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**PRODUCTIVITY AND COSTS BY INDUSTRY**  
 SELECTED SERVICE-PROVIDING INDUSTRIES – 2018

**Labor productivity** rose in 18 of 28 selected service-providing industries in 2018, the U.S. Bureau of Labor Statistics reported today. This was similar to 2017, when labor productivity increased in 19 of 28 industries. Output increased in 21 industries in 2018, while hours worked increased in 15 industries.

**Chart 1. Selected service-providing industries with the largest change in productivity, 2018**

**Output Percent Change**

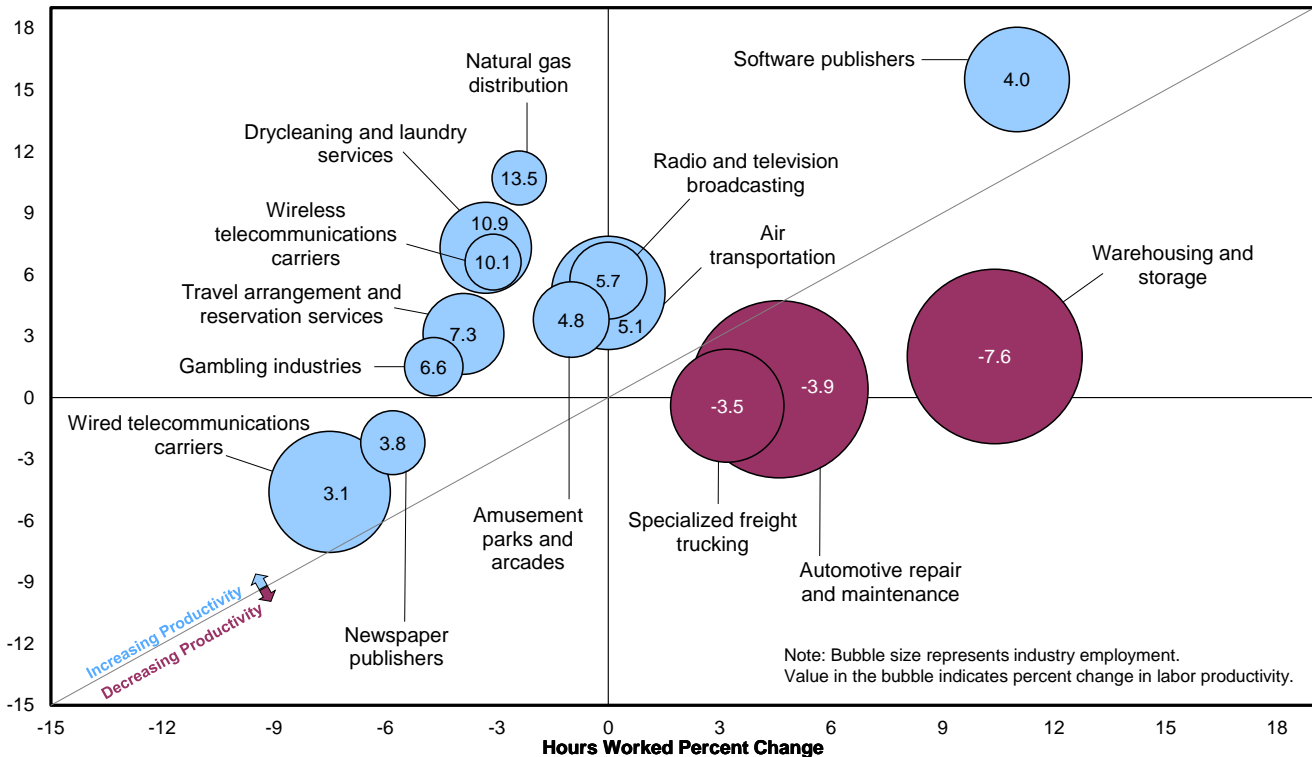


Chart 1 shows the changes in output and hours worked for industries with the largest changes in productivity. Industries above the diagonal line had productivity growth. In many of these industries, output grew while hours worked declined. This was the case in natural gas distribution, the industry that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

