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PRODUCTIVITY AND COSTS BY INDUSTRY: SELECTED SERVICE-PROVIDING AND MINING INDUSTRIES, 2005

The Bureau of Labor Statistics of the U.S. Department of Labor reported today on productivity and costs for selected service-providing and mining industries in 2005. Labor productivity, defined as output per hour, rose in approximately two-thirds of the 42 industries studied, about the same as in 2004. Unit labor costs declined in 17 out of 42 industries. Over the long term period of 1987 to 2005, labor productivity increased in more industries than in 2005, and unit labor costs declined in fewer.

Productivity and cost measures for three new industries are presented here for the first time: employment placement agencies (NAICS 56131), amusement and theme parks (NAICS 71311), and bowling centers (NAICS 71395). Productivity data for the manufacturing, retail trade, wholesale trade, and food services and drinking places industries are published in separate releases and can be accessed online at http://www.bls.gov/schedule/archives/prin_nr.htm.

2004-2005 change

In 2005, labor productivity increased in 26 of the 38 detailed service-providing industries and fell in 12 industries. (See table 1.) Three industries recorded double-digit growth. The biggest increase in output per hour, 34.4 percent, occurred in wireless telecommunications carriers (NAICS 5172). Labor productivity also grew by double digits in travel agencies (NAICS 56151), where output per hour increased 12.4 percent, and in photofinishing (NAICS 81292), where productivity grew 10.9 percent. The two industries where productivity fell the most, passenger car rental (NAICS 532111) and line-haul railroads (NAICS 482111), recorded declines of 6.6 percent and 5.4 percent, respectively.

Labor productivity fell 10.1 percent in the mining sector (NAICS 21). Among the detailed industries covered, coal mining (NAICS 2121) showed the largest decline, 4.6 percent. Nonmetallic mineral mining and quarrying (NAICS 2123) was the only mining industry with labor productivity growth, 2.2 percent. However, BLS does not publish

every detailed mining industry in the sector; therefore, results for the detailed industries shown in the table may not be consistent with the results shown for the sector as a whole.

Unit labor costs, defined as the total labor costs required to produce a unit of output, rose in the majority of the service-providing industries. The biggest increase, 9.2 percent, occurred in employment placement agencies (NAICS 56131). However, 15 of the 38 detailed service-providing industries reduced unit labor costs. Unit labor costs fell 20.2 percent in wireless telecommunications carriers (NAICS 5172) and 11.5 percent in travel agencies (NAICS 56151), the two industries where productivity increased the most, and 10.7 percent in air transportation (NAICS 481).

Unit labor costs increased rapidly in the mining sector. Growth in unit labor costs was especially strong in the oil and gas extraction industry (NAICS 211), rising 16.9 percent in 2005. Only nonmetallic mineral mining and quarrying (NAICS 2123), the sole mining industry with productivity growth, recorded a reduction in unit labor costs of 2.9 percent.

Long-term trends

Between 1987 and 2005, labor productivity in the detailed service-providing industries increased in 33 industries and fell in 5 industries. Software publishers (NAICS 5112) recorded the fastest productivity growth over the period, 17.0 percent per year on average, followed by wireless telecommunications carriers (NAICS 5172) with average annual growth of 9.6 percent. Two industries in the transportation sector, used household and office goods moving (NAICS 48421) and couriers and messengers (NAICS 492), had the largest labor productivity declines, falling an average of 1.0 percent per year in both industries.

Labor productivity in the mining sector (NAICS 21) grew 0.6 percent per year on average from 1987 to 2005. All four detailed mining industries experienced productivity gains. Both coal mining (NAICS 2121) and metal ore mining (NAICS 2122) recorded average annual growth of 3.4 percent, which was the highest among the mining industries.

Unit labor costs among the detailed service-providing industries increased in 28 industries and declined in 10 industries. Funeral homes and funeral services (NAICS 81221) experienced the largest growth, 4.6 percent per year, followed by couriers and messengers (NAICS 492) with average annual growth of 4.4 percent. The most rapid declines in unit labor costs occurred in the two industries with the fastest productivity growth. Software publishers (NAICS 5112) reduced unit labor costs an average 10.0 percent per year and wireless telecommunications carriers (NAICS 5172) showed a decline of 6.3 percent.

Unit labor costs for the mining sector increased at an average annual rate of 4.0 percent between 1987 and 2005, led by an increase of 5.1 percent in oil and gas

extraction (NAICS 211). Only coal mining (NAICS 2121) reduced unit labor costs, which fell an average 0.7 percent per year.

Technical Note

Output

Industry output is measured as sectoral output, the total value, in real terms, of goods and services produced for sale outside the industry. Real industry output is most often derived by deflating nominal sales or value of production, but for some industries it is measured by physical quantities of output. Wherever possible, the indexes of industry output are calculated with a Törnqvist formula. This formula aggregates the growth rates of the various industry outputs between two periods, using their relative shares in industry value of production, averaged over the two periods, as weights.

