

Measuring the Gig Economy: Current Knowledge and Open Issues

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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.

Motivation

Is new technology producing an accelerated pace of change in the organization of work?

- Popular perception of dramatic growth in number of workers with no long-term connection to a particular business (“gig workers”)
- Short duration employment opportunities facilitated by the internet

Any significant changes are likely to have important implications

- Worker welfare (both positive and negative)
- Policy (health insurance, retirement savings, legal rights & protections, ...)
- Economic measurement

Big Questions

- 1) Do we know the level and trend of gig employment?
 - from household survey data
 - from business data
 - from administrative (tax) data
- 2) Is gig employment large enough to matter for measures of employment and earnings?
- 3) Are productivity statistics accurately capturing labor input and allocating output and labor to the appropriate industries?
- 4) Are there suggestions for better measurement?

Defining & quantifying gig employment

Work arrangement type	Work Arrangement Characteristic				How Work Arrangement Reported			Temporary or Gig Worker?
	Paid a wage or salary	Implicit or explicit contract for continuing relationship	Predictable work schedule	Work supervised by the firm that pays the salary	Classified as self-employed in HH surveys	Information return on which payer may report earnings [1]	Tax form that worker should file with the IRS [2]	
Employee								
Traditional employee	Yes	Some	Yes	Yes	No	W2	1040	No
On-call worker/worker with irregular schedule	Yes	Some	No	Yes	No	W2	1040	No
Direct-hire temporary worker	Yes	No	Some	Yes	No	W2	1040	Yes
Contract company workers								
Temporary help agency worker	Yes	Some	No	No	No	W2	1040	Yes
PEO worker	Yes	Some	Yes	No	No	W2	1040	No
Other contract company worker	Yes	Some	Yes	No	No	W2	1040	No
Self-employed								
Business owners						W2, K1 or 1099-		
Incorporated business owner	Some	Some	Some	NA	Inc. SE	DIV	1040	No
Partner in a partnership	No	Some	Some	NA	Uninc. SE	K1	1040	No
Unincorporated sole proprietor	No	Some	Some	NA	Uninc. SE	1099	Sched C, SE	No
Occasional contractor	No	No	No	NA	Uninc. SE	1099	Sched C, SE	Yes
Day laborer	No	No	No	NA	Uninc. SE	1099	Sched C, SE	Yes
On-demand/platform worker	No	No	No	NA	Uninc. SE	1099	Sched C, SE	Yes

Defining & quantifying gig employment

Gig workers do not have an implicit or explicit contract for a continuing work relationship → they are a subset of contingent workers

But this doesn't help us quantify the number of gig workers

- CPS Contingent Worker Supplement (CWS) was asked in 1995, 1997, 1999, 2001, 2005, & 2017, so missing important years when gig employment has been increasing
- CWS primarily asks about main jobs, so misses secondary work

