

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

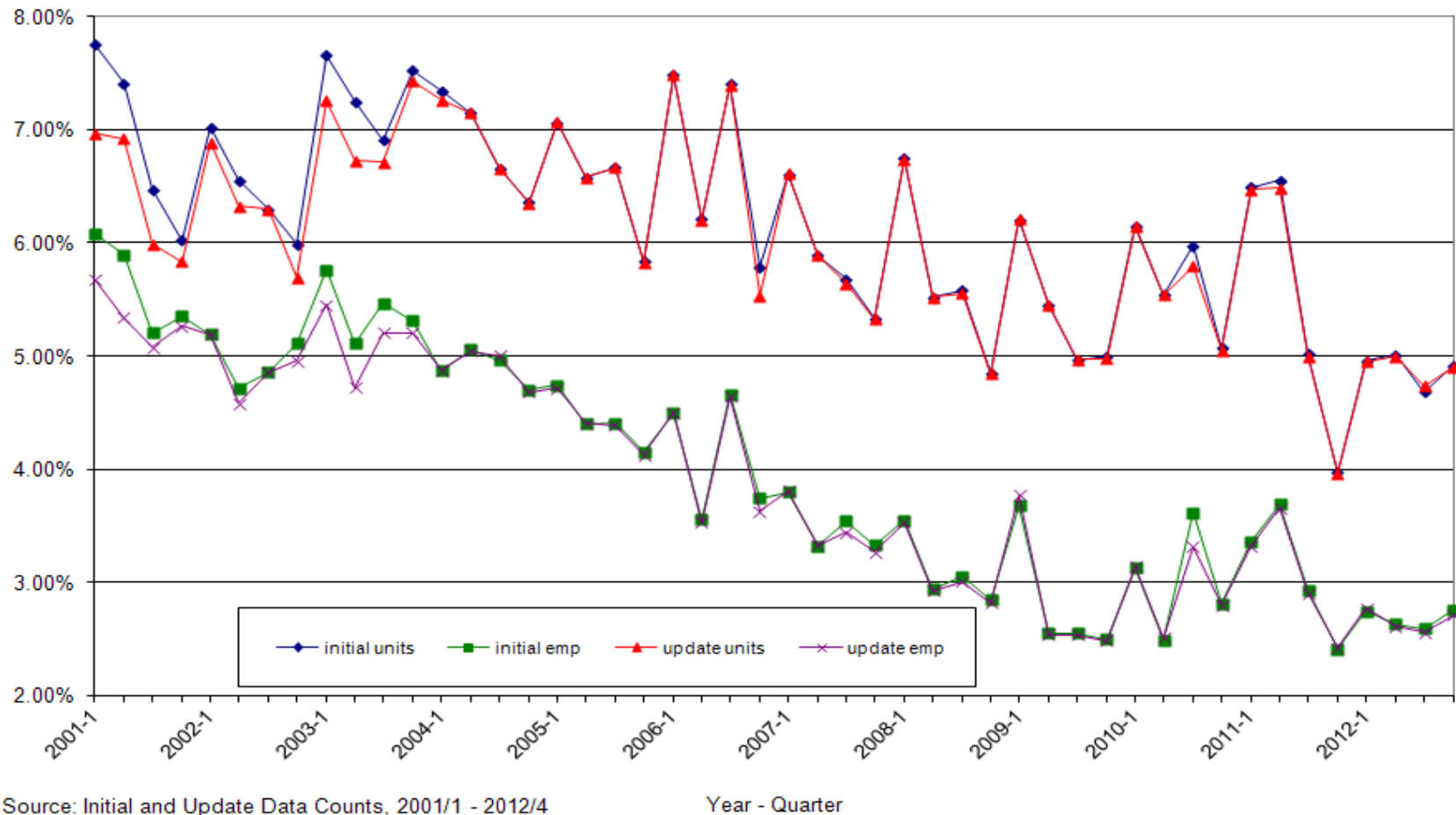
- Monthly employment for all UI covered businesses, quarterly wages...98% of US employment including government, agriculture and private households
- **Coverage**: Reporting is mandated by state laws.
 - 14.5 million annual UI claim verification events ensure high coverage; each initial UI claim includes 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

