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PRODUCTIVITY AND COSTS BY INDUSTRY

SELECTED SERVICE-PROVIDING INDUSTRIES – 2016

Labor productivity rose in 17 of 28 selected service-providing industries in 2016, the U.S. Bureau of Labor Statistics reported today. This was greater than in 2015, when labor productivity increased in 14 of 28 industries. In 2016, output and hours increased in fewer industries than in 2015.

Unit labor costs declined in 5 industries in 2016. Each of the industries with declines in unit labor costs also recorded increases in productivity. Increases in labor productivity counter the impact of rising hourly compensation on unit labor costs facing employers.

Long term measures of productivity and cost through 2015 are available for 58 industries; included for the first time are veterinary services.

Chart 1. Selected service-providing industries with the largest change in productivity, 2016

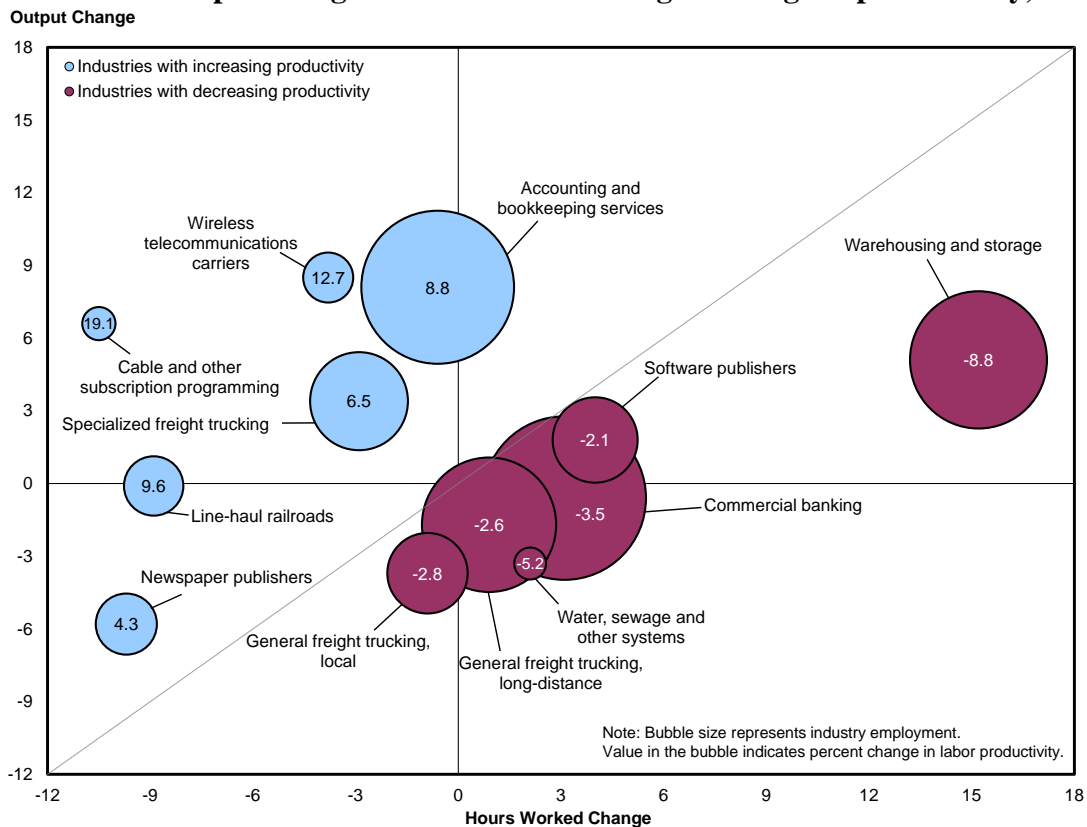


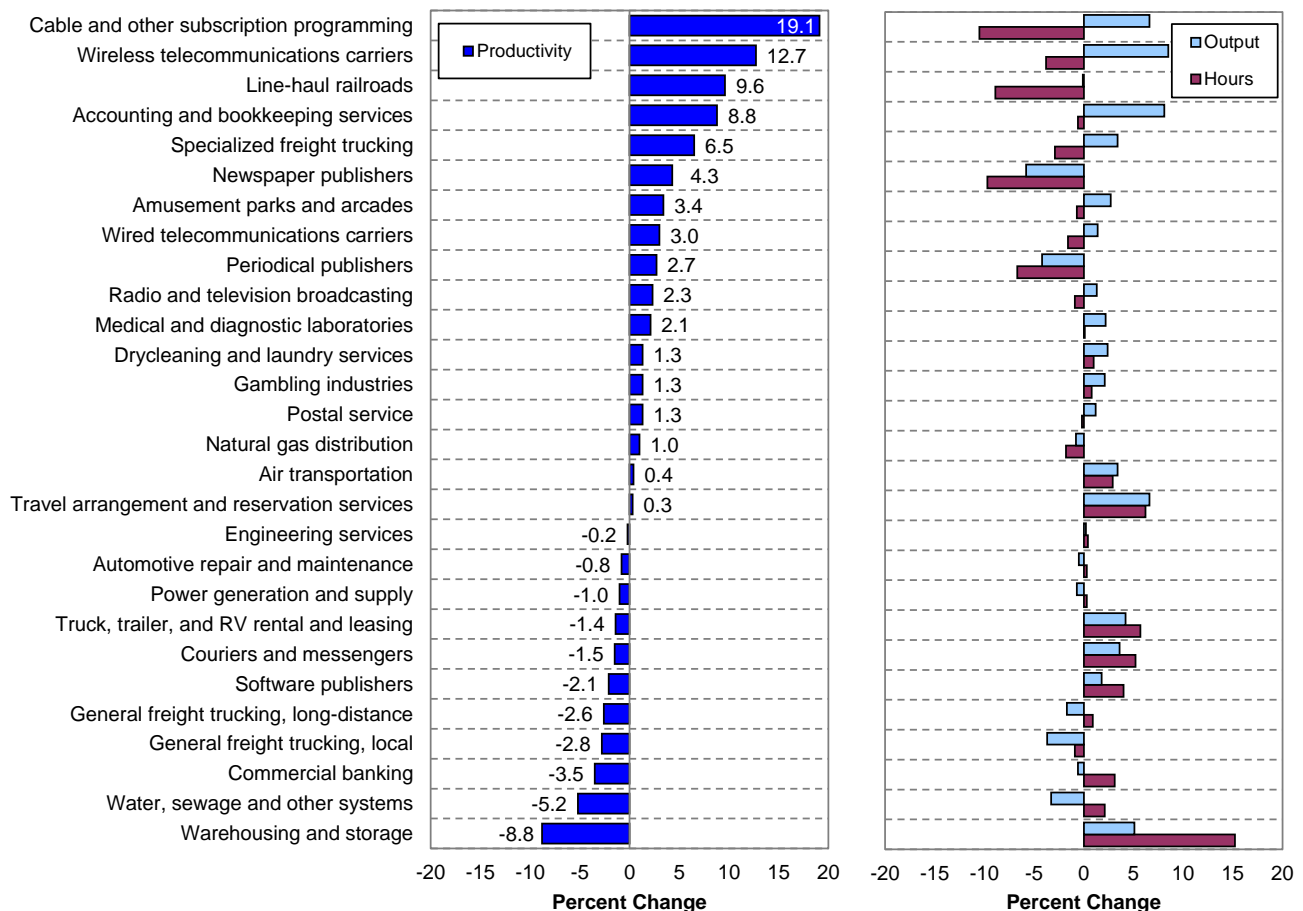
Chart 1 shows the changes in output and hours worked for industries with large changes in productivity. Industries above the diagonal line had productivity growth. For most of these industries, output grew or was unchanged while hours worked declined. In the case of newspaper publishers, productivity growth occurred because hours worked declined more than output.

