

Expert Meeting on Changes to the Current Population Survey Annual Social and Economic Supplement

Monday, May 13, 2019

1:00 pm to 4:00 pm

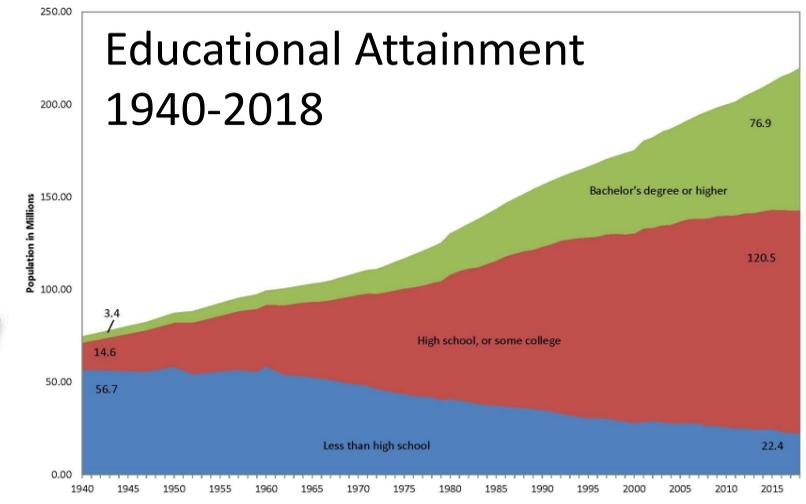
U.S. Census Bureau, Conference Rooms 3 and 4

Welcome and Introduction

Victoria Velkoff

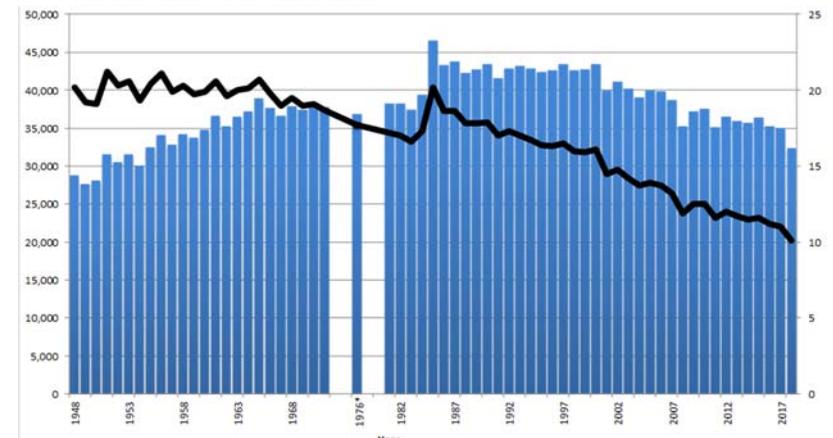
David Waddington

CPS ASEC Data Products



Sources: U.S. Census Bureau, 1947, 1952-2002 March Current Population Survey, 2005-2018 Annual Social and Economic Supplement to the Current Population Survey, 1940-1960 Census of Population.

Number of Movers and Mover Rate 1948-2018



Redesign Implementation: Two Stages

STAGE ONE: REDESIGN OF THE ASEC QUESTIONNAIRE

- **2014 ASEC** - Income and health insurance reference year 2013
 - Split Panel Test for Income – partial sample original questions, partial sample redesign
 - Redesigned health insurance questions – full sample
- **2015 ASEC** - Income and health insurance reference year 2014
 - Income questions implemented for full sample (first year)
 - Health insurance questions implemented for full sample (second year)
 - Processed using old system
- **2017 ASEC** - Income and health insurance reference year 2016
 - Full implementation of the new relationship answer categories
 - Processed using old system

STAGE TWO: UPDATED PROCESSING SYSTEM

- **2019 ASEC – Income and health insurance reference year 2018**
 - 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

Meeting Agenda

1:00 PM – 1:10 PM	Welcome and Introductions
1:10 PM – 1:30 PM	Household and Family Relationships
1:30 PM – 2:30 PM	Income and Poverty
2:45 PM – 3:30 PM	Health Insurance
3:30 PM – 4:00 PM	Discussion, Wrap-up, and Conclusion

Changes to Data About Same-Sex Couples in the Current Population Survey

Benjamin T. Gurrentz and Rose M. Kreider
Fertility and Family Statistics Branch

Overview

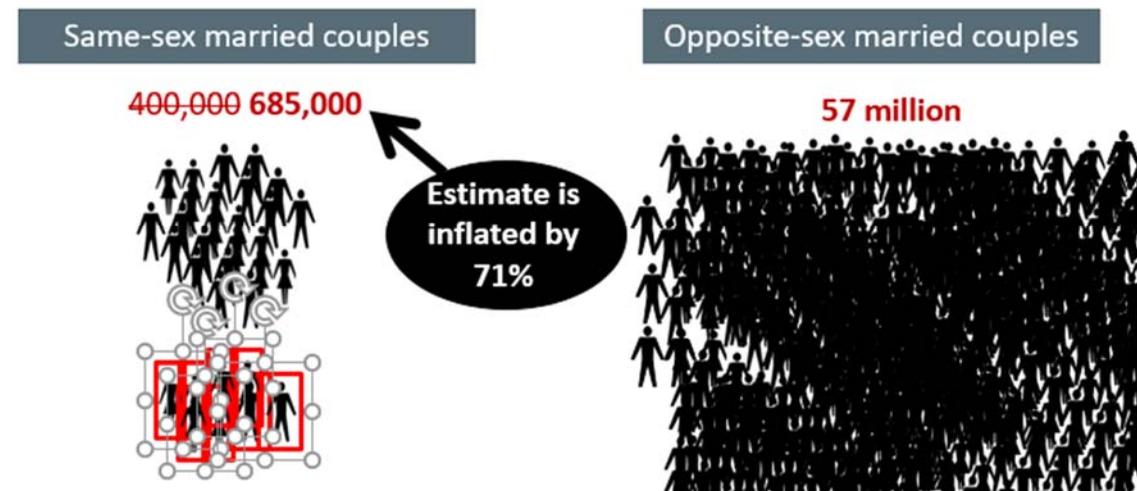
- Describe changes to the CPS household relationship data
 - Expansion of the “husband or wife” and “unmarried partner” categories
 - Edit procedures for same-sex couples
 - Changes to parent identification questions
- Show results illustrating the changes

Background: Changes to CPS Family Data

- 2010
 - Those reported as same-sex spouses edited and shown as *same-sex unmarried partners*.
 - Previously, the sex of one was changed to show them as *opposite-sex married couples*.

Background: Data Quality Challenges

- A statistical problem: a low rate of random error in a large group (opposite-sex married couples) creates issues in the estimates of a small group (same-sex married couples)
 - There are some 57 million opposite-sex married couple households. (ACS 2017 1-year file)
 - Only a small proportion mismark their response, but it is enough to create significant error in the estimate of same-sex married couples.



Background: Changes to CPS Family Data

- 2010
 - Those reported as same-sex spouses edited and shown as *same-sex unmarried partners*.
 - Previously, the sex of one was changed to show them as opposite-sex married couples.
- 2017
 - Added separate opposite-sex and same-sex categories for the spouse and unmarried partner categories

Revising the Relationship Categories

How (is/are) (name/you) related to (you/reference person's name)?

Production Categories

Spouse (Husband/Wife)

Unmarried Partner

Child

Grandchild

Parent

Brother/Sister

Other relative

Foster Child

Housemate/Roommate

Roomer/Boarder

Other nonrelative

Research File Categories

Opposite-sex Spouse (Husband/Wife)

Same-sex Spouse (Husband/Wife)

Opposite-sex Unmarried Partner

Same-sex Unmarried Partner

Child

Grandchild

Parent

Brother/Sister

Other relative

Foster Child

Housemate/Roommate

Roomer/Boarder

Other nonrelative

Revising the Relationship Categories

How (is/are) (name/you) related to (you/reference person's name)?

Production Categories

Spouse (Husband/Wife)	19.2%
Unmarried Partner	2.1%
Child	29.3%
Grandchild	2.0%
Parent	1.8%
Brother/Sister	1.4%
Other relative	1.9%
Foster Child	0.1%
Housemate/Roommate	1.7%
Roomer/Boarder	0.3%
Other nonrelative	0.9%

Research File Categories

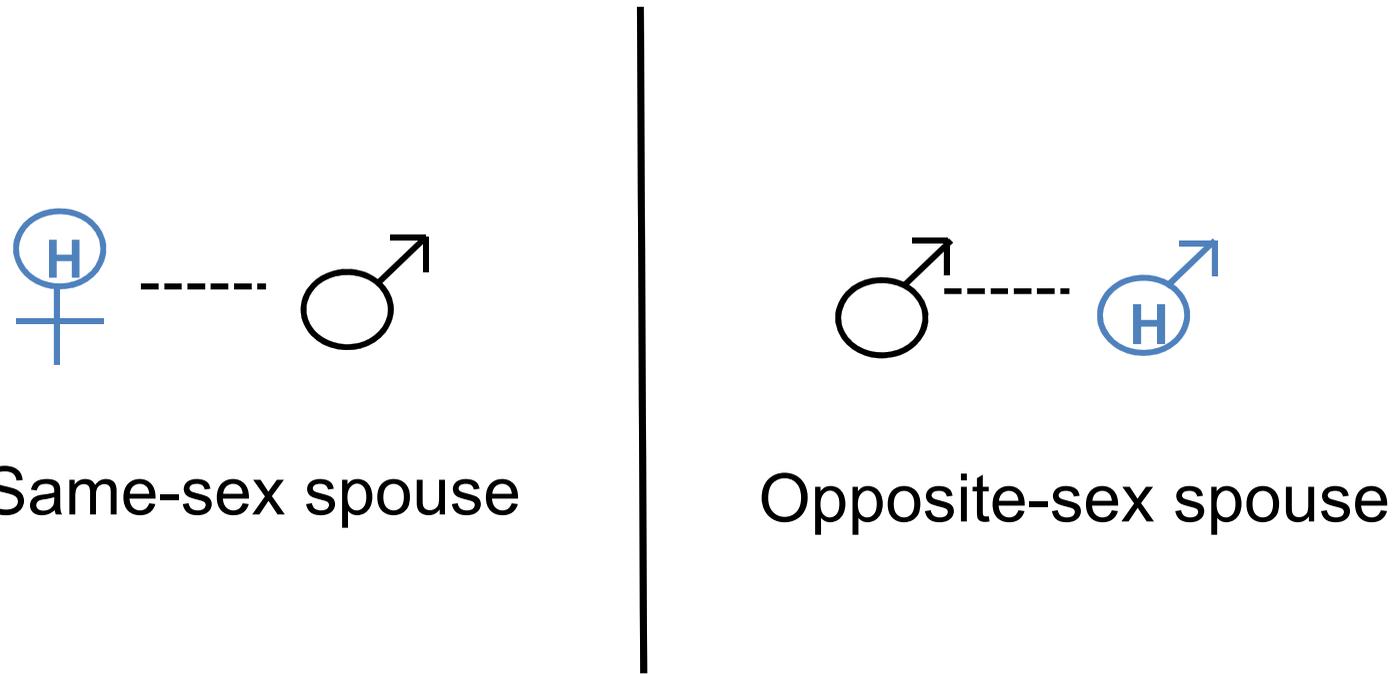
Opposite-sex Spouse (Husband/Wife)	19.0%
Same-sex Spouse (Husband/Wife)	0.1%
Opposite-sex Unmarried Partner	2.2%
Same-sex Unmarried Partner	0.2%
Child	29.2%
Grandchild	2.0%
Parent	1.8%
Brother/Sister	1.4%
Other relative	1.9%
Foster Child	0.1%
Housemate/Roommate	1.6%
Roomer/Boarder	0.3%
Other nonrelative	0.8%

Edit Changes

1. Inconsistent reports of relationship and sex (e.g., Opposite-sex spouse, but householder and spouse are both male) will be resolved in the edit

Mismatched Couples

- Relationship and Sex reports are inconsistent



Is this a same-sex or opposite-sex couple?