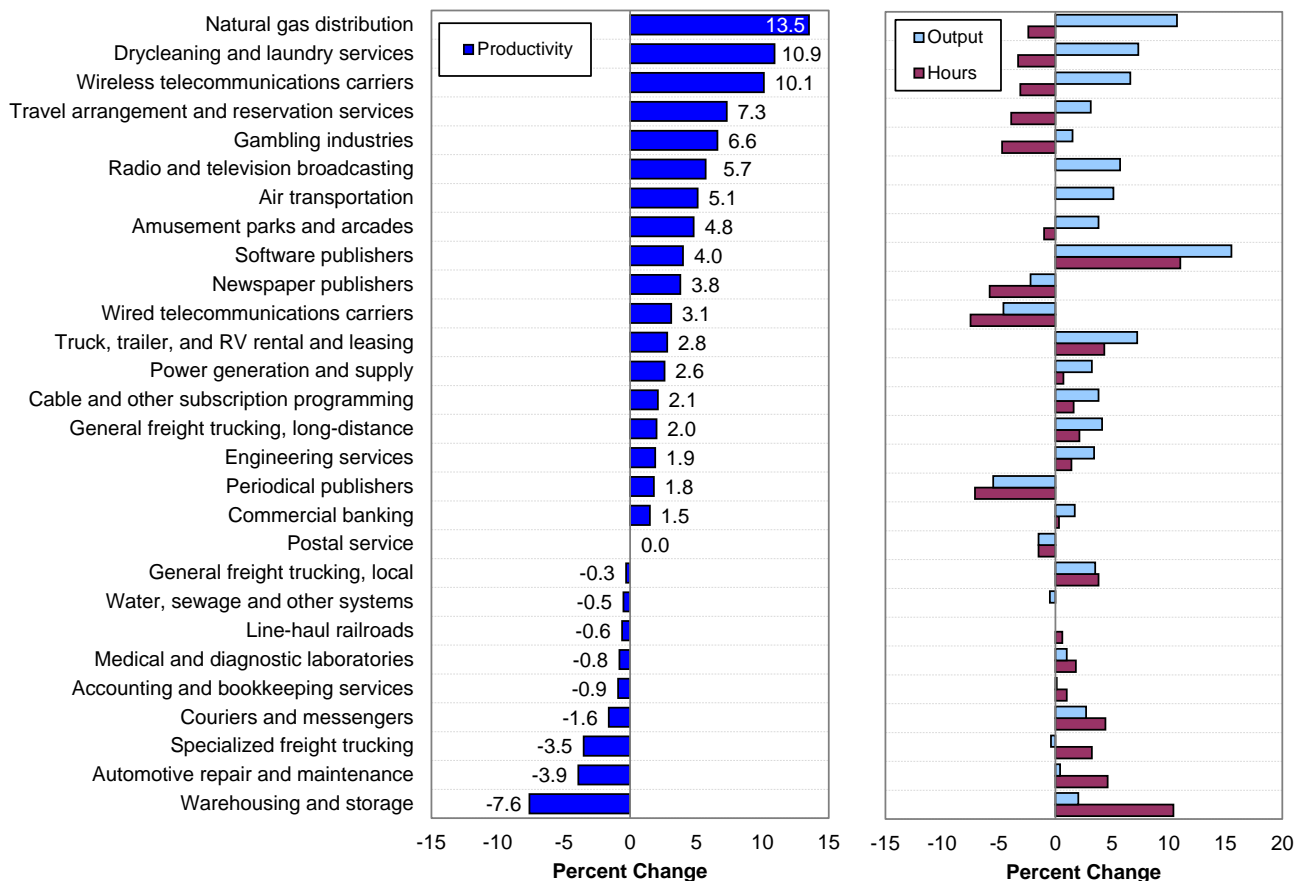
but at a slower rate than output, as shown in software publishers. In newspaper publishers and wired telecommunications carriers, productivity grew because hours worked declined more than output.

Industries below the diagonal line exhibited declining productivity. In all of these industries, hours worked increased while output declined or grew at a slower rate.

