Data Sharing: Progress and Challenges at BLS

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Data Sharing: Progress and Challenges at BLS

- Quarterly Census of Employment and Wages (QCEW) basics
- Data Sharing Opportunities
- Current Progress and Challenges
- Future Work and Opportunities
QCEW Basics

- Federal/state system
  - BLS pays states and sets data quality standards
- UI mandated reporting
  - Any covered business must report to the state
- Supplemented by Annual Refiling Survey
  - Most establishments on a 3 year cycle
  - Establishments in “low change” industries on a 6 year cycle (cemeteries, pipelines, etc.)
QCEW: Strengths

• Monthly employment for all UI covered businesses, quarterly wages...98% of US employment including government, agriculture and private households

• **Coverage**: Reporting is mandated by state laws.
  – 14.5 million annual UI claim verification events ensure high coverage; each initial UI claim includes a search for the employer. (280,000 x 52 weeks)
QCEW: Strengths

• Timely, frequent, and heavily reviewed (by States, BLS, BEA)
  – Over-the-month, -quarter, and -year edits
• Lots of respondent re-contact
  – validation of change, reasons for change, corrections, etc.)
• 5.6 month lag to publication
  – Following the end of each calendar quarter
• 9.36 million establishments (Q1 2014)
• 143.6 million employment
Data Quality:
Low QCEW Imputations

QCEW Imputations: Percent of Units and Employment Imputed, Private Sector

Source: Initial and Update Data Counts, 2001/1 - 2012/4
QCEW: Strengths – Multiple Worksite Report

• Multiple Worksite Report (any sub-unit with 10+ employees should be reported separately)
• Unmatched worksite reporting in the world
• Quarterly reports capture
  – continuing establishments,
  – new establishment births,
  – and establishment closings/deaths
• Mandatory in 28 states
• Voluntary in 25 states
QCEW: Reporting Structure

• UI covered employment reported at UI number level within a state
• EINs for 99.9 % of establishments in private sector due to FUTA tax offset

**Multi**
- EIN 1  UI 1  Estab 1
  Estab 2
- UI 2  Estab 1

**Single**
- EIN 2  UI 1  Estab 1

• EINs are directly linked to each owned establishment.
USES OF QCEW

General Economic Uses
- Gross Domestic Product (BEA)
- Personal Income (BEA)
- State Revenue Projections
- Economic Forecasting

Analytical Uses
- Quarterly Census of Employment and Wages (QCEW)
- Geocoded Establishments
- Census Bureau
  - Improve CPS After 2010 Census
  - LEHD
  - Industry Code Sharing

Sampling
- Benchmarking (Employment Base)
- Current Employment Statistics
- Occupational Employment Statistics
- Occupational Safety and Health Statistics
- Jobs Openings & Labor Turnover Survey

Programmatic Uses
- UI Tax Rate & Actuarial Analysis
- UI-Covered Employment
- Local Area Unemployment
- Social Security Administration
- Federal Funds Allocation $321 Billion (HUD, USDA, HCFA/CHIP)

Local Economic Development Indicators
- Cluster Analysis
- Shift Share
- Industry Diversity Indexes
- Location Quotients

Minimum Wage Studies
Quarterly Press Releases, Annual Employment and Wages
Job Creation/Destruction
- Size Class Dynamics
- Business Survival Rates

Geocoded Establishments
Census Bureau
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Local Government Services Planning
Local Economic Impact Response Planning
Local Transportation Planning

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- Future Work and Opportunities
Existing Data Sharing Opportunities

- QCEW provides Census with NAICS codes, physical location address and other codes for new and unclassified businesses
  - Over 1 million codes provided each year saving Census funds, reducing burden, increasing consistency.
- QCEW used as base input to LEHD
- QCEW used in redesign of CPS sample after Decennial Census
MOU

• BLS and Census share multi-unit firms under a 3-year Memorandum Of Understanding

• Timing: Files shared in October based on data availability of Econ Census or Company Organization Survey.
  – QCEW 2012 files are available by mid 2013.
    • QCEW March files available in September same year
  – Census 2012 files available fall 2014.

