2010 Census Coverage Measurement

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Outline of My Remarks

1. Coverage measurement results
2. Methods used to produce the CCM results
3. Census costs
4. Implications for 2020

1. Coverage Measurement Results

Net Undercount Rate: National Level, 2010

- CCM = -0.01% (or overcount of 36,000 people)
- DA = -0.09% (or overcount of 270,538 people)
- Seems amazingly good

How Does 2010 Compare to Recent Censuses?

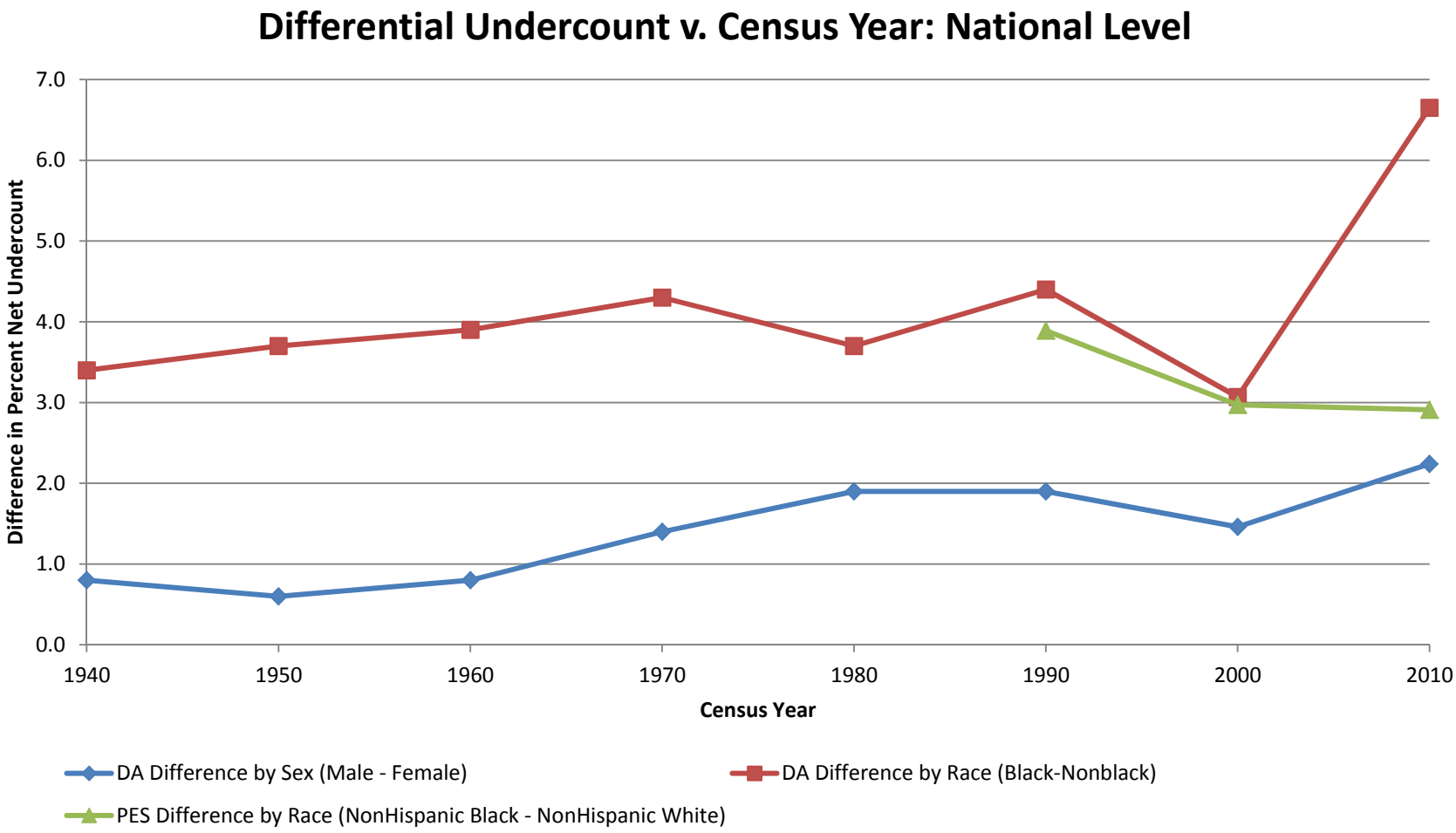
Census Year	Net Undercount (in %)*
1990	1.61
2000	-0.49
2010	-0.01