Year - Quarter



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

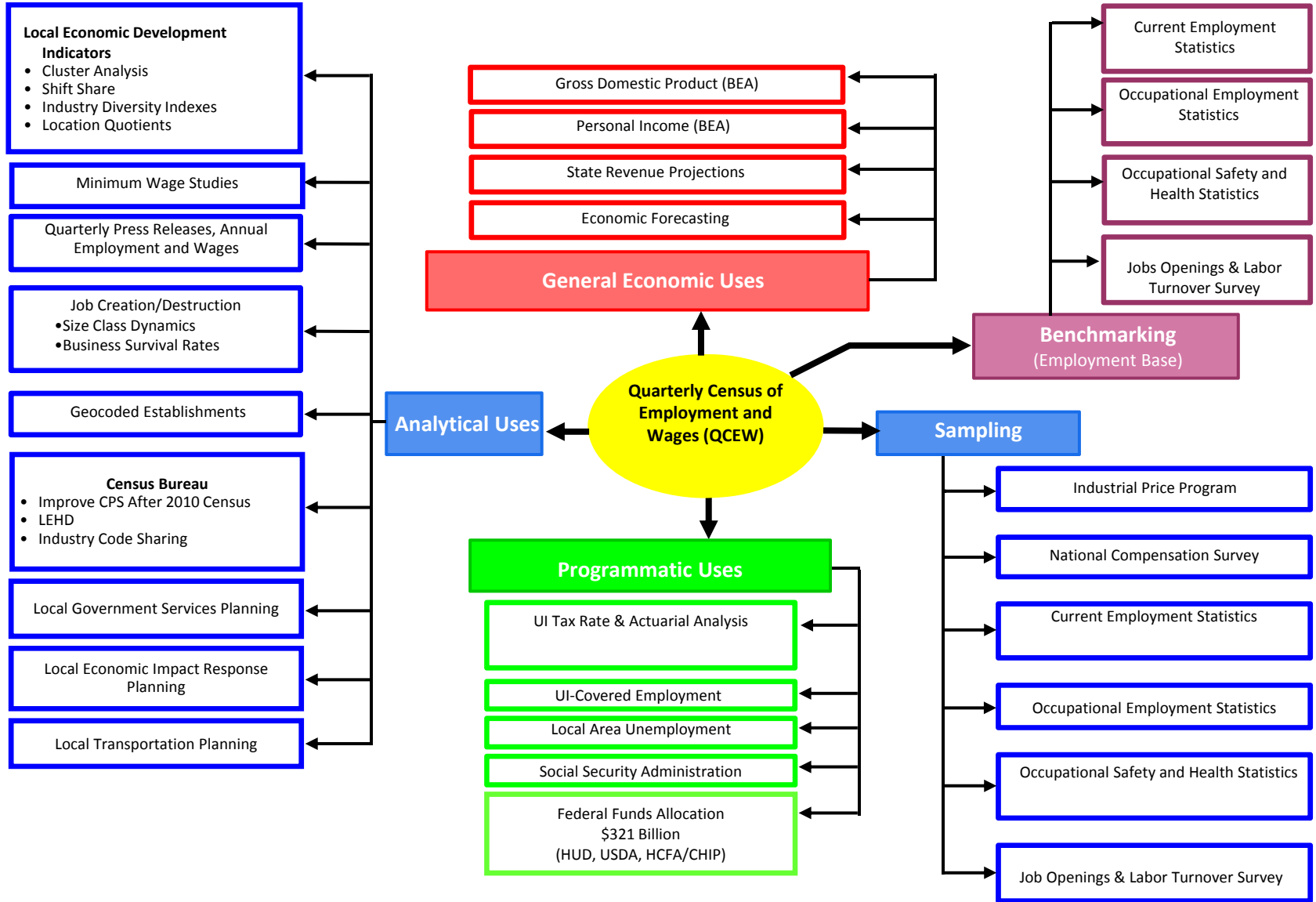
– EIN 1	UI 1	Estab 1
		Estab 2
	UI 2	Estab 1

Single

– EIN 2	UI 1	Estab 1
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- EINs are directly linked to each owned establishment.