Industries below the diagonal line exhibited declining productivity. Hours worked increased in most of these industries while output declined or grew at a slower rate. Productivity also declines when output decreases more than hours worked as was the case with general freight trucking, local.

Trends in Labor Productivity in 2016

- Labor productivity increased in 17 of 28 industries in 2016. (See chart 2.) Among those with increasing productivity, output grew in 13 industries.
- Hours worked grew in 15 of the 28 industries.
- Productivity gains of at least 8.0 percent occurred in 3 industries where output increases coincided with declines in hours worked: cable and other subscription programming (19.1 percent), wireless telecommunications carriers (12.7 percent), and accounting and bookkeeping services (8.8 percent).
- Three industries recorded productivity declines despite output gains of at least 3.0 percent because of larger increases in hours worked: warehousing and storage (-8.8 percent); couriers and messengers (-1.5 percent); and truck, trailer, and RV rental and leasing (-1.4 percent).

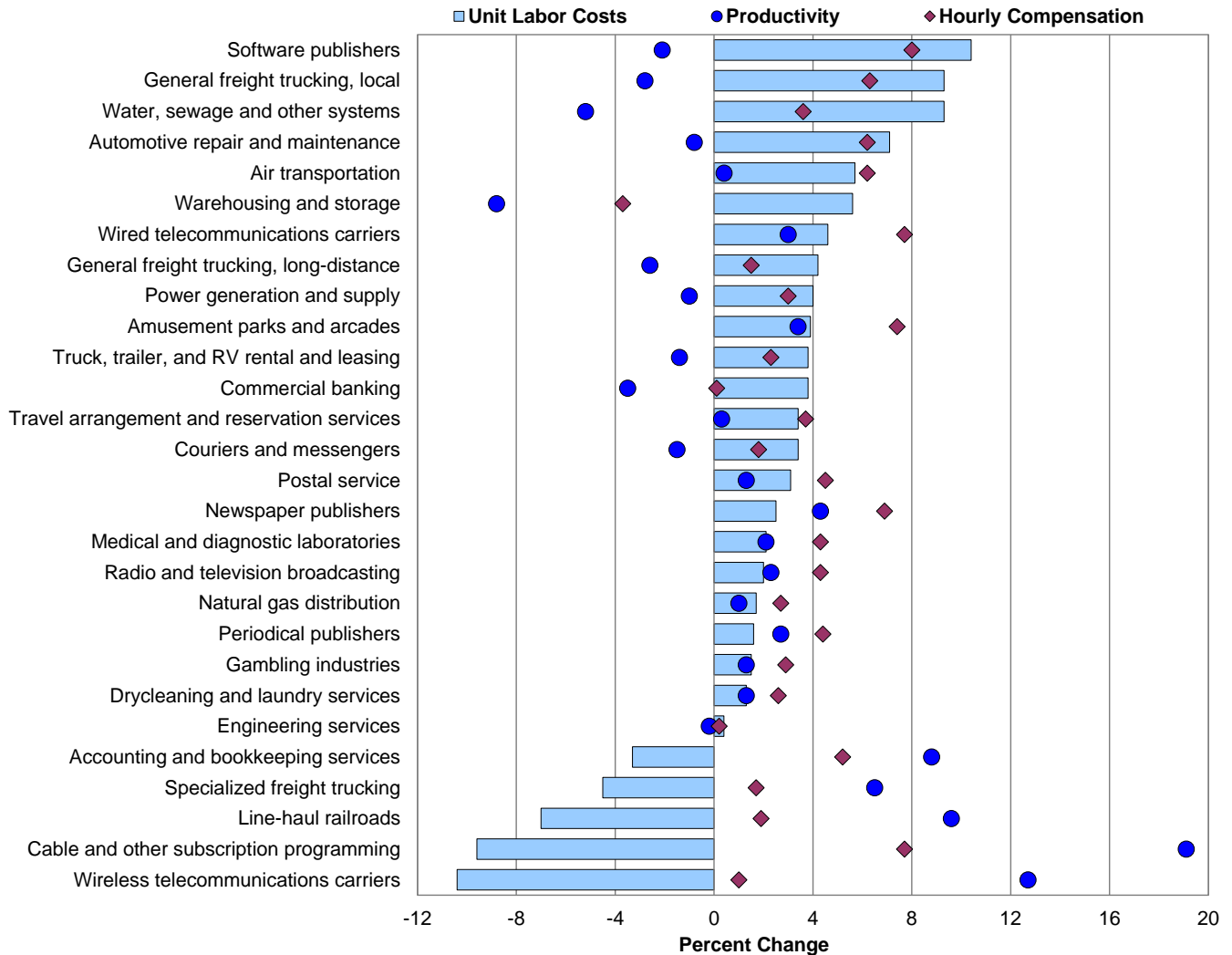
Chart 2. Labor productivity growth in selected service-providing industries, 2016



