Employment and Wages by Major Occupational Group and Industry

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Since 1996, the Occupational Employment Statistics (OES) program has collected occupational employment and wage information data from all industries each year. The OES survey is designed to estimate employment and wages at detailed industry and area levels based on a sample of 1.2 million establishments. The data are collected in six semiannual panels over a 3-year 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 for detailed occupations in selected industries. Following the articles in this bulletin, table 1 shows cross-industry national estimates of employment, hourly mean wage, annual mean wage, and percentile wages.

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Table 2 shows the 10 largest occupations in each four-digit NAICS industry. Table 3 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 in each Standard Occupational Classification (SOC) major group. (For a description of the SOC system used by Federal agencies, see appendix A.)

Employment and wages by major occupational group

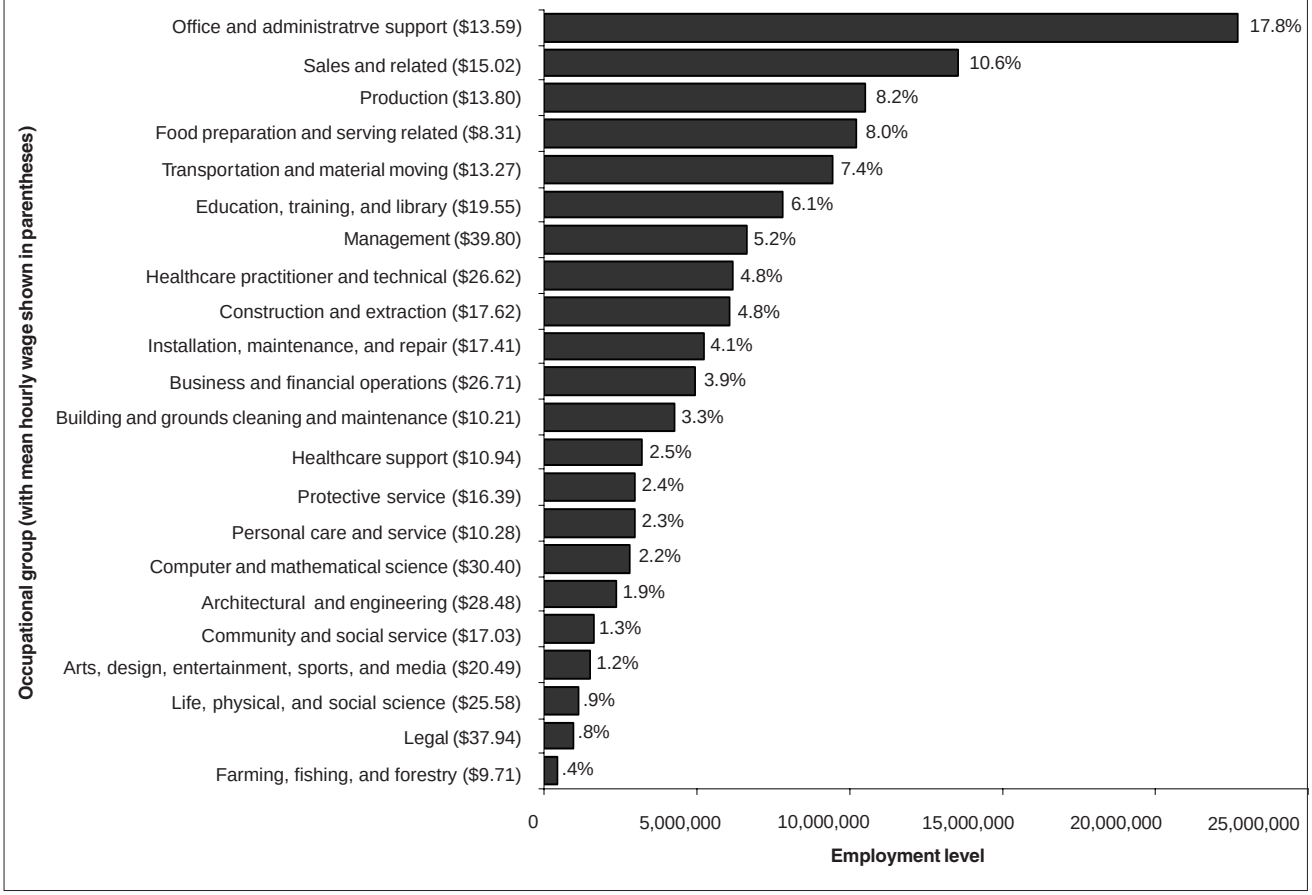
The OES program collects and publishes data for 22 of the 23

