LEHD Public Use Data Schema V4.2a-draft

Contents

(Printable version)

Important
This document is not an official Census Bureau publication. It is compiled from publicly accessible information by Lars Vilhuber (Labor Dynamics Institute, Cornell University). Feedback is welcome. Please write us at lars.vilhuber@cornell.edu.

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 V4.1.0, for files released as of R2017Q1.

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. The *'Base'* indicates the denominator used to compute the statistic, and may be *1*. *'Units'* identify the type of variable: counts, rates, monetary amounts.

5.3.1 National QWI and state-level QWI (QWIPU)

(variables_qwi.csv)

Indicator Variable	Alternate Name	Status Flag	Indicator Name	Description	Units	Concept	Base
Emp	B	sEmp	Beginning-of-Quarter Employment	Estimate of the total number of jobs on the first day of the reference quarter	Count	Employment	1
EmpEnd	E	sEmpEnd	End-of-Quarter Employment	Estimate of the number of jobs on the last day of the quarter	Count	Employment	1
EmpS	F	sEmpS	Full-Quarter Employment (Stable)	Estimate of stable jobs - the number of jobs that are held on both the first and last day of the quarter with the same employer	Count	Employment	1
EmpSpv	Fpv	sEmpSpv	Full-Quarter Employment in the Previous Quarter	Estimate of stable jobs in the quarter before the reference quarter	Count	Employment	1
EmpTotal	M	sEmpTotal	Employment - Reference Quarter	Estimated count of people employed in a firm at any time during the quarter	Count	Employment	1
HirA	A	sHirA	Hires (All Accessions)	Estimated number of workers who started a new job in the specified quarter	Count	Hire	1
HirN	H	sHirN	New Hires	Estimated number of workers who started a new job excluding recall hires	Count	Hire	1
HirR	R	sHirR	Recall Hires	Estimated number of workers who returned to the same employer where they had worked within the previous year	Count	Hire	1
Sep	S	sSep	Separations (All)	Estimated number of workers whose job with a given employer ended in the specified quarter	Count	Separation	1

Indicator Variable	Alternate Name	Status Flag	Indicator Name	Description	Units	Concept	Base
HirAEnd	CA	sHirAEnd	End-of-Quarter Hires	Estimated number of workers who started a new job in the specified quarter, which continued into next quarter	Count	Hire	1
HirAEndR	CAR	sHirAEndR	End-of-Quarter Hiring Rate	Hires as a percent of average employment	Rate	Hire	(Emp + EmpEnd)/2
SepBeg	CS	sSepBeg	Beginning-of-Quarter Separations	Estimated number of workers whose job in the previous quarter continued and ended in the given quarter	Count	Separation	1
SepBegR	CSR	sSepBegR	Beginning-of-Quarter Separation Rate	Separations as a percent of average employment	Rate	Separation	(Emp + EmpEnd)/2
HirAS	FA	sHirAS	Hires (All Hires into Full-Quarter Employment)	Estimated number of workers that started a job that lasted at least one full quarter with a given employer	Count	Hire	1
HirNS	FH	sHirNS	New Hires (New Hires into Full-Quarter Employment)	Estimated number of workers who started a job that they had not held within the past year and the job turned into a job that lasted at least a full quarter with a given employer	Count	Hire	1
SepS	FS	sSepS	Separations (Flows out of Full-Quarter Employment)	Estimated number of workers who had a job for at least a full quarter and then the job ended	Count	Separation	1
SepSnx	FSnx	sSepSnx	Separations in the Next Quarter (Flows out of Full-Quarter Employment)	Estimated number of workers in the next quarter who had a job for at least a full quarter and then the job ended	Count	Separation	1
TurnOvrS	FT	sTurnOvrS	Turnover (Stable)	The rate at which stable jobs begin and end	Rate	Turnover	2*EmpS
FrmJbGn	JC	sFrmJbGn	Firm Job Gains (Job Creation)	Estimated number of jobs gained at firms throughout the quarter	Count	Hire	1
FrmJbLs	JD	sFrmJbLs	Firm Job Loss (Job Destruction)	Estimated number of jobs lost at firms throughout the quarter	Count	Separation	1