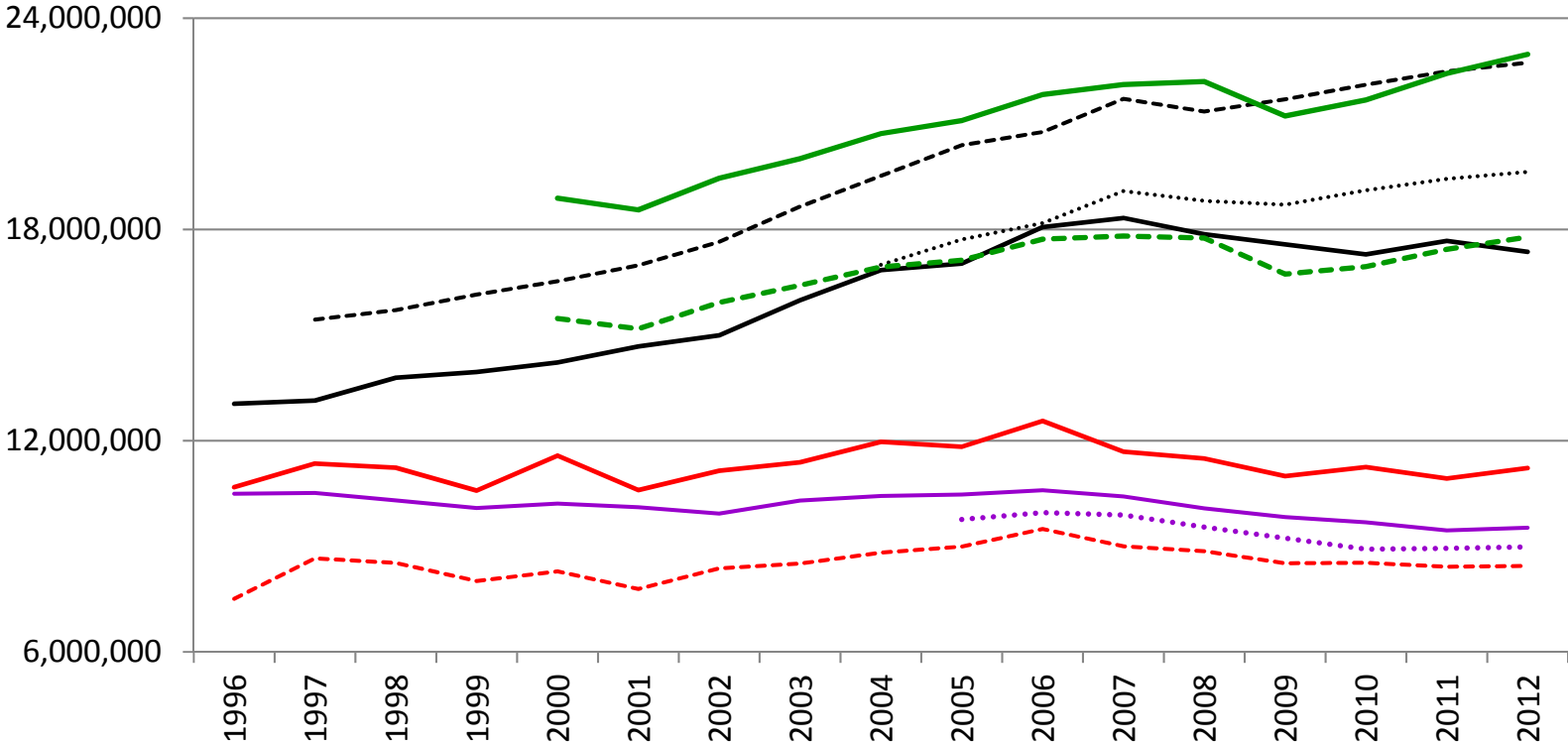
Defining & quantifying gig employment

Gig workers are a subset of the unincorporated self-employed

- Unincorporated SE are measured in household surveys
 - need to be aware of the distinction between main job and second jobs
- Most unincorporated SE should receive a 1099 and should file a Schedule C and Schedule SE

Trends in unincorporated self-employment from both household surveys and tax data are a first place to look for trends in gig employment

Self-employment levels and trends



- Nonemployers
- Nonemployer Sole Proprietors
- DER Self Employed
- 1099-MISC, Individ + Business
- - - - 1099-MISC, Individuals
- CPS Monthly, Main Job Last Week
- CPS ASEC, All Jobs Last Year
- - - - CPS ASEC, Longest Job Last Year
- ACS, Main Job Last Week

Self-employment levels and trends

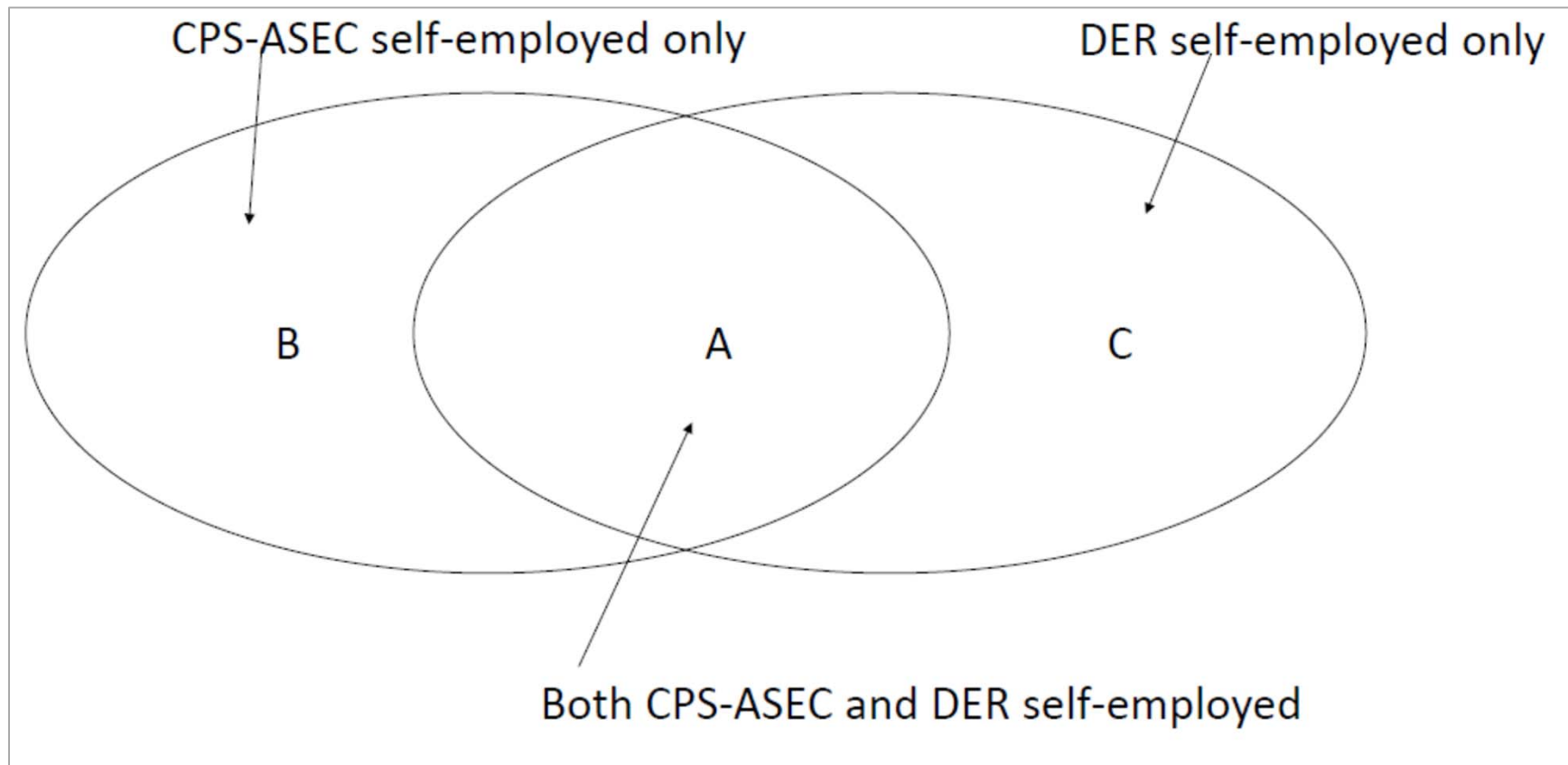
Can we say that household survey data or administrative tax data are more accurate? No