### Trends in Labor Productivity in 2018

- Labor productivity increased in 18 of 28 industries in 2018. (See chart 2.) Among those with increasing productivity, output grew in 15 industries and hours worked grew in 7 industries.
- Productivity gains of at least 7.0 percent occurred in 4 industries: natural gas distribution (13.5 percent), drycleaning and laundry services (10.9 percent), wireless telecommunications carriers (10.1 percent), and travel arrangement and reservation services (7.3 percent). In all 4 of these industries, output increases coincided with declines in hours worked.
- Hours worked grew in 15 of the 28 industries.
- Hours worked increased in 8 industries which recorded declines in productivity. Of these, the largest gains in hours worked were in warehousing and storage (10.4 percent), automotive repair and maintenance (4.6 percent), and couriers and messengers (4.4 percent).

**Chart 2. Labor productivity growth in selected service-providing industries, 2018**

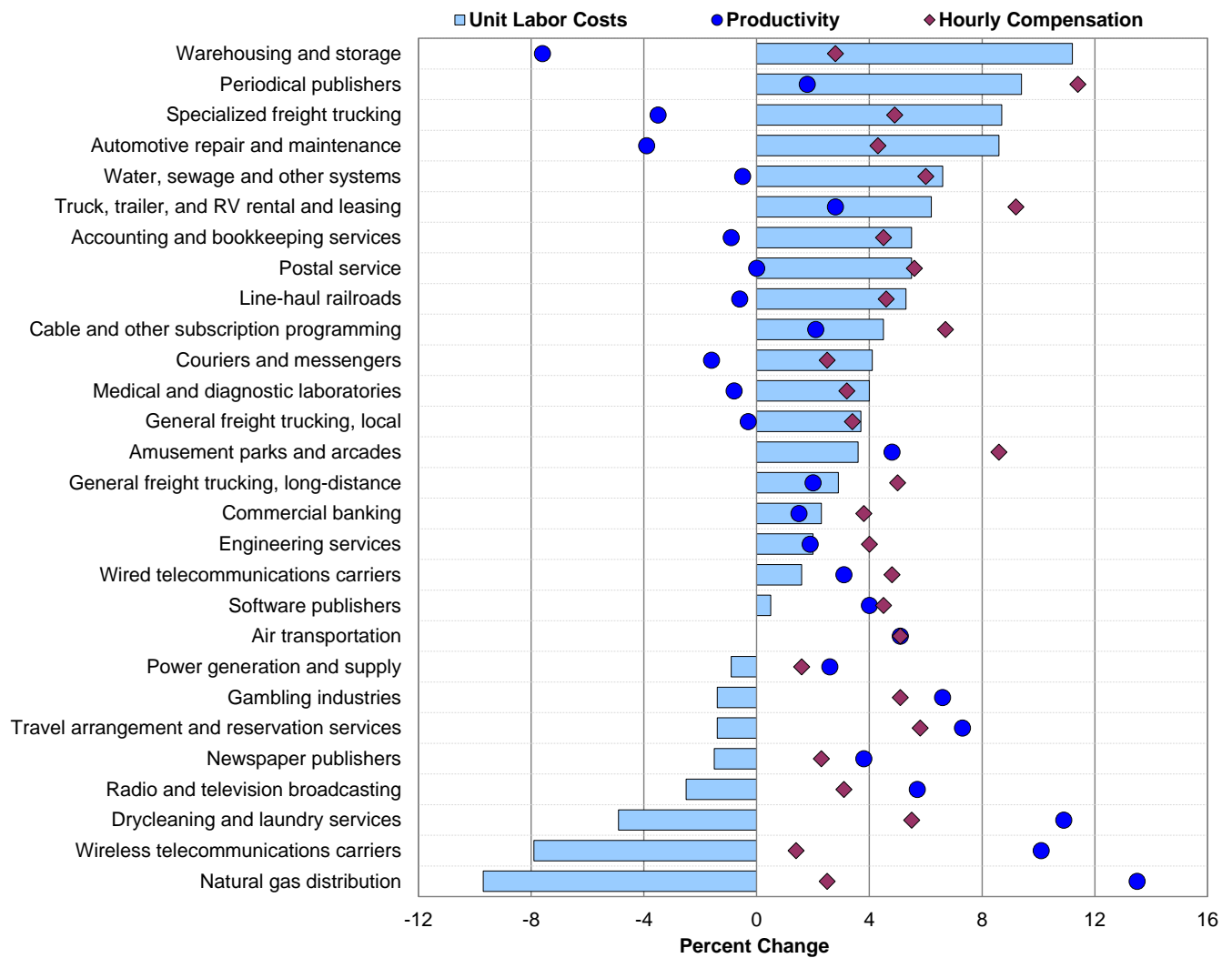


**Unit labor costs** declined in 8 industries in 2018. Each of the industries with a decline in unit labor costs also recorded an increase in productivity. Increases in labor productivity counter the impact of rising hourly compensation on unit labor costs facing employers.

**Trends in Unit Labor Costs in 2018**

- The largest declines in unit labor costs were in natural gas distribution (-9.7 percent) and wireless telecommunications carriers (-7.9 percent). In both industries, productivity grew substantially more than hourly compensation. (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 all of the 28 industries measured.

**Chart 3. Unit labor costs, productivity, and hourly compensation costs in selected service-providing industries, 2018**