Trends in Unit Labor Costs in 2016

- Unit labor costs fell in 5 industries in 2016. (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 labor compensation rose in all but 1 of the 28 industries measured.

Chart 3. Unit labor costs, productivity, and hourly compensation costs in selected service-providing industries, 2016



Long Term Productivity Trends

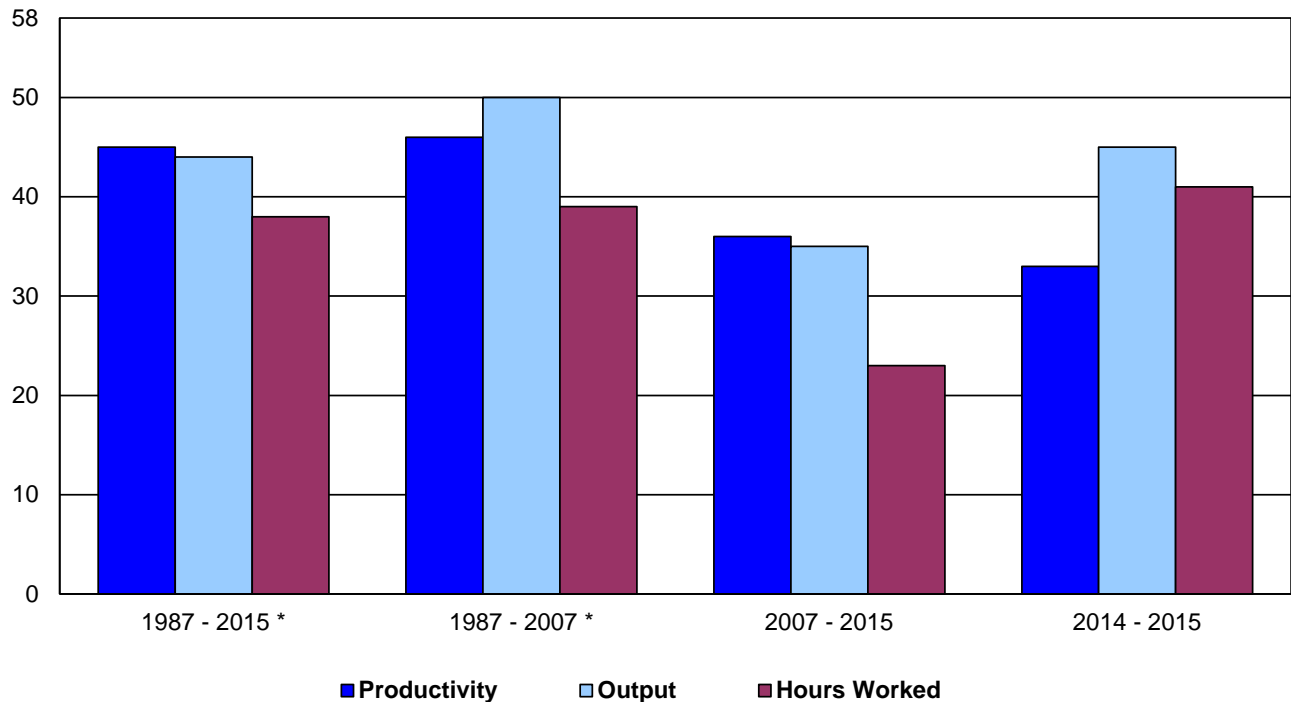
Chart 4 displays the number of industries with increases in productivity, output, and hours worked for selected time periods through 2015, the latest year for which data are available for all 58 selected service-providing industries published on the BLS website.