*Results based on the PES method

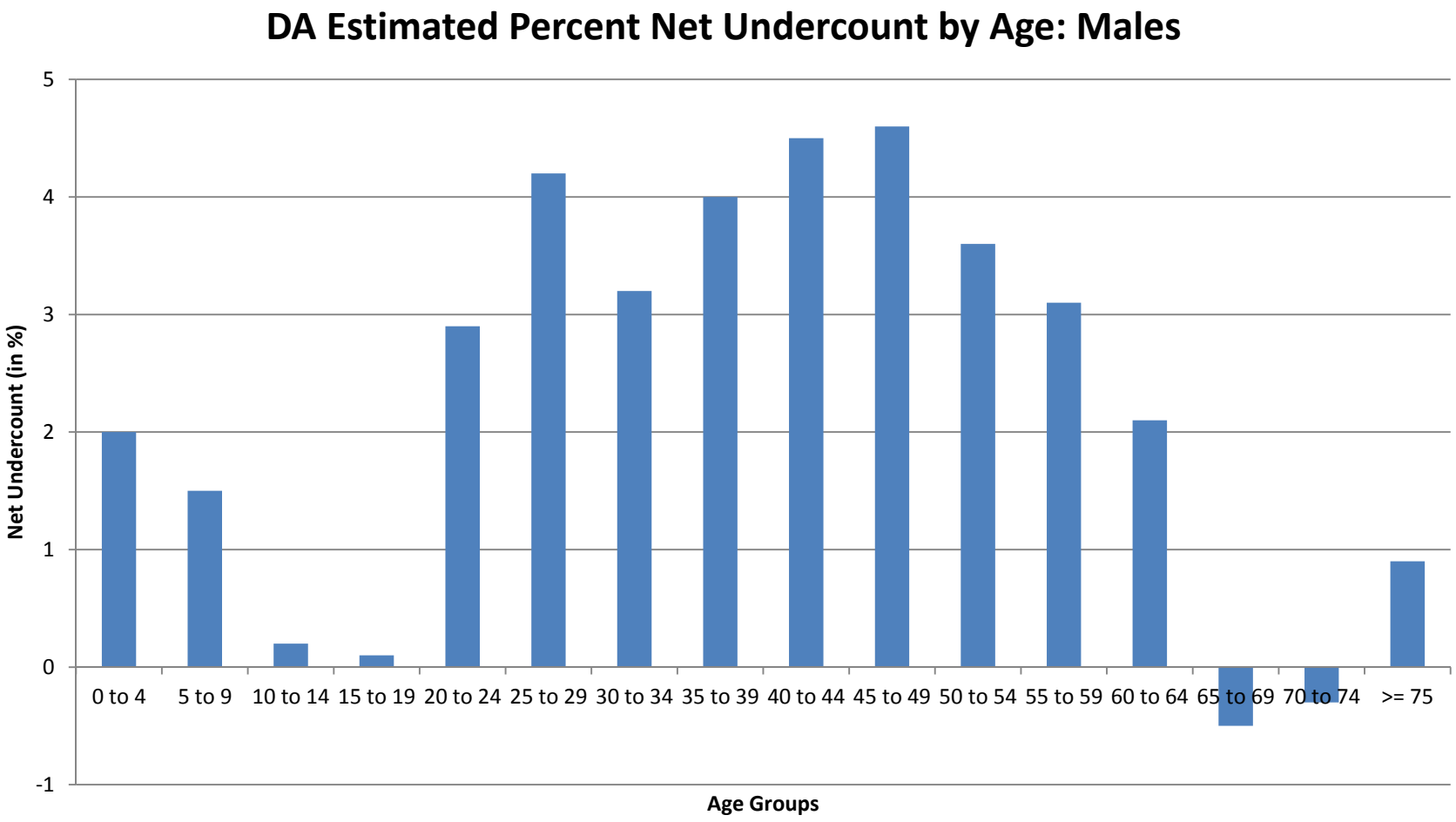
Differential Undercount

- Race
- Ethnicity
- Sex
- Age
- Type of enumeration area
- Housing tenure
- Mover status
- Urban/rural
- State

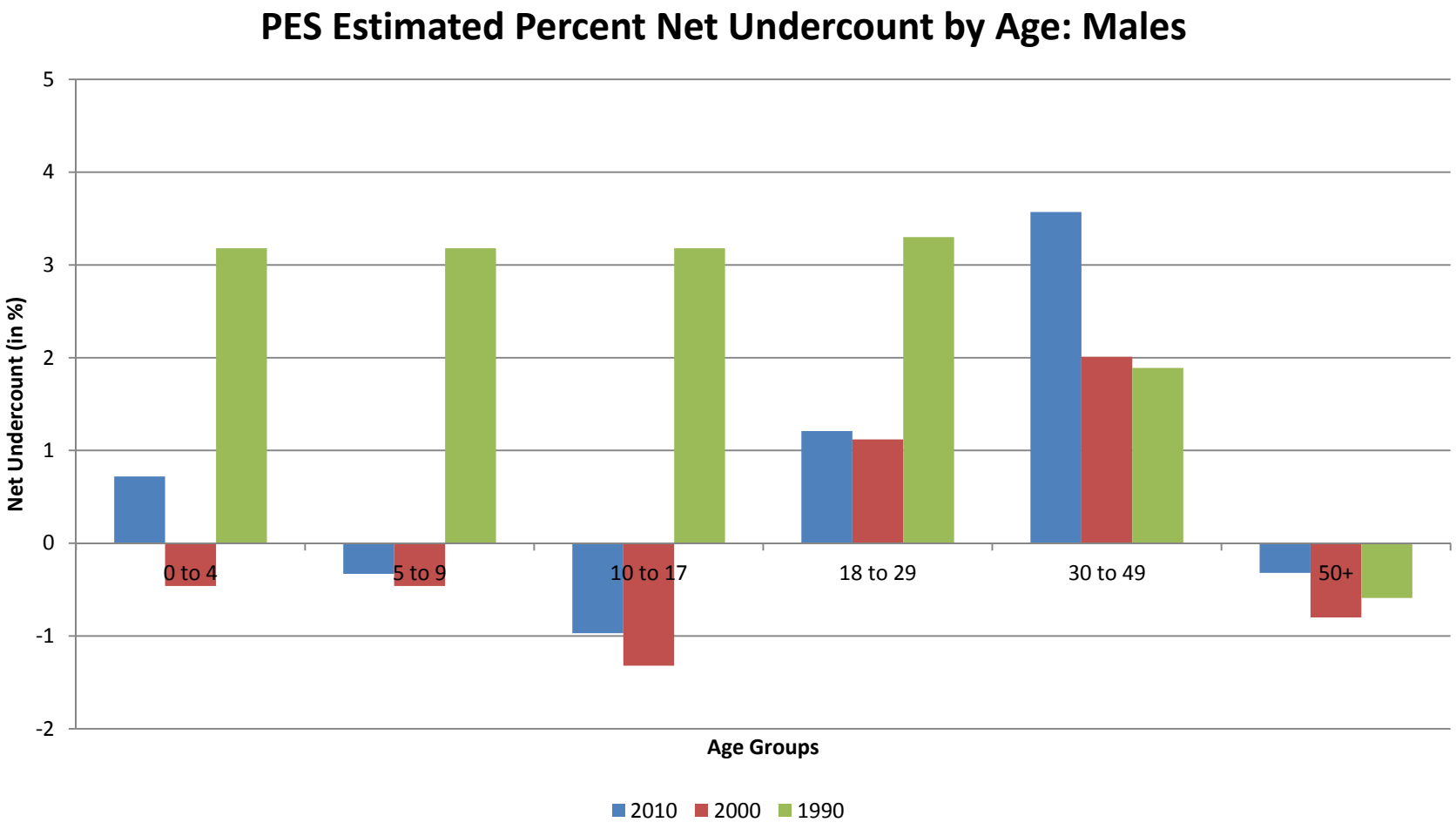
How Does 2010 Compare to Recent Censuses?