Mismatched Couples

Household	Relationship to Householder	Sex	Name
A	Householder	Male	<u>John</u>
A	Same-sex Spouse	Female	<u>Mary</u>

Based on sex assigned based on first names in the 2015 National Content Test data ...
70% of the time, they are opposite-sex couples.

Edit Changes

- 2. Parent identification questions:
 - Beginning in 2017, parent identification questions are now gender neutral – parent 1 and parent 2. In past these categories represented “mother” and “father”

Parent Identification Questions

Production Question

Is (name's/your) *mother* a member of this household?



Research File Question

Is (name's/your) *parent* a member of this household?

Is (name's/your) *father* a member of this household?



Is (name's/your) *other parent* a member of this household?

Edit Changes

- 3. Parent identification questions:
 - Beginning in 2017, parent identification questions are now gender neutral – parent 1 and parent 2. In past these categories represented “mother” and “father.”
 - Now edited to identify cohabiting parents in the edit who are not measured in the direct cohabitation question.
 - Now edited so that parent 1 is mom if present and parent 2 is dad, if present.

Results

Table 1. Coupled Households by Type: 2017 Production vs. Research Estimates

	Production Coupled Households (<i>perrp + a_sex</i>)		Research Coupled Households (revised <i>perrp</i>)		Change in Totals?	Change in Distribution %?
Total (in thousands)	68,080	100.0%	68,860	100.0%	↑	N/A
Opposite-sex Married	60,800	89.3%	60,920	88.5%	N.S.	↓
Opposite-sex Unmarried	6,383	9.4%	6,876	10.0%	↑	↑
Same-sex Married			445	0.7%		
Same-sex Unmarried	375	0.6%	622	0.9%	↑	↑

Note: Arrows represent significant difference from production estimate at 90% Confidence Level. N.S. = Not significant. N/A = Not applicable.

Table 1. Coupled Households by Type: 2017 Production vs. Research Estimates

	Production Coupled Households (EXTRACT) (<i>perrp + a_sex</i>)		Research Coupled Households (revised <i>perrp</i>)		Change in Totals?	Change in Distribution %?
Total (in thousands)	68,080	100.0%	68,860	100.0%	↑	N/A
Opposite-sex Married	60,800	89.3%	60,920	88.5%	N.S.	↓
Opposite-sex Unmarried	6,383	9.4%	6,876	10.0%	↑	↑
Same-sex Married ¹	522	0.8%	445	0.7%	↓	↓
Same-sex Unmarried	375	0.6%	622	0.9%	↑	↑

Note: Arrows represent significant difference from production estimate at 90% Confidence Level.

N.S. = Not significant. N/A = Not applicable.

¹ Production estimate created using extract file that identifies who reported as same-sex spouse.

Characteristics of Coupled Households by Type: 2017 Production vs. Research Estimates

- Couple types:
 - Opposite-sex Married, Opposite-sex Unmarried, Same-sex Married, Same-sex Unmarried
- Characteristics:
 - Education (Both Partners have Bachelor's+), Employment (Both Partner's Employed), Race (Interracial Couple)
- Findings:
 - No significant differences between production and research estimates at 90% confidence level (see supplemental slides for estimates).

Table 2. Parents: Production vs. Research Estimates

	Production 2017 Estimates		Research 2017 Estimates	
All Coresident Parents (in thousands)	91,580	28.6%	91,900	28.7%
Parents of Coresident Children Under 18 (in thousands)	64,220	20.1%	64,520	20.2%

Note: The research file estimates did not differ statistically from the production estimates at the 90% confidence level.

Table 3. Parents by Couple Type

	Production Coresident Parents (EXTRACT)		Research Coresident Parents	
Total (in thousands)	91,580	100.0%	91,900	100.0%
No Partner Present	20,260	22.1%	20,310	22.1%
Opposite-sex Married	66,280	72.4%	66,330	72.2%
Opposite-sex Unmarried	4,786	5.2%	4,867	5.3%
Same-sex Married ¹	184	0.2%	↑ 275	0.3%
Same-sex Unmarried	65	0.1%	↑ 115	0.3%

Note: Arrows represent significant difference from production estimate at 90% Confidence Level.

¹ Production estimate created using extract file that identifies who reported as same-sex spouse.

Implications for Family Measures

- No changes are proposed for the Census Bureau's definition of family:
 - *A family is a group of two persons or more (one of whom is the householder) residing together and related by birth, marriage or adoption.*
- Married-couple families now include same-sex married couples

Conclusion

- Changes made to relationship to householder and parent identification questions allow better measurement of the specific type of family/living arrangement, especially for same-sex couples and their children
- At the same time, we don't see wide differences in the characteristics of coupled households in the research file

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Current Population Survey

<http://www.census.gov/programs-surveys/cps.html>

To see papers about the testing of the new relationship questions, please see:
<https://www.census.gov/topics/families/same-sex-couples/library/working-papers.html>

Questions and Discussion

Changes to Income Processing in the Current Population Survey Annual Social and Economic Supplement

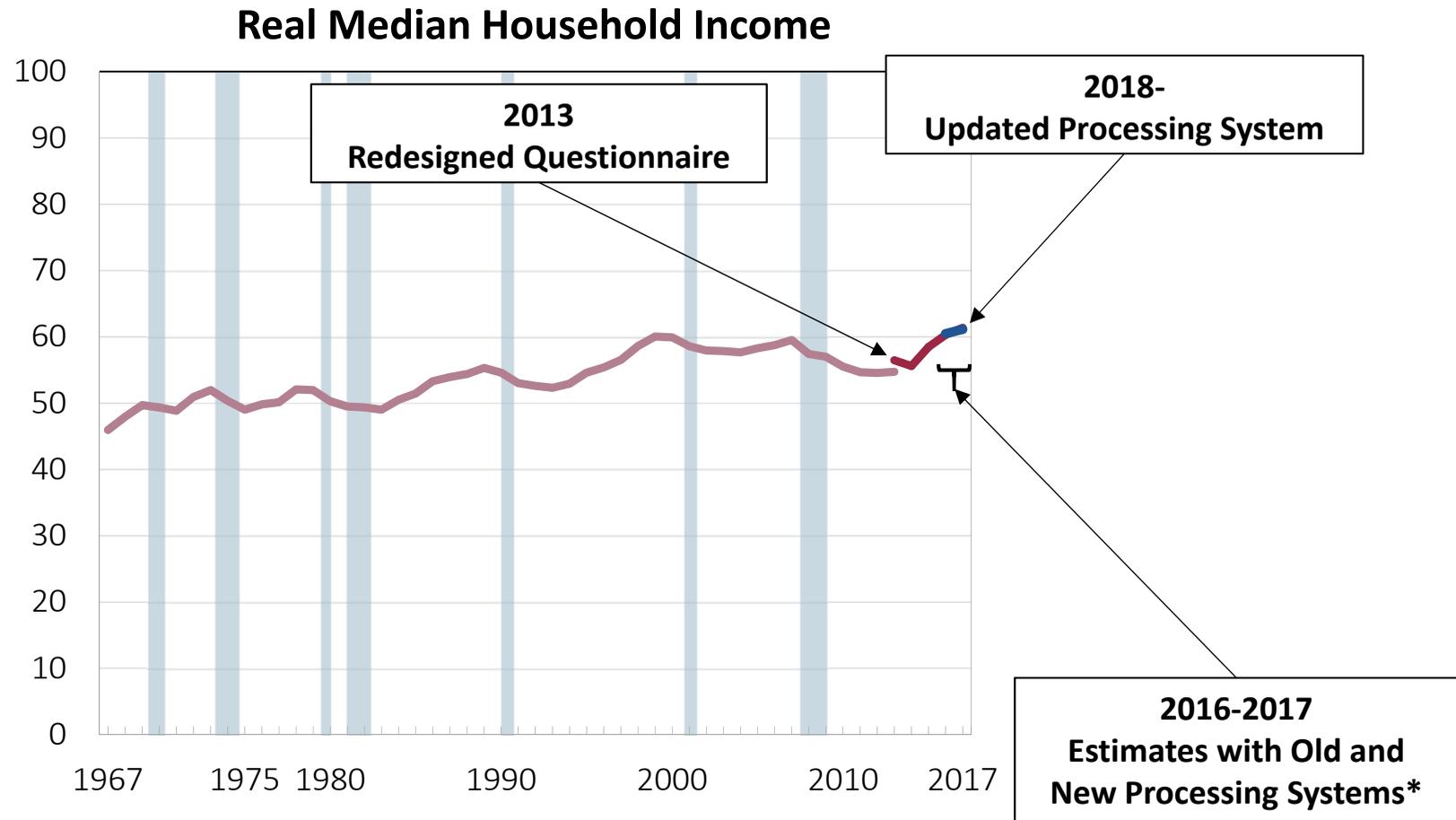
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U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU
census.gov

Redesign of CPS ASEC: Income

- Redesigned Questionnaire in 2014
 - Income in 2013
- Updating processing system in production in 2019
 - Income in 2018
- Re-release estimates for 2016 and 2017 with new system
 - 2017 Research and 2018 Bridge files
 - Income in 2016 and 2017 respectively



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 survey instrument changes
- Income processing changes
- Results

Reasons for Income Redesign

- Improve data quality
 - Address misreporting, item nonresponse, and errors resulting from respondent fatigue
 - Under-reporting of means-tested programs
 - Under-reporting of income amounts
- Take better advantage of an automated instrument
 - Aid in respondent recall
 - Decrease errors resulting from respondent fatigue

Reasons for Income Redesign

- Reflect the changing retirement environment
 - Aggregate holdings in newer types of retirement accounts exceeds those of traditional pension plans
 - Under-reporting of retirement, pension, and annuities
- Improve reporting of asset income
 - For example, interest and dividends

Outline

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

- Dual Pass Approach
 - First pass – identify all income sources
 - Second pass – collect amounts
- Family income screener removed
 - Some questions were not asked of high income families (according to family income range question)
- Tailored skip patterns (based on age and household income)
- Income range follow ups
 - Ask item non-respondents to give income in one of five brackets
- 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

Outline

- Background on the redesign to the CPS ASEC
- Details of the survey instrument changes
- **Income processing changes**
- Results

Processing Changes

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

Earnings Ranges Used in Imputation

- Impute income within ranges given
- 73% of item non-respondents had income imputed using a range

Could you tell me if you earned

- less than \$45,000,
- between \$45,000 and \$60,000, or
- \$60,000 or more

for the TOTAL yearly amount from this employer before taxes and other deductions during 2016?

