

Jobs and Earnings by Industry and Sex

Data Sources and Limitations

Background

Beginning with data from the first quarter of 2016, The Vermont Department of Labor is publishing a new data product: Earnings and Jobs by Industry and Sex. This data is based on quarterly wage records and will be published concurrently with publication of each Quarterly Census of Employment and Wages (QCEW) report. Quarterly historical data from 2005 onward is also available. All historical data is subject to revision.

A wage record is a mandatory report of persons currently employed by a firm under the Unemployment Insurance (UI) program. Wage records are submitted quarterly and contain the total wages paid to each employee during the quarter as well as the sex of the employee. Because firms are organized by Unemployment Insurance account number, results are organized at the firm level. For firms with multiple individual establishments, employment is recorded at the firm's primary location and in the industry of that location's primary business activity.

The Economic & Labor Market Information Division will publish this data aggregated by industry sector and sex. This will replace the "female counts" in our Quarterly Census of Employment and Wages publication. The QCEW program has ceased publishing data specific to female counts. The following section provides additional detail about wage records and explains some important conceptual differences between QCEW employment counts and wage records.

This change is being made to improve sex-related data quality. The use of wage records creates opportunities for more aggregate analysis into research topics such as multiple job holders, tenure, and career paths. Wage record counts are also far more efficient to process, thereby relieving our staff of a significant data production burden.

Differences in Employment Concepts and Data Collected

QCEW employment counts are a census of all employment covered by unemployment insurance (UI) during the reference week of a given month. Typically, the reference week includes the 12th of the month.

That data is published as monthly counts and quarterly averages. Female counts are only collected for the final month of each quarter. That information is used to produce quarterly and annual female count estimates.

Aggregated wage records provide a count of individuals that are employed by a firm and covered by UI during the referenced quarter. Each instance of a person being employed by a firm creates a single count of employment regardless of the length or dates of that employment. A person who works at more than one firm over the course of a quarter will create more than one wage record. Wage records contain a sex field. In the past two years over 99% of all records included a reported sex.

This distinction is important to understanding a comparison of the data each produces. An example might better demonstrate the conceptual difference: A firm hires a different person each month for two months during a quarter to complete a one-week project. Each of those two hirings coincide with a QCEW reference week. The monthly QCEW data would report this as 1 job in each of two months during the quarter. Quarterly QCEW data would report this as .66 average employment over the quarter. The wage record analysis would report this as 2 employment instances over the quarter.

In addition, any employment that does not extend over a period of time that includes a QCEW reference week will not appear as employment in QCEW. The same employment would appear as an employment instance in a wage records analysis. A person hired for a short-term project during the last week of a month would be reported as one count of employment in wage records and zero counts of employment in QCEW. A person hired by the same firm for two separate projects on two separate occasions over a quarter would be reflected as one count in wage records. If the firm had instead hired a different person for each occasion, it would be reflected as two counts in wage records.

The net effect of these differences is that wage records produce larger absolute counts than QCEW.

Comparison of Results

While the counts are larger in wage records, the share of employment held by females is similar using both methods. Using first quarter 2015 as a representative example, we find that the share of employment held by females is 51.2% in wage records and 50.6% in QCEW. Reviewing the data by industry, most

industries show a discrepancy of three percentage points or less between wage records and QCEW. The largest three industries show discrepancies of two percentage points or less.

Limitations and Known Issues

Unidentified Sex

A small portion of wage records do not record sex. In the most recent four years this accounted for less than one percent of all records. This is a significant improvement from a decade ago when approximately nine percent of all records failed to record sex. Records that do not include sex are currently removed from any analysis.

We reduce the number of records with unidentified sexes by comparing identifiable information across quarters and worksites.

Zero-Wage Records

Each quarter, a few dozen records indicate total wages of zero. These records are excluded.

Seasonal Factors

No attempt is made to seasonally adjust wage record data. As with QCEW, the data is collected and published without regard to expected seasonal movements.

For questions and more information, please contact:

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