
LEHD Public Use Data Schema V4.1-rc2

Contents

| | | |
|----------|---|-----------|
| 1 | Purpose | 1 |
| 2 | File naming | 1 |
| 3 | Extends | 1 |
| 4 | Supersedes | 1 |
| 5 | Basic Schema | 1 |
| 5.1 | Generic structure | 1 |
| 5.2 | Identifiers | 3 |
| 5.2.1 | Mapping for Identifiers | 3 |
| 5.2.2 | Identifiers for j2j | 4 |
| 5.2.3 | Identifiers for j2jod | 5 |
| 5.2.4 | Identifiers for qwi | 6 |
| 5.3 | Indicators | 7 |
| 5.3.1 | National QWI and state-level QWI (QWIPU) | 7 |
| 5.3.2 | National QWI and state-level QWI rates (QWIPUR) | 8 |
| 5.3.3 | Job-to-job flow counts (J2J) | 9 |
| 5.3.4 | Job-to-job flow rates (J2JR) | 10 |
| 5.3.5 | Job-to-job flow Origin-Destination (J2JOD) | 11 |
| 5.4 | Variability measures | 12 |
| 5.4.1 | Generic structure | 12 |
| 5.4.2 | National QWI and state-level QWI | 14 |
| 5.4.3 | National QWI and state-level QWI rates | 15 |
| 5.4.4 | Job-to-job flow counts (J2J) | 16 |
| 5.4.5 | Job-to-job flow rates (J2JR) | 16 |
| 5.4.6 | Job-to-job flow Origin-Destination (J2JOD) | 16 |
| 6 | Categorical Variables | 17 |
| 6.1 | agegrp | 17 |
| 6.2 | education | 17 |
| 6.3 | ethnicity | 17 |
| 6.4 | firmage | 17 |
| 6.5 | firmsize | 18 |
| 6.6 | ownercode | 18 |
| 6.7 | periodicity | 18 |
| 6.8 | quarter | 18 |

| | | |
|----------|--|-----------|
| 6.9 | race | 18 |
| 6.10 | seasonadj | 19 |
| 6.11 | sex | 19 |
| 6.12 | stusps | 19 |
| 6.13 | Industry | 21 |
| 6.13.1 | Industry levels | 21 |
| 6.13.2 | Industry | 21 |
| 6.14 | Geography | 22 |
| 6.14.1 | Geographic levels | 22 |
| 6.14.2 | National and state-level values | 22 |
| 6.14.3 | Detailed state and substate level values | 23 |
| 6.15 | Aggregation level | 25 |
| 7 | Status flags | 27 |
| 8 | Changes | 28 |
| 8.1 | This version (revisions) | 28 |
| 8.2 | Version 4.1-rc1 from 4.0.5 | 28 |
| 8.2.1 | In more detail | 28 |
| 8.3 | Version 4.1-rc2 from 4.1-rc1 | 29 |

([Printable version](#))

**Important**

This specification is draft. Feedback is welcome. Please write us at lars.vilhuber@census.gov.

1 Purpose

The public-use data from the Longitudinal Employer-Household Dynamics Program, including the Quarterly Workforce Indicators (QWI) and Job-to-Job Flows (J2J), are available for download with the following data schema. These data are available as Comma-Separated Value (CSV) files through the LEHD website's Data page at <http://lehd.ces.census.gov/data/> and through LED Extraction Tool at <http://ledextract.ces.census.gov/>.

This document describes the data schema for LEHD files. LEHD-provided SHP files are separately described in [lehd_shapefiles.pdf](#). For each variable, a set of allowable values is defined. Definitions are provided as CSV files, with header variable definitions. Changes relative to the original v4.0 version are listed [at the end](#).

2 File naming

The naming conventions of the data files is documented in [lehd_csv_naming.pdf](#).

3 Extends

This version reimplements some features from V4.0. Many files compliant with LEHD or QWI Schema v4.0 will also be compliant with this schema, but compatibility is not guaranteed.

4 Supersedes

This version supersedes V4.0.5, for files released as of RXXXX.

5 Basic Schema

Each data file is structured as a CSV file. The first columns contain [\[identifiers\]](#), subsequent columns contain [\[indicators\]](#), followed by [status flags](#).

5.1 Generic structure

| Column name |
|-----------------|
| [Identifier1] |
| [Identifier2] |
| [Identifier3] |
| [...] |
| [Indicator 1] |
| [Indicator 2] |
| [Indicator 3] |

| Column name |
|-------------------|
| [...] |
| [Status Flag 1] |
| [Status Flag 2] |
| [Status Flag 3] |
| [...] |

Note: A full list of indicators for each type of file are shown below in the [Indicators](#) section. While all indicators are included in the CSV files, only the requested indicators will be included in data outputs from the LED Extraction Tool.

5.2 Identifiers

Records, unless otherwise noted, are parts of time-series data. Unique record identifiers are noted below, by file type. Identifiers without the year and quarter component can be considered a series identifier.