Differential Undercount by Age:
Males in 1980, Demographic Analysis Estimates



Differential Undercount by Age:
Males in 1990, 2000, and 2010, PES Estimates



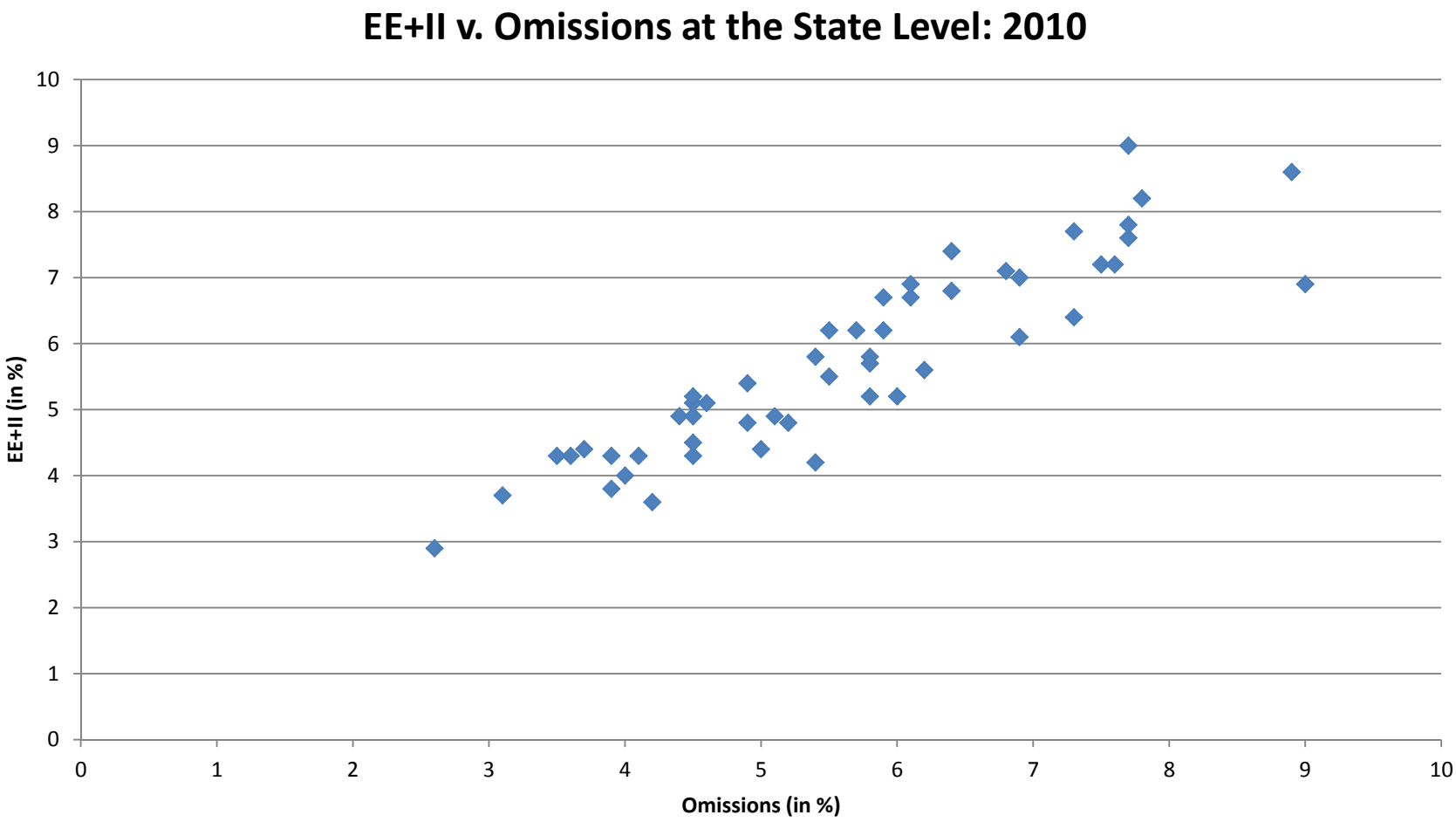
Differential Undercount by State: 2010, CCM Estimates

- Top three states
  - DC = 2.23%
  - VT = 1.29%
  - TX = 0.97%
- Bottom three states
  - AK = -0.85%
  - OK = -1.08%
  - WV = -1.43%

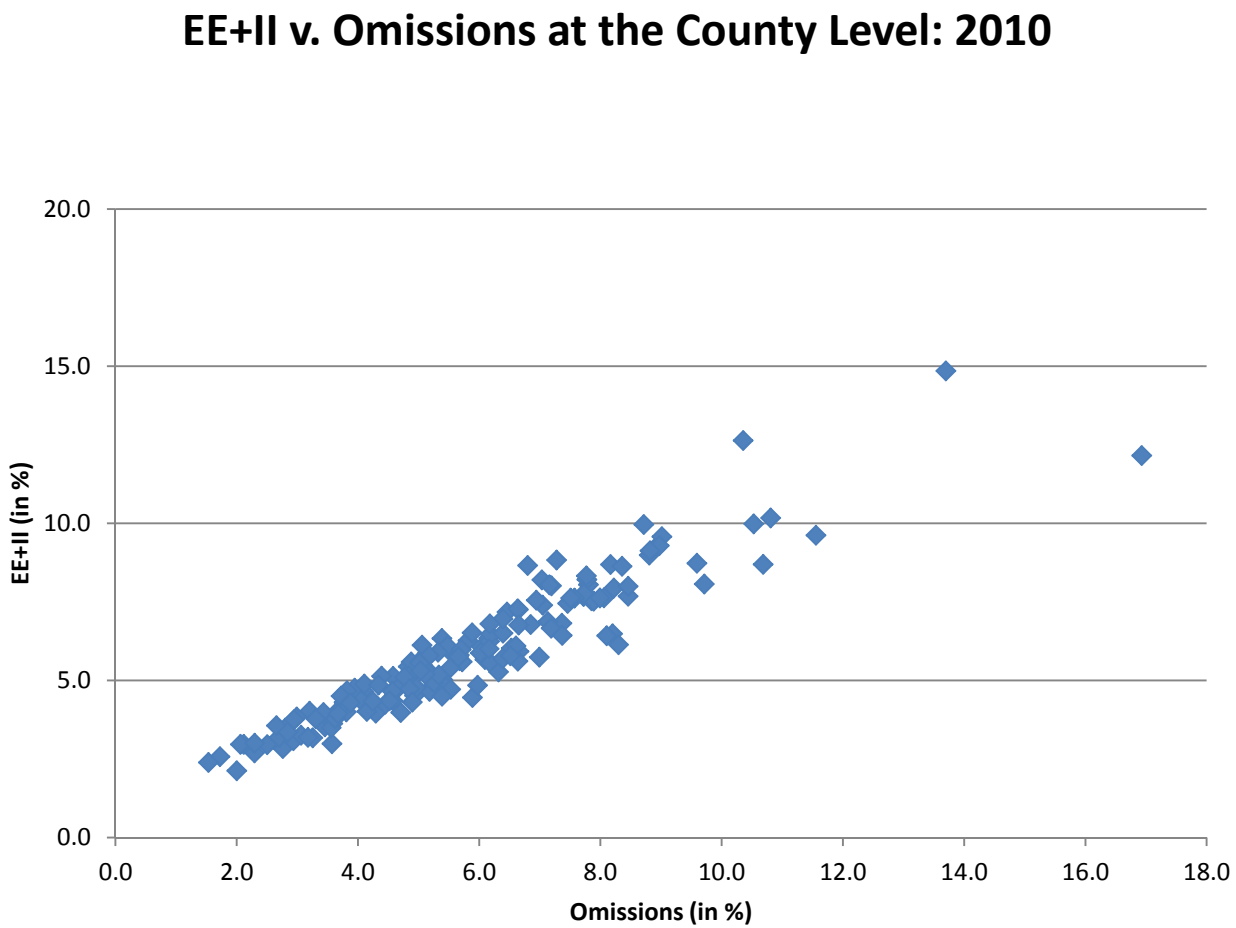
2010 was Accurate Overall because of Well Targeted Additions

CCM Estimate		Census Estimate	
Correct Enumerations	284,668	Correct Enumerations	284,668
Omissions	15,999	EE+II	16,035
Total Population	300,667	Total Population	300,703