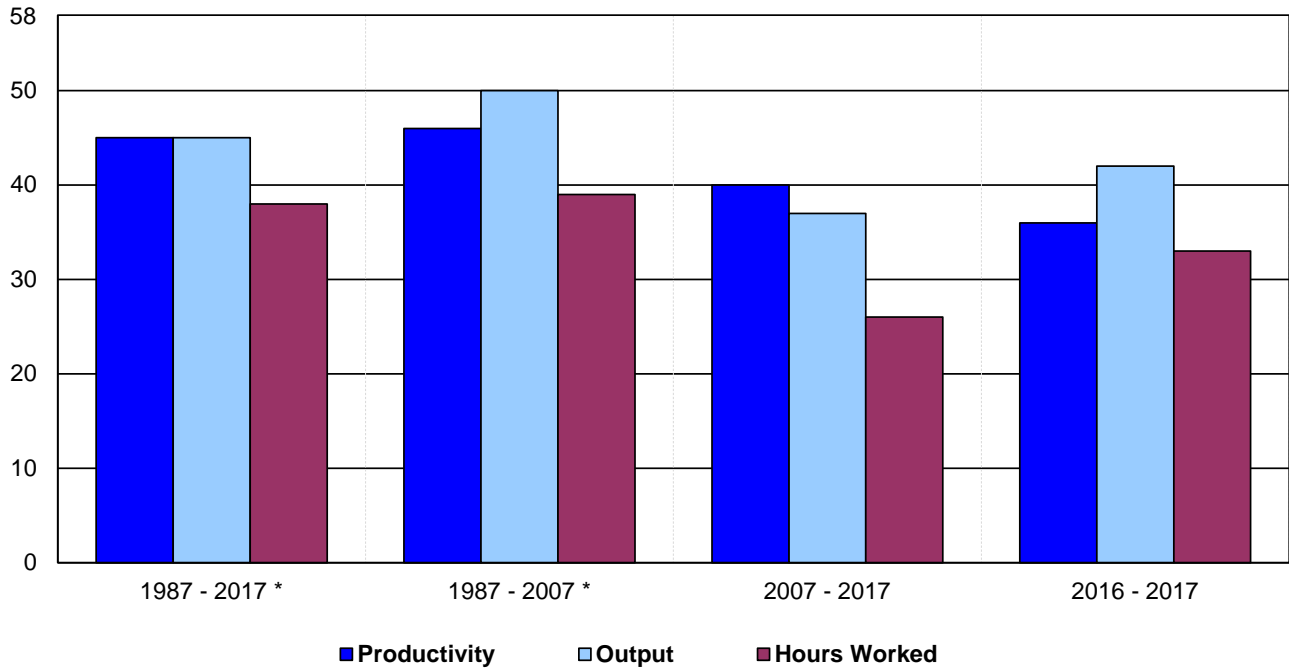
### Long Term Productivity Trends

Chart 4 displays the number of industries with increases in productivity, output, and hours worked for selected time periods through 2017, 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 2017.
- Median long term productivity growth for all 58 industries was approximately 1.4 percent per year.
- Output increased over the long term in 45 industries while hours worked increased in 38 industries.
- Productivity increased in 40 of the 58 industries in the period from 2007 to 2017 that began with a severe recession. During this period, only 37 industries had increases in output and 26 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?**

**Access more productivity data using the data dashboard, at [www.bls.gov/lpc/lpc\\_by\\_industry\\_dashboard.xlsx](http://www.bls.gov/lpc/lpc_by_industry_dashboard.xlsx).**

- 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

**More information from the BLS productivity program is available at [www.bls.gov/lpc](http://www.bls.gov/lpc).**

### **Questions?**

Additional information can be obtained by calling the BLS productivity program at (202) 691-5606 or by sending an email to [productivity@bls.gov](mailto:productivity@bls.gov). Information in this release will be made available to sensory impaired individuals upon request. Voice phone: (202) 691-5200; Federal Relay Service: (800) 877-8339.

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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:** Real 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. 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 2018 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 2018 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	2018 Employment (thousands)	Percent change, 2017-2018				
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compensation
<b>Utilities</b>							
Utilities.....	22	554.7	4.5	-2.3	4.5	0.0	2.0
Utilities.....	221	554.7	4.5	-2.3	4.5	0.0	2.0
Power generation and supply.....	2211	392.7	2.6	-0.9	3.2	0.7	2.3
Natural gas distribution.....	2212	110.0	13.5	-9.7	10.7	-2.4	0.0
Water, sewage and other systems.....	2213	52.0	-0.5	6.6	-0.5	0.0	6.0
<b>Transportation and Warehousing</b>							
Air transportation.....	481	481.6	5.1	0.0	5.1	0.0	5.2
Line-haul railroads.....	482111	166.2	-0.6	5.3	0.0	0.6	5.2