Did you earn

- less than \$15,000,
- between \$15,000 and \$30,000, or
- \$30,000 or more

from this employer during 2016?

Other Income Edit and Imputation Overhaul

- Without processing changes, redesigned questions were run through the old processing system
 - For example, multiple questions on interest and retirement income combined into one income amount for each
 - Effectively converts non-response to some questions to zero income

Other Income Edit and Imputation Overhaul

- Use ranges provided in responses for income imputation

Allocation System Improvements

- Imputations using ranges (for select variables)

Variable	Percent of Item Non-Respondents with Ranges
Earnings (Longest Job)	73%
Unemployment Insurance	41%
Worker's Compensation	40%
Social Security	39%
SSI	37%
Interest	52%
Dividends	36%
Overall	50%
(percent of income items missing due to item non-response)	

Source: 2017 CPS ASEC Research File.

Other Income Edit and Imputation Overhaul

- Use ranges provided in responses for income imputation
- Update hot deck models to address critiques on match bias (to the extent possible with hot deck approach)
 - Increase the number of variables used in models
 - Multiple levels of matches – match people on as many variables as possible

Hot Deck Imputation

- Match non-respondents to “similar” respondents along a set of characteristics in the model
- Donate response as imputation from respondent to non-respondent
- Example: 2 variables, 2 categories each – 4 cells
 1. Race: White/non-White
 2. Gender: male/female
 - Two non-respondents (A and B)
 - **Person A:** white, female – randomly select a white, female respondent and use her response as the imputed value
 - **Person B:** non-white, male – randomly select a non-White, male respondent and use his response as the imputed value

Other Income Edit and Imputation Overhaul

- Use ranges provided in responses for income imputation
- Update hot deck models to address critiques on match bias (to the extent possible with hot deck approach)
 - Increase the number of variables used in models
 - Multiple levels of matches – match people on as many variables as possible
- Which variables to include?
 - Use RandomForest to select variables that best predict each income item
 - Supervised machine learning method that allows variables to be ranked based on how much they reduce variance when included in model

Allocation System Improvements

- Example – Rental Income

Not Possible Before

	Old	New
Reciency (Yes/No)	Relation to Householder Age Gender Education Race	Age Presence of Child Relation to Householder Savings Interest Census Region Earnings Marital Status Dividends Household Income (to this point)
Value	Earnings Age Race Gender Relation to Householder	Age Presence of Child Relation to Householder Savings Interest Census Region Earnings Marital Status Dividends Household Income (to this point)

Mortgage Imputation

- Pre-update
 - Mortgage non-response imputed from lagged American Housing Survey (AHS)
 - AHS conducted every two years with slight lag after collection for processing before data is available for use in CPS ASEC imputation
 - Imputed some very infrequently used variables from AHS data
 - Essentially mixing distributions as responses are not identical on AHS and CPS ASEC
- Update
 - Impute missing mortgage information directly from CPS ASEC respondents as we do for all other missing data

Means-Tested Benefit Caps Removed

- Pre-update
 - Energy assistance – if household income above a set nominal threshold, edit energy assistance receipt to \$0, even if respondent reported receipt
 - Other means-tested benefits – no imputation of means-tested benefits to respondents above a set nominal threshold
 - SNAP, energy assistance, free or reduced price lunches, public housing assistance
- Update
 - Removed all of these caps
 - Research on benefits has consistently shown receipt for benefits for households with income above these caps, including in ACS responses and administrative program data

Income Allocation Flags

- Pre-update
 - Need to check two flags for each income variable to assess if value imputed
 - Imputation flag for that income variable
 - Earnings from the longest job – $i_ernval > 0$
 - Social security – $i_ssval > 0$
 - SSI – $i_ssival > 0\dots$
 - Imputation flag for supplement non-response
 - ALL income items imputed if supplement non-respondent
 - Check if $FL_665 > 1$
 - Anecdotally - not well understood by even some experienced CPS ASEC researchers

Income Allocation Flags

- Update
 - Include a code for supplement non-response in each variable
 - If `i_ernval = 9`, then earnings imputed due to supplement non-response
 - More detail in imputation codes
 - Values 1-3: range bracket used in imputation
 - Values 4+: no range used
 - Lower values within these groups (1-3, 4+) indicate better matches (more variables in imputation model)
 - Composite variable imputation information
 - Example – interest income is a composite of several questions about various interest types
 - Y/N variables – imputation code indicates if all/some/or none of the variables were imputed
 - Value variables – imputation code indicates share of income imputed (0-25%, 25-50%,...)

Increased Top Codes for Some Income Types

- Pre-update
 - Nominal top codes for many income types had not been changed in many years
 - Small, but increasing share of responses above top codes
- Update
 - Increased top codes for:
 - Property income (interest, dividends, rental income)
 - Retirement income (annuities, pensions, withdrawals from defined-contribution plans)
 - Financial assistance
 - Other income
 - Changed process for updating top codes so that they are revisited annually and easier to update
 - Prevent fixed nominal values from declining in real terms over decades

Various Other Small Fixes

- In updating/editing code, various bugs/errors fixed and minor improvements made
 - Examples
 - Changed a small number of variable names to be consistent with established CPS ASEC naming conventions (such as adding an “h” prefix for household variables that did not have them)
 - Fixed an error in the assignment of the family market value of SNAP benefits (F_MV_FS)
 - Fixed an error when calculating family income for subfamilies where a member of the primary family had a loss in self-employment or rental income

Various Other Small Fixes

- Examples, cont.
 - Fixed an error where the redesign instrument caused interview/respondent confusion.
 - This confusion resulted in a multiple pension sources being recorded when the respondent had only one source
 - Discovered in the course of processing updates
 - The second pension sources was recorded as having exactly the same income amount as the first
 - Pre-redesign, having multiple pension sources with the same amounts occurred ~10 times per year, post redesign, this occurred ~500 times per year
 - Minimal impact on distribution statistics for the 65+ population, but affects aggregate pension income in the survey

Outline

- Background on the redesign to the CPS ASEC
- Details of the survey instrument changes
- Income processing changes
- **Results**

Personal Income by Type: Percent Difference between Files

Type		People with Income	Percentile			Average	Total
			25	50	90		
Total	2017 Research	0.0	***1.3	0.3	0.8	***1.4	***1.4
	2018 Bridge	**-.0.1	***1.8	***0.6	0.2	***1.7	***1.6
Earnings	2017 Research	0.0	***1.8	0.3	-0.1	0.4	0.4
	2018 Bridge	0.0	***1.1	**1.4	-0.1	0.0	0.0
Social Security	2017 Research	0.0	***-2.0	-0.4	0.4	***-1.3	***-1.3
	2018 Bridge	0.1	***-2.4	-0.3	-0.5	***-1.7	***-1.5
SSI	2017 Research	0.5	***-17.7	***-1.3	0.1	***-2.6	*-2.2
	2018 Bridge	-0.7	***-15.0	**1.5	-1.9	***-3.4	***-4.1
Public Assistance	2017 Research	0.1	***-7.3	***-11.0	-4.8	***-6.5	**6.4
	2018 Bridge	**4.4	**6.5	*6.5	-1.6	**5.7	-1.6
Interest	2017 Research	-0.1				***15.1	***15.0
	2018 Bridge	0.0				***19.6	***19.6
Dividends	2017 Research	***1.4				***13.0	***14.6
	2018 Bridge	0.9				**8.8	**9.7

Source: 2017 CPS ASEC Production and Research Files and 2018 Production and Bridge Files. Positive numbers indicate more recipients or income in the Research/Bridge file than in the production file. All percentiles are calculated using linear interpolation. Interest and dividend interpolations not shown as 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.

Personal Income by Type: Percent Difference between Files

Type		People with Income	25	Percentile 50	90	Average	Total
Retirement Income	2017 Research	***4.2	** -4.3	***-5.6	-2.4	1.7	***6.0
	2018 Bridge	***5.3	***-9.2	***-4.7	***-4.8	**3.5	***9.0
Company/Union Pension	2017 Research	***-4.2	-0.9	1.3	2.5	***6.4	1.9
	2018 Bridge	***-4.5	-3.8	2.2	3.0	***7.4	2.6
Federal Gov't Pension	2017 Research	***-5.8	***-20.4	***-9.1	*-9.1	***-9.8	***-15.0
	2018 Bridge	***-10.5	***-11.8	** -11.7	-5.3	-4.3	***-14.3
Military	2017 Research	***-18.1	***-28.2	***-11.9	*4.5	-1.1	***-19.0
	2018 Bridge	***-12.2	***-50.4	***-18.6	** -15.9	***-18.2	***-28.2
State/Local Gov't Pension	2017 Research	***-11.6	6.6	2.5	3.6	***4.6	***-7.5
	2018 Bridge	***-10.1	-5.9	*-7.8	0.5	*6.3	-4.5
Defined Contribution (IRA, 401(k), etc.)	2017 Research	***73.7	-2.9	0.9	-7.7	**8.5	***88.4
	2018 Bridge	***73.3	***-15.2	*-4.2	-0.9	**14.8	***98.9

Source: 2017 CPS ASEC Production and Research Files and 2018 Production and Bridge Files. Positive numbers indicate more recipients or income in the Research/Bridge file than in the production file. All percentiles are calculated using linear interpolation. Interest and dividend interpolations not shown as 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 (in dollars)