- CPS & ACS don't probe deeply about non-traditional work arrangements, leading to reporting errors
- Tax data only captures what is reported to the tax authorities

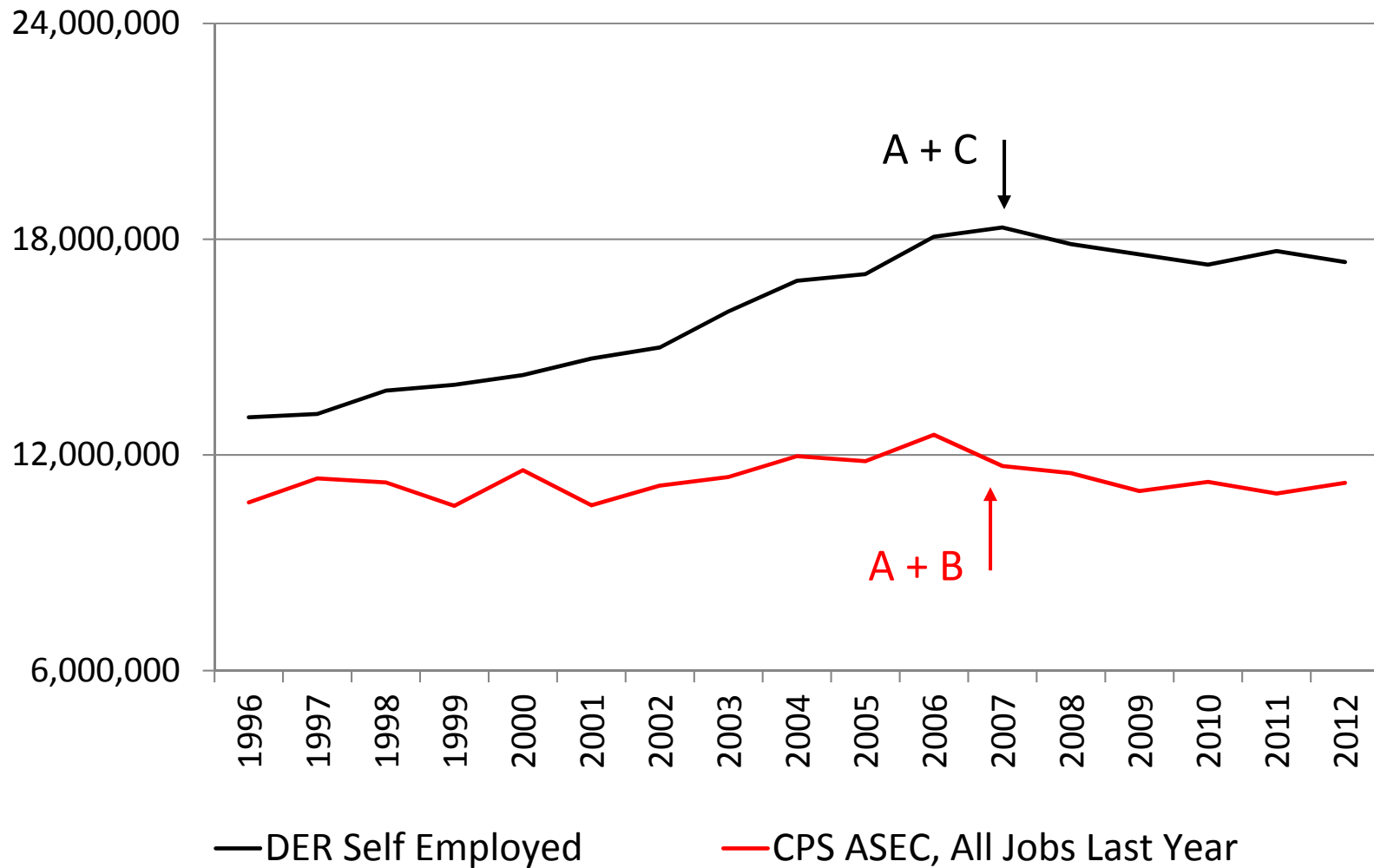
The best way to understand discrepancies between household survey data and administrative tax data is to compare information from the two sources for the same set of people

