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Occupational Employment and Wages in Detroit-Warren-Dearborn — May 2020

Workers in the Detroit-Warren-Dearborn, MI Metropolitan Statistical Area had an average (mean) hourly wage of $27.76 in May 2020, about 3 percent above the nationwide average of $27.07, the U.S. Bureau of Labor Statistics reported today. Regional Commissioner Jason Palmer noted that, after testing for statistical significance, wages in the local area were lower than their respective national averages in 11 of the 22 major occupational groups, including legal; computer and mathematical; and life, physical, and social science. Five groups had significantly higher wages than their respective national averages, including construction and extraction, production, and architecture and engineering.

When compared to the nationwide distribution, Detroit area employment was more highly concentrated in 6 of the 22 occupational groups, including production, architecture and engineering, and business and financial operations. Thirteen groups had employment shares significantly below their national representation, including educational instruction and library, construction and extraction, and food preparation and serving related. (See table A.)

Table A. Occupational employment and wages by major occupational group, United States and the Detroit metropolitan area, and measures of statistical significance, May 2020

Major occupational group	Percent of total employment		Mean hourly wage		
	United States	Detroit	United States	Detroit	Percent difference [1]
Total, all occupations	100.0	100.0	$27.07	$27.76*	3
Management	5.7	5.5	60.81	61.64	1
Business and financial operations...........................	6.0	6.7*	38.79	38.56	-1
Computer and mathematical	3.3	3.7*	46.53	41.94*	-10
Architecture and engineering	1.8	4.3*	43.41	44.55*	3
Life, physical, and social science	0.9	0.6*	38.15	34.53*	-9
Community and social service.................................	1.6	1.3*	25.09	24.16*	-4
Legal...	0.8	0.9*	54.00	45.73*	-15
Educational instruction and library	6.1	4.2*	28.75	29.50	3
Arts, design, entertainment, sports, and media.......	1.3	1.2*	30.96	28.94*	-7
Healthcare practitioners and technical	6.2	6.6*	41.30	39.50*	-4
Healthcare support	4.6	4.2*	15.50	14.96*	-3
Protective service	2.4	1.9*	25.11	23.45*	-7
Food preparation and serving related	8.1	7.1*	13.30	12.92*	-3
Building and grounds cleaning and maintenance ...	2.9	2.6*	15.75	15.06*	-4
Personal care and service......................................	1.9	1.8*	15.68	15.08*	-4
Sales and related	9.4	9.6	22.00	23.03*	5
Office and administrative support............................	13.3	12.7*	20.38	20.56	1
Farming, fishing, and forestry.................................	0.3	(2)	16.02	16.54	3
Construction and extraction.....................................	4.3	3.2*	25.93	28.07*	8
Installation, maintenance, and repair	3.9	3.6*	25.17	25.67*	2

Note: See footnotes at end of table.

Table A. Occupational employment and wages by major occupational group, United States and the Detroit metropolitan area, and measures of statistical significance, May 2020 - Continued

Major occupational group	Percent of total employment		Mean hourly wage		
	United States	Detroit	United States	Detroit	Percent difference [1]
Production	6.1	9.6*	20.08	21.51*	7
Transportation and material moving	8.7	8.7	19.08	20.69	8

Footnotes:
(1) A positive percent difference measures how much the mean wage in the Detroit-Warren-Dearborn, MI Metropolitan Statistical Area is above the national mean wage, while a negative difference reflects a lower wage.
(2) Indicates a value of less than 0.05 percent.
* 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. Detroit had 170,250 jobs in production, accounting for 9.6 percent of local area employment, significantly higher than the 6.1-percent share nationally. The average hourly wage for this occupational group locally was $21.51, significantly above the national wage of $20.08.