Additions at the State Level



Additions at the County Level



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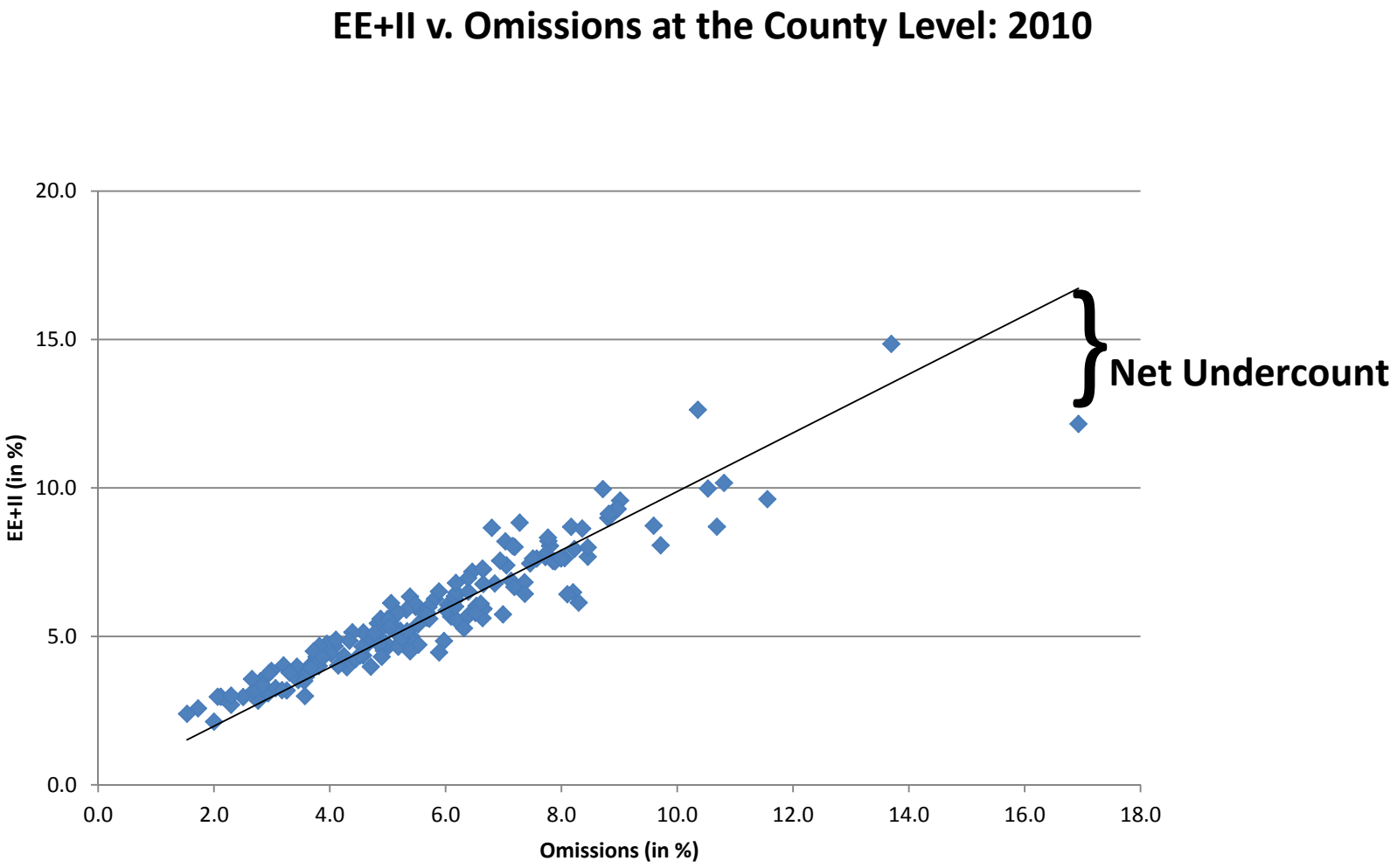
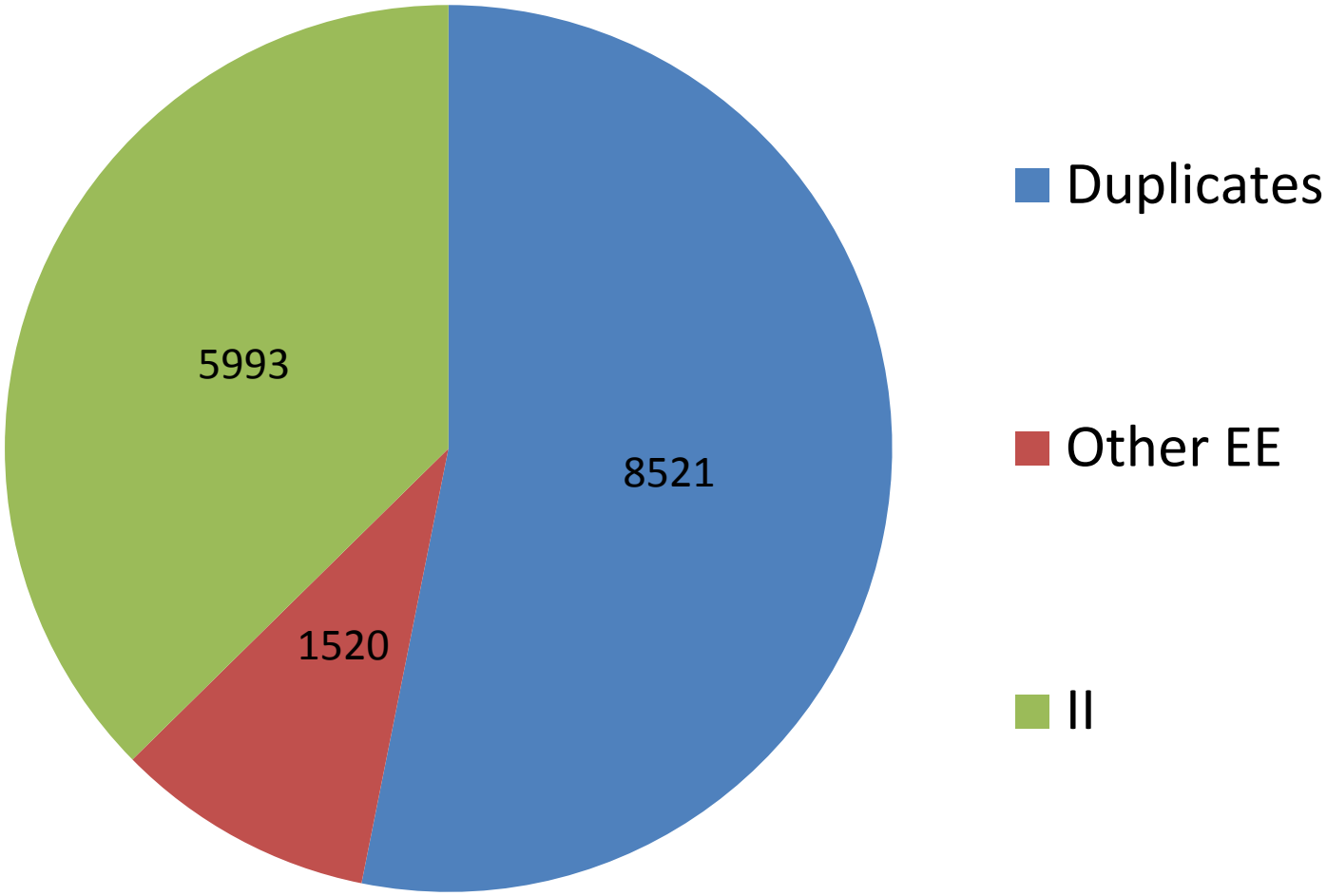


