

# Employment and Wages by Major Occupational Group and Industry

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The Occupational Employment Statistics (OES) program conducted its first employment survey in 1971 by sending 50,000 questionnaires to manufacturing establishments throughout the United States. Over the next 25 years, the survey grew to include approximately 725,000 nonfarm establishments, surveyed over a 3-year period, in 400 detailed industries as defined in the *1987 Standard Industrial Classification (SIC) Manual*. Until 1996, the OES survey followed a 3-year cycle in which surveys of specific industries were conducted every year, alternating among manufacturing, nonmanufacturing (mining, construction, finance, and services), and the balance of nonmanufacturing (trade, transportation, communications, utilities, State and local government, and educational services). The employment data col-

lected were used to estimate total employment by occupation and industry for the Nation and for each State.

In 1996, the OES program was redesigned to survey all industries each year, and wages also were surveyed for the first time in all States. The current OES survey still covers the same 400 detailed industries and more than 760 occupations, but it now collects employment and wage data for 400,000 establishments each year, or 1.2 million establishments over the full 3-year sampling period. These changes to the survey design permit estimation and analysis of wage distribution by occupation across all industries as well as within individual industries.

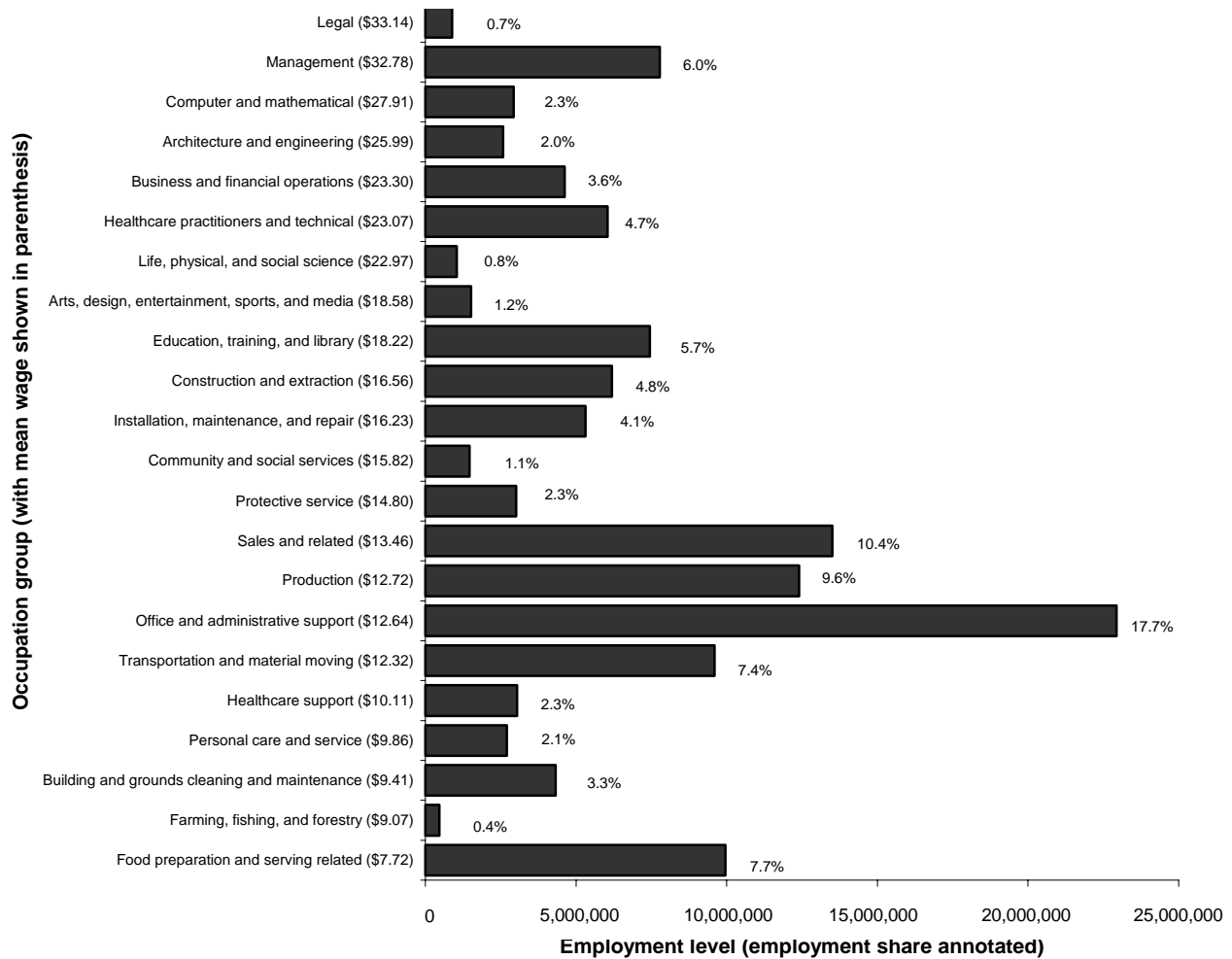
The OES program used its own occupational structure through the 1998 survey. However, in 1999, the program