5.2.1 Mapping for Identifiers

([lehd_mapping_identifiers.csv](#))

Each of the released files has a set of variables uniquely identifying records (*Identifiers*). The table below relates the set of identifier specifications to the released files. The actual CSV files containing the identifiers for each set are listed after this table. Each identifier can take on a specified list of values, documented in the section on [Categorical Variables](#).

| identifiers | QWI | NQWI | J2J | J2JR | J2JOD | LODES |
|------------------------|------------|-------------|------------|-------------|--------------|--------------|
| lehd_identifiers_qwi | 1 | 1 | | | | |
| lehd_identifiers_j2j | | | 1 | 1 | | |
| lehd_identifiers_j2jod | | | | | 1 | |

5.2.2 Identifiers for j2j

(lehd_identifiers_j2j.csv)

| Variable | Type | label |
|-----------------|-------------|--|
| periodicity | Char(1) | Periodicity of report |
| seasonadj | Char(1) | Seasonal Adjustment Indicator |
| geo_level | Char(1) | Group: Geographic level of aggregation |
| geography | Char(8) | Group: Geography code |
| ind_level | Char(1) | Group: Industry level of aggregation |
| industry | Char(5) | Group: Industry code |
| ownercode | Char(3) | Group: Ownership group code |
| sex | Char(1) | Group: Gender code |
| agegrp | Char(3) | Group: Age group code (WIA) |
| race | Char(2) | Group: race |
| ethnicity | Char(2) | Group: ethnicity |
| education | Char(2) | Group: education |
| firmage | Char(1) | Group: Firm Age group |
| firmsize | Char(1) | Group: Firm Size group |
| year | Num | Time: Year |
| quarter | Num | Time: Quarter |
| agg_level | Num | Aggregation Level Indicator |

5.2.3 Identifiers for j2jod

([lehd_identifiers_j2jod.csv](#))

| Variable | Type | label |
|-----------------|-------------|---|
| periodicity | Char(1) | Periodicity of report |
| seasonadj | Char(1) | Seasonal Adjustment Indicator |
| geo_level | Char(1) | Group: Geographic level of aggregation of destination job |
| geography | Char(8) | Group: Geography code of destination job |
| ind_level | Char(1) | Group: Industry level of aggregation of destination job |
| industry | Char(5) | Group: Industry code of destination job |
| ownercode | Char(3) | Group: Ownership group code of destination job |
| sex | Char(1) | Group: Gender code |
| agegrp | Char(3) | Group: Age group code (WIA) |
| race | Char(2) | Group: race |
| ethnicity | Char(2) | Group: ethnicity |
| education | Char(2) | Group: education |
| firmage | Char(1) | Group: Firm Age group |
| firmsize | Char(1) | Group: Firm Size group |
| year | Num | Time: Year |
| quarter | Num | Time: Quarter |
| agg_level | Num | Aggregation Level Indicator |
| geo_level_orig | Char(1) | Group: Geographic level of aggregation of origin job |
| geography_orig | Char(8) | Group: Geography code of origin job |
| ind_level_orig | Char(1) | Group: Industry level of aggregation of origin job |
| industry_orig | Char(5) | Group: Industry code of origin job |
| ownercode_orig | Char(3) | Group: Ownership group code of origin job |
| firmage_orig | Char(1) | Group: Firm Age group of origin job |
| firmsize_orig | Char(1) | Group: Firm Size group of origin job |

5.2.4 Identifiers for qwi([lehd_identifiers_qwi.csv](#))

| Variable | Type | label |
|-----------------|-------------|--|
| periodicity | Char(1) | Periodicity of report |
| seasonadj | Char(1) | Seasonal Adjustment Indicator |
| geo_level | Char(1) | Group: Geographic level of aggregation |
| geography | Char(8) | Group: Geography code |
| ind_level | Char(1) | Group: Industry level of aggregation |
| industry | Char(5) | Group: Industry code |
| ownercode | Char(3) | Group: Ownership group code |
| sex | Char(1) | Group: Gender code |
| agegrp | Char(3) | Group: Age group code (WIA) |
| race | Char(2) | Group: race |
| ethnicity | Char(2) | Group: ethnicity |
| education | Char(2) | Group: education |
| firmage | Char(1) | Group: Firm Age group |
| firmsize | Char(1) | Group: Firm Size group |
| year | Num | Time: Year |
| quarter | Num | Time: Quarter |

5.3 Indicators

The following tables and associated mapping files list the indicators available on each file. The '*Indicator Variable*' is the short name of the variable on the CSV files, suitable for machine processing in a wide variety of statistical applications. When given, the '*Alternate name*' may appear in related documentation and articles. The '*Status Flag*' is used to indicate publication or data quality status (see [Status Flags](#)). The '*Indicator Name*' is a more verbose description of the indicator.

5.3.1 National QWI and state-level QWI (QWIPU)

([variables_qwi.csv](#))