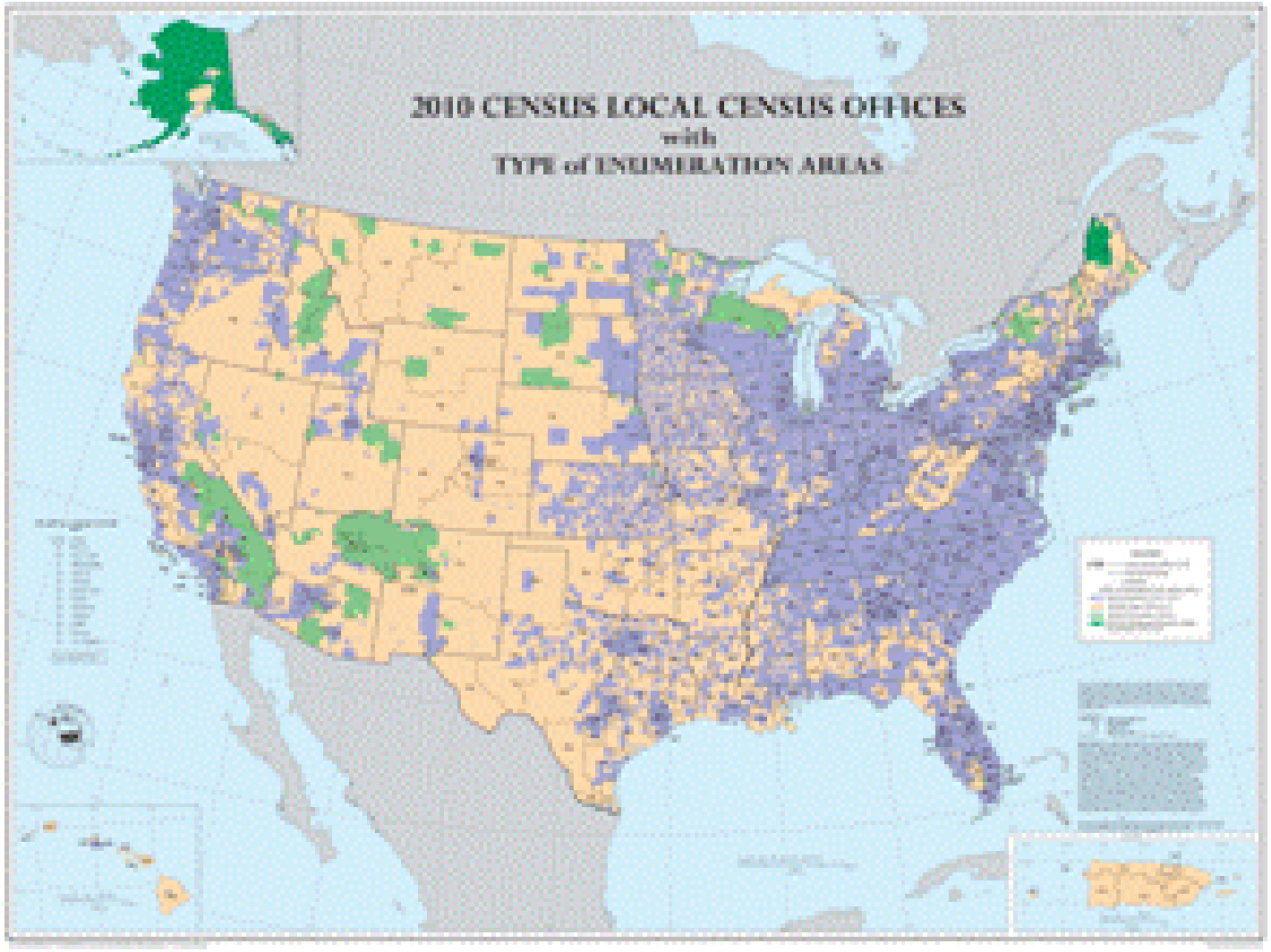
Duplicates are a Major Part of the Census Additions



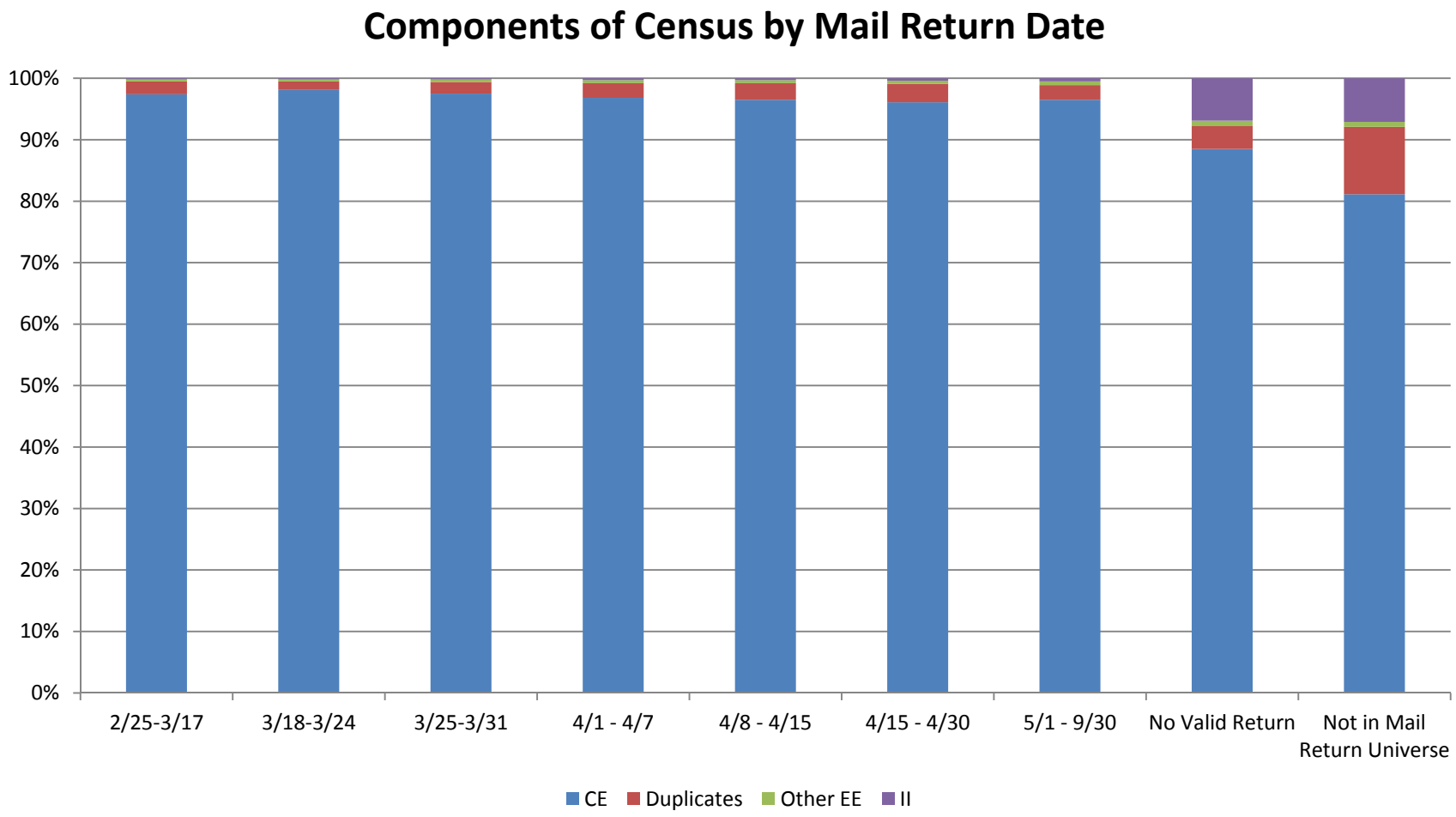
But Do They Distort Relationships?