- We link the CPS-ASEC and the DER microdata, 1996-2012
(DER is "Detailed Earnings Record," with information from Schedule SE)

Self-employment in CPS-ASEC and DER



Self-employment in CPS-ASEC and DER



Self-employment in CPS-ASEC and DER

Average 1996-2012

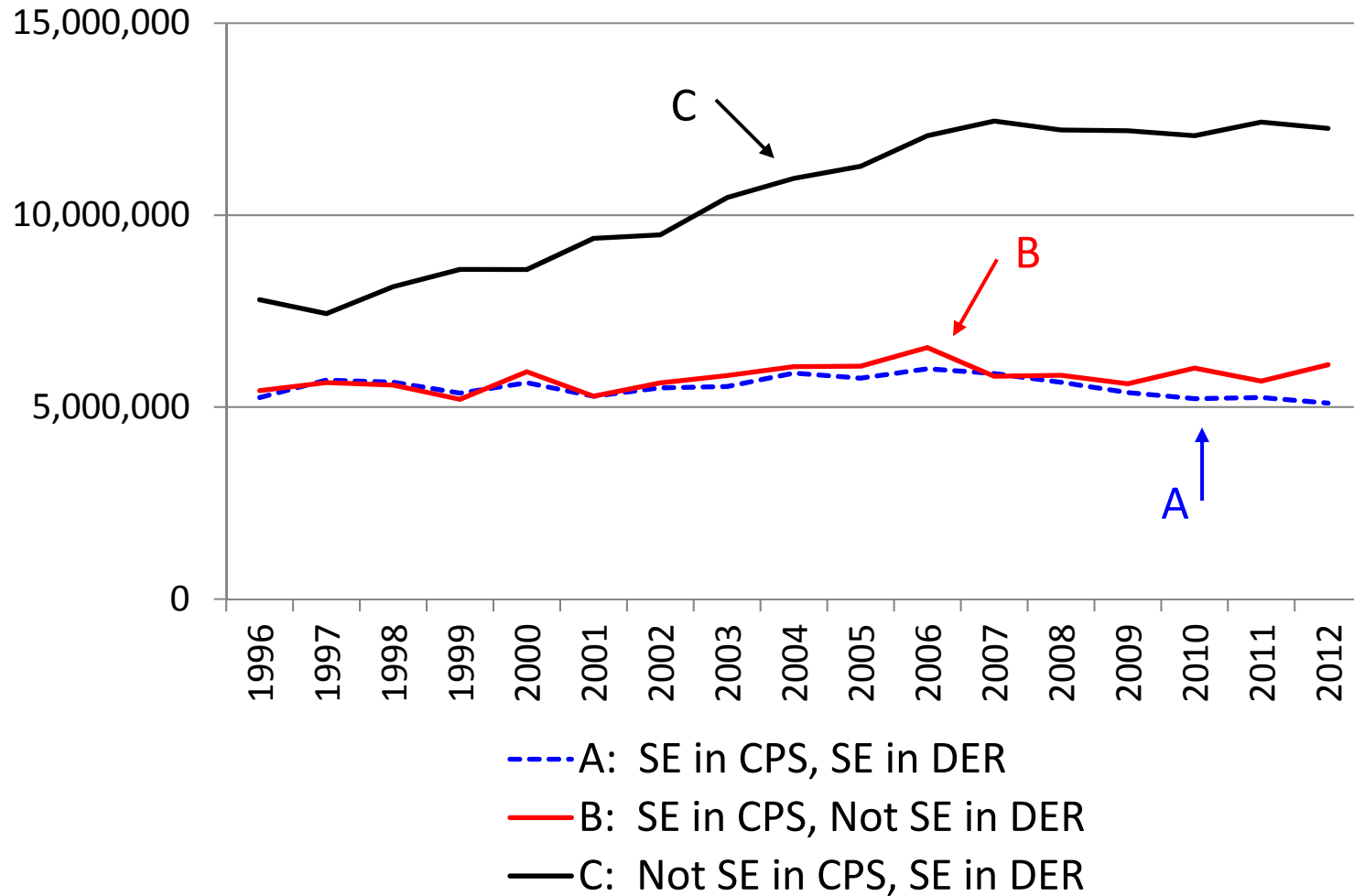
	Not SE in DER	SE in DER	
Not SE in CPS			
Number	202,311,037	10,459,170	} C
Row Share	95.1%	4.9%	
Column Share	97.2%	65.4%	
SE in CPS			
Number	5,776,887	5,531,764	} A
Row Share	51.1%	48.9%	
Column Share	2.8%	34.6%	
	208,087,924	15,990,935	
	92.9%	7.1%	
			224,078,859

