

# LEHD Public Use Data Schema V4.7.0

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( [Printable version](#) )



#### *Important*

This specification is draft. Feedback is welcome. Please write us at [ces.qwi.feedback@census.gov](mailto:ces.qwi.feedback@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 through the LEHD website's Data page at <https://lehd.ces.census.gov/data/> and through the LED Extraction Tool at <https://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 V4.6.0, for files released as of R2020Q4.

# 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](#). In some cases, visually formatted Excel (XLSX) files are also available, containing the same information together with header lines on each sheet.

## 5.1. Generic structure

Column name
[ Identifier1 ]
[ Identifier2 ]
[ Identifier3 ]
[ ... ]
[ Indicator 1 ]
[ Indicator 2 ]
[ Indicator 3 ]
[ ... ]
[ 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	PSEO E	PSEO F	LODE S
lehd_identifiers_qwi	1	1						
lehd_identifiers_j2j			1	1				
lehd_identifiers_j2jod					1			
lehd_identifiers_pseo						1	1	

## 5.2.2. 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

### 5.2.3. 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

## 5.2.4. 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

### 5.2.5. Identifiers for pseo

( [lehd\\_identifiers\\_pseo.csv](#) )

Variable	Type	label
agg_level_pseo	Numeric	Aggregation level
inst_level	Char(1)	Tabulation level of the institution
institution	Char(6)	Place of the institution
degree_level	Char(2)	Degree level code
cip_level	Char(1)	Degree field level of aggregation
cipcode	Char(7)	Degree field
grad_cohort	Char(4)	First year of graduation cohort (YYYY) - All Cohorts 0000
grad_cohort_years	Numeric	Number of years in graduation cohort
geo_level	Char(1)	Group: Geographic level of employment
geography	Char(8)	Group: Geography code of employment
ind_level	Char(1)	Group: Industry level of employment
industry	Char(5)	Group: Industry code of employment



## 5.3. Indicators

The following tables and associated mapping files list the indicators available on each file. The descriptor files themselves are structured as follows:

- 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 non-abbreviated version of the "Indicator Variable".
- The "Description" provides more verbose description of the variable.
- "Units" identify the type of variable according to a very simplified taxonomy (not formalized yet): counts, rates, monetary amounts.
- "Concept" classifies the variables into higher-level concepts. The taxonomy for these concepts has not been finalized yet, see [label\\_concept\\_draft.csv](#) for a draft version.
- The "Base" indicates the denominator used to compute the statistic, and may be '1'.

### 5.3.1. National QWI and state-level QWI

( [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

<b>Indicator or Variable</b>	<b>Alternate Name</b>	<b>Status Flag</b>	<b>Indicator Name</b>	<b>Description</b>	<b>Units</b>	<b>Concept</b>	<b>Base</b>
EmpTotal	M	sEmpTotal	Employment - Reference Quarter	Estimated count of people employed in a firm at any time during the quarter	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
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
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

<b>Indicator or Variable</b>	<b>Alternate Name</b>	<b>Status Flag</b>	<b>Indicator Name</b>	<b>Description</b>	<b>Units</b>	<b>Concept</b>	<b>Base</b>
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
HirAEndRepl	EI	sHirAEndRepl	Replacement Hires	Hires into continuous quarter employment in excess of job creation	Count	Hire	1
HirAEndR	CAR	sHirAEndR	End-of-Quarter Hiring Rate	Hires as a percent of average employment	Rate	Hire	(Emp + EmpEnd)/2
SepBegR	CSR	sSepBegR	Beginning-of-Quarter Separation Rate	Separations as a percent of average employment	Rate	Separation	(Emp + EmpEnd)/2
HirAEndReplR	EIR	sHirAEndReplR	Replacement Hiring Rate	Replacement hires as a percent of the average of beginning- and end-of-quarter employment	Rate	Hire	(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

<b>Indicator Variable</b>	<b>Alternate Name</b>	<b>Status Flag</b>	<b>Indicator Name</b>	<b>Description</b>	<b>Units</b>	<b>Concept</b>	<b>Base</b>
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	Job Flows	1
FrmJbLs	JD	sFrmJbLs	Firm Job Loss (Job Destruction)	Estimated number of jobs lost at firms throughout the quarter	Count	Job Flows	1
FrmJbC	JF	sFrmJbC	Firm Job Change (Net Change)	Difference between firm job gain and firm job loss	Count	Job Flows	1
FrmJbGnS	FJC	sFrmJbGnS	Firm Job Gains (Stable)	Estimated number of full-quarter jobs gained at firms	Count	Job Flows	1

<b>Indicator Variable</b>	<b>Alternate Name</b>	<b>Status Flag</b>	<b>Indicator Name</b>	<b>Description</b>	<b>Units</b>	<b>Concept</b>	<b>Base</b>
FrmJbLsS	FJD	sFrmJbLsS	Firm Job Loss (Stable)	Estimated number of full-quarter jobs lost at firms	Count	Job Flows	1
FrmJbCS	FJF	sFrmJbCS	Firm Job Change (Stable; Net Change)	Net growth in jobs that last a full quarter	Count	Job Flows	1
EarnS	ZW3	sEarnS	Average Monthly Earnings (Full-Quarter Employment)	Average monthly earnings of employees with stable jobs	Dollars	Earnings	EmpS
EarnBeg	ZW2B	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

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

( [variables\\_qwir.csv](#) )