• MOU calls for meetings every 6 months
MOU: BLS Primary Projects

1. Establishment vs. firms vs. enterprises
2. Product codes: PPI and QCEW
3. NAICS coding differences
   – Differences in NAICS has been a problem for BEA for 50 years (Bob Parker)
   – Can we address this problem?
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Project 1: Establishment vs. firms vs. enterprises

- Users want different levels of data: establishment, firm, enterprise.
- These different levels are used to illustrate different economic concepts.
- But how different are they? Do they tell a different story?
Project 1: Establishment vs. firms vs. enterprises

- Most firms/enterprises are single location businesses.
- QCEW (Single + Multi) data:
  - 5.84 Million of 6.18 Million firms have a single location
    - The establishment is the firm is the enterprise
  - 343 Thousand firms with > 1 location – i.e. Multi’s
- Census Multi data:
  - 128 Thousand firms are single firm enterprises
    - The firm is the enterprise
  - 40 Thousands enterprises with > 1 firm
    - QCEW can benefit by obtaining this linkage from Census BR
- Given small number of multi-firm enterprises – we might expect Firm and Enterprise data to be similar
Project 1: Establishment vs. firms vs. enterprises

- BLS has establishment and firm (EIN)
- Census provided “enterprise” codes
- BLS re-tabulated its Business Employment Dynamics data at the enterprise level.
Enterprises vs. Firms vs. Establishments
September 1992 – September 2012
Total gross job gains

Total private
Thousands

Note: Shaded area represents recession period.
Enterprises vs. Firms vs. Establishments
September 1992 – September 2012
Gross job gains from openings

less than 50 employees
Thousands

1600
1500
1400
1300
1200
1100
1000
900
800
700


Enterprises   Establishments   Firms

Note: Shaded area represents recession period.
Enterprises vs. Firms vs. Establishments
September 1992 – September 2012
Total gross job losses

Total private Thousands

Note: Shaded area represents recession period.
Enterprises vs. Firms vs. Establishments

September 1992 – September 2012

Gross job losses from closings

less than 50 employees

Thousands

Note: Shaded area represents recession period.
Project 2: Producer Price Index and Product codes

• Under the continued MOU, the goal would be to establish whether product codes are stable over time, and if so, then:
  – Can PPI use product-level information from the Economic Census data as the primary sampling frame or more likely as a supplementary sampling frame with QCEW data.
  – Main concern is if PPI can only get that product code information once every 5 years, is it stable enough?

• PPI did joint work with International Price Program on using material codes for constructing an independent Input Price Index.

• QCEW has not yet been able to focus resources for work with product codes – however, this is still planned.
Project 3: NAICS Coding Differences:
Why do we have differences?

• **Different collection vehicles and processes**
  – Different collected information, forms, coders, frequency, timeliness

• **Frequencies/Timing**
  – QCEW conducts Annual Refiling Survey on 3-6 year rotating cycle. Most businesses with 3+ employees are on a 3-year cycle.
  – Census sets codes for many units each 5 years Econ Census

  – QCEW kills off deaths each quarter
    • Impacts employment comparisons
Project 3: NAICS Coding Differences:
Why do we have differences?

- **Multi-unit breakouts:**
  - QCEW has 1.4 million more multi’s - means that BLS will have different codes for varying “levels” of the business
  
  - If QCEW has several establishments for a firm and Census has it as a single......we each might be coding at a different level....different content equals different codes. And vice versa.
Project 3: NAICS Coding Differences: Why do we have differences?

- **Respondents** within business **may differ**
  - For example, payroll offices versus tax preparers
- **Payroll provider** reporting versus business reporting may lead to employment differences
- **Professional Employer Organization** reporting differences may lead to NAICS coding and employment differences
Project 3: NAICS Coding Differences: Why do we have differences?