Some of the larger detailed occupations within the production group included miscellaneous assemblers and fabricators (46,960); inspectors, testers, sorters, samplers, and weighers (14,100); and first-line supervisors of production and operating workers (11,630). Among the higher-paying jobs in this group were power distributors and dispatchers and power plant operators, with mean hourly wages of $47.55 and $40.15, respectively. At the lower end of the wage scale were textile knitting and weaving machine setters, operators, and tenders ($11.04) and pressers, textile, garment, and related materials ($11.62). (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_19820.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 Detroit area, above-average concentrations of employment were found in some of the occupations within the production group. For instance, tool and die makers were employed at 6.0 times the national rate in Detroit, and cutting, punching, and press machine setters, operators, and tenders, metal and plastic, at 3.7 times the U.S. average. Printing press operators had a location quotient of 1.0 in Detroit, indicating that this particular occupation's local and national employment shares were similar.

These statistics are from the Occupational Employment and Wage Statistics (OEWS) survey, a federal-state cooperative program between BLS and State Workforce Agencies, in this case, the Michigan Department of Technology, Management & Budget.

Occupational Employment and Wage Statistics (OEWS) Name Change

The Occupational Employment Statistics (OES) program has changed its name to Occupational Employment and Wage Statistics (OEWS) to better reflect the range of data available from the program. Data released on or after March 31, 2021, will reflect the new program name. Webpages, publications, and other materials associated with previous data releases will retain the Occupational Employment Statistics name.

Coronavirus (COVID-19) Impact on May 2020 Occupational Employment and Wage Statistics

Due to features of the OEWS methodology, the May 2020 OEWS estimates do not fully reflect the impact of the COVID-19 pandemic. The May 2020 OEWS estimates are based on survey panels collected for May 2020, November 2019, May 2019, November 2018, May 2018, and November 2017. Because 5 of the 6 survey panels used to produce the estimates date from before the COVID-19 pandemic, only the most recent (May 2020) survey panel reflects changes in occupational proportions related to the COVID-19 pandemic.

The May 2020 OEWS employment estimates are benchmarked to the average of May 2020 and November 2019 employment from the Quarterly Census of Employment and Wages (QCEW). Although the May 2020 QCEW data reflect the early employment effects of the COVID-19 pandemic, the November 2019 QCEW employment data precede the pandemic, and therefore do not reflect its impact.

In addition, as a result of the pandemic, response rates for the November 2019 and May 2020 panels were lower in some areas. Lower response rates may negatively affect data availability and data quality. More information is available at www.bls.gov/covid19/effects-of-covid-19-pandemic-on-occupational-employment-and-wage-statistics.htm.

Implementing the 2018 Standard Occupational Classification (SOC) System

With the May 2019 estimates, the OEWS program began implementing the 2018 Standard Occupational Classification (SOC) system. Because the May 2019 and May 2020 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. This is the second and final year that the hybrid occupational structure will be used. The May 2021 estimates, to be published in Spring 2022, will be the first OEWS estimates based entirely on survey data collected using the 2018 SOC. For more information on the occupational classification system used in the May 2019 and May 2020 estimates, please see www.bls.gov/oes/soc_2018.htm and www.bls.gov/oes/oes_ques.htm#qf10.

Upcoming Changes to the Occupational Employment and Wage Statistics Methodology

With the May 2021 estimates, to be released in Spring 2022, the OEWS program plans to begin using a new estimation methodology. The new model-based methodology, called MB3, has advantages over the existing methodology, as described in the Monthly Labor Review article at www.bls.gov/opub/mlr/2019/article/model-based-estimates-for-the-occupational-employment-statistics-program.htm. OEWS estimates for the years 2015-2018 were recalculated using the new estimation methodology and are available as research estimates at www.bls.gov/oes/oes-mb3-methods.htm.

Technical Note

The Occupational Employment and Wage Statistics (OEWS) survey is a semiannual survey measuring occupational employment and wage rates for wage and salary workers in nonfarm establishments in the United States. The OEWS 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. OEWS data are available at www.bls.gov/oes/tables.htm.

The OEWS 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. OEWS estimates are constructed from a sample of about 1.1 million establishments. Each year, two semiannual panels of approximately 180,000 to 185,000 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 2020 estimates are based on responses from six semiannual panels collected over a 3-year period: May 2020, November 2019, May 2019, November 2018, May 2018, and November 2017. The unweighted sample employment of 83 million across all six semiannual panels represents approximately 56 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 69 percent based on establishments and 66 percent based on weighted sampled employment. The sample in the Detroit-Warren-Dearborn, MI Metropolitan Statistical Area included 7,022 establishments with a response rate of 71 percent. For more information about OEWS 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.

