

Redesign of the Current Population Survey Annual Social and Economic Supplement

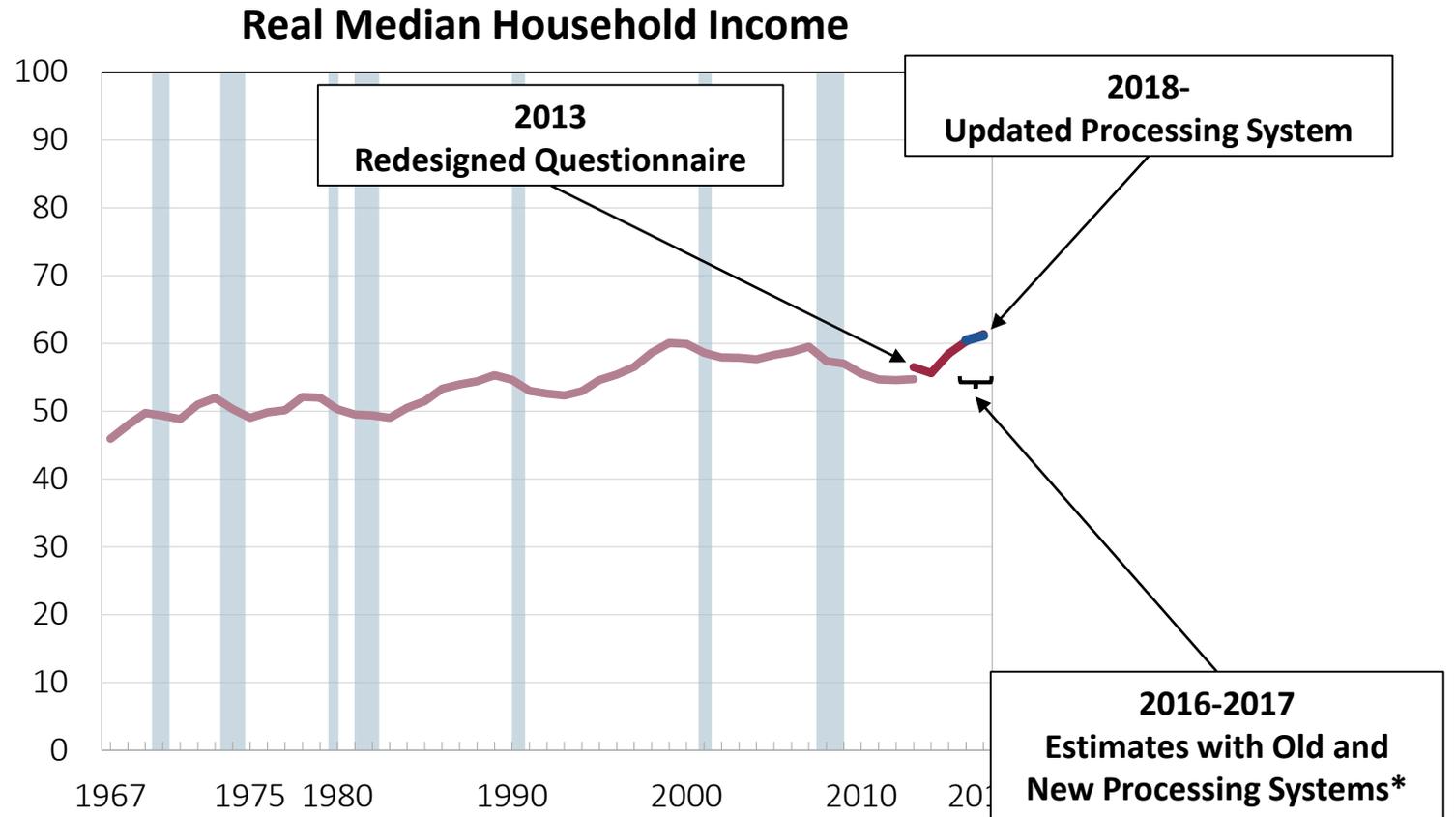
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Census Scientific Advisory Committee Spring 2019 Meeting
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Redesign of CPS ASEC: Income Example

- Redesigned Questionnaire in 2014
 - Income in 2013
- Updating processing system in production in 2019
 - Income in 2018
- Re-release estimates for 2017 with new system
 - 2016 data available in with new processing system in 2017 Research File



Source: CPS ASEC

* 2016 estimates with new processing system from 2017 Research File, 2017 estimates with new processing system from 2018 Bridge File.

