

Quarterly Workforce Indicators: Data Notices

Local Employment Dynamics

Background	3
Data Notices	3
The Quarterly Workforce Indicators	3
Important Note on Quarterly Recalculations	4
General Notices	4
Jul – Sep 2016 (R2016Q3)	4
Sectoral Suppressions in Connecticut.....	4
Removal of Sectoral Suppressions in Nevada.....	4
States not included in R2016Q3.....	4
Apr – Jun 2016 (R2016Q2)	4
Removal of Sectoral Suppressions in Oregon.....	4
Sectoral Suppressions in Nevada.....	5
States not included in R2016Q2.....	5
Jan – Mar 2016 (R2016Q1)	5
Removal of Empty Records from CSV Files, Race Category A06.....	5
Sectoral Suppressions in Oregon	5
States not included in R2016Q1.....	6
Oct – Dec 2015 (R2015Q4)	6
Improvements in Assignment of Establishment Characteristics, Job Linkages (Minnesota).....	6
Resumption of Kansas QWI Production, Firm Age and Size Withheld	6
Sectoral Suppressions in Oregon	6
States not included in R2015Q4.....	6
Jul – Sep 2015 (R2015Q3)	6
Release of Massachusetts Quarterly Workforce Indicators	6
Upgrade to NAICS 2012 Industry Codes	6
Sectoral Suppressions in Oregon	7
States not included in R2015Q3.....	7

Apr – Jun 2015 (R2015Q2)	7
UI Reporting Changes for Professional Employer Organizations in Florida.....	7
Public Sector Suppressions in South Dakota.....	7
Sectoral and Geographic Suppression in Virginia	7
States not included in R2015Q2.....	7
Jan – Mar 2015 (R2015Q1)	8
Shift in Firm Age Distributions in Vermont	8
Shift in Firm Size Distribution in Connecticut	8
States not included in R2015Q1.....	8
Oct – Dec 2014 (R2014Q4)	8
Date of Birth Imputes.....	8
Multi-unit Firm Employment Allocations.....	8
States not included in R2014Q4.....	8
Jul – Sep 2014 (R2014Q3)	9
County Subdivision Geography Changes in Vermont	9
Workplace Geography Enhancement	9
States not included in R2014Q3.....	9
Apr - Jun 2014 (R2014Q2)	9
Shifts in Firm Age Data Trend	9
Residential Geography Enhancements	9
Startup Firm Employment in New Jersey.....	9
Fluctuations in Utilities Sector (NAICS 22)	9
States not included in R2014Q2.....	10
Jan - Mar 2014 (R2014Q1)	10
Firm Age & Size Data Availability	10
Residential and Workplace Geography Enhancements.....	10
States not included in R2014Q1.....	10
Oct - Dec 2013 (R2013Q4)	10
Residential Address Revisions.....	10
Employment Shifts in NAICS 6241 and 8141 (home-based services)	10
States not included in R2013Q4.....	11
Jul - Sep 2013 (R2013Q3)	11
Geocode Revisions	11
QWI Time Series Adjustments	11
States not included in R2013Q3.....	11

Jul - Sep 2012 (R2012Q3)	12
Improvement to Longitudinal Residential Address	12
Jan - Mar 2012 (R2012Q1)	12
Worker-Establishment Assignment	12
Oct - Dec 2008 (R2008Q4)	12
Successor-Predecessor Adjustment, Calculation of Average Earnings for Full Quarter Separations	12
State-Specific Notices	12
California	12
Public sector worker reporting	12
Industry reporting	12
Delaware	13
Florida	13
Hawaii	13
Iowa	13
Missouri	13
Mississippi	13
New Jersey	13

Background

Data Notices

The Longitudinal Employer-Household Dynamics (LEHD) program is continually working to improve and refine the Quarterly Workforce Indicators (QWI). This Data Notices document provides information to users on important updates to QWI data and specific data issues that affect certain states. General data issues that affect the QWI are posted at the top of the document; further below, state-specific notices highlight major data features or issues that affect individual states. These Data Notices are designed to inform users of large-scale updates and issues, and this document will be revised as processes are improved or new data quality issues are uncovered.