- Over the long term, productivity rose in 45 service-providing industries. For the majority of the industries studied, this period extends from 1987 to 2015.
- Median long term productivity growth for all 58 industries was approximately 1.6 percent per year.
- Output increased over the long term in 44 industries while hours worked increased in 38 industries.

- Productivity increased in 36 of the 58 industries in the more recent 2007 to 2015 period that began with a severe recession. Only 35 industries had increases in output and 23 experienced growth in hours worked.
- Veterinary services is published for the first time in this release. Productivity in this industry increased by 0.9 percent from 2014 to 2015.

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?

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 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. Industrial production data from the Quarterly Service Survey from the Census Bureau are used to construct preliminary output measures for 2016 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 2016 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	2016 Employment (thousands)	Percent change, 2015-2016				
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compensation
Utilities							
Utilities.....	22	556.2	-0.8	3.7	-0.8	0.0	2.9
Utilities.....	221	556.2	-0.8	3.7	-0.8	0.0	2.9
Power generation and supply.....	2211	393.6	-1.0	4.0	-0.7	0.3	3.3
Natural gas distribution.....	2212	112.5	1.0	1.7	-0.8	-1.8	0.8
Water, sewage and other systems.....	2213	50.1	-5.2	9.3	-3.3	2.1	5.7
Transportation and Warehousing							
Air transportation.....	481	448.1	0.4	5.7	3.4	2.9	9.3
Line-haul railroads.....	482111	173.1	9.6	-7.0	-0.1	-8.9	-7.1
Truck transportation.....	484	1,671.2	0.5	1.8	0.0	-0.5	1.8
General freight trucking.....	4841	1,201.5	-2.3	5.1	-1.9	0.5	3.1
General freight trucking, local.....	48411	317.4	-2.8	9.3	-3.7	-0.9	5.3
General freight trucking, long-distance.....	48412	884.1	-2.6	4.2	-1.7	0.9	2.5
Specialized freight trucking.....	4842	469.7	6.5	-4.5	3.4	-2.9	-1.3
Postal service.....	491	608.9	1.3	3.1	1.2	-0.2	4.4
Postal service.....	4911	608.9	1.3	3.1	1.2	-0.2	4.4
Couriers and messengers.....	492	675.4	-1.5	3.4	3.6	5.2	7.1
Warehousing and storage.....	493	922.1	-8.8	5.6	5.1	15.2	11.0
Warehousing and storage.....	4931	922.1	-8.8	5.6	5.1	15.2	11.0
Information							
Publishing.....	511	760.0	2.3	7.3	-0.4	-2.6	6.9
Newspaper publishers.....	51111	183.0	4.3	2.5	-5.8	-9.7	-3.5
Periodical publishers.....	51112	108.4	2.7	1.6	-4.2	-6.7	-2.7
Software publishers.....	5112	356.1	-2.1	10.4	1.8	4.0	12.4
Broadcasting, except Internet.....	515	277.2	7.7	-2.7	4.3	-3.2	1.4
Radio and television broadcasting.....	5151	223.0	2.3	2.0	1.3	-0.9	3.4
Cable and other subscription programming.....	5152	54.2	19.1	-9.6	6.6	-10.5	-3.6
Wired telecommunications carriers.....	5171	590.6	3.0	4.6	1.4	-1.6	6.1
Wireless telecommunications carriers.....	5172	122.5	12.7	-10.4	8.5	-3.8	-2.9
Finance and Insurance							
Commercial banking.....	52211	1,307.0	-3.5	3.8	-0.6	3.1	3.2
Real Estate and Rental and Leasing							
Truck, trailer, and RV rental and leasing.....	53212	76.3	-1.4	3.8	4.2	5.7	8.2
Professional and Technical Services							
Accounting and bookkeeping services.....	5412	1,145.4	8.8	-3.3	8.1	-0.6	4.6
Accounting and bookkeeping services.....	54121	1,145.4	8.8	-3.3	8.1	-0.6	4.6
Engineering services.....	54133	973.0	-0.2	0.4	0.2	0.4	0.6
Administrative and Waste Services							
Travel arrangement and reservation services.....	5615	238.4	0.3	3.4	6.6	6.2	10.2
Health Care and Social Assistance							
Medical and diagnostic laboratories.....	6215	271.2	2.1	2.1	2.2	0.1	4.3
Arts, Entertainment, and Recreation							
Amusement parks and arcades.....	7131	208.8	3.4	3.9	2.7	-0.7	6.6
Gambling industries.....	7132	136.1	1.3	1.5	2.1	0.8	3.7
Other Services							
Automotive repair and maintenance.....	8111	1,113.5	-0.8	7.1	-0.5	0.3	6.5
Drycleaning and laundry services.....	8123	316.6	1.3	1.3	2.4	1.0	3.7

