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Occupational Employment and Wages in Tulsa – May 2019

Workers in the Tulsa, OK Metropolitan Statistical Area had an average (mean) hourly wage of \$23.03 in May 2019, about 10 percent below the nationwide average of \$25.72, the U.S. Bureau of Labor Statistics reported today. Acting Regional Commissioner Susan Mendez noted that, after testing for statistical significance, 19 of the 22 major occupational groups had average wages in the local area that were significantly lower than their respective national averages, including computer and mathematical, educational instruction and library, and protective service. No local group had wages that were significantly above their respective national average.

When compared to the nationwide distribution, Tulsa area employment was more highly concentrated in 6 of the 22 occupational groups, including production, office and administrative support, and installation, maintenance, and repair. Conversely, thirteen groups had employment shares significantly below their national representation, including educational instruction and library, computer and mathematical, and building and grounds cleaning and maintenance. (See [table A](#) and [box note](#) at end of release.)

Table A. Occupational employment and wages by major occupational group, United States and the Tulsa, OK Metropolitan Statistical Area, and measures of statistical significance, May 2019

Major occupational group	Percent of total employment		Mean hourly wage		
	United States	Tulsa	United States	Tulsa	Percent difference ⁽¹⁾
Total, all occupations	100.0	100.0	\$25.72	\$23.03*	-10
Management	5.5	5.4	58.88	53.51*	-9
Business and financial operations	5.6	5.0*	37.56	32.86*	-13
Computer and mathematical	3.1	2.3*	45.08	34.35*	-24
Architecture and engineering	1.8	2.5*	42.69	40.41*	-5
Life, physical, and social science	0.9	0.6*	37.28	40.14	8
Community and social service.....	1.5	1.1*	24.27	20.53*	-15
Legal.....	0.8	0.6*	52.71	46.64*	-12
Educational instruction and library	6.1	5.0*	27.75	21.35*	-23
Arts, design, entertainment, sports, and media	1.4	1.0*	29.79	22.29*	-25
Healthcare practitioners and technical	5.9	6.0	40.21	38.20	-5
Healthcare support	4.4	3.9*	14.91	13.79*	-8
Protective service	2.4	1.9*	23.98	19.56*	-18
Food preparation and serving related	9.2	9.3	12.82	10.59*	-17
Building and grounds cleaning and maintenance	3.0	2.3*	15.03	12.93*	-14
Personal care and service.....	2.2	1.8*	15.03	13.47*	-10
Sales and related	9.8	10.4*	20.70	19.68*	-5
Office and administrative support.....	13.3	14.3*	19.73	18.41*	-7
Farming, fishing, and forestry.....	0.3	0.1*	15.07	13.59*	-10
Construction and extraction.....	4.2	4.8*	25.28	22.12*	-13
Installation, maintenance, and repair	3.9	4.9*	24.10	22.84*	-5
Production	6.2	8.8*	19.30	19.48	1

Note: See footnotes at end of table.

Table A. Occupational employment and wages by major occupational group, United States and the Tulsa, OK Metropolitan Statistical Area, and measures of statistical significance, May 2019 - Continued

Major occupational group	Percent of total employment		Mean hourly wage		
	United States	Tulsa	United States	Tulsa	Percent difference ⁽¹⁾
Transportation and material moving	8.5	8.0*	18.23	17.11*	-6

Footnotes:

(1) A positive percent difference measures how much the mean wage in the Tulsa, OK Metropolitan Statistical Area is above the national mean wage, while a negative difference reflects a lower wage.

* The mean hourly wage or percent share of employment is significantly different from the national average of all areas at the 90-percent confidence level.

One occupational group—production—was chosen to illustrate the diversity of data available for any of the 22 major occupational categories. Tulsa had 39,220 jobs in production, accounting for 8.8 percent of local area employment, significantly higher than the 6.2-percent share nationally. The average hourly wage for this occupational group locally was \$19.48, compared to the national wage of \$19.30.

