

# *Enhanced Model Employment Input Processing*

*presented to*  
Model Advancement Committee

*presented by*  
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# Overview

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- Background
  - » Employment for SERPM8 needs
  - » Central Office 2015 employment estimates
- Wage and Salary baseline
- Self-employment derivation
- Checks and lessons learned

# Background

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## ➤ SERPM 8 Needs

- » 2015 base year
- » Consistent employment estimates for region
- » Wage employment AND self-employment
- » MAZ-level data
  - Roughly aligned with Census Blocks

## ➤ Central Office 2015 Estimates

- » Data sources
  - 2014 InfoGroup Data
  - BEBR Series 411
  - CBP Data (control total floor)
  - 2013 and 2014 LEHD
- » Wage and salary employment
- » Census Block level

# 2010 – 2015 W/S Employment

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<u>County</u>	<u>Model W/S 2010</u>	<u>BEA 2015</u>	<u>Differences</u>	<u>County</u>	<u>BEA 2010</u>	<u>BEA 2015</u>	<u>Differences</u>
<b>Palm Beach</b>	533,264	618,640	16%	<b>Palm Beach</b>	534,249	618,640	15.8%
<b>Broward</b>	738,008	824,197	12%	<b>Broward</b>	737,629	824,197	11.7%
<b>Miami-Dade</b>	927,477	1,173,629	27%	<b>Miami-Dade</b>	1,034,961	1,173,629	13.4%
<b>Region</b>	2,198,748	2,616,466	19%	<b>Region</b>	2,306,839	2,616,466	13.4%

Implied growth factors (model to BEA) are greater than BEA to BEA growth factors and are most different for Miami-Dade, which had the largest difference from BEA in 2010.

# Considerations for employment total

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- **Key question:** 2015 total employment = BEA or not?
- Option 1: Use the Central Office 2015 data.
  - » Total employment will match BEA
  - » Assumes that BEA control totals are more reliable than 2010 model employment data
- Option 2: Apply the **BEA 2010-2015 growth rates** (slide 9) to model 2010 county total employment to produce 2015 control totals. Scale Central Office 2015 accordingly.
  - » Assumes that model 2010 employment totals are more reliable (**results will not equal BEA 2015**)

# *Selected approach for wage and salary baseline*

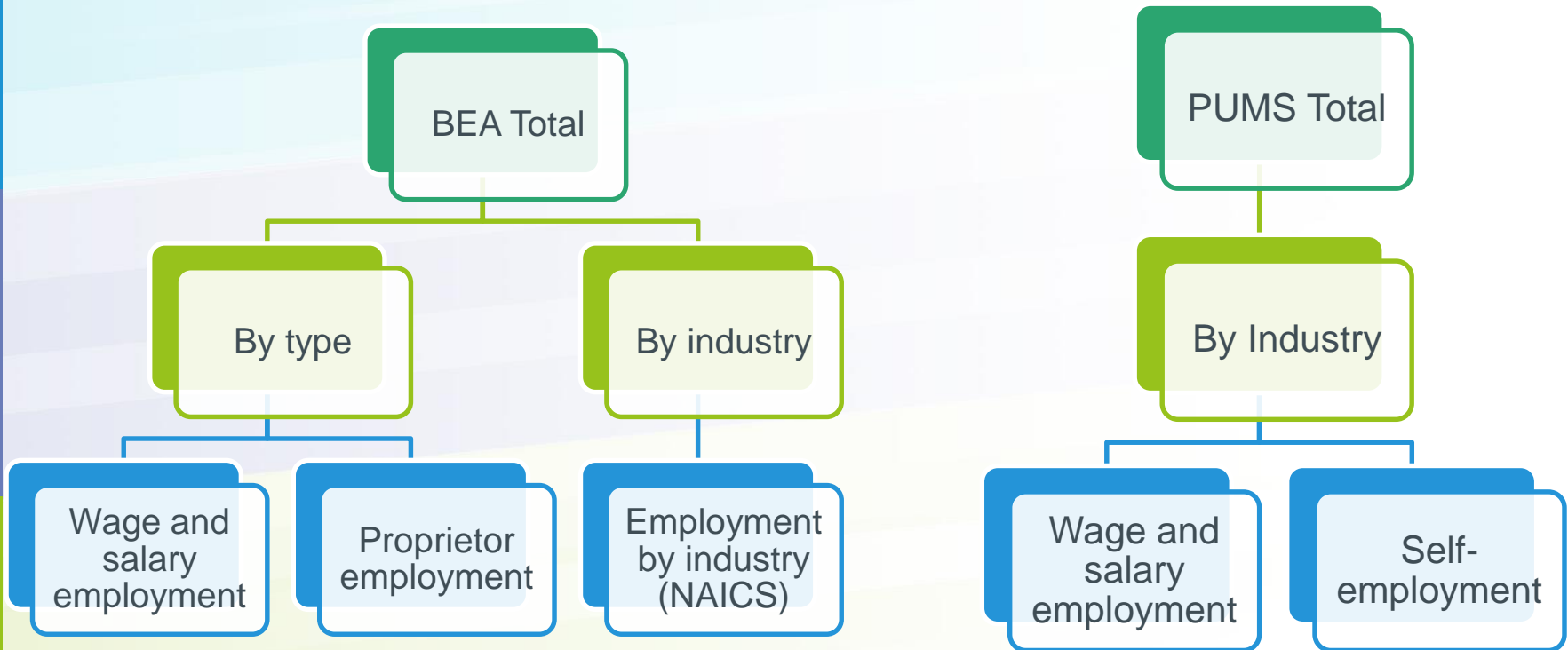
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- Option 1: Use the Central Office 2015 data.
  - » Consistent with local employment data
  - » Explaining 'growth' between Model 2010 and Central Office 2015
    - Comparison of different data sources (apples and oranges)
  - » SERPM8 calibration would be specific to BEA 2015
    - Better foundation for employment projections based on BEA