Truck transportation.....	484	1,704.0	-0.3	5.0	2.4	2.7	7.5
General freight trucking.....	4841	1,224.4	1.5	3.1	4.0	2.5	7.2
General freight trucking, local.....	48411	326.5	-0.3	3.7	3.5	3.8	7.4
General freight trucking, long-distance.....	48412	897.9	2.0	2.9	4.1	2.1	7.2
Specialized freight trucking.....	4842	479.6	-3.5	8.7	-0.4	3.2	8.3
Postal service.....	491	608.6	0.0	5.5	-1.5	-1.5	4.0
Postal service.....	4911	608.6	0.0	5.5	-1.5	-1.5	4.0
Couriers and messengers.....	492	757.1	-1.6	4.1	2.7	4.4	7.0
Warehousing and storage.....	493	1,143.4	-7.6	11.2	2.0	10.4	13.4
Warehousing and storage.....	4931	1,143.4	-7.6	11.2	2.0	10.4	13.4
<b>Information</b>							
Publishing.....	511	761.9	7.3	1.2	9.7	2.3	11.1
Newspaper publishers.....	51111	153.5	3.8	-1.5	-2.2	-5.8	-3.7
Periodical publishers.....	51112	96.4	1.8	9.4	-5.5	-7.1	3.4
Software publishers.....	5112	409.3	4.0	0.5	15.5	11.0	16.0
Broadcasting, except Internet.....	515	276.2	4.5	0.0	4.9	0.4	4.9
Radio and television broadcasting.....	5151	221.6	5.7	-2.5	5.7	0.0	3.0
Cable and other subscription programming.....	5152	54.6	2.1	4.5	3.8	1.6	8.4
Wired telecommunications carriers.....	5171	551.6	3.1	1.6	-4.6	-7.5	-3.1
Wireless telecommunications carriers.....	5172	116.9	10.1	-7.9	6.6	-3.1	-1.8
<b>Finance and Insurance</b>							
Commercial banking.....	52211	1,320.4	1.5	2.3	1.7	0.3	4.0
<b>Real Estate and Rental and Leasing</b>							
Truck, trailer, and RV rental and leasing.....	53212	86.1	2.8	6.2	7.2	4.3	13.8
<b>Professional and Technical Services</b>							
Accounting and bookkeeping services.....	5412	1,172.1	-0.9	5.5	0.1	1.0	5.6
Accounting and bookkeeping services.....	54121	1,172.1	-0.9	5.5	0.1	1.0	5.6
Engineering services.....	54133	1,013.2	1.9	2.0	3.4	1.4	5.5
<b>Administrative and Waste Services</b>							
Travel arrangement and reservation services.....	5615	244.7	7.3	-1.4	3.1	-3.9	1.7
<b>Health Care and Social Assistance</b>							
Medical and diagnostic laboratories.....	6215	290.7	-0.8	4.0	1.0	1.8	5.1
<b>Arts, Entertainment, and Recreation</b>							
Amusement parks and arcades.....	7131	214.3	4.8	3.6	3.8	-1.0	7.5
Gambling industries.....	7132	128.1	6.6	-1.4	1.5	-4.7	0.1
<b>Other Services</b>							
Automotive repair and maintenance.....	8111	1,176.9	-3.9	8.6	0.4	4.6	9.1
Drycleaning and laundry services.....	8123	311.0	10.9	-4.9	7.3	-3.3	2.1



