

Employment and Wages by Major Occupational Group and Industry

Fatemeh Hajiha

Since 1996, the Occupational Employment Statistics (OES) program has collected occupational employment and wage information from all industries each year. The OES survey covers 400 detailed industries and more than 760 occupations, and collects employment and wage data for 400,000 establishments each year, or 1.2 million establishments over the full 3-year sampling period. This survey design permits estimation and analysis of wage distributions by occupation across all industries as well as within individual industries, and by detailed geographic areas.

The following analysis examines employment and wages by major occupational group across all industries, and wages

Fatemeh Hajiha is an economist in the Division of Occupational and Administrative Statistics, Bureau of Labor Statistics.

for detailed occupations in selected industries. Following the articles in this bulletin, 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 within each major group of the Standard Occupational Classification (SOC). (For a description of the SOC system used by Federal agencies, see appendix A.)

Employment and wages by major occupational group

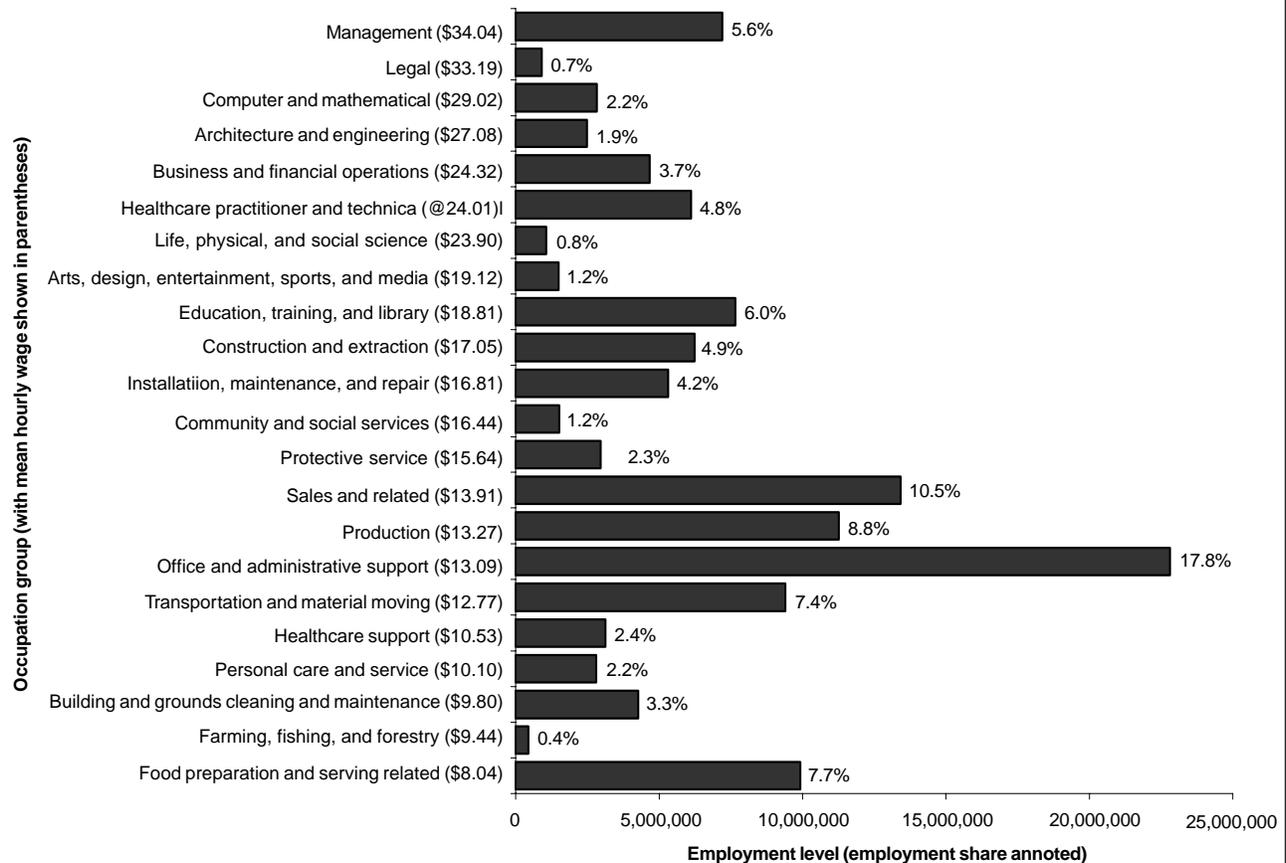
The OES program collects and publishes data for 22 of the 23