The Quarterly Workforce Indicators

The Quarterly Workforce Indicators (QWI) is an innovative data product that provides detailed local labor market statistics by industry, worker demographics and employer characteristics. By using unique job-level data that link workers to their employers, labor market data in the QWI is available by worker age, sex, educational attainment, race, and ethnicity. This allows for many interesting analyses – for instance, users can identify and study industries with aging workforces. Further, links between workers and firms allow the QWI to identify worker flows – including hires, separations, and turnover. Data on worker flows enables researchers to examine which industries have hired workers and the characteristics of new hires. QWI is a powerful tool for understanding trends and dynamics in local labor markets.

The source data for the QWI is the Longitudinal Employer-Household Dynamics (LEHD) linked employer-employee microdata. The LEHD data is massive longitudinal database covering over 95% of U.S. private sector jobs. Much of this data is collected via a unique federal-state data sharing collaboration, the Local Employment Dynamics (LED) partnership. LED is a cooperative venture between the LEHD program at the U.S. Census Bureau and state agencies of all 50 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands. By integrating data used to administer public programs with existing records and surveys, a new national jobs database is generated at very low cost and with no additional respondent burden. More information on the QWI can be found here: http://lehd.ces.census.gov/doc/QWI_101.pdf.

Important Note on Quarterly Recalculations

The complete QWI time series is updated with every quarterly data release. Measures across the time series may change between releases for a number of reasons, including:

- raw data inputs are updated;
- algorithms to develop estimates are revised;
- random draws that are used to generate missing data may change.

Regular users should be aware that fluctuations may be observed in historic data, and we generally advise that users do not combine data from different QWI releases.

General Notices

Jul – Sep 2016 (R2016Q3)

Sectoral Suppressions in Connecticut

Due to a data quality issue identified in the fourth quarter of 2015, the QWI series for NAICS Sector 61 – Educational Services (and all associated subsectors and industry groups) have been suppressed for the entire state in 2015Q3 and 2015Q4.

Removal of Sectoral Suppressions in Nevada

An existing data quality issue in Nevada had been resolved with this release. The sectoral suppressions previously in place for NAICS Sector 22 – Utilities (and all associated subsectors and industry groups) in 2015Q2 and 2015Q3 have been removed.

States not included in R2016Q3

The following states were not available for QWI production in this cycle because of delays in provision of input files, or because of data issues pending remediation:

- Michigan
- Wyoming
- Puerto Rico, Virgin Islands (*experimental production*)

Apr – Jun 2016 (R2016Q2)

Removal of Sectoral Suppressions in Oregon

An existing data quality issue in Oregon had been resolved with this release. The sectoral suppressions previously in place for NAICS Subsector 452 – General Merchandise Stores (and all associated 4-digit industry groups) for 2014 Q2, 2014Q3, and 2014Q4 have been removed.

Sectoral Suppressions in Nevada

Due to a data quality issue identified in the third quarter of 2015, the QWI series for NAICS Sector 22 – Utilities (and all associated subsectors and industry groups) have been suppressed for the entire state in 2015Q2 and 2015Q3.

States not included in R2016Q2

The following states were not available for QWI production in this cycle because of delays in provision of input files, or because of data issues pending remediation:

- Wyoming
- Puerto Rico, Virgin Islands (*experimental production*)

Jan – Mar 2016 (R2016Q1)

Removal of Empty Records from CSV Files, Race Category A06

Users of the CSV files available for download from the LEHD website may have noticed records for race category “A06”, with missing values or zeroes for all measures. We note that LEHD tabulations follow the OMB standards for publishing race/ethnicity:

a. Race:

- American Indian or Alaskan Native
- Asian or Pacific Islander
- Black
- White

b. Ethnicity:

- Hispanic Origin
- Not of Hispanic Origin

From the core race categories above we break out Asian and Pacific Islander and add support for the multi-race category, which is part of the OMB standard as well:

https://www.whitehouse.gov/omb/fedreg_race-ethnicity

The code “A06” is used for internal processing only, and is never used for tabulation by race. These empty records have been removed from the CSV (comma separated values) files starting with this release. Users of the LED Extraction tool or QWI explorer will see no change.