# Description of the self-employment data sources

➤ BEA proprietor data

➤ PUMS self-employment



# *Description of the data sources*

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- BEA county proprietors employment
  - » Data source: tax filing
  - » Type: sole proprietors (non-incorporated) and general partners (incorporated) who incorporated their businesses with legal entities.
  
- PUMS self-employment
  - » Data source: ACS survey
  - » The ACS form asks people whether they are self-employed or salaried-employees.
    - Based on major employment activity and primary source of income.



# Comparison of self-employment data sources

## ➤ Differences between BEA and PUMS (2015)

<u>County</u>	<u>BEA Proprietor employment</u>	<u>PUMS Self-employment</u>
Palm Beach	257,339	108,242
Broward	314,487	147,153
<u>Miami-Dade</u>	<u>507,624</u>	<u>205,904</u>
Region	1,079,450	461,299

## ➤ Why

- » “There are people whose primary sources of income are not unincorporated businesses and have to file income tax forms for the proprietary businesses; and
- » A self-employed individual can be involved in **multiple businesses** and each of the businesses may require filing of income tax forms.”

*How Hard is it to Count Workers? Self-Employment Data in Nonemployer Statistics and in American Community Survey*  
[https://www.fhwa.dot.gov/planning/census\\_issues/ctpp/status\\_report/sr1214/index.cfm#ftn1](https://www.fhwa.dot.gov/planning/census_issues/ctpp/status_report/sr1214/index.cfm#ftn1)