Characteristic	Percent Difference	
	2017 Research	2018 Bridge
All Households	0.3	-0.4
Family households	0.0	0.1
Nonfamily households	0.0	-0.8
Race		
White	0.1	*-0.7
White, not Hispanic	0.6	0.1
Black	0.7	*-2.2
Asian	-0.7	0.1
Hispanic (any race)	*-1.6	-0.6
Age		
25 to 34 years	** -1.5	*** -1.7
35 to 44 years	-0.8	0.6
45 to 54 years	0.6	-0.6
55 to 64 years	0.7	0.5
65 years and older	** 1.8	0.4

Source: 2017 CPS ASEC Production and Research Files and 2018 Production and Bridge 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 10th Percentile (in dollars)

Characteristic	Percent Difference	
	2017 Research	2018 Bridge
All Households	0.5	0.6
Family households	-0.2	0.7
Nonfamily households	-1.0	-1.6
Race		
White	0.4	0.3
White, not Hispanic	0.5	0.4
Black	-1.0	-1.4
Asian	2.2	*5.9
Hispanic (any race)	-1.1	-1.4
Age		
25 to 34 years	-0.8	2.2
35 to 44 years	0.9	2.0
45 to 54 years	-0.3	*3.5
55 to 64 years	*3.3	2.5
65 years and older	** -2.3	* -2.1

Source: 2017 CPS ASEC Production and Research Files and 2018 Production and Bridge 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 25th Percentile (in dollars)

Characteristic	Percent Difference	
	2017 Research	2018 Bridge
All Households	-0.2	0.6
Family households	0.3	0.7
Nonfamily households	-0.1	-0.3
Race		
White	0.2	*0.8
White, not Hispanic	1.2	**1.5
Black	-1.4	-0.1
Asian	2.5	0.4
Hispanic (any race)	*-1.3	-0.6
Age		
25 to 34 years	** -3.0	-1.2
35 to 44 years	1.0	*1.2
45 to 54 years	1.0	0.1
55 to 64 years	*1.8	0.1
65 years and older	-0.7	0.9

Source: 2017 CPS ASEC Production and Research Files and 2018 Production and Bridge 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 75th Percentile (in dollars)

Characteristic	Percent Difference	
	2017 Research	2018 Bridge
All Households	0.0	0.1
Family households	*0.7	*0.7
Nonfamily households	-0.9	***-3.5
Race		
White	-0.2	0.1
White, not Hispanic	0.4	0.1
Black	0.8	** -1.6
Asian	-2.0	-0.3
Hispanic (any race)	** -1.9	** -1.7
Age		
25 to 34 years	-0.9	-0.6
35 to 44 years	-0.6	0.7
45 to 54 years	1.3	0.0
55 to 64 years	1.6	1.7
65 years and older	0.9	0.4

Source: 2017 CPS ASEC Production and Research Files and 2018 Production and Bridge 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 (in dollars)

Characteristic	Percent Difference	
	2017 Research	2018 Bridge
All Households	***3.2	***2.9
Family households	***4.0	***4.1
Nonfamily households	** -2.4	* -2.7
Race		
White	***3.8	***3.5
White, not Hispanic	***4.3	***3.9
Black	1.2	0.6
Asian	*4.9	0.3
Hispanic (any race)	-1.2	0.8
Age		
25 to 34 years	0.5	-1.4
35 to 44 years	***3.4	1.4
45 to 54 years	*2.6	**3.2
55 to 64 years	***4.2	***5.5
65 years and older	***4.7	***5.3

Source: 2017 CPS ASEC Production and Research Files and 2018 Production and Bridge Files. All percentiles are calculated using linear interpolation. ***, **, and * indicate statistical significance at the 1, 5, and 10 percent levels respectively.

Contact Information

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Questions and Discussion

Updating the Current Population Survey Processing System and Bridging Differences in the Measurement of Poverty

Ashley Edwards
Poverty Statistics Branch

Updating the CPS ASEC

The Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC) is the official source of poverty estimates in the U.S.

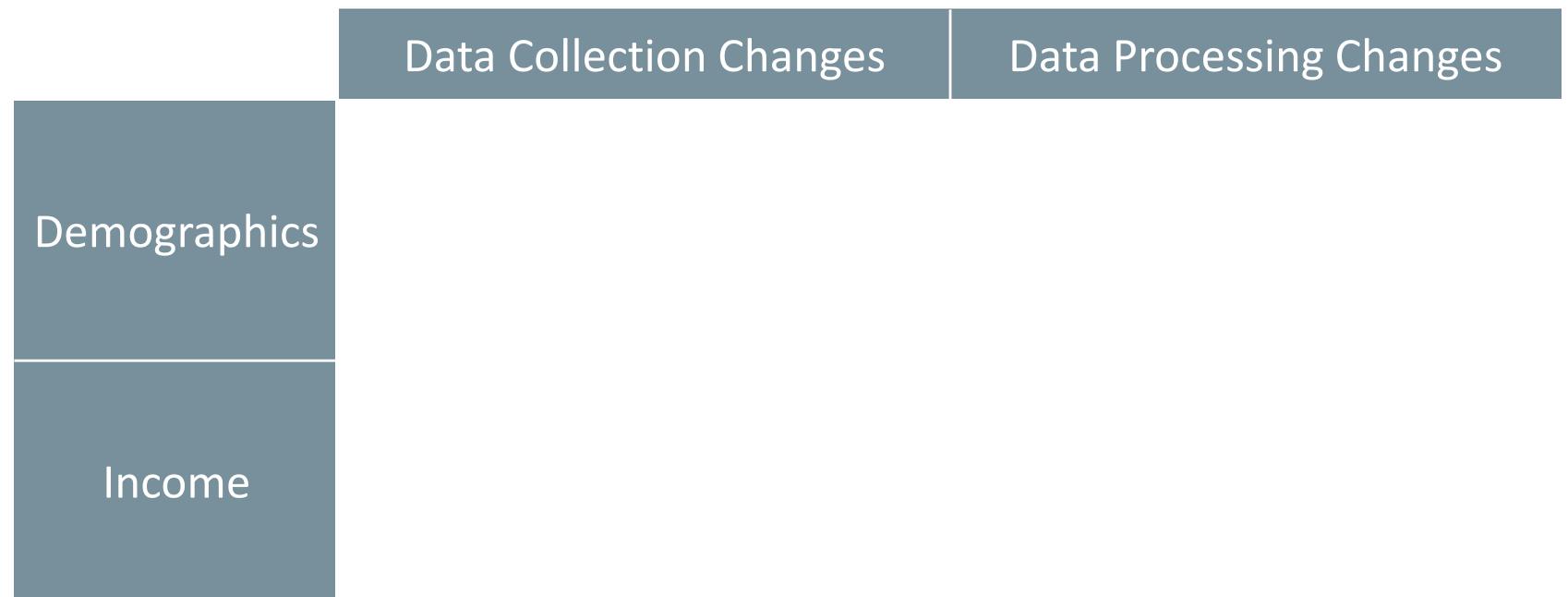
- Collected February through April of each year
- Questions on the receipt and value of 51 sources of income over the previous calendar year
- Household composition, family characteristics, and person level demographics based on the time of interview
- Poverty estimates dating back to 1959

Demographic Changes

Goal: Improve the measurement of same-sex couples

Income Changes

Goal: Improve the quality of income and program participation data



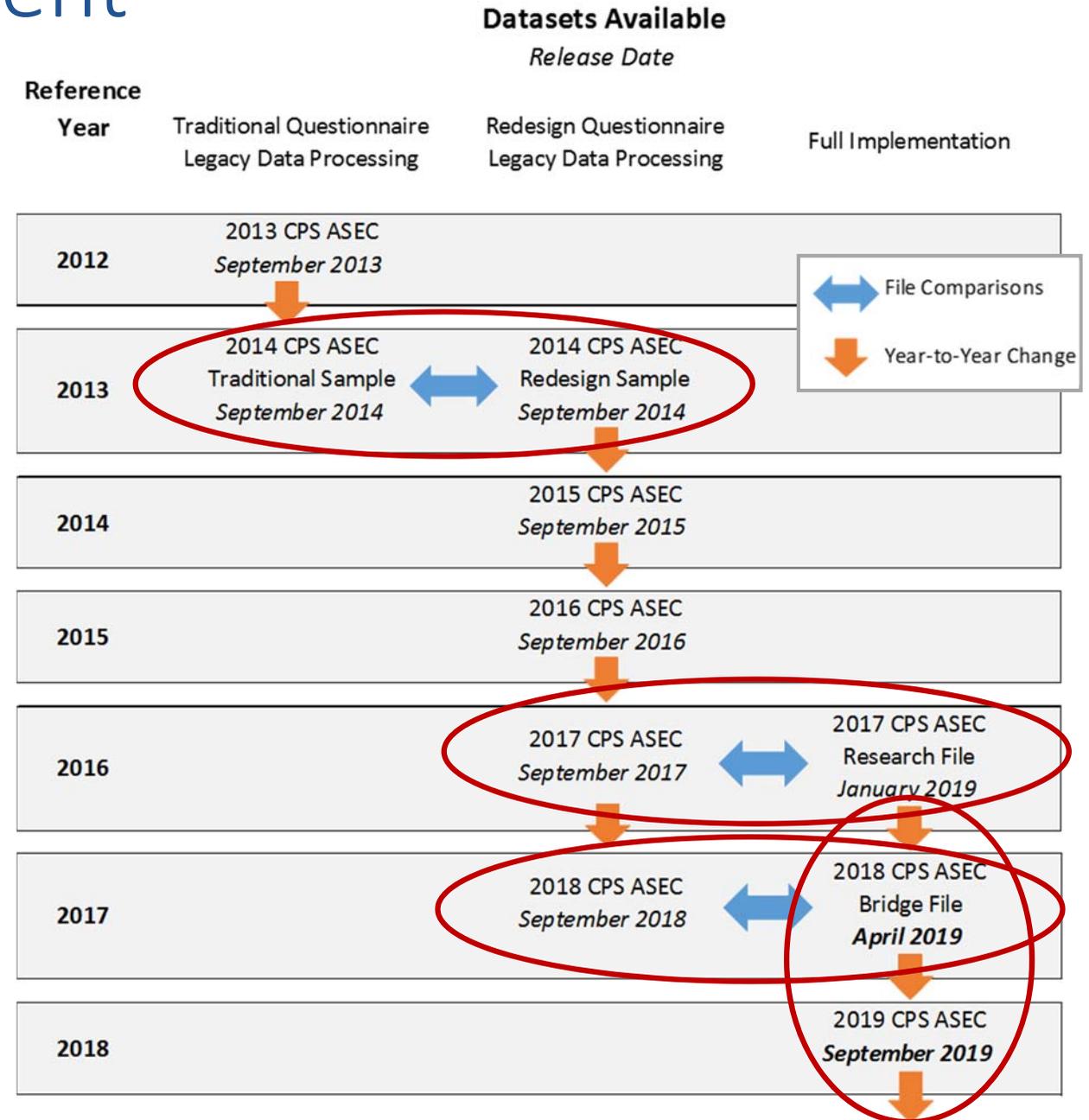
Income & Demographic Content Implementation Timeline