Indicator or Variable	Alternate Name	Status Flag	Indicator Name	Description	Units	Concept	Base
HirAR	AR	sHirAR	Hiring Rate (All Accessions)	All accessions as a percent of average employment	Rate	Hire	$(\text{Emp} + \text{EmpEnd})/2$
HirNR	HR	sHirNR	New Hiring Rate	New hires as a percent of average employment	Rate	Hire	$(\text{Emp} + \text{EmpEnd})/2$
HirRR	RR	sHirRR	Recall Rate	Recall hires as a percent of average employment	Rate	Hire	$(\text{Emp} + \text{EmpEnd})/2$
SepR	SR	sSepR	Separation Rate (All Separations)	All separations as a percent of average employment	Rate	Separation	$(\text{Emp} + \text{EmpEnd})/2$
HirAEndR	CAR	sHirAEndR	End-of-Quarter Hiring Rate	Hires as a percent of average employment	Rate	Hire	$(\text{Emp} + \text{EmpEnd})/2$
SepBeginR	CSR	sSepBeginR	Beginning-of-Quarter Separation Rate	Separations as a percent of average employment	Rate	Separation	$(\text{Emp} + \text{EmpEnd})/2$
HirAEndReplR	EIR	sHirAEndReplR	Replacement Hiring Rate	Replacement hires as a percent of average employment	Rate	Hire	$(\text{Emp} + \text{EmpEnd})/2$
HirASR	FAR	sHirASR	Hiring Rate (Flows into Full-Quarter Employment)	Flows into stable employment as a percent of average stable employment	Rate	Hire	$(\text{EmpSpv} + \text{EmpS})/2$
HirNSR	FHR	sHirNSR	New Hiring Rate (New Hires to Full-Quarter Status)	New hires into stable employment as a percent of average stable employment	Rate	Hire	$(\text{EmpSpv} + \text{EmpS})/2$

<b>Indicator or Variable</b>	<b>Alternate Name</b>	<b>Status Flag</b>	<b>Indicator Name</b>	<b>Description</b>	<b>Units</b>	<b>Concept</b>	<b>Base</b>
SepSR	FSR	sSepSR	Separation Rate (Flows out of Full- Quarter Employment)	Flows out of stable employment as a percent of average stable employment	Rate	Separat ion	(EmpSp v + EmpS)/ 2
SepSnx R	FSnxR	sSepSn xR	Separation Rate in the Next Quarter (Flow out of Full- Quarter Employment)	Flow rate out of stable employment in the next quarter	Rate	Separat ion	(EmpSp v + EmpS)/ 2
TurnOv rSR	FTR	sTurnO vrSR	Turnover Rate (Stable)	The rate at which stable jobs begin and end	Rate	Turnov er	2*Emp S
FrmJbG nR	JCR	sFrmJb GnR	Firm Job Gain Rate (Job Creation Rate)	Estimated number of jobs gained at firms throughout the quarter as a percent of average employment	Rate	Job Flows	(Emp + EmpEn d)/2
FrmJbL sR	JDR	sFrmJb LsR	Firm Job Loss Rate (Job Destruction Rate)	Estimated number of jobs lost at firms throughout the quarter as a percent of average employment	Rate	Job Flows	(Emp + EmpEn d)/2
FrmJbC R	JFR	sFrmJb CR	Firm Job Change Rate (Net Change Rate)	Difference between firm job gain and firm job loss as a percent of average employment	Rate	Job Flows	(Emp + EmpEn d)/2
FrmJbG nSR	FJCR	sFrmJb GnSR	Firm Job Gain Rate (Stable)	Estimated number of full-quarter jobs gained at firms as a percent of average stable employment	Rate	Job Flows	(EmpSp v + EmpS)/ 2

Indicator Variable	Alternate Name	Status Flag	Indicator Name	Description	Units	Concept	Base
FrmJbLsSR	FJDR	sFrmJbLsSR	Firm Job Loss Rate (Stable)	Estimated number of full-quarter jobs lost at firms as a percent of average stable employment	Rate	Job Flows	$(\text{EmpSpv} + \text{EmpS})/2$
FrmJbCSR	FJFR	sFrmJbCSR	Firm Job Change Rate (Stable; Net Change Rate)	Net growth in jobs that last a full quarter as a percent of average stable employment	Rate	Job Flows	$(\text{EmpSpv} + \text{EmpS})/2$



### 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_dom a2	sMHire	Hires	Hires into a worker's main job	Count	Hire	1
MSep	all_dom s2	sMSep	Separations	Separations from a worker's main job	Count	Separation	1
MJobStart	first_dom me	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	Hire	1
MJobEnd	last_dom mb	sMJobEnd	Main Job Ends	End of main jobs due to separations and instances when another job becomes the main source of earnings	Count	Separation	1
EEHire	ee_dom a2	sEEHire	Job-to-Job Hires (Continuous Employment)	Hires following a separation with no observed nonemployment spell	Count	Hire	1
EESep	ee_dom s2	sEESep	Job-to-Job Separations (Continuous Employment)	Separations followed by a hire with no observed nonemployment spell	Count	Separation	1
AQHire	aq_dom a2	sAQHire	Job-to-Job Hires (Brief Nonemployment)	Hires following a separation with a short nonemployment spell	Count	Hire	1
AQSep	aq_dom s2	sAQSep	Job-to-Job Separations (Brief Nonemployment)	Separations followed by a hire with a short nonemployment spell	Count	Separation	1

<b>Indicator or Variable</b>	<b>Alternate Name</b>	<b>Status Flag</b>	<b>Indicator Name</b>	<b>Description</b>	<b>Units</b>	<b>Concept</b>	<b>Base</b>
J2JHire	j2j_dom a2	sJ2JHire	Job-to-Job Hires	Hires following a separation (short or no observed nonemployment spell)	Count	Hire	1
J2JSep	j2j_dom s2	sJ2JSep	Job-to-Job Separations	Separations followed by a hire (short or no observed nonemployment spell)	Count	Separation	1
NEHire	ne_dom a2	sNEHire	Hires from Nonemployment	Hires following any spell of nonemployment	Count	Hire	1
ENSep	en_dom s2	sENSep	Separations to Nonemployment	Separations into any spell of nonemployment	Count	Separation	1
NEPersist	ne2_dom a2	sNEPersist	Hires from Persistent Nonemployment	Hires following a spell of persistent nonemployment	Count	Hire	1
ENPersist	en2_dom s2	sENPersist	Separations to Persistent Nonemployment	Separations into a spell of persistent nonemployment	Count	Separation	1
NEFull Q	ne2p_dom a2	sNEFull Q	Hires from Full-Quarter Nonemployment	Hires following a spell of full-quarter nonemployment (does not include intermittently employed)	Count	Hire	1
ENFull Q	en2p_dom s2	sENFull Q	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