Text table 1. **Percentile wages by major occupational group, May 2003**

Major occupational group	Hourly earnings						
	Employment	10th percentile	25th percentile	50th percentile	75th percentile	90th percentile	Mean wage
Total	127,567,910	$7.04	$9.08	$13.53	$21.17	$31.97	$17.41
Management	6,653,480	16.15	23.14	34.07	49.39	(1)	39.80
Legal	951,510	13.55	18.40	28.46	49.87	(1)	37.94
Computer and mathematical	2,827,010	15.61	21.17	28.87	38.17	47.12	30.40
Architecture and engineering	2,376,650	14.84	19.89	26.89	35.57	44.25	28.48
Business and financial operations	4,924,210	13.66	17.72	23.68	32.10	42.79	26.71
Healthcare practitioner and technical	6,173,760	11.49	15.86	21.63	29.24	43.74	26.62
Life, physical, and social science	1,113,130	11.95	16.08	22.58	32.01	43.10	25.58
Arts, design, entertainment, sports, and media	1,538,150	7.69	11.09	16.88	25.33	36.15	20.49
Education, training, and library	7,831,630	8.01	11.94	18.00	25.01	32.98	19.55
Construction and extraction	6,085,510	9.11	11.65	16.04	22.24	28.92	17.62
Installation, maintenance, and repair	5,226,080	9.11	12.00	16.49	21.87	27.22	17.41
Community and social services	1,615,610	9.14	11.75	15.58	20.99	27.14	17.03
Protective service	2,999,630	7.47	9.70	14.25	21.56	28.66	16.39
Sales and related	13,534,180	6.38	7.55	10.20	17.35	28.99	15.02
Production	10,488,450	7.53	9.32	12.32	16.87	22.69	13.80
Office and administrative support	22,678,010	7.70	9.66	12.52	16.56	20.92	13.59
Transportation and material moving	9,414,920	6.85	8.36	11.31	16.08	21.55	13.27
Healthcare support	3,208,770	7.21	8.46	10.27	12.84	15.99	10.94
Personal care and service	2,988,590	6.03	6.94	8.48	11.26	16.83	10.28
Building and grounds cleaning and maintenance	4,260,380	6.32	7.38	9.02	11.83	15.75	10.12
Farming, fishing, and forestry	461,630	6.34	7.03	8.13	10.90	15.59	9.71
Food preparation and serving related	10,216,620	5.77	6.40	7.40	9.26	12.20	8.31

[1] Represents a wage above $70 per hour.

Chart 1. **Mean hourly wage and percent of total employment by major occupational group, May 2003**



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 employment, with the largest occupational group on the top and the smallest group on the bottom.

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 office and administrative support; sales and related; production; food preparation and serving related; transportation and material moving. These groups together account for more than one-half of total employment, or about 66 million workers. Of the five, the office and administrative support group, with about 22.7 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 ($17.41). The food preparation and serving related group has a mean wage of $8.31 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 million workers, these groups are education, training, and library; management; healthcare practitioner and technical; construction and extraction; and installation, maintenance, and repair. The mean wage estimates in these groups range from twice the mean wage for all workers to wages that are about the same as the mean for all workers. The management group, with about 6.7 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 5.2 million workers, has the smallest employment and lowest mean wage among the midsize occupational groups.

The remaining 12 occupational groups account for 23.9 percent of total employment, or 29.3 million workers. Among these, the business and financial operations group, with around 4.9 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 ser-

vice; 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.

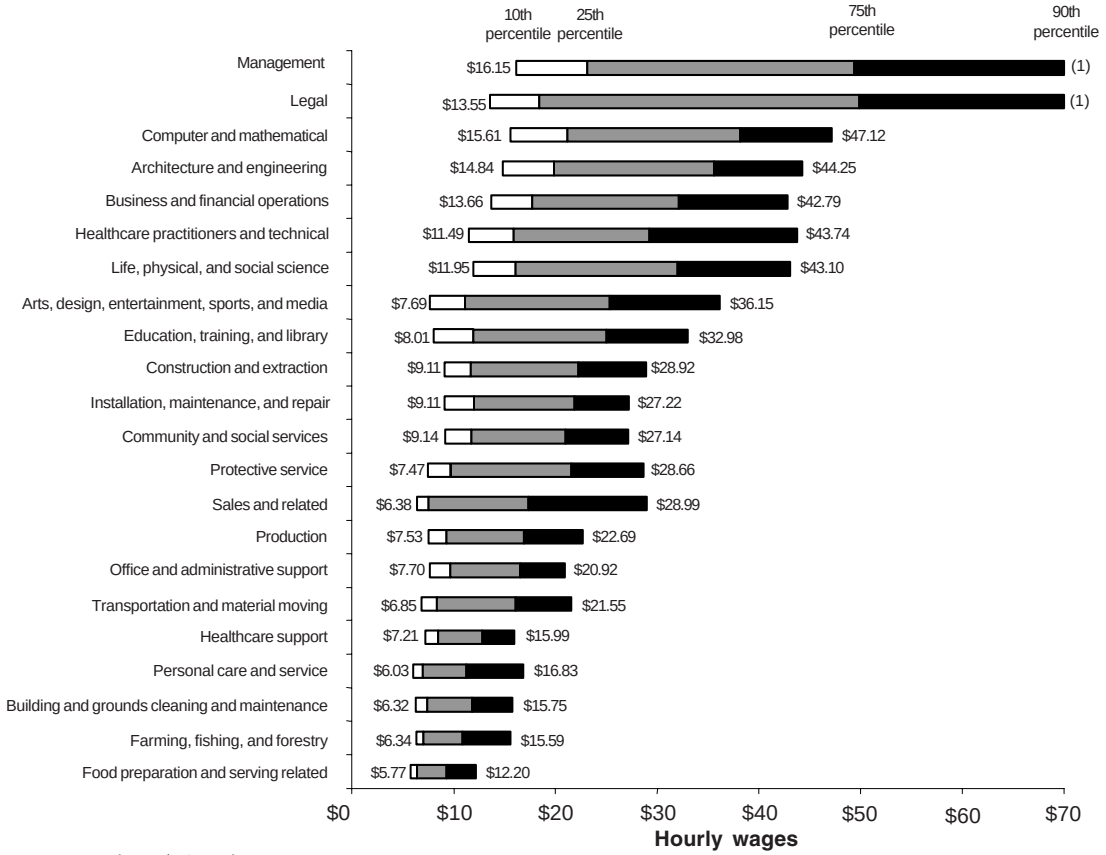
As indicated earlier, the lowest paid occupational group is the food preparation and serving related occupations. This is clearly indicated by the fact that, for each percentile wage shown, the food preparation and serving related group wage is lower than that for any of the other groups. In addition 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 the workers in this group, approximately 1 million, earn less than $5.77 per hour, while ninety percent of the workers earn less than $12.20 per hour, a difference of only $6.43 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 $16.15 per hour, while ninety percent earn less than $70.00 per hour, a difference of at least $53.85 per hour. However, the management group does not have the highest wages in all percentile wage categories. The group ranks second in the 10th-percentile category. The largest distribution of wages is among legal occupations, which has a difference of at least $56.45 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 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