Some of the larger detailed occupations within the production group included welders, cutters, solderers, and brazers (4,310), first-line supervisors of production and operating workers (3,240), and machinists (2,260). Among the higher-paying jobs in this group were petroleum pump system operators, refinery operators, and gaugers, as well as gas plant operators, with mean hourly wages of \$37.24 and \$30.39, respectively. At the lower end of the wage scale were laundry and dry-cleaning workers (\$10.36) and butchers and meat cutters (\$11.91). (Detailed data for the production occupations are presented in [table 1](#); for a complete listing of detailed occupations available go to www.bls.gov/oes/current/oes_46140.htm.)

Location quotients allow us to explore the occupational make-up of a metropolitan area by comparing the composition of jobs in an area relative to the national average. (See [table 1](#).) For example, a location quotient of 2.0 indicates that an occupation accounts for twice the share of employment in the area than it does nationally. In the Tulsa area, above-average concentrations of employment were found in many of the occupations within the production group. For instance, aircraft structure, surfaces, rigging, and systems assemblers were employed at 8.0 times the national rate in Tulsa, and petroleum pump system operators, refinery operators, and gaugers, at 4.6 times the U.S. average. On the other hand, printing press operators had a location quotient of 1.0 in Tulsa, indicating that this particular occupation’s local and national employment shares were similar.

These statistics are from the Occupational Employment Statistics (OES) survey, a federal-state cooperative program between BLS and State Workforce Agencies, in this case, the Oklahoma Employment Security Commission.

Changes to the Occupational Employment Statistics (OES) Data

With the May 2019 estimates, the OES program has begun implementing the 2018 Standard Occupational Classification (SOC) system. Each set of OES estimates is calculated from six panels of survey data collected over three years. Because the May 2019 estimates are based on a combination of survey data collected using the 2010 SOC and survey data collected using the 2018 SOC, these estimates use a hybrid of the two classification systems that contains some combinations of occupations that are not found in either the 2010 or 2018 SOC. These combinations may include occupations from more than one 2018 SOC minor group or broad occupation. Therefore, OES will not publish data for some 2018 SOC minor groups and broad occupations in the May 2019 estimates. The May 2021 estimates, to be published in Spring 2022, will be the first OES estimates based entirely on survey data collected using the 2018 SOC.

In addition, the OES program has replaced some 2018 SOC detailed occupations with SOC broad occupations or OES-specific aggregations. These include home health aides and personal care aides, for which OES will publish only the 2018 SOC broad occupation 31-1120 Home Health and Personal Care Aides.

For more information on the occupational classification system used in the May 2019 OES estimates, please see www.bls.gov/oes/soc_2018.htm and www.bls.gov/oes/oes_ques.htm#qf10.

The May 2019 OES estimates use the metropolitan area definitions delineated in Office of Management and Budget (OMB) Bulletin 17-01, which add a new Metropolitan Statistical Area (MSA) for Twin Falls, Idaho. For more information on the area definitions used in the May 2019 estimates, please see www.bls.gov/oes/current/msa_def.htm.

Technical Note

The Occupational Employment Statistics (OES) survey is a semiannual survey measuring occupational employment and wage rates for wage and salary workers in nonfarm establishments in the United States. The OES data available from BLS include cross-industry occupational employment and wage estimates for the nation; over 580 areas, including states and the District of Columbia, metropolitan statistical areas (MSAs), nonmetropolitan areas, and territories; national industry-specific estimates at the NAICS sector, 3-digit, most 4-digit, and selected 5- and 6-digit industry levels, and national estimates by ownership across all industries and for schools and hospitals. OES data are available at www.bls.gov/oes/tables.htm.

The OES survey is a cooperative effort between BLS and the State Workforce Agencies (SWAs). BLS funds the survey and provides the procedures and technical support, while the State Workforce Agencies collect most of the data. OES estimates are constructed from a sample of about 1.1 million establishments. Each year, two semiannual panels of approximately 180,000 to 200,000 sampled establishments are contacted, one panel in May and the other in November. Responses are obtained by mail, Internet or other electronic means, email, telephone, or personal visit. The May 2019 estimates are based on responses from six semiannual panels collected over a 3-year period: May 2019, November 2018, May 2018, November 2017, May 2017, and November 2016. The unweighted sample employment of 83 million across all six semiannual panels represents approximately 57 percent of total national employment. The overall national response rate for the six panels, based on the 50 states and the District of Columbia, is 71 percent based on establishments and 68

percent based on weighted sampled employment. The sample in the Tulsa, OK Metropolitan Statistical Area included 3,287 establishments with a response rate of 78 percent. For more information about OES concepts and methodology, go to www.bls.gov/oes/current/oes_tec.htm.