- Response may be provided by a **Payroll provider** (ADP, Paychex, etc.) to QCEW and from within the business to Census
  - QCEW gets 38% of employment from payroll and tax companies. The respondent (of a business that uses a payroll provider) may use a different source of data for Census forms.
  - QCEW employment (from payroll providers) must also reasonably match UI wage records – a double check.
## Payroll Differences

### Table 1: Industries with large wage/payroll differences between QCEW and Census

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<thead>
<tr>
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<tbody>
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<td></td>
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<td>QCEW Wages Census Payroll QCEW-Census Census</td>
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<td>Employment Services</td>
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<tr>
<td>525</td>
<td>Funds, Trusts, and Other Financial Vehicles</td>
<td>8,659 x 8,669 8,817 470</td>
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<tr>
<td>551114</td>
<td>Corporate, Subsidiary, and Regional Managing Offices</td>
<td>163,513 237,224 (73,711) (104,005) (103,013)</td>
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*These are the original data presented by BEA and have since been revised.

SOURCE: Quarterly Census of Employment and Wages and County Business Patterns
Project 3: NAICS Coding Differences:
Why do we have differences?
Professional Employer Organizations (PEOs)

- PEO’s acquire the employees of businesses, then lease them back
  - Frees owner to focus on business
  - Problem: how to know the industry/geography of the clients
- Many states already mandate client level reporting
- BLS and Florida focused on obtaining “client” level reporting for many years
- Breakthrough: Florida law requiring client level reporting – vastly improved distribution by industry and county
- BLS provided to Census PEO breakouts where known
Project 3. **NAICS 525 – Funds, Trusts, and Other Financial Vehicles**

- BEA brought a discrepancy in this industry to our attention
- BLS reviewed cases and determined to move most establishments from 525 to 523920
  - Portfolio Management
  - Discrepancy reduced by over $8 billion
Project 3. Progress

NAICS code adjudication

- For matched multi-units:
- About 8,000 units with employment over 50 that differ at the sector level
- Process: BLS regional staff are reviewing cases
- Two staff per case
NAICS Code Adjudication Process

1. Bureau of Labor Statistics business register, based on UI records with other survey sources

2a. Match records

2b. Independently verify NAICS codes based on publicly available information and respondent contact

BLS Only


Independently Verified NAICS Codes

Census Bureau business register
NAICS code adjudication: Results of pilot tests

- 6 months: large cases - not necessarily representative
  - 434 (53%): matched QCEW code
    - 280 matched QCEW
      - 45 matched both (were different in 2011, now the same in 2012)
      - 235 did not match Census
  - 154 did not match QCEW code
    - 122 matched Census
    - 32 did not match either
  - 391 (47%): two Regional staff disagreed on sector
    - Review of cases: these are difficult
    - Respondents can vary on answers
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SOURCE: Quarterly Census of Employment and Wages and County Business Patterns
Corporate, Subsidiary and Regional Managing Offices
(NAICS 551114)

• Largest single source of discrepancy
• Two alternatives for resolution:
  – BLS adjudicate differences case by case
    • 2-3 years, slowly changing codes
    • Slow changes in both BLS and Census products
    • New set of differences every 5 years
  – Provide BEA with tabulations allowing them to reallocate wages now
    • And proceed with adjudication of large cases
Impact

• If all recommended changes from existing adjudicated cases are accepted by both states and Census:
  – Sector 55  Management of Companies and Enterprises  (2013 annual average):
    • BLS wages change by $1.2 billion
      ➢ $214.4 Billion to
      ➢ $215.6 Billion 0.4%
    • BLS employment
      ➢ Changes by +7000 0.34 %
## Census Headquarters vs. QCEW Industries