<b>Indicator or Variable</b>	<b>Alternate Name</b>	<b>Status Flag</b>	<b>Indicator Name</b>	<b>Description</b>	<b>Units</b>	<b>Concept</b>	<b>Base</b>
MainE	domE	sMainE	Employment (End of Quarter)	Main jobs held on the last day of the quarter	Count	Employment	1
EESepS	fee_doms2	sEESepS	Stable Job-to-Job Separations (Continuous Employment)	Separations from stable employment followed by a hire to stable employment with no observed nonemployment spell	Count	Separation	1
EEHireS	fee_doma2	sEEHireS	Stable Job-to-Job Hires (Continuous Employment)	Hires to stable employment following a separation from stable employment with no observed nonemployment spell	Count	Hire	1
AQSepS	faq_doms2	sAQSepS	Stable Job-to-Job Separations (Brief Nonemployment)	Separations from stable employment followed by a hire to stable employment with a short nonemployment spell	Count	Separation	1
AQHireS	faq_doma2	sAQHireS	Stable Job-to-Job Hires (Brief Nonemployment)	Hires to stable employment following a separation from stable employment with a short nonemployment spell	Count	Hire	1
NEPersistS	fne2_doma2	sNEPersistS	Stable Hires from Persistent Nonemployment	Hires to stable employment following a spell of persistent nonemployment	Count	Hire	1

<b>Indicator or Variable</b>	<b>Alternate Name</b>	<b>Status Flag</b>	<b>Indicator Name</b>	<b>Description</b>	<b>Units</b>	<b>Concept</b>	<b>Base</b>
ENPersistS	fen2_doms2	sENPersistS	Stable Separations to Persistent Nonemployment	Separations from stable employment into a spell of persistent nonemployment	Count	Separation	1
JobStays	f4domb_e	sJobStays	Stable Job Stayer	Stable main jobs that did not change during the reference quarter	Count	Employment	1
MainBS	fdomb	sMainBS	Stable Employment (Beginning of Quarter)	Stable main jobs held on the first day of the quarter	Count	Employment	1
MainES	fdome	sMainES	Stable Employment (End of Quarter)	Stable main jobs held on the last day of the quarter	Count	Employment	1
NEHireSEarn_Dest	fne2_doma2_kfqearn	sNEHireSEarn_Dest	Average Earnings following Stable Hires from Persistent Nonemployment	Average quarterly earnings following hires to stable employment from a spell of persistent nonemployment	Dollars	Earnings	NE Persistent
ENSEpSEarn_Orig	fen2_doms2_jfqearn	sENSEpSEarn_Orig	Average Earnings prior to Stable Separations to Persistent Nonemployment	Average quarterly earnings prior to separations from stable employment into a spell of persistent nonemployment	Dollars	Earnings	EN Persistent
JobStaysSEarn_Orig	f4domb_e_jfqearn	sJobStaysSEarn_Orig	Average Earnings prior to Stable Job Stayer	Average quarterly earnings in the previous quarter when workers stayed in a stable job	Dollars	Earnings	Job Stays
JobStaysSEarn_Dest	f4domb_e_kfqearn	sJobStaysSEarn_Dest	Average Earnings following Stable Job Stayer	Average quarterly earnings in the quarter when workers stayed in a stable job	Dollars	Earnings	Job Stays

<b>Indicator or Variable</b>	<b>Alternative Name</b>	<b>Status Flag</b>	<b>Indicator Name</b>	<b>Description</b>	<b>Units</b>	<b>Concept</b>	<b>Base</b>
EESepS Earn_O rig	fee_do ms2_jfq earn	sEESepS Earn_O rig	Average Earnings prior to Stable Job-to- Job Separations (Continuous Employment)	Average quarterly earnings prior to job flows with no observed nonemployment spell	Dollars	Earnings	EE Sep S
EEHireS Earn_D est	fee_do ma2_kf qearn	sEEHire SEarn_ Dest	Average Earnings following Stable Job- to-Job Hires (Continuous Employment)	Average quarterly earnings following job flows with no observed nonemployment spell	Dollars	Earnings	EE Hir eS
AQSepS Earn_O rig	faq_do ms2_jfq earn	sAQSep SEarn_ Orig	Average Earnings prior to Stable Job-to- Job Separations (Brief Nonemployment)	Average quarterly earnings prior to job flows with a short nonemployment spell	Dollars	Earnings	AQ Sep S
AQHire SEarn_ Dest	faq_do ma2_kf qearn	sAQHir eSEarn_ Dest	Average Earnings following Stable Job- to-Job Hires (Brief Nonemployment)	Average quarterly earnings following job flows with a short nonemployment spell	Dollars	Earnings	AQ Hir eS

### 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 or Variable	Alternate Name	Status Flag	Indicator Name	Description	Units	Concept	Base
MHireR	all_dom a2_rate	sMHire R	Hires	Rate of hires into a worker's main job	Rate	Hire	((Main B+ MainE)/2)
MSepR	all_dom s2_rate	sMSepR	Separations	Rate of separations from a worker's main job	Rate	Separation	((Main B+ MainE)/2)
MJobStartR	first_dom me_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	Hire	((Main B+ MainE)/2)
MJobEndR	last_dom mb_rate	sMJobEndR	Main Job Ends	Rate of end of main jobs due to separations and instances when another job becomes the main source of earnings	Rate	Separation	((Main B+ MainE)/2)
EEHireR	ee_dom a2_rate	sEEHireR	Job-to-Job Hires (Continuous Employment)	Rate of hires following a separation with no observed nonemployment spell	Rate	Hire	((Main B+ MainE)/2)