Industry output measures for service-providing and mining industries are constructed primarily using data from the economic censuses and annual surveys of the Bureau of the Census, U.S. Department of Commerce, together with information on price changes primarily from BLS. Other data sources include the U.S. Department of Transportation, the U.S. Department of Energy, the U.S. Geological Survey of the U.S. Department of the Interior, the U.S. Postal Service, the Federal Deposit Insurance Corporation, and the Postal Rate Commission.

Labor Hours

The industry labor input measures represent the hours of all workers in the industry. The primary source of data on employment and hours is the BLS Current Employment Statistics (CES) survey, which provides monthly data on the number of jobs held by wage and salary workers employed directly in nonfarm establishments. The CES survey also provides data on the average weekly hours of production and nonsupervisory workers in these establishments.

Data from the BLS Current Population Survey (CPS) are used to supplement the CES data. The Division of Industry Productivity Studies (DIPS) estimates the average weekly hours of supervisory and nonproduction workers for each industry using data from the CPS together with the CES data. CPS data are also used to estimate the employment and hours of self-employed and unpaid family workers in most of the service-providing industries. The hours of nonsupervisory workers, supervisory workers, and self-employed and unpaid family workers are treated as homogeneous and are directly aggregated.

Other sources of employment and hours data for service industries include the American Association of Railroads, the U.S. Department of Transportation, and the U.S. Postal Service.

Labor Productivity

The industry labor productivity measures describe the relationship between output and the labor time involved in its production. They show the changes from period to period in the amount of goods and services produced per hour. Industry output per hour indexes are prepared from data published by various public and private agencies, using the greatest level of industry detail available.

Although the labor productivity measures relate output to hours of employees or all persons engaged in an industry, they do not measure the specific contribution of labor, capital, or any other factor of production. Rather, they reflect the joint effects of many influences, including changes in technology; capital investment; level of output; utilization of capacity, energy, and materials; the use of purchased services inputs, including contract employment services; the organization of production; managerial skill; and the characteristics and effort of the workforce.

Long-term trends tend to be more reliable indicators of the performance of an industry than are the year-to-year changes. The annual changes in an industry's output and use of labor may reflect cyclical changes in the economy as well as long-term trends. Also, annual productivity indexes are based on sample data, which are likely to differ from data generated by a census of establishments in the industry.

Unit Labor Costs

The unit labor cost series represents the cost of labor input required to produce one unit of output. The indexes of unit labor costs for each industry are computed by dividing an index of industry labor compensation by an index of industry output. 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 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.

New Industries

The introduction of productivity and cost measures for several new industries reflects the ongoing BLS effort to expand productivity measurement of the service-providing industries. The measurement of industry productivity and costs for these new industries follows standard BLS methods, as described above, wherever possible. To construct output measures for the employment placement agencies industry (NAICS 56131), annual industry receipts were deflated with BLS producer price indexes (PPIs). The labor productivity measures for this industry begin in 1994 because no PPIs or other appropriate price series are available to deflate revenues prior to 1994. For amusement

and theme parks (NAICS 71311) and bowling centers (NAICS 71395), detailed receipts were deflated with detailed price indexes from the Consumer Price Index (CPI) program.

Notes

The measures in this news release replace the mining, utilities, and service industry series published in the news release *Productivity and Costs by Industry, Selected Service-Providing and Mining Industries, 2004* (released July 12, 2006), and in table 51 of the Monthly Labor Review. All of the measures for 2005 in this release are preliminary and subject to revision.

Published productivity and unit labor cost indexes for selected NAICS industries, including the industries covered in this report, can be accessed electronically by visiting the Labor Productivity and Costs Web site: <http://www.bls.gov/lpc/home.htm>. While the index numbers and rates of change reported by BLS in this news release are rounded to one decimal place, all percent changes in this release and on the BLS web site are calculated using index numbers to three decimal places, as found on the web site.

Additional related measures for detailed service-providing industries, including industry employment, annual hours, the net value of production, and the implicit price deflator for output can be obtained by sending an email request to dipsweb@bls.gov, or by calling the Division of Industry Productivity Studies (202-691-5618).