| Indicator Variable | Alternate name | Status Flag | Indicator Name | Units |
|--------------------|----------------|---------------|--|---------|
| Emp | B | sEmp | Beginning-of-Quarter Employment | Count |
| EmpEnd | E | sEmpEnd | End-of-Quarter Employment | Count |
| EmpS | F | sEmpS | Full-Quarter Employment (Stable) | Count |
| EmpSpv | Fpv | sEmpSpv | Full-Quarter Employment in the Previous Quarter | Count |
| EmpTotal | M | sEmpTotal | Employment - Reference Quarter | Count |
| HirA | A | sHirA | Hires (All Accessions) | Count |
| HirN | H | sHirN | New Hires | Count |
| HirR | R | sHirR | Recall Hires | Count |
| Sep | S | sSep | Separations (All) | Count |
| HirAEnd | CA | sHirAEnd | End-of-Quarter Hires | Count |
| HirAEndR | CAR | sHirAEndR | End-of-Quarter Hiring Rate | Rate |
| SepBeg | CS | sSepBeg | Beginning-of-Quarter Separations | Count |
| SepBegR | CSR | sSepBegR | Beginning-of-Quarter Separation Rate | Rate |
| HirAS | FA | sHirAS | Hires (All Hires into Full-Quarter Employment) | Count |
| HirNS | FH | sHirNS | New Hires (New Hires into Full-Quarter Employment) | Count |
| SepS | FS | sSepS | Separations (Flows out of Full-Quarter Employment) | Count |
| SepSnx | FSnx | sSepSnx | Separations in the Next Quarter (Flows out of Full-Quarter Employment) | Count |
| TurnOvrS | FT | sTurnOvrS | Turnover (Stable) | Rate |
| FrmJbGn | JC | sFrmJbGn | Firm Job Gains (Job Creation) | Count |
| FrmJbLs | JD | sFrmJbLs | Firm Job Loss (Job Destruction) | Count |
| FrmJbC | JF | sFrmJbC | Firm Job Change (Net Change) | Count |
| HirAEndRepl | EI | sHirAEndRepl | Replacement Hires | Count |
| HirAEndReplr | EIR | sHirAEndReplr | Replacement Hiring Rate | Rate |
| FrmJbGnS | FJC | sFrmJbGnS | Firm Job Gains (Stable) | Count |
| FrmJbLsS | FJD | sFrmJbLsS | Firm Job Loss (Stable) | Count |
| FrmJbCS | FJF | sFrmJbCS | Firm Job Change (Stable; Net Change) | Count |
| EarnS | ZW3 | sEarnS | Average Monthly Earnings (Full-Quarter Employment) | Dollars |
| EarnBeg | ZW1 | sEarnBeg | Average Monthly Earnings (Beginning-of-Quarter Employment) | Dollars |
| EarnHirAS | ZWFA | sEarnHirAS | Average Monthly Earnings (All Hires into Full-Quarter Employment) | Dollars |
| EarnHirNS | ZWFH | sEarnHirNS | Average Monthly Earnings (New Hires into Full-Quarter Employment) | Dollars |
| EarnSepS | ZWFS | sEarnSepS | Average Monthly Earnings (Flows out of Full-Quarter Employment) | Dollars |
| Payroll | W1 | sPayroll | Total Quarterly Payroll | Dollars |

5.3.2 National QWI and state-level QWI rates (QWIPUR)

Rates are computed from published data, and are provided as a convenience. The column **Base** indicates the denominator used to compute the rate.

([variables_qwir.csv](#))

| Indicator Variable | Alternate name | Status Flag | Indicator Name | Units | Base |
|--------------------|----------------|---------------|---|-------|-------------------|
| HirAR | AR | sHirAR | Hiring Rate (All Accessions) | Rate | (Emp + EmpEnd)/2 |
| HirNR | HR | sHirNR | New Hiring Rate | Rate | (Emp + EmpEnd)/2 |
| HirRR | RR | sHirRR | Recall Rate | Rate | (Emp + EmpEnd)/2 |
| SepR | SR | sSepR | Separation Rate (All Separations) | Rate | (Emp + EmpEnd)/2 |
| HirAEndR | CAR | sHirAEndR | End-of-Quarter Hiring Rate | Rate | (Emp + EmpEnd)/2 |
| SepBegR | CSR | sSepBegR | Beginning-of-Quarter Separation Rate | Rate | (Emp + EmpEnd)/2 |
| HirAsR | FAR | sHirAsR | Hiring Rate (Flows into Full-Quarter Employment) | Rate | (EmpSpv + EmpS)/2 |
| HirNsR | FHR | sHirNsR | New Hiring Rate (New Hires to Full-Quarter Status) | Rate | (EmpSpv + EmpS)/2 |
| SepSR | FSR | sSepSR | Separation Rate (Flows out of Full-Quarter Employment) | Rate | (EmpSpv + EmpS)/2 |
| SepSnxR | FSnxR | sSepSnxR | Separation Rate in the Next Quarter (Flow out of Full-Quarter Employment) | Rate | (EmpSpv + EmpS)/2 |
| TurnOvrSR | FTR | sTurnOvrSR | Turnover Rate (Stable) | Rate | 2*EmpS |
| FrmJbGnR | JCR | sFrmJbGnR | Firm Job Gain Rate (Job Creation Rate) | Rate | (Emp + EmpEnd)/2 |
| FrmJbLsR | JDR | sFrmJbLsR | Firm Job Loss Rate (Job Destruction Rate) | Rate | (Emp + EmpEnd)/2 |
| FrmJbCR | JFR | sFrmJbCR | Firm Job Change Rate (Net Change Rate) | Rate | (Emp + EmpEnd)/2 |
| HirAEndReplR | EIR | sHirAEndReplR | Replacement Hiring Rate | Rate | (Emp + EmpEnd)/2 |
| FrmJbGnSR | FJCR | sFrmJbGnSR | Firm Job Gain Rate (Stable) | Rate | (EmpSpv + EmpS)/2 |
| FrmJbLsSR | FJDR | sFrmJbLsSR | Firm Job Loss Rate (Stable) | Rate | (EmpSpv + EmpS)/2 |
| FrmJbCSR | FJFR | sFrmJbCSR | Firm Job Change Rate (Stable; Net Change Rate) | Rate | (EmpSpv + EmpS)/2 |