More information on the data schema is available at the following link:

http://lehd.ces.census.gov/data/schema/V4.0.4/lehd_public_use_schema.html

Sectoral Suppressions in Oregon

Due to a data quality issue identified in the third quarter of 2014, the QWI series for NAICS Subsector 452 – General Merchandise Stores (and all associated 4-digit industry groups) have been suppressed for the entire state in 2014Q2, 2014Q3, and 2014Q4.

States not included in R2016Q1

The following states were not available for QWI production in this cycle because of delays in provision of input files, or because of data issues pending remediation:

- Wyoming
- Puerto Rico, Virgin Islands (*experimental production*)

Oct – Dec 2015 (R2015Q4)

Improvements in Assignment of Establishment Characteristics, Job Linkages (Minnesota)

We have made improvements to the algorithm by which geography and industry are assigned to workers' jobs, significantly improving the consistency between QWI employment counts and those from Quarterly Census of Employment and Wages at lower geographies. In addition, improved job linkages have resulted in decreases in measures of job flows, such as accessions, separations, job creation, and job destruction.

Resumption of Kansas QWI Production, Firm Age and Size Withheld

Kansas has returned to regular production with this release. However, because of the previous suspension of production, the Firm Age and Size data could not be produced for this release. A full release will be available next quarter.

Sectoral Suppressions in Oregon

Due to a data quality issue identified in the third quarter of 2014, the QWI series for NAICS Subsector 452 – General Merchandise Stores (and all associated 4-digit industry groups) have been suppressed for the entire state in 2014Q2, 2014Q3, and 2014Q4.

States not included in R2015Q4

The following states were not available for QWI production in this cycle because of delays in provision of input files, or because of data issues pending remediation:

- Wyoming
- Puerto Rico, Virgin Islands (*experimental production*)

Jul – Sep 2015 (R2015Q3)

Release of Massachusetts Quarterly Workforce Indicators

The first official release of the Massachusetts Quarterly Workforce Indicators has been included in this quarter's QWI publications.

Upgrade to NAICS 2012 Industry Codes

The Quarterly Workforce Indicators (QWI) will transition from the 2007 North American Industry Classification System (NAICS) to the 2012 NAICS beginning with the third quarter of 2015 data release (R2015Q3). As with all QWI releases, the 2012 NAICS coding system will be applied to the complete history of the data. In conjunction with the transition to the 2012 NAICS, the industry coding algorithm has been restructured to improve data quality and manageability. For further information, please see the attached document [NAICS 2012 Data Notice](#).

Sectoral Suppressions in Oregon

Due to a data quality issue identified in the third quarter of 2014, the QWI series for NAICS Subsector 452 – General Merchandise Stores (and all associated 4-digit industry groups) have been suppressed for the entire state in 2014Q2, 2014Q3, and 2014Q4.

States not included in R2015Q3

The following states were not available for QWI production in this cycle because of delays in provision of input files, or because of data issues pending remediation:

- Kansas
- New Mexico
- Puerto Rico, Virgin Islands (*experimental production*)

Apr – Jun 2015 (R2015Q2)

UI Reporting Changes for Professional Employer Organizations in Florida

Changes in the reporting of unemployment insurance (UI) wage records for jobs associated with Professional Employer Organizations (PEO) were implemented in Florida in 2013, in accordance with state legislation. These changes have resulted in difficulty matching records between the UI wage file and the Quarterly Census of Employment and Wages (QCEW), causing approximately 1.5% of jobs in Florida to be omitted when calculating the Quarterly Workforce Indicators. The bias at higher levels is generally small because the jobs are well dispersed across industry and geography, and weighting factors largely correct the employment counts. However, users may encounter shifts in small cells because of missing jobs. In addition, unusual spikes may be observed in separation measures, particularly in the fourth quarter of 2012. Future research will be conducted to correct this issue.

Public Sector Suppressions in South Dakota

Due to an issue identified in the UI reporting patterns of the state’s public sector employment, the “All Ownership (Public + Private)” aggregations for South Dakota will be suppressed for this release. The QWI series will be published only for the private sector.