Text table 1. Percentile wages by major occupational group

Major occupational group	Hourly earnings						
	Employment	10th percentile	25th percentile	50th percentile	75th percentile	90th percentile	Mean wage
Total .....	129,739,000	\$6.53	\$8.41	\$12.55	\$19.64	\$29.09	\$15.81
Legal .....	890,910	12.61	17.21	27.34	47.98	(1)	33.14
Management .....	7,782,680	14.05	19.95	29.47	42.80	63.80	32.78
Computer and mathematical .....	2,932,810	14.51	19.50	26.49	34.94	43.66	27.91
Architecture and engineering .....	2,575,620	13.76	18.29	24.77	32.67	41.33	25.99
Business and financial operations .....	4,619,270	12.18	15.84	21.10	28.19	37.72	23.30
Healthcare practitioner and technical .....	6,041,210	10.55	14.45	19.75	26.55	39.88	23.07
Life, physical, and social science .....	1,038,670	11.13	14.96	20.72	28.51	39.12	22.97
Arts, design, entertainment, sports, and media .....	1,513,420	7.11	10.25	15.76	23.72	33.75	18.58
Education, training, and library .....	7,450,860	7.41	11.09	16.78	23.35	31.09	18.22
Construction and extraction .....	6,187,360	8.58	10.96	15.14	20.97	26.97	16.56
Installation, maintenance, and repair .....	5,318,490	8.55	11.17	15.36	20.43	25.66	16.23
Community and social services .....	1,469,000	8.51	10.96	14.54	19.63	25.34	15.82
Protective service .....	3,009,070	6.85	8.53	12.82	19.62	26.17	14.80
Sales and related .....	13,506,880	5.99	6.95	9.33	15.82	26.37	13.46
Production .....	12,400,080	6.99	8.57	11.24	15.57	21.06	12.72
Office and administrative support .....	22,936,140	7.22	9.00	11.61	15.38	19.72	12.64
Transportation and material moving .....	9,592,740	6.35	7.80	10.55	15.02	20.32	12.32
Healthcare support .....	3,039,430	6.67	7.76	9.50	11.87	14.83	10.11
Personal care and service .....	2,700,510	5.80	6.53	8.04	10.75	16.45	9.86
Building and grounds cleaning and maintenance .....	4,318,070	5.96	6.85	8.36	10.90	14.54	9.41
Farming, fishing, and forestry .....	460,700	5.98	6.40	7.34	10.27	14.93	9.07
Food preparation and serving related .....	9,955,060	5.59	6.08	6.81	8.48	11.03	7.72

<sup>1</sup> Represents a wage above \$70.00 per hour.

Chart 1. Mean hourly wage and percent of total employment by major occupational group, 2000



began using the new, governmentwide Standard Occupational Classification (SOC) system, authorized by the U.S. Office of Management and Budget, to develop estimates of employment and wages by detailed occupation and by major occupational group.