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

Industry	2012 NAICS code	2015 Employment (thousands)	Average annual percent change, 1987-2015				
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compensation
Utilities							
Utilities.....	22	556.0	2.2	1.5	1.4	-0.8	2.9
Utilities.....	221	556.0	2.2	1.5	1.4	-0.8	2.9
Power generation and supply.....	2211	394.2	3.1	0.5	2.1	-1.0	2.7
Natural gas distribution.....	2212	112.9	0.6	3.8	-0.3	-1.0	3.5
Water, sewage and other systems.....	2213	48.9	-1.6	4.5	0.8	2.5	5.4
Transportation and Warehousing							
Air transportation.....	481	434.9	3.1	0.6	2.6	-0.4	3.3
Line-haul railroads.....	482111	189.8	3.6	-0.3	2.0	-1.5	1.7
Truck transportation ¹	484	1,668.9	0.6	0.9	2.1	1.5	3.0
General freight trucking ¹	4841	1,193.1	1.1	1.0	2.4	1.3	3.4
General freight trucking, local ¹	48411	313.1	2.4	0.2	3.6	1.2	3.8
General freight trucking, long-distance.....	48412	880.0	1.2	0.4	2.3	1.1	2.7
Specialized freight trucking ²	4842	475.8	0.7	1.8	2.2	1.4	4.0
Used household and office goods moving.....	48421	98.7	-0.7	2.6	-0.2	0.5	2.4
Other specialized trucking, local ²	48422	236.9	0.1	2.4	1.9	1.8	4.4
Other specialized trucking, long-distance ²	48423	140.1	1.3	1.2	3.9	2.5	5.1
Postal service.....	491	596.9	0.5	3.2	-0.7	-1.2	2.5
Postal service.....	4911	596.9	0.5	3.2	-0.7	-1.2	2.5
Couriers and messengers.....	492	641.5	-1.9	3.3	0.4	2.4	3.7
Warehousing and storage ¹	493	837.4	2.2	0.0	5.8	3.5	5.7
Warehousing and storage ¹	4931	837.4	2.2	0.0	5.8	3.5	5.7
General warehousing and storage ¹	49311	725.4	3.4	-0.9	7.2	3.6	6.2
Refrigerated warehousing and storage ¹	49312	55.9	-0.3	1.7	2.8	3.1	4.6
Information							
Publishing.....	511	770.9	3.7	1.5	3.4	-0.3	4.9
Newspaper, book, and directory publishers.....	5111	435.8	-0.4	4.4	-2.6	-2.2	1.7