Indicator Variable	Alternate Name	Status Flag	Indicator Name	Description	Units	Concept	Base
FrmJbC	JF	sFrmJbC	Firm Job Change (Net Change)	Difference between firm job gain and firm job loss	Count	Employment	1
HirAEndRepl	EI	sHirAEndRepl	Replacement Hires	Hires into continuous quarter employment in excess of job creation	Count	Hire	1
HirAEndRepR	EIR	sHirAEndRepR	Replacement Hiring Rate	Replacement hires as a percent of the average of beginning- and end-of-quarter employment	Rate	Hire	(Emp + EmpEnd)/2
FrmJbGnS	FJC	sFrmJbGnS	Firm Job Gains (Stable)	Estimated number of full-quarter jobs gained at firms	Count	Hire	1
FrmJbLsS	FJD	sFrmJbLsS	Firm Job Loss (Stable)	Estimated number of full-quarter jobs lost at firms	Count	Separation	1
FrmJbCS	FJF	sFrmJbCS	Firm Job Change (Stable; Net Change)	Net growth in jobs that last a full quarter	Count	Employment	1
EarnS	ZW3	sEarnS	Average Monthly Earnings (Full-Quarter Employment)	Average monthly earnings of employees with stable jobs	Dollars	Earnings	EmpS
EarnBeg	ZW1	sEarnBeg	Average Monthly Earnings (Beginning-of-Quarter Employment)	Average monthly earnings of employees who worked on the first day of the reference quarter	Dollars	Earnings	Emp
EarnHirAS	ZWFA	sEarnHirAS	Average Monthly Earnings (All Hires into Full-Quarter Employment)	Average monthly earnings for workers who started a job that turned into a job lasting a full quarter	Dollars	Earnings	HirAS
EarnHirNS	ZWFH	sEarnHirNS	Average Monthly Earnings (New Hires into Full-Quarter Employment)	Average monthly earnings of newly stable employees	Dollars	Earnings	HirNS
EarnSepS	ZWFS	sEarnSepS	Average Monthly Earnings (Flows out of Full-Quarter Employment)	Average monthly earnings of separations from full-quarter status at an establishment	Dollars	Earnings	SepSnx
Payroll	W1	sPayroll	Total Quarterly Payroll	Total quarterly payroll for all jobs	Dollars	Earnings	1

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

Rates are computed from published data, and are provided as a convenience.

(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	Description	Units	Concept	Base
MHire	all_doma2	sMHire	Hires	Hires into a worker's main job	Count	Hire	1
MSep	all_doms2	sMSep	Separations	Separations from a worker's main job	Count	Separation	1
MJobStart	first_dome	sMJobStart	Main Job Starts	New main jobs due to hires and instances when a previously existing secondary job becomes the main source of earnings	Count	Employment	1
MJobEnd	last_domb	sMJobEnd	Main Job Ends	End of main jobs due to separations and instances when another job becomes the main source of earnings	Count	Employment	1
EEHire	ee_doma2	sEEHire	Job-to-Job Hires (Continuous Employment)	Hires following a separation with no observed nonemployment spell	Count	Hire	1
EESep	ee_doms2	sEESep	Job-to-Job Separations (Continuous Employment)	Separations followed by a hire with no observed nonemployment spell	Count	Separation	1
AQHire	aq_doma2	sAQHire	Job-to-Job Hires (Brief Nonemployment)	Hires following a separation with a short nonemployment spell	Count	Hire	1
AQSep	aq_doms2	sAQSep	Job-to-Job Separations (Brief Nonemployment)	Separations followed by a hire with a short nonemployment spell	Count	Separation	1
J2JHire	j2j_doma2	sJ2JHire	Job-to-Job Hires	Hires following a separation (short or no observed nonemployment spell)	Count	Hire	1
J2JSep	j2j_doms2	sJ2JSep	Job-to-Job Separations	Separations followed by a hire (short or no observed nonemployment spell)	Count	Separation	1
NEHire	ne_doma2	sNEHire	Hires from Nonemployment	Hires following any spell of nonemployment	Count	Hire	1
ENSep	en_doms2	sENSep	Separations to Nonemployment	Separations into any spell of nonemployment	Count	Separation	1
NEPersist	ne2_doma2	sNEPersist	Hires from Persistent Nonemployment	Hires following a spell of persistent nonemployment	Count	Hire	1
ENPersist	en2_doms2	sENPersist	Separations to Persistent Nonemployment	Separations into a spell of persistent nonemployment	Count	Separation	1