USES OF QCEW



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- Current Progress and Challenges
- 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

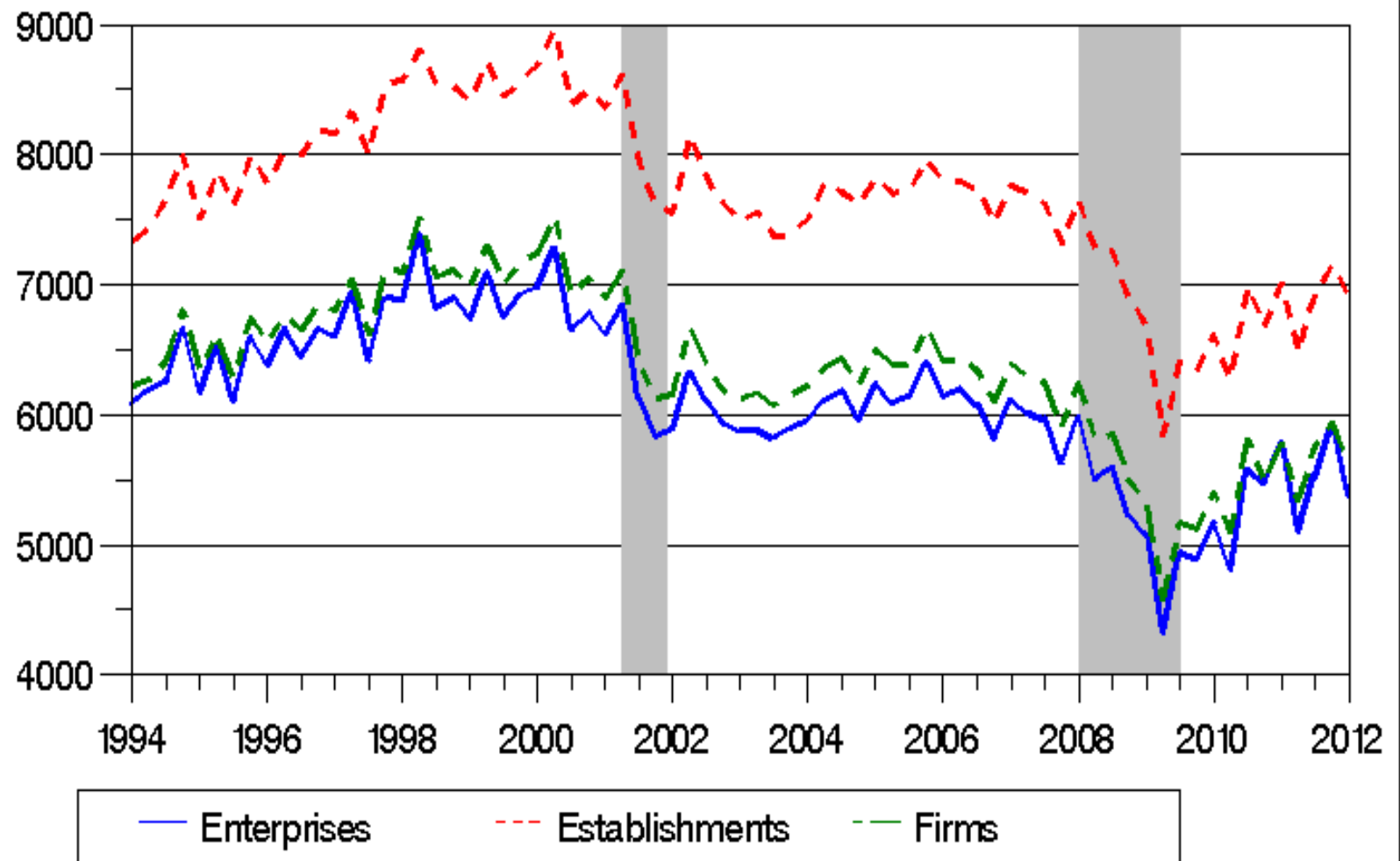
- Most firms/enterprises are single location businesses.
- QCEW (Single + Multi) data:
 - 5.84 Million of 6.18 Million firms have a single location
 - The establishment is the firm is the enterprise
 - 343 Thousand firms with > 1 location – i.e. Multi's
- Census Multi data:
 - 128 Thousand firms are 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

