Longitudinal Employer-Household Dynamics (LEHD) Program

A Dynamic Data Source for the 21st Century

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Disclaimer: All data examples are fictional and do not reflect any individual or firm data. Any opinions and conclusions expressed herein are those of the authors and do not necessarily represent the views of the U.S. Census Bureau.

What is LEHD?

- At its core, LEHD is a National Longitudinal Job Frame
  - Based on UI-Wage and other administrative data sources
- Primary Products
  - Public use products: QWI, OnTheMap
  - Rich micro data for research in the RDCs

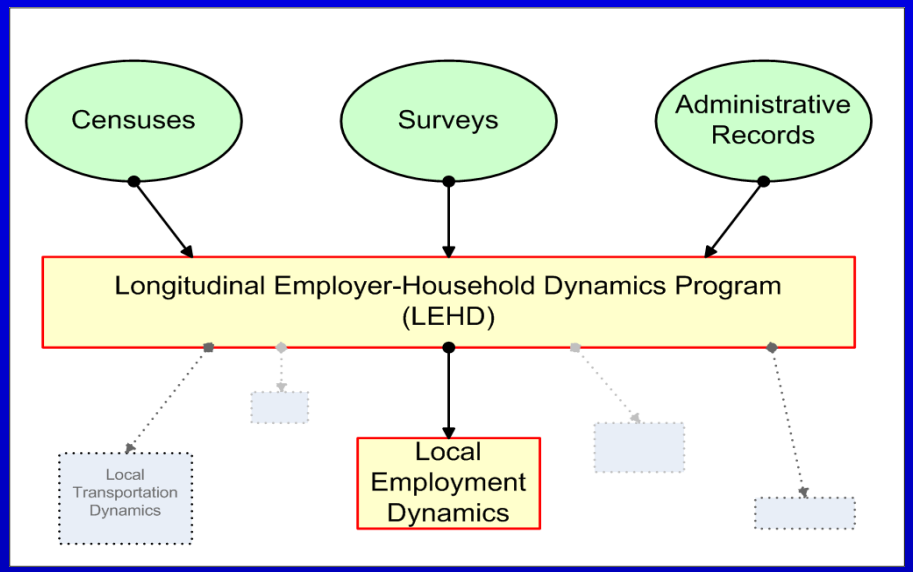
Where does LEHD fit within the Census Bureau's data infrastructure?

- The Census Bureau maintains national frames of household and business establishments
- Household Frame: Master Address File
  - Decennial Census, ACS, CPS, SIPP, etc.
- Establishment Frame: Business Register
  - Economics Census, Monthly and Annual Surveys, Longitudinal Business Database, County Business Patterns, etc

LEHD is a national jobs frame

- Jobs are the unit of analysis in LEHD data
  - Jobs are an employer – employee pair for a given time period
- Integrate with
  - Person and Household Data via “employee” information
  - Establishment and Firm data via “employer” information
- Integration permits:
  - Improved Public Use Products
  - Richer Microdata for Research (via the Research Data Centers)

The Concept – Data Integration



Longitudinal National Frame of Jobs

New data and products

- Leverage existing data
- Create new data and products
- Make valid detailed data available while protect confidentiality
- Cost-effective
- No respondent burden

Local Employment Dynamics

- ✓ A voluntary partnership between the states and the U.S. Census Bureau
- ✓ States supply quarterly worker (UI wage) and business (QCEW) records
- ✓ Census Bureau merges the state records with other data to produce new data and products about jobs, workers, industries and your local economy

LEHD microdata available for research in the RDCs

Employment History File (EHF)

Changes jobs in Q3

PIK	SEIN	Q1	Q2	Q3	Q4	Q5
Person1	Firm A	7000	7000	3000	0	0
Person1	Firm B	0	0	4000	8000	8000
Person2	Firm A	500	0	0	0	0
Person2	Firm D	0	1000	1000	0	0
Person2	Firm F	0	0	3000	4000	4000

Unit of observation is a job

Universe is jobs covered by State UI

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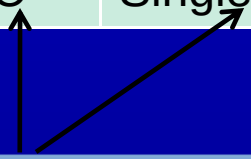
Universe is employers reporting QCEW data

Employer Characteristics File (ECF)

SEIN	SEINUNIT	Qtr	Industry	M1size	M2size	M3size
FirmA	Unit1	1	333333	302	335	330
FirmA	Unit2	1	666111	4030	4032	4031
FirmA	Unit3	1	444222	20	23	21
FirmB	Singleunit	1	771111	1	1	0
FirmC	Singleunit	1	666622	5	7	7



Unit of observation is a State UI taxpayer ID

LEHD microdata available for research in the RDCs

Individual Characteristics File (ICF)

PIK	DOB	Sex	Race
Person1	MM/DD/YYYY	M/F	Race1
Person2	MM/DD/YYYY	M/F	Race4
Person3	MM/DD/YYYY	M/F	Race1

Demographic information from Census surveys and SSA administrative data.

Unit of observation is a Person ID (PIK)

Linking the data for analysis

Geo-coded Address List: Person and Firm address data

ICF

PIK	DOB	Sex	Race
Person1	1/3/73	F	White
Person2	3/1/37	F	Asian

EHF

PIK	SEIN	Q1	Q2	Q3
Person1	Firm A	7000	7000	3000
Person1	Firm B	0	0	4000
Person2	Firm A	500	0	0
Person2	Firm D	0	1000	1000
Person2	Firm F	0	0	3000

ECF

SEIN	SEINUNIT	Qtr	Industry	M1size	M2size	M3size
FirmA	Unit1	1	333333	302	335	330
FirmA	Unit2	1	666111	4030	4032	4031
FirmA	Unit3	1	444222	20	23	21

U2W: imputes PIK -> SEINUNIT

LEHD microdata available for research in the RDCs

- Employment History Files
  - PIK-level file, wage and employment history
- Employer Characteristics Files
  - SEIN-level file, information on employers
- Individual Characteristics File
  - Worker characteristics
- Geo-coded Address List
  - SEIN and PIK addresses
- Unit-to-Worker Imputation File
  - Impute from SEIN to establishment
- Business Register Bridge

Questions for Research: Example Business Formation and Innovation

- Business formation is critical for job and productivity growth
- New firms are often small, sole proprietors and an important fraction start as micro-enterprises (non-employer firms)
- By integrating LEHD microdata with business microdata data researchers can track business startups.
  - Where did the entrepreneur come from?
    - What type of firm was entrepreneur working at?
    - Are some business types and locations especially effective incubators of new firms?
  - What kinds of jobs do start-ups create?
    - What kind of job paths are there at successful startups?
    - Do workers at startups come from the community or are the workers migrants?

Questions for Research: Example Displaced worker outcomes

- What happens to the workers at establishments that have mass layoff events?
  - LEHD data allow researchers to follow these workers to their subsequent jobs
  - Can examine their wage outcomes and the characteristics of the businesses that reemploy them.

- Tracking employment outcomes for workers who are displaced
    - How long does it take to become re-employed?
    - What types of jobs are they hired into (location, industry)?
    - What are the earnings outcomes?

Summary: Research using LEHD data in RDCs

- LEHD microdata offer many unique advantages for economic research:
  - Longitudinal linked employer-employee data
  - Follow employment histories of workers
  - Can identify nascent firms and follow them over time
  - Can identify co-workers
- Ability to link at the micro (individual, household, establishment, firm) level records from different census, survey and administrative programs, as well as researcher provided data.
  - Dramatically increases the analytical power of the data.