Indicator Variable	Alternate Name	Status Flag	Indicator Name	Description	Units	Concept	Base
NEFullQ	ne2p_domas2	sNEFullQ	Hires from Full-Quarter Nonemployment	Hires following a spell of full-quarter nonemployment (does not include intermittently employed)	Count	Hire	1
ENFullQ	en2p_domss2	sENFullQ	Separations to Full-Quarter Nonemployment	Separations into a spell of full-quarter nonemployment (does not include intermittently employed)	Count	Separation	1
MainB	domB	sMainB	Employment (Beginning of Quarter)	Main jobs held on the first day of the quarter	Count	Employment	1
MainE	domE	sMainE	Employment (End of Quarter)	Main jobs held on the last day of the quarter	Count	Employment	1

5.3.4 Job-to-job flow rates (J2JR)

(variables_j2jr.csv)

Rates are computed from published data, and are provided as a convenience.

Indicator Variable	Alternate Name	Status Flag	Indicator Name	Description	Units	Concept	Base
MHireR	all_doma2_rate	sMHireR	Hires	Rate of hires into a worker's main job	Rate	Hire	(MainB+MainE)/
MSepR	all_doms2_rate	sMSepR	Separations	Rate of separations from a worker's main job	Rate	Separation	(MainB+MainE)/
MJobStartR	first_dome_rate	sMJobStartR	Main Job Starts	Rate of new main jobs due to hires and instances when a previously existing secondary job becomes the main source of earnings	Rate	Employment	(MainB+MainE)/
MJobEndR	last_domb_rate	sMJobEndR	Main Job Ends	Rate of the end of main jobs due to separations and instances when another job becomes the main source of earnings	Rate	Employment	(MainB+MainE)/
EEHireR	eea_rate	sEEHireR	Job-to-Job Hires (Continuous Employment)	Rate of hires following a separation with no observed nonemployment spell	Rate	Hire	(MainB+MainE)/
EESepR	ees_rate	sEESepR	Job-to-Job Separations (Continuous Employment)	Rate of separations followed by a hire with no observed nonemployment spell	Rate	Separation	(MainB+MainE)/
AQHireR	aq_doma2_rate	sAQHireR	Job-to-Job Hires (Brief Nonemployment)	Rate of hires following a separation with a short nonemployment spell	Rate	Hire	(MainB+MainE)/
AQSepR	aq_doms2_rate	sAQSepR	Job-to-Job Separations (Brief Nonemployment)	Rate of separations followed by a hire with a short nonemployment spell	Rate	Separation	(MainB+MainE)/
J2JHireR	j2j_doma2_rate	sJ2JHireR	Job-to-Job Hires	Rate of hires following a separation (short or no observed nonemployment spell)	Rate	Hire	(MainB+MainE)/
J2JSepR	j2j_doms2_rate	sJ2JSepR	Job-to-Job Separations	Rate of separations followed by a hire (short or no observed nonemployment spell)	Rate	Separation	(MainB+MainE)/
NEHireR	ne_doma2_rate	sNEHireR	Hires from Nonemployment	Rate of hires following any spell of nonemployment	Rate	Hire	(MainB+MainE)/
ENSepR	en_doms2_rate	sENSepR	Separations to Nonemployment	Rate of separations into any spell of nonemployment	Rate	Separation	(MainB+MainE)/

Indicator Variable	Alternate Name	Status Flag	Indicator Name	Description	Units	Concept	Base
NEPersistR	ne2_doma2_stat	NEPersistR	Hires from Persistent Nonemployment	Rate of hires following a spell of persistent nonemployment	Rate	Hire	(MainB+MainE)/
ENPersistR	en2_doms2_stat	ENPersistR	Separations to Persistent Nonemployment	Rate of separations into a spell of persistent nonemployment	Rate	Separation	(MainB+MainE)/
NEFullQR	ne2p_doma2_stat	NEFullQR	Hires from Full-Quarter Nonemployment	Rate of hires following a spell of full-quarter nonemployment (does not include intermittently employed)	Rate	Hire	(MainB+MainE)/
ENFullQR	en2p_doms2_stat	ENFullQR	Separations to Full-Quarter Nonemployment	Rate of separations into a spell of full-quarter nonemployment (does not include intermittently employed)	Rate	Separation	(MainB+MainE)/