5.3.3 Job-to-job flow counts (J2J)

(variables_j2j.csv)

| Indicator Variable | Alternate Name | Status Flag | Indicator Name | Units |
|---------------------------|-----------------------|--------------------|--|--------------|
| MHire | all_doma2 | sMHire | Hires | Count |
| MSep | all_doms2 | sMSep | Separations | Count |
| MJobStart | all_dest | sMJobStart | Main Job Starts | Count |
| MJobEnd | all_orig | sMJobEnd | Main Job Ends | Count |
| EEHire | ee_doma2 | sEEHire | Job-to-Job Hires (Continuous Employment) | Count |
| EESep | ee_doms2 | sEESep | Job-to-Job Separations (Continuous Employment) | Count |
| AQHire | aq_doma2 | sAQHire | Job-to-Job Hires (Brief Nonemployment) | Count |
| AQSep | aq_doms2 | sAQSep | Job-to-Job Separations (Brief Nonemployment) | Count |
| J2JHire | eeall_doma2 | sJ2JHire | Job-to-Job Hires | Count |
| J2JSep | eeall_doms2 | sJ2JSep | Job-to-Job Separations | Count |
| NEHire | ne_doma2 | sNEHire | Hires from Nonemployment | Count |
| ENSep | en_doms2 | sENSep | Separations to Nonemployment | Count |
| NEPersist | ne2_doma2 | sNEPersist | Hires from Persistent Nonemployment | Count |
| ENPersist | en2_doms2 | sENPersist | Separations to Persistent Nonemployment | Count |
| NEFullQ | ne2p_doma2 | sNEFullQ | Hires from Full-Quarter Nonemployment | Count |
| ENFullQ | en2p_doms2 | sENFullQ | Separations to Full-Quarter Nonemployment | Count |
| MainB | domB | sMainB | Employment (Beginning of Quarter) | Count |
| MainE | domE | sMainE | Employment (End of Quarter) | Count |

5.3.4 Job-to-job flow rates (J2JR)

([variables_j2jr.csv](#))

Rates are computed from published data, and are provided as a convenience. The column **Base** indicates the denominator used to compute the rate.

| Indicator Variable | Alternate Name | Status Flag | Indicator Name | Units | Base |
|--------------------|------------------|----------------|--|-------|-----------------|
| MHireR | all_doma2_rate | sMHireR | Hires | Rate | (MainB+MainE)/2 |
| MSepR | all_doms2_rate | sMSepR | Separations | Rate | (MainB+MainE)/2 |
| MJobStartR | all_dest_rate | sMJobStartRate | Main Job Starts | Rate | (MainB+MainE)/2 |
| MJobEndR | all_orgin_rate | sMJobEndRate | Main Job Ends | Rate | (MainB+MainE)/2 |
| EEHireR | eea_rate | sEEHireRate | Job-to-Job Hires (Continuous Employment) | Rate | (MainB+MainE)/2 |
| EESepR | ees_rate | sEESepR | Job-to-Job Separations (Continuous Employment) | Rate | (MainB+MainE)/2 |
| AQHireR | aq_doma2_rate | sAQHireR | Job-to-Job Hires (Brief Nonemployment) | Rate | (MainB+MainE)/2 |
| AQSepR | aq_doms2_rate | sAQSepR | Job-to-Job Separations (Brief Nonemployment) | Rate | (MainB+MainE)/2 |
| J2JHireR | eeall_doma2_rate | sJ2JHireR | Job-to-Job Hires | Rate | (MainB+MainE)/2 |
| J2JSepR | eeall_doms2_rate | sJ2JSepR | Job-to-Job Separations | Rate | (MainB+MainE)/2 |
| NEHireR | ne_doma2_rate | sNEHireR | Hires from Nonemployment | Rate | (MainB+MainE)/2 |
| ENSepR | en_doms2_rate | sENSepR | Separations to Nonemployment | Rate | (MainB+MainE)/2 |
| NEPersistR | ne2_doma2_rate | sNEPersistR | Hires from Persistent Nonemployment | Rate | (MainB+MainE)/2 |
| ENPersistR | en2_doms2_rate | sENPersistR | Separations to Persistent Nonemployment | Rate | (MainB+MainE)/2 |
| NEFullQR | ne2p_doma2_rate | sNEFullQR | Hires from Full-Quarter Nonemployment | Rate | (MainB+MainE)/2 |
| ENFullQR | en2p_doms2_rate | sENFullQR | Separations to Full-Quarter Nonemployment | Rate | (MainB+MainE)/2 |

5.3.5 Job-to-job flow Origin-Destination (J2JOD)

(variables_j2jod.csv)

| Indicator Variable | Alternate Name | Status Flag | Indicator Name | Units |
|---------------------------|-----------------------|--------------------|---|--------------|
| EE | ee | sEE | Job-to-Job Flows (Continuous Employment) | Count |
| AQHire | aq_doma2 | sAQHire | Job-to-Job Flows (Brief Nonemployment) | Count |
| J2J | ee+aq_doma2 | sJ2J | Job-to-Job Flows | Count |
| EEFullQ | fee | sEEFullQ | Stable Job-to-Job Flows (Continuous Employment) | Count |
| AQFullQHire | faq_doma2 | sAQFullQHire | Stable Job-to-Job Flows (Brief Nonemployment) | Count |
| J2JFullQ | fee+faq_doma2 | sJ2JFullQ | Stable Job-to-Job Flows | Count |

5.4 Variability measures

The following tables and associated mapping files list the variability measures available on each file. The '*Variability Measure*' is the short name of the variable on the CSV files, suitable for machine processing in a wide variety of statistical applications. When given, the '*Alternate Name*' may appear in related documentation and articles. The '*Variable Name*' is a more verbose description of the variability measure.

Six variability measures are published:

- Total variability, prefixed by vt_
- Standard error, prefixed by st_, and computed as the square root of Total Variability
- Between-implicate variability, prefixed by vb_
- Average within-implicate variability, prefixed by vw_
- Degrees of freedom, prefixed by df_
- Missingness ratio, prefixed by mr_

A missing variability measure indicates a structural zero in the corresponding indicator. This is currently not associated with a flag.