<b>Indicator or Variable</b>	<b>Alternate Name</b>	<b>Status Flag</b>	<b>Indicator Name</b>	<b>Description</b>	<b>Units</b>	<b>Concept</b>	<b>Base</b>
EESepR	ee_dom s2_rate	sEESep R	Job-to-Job Separations (Continuous Employment)	Rate of separations followed by a hire with no observed nonemployment spell	Rate	Separation	((Main B+ MainE)/2)
AQHireR	aq_dom a2_rate	sAQHireR	Job-to-Job Hires (Brief Nonemployment)	Rate of hires following a separation with a short nonemployment spell	Rate	Hire	((Main B+ MainE)/2)
AQSepR	aq_dom s2_rate	sAQSepR	Job-to-Job Separations (Brief Nonemployment)	Rate of separations followed by a hire with a short nonemployment spell	Rate	Separation	((Main B+ MainE)/2)
J2JHireR	j2j_dom a2_rate	sJ2JHireR	Job-to-Job Hires	Rate of hires following a separation (short or no observed nonemployment spell)	Rate	Hire	((Main B+ MainE)/2)
J2JSepR	j2j_dom s2_rate	sJ2JSepR	Job-to-Job Separations	Rate of separations followed by a hire (short or no observed nonemployment spell)	Rate	Separation	((Main B+ MainE)/2)
NEHireR	ne_dom a2_rate	sNEHireR	Hires from Nonemployment	Rate of hires following any spell of nonemployment	Rate	Hire	((Main B+ MainE)/2)

<b>Indicator or Variable</b>	<b>Alternate Name</b>	<b>Status Flag</b>	<b>Indicator Name</b>	<b>Description</b>	<b>Units</b>	<b>Concept</b>	<b>Base</b>
ENSepR	en_dom s2_rate	sENSep R	Separations to Nonemployment	Rate of separations into any spell of nonemployment	Rate	Separati on	((Main B+ MainE )/2)
NEPersi stR	ne2_do ma2_rat e	sNEPers istR	Hires from Persistent Nonemployment	Rate of hires following a spell of persistent nonemployment	Rate	Hire	((Main B+ MainE )/2)
ENPersi stR	en2_do ms2_rat e	sENPers istR	Separations to Persistent Nonemployment	Rate of separations into a spell of persistent nonemployment	Rate	Separati on	((Main B+ MainE )/2)
NEFull QR	ne2p_d oma2_r ate	sNEFull QR	Hires from Full- Quarter Nonemployment	Rate of hires following a spell of full-quarter nonemployment (does not include intermittently employed)	Rate	Hire	((Main B+ MainE )/2)
ENFull QR	en2p_d oms2_r ate	sENFull QR	Separations to Full- Quarter Nonemployment	Rate of separations into a spell of full- quarter nonemployment (does not include intermittently employed)	Rate	Separati on	((Main B+ MainE )/2)



### 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_dom a2	sEE	Job-to-Job Flows (Continuous Employment)	Job flows with no observed nonemployment spell	Count	Hire	1
AQHire	aq_dom a2	sAQHire	Job-to-Job Flows (Brief Nonemployment)	Job flows with a short nonemployment spell	Count	Hire	1
EES	fee_do ma2	sEES	Stable Job-to-Job Flows (Continuous Employment)	Job flows from stable employment into stable employment with no observed nonemployment spell	Count	Hire	1
AQHire S	faq_do ma2	sAQHire S	Stable Job-to-Job Flows (Brief Nonemployment)	Job flows from stable employment into stable employment with a short nonemployment spell	Count	Hire	1
EESEarnings_Orig	fee_do ma2_jfq earn	sEESEarnings_Orig	Average Earnings prior to Job-to-Job Flows (Continuous Employment)	Average quarterly earnings prior to job flows with no observed nonemployment spell	Dollars	Earnings	EE S
EESEarnings_Dest	fee_do ma2_kf qearn	sEESEarnings_Dest	Average Earnings following Job-to-Job Flows (Continuous Employment)	Average quarterly earnings following job flows with no observed nonemployment spell	Dollars	Earnings	EE S
AQHire SEarnings_Orig	faq_do ma2_jfq earn	sAQHire SEarnings_Orig	Average Earnings prior to Job-to-Job Flows (Brief Nonemployment)	Average quarterly earnings prior to job flows with a short nonemployment spell	Dollars	Earnings	AQ Hire S

<b>Indicator or Variable</b>	<b>Alternate Name</b>	<b>Status Flag</b>	<b>Indicator Name</b>	<b>Description</b>	<b>Units</b>	<b>Concept</b>	<b>Base</b>
AQHire SEarn_ Dest	faq_doma2_kfqearn	sAQHireSEarn_ Dest	Average Earnings following Job-to-Job Flows (Brief Nonemployment)	Average quarterly earnings following job flows with a short nonemployment spell	Dollars	Earnings	AQHireS

### 5.3.6. Post-Secondary Employment Outcomes Earnings (PSEOE)

( [variables\\_pseoe.csv](#) )