Self-employment in CPS-ASEC and DER

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Self-employment in CPS-ASEC and DER



“C: Not SE in CPS, SE in DER”

The rising off-diagonal is
“C: Not SE in CPS, SE in DER.”

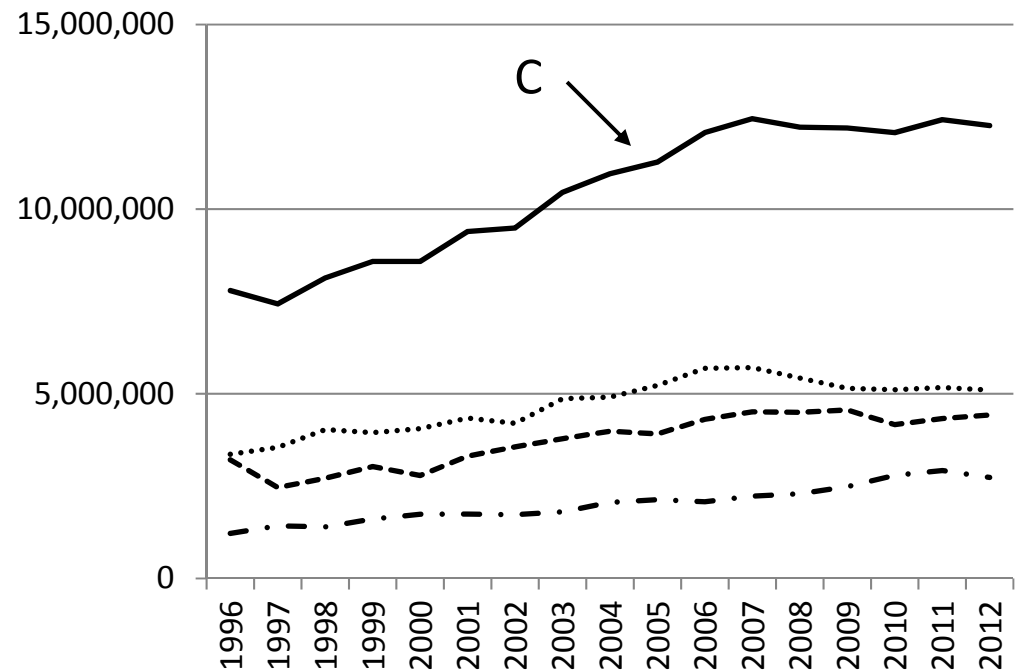
Each of the following

“Missing 2nd job: W&S in both, SE in DER”

“Misclassification: W&S in CPS, SE in DER”

“No CPS employment, SE in DER”

