

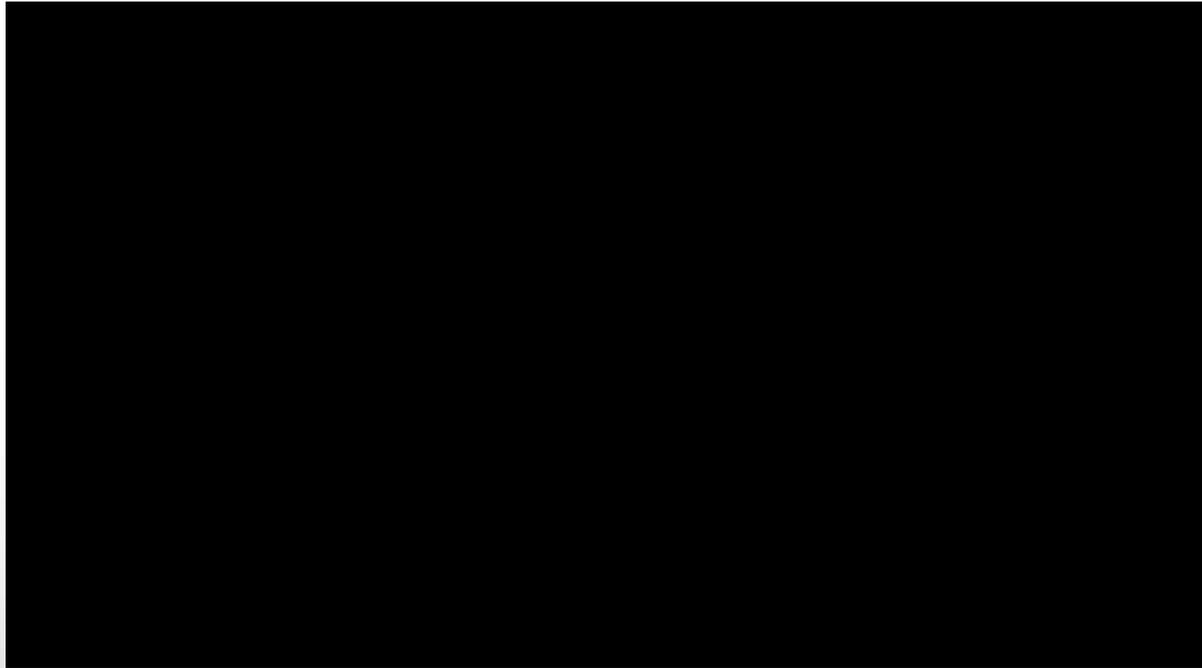
The Undercount of Young Children in Surveys and Censuses

Children Undercount Research Team
SDC/CIC Annual Conference

April 6, 2016

This presentation is released to inform interested parties of ongoing research and to encourage discussion of work in progress. Any views expressed are those of the authors and not necessarily those of the U.S. Census Bureau.

Children Count Too



Introduction

The Problem

- The goal of the decennial census is to produce an accurate count of the United States population
- An over count or undercount for a group is referred to as *coverage error*
- Coverage error in the census is measured with
 - Demographic Analysis (DA)
 - Post-enumeration survey
 - 2010 Census Coverage Measurement (CCM) Program

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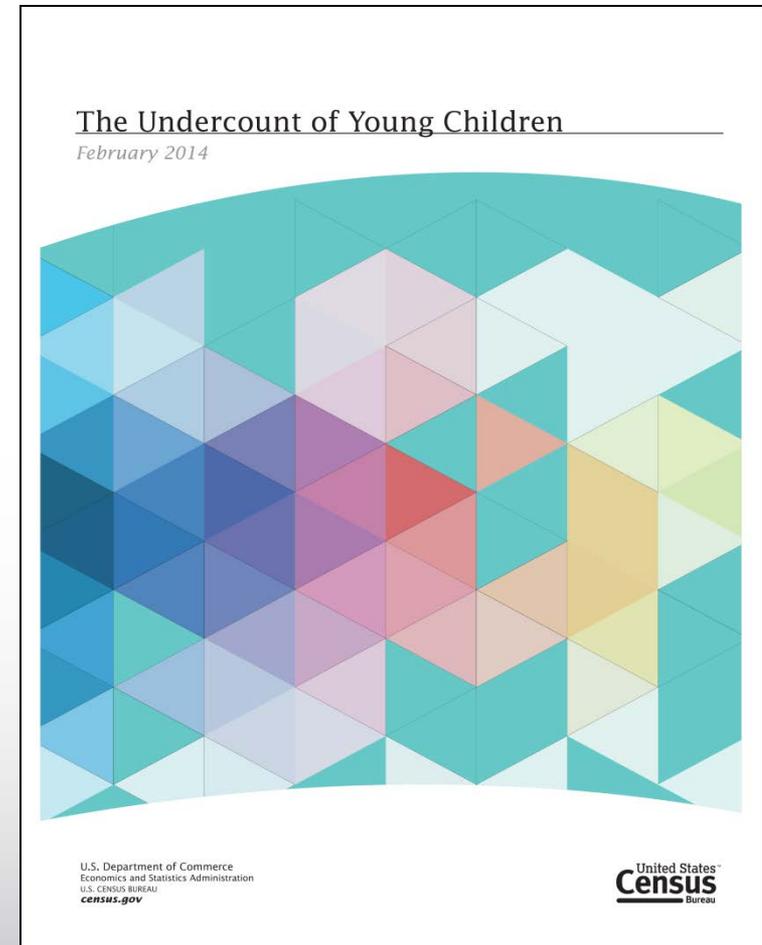
The Problem