Newspaper publishers.....	51111	201.2	-1.2	4.4	-4.3	-3.1	-0.1
Periodical publishers.....	51112	113.5	-0.8	5.1	-1.6	-0.8	3.4
Book publishers.....	51113	72.7	-0.4	5.0	-0.9	-0.5	4.1
Software publishers.....	5112	335.1	11.6	-6.0	18.1	5.9	11.1
Motion picture and video exhibition.....	51213	137.9	1.9	1.8	1.8	-0.1	3.6
Broadcasting, except Internet.....	515	289.4	2.9	1.8	3.0	0.1	4.8
Radio and television broadcasting.....	5151	227.9	1.9	2.1	1.6	-0.3	3.7
Radio broadcasting.....	51511	92.9	3.7	1.6	2.6	-1.0	4.3
Cable and other subscription programming.....	5152	61.5	5.1	2.7	6.9	1.7	9.8
Wired telecommunications carriers.....	5171	598.0	3.7	-0.8	2.8	-0.9	1.9
Wireless telecommunications carriers.....	5172	129.8	11.7	-6.7	19.1	6.6	11.1
Finance and Insurance							
Commercial banking.....	52211	1,284.7	3.4	1.8	3.2	-0.2	5.1
Real Estate and Rental and Leasing							
Passenger car rental.....	532111	120.2	1.8	2.0	2.7	0.9	4.8
Truck, trailer, and RV rental and leasing.....	53212	72.2	2.2	1.1	2.5	0.4	3.6
Video tape and disc rental.....	53223	14.1	6.8	-2.1	-1.2	-7.4	-3.3
Professional and Technical Services							
Accounting and bookkeeping services ³	5412	1,126.6	2.6	1.2	3.4	0.7	4.5
Accounting and bookkeeping services ³	54121	1,126.6	2.6	1.2	3.4	0.7	4.5
Offices of certified public accountants ³	541211	468.3	1.9	2.4	2.9	1.1	5.4
Tax preparation services.....	541213	139.9	0.5	1.8	2.4	1.9	4.2
Other accounting services ³	541219	346.6	4.7	-2.1	4.9	0.2	2.7
Architectural services.....	54131	191.4	1.5	1.9	2.4	0.9	4.4
Engineering services.....	54133	963.7	1.2	3.0	2.8	1.6	5.9
Advertising agencies.....	54181	218.1	1.6	2.5	2.2	0.6	4.7
Photography studios, portrait.....	541921	59.5	0.2	1.8	1.2	1.0	3.0

See footnotes at end of table.