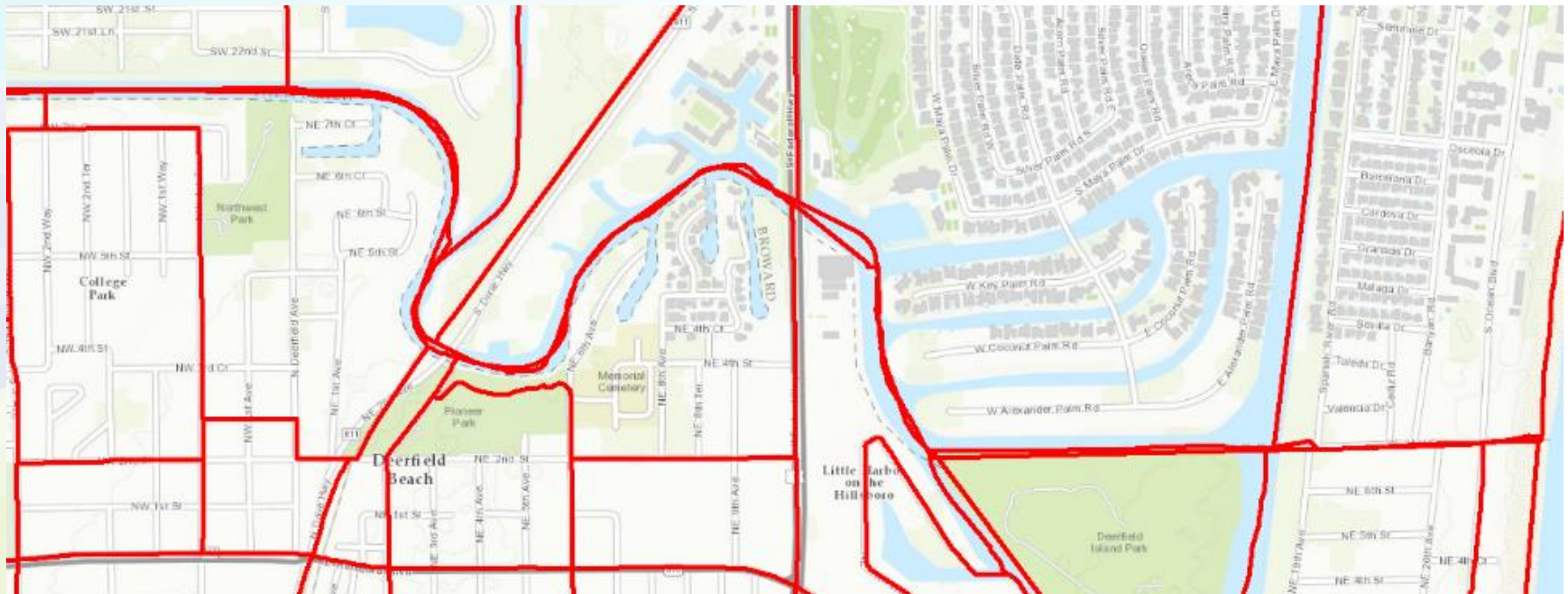
# Recommended approach: self-employment factors

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- Key questions:
  - » BEA proprietor data or PUMS self-employment data?
- Recommendation: Use the PUMS self-employment segment factor by industry.
  - » Consistent with self-employment factor derivation for SERPM7
  - »  $selfemp\ scale\ factor = \frac{Total\ employment}{Wage\ employment}$
  - » **Avoid individual double counting** in BEA proprietor employment.
  - » Recognize the reliability of the 2015 BEA wage employment estimates, keep the total employment at a reasonable range.

# *Spatial allocation challenges*

- InfoGroup is source of spatial allocation
- Allocated from Census Block to MAZ spatially



# Spatial allocation checks

- Programmatic comparison to SERPM7 dataset to identify changes and prioritize checking

SERPM\_ZonalEmpTrend\_Checks\_2010SERPM7\_2015\_NoSelfEmp.xlsx - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW ADD-INS ACROBAT TEAM

N9 :

	A	D	I	J	K	L
1	MAZ	TAZ	SD	REF_VALUE	NEW_VALUE	CHK
2	6555	2724	Broward South-West	2836	0	L2 MAZ Trend: Amusement Employment > 0 in 2010, 0 in 2015
3	7726	2592	Broward South-East	2290	0	L2 MAZ Trend: Manufacturing Employment > 0 in 2010, 0 in 2015
4	6000	2531	Broward CBD	1042	0	L2 MAZ Trend: Professional Business Employment > 0 in 2010, 0 in 2015
5	6686	2569	Broward CBD	816	0	L2 MAZ Trend: Total Employment > 0 in 2010, 0 in 2015
6	6686	2569	Broward CBD	816	0	L2 MAZ Trend: Total Employment > 0 in 2010, 0 in 2015
7	6698	2566	Broward South-East	564	0	L2 MAZ Trend: Construction Employment > 0 in 2010, 0 in 2015
8	6021	2598	Broward South-East	530	0	L2 MAZ Trend: Total Employment > 0 in 2010, 0 in 2015
9	6021	2598	Broward South-East	530	0	L2 MAZ Trend: Total Employment > 0 in 2010, 0 in 2015
10	5741	2146	Broward Central	454	0	L2 MAZ Trend: Construction Employment > 0 in 2010, 0 in 2015
11	5594	2074	Broward North	409	0	L2 MAZ Trend: Wholesale/Warehouse Employment > 0 in 2010, 0 in 2015
12	7594	2333	Broward Central	404	0	L2 MAZ Trend: Total Employment > 0 in 2010, 0 in 2015

***QUESTIONS?***



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