- DA estimated a net over count of 0.1 percent for the total population in 2010
- While adults were over counted, children under 18 had a 1.7 percent net undercount
- Young children aged 0-4 had the highest net undercount rates, 4.6 percent

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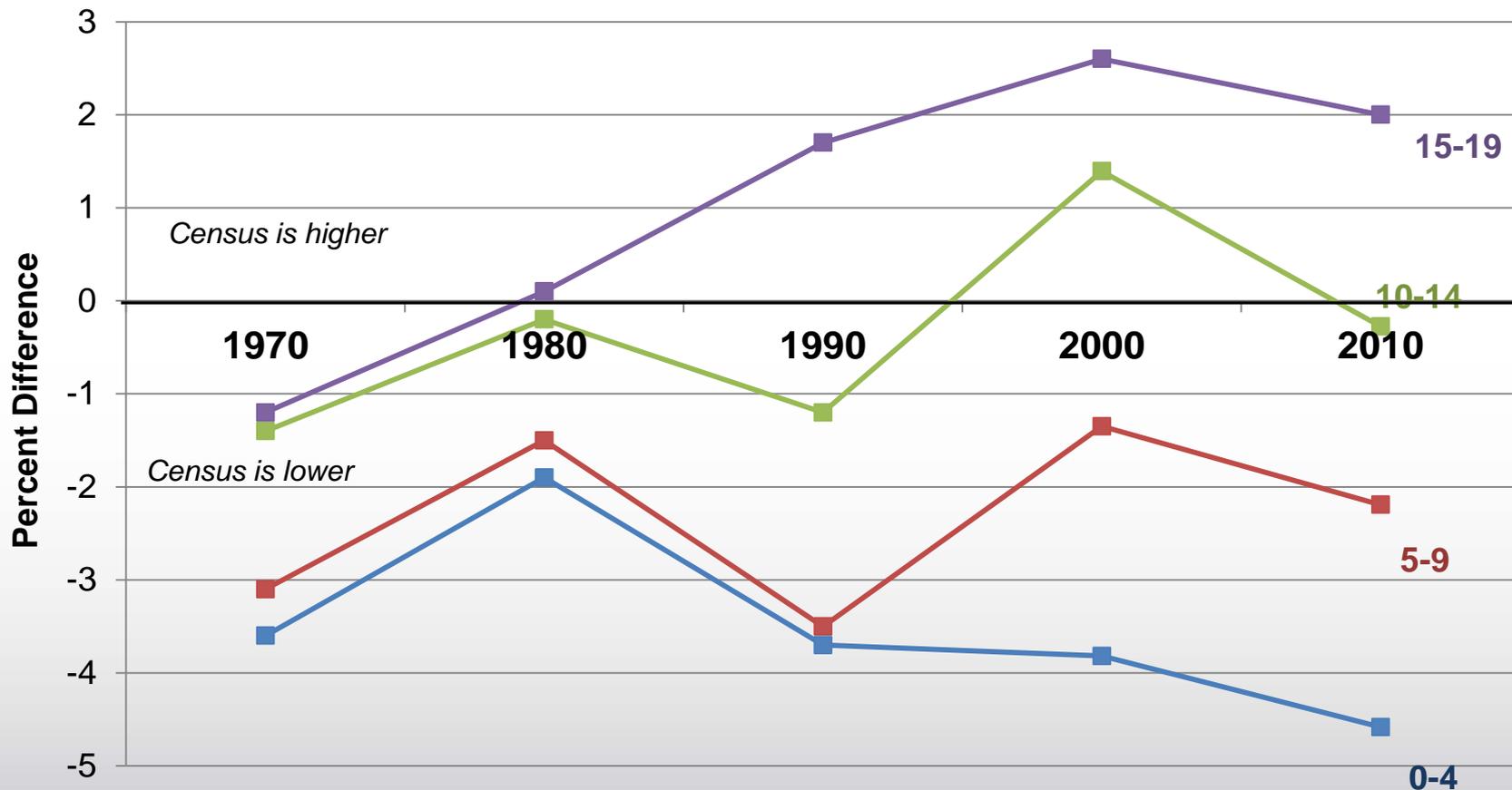
The Problem

