

## Technical Notes for May 2011 OES Estimates

### Scope of the survey

The Occupational Employment Statistics (OES) survey is a semiannual mail survey measuring occupational employment and wage rates for wage and salary workers in nonfarm establishments in the United States. OES data available from BLS include cross-industry occupational employment and wage estimates for the nation; over 500 areas, including states and the District of Columbia, metropolitan statistical areas (MSAs), metropolitan divisions, nonmetropolitan areas, and territories; national industry-specific estimates at the NAICS sector, 3-, 4-, and selected 5-digit industry levels; and national estimates by ownership across all industries and for schools and hospitals.

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 1.2 million establishments. Each year, forms are mailed to two semiannual panels of approximately 200,000 sampled establishments, one panel in May and the other in November. May 2011 estimates are based on responses from six semiannual panels collected over a 3-year period: May 2011, November 2010, May 2010, November 2009, May 2009, and November 2008. The overall national response rate for the six panels is 77.3 percent based on establishments and 73.3 percent based on employment. The unweighted employment of sampled establishments across all six semiannual panels represents approximately 62.2 percent of total national employment.

### The occupational coding system

The OES survey categorizes workers into nearly 800 detailed occupations based on the Office of Management and Budget's Standard Occupational Classification (SOC) system; together, these detailed occupations make up 22 of the 23 SOC major occupational groups. Major group 55, Military Specific Occupations, is not included. The May 2011 and May 2010 OES estimates are based in part on data collected using the 2010 SOC system. Previous estimates were based on the 2000 SOC.

Almost all the occupations in this release are 2010 SOC occupations; however, some are not. In these cases, an estimate for a temporary occupation was created from data reported for one or more occupations in the 2000 SOC combined with data reported for one or more 2010 SOC occupations. Some occupations have the same title as a 2010

SOC occupation, but not the same content. These occupations are marked with an asterisk (\*) and given a temporary code for the OES data. The May 2012 OES data will reflect the full set of detailed occupations in the 2010 SOC. For a list of all occupations, including 2010 SOC occupations, and how data collected on two structures were combined, see the OES Frequently Asked Questions online at [www.bls.gov/oes/oes\\_ques.htm#Ques41](http://www.bls.gov/oes/oes_ques.htm#Ques41).

For more information about the SOC system, please see the Bureau of Labor Statistics Web site at <http://www.bls.gov/soc/>.

## **The industry coding system**

The OES survey uses the 2007 North American Industry Classification System (NAICS). For more information about NAICS, see the BLS Web site at <http://www.bls.gov/bls/naics.htm>.

The OES survey excludes the majority of the agricultural sector, with the exception of logging (NAICS 113310), support activities for crop production (NAICS 1151), and support activities for animal production (NAICS 1152). Private households (NAICS 814) also are excluded. OES federal government data include the U.S. Postal Service and the federal executive branch only. All other industries, including state and local government, are covered by the survey.

The OES survey covers all full- and part-time wage and salary workers in nonfarm industries. The survey does not include the self-employed, owners and partners in unincorporated firms, household workers, or unpaid family workers.

## **Survey sample**

The OES survey draws its sample from state unemployment insurance (UI) files. Supplemental sources are used for rail transportation (NAICS 4821) and Guam because they do not report to the UI program. The OES survey sample is stratified by metropolitan and nonmetropolitan area, industry, and size.

To provide the most occupational coverage, larger employers are more likely to be selected than smaller employers. An annual census is taken of the executive branch of the federal government, the U.S. Postal Service, and state government.

## **Concepts**

Occupational employment is the estimate of total wage and salary employment in an occupation. The OES survey defines employment as the number of workers who can be

classified as full- or part-time employees, including workers on paid vacations or other types of paid leave; workers on unpaid short-term absences; salaried officers, executives, and staff members of incorporated firms; employees temporarily assigned to other units; and employees for whom the reporting unit is their permanent duty station, regardless of whether that unit prepares their paycheck.

Wages for the OES survey are straight-time, gross pay, exclusive of premium pay. Base rate; cost-of-living allowances; guaranteed pay; hazardous-duty pay; incentive pay, including commissions and production bonuses; and tips are included. Excluded are overtime pay, severance pay, shift differentials, nonproduction bonuses, employer cost for supplementary benefits, and tuition reimbursements.

OES receives wage rate data for the federal government, the U.S. Postal Service, and some state governments. For the remaining establishments, the OES survey collects wage data in 12 intervals. For each occupation, respondents are asked to report the number of employees paid within specific wage intervals. The intervals are defined both as hourly rates and the corresponding annual rates, where the annual rate for an occupation is calculated by multiplying the hourly wage rate by a typical work year of 2,080 hours. The responding establishments are instructed to report the hourly rate for part-time workers, and to report annual rates for occupations that are typically paid at an annual rate but do not work 2,080 hours per year, such as teachers, pilots, and flight attendants. Other workers, such as some entertainment workers, are paid hourly rates, but generally do not work 40 hours per week, year round. For these workers, only an hourly wage is reported.

## **Estimation methodology**

The OES survey is designed to produce estimates by combining six panels of data collected over a 3-year period. Each OES panel includes approximately 200,000 establishments. The full six-panel sample of nearly 1.2 million establishments allows the production of estimates at detailed levels of geography, industry, and occupation.

*Wage updating.* Significant reductions in sampling errors are obtained by combining six panels of data, particularly for small geographic areas and occupations. Wages for the current panel need no adjustment. However, wages in the five previous panels need to be updated to the current panel's reference period.

The OES program uses the BLS Employment Cost Index (ECI) to adjust survey data from prior panels before combining them with the current panel's data. The wage updating procedure adjusts each detailed occupation's wage rate, as measured in the earlier panel, according to the average movement of its broader occupational division.

*Imputation.* About 20 percent of establishments do not respond for a given panel. A "nearest neighbor" hot deck imputation procedure is used to impute missing occupational employment totals. A variant of mean imputation is used to impute missing wage distributions.

*Weighting and benchmarking.* The sampled establishments are weighted to represent all establishments for the reference period. Weights are further adjusted by the ratio of employment totals (the average of November 2010 and May 2011 employment) from the BLS Quarterly Census of Employment and Wages to employment totals from the OES survey.

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### **For more information**

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Answers to frequently asked questions about the OES data are available at [http://www.bls.gov/oes/oes\\_ques.htm](http://www.bls.gov/oes/oes_ques.htm).

Detailed technical information about the OES survey is available in our Survey Methods and Reliability Statement on the BLS website at [http://www.bls.gov/oes/current/methods\\_statement.pdf](http://www.bls.gov/oes/current/methods_statement.pdf).