Income questionnaire changes implemented in the 2014 CPS ASEC through a probability split panel design

- While the data *collection* instrument was updated, the data *processing* system was not

In May 2015, the basic monthly CPS began phasing in expanded relationship categories, fully implemented in 2017 CPS ASEC

- Like income, programming logic recoded responses into the earlier relationship categories



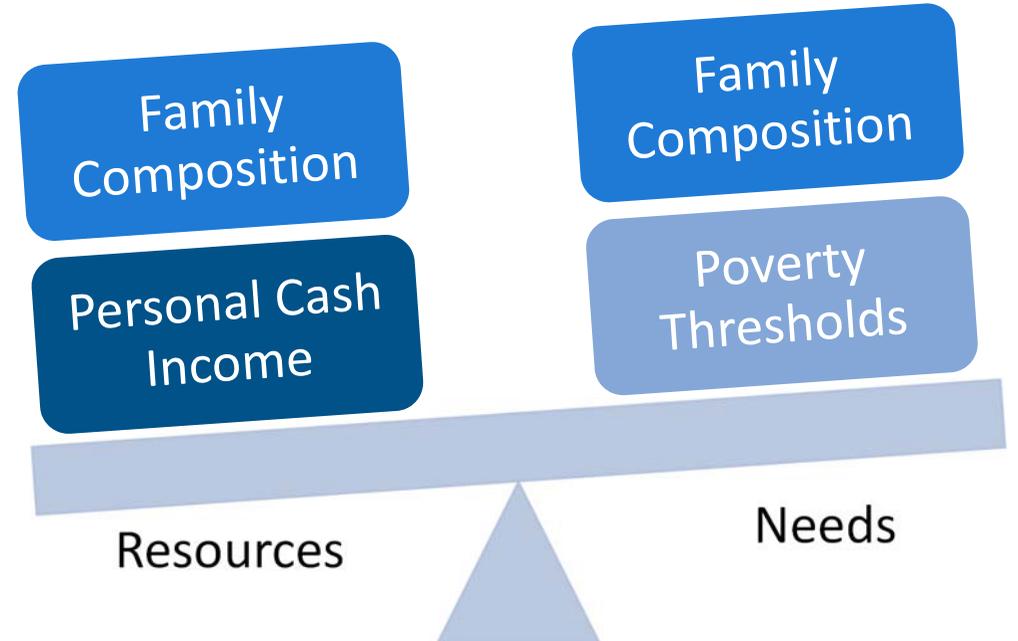
How Do Changes Impact the Official Poverty Measure (OPM)?

Resources

- Removed income screener for reporting means-based cash assistance
- Efforts to improve reporting of retirement income
- Dual pass approach
- Dynamic skip patterns
- New imputation techniques
- Revised family assignments

Needs

- Revised family assignments
- New poverty thresholds



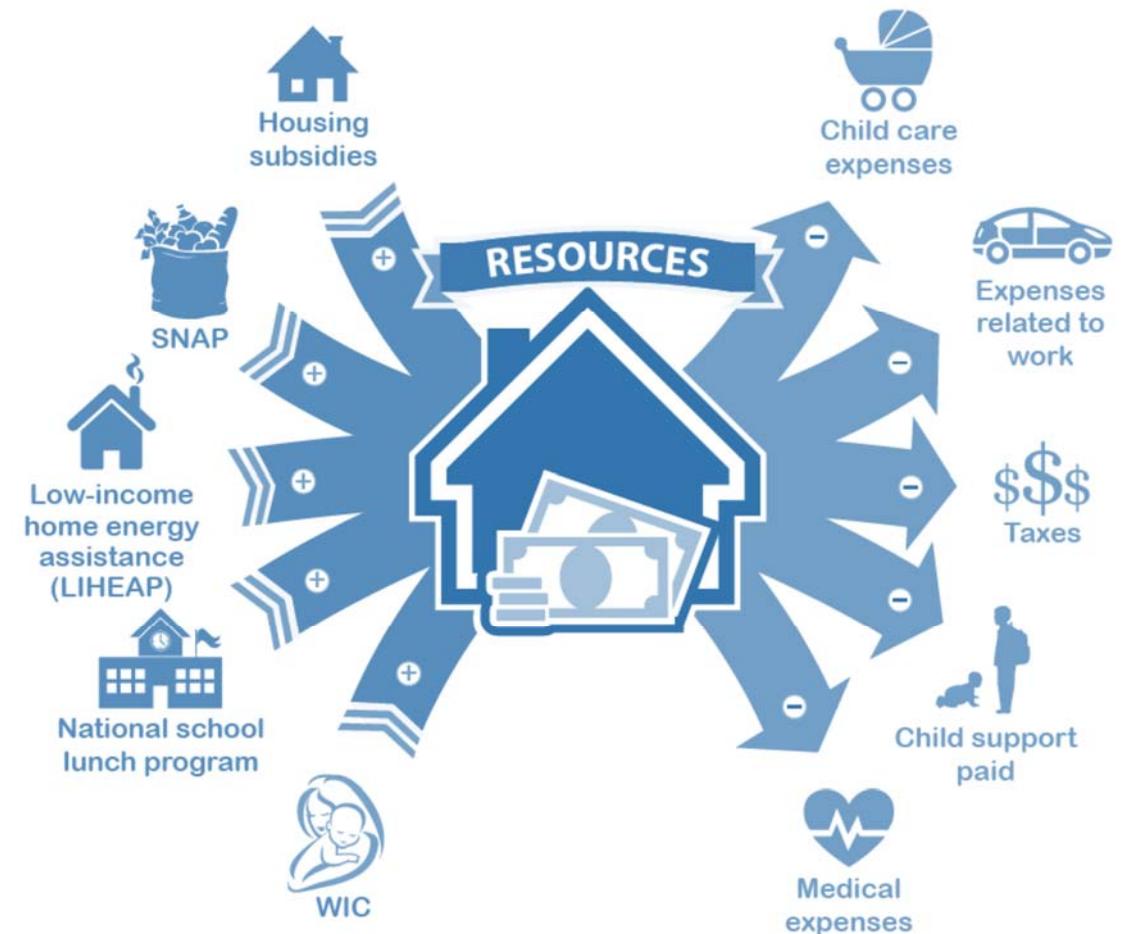
How Do Changes Impact the Supplemental Poverty Measure (SPM)?

Resources

- Changes in insurance coverage and related out of pocket expenditures (MOOP)
- Removed income screener for reporting means-based non-cash assistance
- Impact on tax units and liability

Needs

- Thresholds not impacted



Source: U.S. Census Bureau, Current Population Survey, 2017 Annual Social and Economic Supplement. www2.census.gov/library/publications/2017/demo/p60-261.html.

Evaluating Changes

Goal is to evaluate overall and incremental impact of the revised demographic and income edit procedure on OPM across processing systems

Considerations when comparing files:

- Different sample weights
- Different universes
- Changes in imputed characteristics not related to relationship status

Additional estimates from the 2018 ASEC

Impact on SPM estimates also evaluated

		Updated Processing		
	Legacy Processing	Updated Processing	Impact of Demo Edit	Impact of Income Edit
Family	old	new	new	old
Personal Income	old	new	old	new
Family Income	old	new	modified	modified

Note: Estimates from the 2017 Updated Processing System are subject to change due to weighting corrections identified in April 2019.

Overall Impact of New Processing System: OPM, CY 2016

No significant overall change in the number or percent of people in poverty in 2016

Poverty increased for:

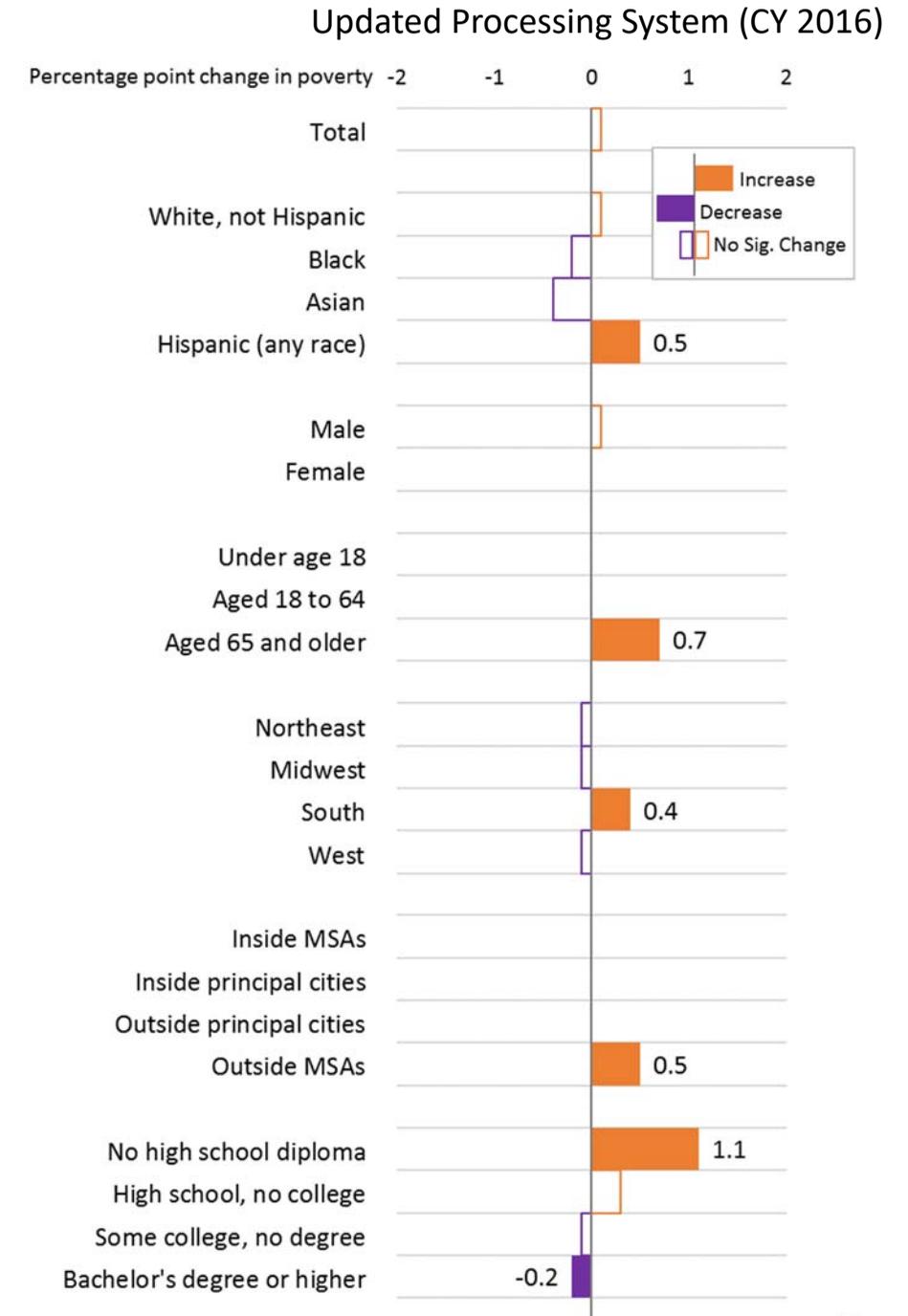
- Hispanics, those aged 65 or older, those living in the South or outside of MSAs, and for individuals age 25 and older with less than a high school diploma