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 **Detroit-Warren-Dearborn, MI Metropolitan Statistical Area** includes Lapeer, Livingston, Macomb, Oakland, St. Clair, and Wayne Counties.

For more information

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

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

Table 1. Employment and wage data for production occupations, Detroit metropolitan area, May 2020

Occupation [1]	Employment		Mean wages	
	Level [2]	Location quotient [3]	Hourly	Annual [4]
Production occupations	170,250	1.6	$21.51	$44,740
First-line supervisors of production and operating workers..	11,630	1.5	34.80	72,370
Coil winders, tapers, and finishers	(5)	(5)	19.36	40,270
Electrical, electronic, and electromechanical assemblers, except coil winders, tapers, and finishers ...	3,250	0.9	17.51	36,430
Structural metal fabricators and fitters............................	680	0.8	19.93	41,460
Fiberglass laminators and fabricators	90	0.4	17.45	36,290
Miscellaneous assemblers and fabricators	46,960	2.9	20.63	42,910
Bakers	2,090	1.0	14.45	30,050
Butchers and meat cutters	2,170	1.2	15.82	32,910
Meat, poultry, and fish cutters and trimmers	(5)	(5)	13.70	28,500
Slaughterers and meat packers	310	0.3	15.09	31,390
Food batchmakers..	800	0.4	16.16	33,610
Food cooking machine operators and tenders................	60	0.2	16.52	34,350
Food processing workers, all other	210	0.4	14.72	30,610
Extruding and drawing machine setters, operators, and tenders, metal and plastic	570	0.7	15.98	33,240
Forging machine setters, operators, and tenders, metal and plastic	480	2.7	20.81	43,290
Rolling machine setters, operators, and tenders, metal and plastic	630	1.4	21.10	43,880
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	8,580	3.7	22.15	46,080
Drilling and boring machine tool setters, operators, and tenders, metal and plastic	160	1.4	25.69	53,430
Grinding, lapping, polishing, and buffing machine tool setters, operators, and tenders, metal and plastic	1,870	2.1	20.48	42,590
Lathe and turning machine tool setters, operators, and tenders, metal and plastic	940	3.1	20.01	41,620
Milling and planing machine setters, operators, and tenders, metal and plastic	270	1.3	22.84	47,510
Machinists	9,390	2.0	23.12	48,090
Pourers and casters, metal	(5)	(5)	21.36	44,420
Model makers, metal and plastic....................................	410	9.5	34.92	72,620
Patternmakers, metal and plastic...................................	110	3.5	27.13	56,430
Foundry mold and coremakers..	280	1.3	19.41	40,380
Molding, coremaking, and casting machine setters, operators, and tenders, metal and plastic	6,700	3.4	15.39	32,000
Multiple machine tool setters, operators, and tenders, metal and plastic	3,170	1.8	21.35	44,410
Tool and die makers	4,700	6.0	27.83	57,890
Welders, cutters, solderers, and brazers........................	4,310	0.9	21.34	44,390
Welding, soldering, and brazing machine setters, operators, and tenders	1,410	3.3	21.08	43,850
Heat treating equipment setters, operators, and tenders, metal and plastic	780	3.7	18.75	38,990
Plating machine setters, operators, and tenders, metal and plastic	1,440	2.9	18.07	37,580
Tool grinders, filers, and sharpeners	(5)	(5)	22.10	45,970
Metal workers and plastic workers, all other	320	1.2	18.85	39,200
Prepress technicians and workers	200	0.6	23.11	48,060
Printing press operators	2,060	1.0	19.12	39,760
Print binding and finishing workers.................................	420	0.8	18.73	38,960
Laundry and dry-cleaning workers	2,410	1.1	13.16	27,380
Pressers, textile, garment, and related materials	250	0.6	11.62	24,170
Sewing machine operators...	760	0.5	14.69	30,550
Shoe and leather workers and repairers	(5)	(5)	15.12	31,450
Tailors, dressmakers, and custom sewers	(5)	(5)	19.51	40,590
Textile cutting machine setters, operators, and tenders..	180	1.1	16.51	34,340

Note: See footnotes at end of table.