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Table 1. Percent change in output per hour, output, hours, compensation, and unit labor costs, 2004-2005

NAICS code	Industry	2005 Employment (thousands)	Percent change, 2004-2005				
			Output per hour	Output	Hours	Labor compensation	Unit labor costs
Mining Industries							
21	Mining	562	-10.1	-2.1	8.9	16.7	19.1
211	Oil and gas extraction	126	-3.4	-3.6	-0.2	12.7	16.9
212	Mining, except oil and gas	213	-1.9	3.5	5.5	9.8	6.1
2121	Coal mining	74	-4.6	1.7	6.6	14.8	12.9
2122	Metal ore mining	29	-4.3	-1.6	2.9	11.6	13.4
2123	Nonmetallic mineral mining and quarrying	110	2.2	7.8	5.4	4.6	-2.9
Service-Providing Industries							
Utilities							
2211	Power generation and supply	401	6.2	5.2	-1.0	1.3	-3.7
2212	Natural gas distribution	107	4.4	-1.0	-5.1	1.9	2.9
Transportation and Warehousing							
481	Air transportation	472	7.7	5.3	-2.2	-6.0	-10.7
482111	Line-haul railroads	182	-5.4	0.2	5.9	5.5	5.4
48412	General freight trucking, long-distance	901	1.7	5.1	3.3	8.2	3.0
48421	Used household and office goods moving	106	-0.2	5.4	5.6	4.2	-1.2
491	Postal service	774	1.1	1.2	0.2	3.4	2.2
492	Couriers and messengers	612	-1.7	-0.6	1.2	0.7	1.2
Information							
511	Publishing	953	4.1	3.6	-0.6	4.5	0.9
5111	Newspaper, book, and directory publishers	714	1.6	0.5	-1.1	3.3	2.8
5112	Software publishers	239	6.5	7.6	1.1	6.2	-1.3
51213	Motion picture and video exhibition	135	-1.1	-6.6	-5.5	-1.8	5.1
515	Broadcasting, except internet	341	4.6	6.6	1.9	8.7	2.0
5151	Radio and television broadcasting	249	5.1	5.1	0.0	6.2	1.1
5152	Cable and other subscription programming	92	2.4	9.1	6.5	17.6	7.8
5171	Wired telecommunications carriers	519	4.7	-1.8	-6.1	-4.2	-2.4
5172	Wireless telecommunications carriers	194	34.4	28.2	-4.6	2.3	-20.2
5175	Cable and other program distribution	137	-2.9	5.4	8.5	14.0	8.1
Finance and Insurance							
52211	Commercial banking	1296	-0.1	2.2	2.4	10.8	8.4
Real Estate and Rental and Leasing							
532111	Passenger car rental	129	-6.6	3.2	10.5	7.7	4.3
53212	Truck, trailer and RV rental and leasing	63	7.3	9.0	1.6	3.0	-5.5
53223	Video tape and disc rental	151	0.7	-3.0	-3.7	-4.3	-1.4
Professional and Technical Services							
541213	Tax preparation services	142	6.9	6.3	-0.6	-0.5	-6.4
54131	Architectural services	219	4.8	10.9	5.9	12.7	1.6
54133	Engineering services	879	5.9	13.3	6.9	10.6	-2.4
54181	Advertising agencies	184	-1.4	1.2	2.6	7.2	6.0
541921	Photography studios, portrait	80	0.4	4.3	3.9	0.3	-3.9
Administrative and Support Services							
56131	Employment placement agencies	298	-1.5	3.0	4.6	12.4	9.2
56151	Travel agencies	124	12.4	9.2	-2.9	-3.4	-11.5
56172	Janitorial services	1146	4.7	5.4	0.7	2.9	-2.4

Table 1. Percent change in output per hour, output, hours, compensation, and unit labor costs, 2004-2005

NAICS code	Industry	2005 Employment (thousands)	Percent change, 2004-2005				
			Output per hour	Output	Hours	Labor compensation	Unit labor costs
Health Care and Social Assistance							
6215	Medical and diagnostic laboratories	204	-1.4	3.7	5.2	3.5	-0.2
621511	Medical laboratories	140	-2.7	2.6	5.5	1.9	-0.7
621512	Diagnostic imaging centers	64	0.9	5.3	4.4	6.8	1.4
Arts, Entertainment, and Recreation							
71311	Amusement and theme parks	144	8.4	3.2	-4.8	4.4	1.1
71395	Bowling centers	79	-1.7	-3.9	-2.3	1.7	5.8
Accommodation and Food Services							
7211	Traveler accommodations	1794	-4.1	0.6	4.9	7.0	6.3
Other Services							
8111	Automotive repair and maintenance	1182	0.5	2.2	1.7	5.5	3.3
81211	Hair, nail and skin care services	909	4.3	4.3	0.0	5.0	0.7
81221	Funeral homes and funeral services	111	0.3	0.4	0.1	1.5	1.1
8123	Drycleaning and laundry services	362	9.2	2.7	-5.9	-3.3	-5.9
81292	Photofinishing	32	10.9	-14.8	-23.2	-16.6	-2.2

Table 2. Average annual percent change in output per hour, output, hours, compensation, and unit labor costs, 1987-2005