Outline

- **Background on the redesign to the CPS ASEC**
- Details of the income survey instrument changes
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Background on the CPS ASEC

- Longest running survey conducted by the Census Bureau
- Widely-used survey
 - Official national poverty statistics
 - Frequently used estimates of median household income and uninsured rate
- Suffers from misclassification and underreporting of income
- Concerns that overestimates uninsured rate

Implementation

- Research
 - Over a decade of research on health insurance underestimates.
 - WESTAT contract for income questions
 - Field test in March 2013.
- 2014
 - Split Panel Test for Income
 - Strong baseline for health insurance – full sample
- 2015+
 - Redesign implemented for full sample: income and health
 - Processed using old system
- 2019+
 - Updated processing system implemented in production
 - Upcoming Income, Poverty, and Health Insurance Reports will show estimates for 2017 and 2018 using the new processing system

Reasons for Questionnaire Redesign

- Improve data quality
- Reduce respondent burden
- Take better advantage of an automated instrument
- Reflect the changing retirement environment
- Improve reporting of asset income
- Reflect the changing health insurance landscape

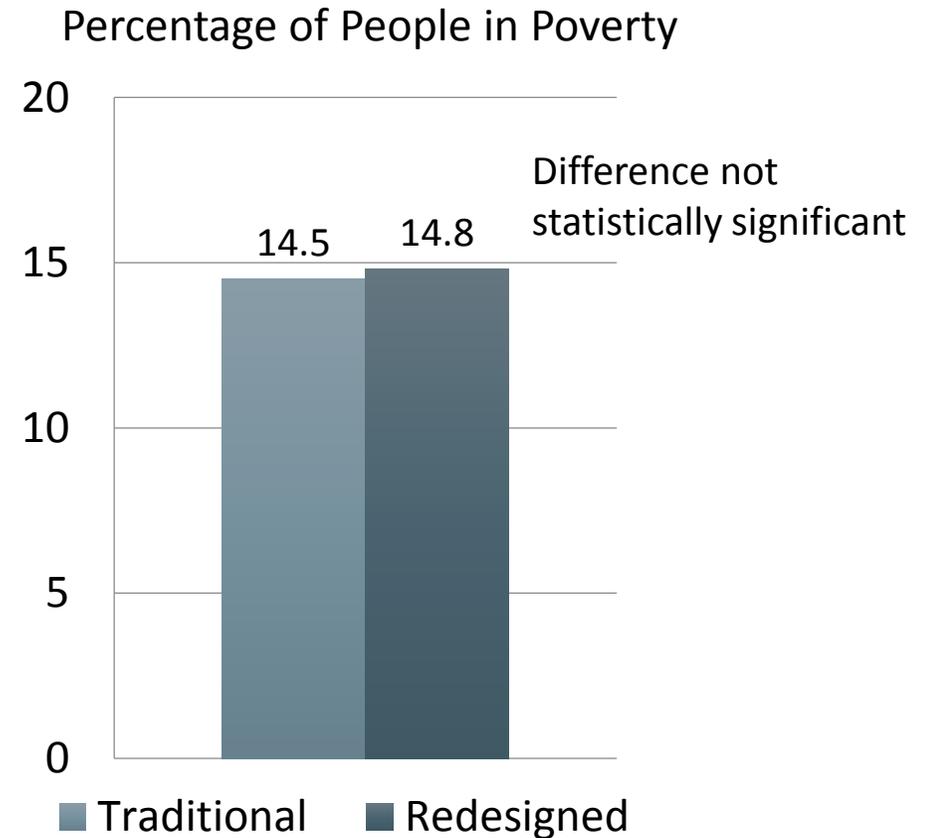
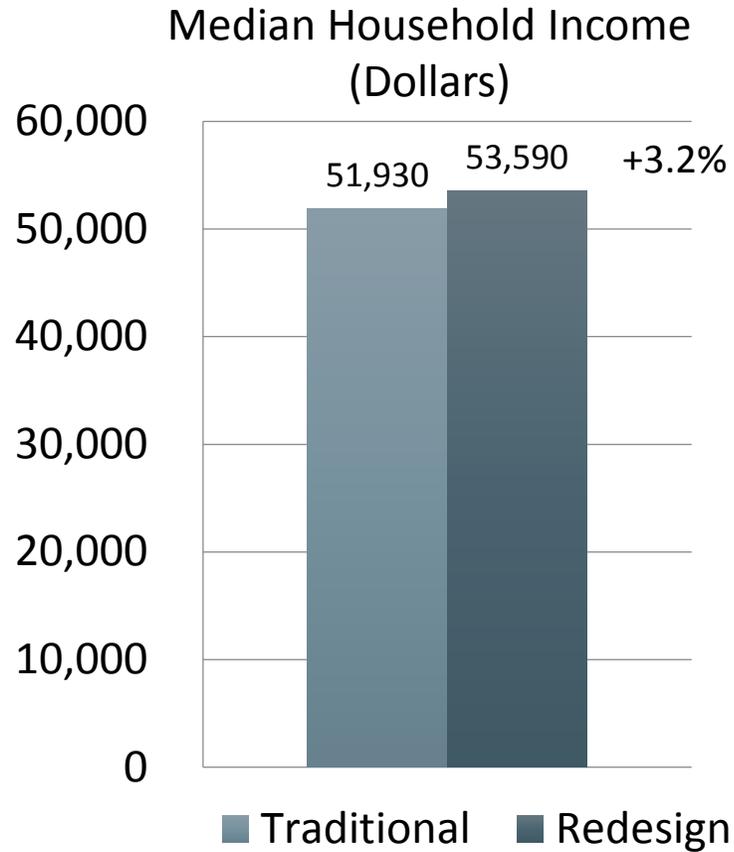
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Changes to the Survey: Income