- Task Force on the Undercount of Young Children (2013)
- Children Undercount Research Team (2015-present)



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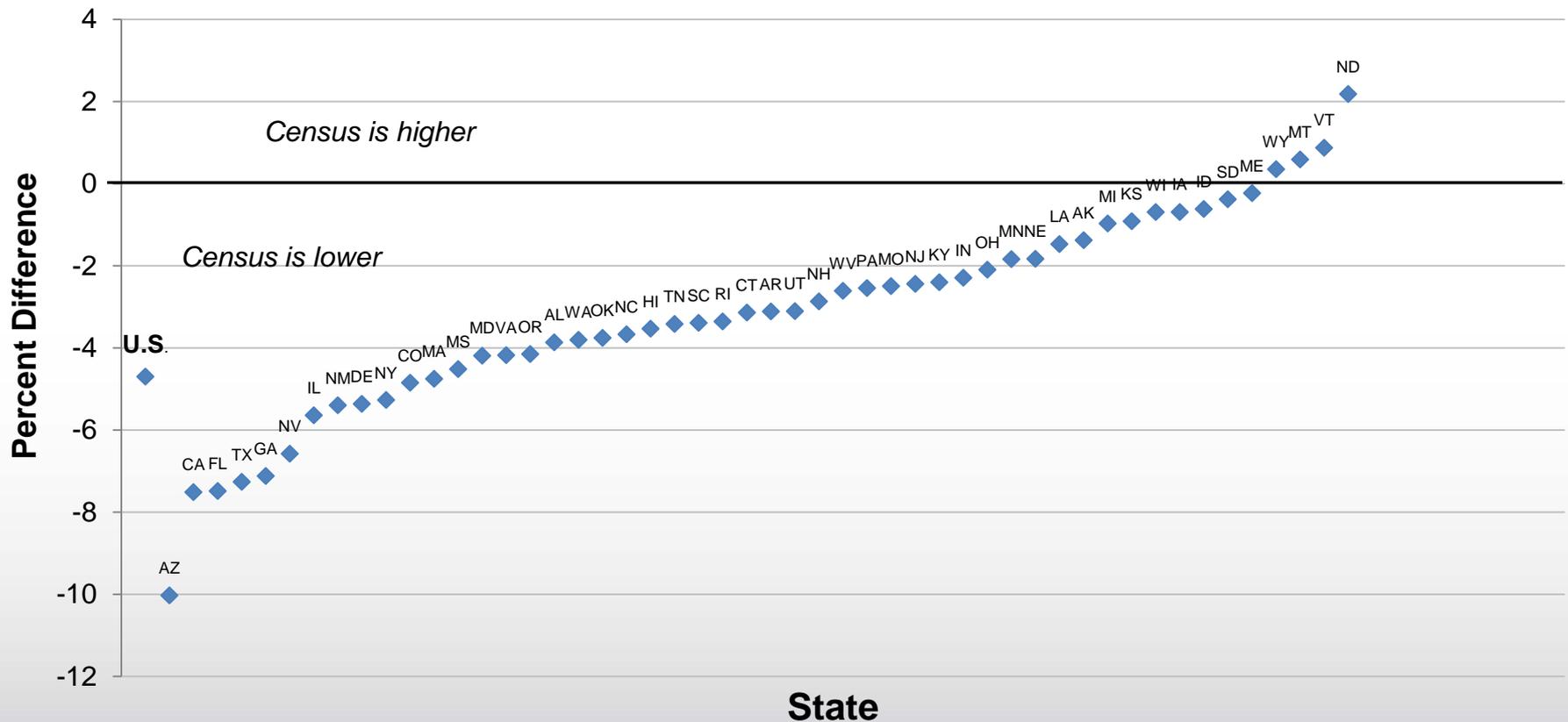
Percent Difference Between the Census Count and DA Estimates by Select Age Groups: 1970 to 2010



Source: 1970, 1980, 1990, 2000, and 2010 Census and Demographic Analysis.