5.4.1 Generic structure

| Column name |
|--|
| [Identifier1] |
| [Identifier2] |
| [Identifier3] |
| [...] |
| [Standard error for Indicator 1] |
| [Standard error for Indicator 2] |
| [Standard error for Indicator 3] |
| [...] |
| [Total variation for Indicator 1] |
| [Total variation for Indicator 2] |
| [Total variation for Indicator 3] |
| [...] |
| [Between-implicate variability for Indicator 1] |
| [Between-implicate variability for Indicator 2] |
| [Between-implicate variability for Indicator 3] |
| [...] |
| [Average within-implicate variability for Indicator 1] |
| [Average within-implicate variability for Indicator 2] |
| [Average within-implicate variability for Indicator 3] |
| [...] |
| [Degrees of freedom for Indicator 1] |
| [Degrees of freedom for Indicator 2] |

| Column name |
|--|
| [Degrees of freedom for Indicator 3] |
| [...] |
| [Missingness ratio for Indicator 1] |
| [Missingness ratio for Indicator 2] |
| [Missingness ratio for Indicator 3] |
| [...] |

Note: A full list of indicators for each type of file are shown in the [Indicators](#) section. In the tables below, only a sample of variability measures are printed, but the complete list is available in the linked CSV schema files.

5.4.2 National QWI and state-level QWI

(variables_qwiv.csv)

| Variability measure | Alternate name | Variable name | Units |
|---------------------|----------------|--|-------|
| st_Emp | st_B | Standard error of Beginning-of-Quarter Employment | Count |
| st_EmpEnd | st_E | Standard error of End-of-Quarter Employment | Count |
| st_EmpS | st_F | Standard error of Full-Quarter Employment (Stable) | Count |
| ... | | | |
| vt_Emp | vt_B | Total variation of Beginning-of-Quarter Employment | Count |
| vt_EmpEnd | vt_E | Total variation of End-of-Quarter Employment | Count |
| vt_EmpS | vt_F | Total variation of Full-Quarter Employment (Stable) | Count |
| ... | | | |
| vb_Emp | vb_B | Between-implicate variability for Beginning-of-Quarter Employment | Count |
| vb_EmpEnd | vb_E | Between-implicate variability for End-of-Quarter Employment | Count |
| vb_EmpS | vb_F | Between-implicate variability for Full-Quarter Employment (Stable) | Count |
| ... | | | |
| ... | | | |
| df_Emp | df_B | Degrees of freedom for VT of Beginning-of-Quarter Employment | Count |
| df_EmpEnd | df_E | Degrees of freedom for VT of End-of-Quarter Employment | Count |
| df_EmpS | df_F | Degrees of freedom for VT of Full-Quarter Employment (Stable) | Count |
| ... | | | |
| mr_Emp | mr_B | Missingness ratio for Beginning-of-Quarter Employment | Count |
| mr_EmpEnd | mr_E | Missingness ratio for End-of-Quarter Employment | Count |
| mr_EmpS | mr_F | Missingness ratio for Full-Quarter Employment (Stable) | Count |

5.4.3 National QWI and state-level QWI rates

(variables_qwirv.csv)

| Variability measure | Alternate name | Variable name | Units |
|---------------------|----------------|--|-------|
| st_HirAR | st_AR | Standard error of Hiring Rate (All Accessions) | Rate |
| st_HirNR | st_HR | Standard error of New Hiring Rate | Rate |
| st_HirRR | st_RR | Standard error of Recall Rate | Rate |
| ... | | | |
| vt_HirAR | vt_AR | Total variation of Hiring Rate (All Accessions) | Rate |
| vt_HirNR | vt_HR | Total variation of New Hiring Rate | Rate |
| vt_HirRR | vt_RR | Total variation of Recall Rate | Rate |
| ... | | | |
| vb_HirAR | vb_AR | Between-implicate variability for Hiring Rate (All Accessions) | Rate |
| vb_HirNR | vb_HR | Between-implicate variability for New Hiring Rate | Rate |
| vb_HirRR | vb_RR | Between-implicate variability for Recall Rate | Rate |
| ... | | | |
| ... | | | |
| df_HirAR | df_AR | Degrees of freedom for VT of Hiring Rate (All Accessions) | Rate |
| df_HirNR | df_HR | Degrees of freedom for VT of New Hiring Rate | Rate |
| df_HirRR | df_RR | Degrees of freedom for VT of Recall Rate | Rate |
| ... | | | |
| mr_HirAR | mr_AR | Missingness ratio for Hiring Rate (All Accessions) | Rate |
| mr_HirNR | mr_HR | Missingness ratio for New Hiring Rate | Rate |
| mr_HirRR | mr_RR | Missingness ratio for Recall Rate | Rate |

5.4.4 Job-to-job flow counts (J2J)

Soon.

5.4.5 Job-to-job flow rates (J2JR)

Soon.

5.4.6 Job-to-job flow Origin-Destination (J2JOD)

Soon.

6 Categorical Variables

Categorical variable descriptions are displayed above each table, with the variable name shown in parentheses. Unless otherwise stated, every possible value/label combination for each categorical variable is listed. Please note that not all values will be available in every table.