- Income range follow ups
- Considerably more detail in retirement and interest income questions
- Changes to social security and SSI questions to clarify confusion on disability income from each category
- Other changes
 - Dual pass approach
 - Family income screener removed – previously some questions not asked of higher income families
 - Tailored skip patterns

Income and Poverty Measures: 2013



Source: 2014 CPS ASEC Traditional and Redesign Files.

Aggregate Income by Source

Comparing the Redesign (R) and Traditional (T)

Income Source	Percentage Change in Aggregate income [(R- T)/T]
Total Income	*4.2
Social Security	*2.4
Supplemental Security income	*10.3
Public Assistance	*36.7
Disability Benefits	*35.2
Retirement income (includes pensions)	*22.2
IRA, Keogh, or 401k	*230.1
Interest earning accounts	*111.7
Dividends	*-20.3

Source: 2014 CPS ASEC Traditional and Redesign Files.

* An asterisk preceding an estimate indicates change is statistically different from zero at the 90 percent confidence level.

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Income Processing Changes

- Earnings ranges used in imputation
- Income allocation flags changed
- Other income edit and imputation overhaul
- Various other small fixes
 - Mortgage imputation change
 - Means-tested program benefit caps removed
 - Increased top codes for some income types

Allocation System Improvements

- Imputations using ranges (for select variables)

Variable	Percent of Item Non-Respondents with Ranges
Earnings (Longest Job)	73%
Overall (share of income items missing due to item non-response)	50%

Income Allocation Flags

- Update
 - Include a code for supplement non-response in each variable
 - Rather than checking flag and FL_665 variable
 - More detail in imputation codes
 - Quality of match information
 - Indicate if range response given

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Personal Income by Type

Percent Difference between Files

Type	People with Income	Percentile			Total
		25	50	90	
Total	0.0	1.3***	0.3	0.8	1.4***
Earnings	0.0	1.8***	0.3	-0.1	0.4
Social Security	0.0	-2.0***	-0.4	0.4	-1.3***
SSI	0.5	-17.7***	-1.3***	0.1	-2.2*
Public Assistance	0.1	-7.3***	-11.0***	-4.8	-6.4**
Interest	-0.1				15.0***
Dividends	1.4***				14.6***

Source: 2017 CPS ASEC Production and Research Files. Positive numbers indicate more recipients or income in the Research file. All percentiles are calculated using linear interpolation. Interest and dividend interpolations not shown the width of the bins used for interpolation are too large for meaningful estimates. ***, **, and * indicate statistical significance at the 1, 5, and 10 percent levels respectively.