The following analysis examines wages by occupational group across all industries, and wages for detailed occupations in selected industries. Following this analysis, table 1 shows national employment, hourly mean wage, annual mean wage, and percentile wages for each detailed occupation. Table 2 presents a sample of the data available from the OES survey, including national industry-specific and State and MSA cross-industry employment and wage data for the five largest occupations for each SOC major group.

### Employment and wages by major occupational group

The OES program collects and publishes data for 22 of the 23 major occupational groups in the SOC. The OES survey

does not cover military occupations. Chart 1 displays employment, the percentage of total employment, and the mean wage for each of these groups. The chart is arrayed by mean wage, with the highest paying occupational group on the top and the lowest paying group on the bottom. Total employment for all occupational groups in 2000 was approximately 130 million workers.

In terms of employment, the 22 occupational groups fall into three broad categories. The first consists of five groups with the largest employment. They are sales and related; production; office and administrative support; transportation and material moving; and food preparation and serving related. These groups account for more than one-half of total employment, or more than 68 million workers. Of the five, the office and administrative support group, with more than 22.9 million workers, is the largest, and the transportation and material moving group, with about 9.6 million workers, is the smallest. The mean wage in each of these five major groups is less than the mean wage for all workers across

occupational groups (\$15.81). The food preparation and serving related group has a mean wage of \$7.72 per hour, the lowest among all occupational groups.

A second category consists of five occupational groups with midsize employment. Accounting for more than one-quarter of total employment, or 32.8 million workers, these groups are management; healthcare practitioner and technical; education, training, and library; construction and extraction; and installation, maintenance, and repair. The mean wage in each of these groups is greater than the mean wage for all workers across occupational groups. The management group, with about 7.8 million workers, has the largest employment among the midsize occupational groups and the second-highest mean wage among all occupational groups. The installation, maintenance, and repair group, with 5.3 million workers, has the smallest employment and lowest mean wage among the midsize occupational groups. Still, the mean wage of \$16.23 per hour for this group is higher than the mean wage for all workers across occupational groups.

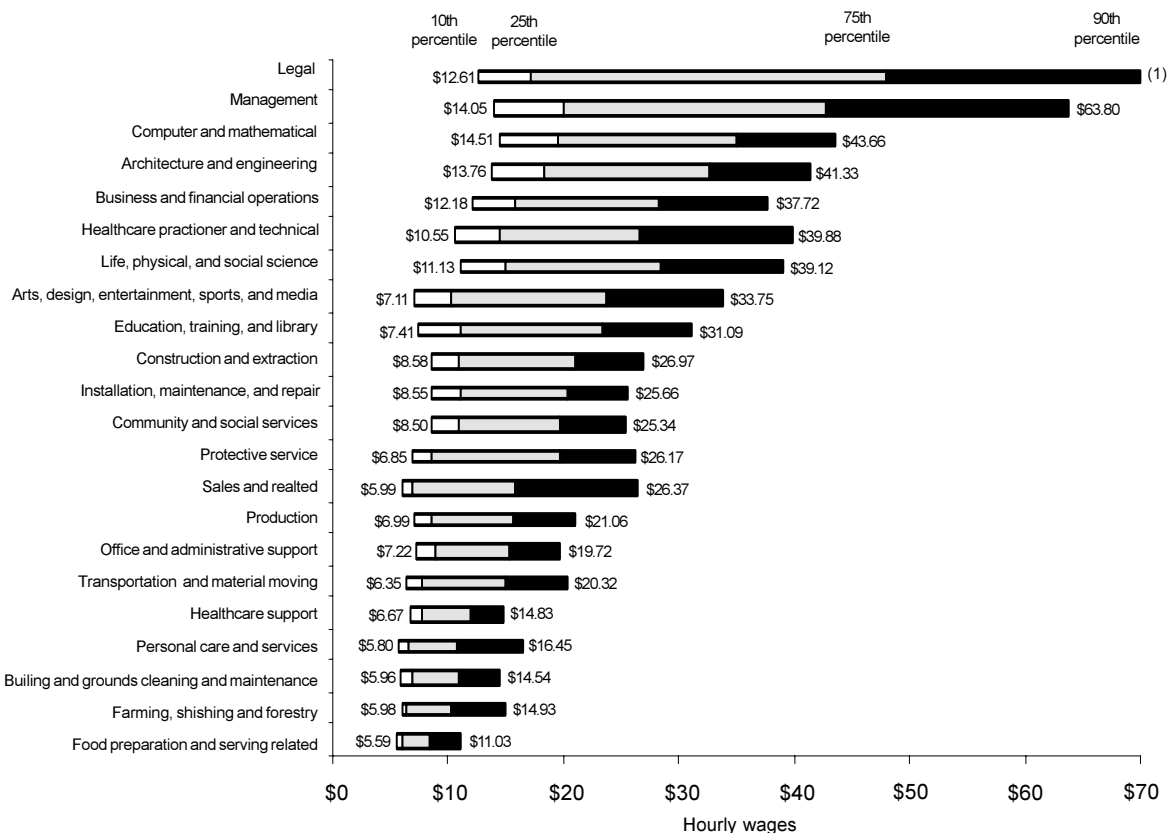
The remaining 12 occupational groups account for 22 percent of total employment, or 28.6 million workers. Among these, the business and financial operations group, with around 4.6 million workers, has the largest employment, and the farming, fishing, and forestry occupations, with fewer