contributes roughly one-third
to the growth of the “C” off-
diagonal

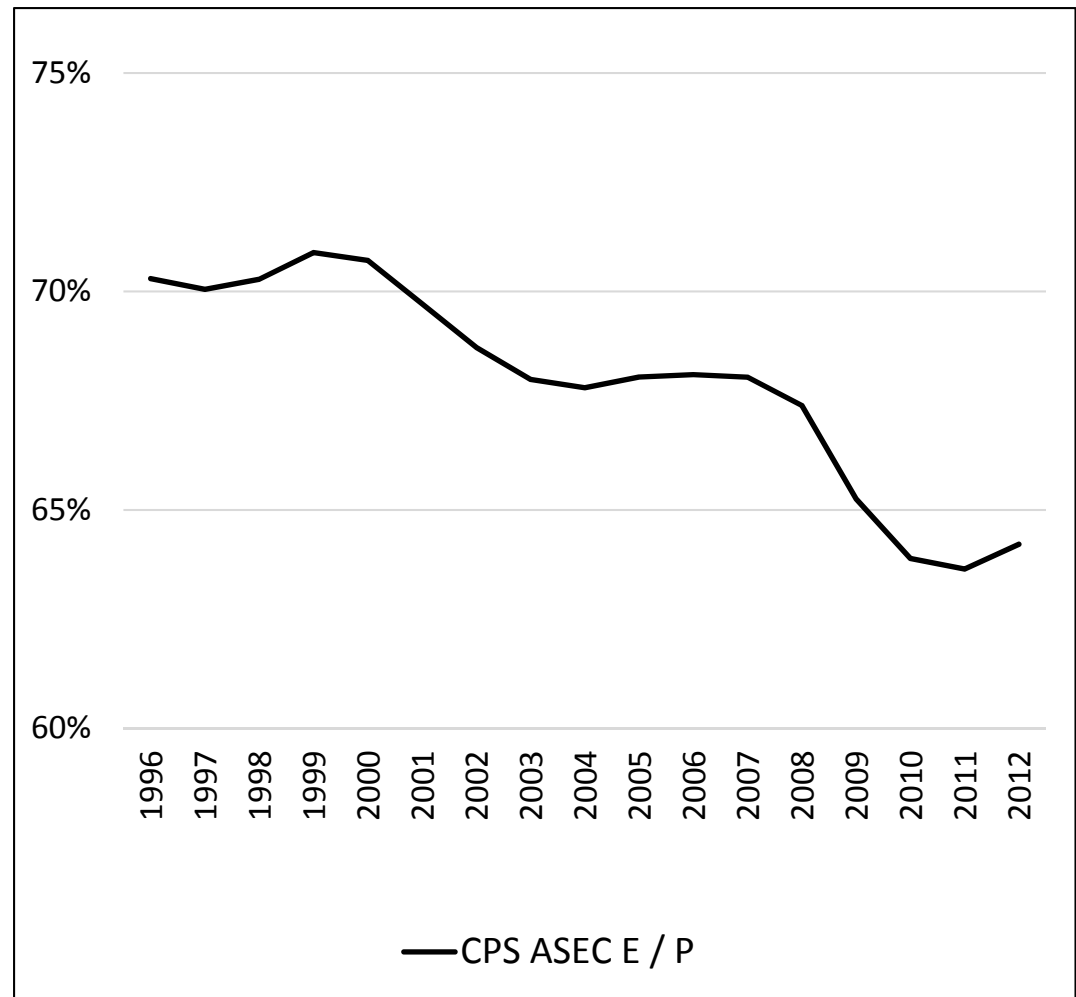


- C: Not SE in CPS, SE in DER
- Missing 2nd Job: W&S in both, SE in DER
- Misclassification: W&S in CPS, SE in DER
- · - No Employment in CPS, SE in DER

Interesting Tangent

The DER is measuring a substantial amount of self-employment that is not measured in the CPS

Does this non-measured SE help us understand the declining E/P ratio?