Indicator Variable	Status Flag	Description	Units	Concept
y1_p25_earnings	status_y1_earnings	Earnings 25th Percentile in Year 1 (2016 Dollars)	Dollars	Earnings
y1_p50_earnings	status_y1_earnings	Earnings 50th Percentile in Year 1 (2016 Dollars)	Dollars	Earnings
y1_p75_earnings	status_y1_earnings	Earnings 75th Percentile in Year 1 (2016 Dollars)	Dollars	Earnings
y1_grads_earn	status_y1_grads_earn	Count of Employed Graduates in Year 1	Count	Employment
y5_p25_earnings	status_y5_earnings	Earnings 25th Percentile in Year 5 (2016 Dollars)	Dollars	Earnings
y5_p50_earnings	status_y5_earnings	Earnings 50th Percentile in Year 5 (2016 Dollars)	Dollars	Earnings
y5_p75_earnings	status_y5_earnings	Earnings 75th Percentile in Year 5 (2016 Dollars)	Dollars	Earnings
y5_grads_earn	status_y5_grads_earn	Count of Employed Graduates in Year 5	Count	Employment
y10_p25_earnings	status_y10_earnings	Earnings 25th Percentile in Year 10 (2016 Dollars)	Dollars	Earnings
y10_p50_earnings	status_y10_earnings	Earnings 50th Percentile in Year 10 (2016 Dollars)	Dollars	Earnings
y10_p75_earnings	status_y10_earnings	Earnings 75th Percentile in Year 10 (2016 Dollars)	Dollars	Earnings

<b>Indicator or Variable</b>	<b>Status Flag</b>	<b>Description</b>	<b>Units</b>	<b>Concept</b>
y10_grads_earn	status_y10_grads_earn	Count of Employed Graduates in Year 10	Count	Employment
y1_ipeds_count	status_y1_ipeds_count	Count of IPEDS Reported Graduates of Programs Included in Year 1 Earnings	Count	Graduates
y5_ipeds_count	status_y5_ipeds_count	Count of IPEDS Reported Graduates of Programs Included in Year 5 Earnings	Count	Graduates
y10_ipeds_count	status_y10_ipeds_count	Count of IPEDS Reported Graduates of Programs Included in Year 10 Earnings	Count	Graduates

### 5.3.7. Post-Secondary Employment Outcomes Flows(PSEOF)

( [variables\\_pseof.csv](#) )

Indicat or Variab le	Status Flag	Description	Units	Concep t
y1_gra ds_emp	status_y1_grads_emp	Count of Employed Graduates in Year 1	Count	Employ ment
y1_gra ds_emp _instate	status_y1_grads_emp_ins tate	Count of Graduates Employed in Same State as Educational Institution in Year 1	Count	Employ ment
y5_gra ds_emp	status_y5_grads_emp	Count of Employed Graduates in Year 5	Count	Employ ment
y5_gra ds_emp _instate	status_y5_grads_emp_ins tate	Count of Graduates Employed in Same State as Educational Institution in Year 5	Count	Employ ment
y10_gra ds_emp	status_y10_grads_emp	Count of Employed Graduates in Year 10	Count	Employ ment
y10_gra ds_emp _instate	status_y10_grads_emp_in state	Count of Graduates Employed in Same State as Educational Institution in Year 10	Count	Employ ment
y1_gra ds_nme	status_y1_grads_nme	Count of Graduates Jobless or Marginally Employed in Year 1	Count	Employ ment
y5_gra ds_nme	status_y5_grads_nme	Count of Graduates Jobless or Marginally Employed in Year 5	Count	Employ ment
y10_gra ds_nme	status_y10_grads_nme	Count of Graduates Jobless or Marginally Employed in Year 10	Count	Employ ment

# 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 ]

Column name
[ 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 ]
[ 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



<b>Variability measure</b>	<b>Alternate name</b>	<b>Variable name</b>	<b>Units</b>	<b>Base</b>
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

<b>Variability measure</b>	<b>Alternate name</b>	<b>Variable name</b>	<b>Units</b>	<b>Base</b>
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
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	State and local government plus private ownership
A01	Federal government
A05	All Private

## 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
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

race	label
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. Industry

### 6.12.1. Industry levels

( [label\\_ind\\_level.csv](#) )

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

### 6.12.2. Industry

( [label\\_industry.csv](#) )

Only a small subset of available values shown. The 2017 NAICS (North American Industry Classification System) is used for all years. QWI releases prior to R2018Q1 used the 2012 NAICS classification (see [Schema v4.1.3](#)). For a full listing of all valid 2017 NAICS codes, see <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2017>.

industry	label	ind_level
00	All NAICS Sectors	A
000	All NAICS Subsectors	A
0000	All NAICS Industry Groups	A
11	Agriculture, Forestry, Fishing and Hunting	2
111	Crop Production	3
1111	Oilseed and Grain Farming	4
1112	Vegetable and Melon Farming	4
...		
2382	Building Equipment Contractors	4
2383	Building Finishing Contractors	4
2389	Other Specialty Trade Contractors	4
31-33	Manufacturing	2
311	Food Manufacturing	3
3111	Animal Food Manufacturing	4
3112	Grain and Oilseed Milling	4

industry	label	ind_level
3113	Sugar and Confectionery Product Manufacturing	4
...		

# 6.13. Educational Institution

## 6.13.1. Institution Levels

( [label\\_inst\\_level.csv](#) )

Educational institutions are tabulated individually in the current data release. Future releases may aggregate to institutions to higher levels, such as state or Census Division.

inst_level	label
I	Institution
S	State of institution
D	Census division of institution
N	All institutions

## 6.13.2. Institution

( [label\\_institution.csv](#) )

Institution identifiers are sourced from the [U.S. Department of Education, Federal Student Aid office](#). This list has been supplemented with records for regional groupings of institutions (may be used in future PSEO tabulations).

institution	label	city	institution_state	inst_level	statefileps
...					
00137000	University of Colorado Boulder	Boulder	CO	I	08
00232500	University of Michigan	Ann Arbor	MI	I	26
00309000	Ohio State University	Columbus	OH	I	39
00332900	Pennsylvania State University (The)	University Park	PA	I	42
00389500	University of Wisconsin - Madison	Madison	WI	I	55
00955800	University of Texas	Austin	TX	I	48
...					