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

Industry	2012 NAICS code	2017 Employment (thousands)	Average annual percent change, 1987-2017				
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compensation
<b>Utilities</b>							
Utilities.....	22	555.4	2.0	1.6	1.3	-0.7	2.9
Utilities.....	221	555.4	2.0	1.6	1.3	-0.7	2.9
Power generation and supply.....	2211	392.7	2.8	0.8	1.9	-0.9	2.7
Natural gas distribution.....	2212	112.1	0.7	3.6	-0.3	-1.0	3.3
Water, sewage and other systems.....	2213	50.6	-1.8	4.7	0.7	2.5	5.4
<b>Transportation and Warehousing</b>							
Air transportation.....	481	468.2	3.0	0.9	2.7	-0.3	3.6
Line-haul railroads.....	482111	167.8	3.6	-0.4	1.8	-1.7	1.4
Truck transportation <sup>1</sup> .....	484	1,667.3	0.7	1.0	2.0	1.3	3.0
General freight trucking <sup>1</sup> .....	4841	1,194.8	1.1	1.0	2.3	1.2	3.4
General freight trucking, local <sup>1</sup> .....	48411	317.7	2.7	0.2	3.7	1.0	3.9
General freight trucking, long-distance.....	48412	877.1	1.3	0.5	2.2	0.9	2.8
Specialized freight trucking <sup>2</sup> .....	4842	472.5	0.8	1.9	1.9	1.1	3.8
Used household and office goods moving.....	48421	101.1	-0.4	2.6	-0.1	0.3	2.5
Other specialized trucking, local <sup>2</sup> .....	48422	233.8	0.3	2.3	1.7	1.4	4.1
Other specialized trucking, long-distance <sup>2</sup> .....	48423	137.6	1.1	1.3	3.2	2.0	4.6
Postal service.....	491	615.4	0.4	2.9	-0.6	-1.0	2.3
Postal service.....	4911	615.4	0.4	2.9	-0.6	-1.0	2.3
Couriers and messengers.....	492	710.8	-1.9	3.2	0.6	2.6	3.9
Warehousing and storage <sup>1</sup> .....	493	1,037.8	1.4	0.3	5.6	4.1	5.8
Warehousing and storage <sup>1</sup> .....	4931	1,037.8	1.4	0.3	5.6	4.1	5.8
General warehousing and storage <sup>1</sup> .....	49311	914.9	2.5	-0.5	6.9	4.3	6.4
Refrigerated warehousing and storage <sup>1</sup> .....	49312	62.5	-0.2	1.5	2.9	3.1	4.4
<b>Information</b>							
Publishing.....	511	760.5	3.8	1.6	3.3	-0.5	5.0