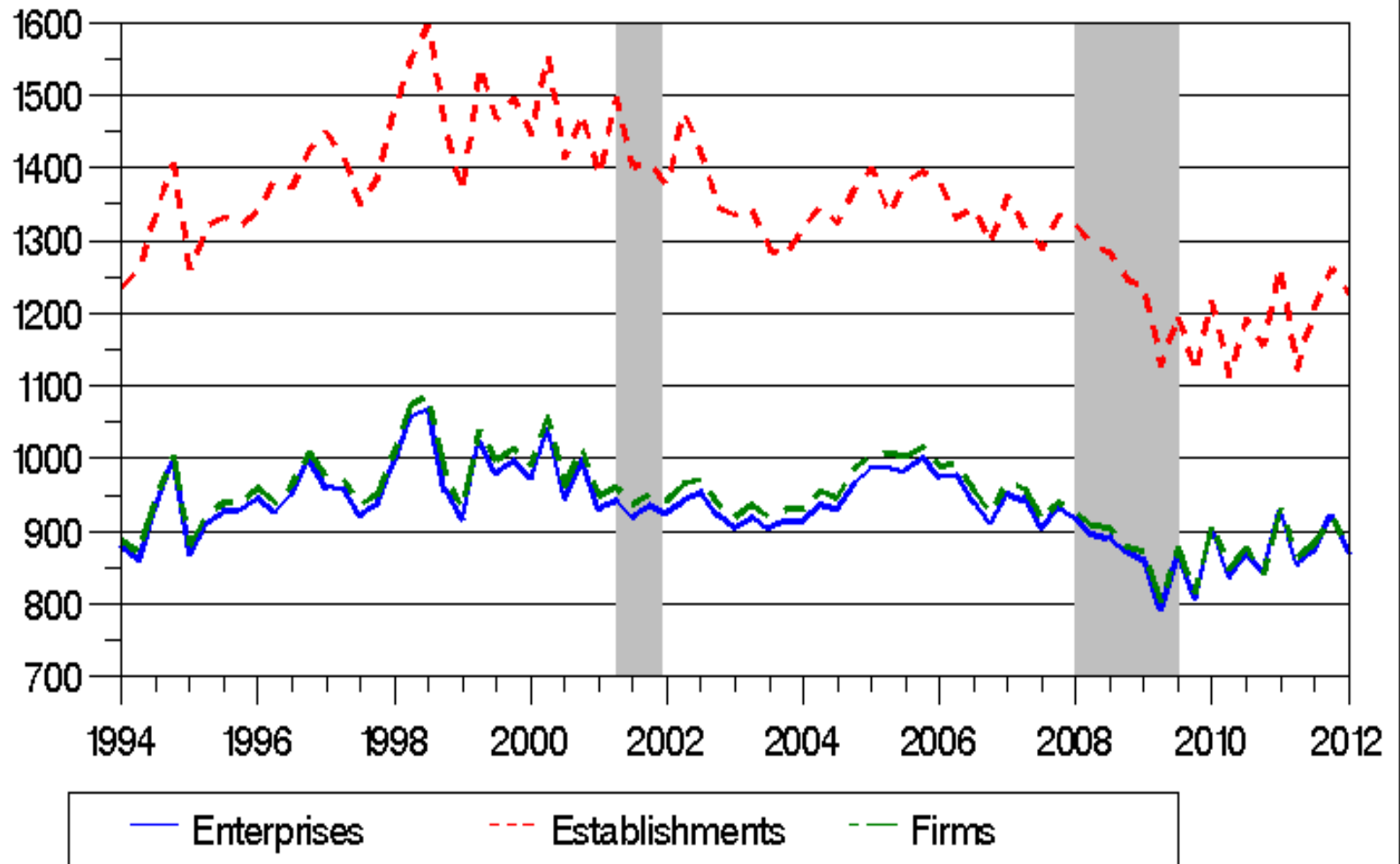
Total private
Thousands



Note: Shaded area represents recession period.

Enterprises vs. Firms vs. Establishments
September 1992 – September 2012
Gross job gains from openings

