

# Checking in with LEHD

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# Desiderata

- Disclaimer: Any opinions and conclusions expressed herein are those of the authors and do not necessarily represent the views of the U.S. Census Bureau. All results have been reviewed to ensure that no confidential information is disclosed.

# Outline

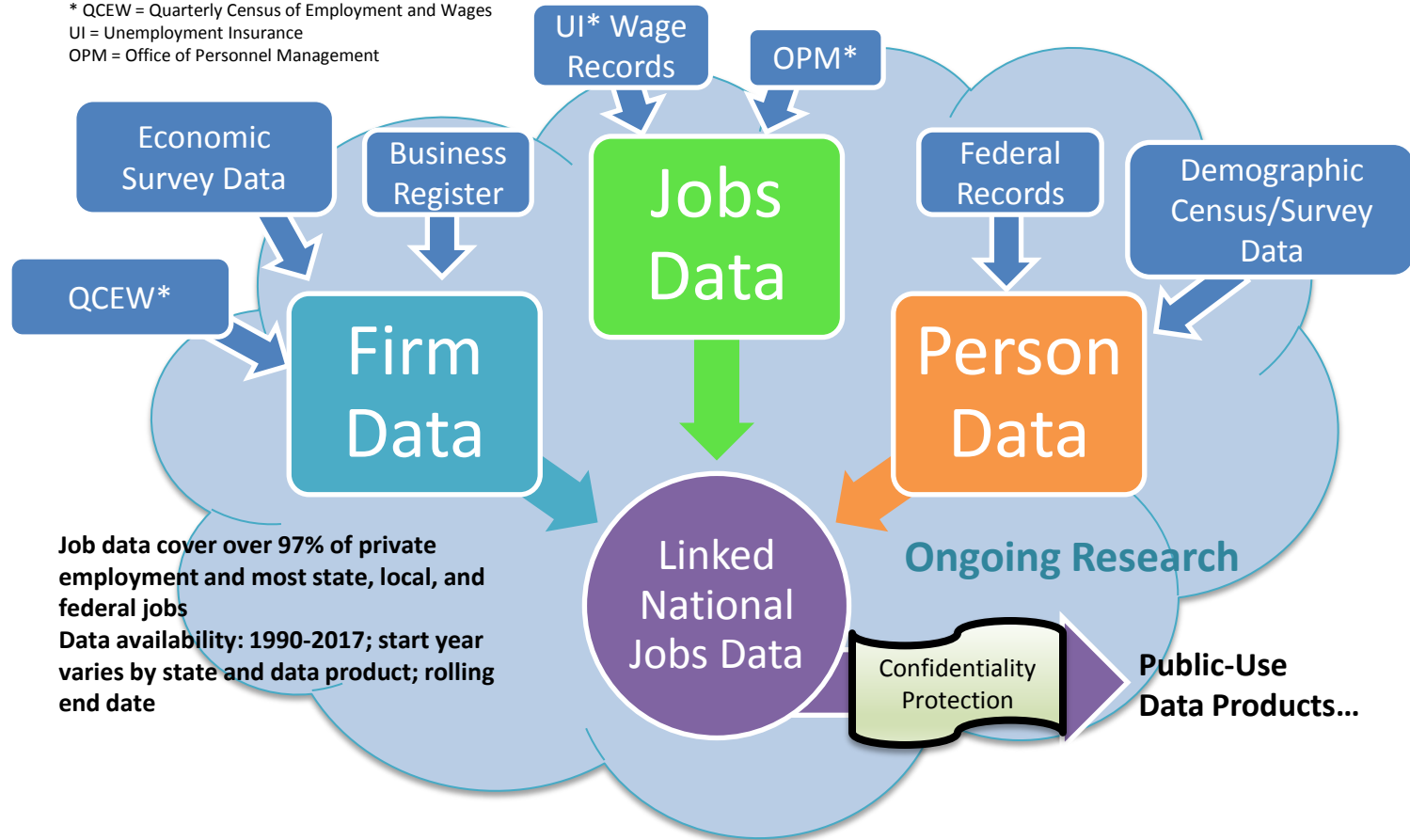
- Quick Recap of the LEHD Program
- What's New at LEHD
  - Job-to-Job Flows and J2J Explorer
  - Pilots with Universities and Army
- LODES/OnTheMap Items
  - Data Release
  - OPM
  - Comparisons to ACS Commuting
  - Next Steps
- Contact

