The US Census Bureau's New Product: National Quarterly Workforce Indicators (NQWI)
Michelle Doran, Economist

Background
The Longitudinal Employer-Household Dynamics (LEHD) program produces Quarterly Workforce Indicators (QWI) and LEHD Origin-Destination Employment Statistics (LODES) data that are used in the Census Bureau's QWI Explorer, OnTheMap, and LEHD Extraction Tool. Prior to the LEHD program, these data were not readily available. Under a partnership between states and the Census Bureau, called the Local Employment Dynamics (LED) Partnership, the LEHD program uses already existing administrative and survey data from states and the Census Bureau to create statistics on employment, earnings, and worker flows for each state. QWI statistics have been available for more than 10 years for states that have been part of the LED Partnership since its inception. More states joined the partnership as they recognized the importance of the data being produced. As of today, all 50 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands have joined the LED Partnership, although the LEHD program is not yet producing public-use statistics for Massachusetts, Puerto Rico, or the U.S. Virgin Islands.

National Quarterly Workforce Indicators
Now that all states’ statistics are, or soon will be, available, national quarterly workforce indicator statistics (NQWI) have been constructed using already produced LEHD data. NQWI data provide users with similar statistics suitable for comparisons. The LEHD website calls it “a consistent reference point for users of the QWI.” By providing users with a relative point of comparison, users can see how New Mexico and sub-state areas relate to the nation using comparable measures and equivalent calculations.

These new national data statistics are compiled from published state-level QWI data. First, state public-use QWI data are created using normal QWI processes. State QWI are then compiled to produce national data. The Census Bureau created procedures to take into account the lack of data for certain states and time periods, as well as suppressions of certain values in the QWI for statistical disclosure limitations, in order to create complete national data statistics. More about the methodology for creating NQWI is available at http://lehd.ces.census.gov/data/qwi_national_beta.html.

These NQWI are considered a “beta” release by the Census Bureau and not an official data release. While no official release schedule has been established, the plan is to release NQWI on a quarterly basis shortly after the release of the state-level data beginning in late 2015. NQWI will be available through the LED Extraction Tool in the future but for now can be downloaded in CSV format equivalent to the state-level QWI file format already produced from http://lehd.ces.census.gov/data/qwi/us/. The NQWI website (http://lehd.ces.census.gov/data/qwi_national_beta.html) provides information on not-yet-released indicators and variables, new data features, and future data releases. Table 1 is a list of planned beta release dates and variables.

An NQWI Data Case Study: An Analysis of Average Monthly Earnings in New Mexico and the United States
The data source used to create Quarterly Workforce Indicators (QWI) is state unemployment insurance tax records, where employment and wages are reported quarterly by employers for each employee. These tax records are added to a longitudinal database where employees are linked to employers over time. Employees that remain with the same employer for at least three quarters are considered “stable.” The number of months an employee worked during a quarter is not provided, so QWI assumes that earnings for stable employees for a particular quarter represent a full three months of employment.

These data can be used to compare statewide and national numbers. For this case study, the indicator used for analysis was average monthly earnings for stable employees (EarnS), which is available for both New Mexico QWI and NQWI. (For more indicators and definitions, read QWI 101 on the LEHD website at http://lehd.ces.census.gov/doc/QWI_101.pdf.) Fourth quarter data were used to provide

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<th>Table 1: Available National QWI Files (Beta Release)</th>
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<td><strong>NAICS</strong>* (Private Ownership)</td>
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*North American Industry Classification System

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NAICS: North American Industry Classification System

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Demographics: Sex-Age, Sex-Education, Race-Ethnicity

Firm Characteristics: Size, Age

Source Release: Released 1st Quarter 2015, Expected 3rd Quarter 2015

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Chart 1: New Mexico Compared to the United States

Source: Census Bureau, Longitudinal Employer-Household Dynamics, Quarterly Workforce Indicators

Chart 2: Men's vs. Women's Average Monthly Earnings for New Mexico and the United States

Source: Census Bureau, Longitudinal Employer-Household Dynamics, Quarterly Workforce Indicators
earnings of workers 65 and older surpassed the earnings of workers 25 to 34 nationally in 2007 and in New Mexico in 2005. It is also interesting to see that nationally average monthly earnings of workers 55 to 64 grew more quickly than, but never surpassed, the average earnings of workers 45 to 54, whereas, in New Mexico, average monthly earnings of workers 55 to 64 surpassed earnings of workers 45 to 54 by 2007.

Nationally, between 2010 and 2011, the average monthly earnings of workers 65 and older continued to grow, while earnings of all other age groups fell. New Mexico experienced the same fall in earnings for all age groups, including those 65 and over, but, in New Mexico, the drop in earnings was more pronounced for younger age groups and less so for older age groups. Nationally, earnings growth rates of workers 65 and older were higher than those of all other age categories following 2001; however, by 2013, the earnings growth of all age categories slowed.

We can also analyze the gender earnings gap existing in New Mexico and the United States, as well as compare the size of the gap between the two areas. While the average monthly earnings of both men and women in New Mexico were less than the national averages for each gender throughout the period, the gap between the earnings of New Mexico men and U.S. men was larger than the gap between the earnings of New Mexico women and U.S. women. Chart 2 shows that New Mexico women earned approximately 89 percent of what U.S. women earned, as of 2013, whereas New Mexico men earned only 80 percent of what U.S. men earned. Again, the earnings gap between New Mexico and the U.S. was smallest for both genders during the Great Recession.

As women and men progress through their careers, their earnings grow at different rates, causing expansion in the earnings gap. QWI cannot answer why the gap widens, but it can indicate where the divergence begins and inflates. Chart 3 shows that while New Mexico average monthly earnings were higher than national average monthly earnings for the 14 to 18 and 19 to 21 age categories, national earnings were higher than New Mexico earnings for all other age groups and for both men and women.

Chart 4 shows average monthly earnings over time for the United States and New Mexico for each age group. Average monthly earnings of workers 65 and older surpassed the earnings of workers 25 to 34 nationally in 2007 and in New Mexico in 2005. It is also interesting to see that nationally average monthly earnings of workers 55 to 64 grew more quickly than, but never surpassed, the average earnings of workers 45 to 54, whereas, in New Mexico, average monthly earnings of workers 55 to 64 surpassed earnings of workers 45 to 54 by 2007.

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Industry sector earnings can provide additional insight into the differences between and within sectors. One of the highest paying industries in New Mexico is the professional, scientific, and technical services sector, which is shown in Chart 5. At the beginning of the New Mexico QWI series, in 1996, average monthly earnings in the professional, scientific, and technical services sector were 97 percent of national average monthly earnings in the same sector. As of 2013, New Mexico's earnings in the sector fell to 84 percent of the national average earnings in the sector.

QWI users should note that NQWI data are available back to 1993, while New Mexico QWI data are available back to 1996. This means that NQWI data for 1993 through 1995 will include imputed data for New Mexico in order to compile the NQWI using the procedures mentioned earlier in the article. Even with that noted fact, National LEHD data can be a great resource for data researchers as it develops. Check back with the LEHD website for updates and new features in national QWI data.
Chart 5: Professional, Scientific, and Technical Services—
New Mexico Earnings Compared to the United States

Source: Census Bureau, Longitudinal Employer-Household Dynamics, Quarterly Workforce Indicators