	100.2	-0.6	2.6	-0.1	0.4	2.5
Other specialized trucking, local ²	48422	228.8	0.2	2.5	1.4	1.3	3.9
Other specialized trucking, long-distance ²	48423	138.4	1.2	1.2	3.5	2.3	4.7
Postal service.....	491	608.8	0.3	3.1	-0.5	-0.8	2.5
Postal service.....	4911	608.8	0.3	3.1	-0.5	-0.8	2.5
Couriers and messengers.....	492	678.3	-1.9	3.2	0.6	2.5	3.8
Warehousing and storage ¹	493	933.4	1.6	0.0	5.7	4.0	5.7
Warehousing and storage ¹	4931	933.4	1.6	0.0	5.7	4.0	5.7
General warehousing and storage ¹	49311	817.2	2.7	-0.8	7.0	4.2	6.2
Refrigerated warehousing and storage ¹	49312	57.9	-0.2	1.4	2.9	3.1	4.3
Information							
Publishing.....	511	760.4	3.8	1.5	3.4	-0.4	4.9
Newspaper, book, and directory publishers.....	5111	401.1	-0.2	4.2	-2.6	-2.4	1.5
Newspaper publishers.....	51111	180.9	-1.0	4.2	-4.3	-3.4	-0.3
Periodical publishers.....	51112	107.9	-0.5	4.9	-1.6	-1.0	3.2
Book publishers.....	51113	68.8	-0.2	4.7	-0.8	-0.6	3.9
Software publishers.....	5112	359.3	11.2	-5.7	17.7	5.8	11.0
Motion picture and video exhibition.....	51213	144.8	1.8	1.9	1.8	0.0	3.7
Broadcasting, except Internet.....	515	278.6	3.0	1.6	3.0	0.0	4.6
Radio and television broadcasting.....	5151	223.4	2.0	1.8	1.7	-0.3	3.5
Radio broadcasting.....	51511	88.8	3.7	1.4	2.5	-1.1	4.0
Cable and other subscription programming.....	5152	55.2	5.3	2.8	6.7	1.3	9.7
Wired telecommunications carriers.....	5171	594.4	3.7	-0.9	2.8	-0.9	1.9
Wireless telecommunications carriers.....	5172	123.0	12.0	-6.8	18.9	6.2	10.8
Finance and Insurance							
Commercial banking.....	52211	1,309.5	3.1	1.9	3.0	-0.1	5.0
Real Estate and Rental and Leasing							
Passenger car rental.....	532111	122.6	2.2	1.5	3.2	1.0	4.8
Truck, trailer, and RV rental and leasing.....	53212	76.6	2.1	1.1	2.6	0.6	3.8
Video tape and disc rental.....	53223	11.6	7.0	-2.5	-1.8	-8.2	-4.2
Professional and Technical Services							
Accounting and bookkeeping services ³	5412	1,140.3	2.8	1.1	3.5	0.6	4.6
Accounting and bookkeeping services ³	54121	1,140.3	2.8	1.1	3.5	0.6	4.6
Offices of certified public accountants ³	541211	482.8	2.1	2.3	3.1	0.9	5.4
Tax preparation services.....	541213	137.9	0.5	2.1	2.2	1.6	4.4
Other accounting services ³	541219	354.0	4.8	-1.8	4.9	0.1	3.0
Architectural services.....	54131	199.3	1.5	1.8	2.5	1.0	4.4
Engineering services.....	54133	968.1	1.2	2.8	2.7	1.6	5.6
Advertising agencies.....	54181	215.2	1.8	2.2	2.3	0.5	4.6
Photography studios, portrait.....	541921	60.1	0.1	1.9	1.1	1.1	3.1

See footnotes at end of table.