## 6.14. Degree level

( [label\\_degree\\_level.csv](#) )

The degree levels are sourced from the [National Center for Education Statistics \(NCES\)](#), [Integrated Postsecondary Education Data System \(IPEDS\)](#).

degree_level	label
00	All Degree Levels
01	Certificate < 1 year
02	Certificate 1-2 years
03	Associates
04	Certificate 2-4 years
05	Baccalaureate
06	Post-Bacc Certificate
07	Masters
08	Post-Masters Certificate
17	Doctoral - Research/Scholarship
18	Doctoral - Professional Practice

## 6.15. Classification of Instruction Programs (CIP)

### 6.15.1. CIP levels

( [label\\_cip\\_level.csv](#) )

cip_level	label
A	All Degree Fields
2	2-Digit CIP Family
4	4-Digit CIP Codes
6	6-Digit CIP Codes

### 6.15.2. CIP Codes

( [label\\_cipcode.csv](#) )

CIP codes are sourced from the [National Center for Education Statistics \(NCES\)](#), [Integrated](#)

Postsecondary Education Data System (IPEDS). Data are reported using 2020 CIP codes, for all years.

<b>cipcode</b>	<b>label</b>	<b>cip_level</b>	<b>CIPFamily</b>	<b>CIPDefinition</b>
00	All Instructional Programs	A	00	All CIP Codes
01	Agricultural/Animal/Plant/Veterinary Science and Related Fields	2	01	Instructional programs that focus on agriculture, animal, plant, veterinary, and related sciences and that prepares individuals to apply specific knowledge, methods, and techniques to the management and performance of agricultural and veterinary operations.
01.00	Agriculture, General	4	01	Instructional content is defined in code 01.0000.
01.0000	Agriculture, General	6	01	A program that focuses on the general principles and practice of agricultural research and production and that may prepare individuals to apply this knowledge to the solution of practical agricultural problems. Includes instruction in basic animal, plant, and soil science; animal husbandry and plant cultivation; soil conservation; and agricultural operations such as farming, ranching, and agricultural business.
01.XX	Agricultural/Animal/Plant/Veterinary Science and Related Fields (Consolidated 0100-0199)	4	01	Instructional programs that focus on agriculture, animal, plant, veterinary, and related sciences and that prepares individuals to apply specific knowledge, methods, and techniques to the management and performance of agricultural and veterinary operations.
03	Natural Resources and Conservation	2	03	Instructional programs that focus on the various natural resources and conservation fields and prepare individuals for related occupations.

## 6.16. Grad Cohort

**grad\_cohort** is a 4-digit number representing the first year of the graduation cohort. The number of years in the cohort is reported in the separate **Grad Cohort Years** variable.

If **grad\_cohort**=2010 and **grad\_cohort\_years**=3, then the cell includes graduates from 2010, 2011, and 2012.

When tabulating across all cohorts, the value **0000** will be used for **grad\_cohort**.

## 6.17. Grad Cohort Years

**grad\_cohort\_years** is the number of years in the cohort of reference (see [Grad Cohort](#)). It varies by [Degree level](#). Bachelor's degrees (05) are reported in 3 year cohorts, all other degrees are reported in 5 year cohorts. The **grad\_cohort\_years** will take a value (3,5). As tabulations are not done across degree types, the appropriate value will be reported in **grad\_cohort\_years** when **grad\_cohort**=0000.

## 6.18. Geography

### 6.18.1. 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 2019 vintage of [Census TIGER/Line geography](#) is used for all tabulations as of the R2020Q1 release.

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

( [label\\_geo\\_level.csv](#) )

geo_level	label	description
B	Metropolitan (complete)	Identifies 5-digit CBSA code for metropolitan areas provided by the Census Bureau's Geography Division. Balance of state including micropolitan areas are identified by custom codes as [ST]999
C	Counties	Identifies 5-digit FIPS/ANSI code for counties
D	Divisions	Identifies 1-digit multi-state Census Divisions
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/ANSI codes

geo_level	label	description
W	Workforce Investment Areas	2-digit state FIPS code and the 6-digit WIA identifier provided by LED State Partners

## 6.18.2. 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

( [label\\_geography\\_division.csv](#) )

The file [label\\_geography\\_division.csv](#) contains values and labels for all entities of [geo\\_level](#) 'D'. For more information on which states comprise each division, see the map [here](#).

geography	label	geo_level
1	New England Division	D
2	Middle Atlantic Division	D
3	East North Central Division	D
4	West North Central Division	D
5	South Atlantic Division	D
6	East South Central Division	D
7	West South Central Division	D
8	Mountain Division	D
9	Pacific Division	D
Z	Unclassified	D

### 6.18.3. State postal codes

Some parts of the schema use (lower or upper-case) state postal codes.

( [label\\_stusps.csv](#) )

geography	stusps
00	US
01	AL
02	AK
04	AZ
05	AR
06	CA
08	CO
09	CT
10	DE
11	DC
12	FL



geography	stusps
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
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

geography	stusps
46	SD
47	TN
48	TX
49	UT
50	VT
51	VA
53	WA
54	WV
55	WI
56	WY
72	PR
78	VI

#### 6.18.4. Detailed state and substate level values

Files of type 'label\_geography\_[ST].csv' will contain identifiers and labels for geographic areas entirely comprised within a given state '[ST]'. State-specific parts of cross-state CBSA, in records of type [geo\\_level](#) = M, are present on files of type 'label\_geography\_[ST].csv'. The file [label\\_geography\\_metro.csv](#) contains labels for records of type [geo\\_level](#) = B, for metropolitan areas only.