Key Variables	CE	Duplicates	Other EE	II	Net Undercount	Omissions
Persons						
White	95.2	2.7	0.4	1.7	-0.5	4.3
Black	92.6	3.6	0.7	3.1	2.1	9.3
Owner	95.7	2.4	0.4	1.5	-0.6	3.7
Renter	92.5	3.7	0.7	3.0	1.1	8.5
Mailout/Mailback	94.8	2.7	0.5	2.0	0.0	5.2
Update/Leave	92.7	4.7	0.5	2.2	-1.4	6.1
Update/Enumerate	91.1	3.0	0.5	5.3	7.9	16.0
OK	92.6	5.0	0.7	1.4	-1.1	6.4
TX	94.0	2.7	0.6	2.6	1.0	6.9
Housing Units						
Owner	98.6	0.6	0.8		0.2	1.6
Renter	97.2	1.3	1.5		-0.3	2.5

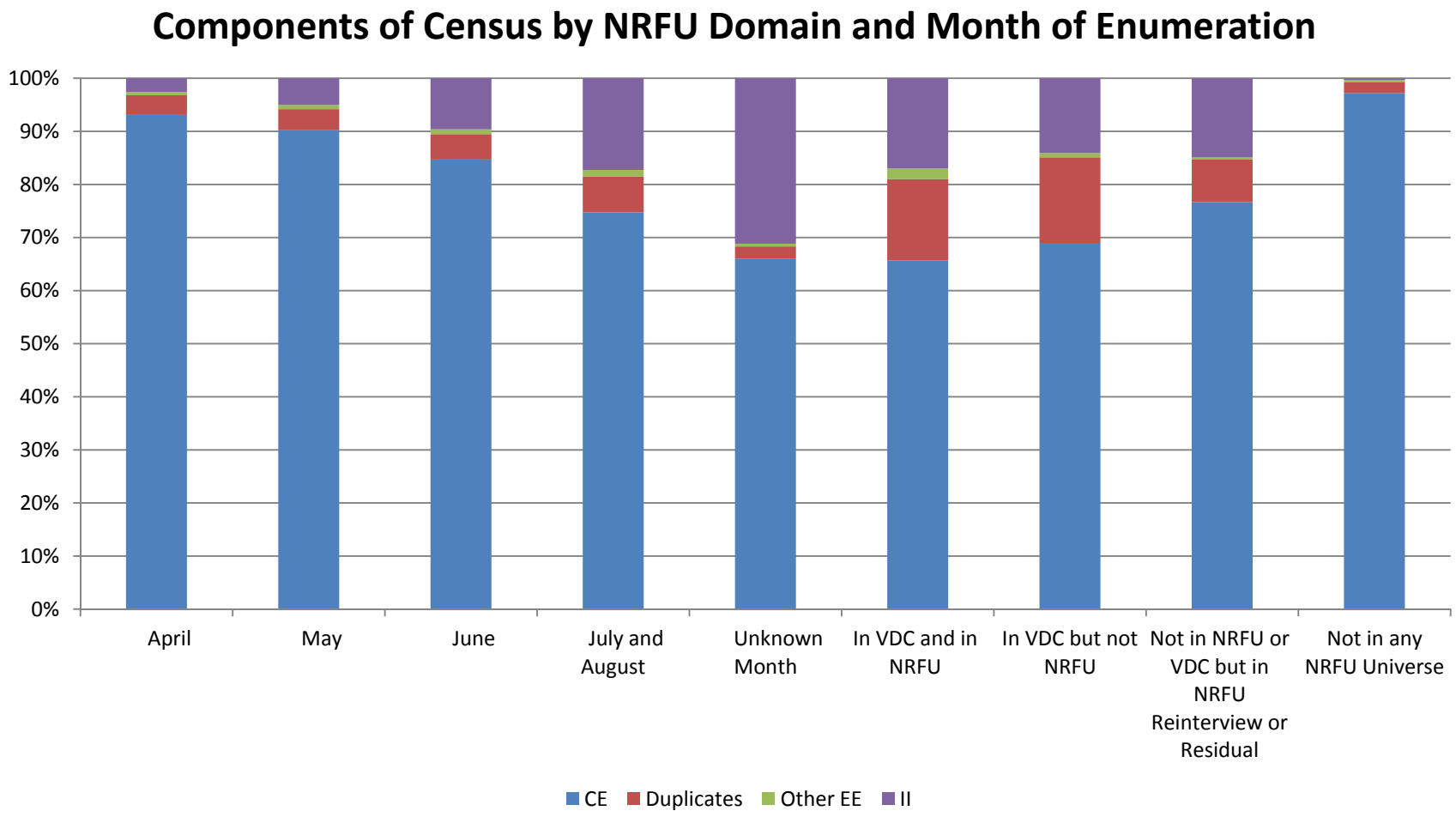
Type of Enumeration Areas



Quality Declines with Time