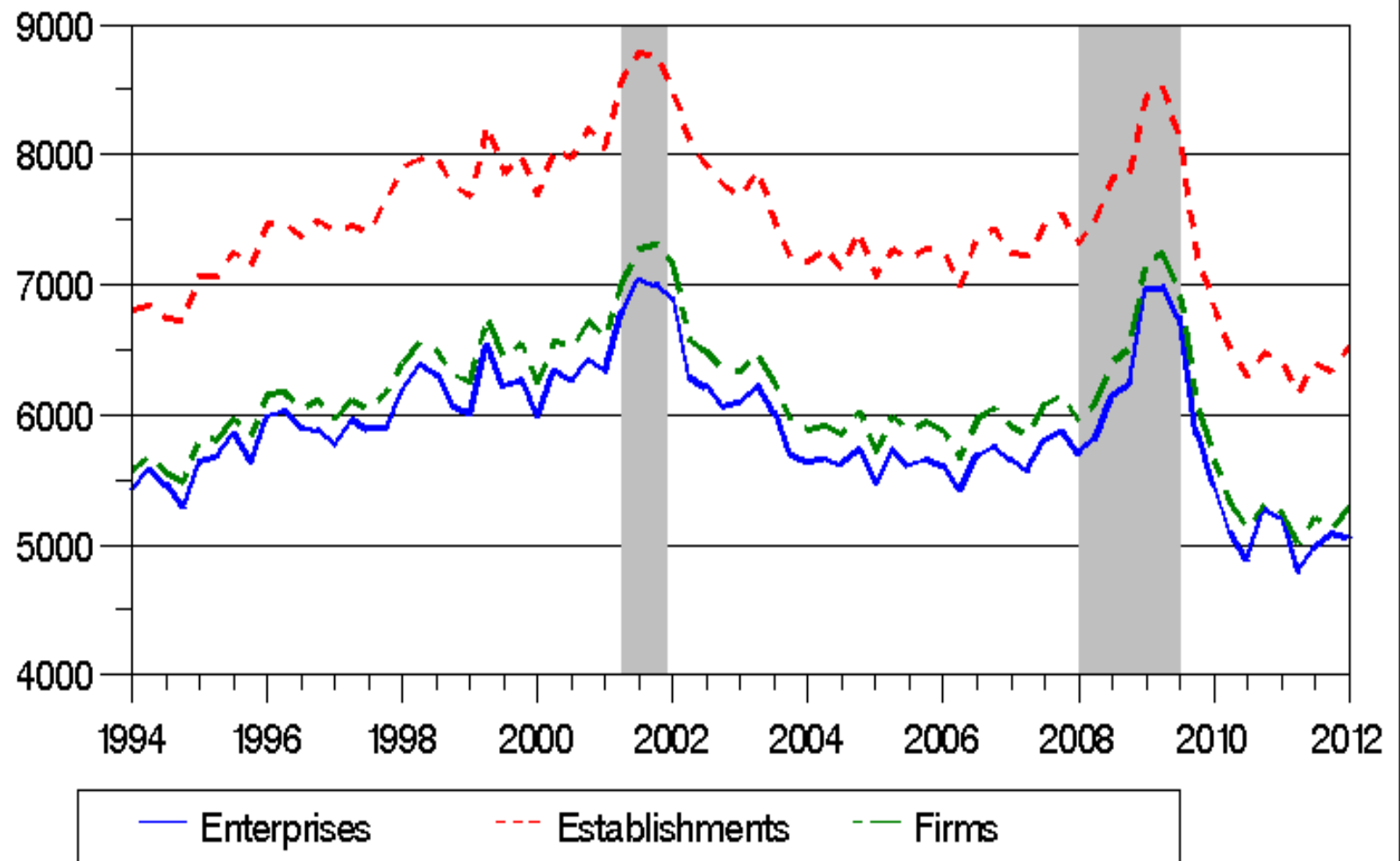
less than 50 employees
Thousands



Note: Shaded area represents recession period.

Enterprises vs. Firms vs. Establishments
September 1992 – September 2012
Total gross job losses