Household Income for Select Subgroups

Median

Characteristic	Production	Research	Percent Difference
All Households	59,040	59,210	0.3
Family households	75,060	75,050	0.0
Nonfamily households	35,760	35,770	0.0
Race			
White	61,860	61,950	0.1
White, not Hispanic	65,040	65,440	0.6
Black	39,490	39,750	0.7
Asian	81,430	80,880	-0.7
Hispanic (any race)	47,680	46,930	*-1.6
Age			
25 to 34 years	60,930	60,020	*-1.5
35 to 44 years	74,480	73,880	-0.8
45 to 54 years	77,210	77,700	0.6
55 to 64 years	65,240	65,710	0.7
65 years and older	39,820	40,530	*1.8

Source: 2017 CPS ASEC Production and Research Files. All percentiles are calculated using linear interpolation. ***, **, and * indicate statistical significance at the 1, 5, and 10 percent levels respectively.

Household Income for Select Subgroups

95th Percentile

Characteristic	Production	Research	Percent Difference
All Households	226,000	233,300	***3.2
Family households	254,000	264,100	***4.0
Nonfamily households	151,200	147,600	** -2.4
Race			
White	231,300	240,200	***3.8
White, not Hispanic	240,200	250,600	***4.3
Black	158,000	159,800	1.2
Asian	276,000	289,600	*4.9
Hispanic (any race)	170,500	168,400	-1.2
Age			
25 to 34 years	189,500	190,400	0.5
35 to 44 years	250,500	259,000	***3.4
45 to 54 years	273,600	280,700	*2.6
55 to 64 years	251,700	262,200	***4.2
65 years and older	181,700	190,300	***4.7

Source: 2017 CPS ASEC Production and Research Files. All percentiles are calculated using linear interpolation. ***, **, and * indicate statistical significance at the 1, 5, and 10 percent levels respectively.

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Changes to the Survey: Health Insurance

- Expanded reference period
 - New current coverage question to improve responses to questions about health insurance coverage in previous calendar year
- Health insurance coverage types
 - Start with general coverage questions followed by more specific questions
- Hybrid person-household-level design
 - After a person reports coverage, ask who else in household had ***that plan type***
 - Ask about all household members ***individually by name*** to address gaps in household coverage

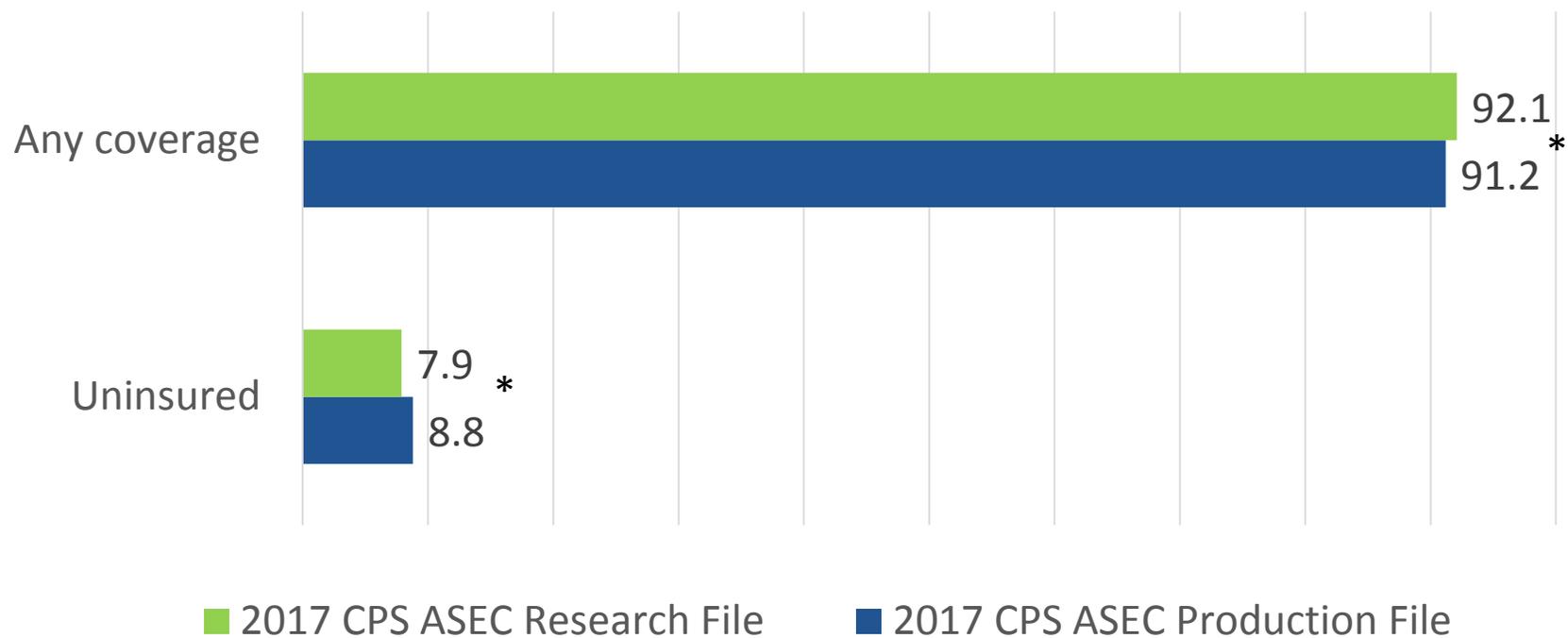
Processing System Changes: Health Insurance