Sectoral and Geographic Suppression in Virginia

Due to a data quality issue identified in the second and third quarter of 2014, the QWI series will be suppressed for the following aggregations:

- Manufacturing sector (NAICS 31-33) for the entire state
- Select sub-state geographic regions in the Virginia Beach metro area

States not included in R2015Q2

The following states were not available for QWI production in this cycle because of delays in provision of input files, or because of data issues pending remediation:

- Kansas
- Louisiana
- Massachusetts , Puerto Rico, Virgin Islands (*experimental production*)

Jan – Mar 2015 (R2015Q1)

Shift in Firm Age Distributions in Vermont

Due to an issue identified in the source file used in the firm age calculations, users may notice, in the 2014Q1 data, an approximate 3% shift of employment from the top (11+ years) into the 4-5 years firm age category, resulting in a 70% increase in the latter group's employment counts. A corresponding fix has since been implemented, and the series is expected to return to normal levels for the 2015Q2 release.

Shift in Firm Size Distribution in Connecticut

Due to an issue identified in the source file used in the firm size calculations, users may notice an approximate 2% shift in employment distribution from the "500+ employees" category to the "50-249 employees" category in the 2014Q1 data. The series is expected to return to stable levels in the next release.

States not included in R2015Q1

The following states were not available for QWI production in this cycle because of delays in provision of input files, or because of data issues pending remediation:

- Florida
- Kansas
- Massachusetts , Puerto Rico, Virgin Islands (*experimental production*)
- Washington

Oct – Dec 2014 (R2014Q4)

Date of Birth Imputes

As the result of a recent infrastructure enhancement, we are now utilizing imputed dates of birth for certain groups of workers with ages that were previously deemed unreliable, or too old/young to be in a credible working status. These employees had historically been excluded from the QWI. With the incorporation of this updated mechanism, users may notice an increase of jobs in certain aggregations, particularly in the agricultural sector, where increases of 5% to 10% may be observed. In addition, a proportional shift in the worker age distribution from the younger to the older categories may be observed across the country.

Multi-unit Firm Employment Allocations

Minor improvements have been made to the allocation of jobs for firms with multiple reported worksite establishments. This resulted in better assignments of jobs across the industries and/or geographies associated with the affected employers. Users may observe changes in relevant queries and aggregations.

States not included in R2014Q4

The following states were not available for QWI production in this cycle because of delays in provision of input files, or because of data issues pending remediation:

- Connecticut
- Florida
- Kansas

- Massachusetts , Puerto Rico, Virgin Islands (*experimental production*)
- Washington

Jul - Sep 2014 (R2014Q3)

County Subdivision Geography Changes in Vermont

Recent changes in the nationally-unique geographic identifiers for the county subdivision/town geographies in Vermont have led to a tabulation error in Workforce Investment Area "06 Franklin/Grand Isle WIB". Approximately 1,100 jobs are determined to have been excluded from the WIA 06 tabulations (an estimate of the tabulation error can be calculated from difference between the State total and the sum of the WIA areas). We have since updated the geography definitions, and this issue will be resolved with the next quarterly release.

Workplace Geography Enhancement

Users may observe occasional shifts of employment allocations at the various geography levels due to ongoing geographic quality enhancements.

States not included in R2014Q3

The following states were not available for QWI production in this cycle because of delays in provision of input files, or because of data issues pending remediation:

- California
- Florida
- Kentucky
- Massachusetts, Puerto Rico, Virgin Islands (*experimental production*)
- Wyoming

Apr - Jun 2014 (R2014Q2)

Shifts in Firm Age Data Trend

In the current 2014Q2 Firm Age & Size (FAS) statistics, users should generally expect to observe a systematic downward shift of employment in young/startup firms (0 to 1 year) compared to the previous release, coupled with an upward shift of employment in the oldest firms (11+ years). This primarily results from an update to a source data file, the Business Dynamics Statistics (BDS), which has improved its longitudinal firm linking methodology.

Residential Geography Enhancements

LEHD has completed the incorporation of updated residential address information, which is used to generate establishment imputes for jobs at multi-establishment firms. Recent fluctuations related to these modifications should stabilize with this release.

Startup Firm Employment in New Jersey

Due to a data issue in the 2003 Unemployment Insurance wage files from New Jersey, there is a noticeable drop in employment measures for startup firms (0 to 1 year old) in that year. The series returns to stable levels in 2004Q2.