A value that is statistically different from another does not necessarily mean that the difference has economic or practical significance. Statistical significance is concerned with the ability to make confident statements about a universe based on a sample. It is entirely possible that a large difference between two values is not significantly different statistically, while a small difference is, since both the size and heterogeneity of the sample affect the relative error of the data being tested.

The May 2019 OES estimates are the first set of OES estimates to be based in part on survey data collected using the 2018 SOC. These estimates use a hybrid of the 2010 and 2018 SOC systems. More information on the hybrid classification system is available at www.bls.gov/oes/soc_2018.htm.

The May 2019 OES estimates are based on the 2017 North American Industry Classification System (NAICS). More information about the 2017 NAICS is available at www.bls.gov/bls/naics.htm.

Metropolitan area definitions

The substate area data published in this release reflect the standards and definitions established by the U.S. Office of Management and Budget.

The **Tulsa, OK Metropolitan Statistical Area** includes Creek, Okmulgee, Osage, Pawnee, Rogers, Tulsa, and Wagoner Counties.

For more information

Answers to frequently asked questions about the OES data are available at www.bls.gov/oes/oes_ques.htm. Detailed information about the OES program is available at www.bls.gov/oes/oes_doc.htm.

Information in this release will be made available to sensory impaired individuals upon request. Voice phone: (202) 691-5200; Federal Relay Service: (800) 877-8339.

Table 1. Employment and wage data for production occupations, Tulsa, OK Metropolitan Statistical Area, May 2019

Occupation (1)	Employment		Mean wages	
	Level (2)	Location quotient (3)	Hourly	Annual (4)
Production occupations	39,220	1.4	\$19.48	\$40,530
First-line supervisors of production and operating workers	3,240	1.7	29.69	61,750
Aircraft structure, surfaces, rigging, and systems assemblers	1,040	8.0	20.35	42,330
Coil winders, tapers, and finishers	(5)	(5)	16.46	34,230
Electrical, electronic, and electromechanical assemblers, except coil winders, tapers, and finishers	1,630	1.9	15.92	33,110
Engine and other machine assemblers	200	1.4	20.51	42,670
Structural metal fabricators and fitters	660	2.9	19.44	40,440
Fiberglass laminators and fabricators	(5)	(5)	14.79	30,770
Miscellaneous assemblers and fabricators	5,050	1.2	15.15	31,510
Bakers	330	0.6	12.36	25,710
Butchers and meat cutters	410	1.0	11.91	24,770
Food and tobacco roasting, baking, and drying machine operators and tenders	80	1.3	16.51	34,340
Food batchmakers	210	0.4	14.59	30,340
Food cooking machine operators and tenders	120	1.3	13.32	27,700
Extruding and drawing machine setters, operators, and tenders, metal and plastic	130	0.6	22.15	46,070
Forging machine setters, operators, and tenders, metal and plastic	(5)	(5)	15.97	33,210
Rolling machine setters, operators, and tenders, metal and plastic	170	1.7	18.12	37,690
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	1,130	1.9	16.59	34,510
Drilling and boring machine tool setters, operators, and tenders, metal and plastic	150	4.7	19.27	40,090
Grinding, lapping, polishing, and buffing machine tool setters, operators, and tenders, metal and plastic	580	2.5	14.89	30,970
Lathe and turning machine tool setters, operators, and tenders, metal and plastic	190	2.2	20.54	42,710
Milling and planing machine setters, operators, and tenders, metal and plastic	80	1.5	17.53	36,470
Machinists	2,260	2.0	20.97	43,630
Foundry mold and coremakers	140	2.7	11.40	23,710
Molding, coremaking, and casting machine setters, operators, and tenders, metal and plastic	270	0.5	14.92	31,020
Multiple machine tool setters, operators, and tenders, metal and plastic	(5)	(5)	17.64	36,680
Tool and die makers	170	0.8	26.22	54,540
Welders, cutters, solderers, and brazers	4,310	3.5	21.54	44,810
Welding, soldering, and brazing machine setters, operators, and tenders	130	1.2	18.68	38,850
Heat treating equipment setters, operators, and tenders, metal and plastic	230	4.0	18.68	38,850
Plating machine setters, operators, and tenders, metal and plastic	140	1.1	18.91	39,340
Tool grinders, filers, and sharpeners	(5)	(5)	18.80	39,110
Prepress technicians and workers	30	0.4	18.61	38,710
Printing press operators	500	1.0	14.64	30,450
Laundry and dry-cleaning workers	680	1.1	10.36	21,550
Pressers, textile, garment, and related materials	160	1.4	9.75	20,270
Sewing machine operators	110	0.3	12.90	26,840
Cabinetmakers and bench carpenters	400	1.3	15.85	32,970
Sawing machine setters, operators, and tenders, wood	70	0.5	14.53	30,220
Woodworking machine setters, operators, and tenders, except sawing	50	0.2	14.00	29,130
Power plant operators	70	0.7	38.83	80,770
Stationary engineers and boiler operators	130	1.3	30.33	63,080