Poverty decreased for:

- Individuals with advanced education—who already had among the lowest poverty rates



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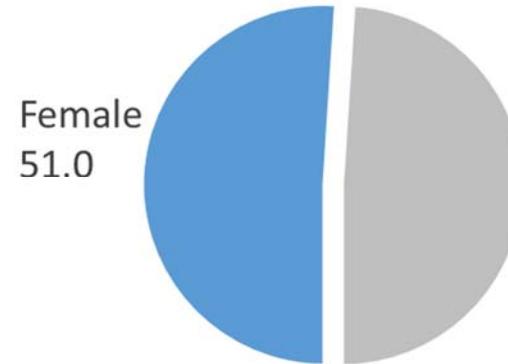
Characteristics of Individuals in Same-Sex Marriages

In 2016, 937,000 spouses were in a same-sex marriage

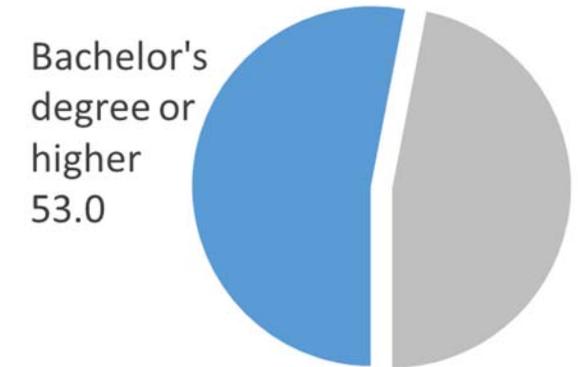
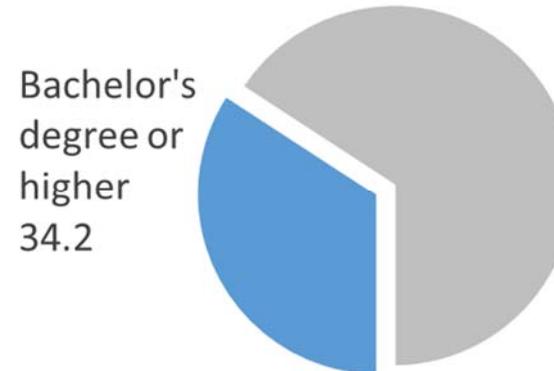
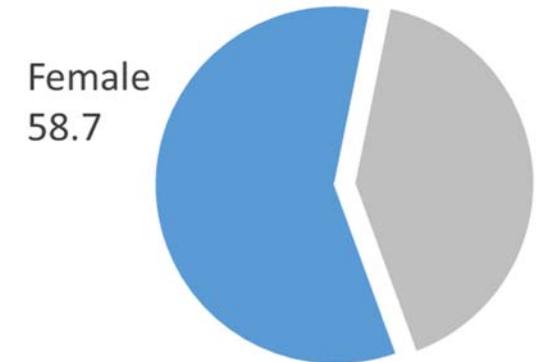
Spouses in same-sex marriages were:

- More likely to be female
- More highly educated

General Population



Same Sex Married Couples



Measuring Poverty (OPM) for Individuals in Same-Sex Marriages

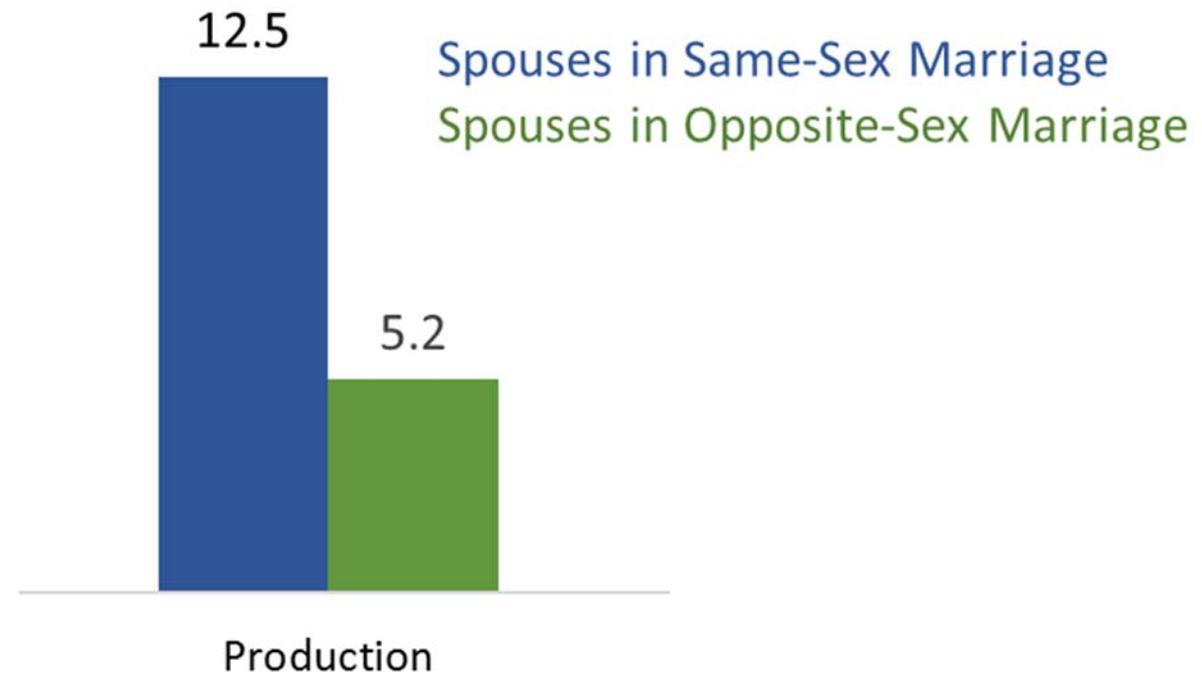
Under legacy processing procedures:

- Treated as unmarried partners
- Poverty rate was 12.5 percent

With updated processing:

- Treated as a single family
- Poverty rate drops to 3.6 percent—
not statistically different from
those in opposite-sex marriages
(when holding income constant)

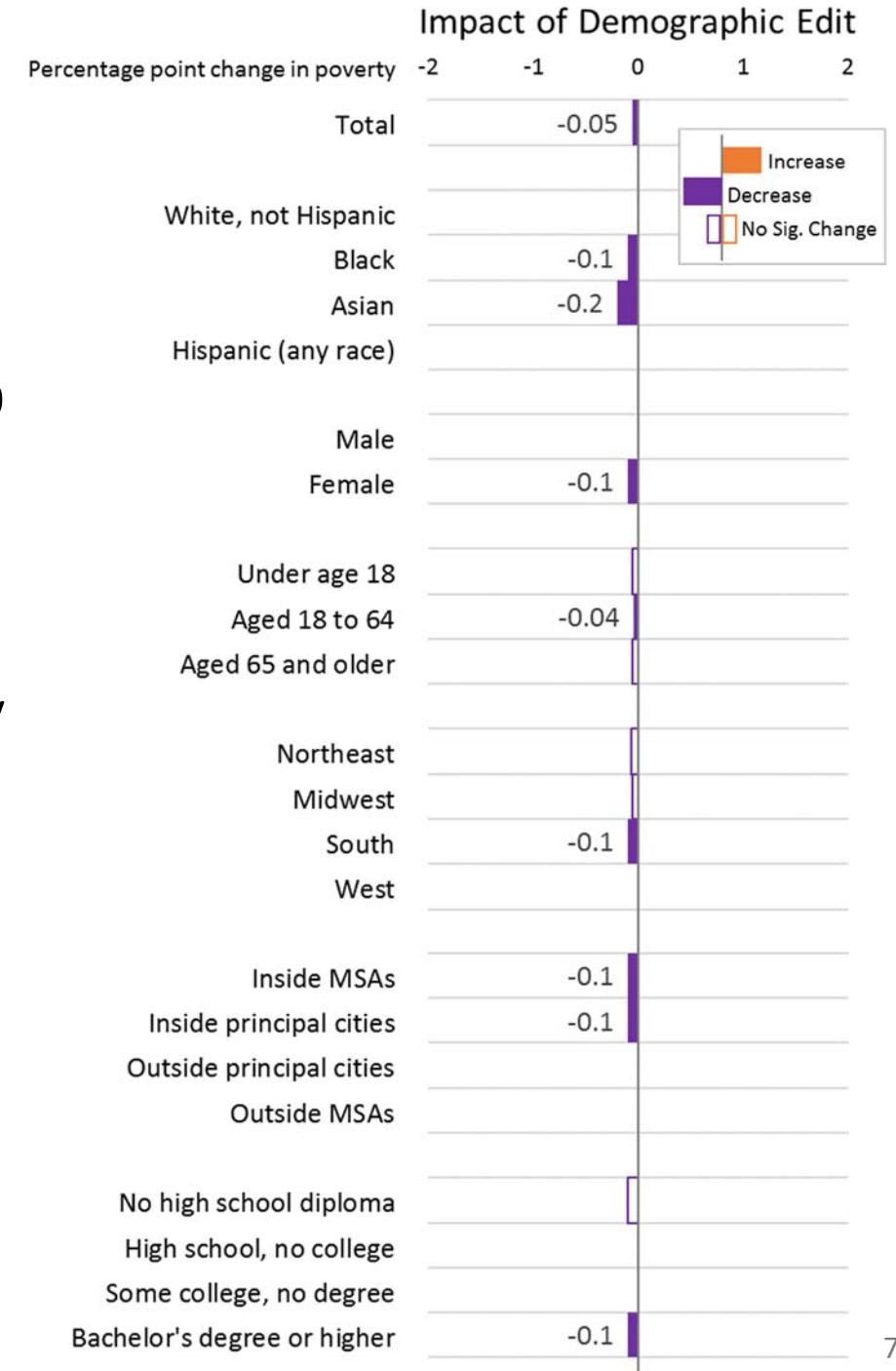
2016 Poverty Rates Across Processing Systems



