The Impact of the Undercount of Young Children in the Census on Poverty Estimates from the American Community Survey

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Outline of Presentation

- Background on the undercount of young children in the Census
- Implications of using DA estimates instead of 2010 Census to weight the 2010 ACS estimates of poverty for young children
- Implications of alternative assumptions poverty rate of uncounted young children in ACS
- Implications of using Vintage 2010 Population Estimates instead of 2010 Census to weight 2010 ACS state poverty estimates
- Summary

Presentation is:

- Illustrative – Not meant to be definitive but meant to highlight implication of census undercount of young children and encourage more research

- Overlooks (minor) inconsistencies across data sets

Use of Many Different Data Sources

- 2010 Census
- 2010 Demographic Analysis Estimates
- Vintage 2010 Population Estimates
- 2010 American Community Survey
- 2009 American Community Survey Coverage Ratios
- CARRA analysis of Administrative Records, American Community Survey, 2010 Census

Undercount of Young Children in the Census

Methods Used by the Census Bureau to Assess Census Coverage

- Demographic Analysis (DA)
  - Independent Estimates are made based on Birth and Death certificate data and estimates of net international migration. The Independent estimates are compared to the Census counts to measure net coverage

- Dual-Systems Estimates (called Census Coverage Measurement in 2010)
  - A post-enumeration survey (PES) is conducted and the results of the PES are compared to the Census to determine undercounts and overcounts.
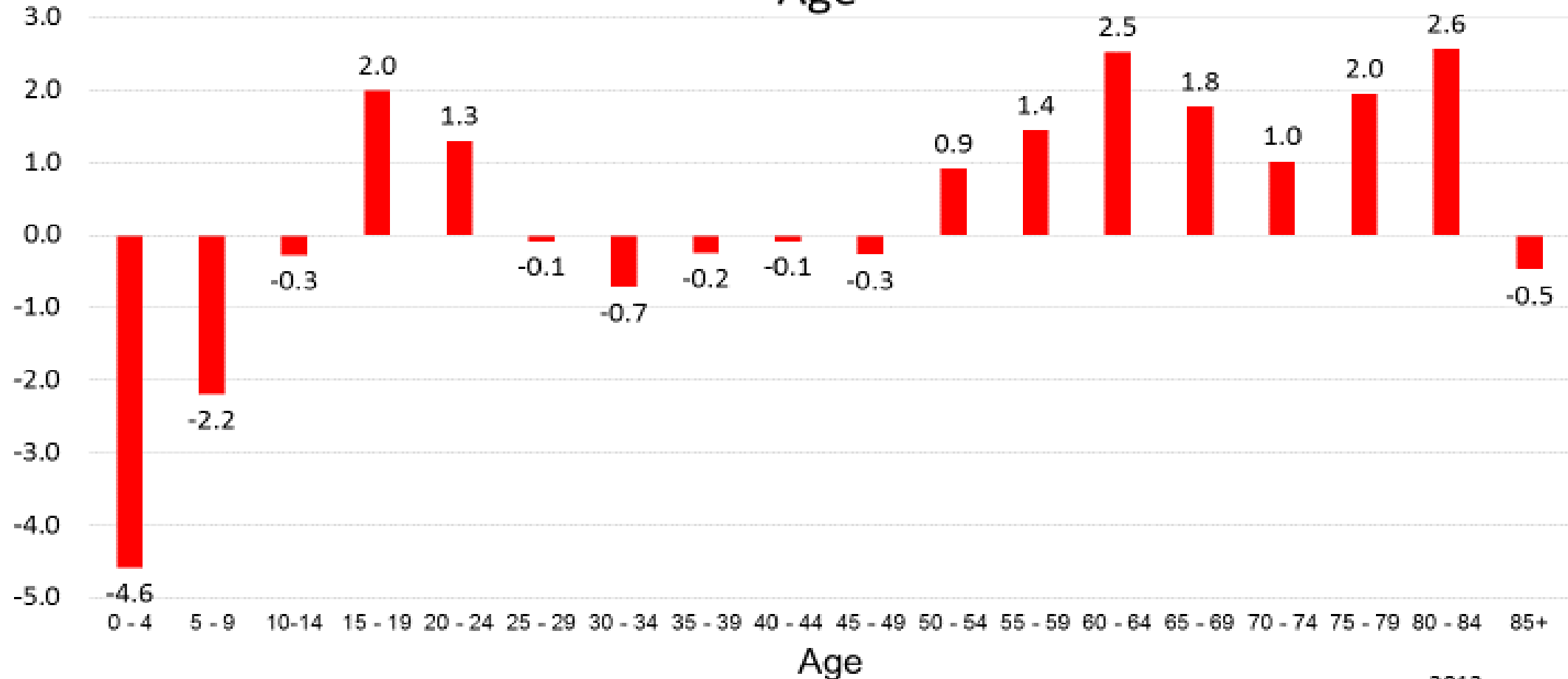
Components of DA Estimate for Age 0 to 4	
Births	21,076,000
Deaths	148,000
Net Immigration	244,000
TOTAL	21,172,000