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

(variables_j2jod.csv)

Indicator Variable	Alternate Name	Status Flag	Indicator Name	Description	Units	Concept	Base
EE	ee	sEE	Job-to-Job Flows (Continuous Employment)	Job flows with no observed nonemployment spell	Count	Flow	1
AQHire	aq_doma2	sAQHire	Job-to-Job Flows (Brief Nonemployment)	Job flows with a short nonemployment spell	Count	Flow	1
EES	fee	sEES	Stable Job-to-Job Flows (Continuous Employment)	Job flows from stable employment into stable employment with no observed nonemployment spell	Count	Flow	1
AQHireS	faq_doma2	sAQHireS	Stable Job-to-Job Flows (Brief Nonemployment)	Job flows from stable employment into stable employment with a short nonemployment spell	Count	Flow	1

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	Base
st_Emp	st_B	Standard error of Beginning-of-Quarter Employment	Count	1
st_EmpEnd	st_E	Standard error of End-of-Quarter Employment	Count	1
st_EmpS	st_F	Standard error of Full-Quarter Employment (Stable)	Count	1
...				
vt_Emp	vt_B	Total variation of Beginning-of-Quarter Employment	Count	1
vt_EmpEnd	vt_E	Total variation of End-of-Quarter Employment	Count	1
vt_EmpS	vt_F	Total variation of Full-Quarter Employment (Stable)	Count	1
...				
vb_Emp	vb_B	Between-implicate variability for Beginning-of-Quarter Employment	Count	1
vb_EmpEnd	vb_E	Between-implicate variability for End-of-Quarter Employment	Count	1
vb_EmpS	vb_F	Between-implicate variability for Full-Quarter Employment (Stable)	Count	1
...				
...				
df_Emp	df_B	Degrees of freedom for VT of Beginning-of-Quarter Employment	Count	1
df_EmpEnd	df_E	Degrees of freedom for VT of End-of-Quarter Employment	Count	1
df_EmpS	df_F	Degrees of freedom for VT of Full-Quarter Employment (Stable)	Count	1
...				
mr_Emp	mr_B	Missingness ratio for Beginning-of-Quarter Employment	Count	1
mr_EmpEnd	mr_E	Missingness ratio for End-of-Quarter Employment	Count	1
mr_EmpS	mr_F	Missingness ratio for Full-Quarter Employment (Stable)	Count	1

5.4.3 National QWI and state-level QWI rates

(variables_qwirv.csv)

Variability measure	Alternate name	Variable name	Units	Base
st_HirAR	st_AR	Standard error of Hiring Rate (All Accessions)	Rate	1
st_HirNR	st_HR	Standard error of New Hiring Rate	Rate	1
st_HirRR	st_RR	Standard error of Recall Rate	Rate	1
...				
vt_HirAR	vt_AR	Total variation of Hiring Rate (All Accessions)	Rate	1
vt_HirNR	vt_HR	Total variation of New Hiring Rate	Rate	1
vt_HirRR	vt_RR	Total variation of Recall Rate	Rate	1
...				
vb_HirAR	vb_AR	Between-implicate variability for Hiring Rate (All Accessions)	Rate	1
vb_HirNR	vb_HR	Between-implicate variability for New Hiring Rate	Rate	1
vb_HirRR	vb_RR	Between-implicate variability for Recall Rate	Rate	1
...				
...				
df_HirAR	df_AR	Degrees of freedom for VT of Hiring Rate (All Accessions)	Rate	1
df_HirNR	df_HR	Degrees of freedom for VT of New Hiring Rate	Rate	1
df_HirRR	df_RR	Degrees of freedom for VT of Recall Rate	Rate	1
...				
mr_HirAR	mr_AR	Missingness ratio for Hiring Rate (All Accessions)	Rate	1
mr_HirNR	mr_HR	Missingness ratio for New Hiring Rate	Rate	1
mr_HirRR	mr_RR	Missingness ratio for Recall Rate	Rate	1