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	127,980,370	\$6.76	\$8.72	\$13.01	\$20.31	\$30.23	\$16.35
Management	7,212,360	14.62	20.84	30.88	44.77	66.62	34.04
Legal	909,370	12.76	17.36	27.03	47.77	(1)	33.19
Computer and mathematical	2,825,870	14.95	20.26	27.72	36.66	45.62	29.02
Architecture and engineering	2,489,070	14.36	19.09	25.78	33.97	42.76	27.08
Business and financial operations	4,676,680	12.65	16.47	21.98	29.67	39.74	24.32
Healthcare practitioner and technical	6,118,970	10.97	15.05	20.56	27.65	41.87	24.01
Life, physical, and social science	1,067,730	11.54	15.52	21.53	29.97	40.71	23.90
Arts, design, entertainment, sports, and media	1,508,790	7.26	10.52	16.19	24.14	34.35	19.12
Education, training, and library	7,658,480	7.68	11.46	17.41	24.14	31.94	18.81
Construction and extraction	6,239,430	8.84	11.29	15.57	21.56	27.89	17.05
Installation, maintenance, and repair	5,323,070	8.85	11.58	15.92	21.14	26.44	16.81
Community and social services	1,523,890	8.83	11.38	15.12	20.35	26.28	16.44
Protective service	2,957,990	7.16	9.14	13.66	20.58	27.32	15.64
Sales and related	13,418,240	6.15	7.16	9.63	16.35	27.21	13.91
Production	11,270,210	7.27	8.95	11.81	16.25	21.87	13.27
Office and administrative support	22,798,590	7.47	9.32	12.04	15.93	20.31	13.09
Transportation and material moving	9,410,660	6.57	8.09	10.96	15.63	21.02	12.77
Healthcare support	3,122,870	6.91	8.06	9.85	12.32	15.48	10.53
Personal care and service	2,802,050	5.97	6.76	8.28	11.04	16.80	10.10
Building and grounds cleaning and maintenance	4,275,340	6.18	7.13	8.71	11.39	15.19	9.80
Farming, fishing, and forestry	453,050	6.26	6.68	7.76	10.62	15.44	9.44
Food preparation and serving related	9,917,660	5.71	6.29	7.13	8.85	11.59	8.04

¹ Represents a wage above \$70 per hour.

Chart 1. Mean hourly wage and percent of total employment by major occupational group, 2001



major occupational groups in the SOC. The OES survey does not cover military specific 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 2001 was approximately 128 million workers.

In terms of employment and wages, the 22 occupational groups fall into three broad categories. The first consist 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 together account for more than one-half of total employment, or about 67 million workers. Of the five, the office and administrative support group, with about 22.8 million workers, is the largest, and the transportation and material moving group, with more than 9.4 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 (\$16.35). The food preparation and serving related group has a mean wage of \$8.04 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 32.6 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 7.2 million workers, has the second largest employment among the midsize occupational groups and the 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 \$16.81 per hour for this group is higher than the mean wage for all workers across occupational groups.

The remaining 12 occupational groups account for 22.4 percent of total employment, or 28.6 million workers. Among these, the business and financial operations group, with around 4.7 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 smallest occupational groups—legal; computer and mathematical; architecture and engineering; and business and financial operations—have the second-, 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.

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.

As indicated earlier, 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, or approximately 1 million, earn less than \$5.71 per hour, while ninety percent of the