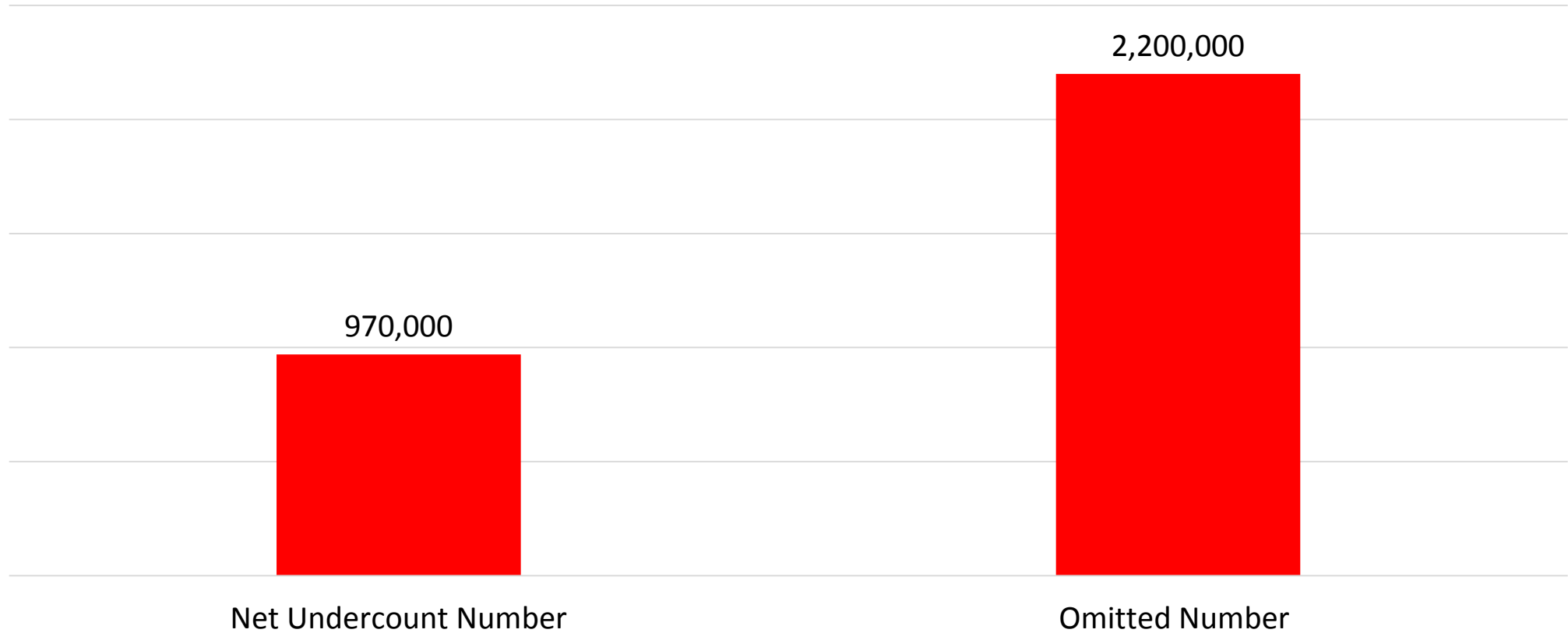|	
Census Count for Age 0-4 =	20,201,000
May 2012 DA Estimate for Age 0-4 =	21,171,000
Difference =	-970,000

Net Undercount Rates in 2010 Census by Age

Source: U.S. Census Bureau May 2012 DA

Net Undercount and Omission Number for Age 0 to 4 in 2010 U.S. Census

970,000

2,200,000

Net Undercount Number

Omitted Number

POINT - The undercount of young children in the U.S. Decennial Census is a large and serious problem

Impact of Census Undercount on Young Child Poverty Rates

Questions

- What would the young child poverty rate be if the DA estimates were used to weight the 2010 ACS?

- What would the young child poverty rate be if those not reported in ACS were assigned different poverty rates?