Fluctuations in Utilities Sector (NAICS 22)

Users may notice periodic fluctuations in longitudinal employment trend of the utilities sector (NAICS 22). In particular, volatile firm reporting patterns have traditionally been the main cause.

States not included in R2014Q2

The following states were not available for QWI production in this cycle because of delays in provision of input files, or because of data issues pending remediation:

- California
- Florida
- North Carolina
- Wyoming
- Massachusetts, Puerto Rico, Virgin Islands (*experimental production*)

Jan - Mar 2014 (R2014Q1)

Firm Age & Size Data Availability

By construction, the Firm Age & Size (FAS) data series lags the latest published QWI time series by one quarter. Due to a delay in the provision of an input file, an extra quarter of lag has been applied to the FAS series in the current release, truncating it at 2012Q4. The input file has since been received and processed, and the series will return to the normal one-quarter lag for the 2014Q2 release.

Residential and Workplace Geography Enhancements

Research staff are continuing their efforts to make improvements to the methodologies and data sources used for geocoding residential and establishment-level information. Worker residence information is used as an input to the Unit-to-Worker (U2W) process, which imputes establishments to jobs at multi-establishment firms. During the ongoing maintenance, users may observe shifts in distribution of employment counts in small cells within states, which will stabilize over the next few quarters as improvements are implemented.

States not included in R2014Q1

The following states were not available for QWI production in this cycle because of delays in provision of input files or issues with input data received from Census state partners:

- California
- Connecticut
- Florida
- Minnesota
- Massachusetts, Puerto Rico, Virgin Islands (*experimental production*)

Oct - Dec 2013 (R2013Q4)

Residential Address Revisions

The methodology for identifying worker residence information has been modified this quarter to further improve the correspondence to the place of work (this is a follow-up to the enhancement made in 2012Q3). Residence information is used as an input to the unit-to-worker (U2W) process, which imputes establishments to jobs at multi-establishment firms. These improvements may result in some shifts in the reported employment within states.

Employment Shifts in NAICS 6241 and 8141 (home-based services)

Beginning with 2013Q1 data, the Bureau of Labor Statistics (BLS) has implemented a nationwide administrative change in coding establishments that provide non-medical, home-based services for the

elderly and people with disabilities. Please refer to http://www.bls.gov/news.release/archives/cewbd_12102013.htm for details.

To better classify such establishments, many states have switched such coding schemes from NAICS 814110 - Private Households, to NAICS 624120 - Services for the Elderly and Persons with Disabilities. This change has had a corresponding impact on the QWI. Users should generally expect to see an increase in NAICS 6241 jobs, coupled with a decrease in NAICS 8141 jobs. Employment shifts between 2012Q4 and 2013Q1 are particularly prominent in Florida, Kansas, Missouri, Nebraska, Oklahoma, Rhode Island, Texas, and Utah.

States not included in R2013Q4

The following states were not available for QWI production in this cycle because of delays in provision of input files or issues with input data received from Census state partners:

- California
- New Jersey
- New Mexico
- Wyoming
- Massachusetts, Puerto Rico, Virgin Islands (*experimental production, pending initial release*)

Jul - Sep 2013 (R2013Q3)

Geocode Revisions

The Geocoded Address List (GAL) is the process that adds and updates geographic information to administrative data during the production of QWI data. In 2013, LEHD updated its GAL processing. The new GAL process reduces geographic reporting errors based on its improved resolution and processing of address data, improved geographic confidence and certainty, and updated data structure. These geographic improvements may lead to shifts in the intrastate distribution of employment, such as county-level employment totals.

QWI Time Series Adjustments

A general review of the QWI data series identified several states and quarters that contained significant data quality issues, primarily related to unemployment insurance wage record reporting in the earlier part of the time series. As these data do not meet current quality standards, QWI time series for the following states will begin in the quarter noted:

- Florida: 1997Q4
- Illinois: 1993Q2
- Virginia: 1998Q3

Research in-progress on data imputation methodologies may permit QWI release of expanded time series in a future quarter.