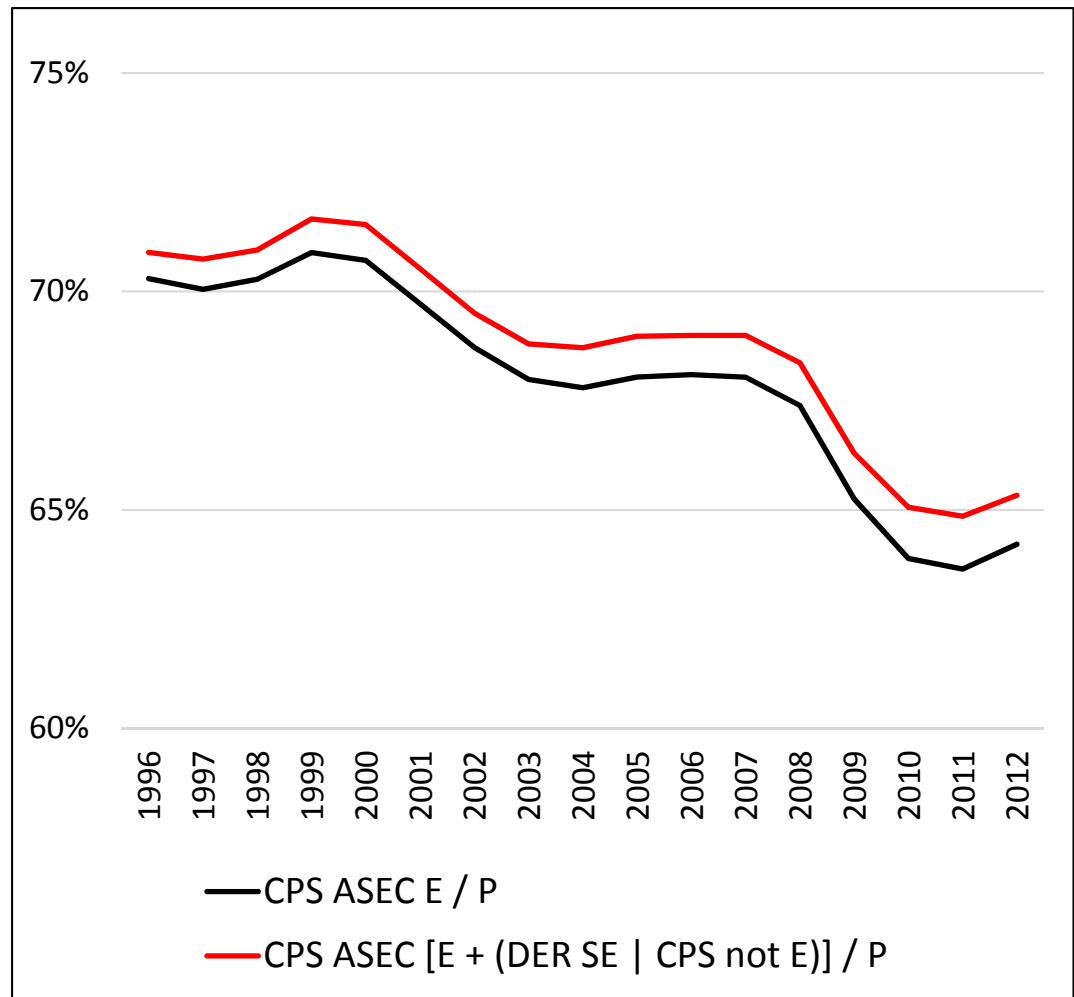


Interesting Tangent

The DER is measuring a substantial amount of self-employment that is not measured in the CPS

Does this non-measured SE help us understand the declining E/P ratio?

Not really, because much missed SE in the CPS is misclassification or 2nd job of persons already employed



Suggestions for better measurement:

1) Improving household survey measures

Would probing for non-traditional work arrangements improve their measurement on household surveys?

Probing about gig employment (Abraham & Amaya) leads to:

- Higher employment rates
- Much higher multiple job holding rates

We recommend:

- More probing questions should be asked at regular intervals (supplements) to measure non-traditional work
- Probes should focus on both primary and secondary jobs
- Probes can be tailored differently for self versus proxy respondents

Suggestions for better measurement:

2) More timely data

Our CPS-DER linked microdata covers the years 1996-2012

- Data currently not available for more recent years

The increase in the gig economy likely occurred after 2012

- Both Farrell & Grieg and Hall & Krueger show the steep rise begins in 2014

Suggestions for better measurement:

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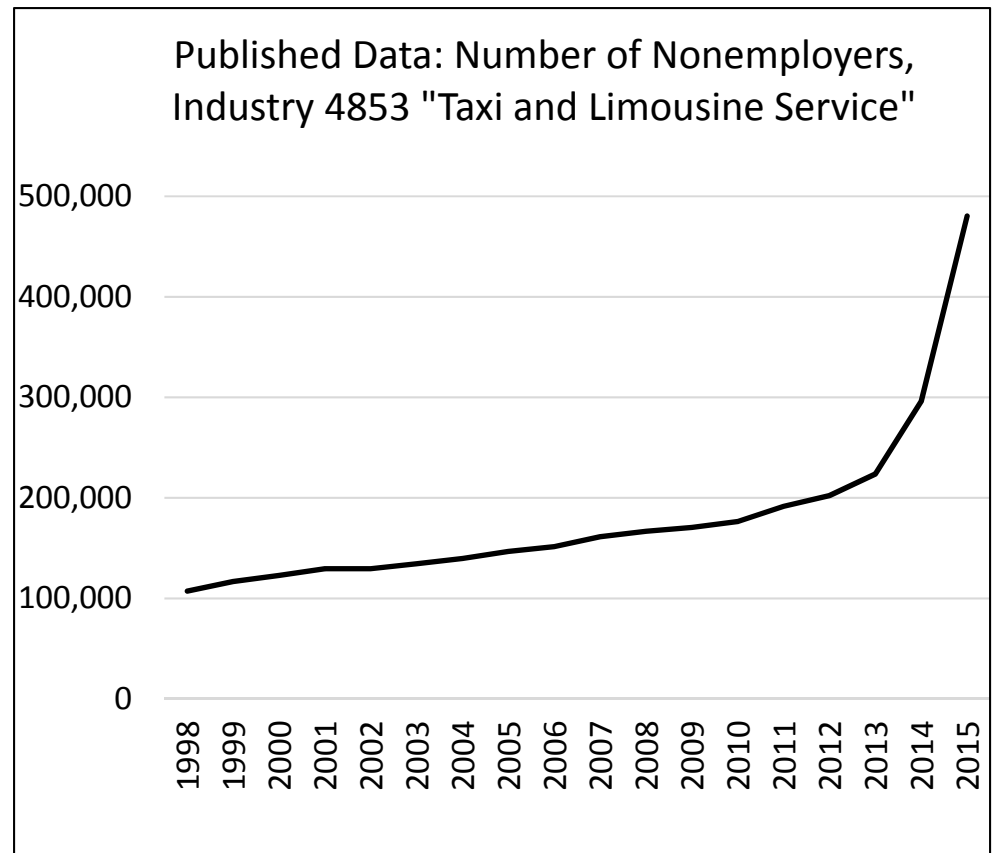
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The increase in the gig economy likely occurred after 2012