Scope	Types	Format file
US	N	<a href="#">label_geography_us.csv</a>
DIVISION	D	<a href="#">label_geography_division.csv</a>
METRO	B	<a href="#">label_geography_metro.csv</a>
<b>States</b>		
AK	S C W M	<a href="#">label_geography_ak.csv</a>
AL	S C W M	<a href="#">label_geography_al.csv</a>
AR	S C W M	<a href="#">label_geography_ar.csv</a>
AZ	S C W M	<a href="#">label_geography_az.csv</a>
CA	S C W M	<a href="#">label_geography_ca.csv</a>
CO	S C W M	<a href="#">label_geography_co.csv</a>

Scope	Types	Format file
CT	S C W M	<a href="#">label_geography_ct.csv</a>
DC	S C W M	<a href="#">label_geography_dc.csv</a>
DE	S C W M	<a href="#">label_geography_de.csv</a>
FL	S C W M	<a href="#">label_geography_fl.csv</a>
GA	S C W M	<a href="#">label_geography_ga.csv</a>
HI	S C W M	<a href="#">label_geography_hi.csv</a>
IA	S C W M	<a href="#">label_geography_ia.csv</a>
ID	S C W M	<a href="#">label_geography_id.csv</a>
IL	S C W M	<a href="#">label_geography_il.csv</a>
IN	S C W M	<a href="#">label_geography_in.csv</a>
KS	S C W M	<a href="#">label_geography_ks.csv</a>
KY	S C W M	<a href="#">label_geography_ky.csv</a>
LA	S C W M	<a href="#">label_geography_la.csv</a>
MA	S C W M	<a href="#">label_geography_ma.csv</a>
MD	S C W M	<a href="#">label_geography_md.csv</a>
ME	S C W M	<a href="#">label_geography_me.csv</a>
MI	S C W M	<a href="#">label_geography_mi.csv</a>
MN	S C W M	<a href="#">label_geography_mn.csv</a>
MO	S C W M	<a href="#">label_geography_mo.csv</a>
MS	S C W M	<a href="#">label_geography_ms.csv</a>
MT	S C W M	<a href="#">label_geography_mt.csv</a>
NC	S C W M	<a href="#">label_geography_nc.csv</a>
ND	S C W M	<a href="#">label_geography_nd.csv</a>
NE	S C W M	<a href="#">label_geography_ne.csv</a>
NH	S C W M	<a href="#">label_geography_nh.csv</a>
NJ	S C W M	<a href="#">label_geography_nj.csv</a>
NM	S C W M	<a href="#">label_geography_nm.csv</a>
NV	S C W M	<a href="#">label_geography_nv.csv</a>
NY	S C W M	<a href="#">label_geography_ny.csv</a>
OH	S C W M	<a href="#">label_geography_oh.csv</a>
OK	S C W M	<a href="#">label_geography_ok.csv</a>

Scope	Types	Format file
OR	S C W M	<a href="#">label_geography_or.csv</a>
PA	S C W M	<a href="#">label_geography_pa.csv</a>
PR	S C W M	<a href="#">label_geography_pr.csv</a>
RI	S C W M	<a href="#">label_geography_ri.csv</a>
SC	S C W M	<a href="#">label_geography_sc.csv</a>
SD	S C W M	<a href="#">label_geography_sd.csv</a>
TN	S C W M	<a href="#">label_geography_tn.csv</a>
TX	S C W M	<a href="#">label_geography_tx.csv</a>
UT	S C W M	<a href="#">label_geography_ut.csv</a>
VA	S C W M	<a href="#">label_geography_va.csv</a>
VT	S C W M	<a href="#">label_geography_vt.csv</a>
WA	S C W M	<a href="#">label_geography_wa.csv</a>
WI	S C W M	<a href="#">label_geography_wi.csv</a>
WV	S C W M	<a href="#">label_geography_wv.csv</a>
WY	S C W M	<a href="#">label_geography_wy.csv</a>

## 6.19. Aggregation level

### 6.19.1. J2J

( [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.

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:

- [cip\\_level](#) - degree field reporting level of table
- [inst\\_level](#) - institution reporting level of table
- [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		1	1	1	0	N
...								
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
...								

## 6.19.2. PSEO

([label\\_agg\\_level\\_pseo.csv](#))

Measures within the PSEO data product can be tabulated by characteristics of the graduate (e.g., institution attended, instructional program, degree level, etc.) and by characteristics of employment (state, industry). All measures may not be available on all levels of aggregation - for example, earnings variables may not be available when tabulating by place and industry of work, though counts are. Every tabulation level is assigned a unique aggregation index, represented by the `agg_level_pseo` variable. This index starts from 1, representing a national level grand total (all institutions, graduates, industries, 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.

Aggregation levels that are available in the PSEO release will be flagged.

The following variables are included in the [label\\_agg\\_level\\_pseo.csv](#) file:

Variable	Description
agg_level_pseo	index representing level of aggregation reported on a given record
grad_char	Characteristics of graduate and program
firm_char	Characterstics of place of employment
pseoe	Flag: aggregation level available on PSEO Earnings
pseof	Flag: aggregation level available on PSEO Flows

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

- [inst\\_levels](#) - institution level of table
- [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.