NAICS code	Industry	Average annual percent change, 1987-2005				
		Output per hour	Output	Hours	Labor compensation	Unit labor costs
Mining Industries						
21	Mining	0.6	-0.4	-1.0	3.7	4.0
211	Oil and gas extraction	1.7	-1.1	-2.7	4.0	5.1
212	Mining, except oil and gas	2.7	1.1	-1.6	1.3	0.2
2121	Coal mining	3.4	0.1	-3.2	-0.6	-0.7
2122	Metal ore mining	3.4	1.9	-1.5	2.8	0.9
2123	Nonmetallic mineral mining and quarrying	1.6	1.5	0.0	3.3	1.7
Service-Providing Industries						
Utilities						
2211	Power generation and supply	3.1	1.3	-1.8	2.8	1.5
2212	Natural gas distribution	3.4	1.3	-2.0	3.2	1.9
Transportation and Warehousing						
481	Air transportation	2.9	3.6	0.6	3.4	-0.1
482111	Line-haul railroads	4.9	2.5	-2.3	1.0	-1.4
48412	General freight trucking, long-distance	1.5	3.4	1.8	3.7	0.3
48421	Used household and office goods moving	-1.0	0.6	1.6	4.4	3.8
491	Postal service	1.1	1.2	0.1	4.1	2.8
492	Couriers and messengers	-1.0	2.4	3.4	6.9	4.4
Information						
511	Publishing	4.3	5.0	0.7	5.8	0.8
5111	Newspaper, book, and directory publishers	0.2	-0.3	-0.5	3.6	3.9
5112	Software publishers	17.0	25.2	7.1	12.7	-10.0
51213	Motion picture and video exhibition	0.7	2.0	1.3	3.9	1.9
515	Broadcasting, except internet	0.9	2.4	1.5	5.4	2.9
5151	Radio and television broadcasting	0.2	0.5	0.3	4.3	3.8
5152	Cable and other subscription programming	2.4	8.2	5.6	11.5	3.0
5171	Wired telecommunications carriers	5.1	3.6	-1.5	2.4	-1.1
5172	Wireless telecommunications carriers	9.6	24.3	13.5	16.5	-6.3
5175	Cable and other program distribution	0.3	5.8	5.5	10.2	4.2
Finance and Insurance						
52211	Commercial banking	2.2	2.0	-0.2	5.7	3.6
Real Estate and Rental and Leasing						
532111	Passenger car rental	1.0	3.7	2.7	6.8	3.0
53212	Truck, trailer and RV rental and leasing	5.0	4.8	-0.2	3.7	-1.0
53223	Video tape and disc rental	4.0	6.8	2.7	5.1	-1.6
Professional and Technical Services						
541213	Tax preparation services	1.4	4.4	2.9	4.1	-0.2
54131	Architectural services	1.8	4.1	2.3	5.9	1.8
54133	Engineering services	1.3	3.5	2.1	6.5	2.9
54181	Advertising agencies	1.8	1.7	0.0	4.9	3.2
541921	Photography studios, portrait	-0.3	2.7	3.0	4.9	2.1
Administrative and Support Services						
56131	Employment placement agencies ^{1/}	2.6	5.7	3.0	8.9	3.0
56151	Travel agencies	4.2	3.3	-0.9	4.7	1.4
56172	Janitorial services	2.7	4.6	1.8	5.9	1.3

Table 2. Average annual percent change in output per hour, output, hours, compensation, and unit labor costs, 1987-2005

NAICS code	Industry	Average annual percent change, 1987-2005				
		Output per hour	Output	Hours	Labor compensation	Unit labor costs
Health Care and Social Assistance						
6215	Medical and diagnostic laboratories ^{1/}	3.9	7.2	3.2	6.0	-1.1
621511	Medical laboratories ^{1/}	3.0	5.9	2.8	5.1	-0.7
621512	Diagnostic imaging centers ^{1/}	5.1	9.4	4.1	8.0	-1.3
Arts, Entertainment, and Recreation						
71311	Amusement and theme parks	-0.1	2.8	2.9	6.8	3.9
71395	Bowling centers	0.0	-1.2	-1.2	1.3	2.6
Accommodation and Food Services						
7211	Traveler accommodations	1.7	2.9	1.1	5.6	2.7
Other Services						
8111	Automotive repair and maintenance	1.5	2.6	1.1	4.5	1.9
81211	Hair, nail and skin care services	2.5	3.5	1.0	5.6	2.0
81221	Funeral homes and funeral services	-0.6	0.3	0.9	4.9	4.6
8123	Drycleaning and laundry services	1.2	0.6	-0.7	3.0	2.5
81292	Photofinishing	0.9	-4.3	-5.2	-1.1	3.4

^{1/} For NAICS industries 56131, 6215, 621511, and 62512, average annual percent changes cover 1994-2005.