# LEHD Program in Brief

- Longitudinal Employer-Household Dynamics Program (LEHD)
  - Local Employment Dynamics (LED) Partnership with States → UI and QCEW
  - Linked Employer-Employee Database
  - Core of Administrative Data
  - Begun in late 1990s
  - Public-use data products on the workforce and the labor market

# LEHD Data Infrastructure

\* QCEW = Quarterly Census of Employment and Wages  
 UI = Unemployment Insurance  
 OPM = Office of Personnel Management



Job data cover over 97% of private employment and most state, local, and federal jobs  
 Data availability: 1990-2017; start year varies by state and data product; rolling end date

# Data Products

- Quarterly Workforce Indicators (QWI)
  - 32 indicators on employment, hiring, separations, and earnings. National indicators in beta.
- LEHD Origin-Destination Employment Statistics (LODES)
  - Annual origin-destination dataset by firm and worker characteristics and detailed geography.
- Job-to-Job Flows (J2J)
  - Quarterly statistics on transitions between jobs as well as transitions into/out of nonemployment.

# Access Points

- Applications
  - OnTheMap <https://onthemap.ces.census.gov/>
  - OnTheMap for Emergency Management <https://onthemap.ces.census.gov/em/>
  - J2J Explorer <https://j2jexplorer.ces.census.gov/>
  - QWI Explorer <https://qwiexplorer.ces.census.gov/>
  - LED Extraction Tool <https://ledextract.ces.census.gov/>
- Raw Data Download <https://lehd.ces.census.gov/data/>
- Census API (QWI Only) <https://www.census.gov/data/developers/data-sets/qwi.html>

# What's New – Job-to-Job

- Job-to-Job Flows (J2J):  
40 different measures of worker reallocation, data back to 2000 for some states, firm and worker characteristics, for national, state, and MSA tabulations. Recently expanded in scope.
- J2J Explorer:  
Web-based analysis tool that enables comprehensive access to the J2J data in a dashboard interface. Beta version released in June.



# J2J and J2J Explorer

- Data Info/Download

[https://lehd.ces.census.gov/data/j2j\\_beta.html](https://lehd.ces.census.gov/data/j2j_beta.html)

- J2J Explorer

<https://j2jexplorer.ces.census.gov/>

# What's New – Pilot Projects

- Education
  - Current partners: U. of Texas and Colorado Dept. of Higher Ed.
  - Fills major gap in stat. infrastructure: Longitudinal earnings outcomes across state borders. Will produce public-use stats in 2018:
    - National earnings tabs by major & institution.
    - Flows from major × institution to region × industry.
    - Employment rates by major & institution.
- Army
  - Help Army understand workforce outcomes for people leaving the service.
  - Many long term goals, including adding Vet. Status as a characteristic on LEHD data products.

# LODES/OnTheMap

- 2015 LODES data released in September
- 2016 release planned for next year
- Changes in Federal jobs data (OPM-sourced)  
<https://lehd.ces.census.gov/doc/help/onthemap/LODESDataNote-FedEmp2015.pdf>
- Improvements in residential source data (RCF)  
<https://ideas.repec.org/p/cen/wpaper/17-40.html>
- Work on confidentiality protection systems  
<https://dl.acm.org/citation.cfm?id=3035940>

# LODES/OnTheMap

- Design comparison between LODES and ACS Commuting

<https://ideas.repec.org/p/cen/wpaper/14-38.html>

- Detailed microdata comparison

<https://ideas.repec.org/p/cen/wpaper/17-34.html>

- Main Issues:

- Disagreement in workplace location between ACS and LODES
- Missing data on establishments from admin. sources

# Microdata Comparison (Green et al.)

Table 2: Sample Restrictions for Analysis Sample

Sample Restriction	Person Records	Percent
ACS respondents in 2009 and 2010	≈ 9,000,000	
Age ≥ 16 at response date with PIK assigned (92%)	6,666,000	
10% random person sample	667,000	10.0%
ACS employed	<b>311,000</b>	46.6%
Linked to any LEHD job in 3-quarter window around response date	287,000	92.2%
Sufficient ACS information for matching (name, address)	285,000	91.6%
Sufficient LEHD information for matching (name, address)	277,000	89.1%

Notes: Records rounded to 1,000s. Percentages computed relative to the line immediately above.