6.1 agegrp

([label_agegrp.csv](#))

| agegrp | label |
|--------|------------------|
| A00 | All Ages (14-99) |
| A01 | 14-18 |
| A02 | 19-21 |
| A03 | 22-24 |
| A04 | 25-34 |
| A05 | 35-44 |
| A06 | 45-54 |
| A07 | 55-64 |
| A08 | 65-99 |

6.2 education

([label_education.csv](#))

| education | label |
|-----------|---|
| E0 | All Education Categories |
| E1 | Less than high school |
| E2 | High school or equivalent, no college |
| E3 | Some college or Associate degree |
| E4 | Bachelor's degree or advanced degree |
| E5 | Educational attainment not available (workers aged 24 or younger) |

6.3 ethnicity

([label_ethnicity.csv](#))

| ethnicity | label |
|-----------|------------------------|
| A0 | All Ethnicities |
| A1 | Not Hispanic or Latino |
| A2 | Hispanic or Latino |

6.4 firmage

([label_firmage.csv](#))

| firmage | label |
|---------|---------------|
| 0 | All Firm Ages |
| 1 | 0-1 Years |
| 2 | 2-3 Years |
| 3 | 4-5 Years |

| firmage | label |
|----------------|------------------------|
| 4 | 6-10 Years |
| 5 | 11+ Years |
| N | Firm Age Not Available |

6.5 firmsize

([label_firmsize.csv](#))

| firmsize | label |
|-----------------|-------------------------|
| 0 | All Firm Sizes |
| 1 | 0-19 Employees |
| 2 | 20-49 Employees |
| 3 | 50-249 Employees |
| 4 | 250-499 Employees |
| 5 | 500+ Employees |
| N | Firm Size Not Available |

6.6 ownercode

([label_ownercode.csv](#))

| ownercode | label |
|------------------|--------------------|
| A00 | All (1-5) |
| A01 | Federal government |
| A05 | All Private (5) |

6.7 periodicity

([label_periodicity.csv](#))

| periodicity | label |
|--------------------|----------------|
| A | Annual data |
| Q | Quarterly data |

6.8 quarter

([label_quarter.csv](#))

| quarter | label |
|----------------|--|
| 1 | 1st Quarter of the Year (January-March) |
| 2 | 2nd Quarter of the Year (April-June) |
| 3 | 3rd Quarter of the Year (July-September) |
| 4 | 4th Quarter of the Year (October-December) |

6.9 race

([label_race.csv](#))

| race | label |
|-------------|--------------|
| A0 | All Races |

| race | label |
|-------------|---|
| A1 | White Alone |
| A2 | Black or African American Alone |
| A3 | American Indian or Alaska Native Alone |
| A4 | Asian Alone |
| A5 | Native Hawaiian or Other Pacific Islander Alone |
| A6 | Some Other Race Alone (Not Used) |
| A7 | Two or More Race Groups |

6.10 seasonadj

([label_seasonadj.csv](#))

| seasonadj | label |
|------------------|-------------------------|
| S | Seasonally adjusted |
| U | Not seasonally adjusted |

6.11 sex

([label_sex.csv](#))

| sex | label |
|------------|--------------|
| 0 | All Sexes |
| 1 | Male |
| 2 | Female |

6.12 stusps

([label_stusps.csv](#))

| geography | stusps |
|------------------|---------------|
| 01 | AL |
| 02 | AK |
| 04 | AZ |
| 05 | AR |
| 06 | CA |
| 08 | CO |
| 09 | CT |
| 10 | DE |
| 11 | DC |
| 12 | FL |
| 13 | GA |
| 15 | HI |
| 16 | ID |
| 17 | IL |
| 18 | IN |
| 19 | IA |
| 20 | KS |
| 21 | KY |
| 22 | LA |
| 23 | ME |
| 24 | MD |
| 25 | MA |
| 26 | MI |

| geography | stusps |
|------------------|---------------|
| 27 | MN |
| 28 | MS |
| 29 | MO |
| 30 | MT |
| 31 | NE |
| 32 | NV |
| 33 | NH |
| 34 | NJ |
| 35 | NM |
| 36 | NY |
| 37 | NC |
| 38 | ND |
| 39 | OH |
| 40 | OK |
| 41 | OR |
| 42 | PA |
| 44 | RI |
| 45 | SC |
| 46 | SD |
| 47 | TN |
| 48 | TX |
| 49 | UT |
| 50 | VT |
| 51 | VA |
| 53 | WA |
| 54 | WV |
| 55 | WI |
| 56 | WY |
| 72 | PR |
| 78 | VI |

6.13 Industry

6.13.1 Industry levels

([label_ind_level.csv](#))

| ind_level | label |
|-----------|-----------------------|
| A | All Industries |
| S | NAICS Sectors |
| 3 | NAICS Subsectors |
| 4 | NAICS Industry Groups |

6.13.2 Industry

([label_industry.csv](#))

Only a small subset of available values shown. The 2012 NAICS (North American Industry Classification System) is used for all years. QWI releases prior to R2015Q3 used the 2007 NAICS classification (see [Schema v4.0.1](#)). For a full listing of all valid 2012 NAICS codes, see <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2012>.

| industry | label |
|----------|---|
| 00 | All NAICS Sectors |
| 000 | All NAICS Subsectors |
| 0000 | All NAICS Industry Groups |
| 11 | Agriculture, Forestry, Fishing and Hunting |
| 111 | Crop Production |
| 1111 | Oilseed and Grain Farming |
| 1112 | Vegetable and Melon Farming |
| ... | |
| 2382 | Building Equipment Contractors |
| 2383 | Building Finishing Contractors |
| 2389 | Other Specialty Trade Contractors |
| 31-33 | Manufacturing |
| 311 | Food Manufacturing |
| 3111 | Animal Food Manufacturing |
| 3112 | Grain and Oilseed Milling |
| 3113 | Sugar and Confectionery Product Manufacturing |
| ... | |

6.14 Geography

6.14.1 Geographic levels

Geography labels for data files are provided in separate files, by scope. Each file *label_geography_SCOPE.csv* may contain one or more types of records as flagged by **geo_level**. For convenience, a composite file containing all geocodes is available as *label_geography.csv*. The 2015 vintage of **Census TIGER/Line geography** is used for all tabulations as of the R2015Q4 release.