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The Nonemployer data is only published through 2015



Suggestions for better measurement:

3) More effective use of administrative data

Information about non-employee work could be derived from:

- Tax data, particularly 1099s (Jackson, Looney, & Ramnath)
- Financial data (Farrell and Greig)
- Private sector company data – obtain personnel data from companies in the online platform sector (Hall & Krueger)

Data integration has the potential to add new insights:

- primary or supplemental source of earnings
- the career path of individuals
- family circumstances, particularly health insurance coverage

Example of Data Integration (I)

Published nonemployer statistics from the Census Bureau show the number of self-employed individuals operating unincorporated businesses. We can add value by linking these data:

- to demographics (age, gender, . . .)
- to wage and salary data (from the LEHD)
- longitudinally over time

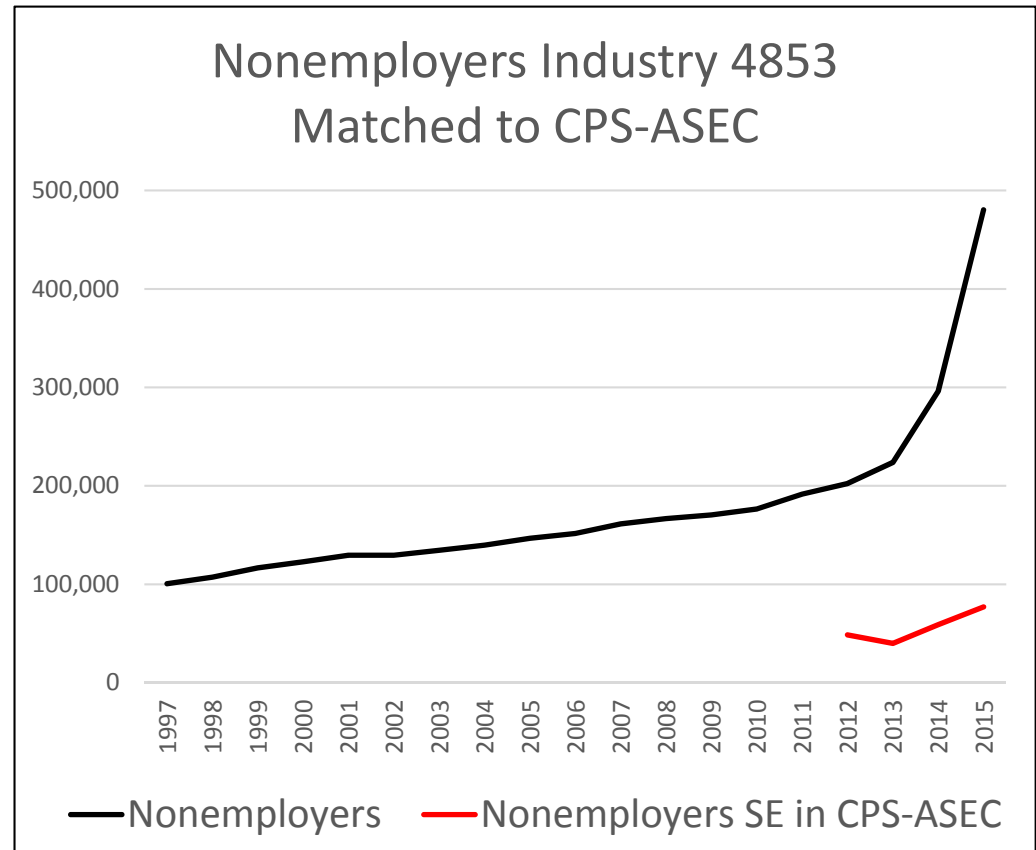
New insights regarding self-employed taxi drivers (AHSS 2018):

- this industry's growth is unique in the Nonemployer data
- entrants are different than incumbents
- on average, self-employment earnings of entrants incompletely mitigates their reduction in wage and salary earnings
- no evidence that incumbent taxi drivers are hurt by industry growth

Example of Data Integration (II)

We are able to link the 2012-2015 nonemployers to their responses in the CPS-ASEC

	Non-employers	Nonemployers SE in CPS-ASEC	Ratio
2012	194,000	48,500	25%
2013	219,000	40,000	18%
2014	320,000	59,000	18%
2015	489,000	77,000	16%



Big Questions

- 1) Do we know the level and trend of gig employment?
 - Gig workers are contingent workers, but missing important years in the time series and concerned about missing second jobs
 - Gig workers are self-employed, but published levels and trends of self-employment differ dramatically across HH surveys and admin (tax) data
- 2) Is gig employment large enough to matter for measures of employment and earnings?
- 3) Are productivity statistics accurately capturing labor input and allocating output and labor to the appropriate industries?
- 4) Are there suggestions for better measurement?
 - Survey modules that probe more deeply about non-employee work
 - More timely data from the Federal Statistical System
 - Integration of survey and administrative data