Newspaper, book, and directory publishers.....	5111	379.0	0.1	4.0	-2.5	-2.6	1.3
Newspaper publishers.....	51111	168.8	-0.6	4.0	-4.2	-3.7	-0.5
Periodical publishers.....	51112	102.3	-0.4	4.7	-1.6	-1.2	3.0
Book publishers.....	51113	66.4	-0.2	4.7	-0.9	-0.7	3.7
Software publishers.....	5112	381.5	10.8	-5.2	17.2	5.8	11.1
Motion picture and video exhibition.....	51213	148.9	1.4	2.0	1.8	0.4	3.8
Broadcasting, except Internet.....	515	276.3	3.0	1.7	2.9	-0.1	4.6
Radio and television broadcasting.....	5151	222.2	2.2	1.7	1.8	-0.4	3.5
Radio broadcasting.....	51511	87.5	3.7	1.1	2.5	-1.2	3.6
Cable and other subscription programming.....	5152	54.1	5.2	2.9	6.4	1.2	9.5
Wired telecommunications carriers.....	5171	586.6	3.6	-0.7	2.6	-0.9	1.9
Wireless telecommunications carriers.....	5172	120.3	11.9	-6.9	18.5	5.9	10.4
<b>Finance and Insurance</b>							
Commercial banking.....	52211	1,323.6	3.0	2.0	3.0	0.0	5.0
<b>Real Estate and Rental and Leasing</b>							
Passenger car rental.....	532111	122.3	2.1	1.4	3.1	1.0	4.6
Truck, trailer, and RV rental and leasing.....	53212	79.8	1.9	1.1	2.7	0.7	3.8
Video tape and disc rental.....	53223	10.3	6.7	-2.3	-2.3	-8.4	-4.6
<b>Professional and Technical Services</b>							
Accounting and bookkeeping services <sup>3</sup> .....	5412	1,151.7	2.6	1.0	3.3	0.6	4.4
Accounting and bookkeeping services <sup>3</sup> .....	54121	1,151.7	2.6	1.0	3.3	0.6	4.4
Offices of certified public accountants <sup>3</sup> .....	541211	489.5	2.0	2.1	3.0	1.0	5.2
Tax preparation services.....	541213	137.2	0.5	2.1	2.0	1.5	4.2
Other accounting services <sup>3</sup> .....	541219	353.3	4.6	-1.8	4.7	0.1	2.8
Architectural services.....	54131	208.9	1.4	1.9	2.6	1.2	4.5
Engineering services.....	54133	994.2	1.2	2.7	2.8	1.6	5.6
Advertising agencies.....	54181	219.0	1.9	2.1	2.4	0.5	4.6
Photography studios, portrait.....	541921	58.4	0.3	1.7	1.2	1.0	2.9

See footnotes at end of table.