than 0.5 million, the smallest. Four of the twelve occupational groups—legal; computer and mathematical; architecture and engineering; and business and financial operations—have the first-, third-, fourth-, and fifth-highest mean wage, respectively, among all occupational groups. Another four—farming, fishing, and forestry; building and grounds cleaning and maintenance; personal care and service; and healthcare support—have the second-, third-, fourth-, and fifth-lowest mean wage, respectively, among all occupational groups.

### Percentile wages by occupational group

In addition to total employment and mean wage by major occupational group, text table 1 also displays the 10th-, 25th-, 50th-, 75th-, and 90th-percentile wages for each of the 22 major occupational groups. A percentile wage shows the percentage of workers in an occupation who earn less than a given wage and the percentage who earn more. For example, the 50th-percentile wage, or median wage, is the pay level at which 50 percent of workers earn more and 50 percent earn less. Likewise, 10 percent of workers earn less than the 10th-percentile wage and 90 percent of workers earn less than the 90th-percentile wage. The middle 80 percent of workers in an occupational group earn wages between these two endpoints.

Chart 2. Wage distribution by occupational group, 2000



<sup>1</sup> Represents a wage above \$70.00 per hour.

Text table 2. Mean wages for selected OES occupations and two-digit SIC industries

Occupation	Industry							
	Agricultural services	General building contractors	Food and kindred products (mfg.)	Electric, gas, and sanitary services	Food stores	Depository institutions	Personal services	Health services
Financial managers .....	\$25.98	\$30.75	\$36.38	\$38.24	\$30.75	\$30.05	\$28.30	\$30.52
Accountants and auditors .....	20.48	22.04	22.65	24.45	18.90	21.30	18.63	20.38
Computer programmers .....	21.80	28.52	25.26	27.92	22.76	29.12	27.06	25.16
Sales representatives, wholesale and manufacturing, except technical and scientific products .....	19.25	21.93	22.31	23.52	15.64	18.60	14.48	22.24
Secretaries, except legal, medical, and executive ....	9.99	10.91	12.86	13.95	10.30	12.94	9.51	11.62
Janitors and cleaners, except maids and housekeeping workers .....	8.96	8.21	10.11	11.57	8.08	7.98	8.75	8.88
Landscaping and groundskeeping workers .....	9.18	10.54	9.94	12.25	8.50	9.22	9.16	9.70
Machinery maintenance workers .....	9.03	13.25	14.38	19.53	13.09	16.14	15.19	14.10

The lowest paid occupational group is the food preparation and serving related occupations. This is clearly indicated by the fact that, for each percentile wage shown, the food preparation and serving related group wage is lower than that for any of the other groups. In addition to being the lowest paid occupational group, the food preparation and serving related occupations have the narrowest distribution of wages among all occupational groups. Ten percent of workers in this group, approximately 1 million workers, earn less than \$5.59 per hour, while ninety percent of the workers earn less than \$11.03 per hour, a difference of \$5.44 per hour.

