## New Methodology

Users familiar with projections data may notice that the numbers of projected openings are significantly higher in this report than in past projections. This is due to the adoption of a new methodology developed by the U.S. Bureau of Labor Statistics that changes the way job openings are estimated. Because of the change in methodology, short-term projections from previous periods should not be compared to newer projections going forward.

The previous methodology assumed that most individuals followed a "traditional" career path: entering employment at a young age, remaining in the same occupation until retirement, and then being replaced by another worker. The new methodology reflects the changing workforce of the 21$^{st}$ century and recognizes that workers may have several career changes during their working life. This dynamic workforce is reflected in the estimation of job openings, which are created not only when workers retire, but also when they move from one occupation to another. The resulting data is more accurate and reliable, especially for smaller occupations.

## Total Openings in an Occupation

If the demand for products and services in an industry changes, the number of workers employed in that industry also will change. Occupational job growth is the difference between the base employment and projected employment for a time period. Occupational growth may be negative – for example, if technological changes result in fewer workers being needed to achieve the same level of productivity. For most occupations, industry growth creates fewer job openings than labor force exits and transfers. Note that occupational transfers take into account workers who change occupations, not jobs within the same occupation.

## Key Points for Users

Employment projections provide an indication of future labor needs. Educators, workforce professionals, employers, job seekers, students and others can use projections to learn about:

• Areas of the economy that are projected to have positive or negative growth

• Occupations projected to have more job openings than others

• Promising future career pathways

## Technical Notes

The Ohio short-term industry and occupational forecasts were derived primarily from data produced by the Occupational Employment Statistics (OES) and the Quarterly Census of Employment and Wages (QCEW) programs. The forecasts were funded by a grant from the U.S. Department of Labor (DOL).

Short-term (two-year) and long-term (10-year) employment forecasts are calculated differently and serve different purposes. The two-year forecasts reflect seasonal and business-cycle changes; the 10-year forecasts are strongly influenced by structural changes

in the economy. Short-term forecasts provide more timely information; long-term forecasts are helpful for extended economic planning and evaluation.

### Industry Employment Forecast

The forecasting models utilized a historical monthly employment series from the QCEW program data through March 2017. Industry groups with three- or four-digit North American Industry Classification System (NAICS) codes were chosen. Trend, ordinary least squares regression, and autoregressive forecasting models were used. These methods measure the relationships between employment and one or more other economic variables, such as populations, labor force participation rate, income, housing, related industries, and more.

### Occupational Employment Forecasts

Occupational estimates were derived from an industry-occupation matrix. From a three-year OES survey cycle, industry staffing patterns were generated based on the Standard Occupational Classification (SOC) coding structure. Occupational patterns for work arrangements outside the scope of the OES program (including agriculture, private household, self-employed and unpaid family workers) were developed using U.S. national staffing patterns and U.S. Census of Agriculture information.

### Wages

The median wage estimates were produced using OES data, which are based on a semiannual mail survey. The survey gathers employment and wage data for specific occupations by geographic area and industry. Statewide Ohio wages were used when available.

### Annual Openings

To project occupational openings, Ohio uses national separation rates calculated by the U.S. Bureau of Labor Statistics (BLS) caused by workers exiting the labor force due to retirement or other reasons (labor force exits) and separations caused by workers transferring to different occupations (occupational transfers). Projections of separations are combined with projections of employment change to determine occupational openings.

### Educational and Training Classifications

DOL's educational and training classification system consists of three categories: (1) typical education needed for entry, (2) commonly required work experience in related occupations, and (3) typical on-the-job training needed to obtain competency in the occupation. Complete definitions can be found at bls.gov/emp/documentation/education-training-system.htm.

### Data Limitations

Every effort was made to ensure the accuracy of the projections, but data and forecasts are subject to error. The information in this report is best used as an indicator of employment trends, not as an exact count or prediction. It should be used in combination with other

data sources and information. Employment forecasts cannot predict unforeseen events or actions.

This report provides estimates of the number of jobs, not the number of employees. It makes no distinctions for employment characteristics such as full-time, part-time or secondary jobs.

For additional information or questions, visit OhioLMI.com, email ContactLMI@jfs.ohio.gov or call (888) 296-7541, option 6.