agg_level_pseo	grad_char	firm_char	cip_level	inst_level	geo_level	ind_level	by_grad_cohort	by_degree_level	pseoe	pseof
38	Degree Level * Institution ID		A	I	N	A	0	1	1	1
40	Degree Level * CIP 2-digit * Institution ID		2	I	N	A	0	1	1	1
42	Degree Level * CIP 4-digit * Institution ID		4	I	N	A	0	1	1	0
44	Degree Level * Start Year for Graduation Cohort * Institution ID		A	I	N	A	1	1	1	1

agg_level_pseo	grad_char	firm_char	cip_level	inst_level	geo_level	ind_level	by_grad_cohort	by_degree_level	pseo_e	pseo_f
...										
188	Degree Level * Start Year for Graduation Cohort * Institution ID	NAICS Sector * Census Division	A	I	D	S	1	1	0	1
190	Degree Level * CIP 2-digit * Start Year for Graduation Cohort * Institution ID	NAICS Sector * Census Division	2	I	D	S	1	1	0	1
192	Degree Level * CIP 4-digit * Start Year for Graduation Cohort * Institution ID	NAICS Sector * Census Division	4	I	D	S	1	1	0	0
...										
188	Degree Level * Start Year for Graduation Cohort * Institution ID	NAICS Sector * Census Division	A	I	D	S	1	1	0	1
190	Degree Level * CIP 2-digit * Start Year for Graduation Cohort * Institution ID	NAICS Sector * Census Division	2	I	D	S	1	1	0	1
192	Degree Level * CIP 4-digit * Start Year for Graduation Cohort * Institution ID	NAICS Sector * Census Division	4	I	D	S	1	1	0	0
...										



### **Restricted 4-digit CIP tabulations in earnings data (PSEOE)**

Earnings estimates and counts are provided only at the 2-digit CIP level for Masters and Doctor Research programs (degree levels 07 and 17). Records are included for 4-digit programs observed, but all measures are suppressed.

### **6.19.3. QWI**

Aggregation level to be added to QWI in a future release

## 7. Status Flags

( [label\\_flags.csv](#) )

Most indicators in the LEHD data products have associated status flags. Each status flag in the tables above contains one of the following valid values. The values and their interpretation are listed in the tables below. Unless otherwise specified in this section, a status flag will take the values described in 7.1 Standard Status Flags.

### 7.1. Standard Status Flags



#### *Important*

Note: Currently, the J2J and PSEO tables only contain status flags '-1', '1', '5'. 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

### 7.2. IPEDS Count Status Flag

( [label\\_flags\\_ipeds\\_count.csv](#) )

Graduate counts are provided from public use data from the [Integrated Postsecondary Education Data System \(IPEDS\)](#). Counts are linked to graduation cohorts in the PSEO data and included in the PSEO tables. In a small number of cases, misalignment in programs (CIPCODE) is observed between the

IPEDS and PSEO counts. In these cases, the IPEDS counts adjusted to be consistent with those on PSEO, and the count is flagged accordingly.

flag	label
1	IPEDS counts as reported
2	IPEDS counts edited for consistency with PSEO categories
3	IPEDS counts not available

# 8. Metadata

( [variables\\_version.csv](#) )

## 8.1. Version Metadata for QWI, J2J, and PSEO 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\_[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 <a href="#">lehd_csv_naming.pdf</a>
fas	[fas]	(optional - concatenated with product) used for QWI to distinguish separate tabulations from the legal [fas] values as described in <a href="#">lehd_csv_naming.pdf</a>
geo	<a href="#">[stusps]</a> or METRO	Covered <a href="#">[geography]</a> (uppercase state postal code including entire nation or the word METRO)
geonum	<a href="#">[geography]</a>	Numeric geography code
start	yyyy:q (QWI, J2J) yyyy (PSEO)	Start year and quarter
end	yyyy:q (QWI, J2J) yyyy (PSEO)	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 latest\_release QWI release of Delaware (obtained from [here](#)) has the following content:

```
QWI_F DE 10 1998:3-2019:4 V4.6.0 R2020Q3 qwipu_de_20200717_2142
QWI_FA DE 10 1998:3-2018:4 V4.6.0 R2020Q3 qwipu_de_20200717_2142
QWI_FS DE 10 1998:3-2018:4 V4.6.0 R2020Q3 qwipu_de_20200717_2142
```

Similarly, the metadata for the latest\_release release of Delaware J2J tabulations (obtained from [here](#)) has the following content:

```
J2J DE 10 2000:2-2019:2 V4.6.0 R2020Q2 j2jpu_de_20200620_0943
```

Some J2J metadata may contain multiple lines, as necessary.

The PSEO metadata will contain separate lines for the PSEOE and PSEOF tables. The year range for PSEO tables is based on the [Grad Cohort](#), the start year of the graduation cohort. An example for Colorado institutions has the following content:

```
PSEOE CO 08 2001-2015 V4.5.0 2019Q1 pseopu_co_20190617_0839
PSEOF CO 08 2001-2015 V4.5.0 2019Q1 pseopu_co_20190617_0839
```

## 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_orig	Char(1)	Geographic level of origin region
geography_orig	Char(8)	Geography code of origin region
start_year	Num	First year regional pair may be observed
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.

### 8.3. Metadata on Indicator Availability

([variables\\_lags.csv](#))

Each [Indicator](#) potentially requires leads and/or lags of data to be computed, and thus may not be available for certain time periods. Only two QWI will be available for all quarters of the time span described by start and end in the [version.txt](#) files: EmpTotal and Payroll. The date range for QWI, QWIR, J2J, and J2JR can be found in [version.txt](#); the date range for J2JOD can be found in [avail.csv](#).

For each indicator, the following files contain the quarters of data required to be available relative to the overall date range described in the metadata for the release:

- [lags\\_qwi.csv](#)
- [lags\\_j2j.csv](#)

The files are structured as follows:

variable	type	label
Indicator Variable	Num	Name of the Indicator
Quarters_Required_Prior	Num	Number of quarters of data required to compute indicator relative to start quarter
Quarters_Required_Subsequent	Num	Number of quarters of data required to compute indicator relative to end quarter

## 9. Changes

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

### 9.1. Changes from 4.6.0

- Merge PSEO schema files into official release version
- Minor formatting changes

### 9.2. Changes from 4.5.0-draft

- Additional status flags on PSEO Earnings
- Additional measures on PSEO Flows to report unobserved/marginally employed
- Earnings reported at 2-digit CIPCODE level
- Institution code changed to 8-digits
- Updated to 2020 CIPCODE

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