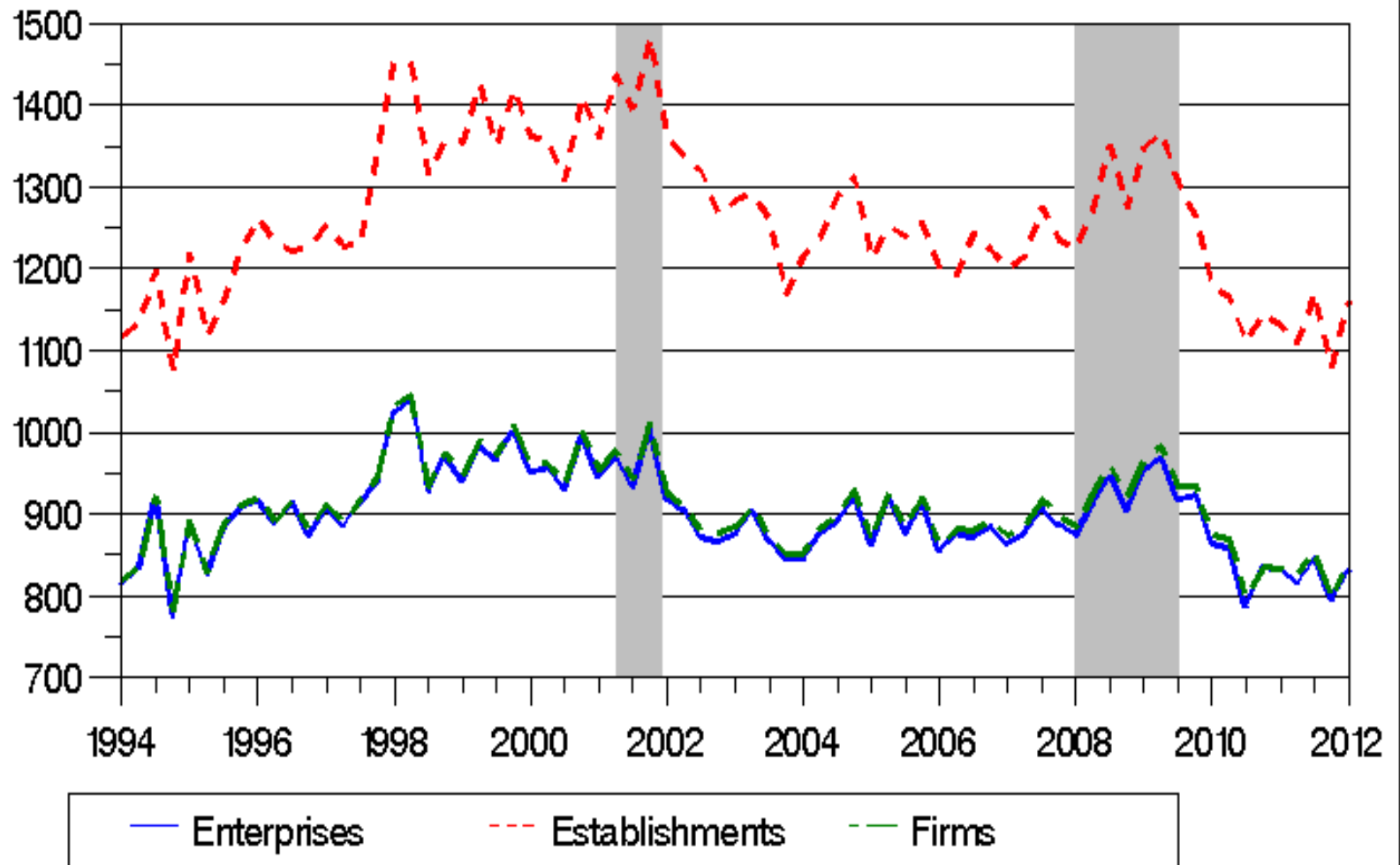
Total private
Thousands



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

2007 NAICS	NAICS Description	BEA Figures Annual Payroll 2007* (in millions \$)		2007 Difference	2011 Difference	2012 Difference	Annual Payroll 2013 (in millions \$)	
		QCEW Wages	Census Payroll				QCEW- Census	QCEW- Census
5613	Employment Services	x	x		(73,631)	(82,299)	100,259	
561320	Temporary Help Services	60,913	70,050	(9,137)	(8,475)	(10,050)	73,290	
561330	Professional Employer Organizations	19,542	70,625	(51,083)	(67,040)	(75,656)	14,377	
523920	Portfolio Management	33,551	55,342	(21,791)	(18,765)	(23,329)	42,385	
525	Funds, Trusts, and Other Financial Vehicles	8,659	x		8,669	8,817	470	
551114	Corporate, Subsidiary, and Regional Managing Offices	163,513	237,224	(73,711)	(104,005)	(103,013)	214,405	
324	Petroleum and Coal Products Manufacturing	10,766	8,486	2,280	2,665	2,895	12,231	
334	Computer and Electronic Product Manufacturing	115,220	65,952	49,268	40,987	44,125	107,057	
42	Wholesale Trade	364,157	336,207	27,950	9,637	15,843	393,584	
44-45	Retail Trade	405,931	362,819	43,112	26,980	35,184	422,183	