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

Industry	2012 NAICS code	2016 Employment (thousands)	Average annual percent change, 1987-2016				
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compensation
Veterinary services ⁴	54194	371.4	-0.8	4.0	1.7	2.6	5.8
Administrative and Waste Services							
Employment placement and executive search ⁵	56131	313.5	4.1	0.2	5.2	1.1	5.5
Travel arrangement and reservation services ³	5615	239.2	5.8	-1.0	3.7	-2.0	2.7
Travel agencies.....	56151	103.9	5.4	-0.7	4.3	-1.1	3.6
Janitorial services.....	56172	1,392.5	1.8	1.5	3.5	1.6	5.1
Health Care and Social Assistance							
Medical and diagnostic laboratories ⁵	6215	274.2	1.9	0.5	5.0	3.0	5.5
Medical laboratories ⁵	621511	198.1	1.8	0.4	5.0	3.1	5.4
Diagnostic imaging centers ⁵	621512	76.1	2.2	0.7	5.0	2.8	5.7
Hospitals, except psychiatric and substance abuse hospitals ⁶	6221,3	4,768.3	0.5	3.3	1.9	1.4	5.3
Arts, Entertainment, and Recreation							
Amusement parks and arcades ⁷	7131	207.3	-2.3	6.3	-0.8	1.5	5.5
Amusement and theme parks.....	71311	182.6	-0.7	4.3	1.9	2.6	6.2
Gambling industries ³	7132	134.9	2.1	2.3	2.1	0.0	4.5
Golf courses and country clubs ²	71391	394.5	-1.4	4.3	-0.1	1.3	4.2
Fitness and recreational sports centers ²	71394	638.5	3.8	-0.6	4.3	0.4	3.7
Bowling centers.....	71395	69.3	0.7	2.7	-1.0	-1.7	1.6
Accommodation and Food Services							
Accommodation and food services.....	72	13,639.6	0.8	2.7	2.3	1.5	5.1
Accommodation.....	721	1,979.6	2.1	1.7	2.8	0.7	4.5
Traveler accommodation.....	7211	1,895.0	2.1	1.6	2.8	0.7	4.5
Hotels and motels, except casino hotels.....	72111	1,589.8	1.5	2.3	2.2	0.7	4.6
Food services and drinking places.....	722	11,660.0	0.5	3.1	2.2	1.7	5.3
Special food services.....	7223	805.1	1.4	1.4	2.4	1.1	3.9
Drinking places, alcoholic beverages.....	7224	392.2	-0.4	3.3	-0.4	0.0	2.9
Restaurants and other eating places.....	72251	10,462.7	0.5	3.3	2.3	1.8	5.7
Full-service restaurants.....	722511	5,396.0	0.5	3.7	2.3	1.7	6.0
Limited-service eating places.....	722513,4,5	5,066.7	0.3	2.8	2.3	2.0	5.2
Other Services							
Automotive repair and maintenance.....	8111	1,114.1	1.1	2.2	1.5	0.4	3.7
Reupholstery and furniture repair.....	81142	21.0	-0.5	3.6	-2.6	-2.1	0.9
Personal care services.....	8121	1,190.3	2.4	1.5	3.4	1.0	5.0
Hair, nail, and skin care services.....	81211	972.5	2.2	1.6	3.0	0.8	4.7
Funeral homes and funeral services.....	81221	111.4	-0.4	4.0	-0.3	0.1	3.7
Drycleaning and laundry services.....	8123	314.9	2.0	1.5	1.0	-0.9	2.5
Coin-operated laundries and drycleaners.....	81231	43.2	2.2	1.7	0.4	-1.7	2.1
Drycleaning and laundry services.....	81232	142.2	0.7	2.2	-1.2	-1.9	1.0
Linen and uniform supply.....	81233	129.5	2.3	0.9	3.1	0.8	4.0
Photofinishing.....	81292	10.8	3.0	2.1	-4.3	-7.1	-2.3

¹ For NAICS industries 484, 4841, 48411, 493, 4931, 49311, and 49312, average annual percent changes are for 1992-2016.

² For NAICS industries 4842, 48422, 48423, 71391, and 71394, average annual percent changes are for 2002-2016.

³ For NAICS industries 5412, 54121, 541211, 541219, 5615, and 7132, average annual percent changes are for 1997-2016.

⁴ For NAICS industry 54194, average annual percent changes are for 2004-2016.

⁵ For NAICS industries 56131, 6215, 621511, and 621512, average annual percent changes are for 1994-2016.

⁶ For NAICS industry 6221,3, average annual percent changes are for 1993-2015. Employment is for 2015.

⁷ For NAICS industry 7131, average annual percent changes are for 2007-2016.