- What would the state-level young child poverty rates be if the Vintage 2010 Population Estimates were used to weight the ACS?

Past research on this issue

- Hernandez and Denton, 2001, "Census Affects Children in Poverty," U.S. Census Monitoring Board

- Daponte and Wolfson 2003, "How Many American Children are Poor? Considering Census Undercount by Comparing Census to Administrative Data," Carnegie Mellon University Working Paper

Research by Hernandez and Denton

- "Census Affects Children in Poverty" U.S. Census Monitoring Board
- Headline " Research Showing 500,000 to 2,000,000 poor children missed in the 1990 Census"
- Focused on children age 0 to 18
- Used Adjusted PL94-171 File to calculate missed children
- Lower bound = number of missed children times race-specific poverty rates = 500,000 missed poor children
- Upper bound = all children missed live in poverty – 2 million

Research by Daponte and Wolfson

- "How Many American Children are Poor? Considering Census Undercount by comparing Census to Administrative Data" Carnegie Mellon Working Paper
- Compared Census Bureau figures to various Administrative Records (WIC, School Lunch Program, Medicaid, Etc.)
- "Comparisons suggest that census and census-based products consistently undercount enormous fractions of children, especially poor children."

First Adjustment: Use DA estimate for children age 0-4 instead of 2010 Census count for weighting ACS

Sources of Counts or Estimates for Children Age 0 to 4 in 2010

Population Figures (in 1000s)	Age 0-4
May 2012 DA	21,171
Census Counts	20,201
2010 ACS	20,134
July 1, 2010 Population Estimate	20,190

Poverty Figures Age 0 to 4 Reported from 2010 ACS			
(Figures in 1000s)			
Total in poverty	Total not in Poverty	Total Population for Whom Poverty Status is determined	Percent in Poverty
4,962	14,861	19,823	25.03
Source: 2010 ACS, Table B17001			

Adjustment to DA for Percent of Young Children for Whom Poverty Status is Determined	
Total Children Under Age 5	20,133,943
Children Under Age 5 for Whom Poverty Status is Determined	19,822,633
Percent for Whom Poverty Status is Determined	98.45
Source: 2010 ACS, Table 17011 and B01001	

Poverty Figures Age 0 to 4 with DA weighting of ACS	
	(Figures in 1000s)
Number of children age 0 to 4 from DA	21,171
Times percent for whom poverty status is determined (.9845)	20,843
Times poverty rates from ACS (.2503)	5,217
Number of Poor children age 0 to 4 added by weighting with DA (5217 - 4962)	255
Percent Increase	5.1

Second Adjustment: Assumption about poverty rate for young children who do not respond to ACS survey

ACS estimates assumes poverty rate for those not reported is the same as for those reported.