In addition to having the highest mean wage, the legal occupations have the widest distribution of wages. Ten percent of workers in this group earn less than \$12.61 per hour, while ten percent earn more than \$70.00 per hour, a difference of at least \$57.00 per hour. However, the legal group does not have the highest wages in all percentile wage categories. The group ranks fourth in the 10th- and 25th-percentile categories and second in the 50th-percentile category.

As shown in text table 1, the mean wage in every occupational group is higher than the 50th-percentile, or median, wage for that group, suggesting that the top half of workers have a wider wage distribution than do the lower half. In other words, the distribution of wages in each occupational group is skewed towards the higher end of the wage range.

Chart 2 uses the percentile wages from text table 1 to graphically display the wage distribution for each major occupational group. Combined, the portions of the bars represent the middle 80 percent of the distribution for each group. The left endpoint of the bar indicates the 10th-percentile wage—10 percent of workers in the occupational group earn less than that wage. The right endpoint of the bar indicates the 90th-percentile wage—10 percent of workers in the occupational group earn more than that wage. Similarly, the inner bar segment between the 25th and 75th percentiles shows the middle 50 percent of the distribution for each of the occupational groups.

As shown in chart 2, the width of the wage distributions for both the middle 80 percent and middle 50 percent of workers in an occupational group generally declines with the mean wage of that group. Wages for the middle 50 percent of workers are skewed, to varying degrees, toward the lower end of the pay distribution for all occupational groups. Most noticeable in this regard are the farming, fishing, and forestry; personal care and service; and sales and related groups. By contrast, wages for the middle 50 percent of workers in computer and mathematical; architecture and engineering; education, training, and library; and installation, maintenance, and repair groups are comparatively less skewed toward the lower end of the pay distribution.

In addition to cross-industry estimates for the 22 OES major occupational groups, the OES program produces detailed occupational wages across all industries. These estimates show that wages for detailed occupations can vary substantially within a major occupational group. Because of these variations, comparative wages for detailed occupations in different major occupational groups might not follow the overall pattern of wage difference noted between their respective major groups. Table 1 shows these variations.

### Occupational wages by two-digit SIC industry

The OES program also produces detailed occupational wages by industry major groups at the two-digit level within the Standard Industrial Classification (SIC) system. Text table 2 shows the mean wage for eight selected OES occupations in eight selected two-digit industries. Wages for detailed occupations vary according to industry, as illustrated in the table. For example, while financial managers have high overall wages compared with other detailed occupations, the mean wage for financial managers itself varies depending on the industry in which they are employed.

In fact, among the occupations for which data are shown in text table 2, financial managers show the largest variation in wages, with \$12.26 separating the highest paying industry from the lowest. The mean wage for financial managers ranges

from \$38.24 per hour in the electric, gas, and sanitary services industry to \$25.98 per hour in the agricultural services industry. Another large difference between industries, \$10.50, occurs for the occupation of machinery maintenance workers. The hourly mean wages for these workers range from \$19.53 per hour in the electric, gas, and sanitary services industry to \$9.03 per hour in agricultural services. The occupation of janitors and cleaners, except maids and housekeeping cleaners exhibits a smaller variation among the selected industries, with less than \$4.00 separating the highest wage from the lowest. The mean wage of this occupation across the eight selected industries ranges from \$11.57 per hour in electric, gas, and sanitary services to \$7.98 per hour in depository institutions.

Similarly, mean wages vary across occupations in an industry. The electric, gas, and sanitary services industry has the highest wages among industries shown for all occupations except computer programmers, for which it has the third highest wage. It is interesting that, while the highest wages for each occupation are fairly concentrated in this single industry, the lowest wages are concentrated in two industries—agricultural services and personal services. Because text table 2 shows only a sample of industries and occupations, it may not reflect the overall wage pattern for a given industry. Detailed information about industries and occupational employment and wage estimates at the two-digit industry level are available on the OES Web site at <http://www.bls.gov/oes/>.