Chart 2. **Wage distribution by occupational group, May 2003**



[1] Represents a wage above $70 per hour.

Text table 2. **Mean wages for selected OES occupations and three-digit NAICS industries, May 2003**

Occupation	Industry							
	Support activities for agriculture and forestry	Utilities	Petroleum and coal products manufacturing	Food and beverage stores	Credit intermediation and related activities	Social assistance	Food services and drinking places	Personal and laundry services
Chief executive	$58.07	$76.80	$82.35	$56.83	$70.58	$45.28	$44.37	$53.87
Training and development specialists	24.13	33.57	32.51	15.71	22.06	15.97	15.85	20.21
Accountants and auditors	27.05	28.86	27.66	21.66	23.79	21.15	21.02	24.64
Sales representatives, wholesale and manufacturing, except technical and scientific products	24.11	31.68	28.67	21.30	26.32	16.67	18.69	18.66
Secretaries, except legal, medical, and executive	10.28	15.61	15.07	11.22	13.45	11.19	11.21	10.84
Janitors and cleaners, except maids and housekeeping workers	8.48	13.84	11.37	8.69	8.80	8.33	8.37	8.14
Security guards	9.02	19.66	14.84	13.01	14.66	10.07	9.57	13.30
Receptionists and information clerks	10.15	12.91	12.03	9.99	10.74	9.61	10.25	8.48

wage and the right endpoint of the bar indicates the 90th-percentile 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 distribution for both the middle 80 percent and middle 50 percent of workers in an occupational group 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, with only 69 cents, 91 cents, and $1.17, respectively, separating the 10th-percentile wage from the 25th-percentile wage. The amounts separating the 75th-percentile wage from the 90th-percentile wage in those three occupational groups are, respectively, $4.69, $5.57, and $11.64, at least 6 times the amounts separating the 10th-percentile wage from the 25th-percentile wage. By contrast, wages for the middle 50 percent of workers in the 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 these occupational groups, the amounts separating the 75th-percentile wage from the 90th-percentile wage are at most twice the amounts separating the 10th-percentile wage from the 25th-percentile wage.

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 major occupational groups incorporate data from as many as 75 specific occupations in their 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 the wage 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 three-digit NAICS industry

The OES program also produces detailed occupational wages by industry major groups at the three-digit, four-digit, and selected five-digit industry level within the North American Industry Classification System (NAICS). Text table 2 shows the mean wage for eight selected OES occupations in eight selected three-digit industries. Wages for detailed occupations vary according to industry, as illustrated in the table. For example, while chief executives have high overall wages compared with other detailed occupations, the mean wage for chief executives 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, chief executives show the largest variation in wages, with $37.98 separating the highest paying industry from the lowest. The mean wage for chief executives ranges from $82.35 per hour in the petroleum and coal products manufacturing industry to $44.37 per hour in the food services and drinking industry. Another large difference between industries, $17.86, occurs for the occupation of training and development specialist workers. The hourly mean wage for these workers ranges from $33.57 per hour in the utilities industry to $15.85 per hour in food services and drinking industry. The occupation of receptionists and information clerks, exhibits a smaller variation among the selected industries, with $4.43 separating the highest wage from the lowest. The mean wage of this occupation across

the eight selected industries ranges from $12.91 per hour in utilities to $8.48 per hour in personal and laundry services.

Similarly, mean wages vary across occupations in an industry. The utilities industry has the highest wages among industries shown for all occupations except chief executives, for which it has the second 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 five industries. 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 three-digit industry level are available on the OES Web site at **www.bls.gov/oes/**. ■