

# Quarterly Workforce Indicators

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## *Data Notice – NAICS 2012*

### **Summary of Changes**

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.

### **Industry Coding Algorithm**

NAICS is the current standard used by Federal statistical agencies in classifying business establishments for the purpose of publishing statistical data related to the U.S. business economy. Contemporaneous industry codes for establishments in the LEHD Infrastructure are obtained from the Quarterly Census of Employment and Wages (QCEW) microdata, dating back to 1990. Historically, codes have been reported in a variety of coding systems, including SIC (Standard Industrial Classification) 1987 revision, and the 1997, 2002, 2007, and now 2012 NAICS. For time consistency, industry codes reported in historical QCEW microdata according to older systems/versions are updated to the latest system/version using a series of edits and imputations. A set of industry concordance tables published by the Census Bureau<sup>1</sup> show how industries reported in older coding systems/versions may appear in a newer coding system/version. Although there is often a one-to-one correspondence between the old and the new industry code, in many cases there is a one-to-many relationship. Using empirical data from the QCEW, we enhance the concordances for one-to-many relationships by estimating the probability an establishment in one coding system/version is reported in each corresponding code in the new system/version. The resulting probabilistic crosswalks are used as needed to impute a new industry code conditional on the value of a reported industry code from a different coding system/version.

Edits and imputations are applied at the establishment level with the goal of preserving longitudinal consistency across coding systems - if an establishment's industry code in the old and new coding system corresponds to a transition reported on the appropriate probabilistic crosswalk, the later industry code is applied to the earlier data for that establishment. However, if the pair of industry codes does not appear in the crosswalk, then an "industry change" has occurred. In the period before the change, the probabilistic crosswalk is applied to the old code to impute an industry code in the newer coding system. At the completion of this process, all establishments will have industry codes from the latest coding system/version in all quarters that data is available.

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<sup>1</sup> <https://www.census.gov/eos/www/naics/concordances/concordances.html>

## Data Quality Results

It is to be expected that there will be changes to the historical data series as a result of the transition to NAICS 2012, the modified editing rules, and the new imputation methodology. High level (industry sector) results display only small shifts after the transition to NAICS 2012. The one sector that appears to be significantly affected is construction (NAICS 23), which increased by roughly 2-3%. This is largely related to improved handling of irregular codes reported in subsector 238, Specialty Trade Contractors. Several other subsector (3-digit) and industry group (4-digit) shifts are related to 2007-2012 coding system changes, particularly in the retail sector (44-45). Overall, employment counts in the QWI have moved closer to comparable data in the public QCEW.

A number of states may also experience shifts in the historical series for NAICS 55, Management of Companies, especially during the 2000-2002 timeframe when NAICS was first implemented. These shifts result from inconsistent reporting of NAICS 55, which can be used to differentiate a company's separate central administrative office locations from worksites that operate in another industry (e.g., manufacturing or retail). The editing rules have been modified to carry NAICS 55 backwards from time periods with more consistent coding, minimizing large jumps that had been observed previously.

## Future Coding System Changes

With this iteration, the infrastructure has been significantly enhanced to more easily accommodate future changes to the coding system. We expect the QWI will migrate to NAICS 2017 shortly after the codes begin to appear in the QCEW source data.

## Further Information

Please contact us at [ces.qwi.feedback@census.gov](mailto:ces.qwi.feedback@census.gov) with any questions or comments.