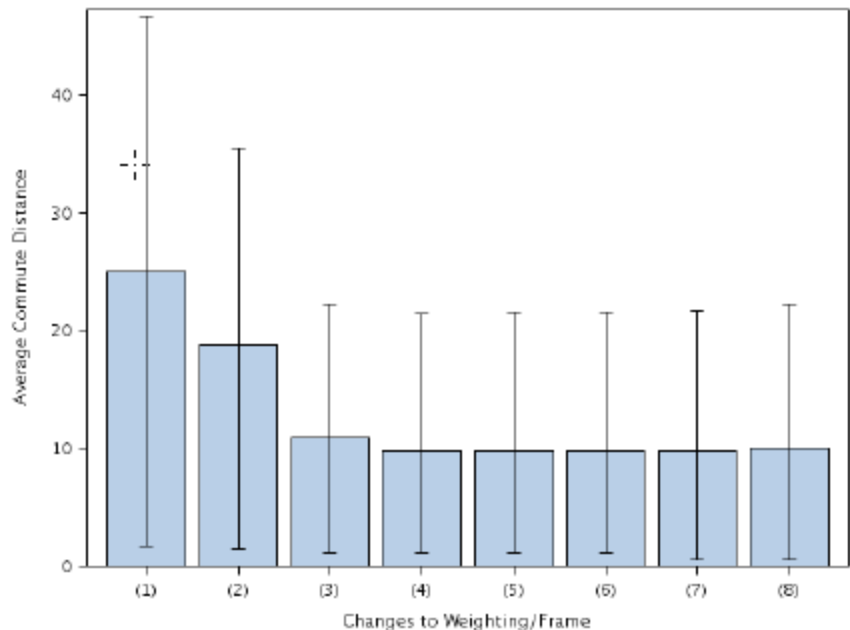


Table 4: Joint Distribution of ACS and LEHD Employment Status

ACS	Link to LEHD in 3-quarter window	
	Employed	Not employed
Employed	43.1	3.7
Not employed	11.5	41.8

Notes: Sample defined in line 2 of Table 2, representing 667,000 ACS respondents. All numbers are cell percentages. LEHD jobs must have earnings in either the ACS response quarter or the previous or subsequent quarters.