Table 1. Employment and wage data for production occupations, Detroit metropolitan area, May 2020 - Continued

Occupation [1]	Employment		Mean wages	
	Level [2]	Location quotient [3]	Hourly	Annual [4]
Textile knitting and weaving machine setters, operators, and tenders	(5)	(5)	11.04	22,960
Upholsterers	(5)	(5)	13.27	27,600
Textile, apparel, and furnishings workers, all other	40	0.2	14.49	30,140
Cabinetmakers and bench carpenters	520	0.4	22.44	46,660
Furniture finishers..	(5)	(5)	18.36	38,190
Sawing machine setters, operators, and tenders, wood .	100	0.2	17.19	35,750
Woodworking machine setters, operators, and tenders, except sawing...	480	0.5	16.38	34,070
Power distributors and dispatchers	80	0.6	47.55	98,910
Power plant operators	600	1.4	40.15	83,500
Stationary engineers and boiler operators	230	0.6	31.11	64,710
Water and wastewater treatment plant and system operators	1,160	0.8	24.11	50,150
Gas plant operators..	160	0.8	37.29	77,560
Petroleum pump system operators, refinery operators, and gaugers	270	0.5	35.29	73,400
Plant and system operators, all other............................	(5)	(5)	33.61	69,910
Chemical equipment operators and tenders	1,150	1.0	28.86	60,020
Separating, filtering, clarifying, precipitating, and still machine setters, operators, and tenders........................	430	0.7	18.93	39,370
Crushing, grinding, and polishing machine setters, operators, and tenders	(5)	(5)	19.78	41,140
Grinding and polishing workers, hand	(5)	(5)	16.18	33,650
Mixing and blending machine setters, operators, and tenders	1,260	0.8	20.37	42,370
Cutters and trimmers, hand..	(5)	(5)	15.17	31,540
Cutting and slicing machine setters, operators, and tenders	320	0.5	17.56	36,520
Extruding, forming, pressing, and compacting machine setters, operators, and tenders	710	0.9	17.01	35,390
Furnace, kiln, oven, drier, and kettle operators and tenders	140	0.7	27.17	56,520
Inspectors, testers, sorters, samplers, and weighers......	14,100	2.0	19.98	41,560
Jewelers and precious stone and metal workers	(5)	(5)	29.13	60,590
Dental laboratory technicians	640	1.6	23.93	49,770
Medical appliance technicians......................................	240	1.3	26.28	54,650
Ophthalmic laboratory technicians	380	1.2	18.80	39,100
Packaging and filling machine operators and tenders	3,770	0.8	16.36	34,030
Painting, coating, and decorating workers	(5)	(5)	12.43	25,860
Coating, painting, and spraying machine setters, operators, and tenders	1,730	1.0	18.58	38,650
Photographic process workers and processing machine operators	(5)	(5)	16.60	34,530
Computer numerically controlled tool operators.............	2,930	1.5	21.17	44,040
Computer numerically controlled tool programmers	1,130	3.5	26.39	54,890
Adhesive bonding machine operators and tenders.........	(5)	(5)	18.98	39,480
Cleaning, washing, and metal pickling equipment operators and tenders	270	1.5	17.29	35,970
Etchers and engravers	(5)	(5)	19.37	40,290
Molders, shapers, and casters, except metal and plastic	640	1.2	19.09	39,700
Paper goods machine setters, operators, and tenders ...	1,080	0.8	17.33	36,040
Tire builders...	(5)	(5)	16.29	33,880
Helpers--production workers	2,190	0.7	14.91	31,010
Production workers, all other..	2,420	1.0	16.21	33,710

Note: See footnotes at end of table.

Footnotes:

(1) For a complete listing of all detailed occupations in the Detroit-Warren-Dearborn, MI Metropolitan Statistical Area, see www.bls.gov/oes/current/oes_19820.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.