New assumption assumes higher poverty rate for those not covered

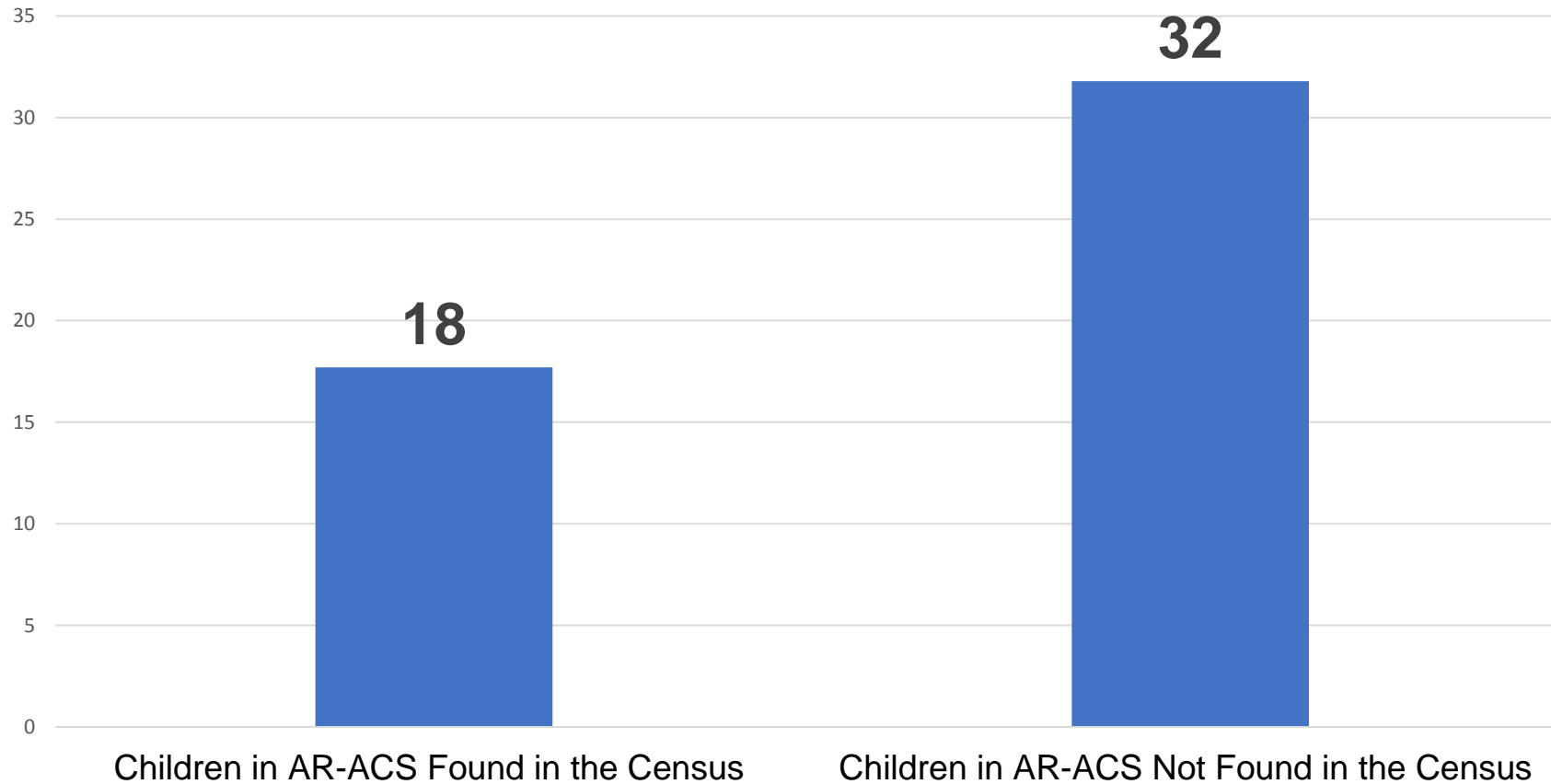## 2009 American Community Survey Coverage Rate for Age 0 to 4

	Coverage Rate	MOE
Age 0 to 4	0.89	0.004

Note: The margin of error (MOE) was calculated using the 90-percent confidence interval.

Source: Jensen 2017 forthcoming

Poverty Rates for Children Age 0 to 4 by Census Match Status

Source: Fernandez, Shatuck and Noon Presentation at the Southern Demographic Association Conference, October 2016

Calculation of new poverty figures based on assumption that children age 0-4 who are not reported have higher poverty rate

	Figures in 1000s		Estimated Young Children in Poverty (in 1000s)
DA estimate for age 0-4 for whom poverty status determined	20,843		
.89 times DA estimate age 0-4	18,550	0.25	4,638
.11 times DA estimates age 0-4	2,293	0.32	734
Revised Estimate of Poverty for age 0-4			5,371
Original ACS Estimate			4,962
Difference			409
Percent Difference (409/4962)			8.2

Third Adjustment: Use Vintage 2010 Population Estimates to weight ACS state poverty estimates

Key Points

- Vintage 2010 Population Estimate for age 0-4 uses same methodology as DA: Births, Deaths, and Net Migration

- Multiply ACS state poverty rates times Vintage 2010 State estimate for age 0-4 to get new poverty estimates

Six States with Largest Number of Young Children Added to Poverty Populaiont Using Vintage 2010 Population Estimates to Weight ACS	
	Number of poor young children added to poverty population
California	61,557
Texas	51,650
Florida	29,747
New York	23,126
Georgia	20,877
Arizona	16,186
Illinois	14,571

Six States with Largest Percent Increase in Young Children Added to Poverty Population Using Vintage 2010 Population Estimates to Weight ACS	
	Percent increase in poor young children added to poverty population
Arizona	12.9
Georgia	10.7
Florida	10.5
California	10.5
Texas	9.4
Nevada	9.3

Summary of Key Points

- High net undercount of young children in the U.S. Census

- If ACS estimates are weighted by DA estimate the number of poor young children increased by 255,000 or 5.1 percent

- Young children under-covered in ACS---if higher poverty rate assumed for uncovered young children, the number of poor young children increased by 409,000 or 8.2 percent.

- If Vintage 2010 Population Estimates used instead of Census to weight ACS state estimates, number of poor young children increased by at least 14,000 in six states and by at least 9 percent in 6 states.

THANKS

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