Shapefiles are described in a [separate document](#).

(*label_geo_level.csv*)

| geo_level | label | description | sourceurl |
|------------------|--|---|---|
| B | Metropolitan/Micropolitan (complete) | Identifies 5-digit CBSA code provided by the Census Bureau's Geography Division | http://www.census.gov/population/metro/ |
| C | Counties | Identifies 5-digit FIPS code | https://www.census.gov/geo/reference/codes/cou.html |
| M | Metropolitan/Micropolitan (state part) | Identifies 7-digit code constructed from the 2-digit state FIPS code and the 5-digit CBSA code provided by the Census Bureau's Geography Division | |
| N | National (50 States + DC) | Custom code using 00 to denote national scope | |
| S | States | Identifies 2-digit FIPS code (also called "ANSI" codes) | https://www.census.gov/geo/reference/ansi_statetables.html |
| W | Workforce Investment Areas | 2-digit state FIPS code and the 6-digit WIA identifier provided by LED State Partners | |

6.14.2 National and state-level values

(*label_fipsnum.csv*)

The file *label_fipsnum.csv* contains values and labels for all entities of **geo_level** *N* or *S*, and is a summary of separately available files.

| geographylabel | geo_level |
|------------------------------|------------------|
| 00 National (50 States + DC) | N |
| 01 Alabama | S |
| 02 Alaska | S |
| 04 Arizona | S |
| 05 Arkansas | S |
| 06 California | S |
| 08 Colorado | S |
| ... | |
| 45 South Carolina | S |
| 46 South Dakota | S |
| 47 Tennessee | S |
| 48 Texas | S |
| 49 Utah | S |
| 50 Vermont | S |
| 51 Virginia | S |
| 53 Washington | S |

6.14.3 Detailed state and substate level values

Note: cross-state CBSA, in records of type `geo_level = M`, are present on files of type `label_geography_XX.csv`. A particular cross-state CBSA will appear on multiple files.

| Scope | Format file | |
|---------------|--|--|
| US | label_geography_us.csv | |
| CBSA | label_geography_cbsa.csv | |
| States | | |
| AK | label_geography_ak.csv | |
| AL | label_geography_al.csv | |
| AR | label_geography_ar.csv | |
| AZ | label_geography_az.csv | |
| CA | label_geography_ca.csv | |
| CO | label_geography_co.csv | |
| CT | label_geography_ct.csv | |
| DC | label_geography_dc.csv | |
| DE | label_geography_de.csv | |
| FL | label_geography_fl.csv | |
| GA | label_geography_ga.csv | |
| HI | label_geography_hi.csv | |
| IA | label_geography_ia.csv | |
| ID | label_geography_id.csv | |
| IL | label_geography_il.csv | |
| IN | label_geography_in.csv | |
| KS | label_geography_ks.csv | |
| KY | label_geography_ky.csv | |
| LA | label_geography_la.csv | |
| MA | label_geography_ma.csv | |
| MD | label_geography_md.csv | |
| ME | label_geography_me.csv | |
| MI | label_geography_mi.csv | |
| MN | label_geography_mn.csv | |
| MO | label_geography_mo.csv | |
| MS | label_geography_ms.csv | |
| MT | label_geography_mt.csv | |
| NC | label_geography_nc.csv | |
| ND | label_geography_nd.csv | |
| NE | label_geography_ne.csv | |
| NH | label_geography_nh.csv | |
| NJ | label_geography_nj.csv | |
| NM | label_geography_nm.csv | |
| NV | label_geography_nv.csv | |
| NY | label_geography_ny.csv | |
| OH | label_geography_oh.csv | |
| OK | label_geography_ok.csv | |
| OR | label_geography_or.csv | |
| PA | label_geography_pa.csv | |
| RI | label_geography_ri.csv | |
| SC | label_geography_sc.csv | |
| SD | label_geography_sd.csv | |
| TN | label_geography_tn.csv | |
| TX | label_geography_tx.csv | |
| UT | label_geography_ut.csv | |
| VA | label_geography_va.csv | |
| VT | label_geography_vt.csv | |
| WA | label_geography_wa.csv | |

| Scope | Format file | |
|--------------|------------------------|--|
| WI | label_geography_wi.csv | |
| WV | label_geography_wv.csv | |
| WY | label_geography_wy.csv | |

6.15 Aggregation level

([label_agg_level.csv](#))

Measures within the J2J and QWI data products are tabulated on many different dimensions, including demographic characteristics, geography, industry, and other firm characteristics. For Origin-Destination (O-D) tables, characteristics of the origin and destination firm can be tabulated separately. Every tabulation level is assigned a unique aggregation index, represented by the `agg_level` variable. This index starts from 1, representing a national level grand total (all industries, workers, etc.), and progresses through different combinations of characteristics. There are gaps in the progression to leave space for aggregation levels that may be included in future data releases.

`agg_level` is currently reported only for J2J data products.