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

Industry	2012 NAICS code	2015 Employment (thousands)	Average annual percent change, 1987-2015				
			Labor productivity	Unit labor costs	Output	Hours worked	Labor compensation
Veterinary services ⁴	54194	358.2	-1.1	4.1	1.3	2.5	5.5
Administrative and Waste Services							
Employment placement and executive search ⁵	56131	301.6	4.1	0.3	5.1	1.0	5.5
Travel arrangement and reservation services ³	5615	226.0	6.2	-1.2	3.6	-2.4	2.3
Travel agencies.....	56151	100.0	5.5	-0.6	4.2	-1.2	3.5
Janitorial services.....	56172	1,354.2	1.9	1.5	3.5	1.6	5.0
Health Care and Social Assistance							
Medical and diagnostic laboratories ⁵	6215	270.3	2.0	0.5	5.1	3.1	5.7
Medical laboratories ⁵	621511	194.4	1.8	0.5	5.1	3.2	5.6
Diagnostic imaging centers ⁵	621512	75.9	2.2	0.7	5.2	2.9	6.0
Hospitals, except psychiatric and substance abuse hospitals ⁶	6221,3	4,675.9	0.5	3.3	1.9	1.4	5.3
Arts, Entertainment, and Recreation							
Amusement parks and arcades ⁷	7131	203.4	-2.7	6.2	-0.9	1.9	5.2
Amusement and theme parks.....	71311	179.6	-0.8	4.2	1.9	2.8	6.2
Gambling industries ³	7132	136.2	2.0	2.4	2.0	0.1	4.4
Golf courses and country clubs ²	71391	382.4	-1.2	4.2	-0.1	1.1	4.1
Fitness and recreational sports centers ²	71394	601.9	3.7	-0.8	4.0	0.3	3.2
Bowling centers.....	71395	68.6	0.5	2.7	-1.1	-1.6	1.5
Accommodation and Food Services							
Accommodation and food services.....	72	13,279.1	0.8	2.7	2.3	1.5	5.1
Accommodation.....	721	1,953.9	2.1	1.7	2.8	0.7	4.5
Traveler accommodation.....	7211	1,868.4	2.1	1.7	2.8	0.7	4.5
Hotels and motels, except casino hotels.....	72111	1,565.1	1.5	2.4	2.2	0.7	4.7
Food services and drinking places.....	722	11,325.2	0.4	3.1	2.1	1.7	5.3
Special food services.....	7223	807.0	1.0	1.6	2.4	1.4	4.0
Drinking places, alcoholic beverages.....	7224	383.3	-0.5	3.5	-0.6	-0.1	2.8
Restaurants and other eating places.....	72251	10,134.9	0.5	3.3	2.3	1.8	5.6
Full-service restaurants.....	722511	5,254.0	0.6	3.6	2.3	1.7	6.0
Limited-service eating places.....	722513,4,5	4,880.9	0.4	2.8	2.3	1.9	5.1
Other Services							
Automotive repair and maintenance.....	8111	1,131.6	1.0	2.3	1.4	0.4	3.7
Reupholstery and furniture repair.....	81142	20.5	-0.5	3.4	-2.7	-2.2	0.6
Personal care services.....	8121	1,198.0	2.4	1.6	3.4	1.0	5.1
Hair, nail, and skin care services.....	81211	974.7	2.3	1.7	3.0	0.7	4.8
Funeral homes and funeral services.....	81221	110.5	-0.4	4.1	-0.3	0.1	3.9
Drycleaning and laundry services.....	8123	310.3	2.0	1.5	1.0	-0.9	2.5
Coin-operated laundries and drycleaners.....	81231	40.2	2.5	1.7	0.5	-2.0	2.2
Drycleaning and laundry services.....	81232	143.1	0.8	2.1	-1.1	-1.9	1.0
Linen and uniform supply.....	81233	127.0	2.1	1.1	2.9	0.8	4.0
Photofinishing.....	81292	11.6	2.6	2.0	-4.3	-6.7	-2.4

¹ For NAICS industries 484, 4841, 48411, 493, 4931, 49311, and 49312, average annual percent changes are for 1992-2015.

² For NAICS industries 4842, 484220, 484230, 71391, and 71394, average annual percent changes are for 2002-2015.

³ For NAICS industries 5412, 54121, 541211, 541219, 5615, and 7132, average annual percent changes are for 1997-2015.

⁴ For NAICS industry 54194, average annual percent changes are for 2004-2015.

⁵ For NAICS industries 56131, 6215, 621511, and 621512, average annual percent changes are for 1994-2015.

⁶ For NAICS industry 6221,3, average annual percent changes are for 1993-2014. Employment is for 2014.

⁷ For NAICS industry 7131, average annual percent changes are for 2007-2015.