States not included in R2013Q3

The following states were skipped in this production cycle because of delays in provision of input files or issues with input data received from Census state partners:

- Louisiana
- New Mexico

- California
- Massachusetts, Puerto Rico, Virgin Islands (*experimental production, pending initial release*)

Jul - Sep 2012 (R2012Q3)

Improvement to Longitudinal Residential Address

LEHD has incorporated an improvement to the residential address data used to impute place of work to jobs, as part of the unit-to-worker (U2W) process. The expanded address data should generally improve the accuracy of employment estimates for multi-establishment firms. Users may observe some shifts in the geographic distribution of employment within states.

Jan - Mar 2012 (R2012Q1)

Worker-Establishment Assignment

In processing the QWI, an imputation method is used to impute establishments to jobs at multi-establishment firms. This process, referred to as unit-to-worker (or U2W), was found to have difficulty processing data for firms that experience significant changes in establishment structure. In response, the U2W process has been revised to improve processing and create more reliable estimates. This may result in some shifts in the geographic distribution of employment within states.

Oct - Dec 2008 (R2008Q4)

Successor-Predecessor Adjustment, Calculation of Average Earnings for Full Quarter Separations

The methodology for adjusting employment flows for successor-predecessor transitions has been improved, which has had the greatest impact on the calculation of full quarter employment flows. In addition, we have corrected an error in the calculation of average earnings from full quarter separations. All current and historical QWI have been adjusted. For more information on this update, please visit: http://lehd.ces.census.gov/doc/QWI_Update_081020.pdf.

State-Specific Notices

California

Public sector worker reporting

Large shares of public sector workers are not reported prior to 2000. This reporting change has a particular impact on the education, health care, and public administration industries (NAICS 61, 62, 92).

Industry reporting

We have noted issues with the 1997-2002 transition of NAICS codes for several sectors, especially NAICS sector 55 (Management of Companies), resulting in large fluctuations in employment estimates during this period. Researchers are currently investigating methods to develop estimates with improved consistency.

Delaware

A legislative change in Delaware brought a large number of nonprofit firms into the UI system. As the universe of QWI is UI-covered employment, this change increased the universe of workers in Delaware's QWI by a significant margin, particularly in the health care and education sectors, starting in 2004Q2.

Florida

Changes in the reporting of unemployment insurance (UI) wage records for jobs associated with Professional Employer Organizations (PEO) were implemented in Florida in 2013, in accordance with state legislation. These changes have resulted in difficulty matching records between the UI wage file and the Quarterly Census of Employment and Wages (QCEW), causing approximately 1.5% of jobs in Florida to be omitted when calculating the Quarterly Workforce Indicators. The bias at higher levels is generally small because the jobs are well dispersed across industry and geography, and weighting factors largely correct the employment counts. However, users may encounter shifts in small cells because of missing jobs. In addition, unusual spikes may be observed in separation measures, particularly in the fourth quarter of 2012. Future research will be conducted to correct this issue.

Hawaii

A large portion of public sector workers is not included in the data for the entire time series.

Iowa

There are unusual shifts in the firm age time series between 2008 and 20012, particularly in the youngest and oldest firms. We are researching the inconsistencies in the longitudinal assignment of firm age, and expect to have a corrected time series in a later release.

Missouri

There is an unusually high mismatch rate between firm identifiers on the unemployment insurance wage records and corresponding employers in the QCEW. This results in higher imputations in industry and geography for jobs that cannot be matched to employer records. While the mismatch is not sufficiently severe to preclude publication of the data, users should be aware of the issue. Research staff is currently investigating edits to improve the match rate across the job and employer data.

Mississippi

There is an unusually high mismatch rate between firm identifiers on the unemployment insurance wage records and corresponding employers in the QCEW. This results in higher imputations in industry and geography for jobs that cannot be matched to employer records. While the mismatch is not sufficiently severe to preclude publication of the data, users should be aware of the issue. Research staff is currently investigating edits to improve the match rate across the job and employer data.

New Jersey

Due to a data issue in 2003 Unemployment Insurance wage files from New Jersey, there is a noticeable drop in employment measures for startup firms (0 to 1 year old) in that year. The series returns to stable levels in 2004Q2.