Background

Percent Difference Between the Census and Vintage 2010 Population Estimate for Children Age 0-4 by State



Source: 2010 Census and Vintage 2010 Population Estimates.

Background

Net Coverage of Children Age 0-4 by Race and Hispanic Origin – 2010 Census

Race/Hispanic Origin	Net Coverage Error of Young Children
All Races	-4.6
Black alone or in combination	-6.3
Non-Black alone or in combination	-4.2
Hispanic	-7.5
Non-Hispanic	-3.6

Source: 2010 Census and Demographic Analysis

Background

Survey Coverage Ratios – Children Aged 0 to 4

Census Survey	Age Group			
	0-4	5-9	10-17	18+
ACS	0.89	0.97	0.98	0.95
CPS	0.82	0.92	0.90	0.88
SIPP	0.80	0.88	0.86	0.86

Source: March 2009 Base Current Population Survey; Survey of Income and Program Participation; 2009 single-year American Community Survey, special tabulation

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Source: Adapted from Fein and West (1988)

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Projects

- Census Coverage Measurement (CCM)
- Estimating Census Omissions
- Coverage of Young Mothers
- Coverage Follow-up (CFU)
- Complex Household Typology
- Subnational Estimates

Census Coverage Measurement Background

- The CCM program used dual-system estimation to measure coverage in the 2010 Census
- CCM included an independent enumeration of a sample of blocks – the P-sample
- The persons enumerated in the CCM survey were matched to the Census to determine whether they were included in the Census

Census Coverage Measurement Background (continued)

- This project studies the P-sample children that did not match to the census
- Persons enumerated in the CCM survey that were not matched to the Census include
 - children that the census missed
 - children that could not be matched
 - children enumerated in the census outside of the CCM search area

Census Coverage Measurement

Preliminary Findings

- Young children experience **all 3 types** of coverage error
- The most common type is when the child is part of a missed household in an enumerated housing unit
- Also *within household* coverage
 - Part of the household is missed
 - Only the child is missed
- Household structure is also related to non-matches
 - Foster child or other unrelated child
 - Other relative

Estimating Census Omissions

Background

- Estimating the total number of young children missed in the census
- The DA estimates measure *net* coverage error
- The CCM program produced estimates of the component of census coverage
 - Omissions are one component
- The DA and CCM results were combined to estimate how many young children were missed in the 2010 Census

Estimating Census Omissions

Preliminary Findings

- Young children had a high omission rate
- The combination of erroneous enumerations and imputations did not offset the omissions
- This explains why the net coverage error remains high for young children

Coverage of Young Mothers

Background

- Statistics Canada found that their census was more likely to exclude young children if the child's mother was young
- We wanted to explore the hypothesis that U.S. censuses and surveys miss young children because we also miss their young mothers
- Compared estimates of births from vital statistics by maternal age with ACS estimates of women who gave birth in the last year by age

Coverage of Young Mothers

Preliminary Findings

- The ACS undercounts young mothers age 15-19
- There is an undercount for all mothers
 - Some variation by race and Hispanic origin groups
 - Unmarried young mothers especially at risk

Coverage Follow-up

Background

- The 2010 Census included a coverage follow-up (CFU) operation to improve the accuracy of the list of rostered household members
- CFU resulted in the addition of about 55,000 young children
- Many more households marked the coverage follow-up question indicating they might have a young child that they did not include

Coverage Follow-up

Preliminary Findings

- Highest add rates for unrelated children and related children other than biological children
 - 10 times greater than for biological children
- Listing errors are greater for children living in non-family and complex households
- The age of the householder was related to children being missed and added in CFU

Complex Households

Background

- New household typology to classify wider range of living situations
- Use data from the 2010 Census
- “Complex households” have more complicated structures
 - Blended families
 - Skip generation (grandparent and grandchild)
 - Multigenerational families
 - Family households with nonrelatives

Complex Households

Preliminary Findings

- Complex households have increased over time
- Young children disproportionately live in complex households
- The percentage of young children living in complex households varies by race and ethnicity

Subnational Estimates

Background

- The 2010 DA produced national-level estimates
- Subnational “DA like” estimates of the 0-4 population
- Compare to the 2010 Census to identify geographic areas with large differences
- Combine these estimates with characteristics from the Planning Database and ACS
 - Determine which characteristics are most highly correlated with coverage of young children

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Your Questions?