*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

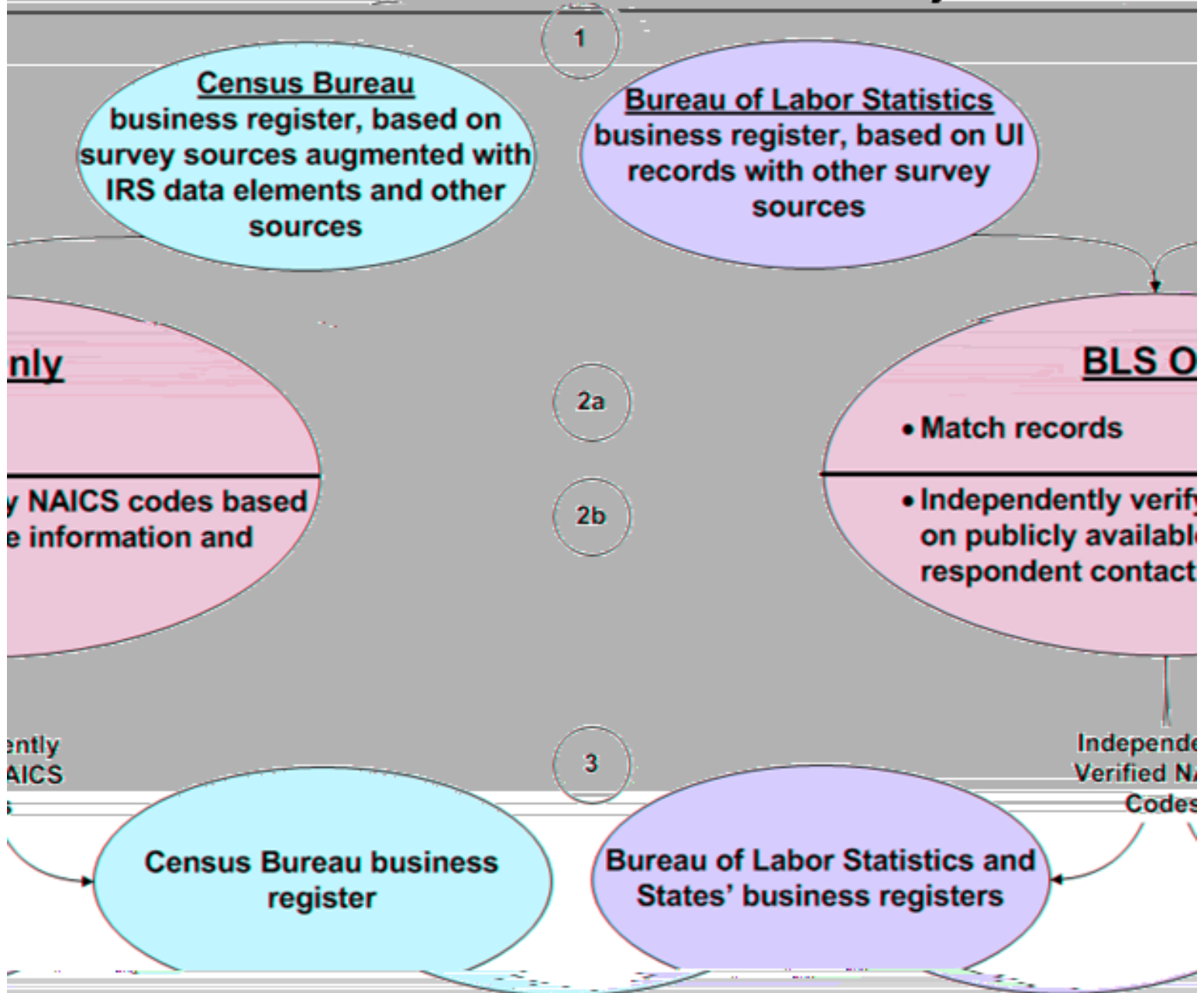
Project 3. **NAICS 525 – Funds, Trusts, and Other Financial Vehicles**

- 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: 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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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

Matched Records with Census Record in HQ and QCEW Record in Industry		
NAICS Sector	NAICS Sector Title	2012 Q1 QCEW Wages (thousands)
11	Agriculture	\$18,368
21	Mining	1,399,267
22	Utilities	36,849
23	Construction	190,714
31-33	Manufacturing	4,725,962
42	Wholesale Trade	1,743,941
44-45	Retail Trade	909,235
48-49	Transportation and Warehousing	538,118
51	Information	536,365
52	Finance and Insurance	696,472
53	Real Estate	387,535
54	Professional and Technical Services	1,780,955
55-56	Management and Administrative	1,846,005
61	Education	49,528
62	Health Care	1,864,650
71	Arts and Entertainment	92,366
72	Accommodations and food services	452,281
81	Other services	182,513

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)