- Includes more detail on types of plans that did not previously exist, including those purchased through a marketplace (healthcare.gov)
- Uses subannual information to improve edits and consistency between types of coverage held concurrently
- Introduces new imputation process that groups people into health insurance units and fills missing data based on the characteristics of that unit
- Changes the categorization of TRICARE from public coverage to private coverage

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Differences in (Un)insured Rate



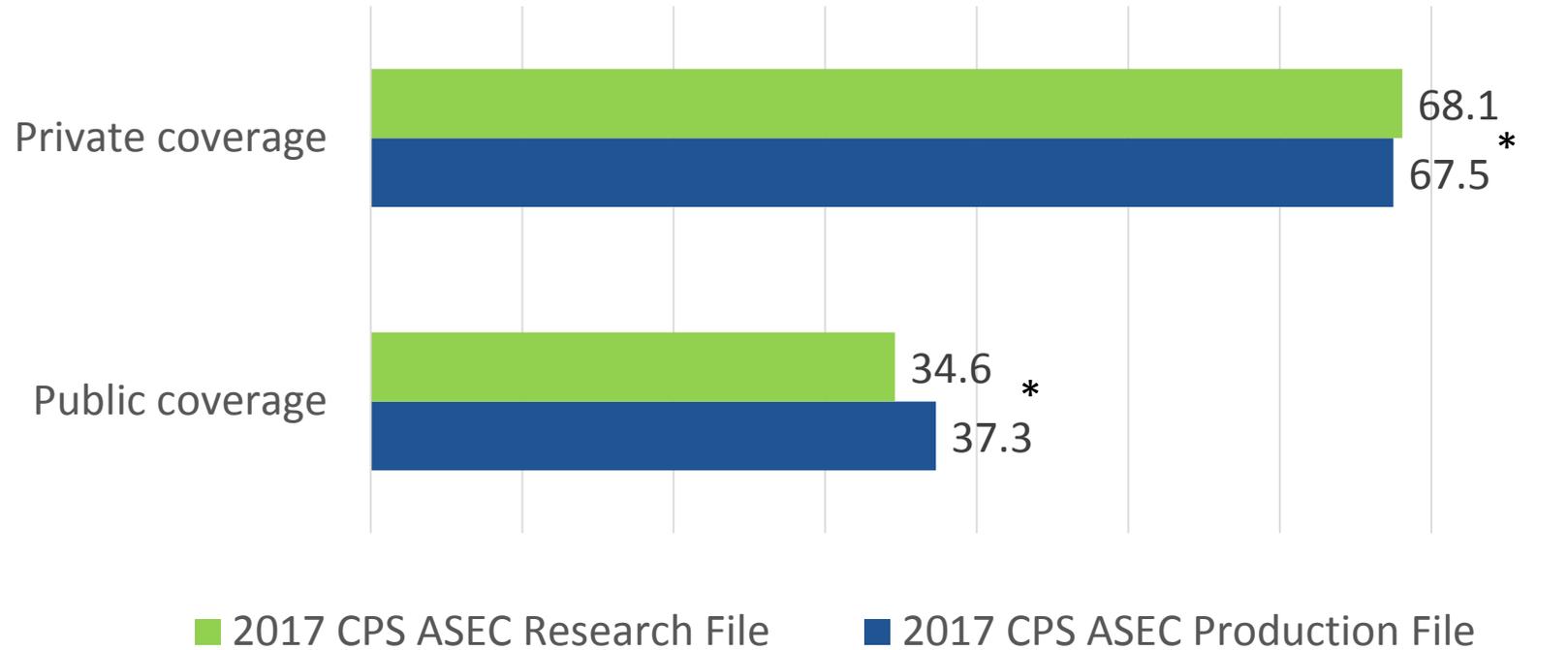
Explanations for Differences

- Many factors contribute to these changes. Two of the largest are:
 - Improvements to the imputation procedure (particularly for households in which no one reports health insurance coverage) (SHADAC, 2005)
 - Refinements to how we construct estimates of annual coverage (i.e. by building up from the monthly level)

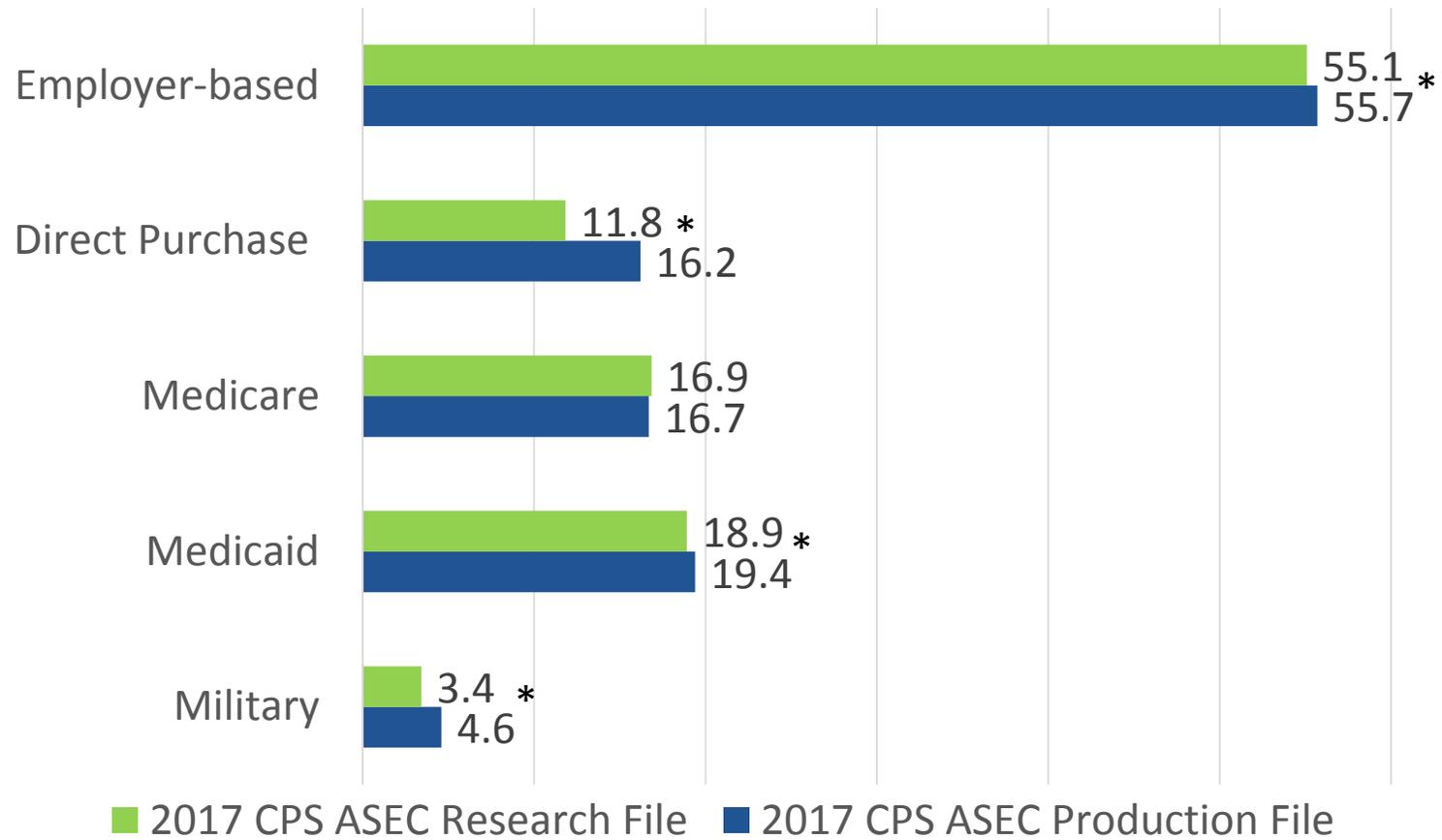
Definitions of Private and Public Coverage