The following variables are included in the [label_agg_level.csv](#) file:

| Variable | Description |
|-----------------------------|---|
| <code>agg_level</code> | index representing level of aggregation reported on a given record |
| <code>worker_char</code> | demographic (worker) characteristics reported on record |
| <code>firm_char</code> | firm characteristics reported on record. These will be the characteristics of the destination firm in O-D tabulations |
| <code>firm_orig_char</code> | characteristics of origin firm reported on record (O-D tabulations only) |
| <code>j2j</code> | Flag: Aggregation level available on J2J counts tables |
| <code>j2jr</code> | Flag: Aggregation level available on J2J rates tables |
| <code>j2jod</code> | Flag: Aggregation level available on J2J O-D tables |
| <code>qwi</code> | Flag: Aggregation level available on QWI |

The characteristics available on an aggregation level are repeated using a series of flags following the standard schema:

- [geo_level](#) - geographic level of table
- [ind_level](#) - industry level of table
- `by_` variables - flags indicating other dimensions reported, including ownership, demographics, firm age and size.

These flags will be expanded to include origin characteristics in a later release. A shortened representation of the file is provided below, the complete file is available in the link above.

| <code>agg_level</code> | <code>worker_char</code> | <code>firm_char</code> | <code>firm_orig_char</code> | <code>j2j</code> | <code>j2jr</code> | <code>j2jod</code> | <code>qwi</code> | <code>geo_level</code> |
|------------------------|--------------------------|------------------------|-----------------------------|------------------|-------------------|--------------------|------------------|------------------------|
| 1 | | | | 1 | 1 | 1 | 0 | N |
| 2 | Sex | | | 1 | 1 | 1 | 0 | N |
| 3 | Age | | | 1 | 1 | 1 | 0 | N |
| 4 | Sex * Age | | | 1 | 1 | 1 | 0 | N |
| 5 | Race | | | 1 | 1 | 1 | 0 | N |
| 9 | Ethnicity | | | 1 | 1 | 1 | 0 | N |
| 13 | Race * Ethnicity | | | 1 | 1 | 1 | 0 | N |
| ... | | | | | | | | |
| 129 | | Firm Size | | 1 | 1 | 1 | 0 | N |
| 257 | | NAICS Sector | | 1 | 1 | 1 | 0 | N |
| 513 | | NAICS Subsector | | 0 | 0 | 0 | 0 | N |

7 Status flags

([label_flags.csv](#))

Each status flag in the tables above contains one of the following valid values. The values and their interpretation are listed in the table below.



Important

Note: Currently, the J2J tables only contain status flags *-1* and *1*. Status flags with values 10 or above only appear in online applications, not in CSV files.

| flag | label |
|------|--|
| -2 | no data available in this category for this quarter |
| -1 | data not available to compute this estimate |
| 1 | OK |
| 5 | Value suppressed because it does not meet US Census Bureau publication standards. |
| 6 | Value calculated from other released measures - no significant distortion |
| 7 | Value calculated from other released measures - some of which have significantly distorted data |
| 9 | Data significantly distorted - fuzzed value released |
| 10 | Aggregate of cells - no significant distortion |
| 11 | Aggregate of cells not released because component cells do not meet U.S. Census Bureau publication standards |
| 12 | Aggregate of cells - some of which have significantly distorted data |

8 Changes

For a description of how schema files are versioned, see [main directory](#).

8.1 This version (revisions)

- 2016-08-08: Initial release

8.2 Version 4.1-rc1 from 4.0.5

- 2016-08-08: Implemented select changes from V4.1d-draft: Key changes are
- Changed structure of state-level geography labels (flat directory structure) e5dbe97
- Describes National QWI files and J2J files (both of which are still in beta), added J2J, National QWI spec
- added additional geo_level for CBSA (complete), additional description, sources in label_geo_level.csv 1eb399f,27a2674

8.2.1 In more detail

- added geohi category of ALL, US, add naming_geohi.csv 89617e3
- added naming convention for additional filesb
- added agg_level variable 89617e3, 2149623
- Changes to name of variable schema files (qwipu → qwi), addition of variability and rate variable schema files. 89617e3
- Addition of a column identifying the type of variable on QWI 89617e3
- Renamed file from QWIPU_Data_Schema.pdf to lehd_public_use_schema.pdf 89617e3
- Addition of variable schema description for J2J 1a57250
- Added a extension component [ext] to the file naming convention to reflect availability of Excel files (and PDF files) d9f8387f7cc524
- Updated documentation-generating scripts to the latest. Documents are now identified by date, not revision 8136f0c
- Added a concatenation of geography files as label_geography.csv. 8136f0c, 39ecfc9
- Added a column geo_level to all label_geography_* files a32bb4c
- Changed fipsnum to force readin of FIPS as character, include geo_level, US. a32bb4c
- Added additional legal values for firmage and firmsize, as used by J2J a32bb4c
- Added Federal government to files (for National QWI) 942dd0a, 1654288
- Clarified description of filenaming components 8888529, 8d580f6
- Sundry small additional changes, building out the schema 28d7c6f
- Changing of naming convention for to-be-released files based on federal government from fg → of. At this time, no such files have been released. 3a0975e

8.3 Version 4.1-rc2 from 4.1-rc1

- 2016-08-10: Added description, definition of SHP files
- 2016-08-11: Modified Indicator Names for J2J variable metadata.

For additional details, please consult the previous draft versions:

- [../V4.1-draft](#)
- [../V4.1b-draft](#)
- [../V4.1c-draft](#)
- [../V4.1d-draft](#)

This revision: Fri Aug 12 14:14:05 EDT 2016