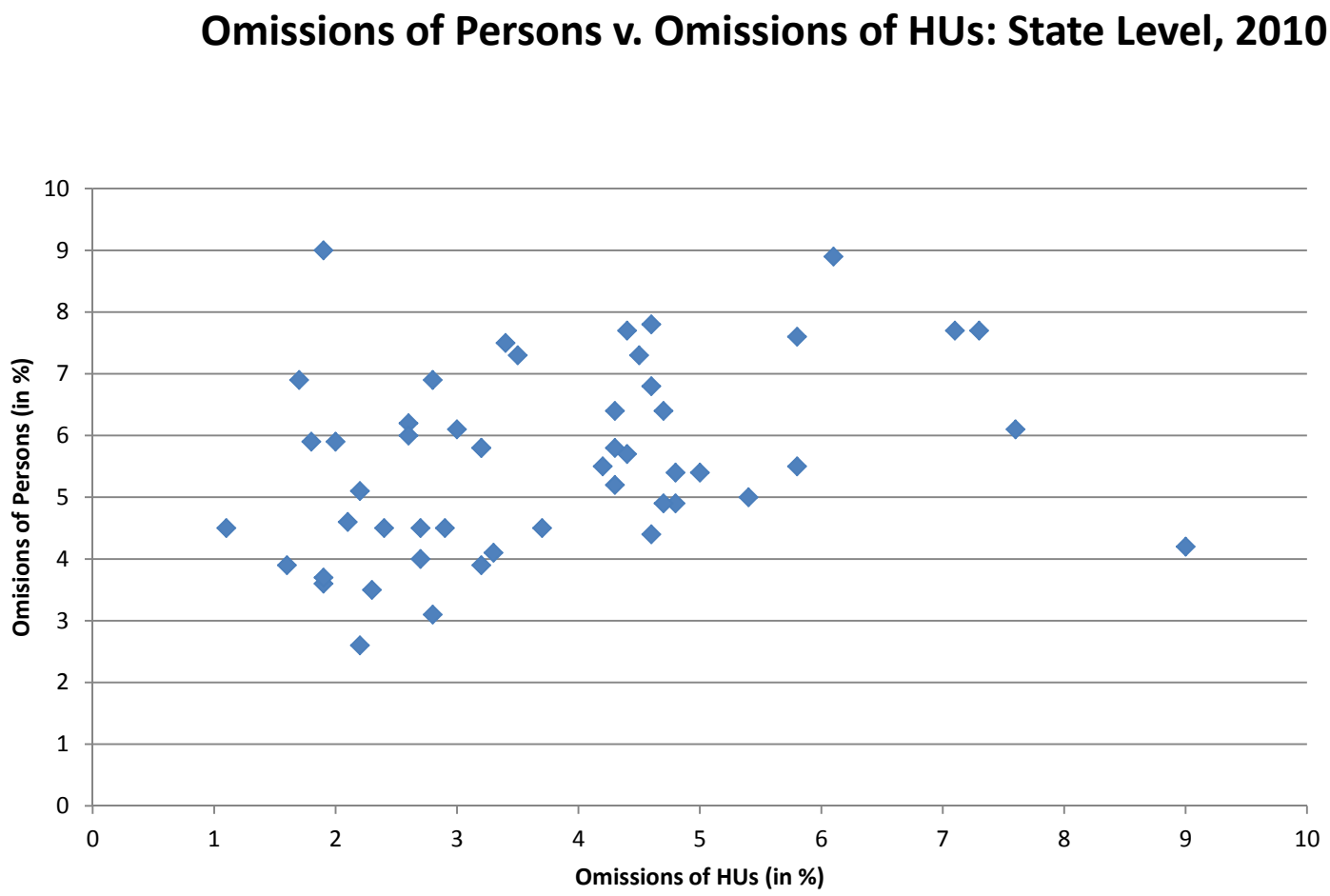
Quality Declines with Time - continued



Wish List

- Analysis by mover status
- Ethnographic studies
- Analysis of omissions
  - Within household
  - Whole household

Analysis of Omissions



2. Methods Used to Produce the CCM Results

- Basic Method

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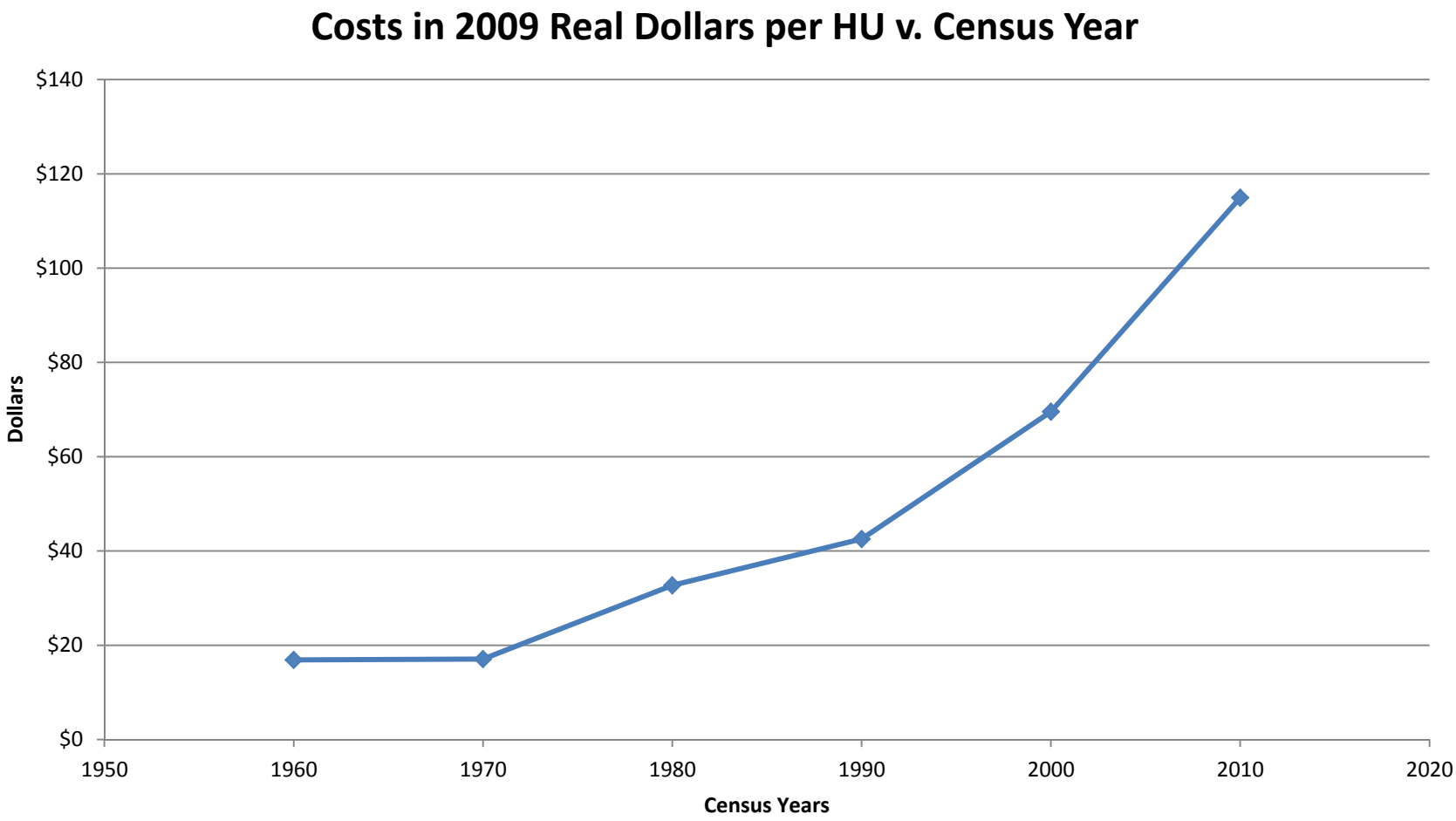
- Problems?
  - Not enough information for matching
- Innovations
  - Assessment of undercount by stage of operations
  - Persons and HUs
  - Logistic regression
  - Correction for correlation bias