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 For Public-Sector Firms

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 For Public-Sector Firms

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_geograpy_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 (complete)	Identifies 5-digit CBSA code for metropolitan areas 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	http://www.census.gov/-population/metro/
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.

geography	label	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
METRO	label_geography_metro.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
agg_level	index representing level of aggregation reported on a given record
worker_char	demographic (worker) characteristics reported on record
firm_char	firm characteristics reported on record. These will be the characteristics of the destination firm in O-D tabulations
firm_orig_char	characteristics of origin firm reported on record (O-D tabulations only)
j2j	Flag: Aggregation level available on J2J counts tables
j2jr	Flag: Aggregation level available on J2J rates tables
j2jod	Flag: Aggregation level available on J2J O-D tables
qwi	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.

A shortened representation of the file is provided below, the complete file is available in the link above.

agg_level	worker_char	firm_char	firm_orig_char	j2j	j2jr	j2jod	qwi	geo_level
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
258	Sex	NAICS Sector		0	0	0	0	N

agg_level	worker_char	firm_char	firm_orig_char	j2j	j2jr	j2jod	qwi	geo_level
...								
1029	Race	State		1	1	1	0	S
1033	Ethnicity	State		1	1	1	0	S
1037	Race * Ethnicity	State		1	1	1	0	S
...								

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 Metadata

(variables_version.csv)

8.1 Metadata for QWI and J2J files (version.txt)

Each data release is accompanied by one or more files with metadata on geographic and temporal coverage, in a compact notation. These files follow the following naming convention:

```
version_[demo]_[fas].txt
version_[type].txt
```

where each component is described in more detail in lehd_csv_naming.pdf.

The contents contains the following elements:

Component	Source	Description
product	[type]	Type as described in lehd_csv_naming.pdf
demo_fas	[demo]_[fas]	(optional - concatenated with product) used for QWI to distinguish separate tabulations from the legal [demo]_[fas] combinations as described in lehd_csv_naming.pdf
geo	Section 6.12 or Metro	Covered [geography] (uppercase state postal code or the word MSA)
fips	[geography]	Numeric (FIPS) geography code
start	yyyy:q	Start year and quarter
end	yyyy:q	End year and quarter
schema	Vx.y.z	Version of the schema
release	RyyyyQq	Release quarter (identifies when the data was created)
internal	various	Internal identifier used for provenance tracking

For instance, the metadata for the R2016Q3 release of Missouri QWI Sex by Age tabulations for No firm size or age detail (obtained from here) has the following content:

```
QWISA_F MO 29 1995:1-2015:4 V4.0.5 R2016Q3 qwipu_mo_20160804_1631
```

Similarly, the metadata for the R2016Q3 release of Missouri J2J tabulations (obtained from here) has the following content:

```
J2J  MO 29  2000:2-2015:3  V4.1.0 R2016Q3 j2jpu_mo_20161028_1522
```

Some J2J metadata may contain multiple lines, as necessary.

8.2 Additional metadata for J2JOD files (avail.csv)

(variables_avail.csv)

Because the origin-destination (J2JOD) data link two regions, we provide an auxiliary file with the time range that cells containing data for each geographic pairing may appear in a data release.

variable	type	label
geo_level	Char(1)	Geographic level of destination region
geography	Char(8)	Geography code of destination region
geo_level_origin	Char(1)	Geographic level of origin region
geography_origin	Char(8)	Geography code of origin region
start_year	Num	First year regional pair may be observed

variable	type	label
start_quarter	Num	First quarter regional pair may be observed
end_year	Num	Last year regional pair may be observed
end_quarter	Num	Last quarter regional pair may be observed

The reference region will always be either the origin or the destination. National tabulations contain records where both origin and destination are geo_level=N; state tabulations contain records where geo_level in (N,S); metro tabulations contain records where geo_level in (N,S,B). Data may be suppressed for certain combinations of regions and quarters because the estimates do not meet Census Bureau publication standards.

9 Changes

For a description of how schema files are versioned, see main directory.

9.1 This version (revisions)

- 2017-04-04: Initial release

9.2 Version 4.2a-draft from 4.1.1

- See github

This revision: Tue Apr 4 15:16:29 EDT 2017