<table>
<thead>
<tr>
<th>NAICS Sector</th>
<th>NAICS Sector Title</th>
<th>2012 Q1 QCEW Wages (thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Agriculture</td>
<td>$18,368</td>
</tr>
<tr>
<td>21</td>
<td>Mining</td>
<td>$1,399,267</td>
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<tr>
<td>22</td>
<td>Utilities</td>
<td>36,849</td>
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<tr>
<td>23</td>
<td>Construction</td>
<td>190,714</td>
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<tr>
<td>31-33</td>
<td>Manufacturing</td>
<td>4,725,962</td>
</tr>
<tr>
<td>42</td>
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<td>48-49</td>
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</tr>
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<td>51</td>
<td>Information</td>
<td>536,365</td>
</tr>
<tr>
<td>52</td>
<td>Finance and Insurance</td>
<td>696,472</td>
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<tr>
<td>53</td>
<td>Real Estate</td>
<td>387,535</td>
</tr>
<tr>
<td>54</td>
<td>Professional and Technical Services</td>
<td>1,780,955</td>
</tr>
<tr>
<td>55-56</td>
<td>Management and Administrative</td>
<td>1,846,005</td>
</tr>
<tr>
<td>61</td>
<td>Education</td>
<td>49,528</td>
</tr>
<tr>
<td>62</td>
<td>Health Care</td>
<td>1,864,650</td>
</tr>
<tr>
<td>71</td>
<td>Arts and Entertainment</td>
<td>92,366</td>
</tr>
<tr>
<td>72</td>
<td>Accommodations and food services</td>
<td>452,281</td>
</tr>
<tr>
<td>81</td>
<td>Other services</td>
<td>182,513</td>
</tr>
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HQ’s

• Adjudicated cases:
  – Some units are HQ’s (BLS incorrect)
  – Some are not (Census incorrect)
  – Multiple activities in the same location
  – BLS process improvement: Linking to OES data helpful (1.2 million sample over 3 years)
  – Example: One HQ had 1000+ nurses among other medical occupations
QUESTIONS: NAICS coding

- NAICS coding practices and policies
  - Different timing, frequency, data items
- Should BLS also collect product information or product codes?
  - This might be easy for specific industries given rise of Internet collection
Future for NAICS code changes

- Can Census address the PEO’s opportunity?
- Should BEA adjust figures for HQ’s?
- Should recoding of individual units continue?
  - Pro – improved data accuracy and consistency for BLS, Census, BEA
  - Con:
    - Slow, gradual shifts in industry profiles based on non-economic reclassification...QCEW and CBP misleading trends
    - Increased movement of establishments / firms from one industry to another; minor impact on continuity of economic statistics
    - Cloud of factory-less goods producer (FGP) shift away from HQ’s
    - Opportunity costs of this work
Future for NAICS code changes

• Why do we have the HQ industry?
  – A HQ within an establishment doing other activities leads to a mixed concept and under-reporting
    • either under-reporting for the HQ function or moving other economic activity NOT HQ-related into the HQ industry
  – Does any establishment think that it is in the HQ “industry”?
  – Does anyone set up a HQ “business” and then seek a customer for this management service?
  – Should the NAICS system rethink this? Should this be a 2022 NAICS issue?

• Return to the “auxiliary” concept could address all issues?
Final Thoughts
Future of Data Sharing

• BLS will continue to share multi’s
• BLS will offer Census a quarterly “death file” for multi’s
  – Might reduce Census costs
  – Might reduce employment and wage discrepancy
  – About 17,000 MU EINs die each year covering 264,000 employment.
• Other projects to continue as resources are available:
  – Product codes and other research
• Resource limitations make for slow progress
Final Thoughts
Lessons Learned

• Sharing is good
• Several projects like this over 20-25 years
• BLS and Census should have the periodic meetings as established in MOU
  – Maintain progress
  – Improve knowledge of each system
• Differences are inherent and institutionalized – change is difficult
• Adjudicating differences is hard and time consuming
• Data sharing for singles is very desirable (but it takes a law change)