Impact of the Demographic Edits on Poverty: OPM, CY 2016

When holding income constant based on the legacy editing procedure:

- Poverty rates decline 0.05 percentage points, with approximately 150,000 individuals no longer in poverty
- While statistically significant, point estimates of the poverty rate are consistent when rounded to the tenth decimal place
- The impact of the updated family edits across population groups is largely as expected given the characteristics of the same-sex married population



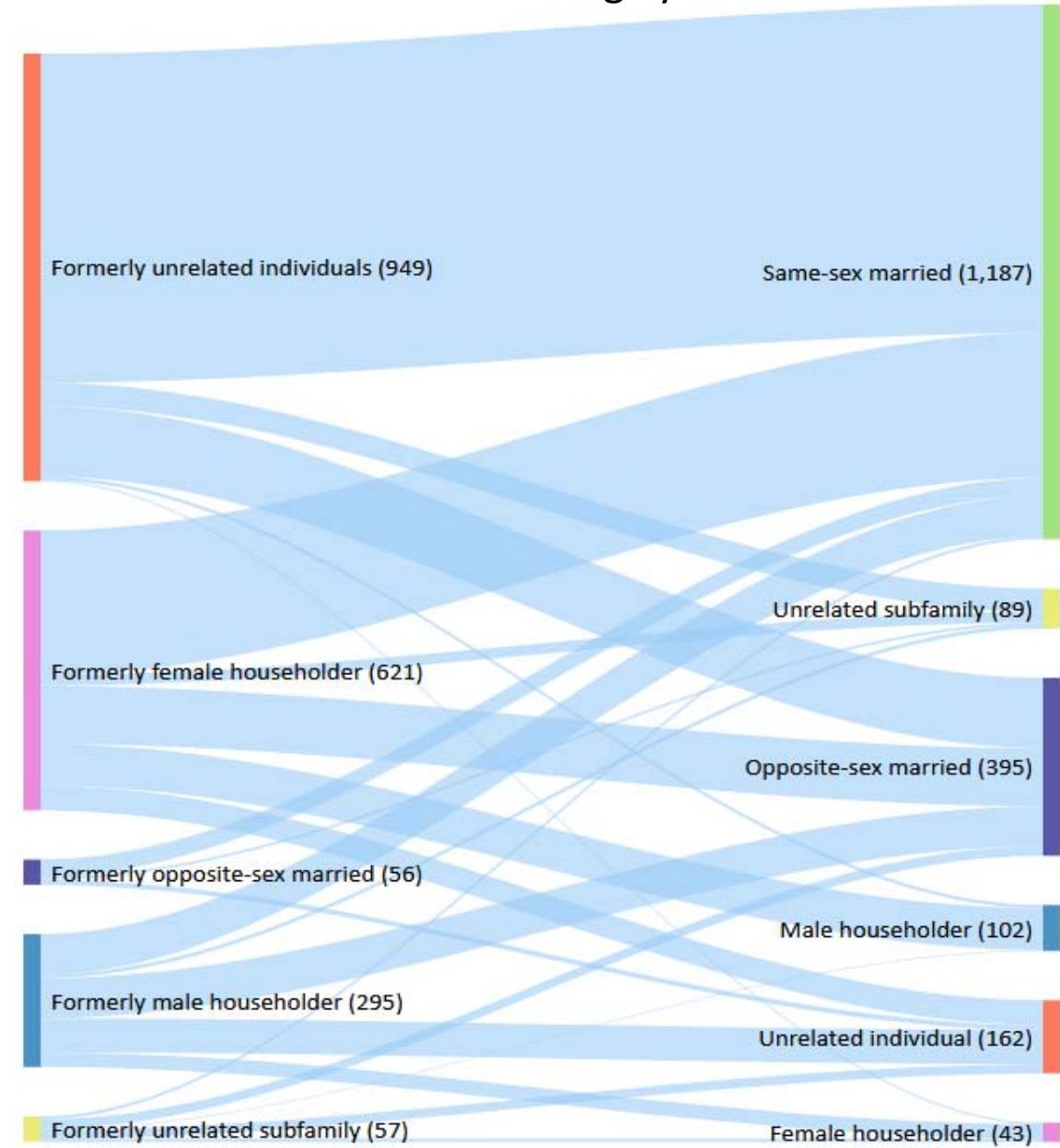
Impact of Demographic Edits on Family Assignment

By family type, poverty rates decrease for primary families and increase for unrelated individuals and those in related subfamilies

Changes in poverty reflect the complicated movement of individuals' family classification across files

- Unrelated individuals who join primary families had lower poverty rates than those who continued to be classified as unrelated individuals
- Those who were in unrelated subfamilies but change classification had much lower poverty rates than those newly classified as being in unrelated subfamilies, however this change is not largely driven by same-sex marriage

Change in Family Assignments Across 2017 CPS ASEC Processing Systems
 Impact of Demographic Edit
 Percentage point change in poverty

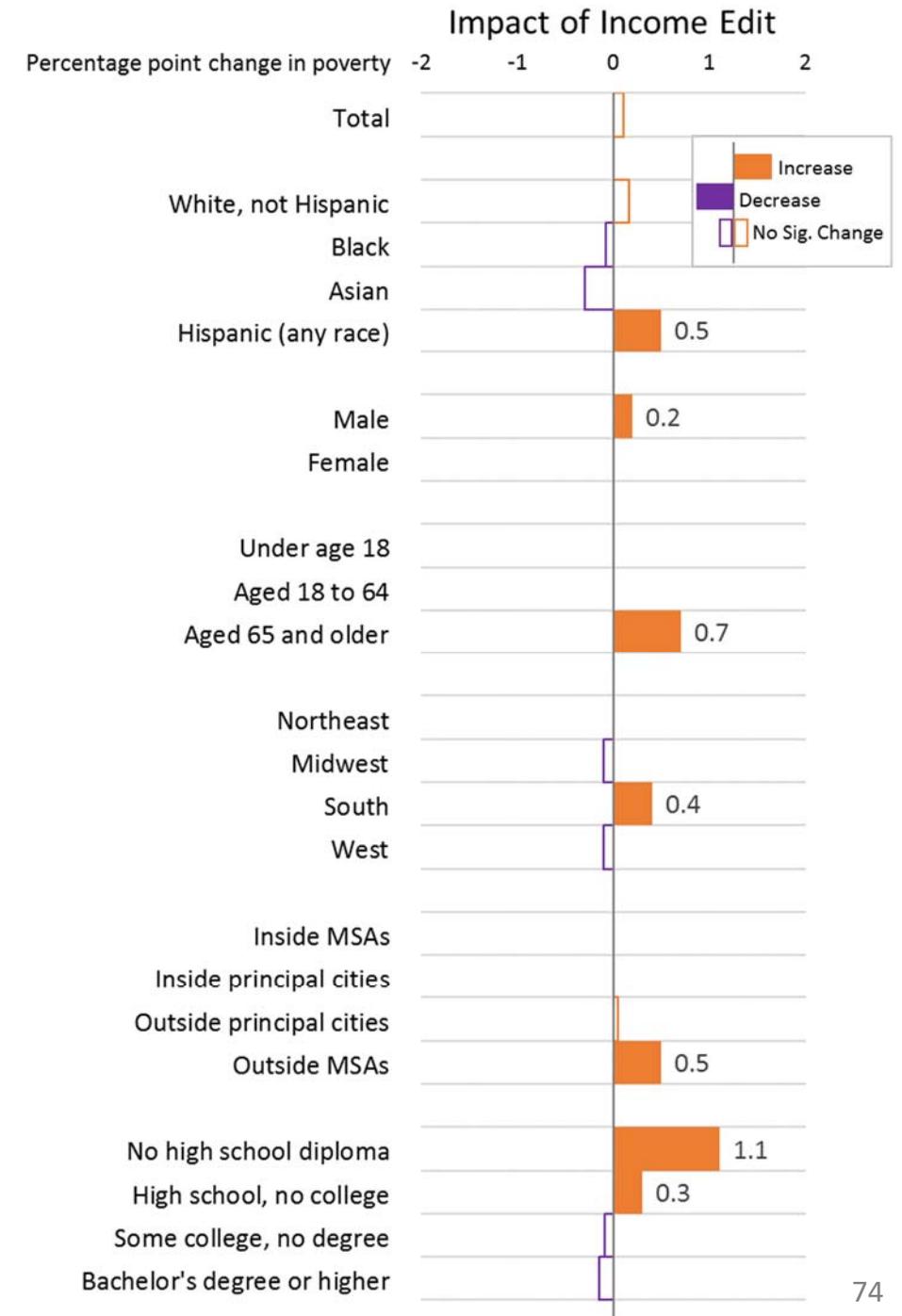


Numbers in thousands

How Income Edits Impact Poverty: OPM, CY 2016

When holding family assignments constant based on the legacy processing system there is no significant change in the overall number or percent of people in poverty

- Increases in poverty for:
 - Hispanics, Males, those aged 65 and older, those living in the South, those living outside of MSAs, and individuals aged 25 and older with less than a high school education and a high school diploma/GED, no college



Changes in Reported Income: CY 2016

While mean household income increases under the updated processing system, poverty is stable or increasing for the studied demographic subgroups

Rothbaum (2019) shows that mean household income reporting varies between files depending on income source

This is particularly interesting for the aged 65 and older population because we see decreases in Social Security and no significant change in total retirement income, two key sources of income