Table 7: Progression of Configurations for Commuting Statistics

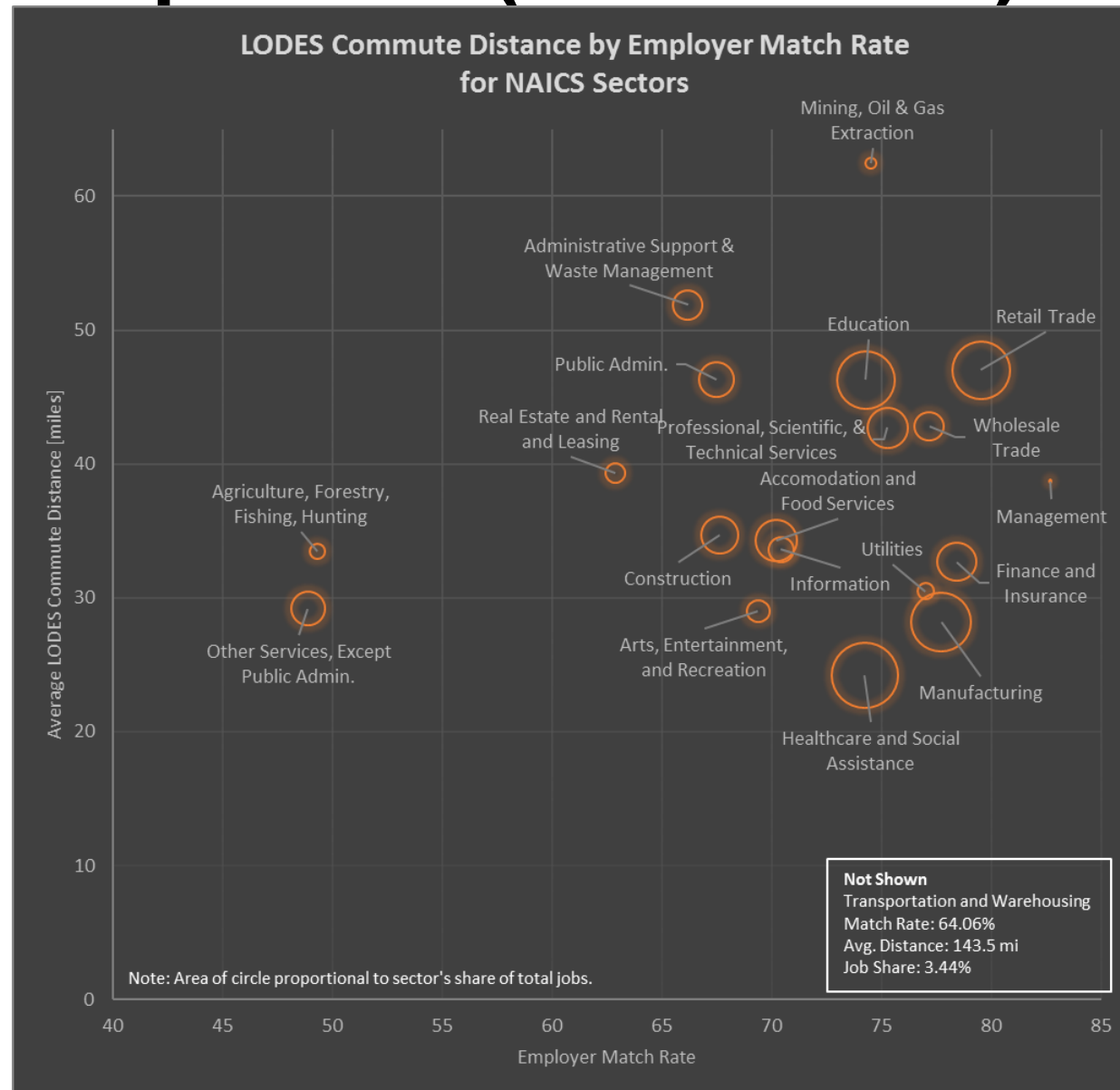
Factors	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Weighting	LODES	LODES	LODES	LODES	LODES	<b>ACS</b>	ACS	ACS
Sample	Employer	<b>Estab.</b>	Estab.	Estab.	Estab.	Estab.	Estab.	<b>Employer</b>
Workplace	U2W	U2W	<b>Match</b>	Match	<b>ACS</b>	ACS	<b>ACS (edit)</b>	ACS (edit)
Residence	CPR	CPR	CPR	<b>ACS</b>	ACS	ACS	ACS	ACS
Obs	158,000	92,000	92,000	92,000	92,000	92,000	83,000	135,000

Notes: Bolded text displays the factor that changes in each configuration. For definitions of *distance-restricted Employer Match* and *distance-restricted Establishment Match* samples, see Table 3. For details, see text.

# Microdata Comparison (Green et al.)

- Industry composition of LODES commute distance by match rate.

Combines Tables A3 and A4 from *Green et al.*



# Next Steps/Challenges

- Next Steps
  - Add data on establishments (NCES school districts)
  - Redesign unit-to-worker (U2W) imputation
- Challenges
  - Staff resources
  - Improving accuracy of data sources
- Also: Redesign OnTheMap application next year
- Thanks!

# Contacts

- LEHD
  - <https://lehd.ces.census.gov/>
  - [CES.Local.Employment.Dynamics@census.gov](mailto:CES.Local.Employment.Dynamics@census.gov)
  - Data: <https://lehd.ces.census.gov/data/>
  - Applications:  
<https://lehd.ces.census.gov/applications/>
- LODES/OnTheMap
  - <https://lehd.ces.census.gov/data/#lodes>
  - <https://onthemap.ces.census.gov/>
- [matthew.graham@census.gov](mailto:matthew.graham@census.gov)