- Differ across files because new processing system allows TRICARE to be disentangled from other types of military coverage
 - In production file:
 - Private: employer-sponsored, direct-purchase
 - Public: Medicare, Medicaid, military (incl. TRICARE, VA, CHAMPVA)
 - In research file:
 - Private: employer-sponsored, direct-purchase, TRICARE
 - Public: Medicare, Medicaid, military (incl. VA, CHAMPVA)

Private and Public Coverage



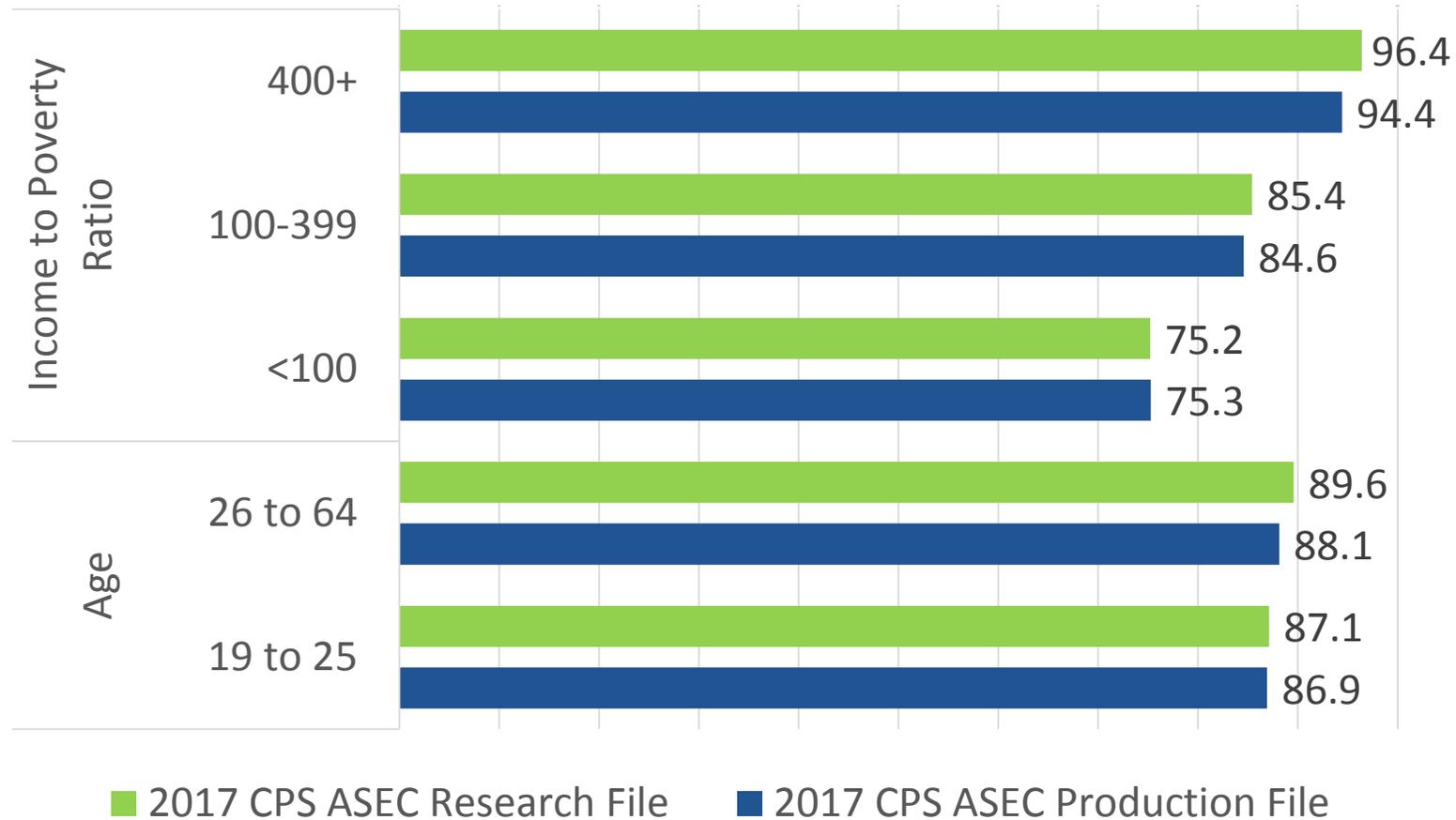
Coverage Types



Subgroups with Largest Changes in Coverage

- The largest changes in coverage occurred by income-to-poverty ratio among adults 19 to 64
 - Expected given the changing health insurance landscape, as this group was the target of many recent health policies (e.g., the ACA)

Differences in Insured Rate for Adults 19- 64



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New Health Insurance Measures

- Marketplace coverage
 - Whether direct-purchase coverage was obtained through the marketplace
 - If so, whether the premium was subsidized
- Subannual coverage
- Military coverage
 - Separate TRICARE from other types of military coverage
- Type of coverage at the time of interview

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Census Outreach

- Working papers (and peer-reviewed journal submissions) available or in preparation:
 - Berchick & Jackson. 2019. “Health Insurance Coverage in the 2017 CPS ASEC Research File.” [SEHSD WP 2019-01](#).
 - Berchick & Jackson. 2019. “Health Insurance Coverage in the Current Population Survey: Estimates from the 2017 Research File.” [SEHSD WP 2019-02](#).
 - Bee. 2019. “Are Bracket Responses Accurate? Using IRS W-2 Records to Assess Earnings Edits for the Redesigned CPS ASEC.”