Note: See footnotes at end of table.

Table 1. Employment and wage data for production occupations, Tulsa, OK Metropolitan Statistical Area, May 2019 - Continued

Occupation ⁽¹⁾	Employment		Mean wages	
	Level ⁽²⁾	Location quotient ⁽³⁾	Hourly	Annual ⁽⁴⁾
Water and wastewater treatment plant and system operators	330	0.9	18.14	37,720
Gas plant operators.....	150	3.5	30.39	63,210
Petroleum pump system operators, refinery operators, and gaugers	560	4.6	37.24	77,470
Chemical equipment operators and tenders	150	0.6	27.62	57,460
Crushing, grinding, and polishing machine setters, operators, and tenders	100	1.0	15.69	32,630
Grinding and polishing workers, hand.....	220	2.5	15.53	32,310
Mixing and blending machine setters, operators, and tenders	240	0.6	24.43	50,820
Cutters and trimmers, hand.....	70	2.3	12.60	26,210
Cutting and slicing machine setters, operators, and tenders	150	0.9	14.97	31,140
Extruding, forming, pressing, and compacting machine setters, operators, and tenders	280	1.3	17.04	35,450
Furnace, kiln, oven, drier, and kettle operators and tenders	100	1.8	17.80	37,020
Inspectors, testers, sorters, samplers, and weighers.....	2,780	1.6	22.10	45,970
Jewelers and precious stone and metal workers	(5)	(5)	16.19	33,670
Dental laboratory technicians	120	1.2	21.86	45,460
Packaging and filling machine operators and tenders	640	0.5	16.09	33,480
Painting, coating, and decorating workers	70	1.7	18.34	38,140
Coating, painting, and spraying machine setters, operators, and tenders	1,220	2.8	18.55	38,590
Computer numerically controlled tool operators.....	1,750	3.8	21.17	44,030
Computer numerically controlled tool programmers	100	1.3	27.05	56,260
Adhesive bonding machine operators and tenders.....	130	3.2	25.22	52,450
Cleaning, washing, and metal pickling equipment operators and tenders	150	2.9	13.88	28,860
Molders, shapers, and casters, except metal and plastic	170	1.3	18.01	37,470
Paper goods machine setters, operators, and tenders ...	380	1.3	23.10	48,050
Helpers--production workers	1,190	1.3	14.15	29,430
Production workers, all other.....	540	0.8	15.63	32,520

Footnotes:

- (1) For a complete listing of all detailed occupations in the Tulsa, OK Metropolitan Statistical Area, see www.bls.gov/oes/current/oes_46140.htm
- (2) Estimates for detailed occupations may not sum to the totals due to rounding, and because the totals may include occupations that are not shown separately. Estimates do not include self-employed workers.
- (3) The location quotient is the ratio of the area concentration of occupational employment to the national average concentration. A location quotient greater than one indicates the occupation has a higher share of employment than average, and a location quotient less than one indicates the occupation is less prevalent in the area than average.
- (4) Annual wages have been calculated by multiplying the hourly mean wage by a "year-round, full-time" hours figure of 2,080 hours; for those occupations where there is not an hourly mean wage published, the annual wage has been directly calculated from the reported survey data.
- (5) Estimate not released.