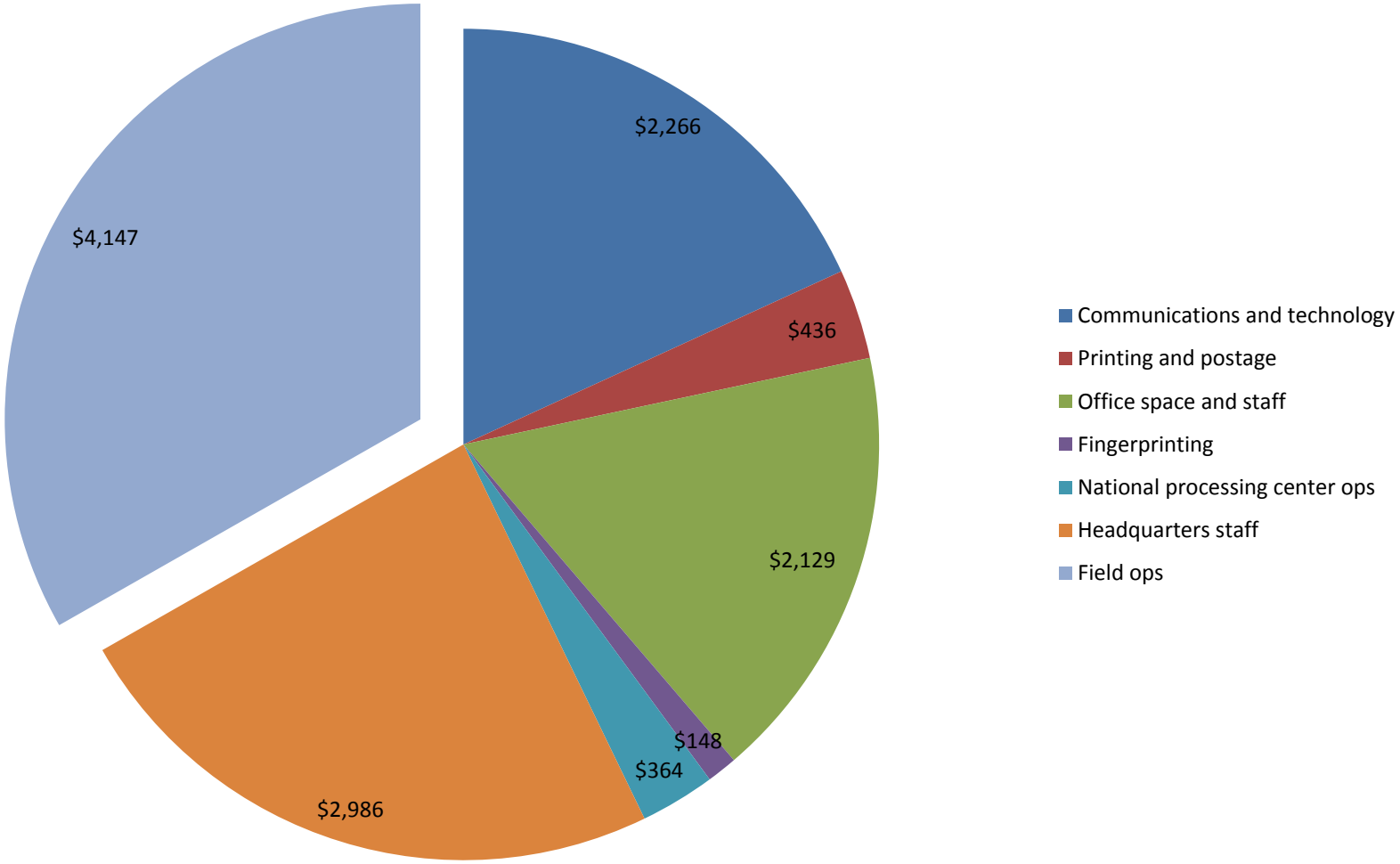
2. Methods - continued

- Great work!

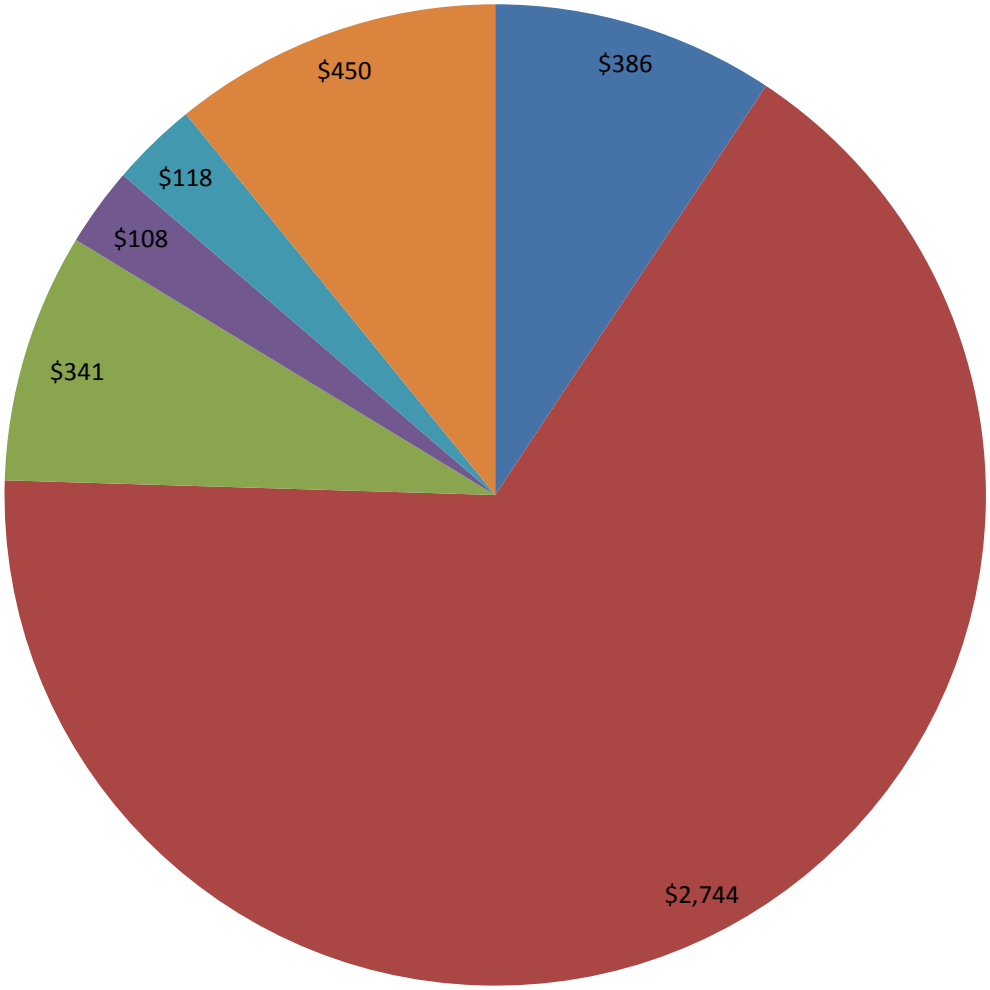
3. Census Costs



Approximate Distribution of Total Costs in 2010



Approximate Distribution of Field Ops Costs in 2010



- Address canvassing
- NRFU
- VDC
- Update/enumerate
- Update/leave
- Other field ops

4. Implications for 2020

- Simulate cost and quality of alternative census scenarios
  - Address canvassing
  - NRFU
  - VDC
  - CFU
  - Update/leave
  - Update/enumerate
- Ascertain key reasons why people and HUs are being missed

2020 - continued

- Duplicates, other EE, and II
  - Ascertain key reasons for EE+II
  - Ascertain how well they balance omissions within blocks, tracts, and counties
  - Are they a cost-effective, worthwhile, and acceptable compensation for the omissions
- Internet census
  - Any new problems of EE, II, or omissions?
  - Any new problems of coverage measurement?
- Administrative records census
  - Any new problems of EE, II, or omissions?
  - Any new problems of coverage measurement?

Thank You!

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