 - Edwards & Creamer. 2019. “Updating the Current Population Survey Processing System and Bridging Differences in the Measurement of Poverty.”
 - Fox & Mykyta. 2019. “The Supplemental Poverty Measure: Evaluating the Effects of Changes In in the CPS ASEC on Poverty Rates By Age Group.”
 - Kreider & Gurrentz. 2019. “Changes to the Household Relationship Data in the Current Population Survey.”
 - Rothbaum. 2019. “Processing Changes to the Current Population Survey Annual Social and Economic Supplement.”
- Files with technical documentation online
 - 2017 Research File – January 2019
 - 2018 Bridge File – April 2019

Census Outreach

- Presentations at academic conferences in 2018 and 2019
 - Association for Public Policy Analysis & Management (APPAM)
 - Joint Statistical Meetings (JSM)
 - Population Association of America (PAA)
 - Society of Government Economists (SGE)
 - Federal Committee on Statistical Methodology (FCSM)
- Expert meeting at Census – May 13, 2019

Implementation

- 2017 CPS ASEC Research File released in January 2019
- 2018 CPS ASEC Bridge File will be released April 2019
- 2019 CPS ASEC and income, poverty, and health insurance estimates released in September 2019 will use the new processing system
 - Year-to-year comparisons in reports and online tables will also use the 2018 CPS ASEC Bridge File

Questions for you

- Additional outreach
 - Any other suggestions for outreach?
 - Who should we be contacting to inform them of the upcoming changes/solicit feedback?
- How to convey the change...
 - Example 1. How should we convey the military split off of TRICARE and effect on the concept of private insurance being presented in official reports?
 - Example 2. Should the income and poverty estimates using the new processing system be considered a break in series?