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

Industry	2012 NAICS code	2017 Employment (thousands)	Average annual percent change, 1987-2017				
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compensation
Veterinary services <sup>4</sup> .....	54194	386.4	-0.2	3.4	2.3	2.6	5.8
<b>Administrative and Waste Services</b>							
Employment placement and executive search <sup>5</sup> .....	56131	303.3	4.3	0.0	5.3	1.0	5.3
Travel arrangement and reservation services <sup>3</sup> .....	5615	245.8	6.0	-1.0	4.1	-1.8	3.0
Travel agencies.....	56151	107.5	5.6	-0.7	4.6	-0.9	3.8
Janitorial services.....	56172	1,465.6	1.7	1.8	3.4	1.8	5.3
<b>Health Care and Social Assistance</b>							
Medical and diagnostic laboratories <sup>5</sup> .....	6215	282.1	1.9	0.5	5.0	3.0	5.5
Medical laboratories <sup>5</sup> .....	621511	201.1	1.9	0.5	5.0	3.0	5.5
Diagnostic imaging centers <sup>5</sup> .....	621512	81.0	2.1	0.8	5.0	2.8	5.8
Hospitals, except psychiatric and substance abuse hospitals <sup>6</sup> .....	6221,3	4,886.1	0.5	3.2	2.0	1.5	5.3
<b>Arts, Entertainment, and Recreation</b>							
Amusement parks and arcades <sup>7</sup> .....	7131	210.6	-1.4	5.3	-0.7	0.8	4.6
Amusement and theme parks.....	71311	182.5	-0.5	4.0	1.8	2.3	5.9
Gambling industries <sup>3</sup> .....	7132	131.4	2.1	2.0	2.1	0.0	4.2
Golf courses and country clubs <sup>2</sup> .....	71391	395.4	-1.2	4.1	0.1	1.3	4.2
Fitness and recreational sports centers <sup>2</sup> .....	71394	658.5	3.7	-0.7	4.4	0.7	3.7
Bowling centers.....	71395	68.8	0.7	3.0	-1.1	-1.7	1.9
<b>Accommodation and Food Services</b>							
Accommodation and food services.....	72	13,978.8	0.8	2.7	2.3	1.6	5.1
Accommodation.....	721	2,027.2	1.9	1.8	2.7	0.8	4.6
Traveler accommodation.....	7211	1,934.1	2.0	1.8	2.8	0.8	4.6
Hotels and motels, except casino hotels.....	72111	1,624.4	1.4	2.5	2.2	0.8	4.7
Food services and drinking places.....	722	11,951.6	0.4	3.0	2.2	1.8	5.3
Special food services.....	7223	843.4	1.2	1.5	2.5	1.2	4.0
Drinking places, alcoholic beverages.....	7224	405.5	-0.3	3.1	-0.1	0.2	3.0
Restaurants and other eating places.....	72251	10,702.7	0.4	3.2	2.3	1.9	5.6
Full-service restaurants.....	722511	5,482.2	0.5	3.6	2.3	1.7	6.0
Limited-service eating places.....	722513,4,5	5,220.5	0.4	2.8	2.4	2.0	5.2
<b>Other Services</b>							
Automotive repair and maintenance.....	8111	1,129.1	1.1	2.1	1.5	0.4	3.7
Reupholstery and furniture repair.....	81142	21.0	-0.9	3.8	-2.8	-2.0	0.8
Personal care services.....	8121	1,262.9	2.2	1.7	3.4	1.2	5.2
Hair, nail, and skin care services.....	81211	1,037.0	2.0	1.8	3.0	1.0	4.9
Funeral homes and funeral services.....	81221	109.5	-0.2	3.9	-0.3	0.0	3.6
Drycleaning and laundry services.....	8123	313.5	2.0	1.5	1.1	-0.9	2.6
Coin-operated laundries and drycleaners.....	81231	42.7	2.3	1.8	0.4	-1.9	2.3
Drycleaning and laundry services.....	81232	138.1	0.8	2.2	-1.2	-1.9	1.0
Linen and uniform supply.....	81233	132.7	2.3	0.9	3.1	0.8	4.1
Photofinishing.....	81292	10.4	3.4	1.7	-4.0	-7.1	-2.4

<sup>1</sup> For NAICS industries 484, 4841, 48411, 493, 4931, 49311, and 49312, average annual percent changes are for 1992-2017.

<sup>2</sup> For NAICS industries 4842, 48422, 48423, 71391, and 71394, average annual percent changes are for 2002-2017.

<sup>3</sup> For NAICS industries 5412, 54121, 541211, 541219, 5615, and 7132, average annual percent changes are for 1997-2017.

<sup>4</sup> For NAICS industry 54194, average annual percent changes are for 2004-2017.

<sup>5</sup> For NAICS industries 56131, 6215, 621511, and 621512, average annual percent changes are for 1994-2017.

<sup>6</sup> For NAICS industry 6221,3, average annual percent changes are for 1993-2016. Employment is for 2016.

<sup>7</sup> For NAICS industry 7131, average annual percent changes are for 2007-2017.