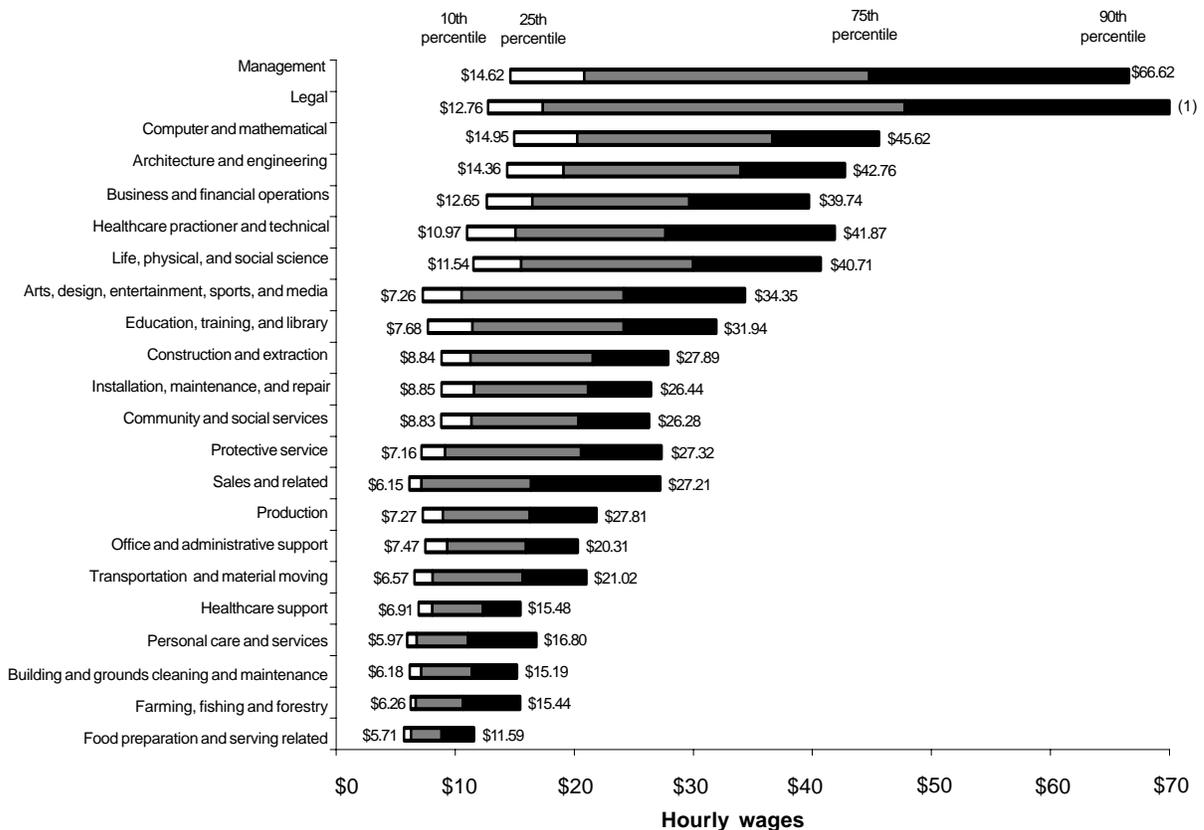
workers earn less than \$11.59 per hour, a difference of only \$5.88 per hour.

In addition to having the highest mean wage, the management occupations have the second widest distribution of wages between the 10th- and the 90th-percentile wage. Ten percent of workers in this group earn less than \$14.62 per hour, while ninety percent earn less than \$66.62 per hour, a difference of \$52.00 per hour. However, the management group does not have the highest wages in all percentile wage categories. The group ranks second in the 10th- and 90th-percentile categories. The largest distribution of wages is among legal occupations, which has a difference of at least \$57.24 between the 10th- and 90th-percentile wages.

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 has a wider wage distribution than does 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

Chart 2. Wage distribution by occupational group, 2001



¹ Represents a wage above \$70 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	\$28.10	\$32.18	\$37.88	\$40.58	\$35.09	\$31.81	\$32.04	\$32.52
Accountants and auditors	22.05	23.80	23.72	25.89	20.18	21.85	22.41	21.45
Computer programmers	24.14	29.81	26.16	29.22	23.82	29.50	26.49	26.20
Sales representatives, wholesale and manufacturing, except technical and scientific products.	21.31	23.08	22.47	24.22	17.96	21.89	14.51	20.23
Secretaries, except legal, medical, and executive	11.10	11.52	13.14	14.80	10.98	13.60	10.50	12.14
Janitors and cleaners, except maids and housekeeping workers	8.85	8.74	10.47	11.80	8.36	8.49	9.18	9.26
Landscaping and groundskeeping workers	9.61	11.34	10.60	12.85	8.57	10.06	9.40	10.20
Machinery maintenance workers	10.09	13.80	15.18	21.18	14.27	18.36	16.29	14.83

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 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. This is due to the fact that occupational groups incorporate data from as many as 75 specific occupations into the mean hourly wages. For example, the legal occupations group includes occupations such as lawyers and legal secretaries. The wages and employment for both are included in the overall wage and employment estimates for legal occupations, even though the mean hourly wage of lawyers is almost 3 times that of legal secretaries. The shares of employment accounted for by these occupations will affect the wages for the entire legal occupations 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 of this publication 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 \$12.48 separating the highest paying industry from the lowest. The mean wage for financial managers ranges from \$40.58 per hour in the electric, gas, and sanitary services industry to \$28.10 per hour in the agricultural services industry. Another large difference between industries, \$11.09, occurs for the occupation of machinery maintenance workers. The hourly mean wages for these workers range from \$21.18 per hour in the electric, gas, and sanitary services industry to \$10.09 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 \$3.44 separating the highest wage from the lowest. The mean wage of this occupation across the eight selected industries ranges from \$11.80 per hour in electric, gas, and sanitary services to \$8.36 per hour in food stores.

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 found in three industries—agricultural services, food 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/>. ■