Change in Mean Household Income by Source
Percent change -30 -20 -10 0 10 20 30



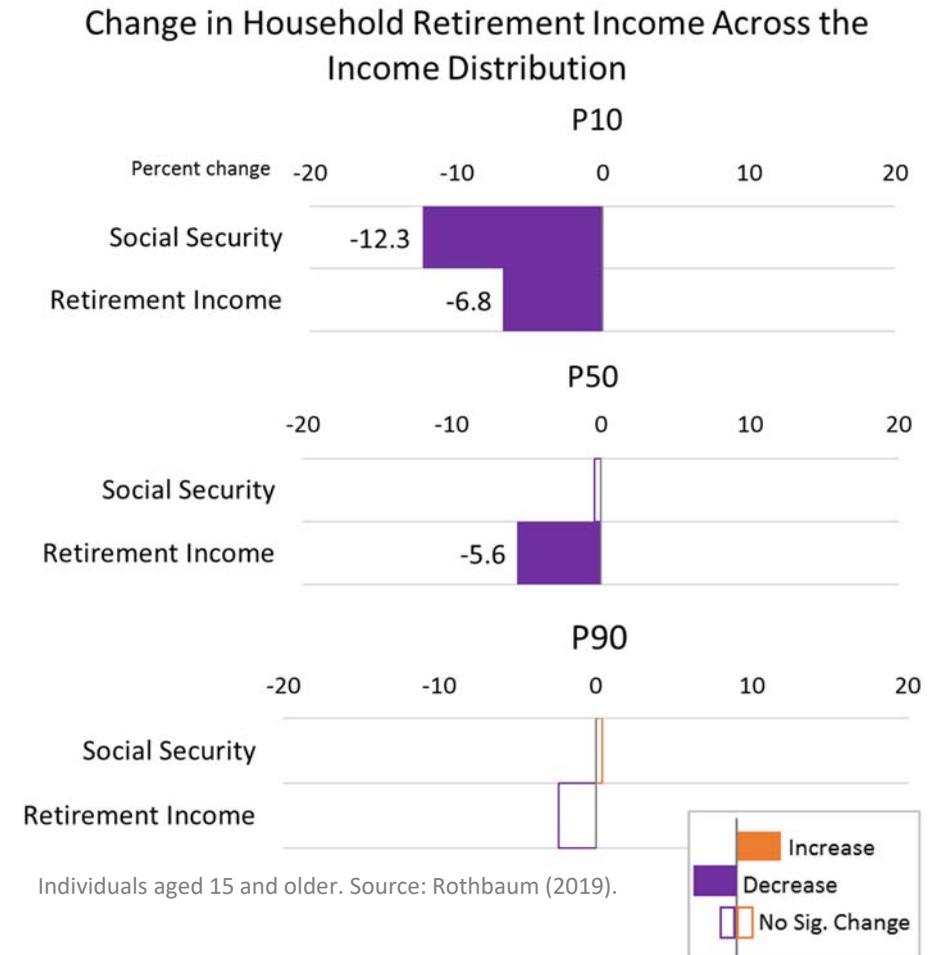
Individuals aged 15 and older. Source: Rothbaum (2019).

Changes in Social Security and Retirement Income: CY 2016

Rothbaum (2019) finds that changes in retirement income across processing systems vary by location on the distribution

Overall retirement income is lower at the 10th percentile and median

Individual sources vary across the distribution, but tend to be lower when using the updated processing system at the lower end of the distribution



Overall Impact of New Processing System: OPM, CY 2017

The 2018 Bridge File will serve as the comparison file for estimates from the 2019 CPS ASEC, which will *only* be processed using the redesigned processing system

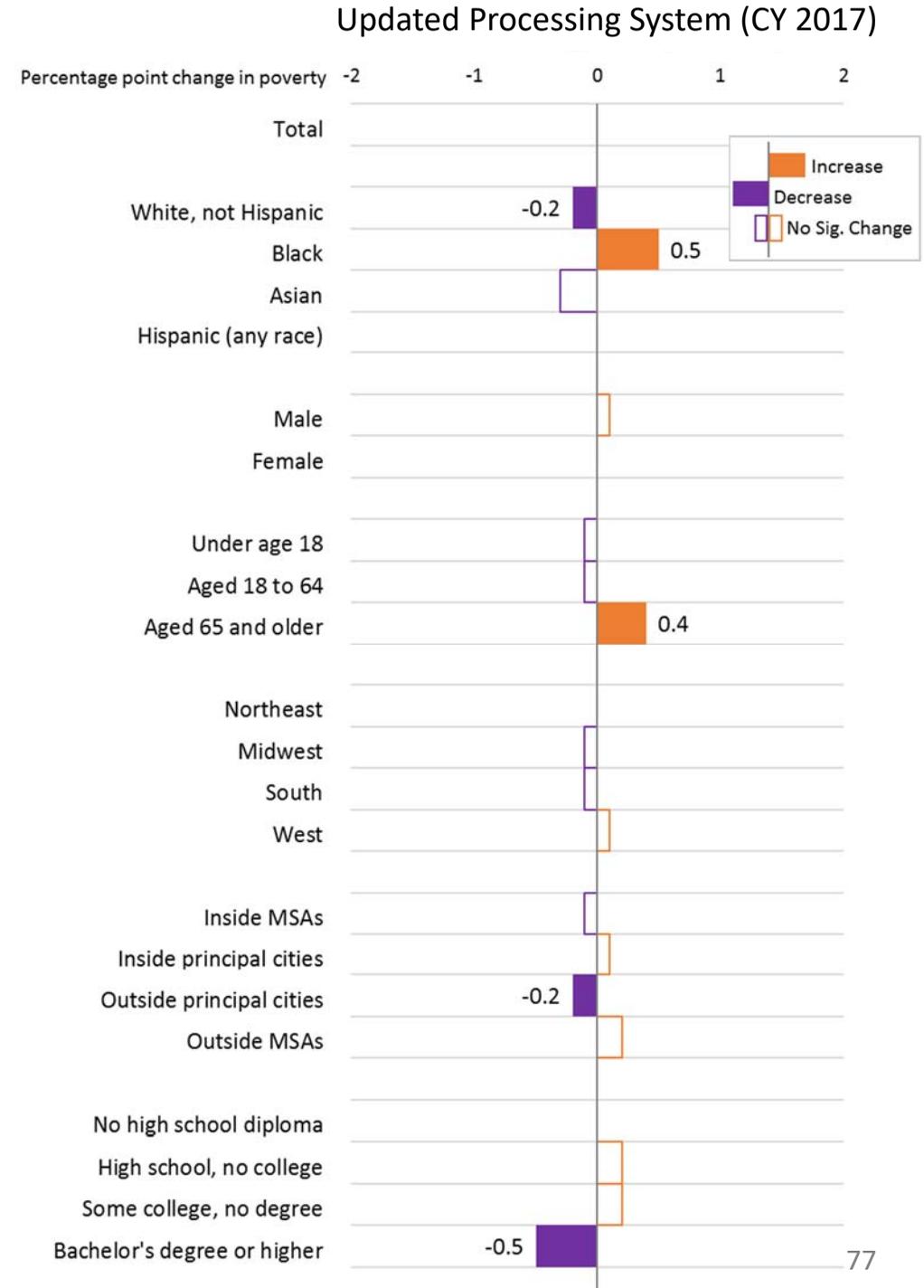
We similarly find no significant overall change in poverty rates across processing systems

Poverty rates increase for:

- Blacks and individuals aged 65 and older

Poverty rates decrease for:

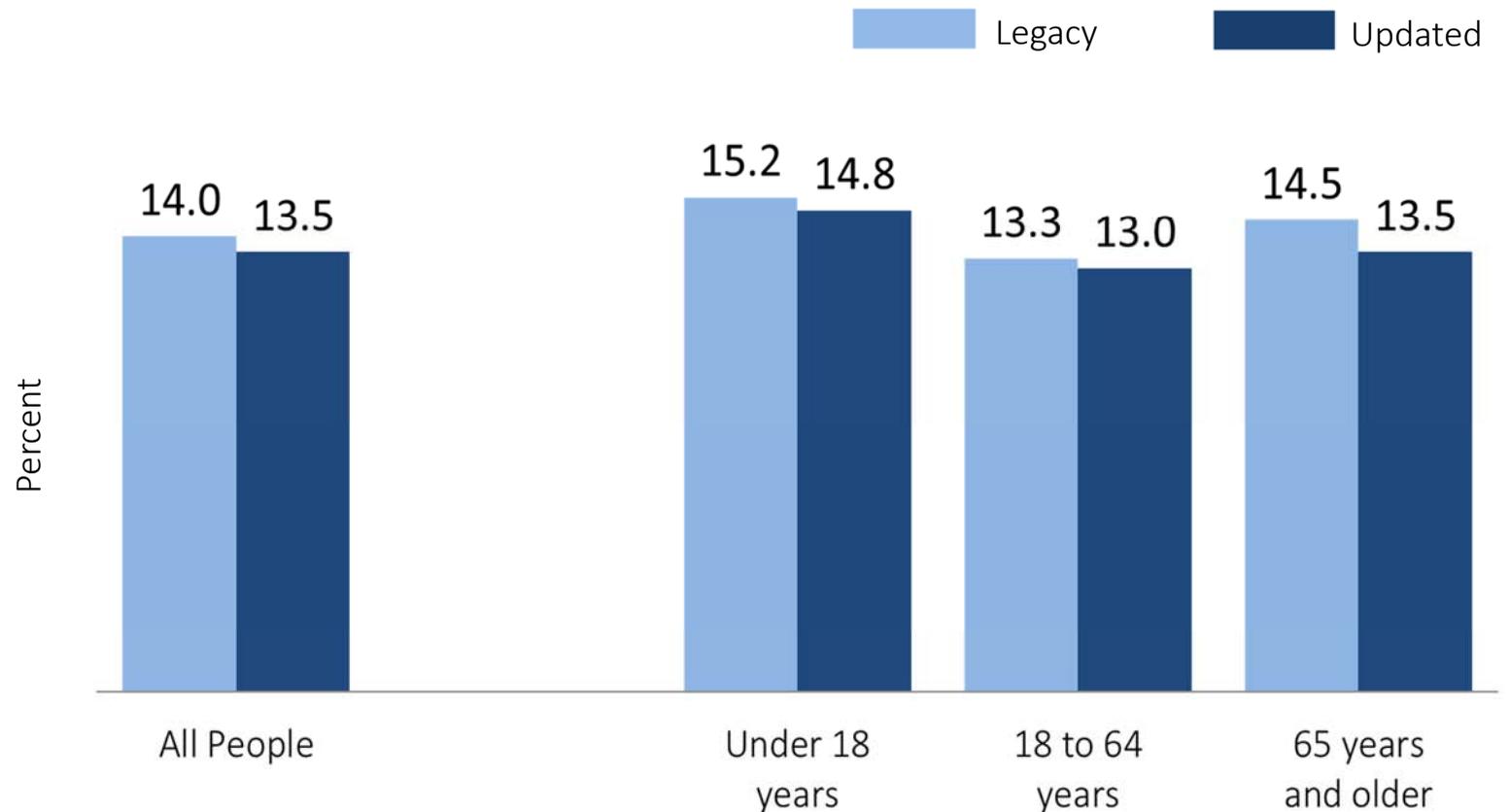
- White, non-Hispanics, those living outside principal cities and people with a bachelor's degree or higher



Implications for the Supplemental Poverty Measure: CY 2016

Estimates of poverty based on the SPM showed *decreases* in overall poverty, as well as for all major age groups

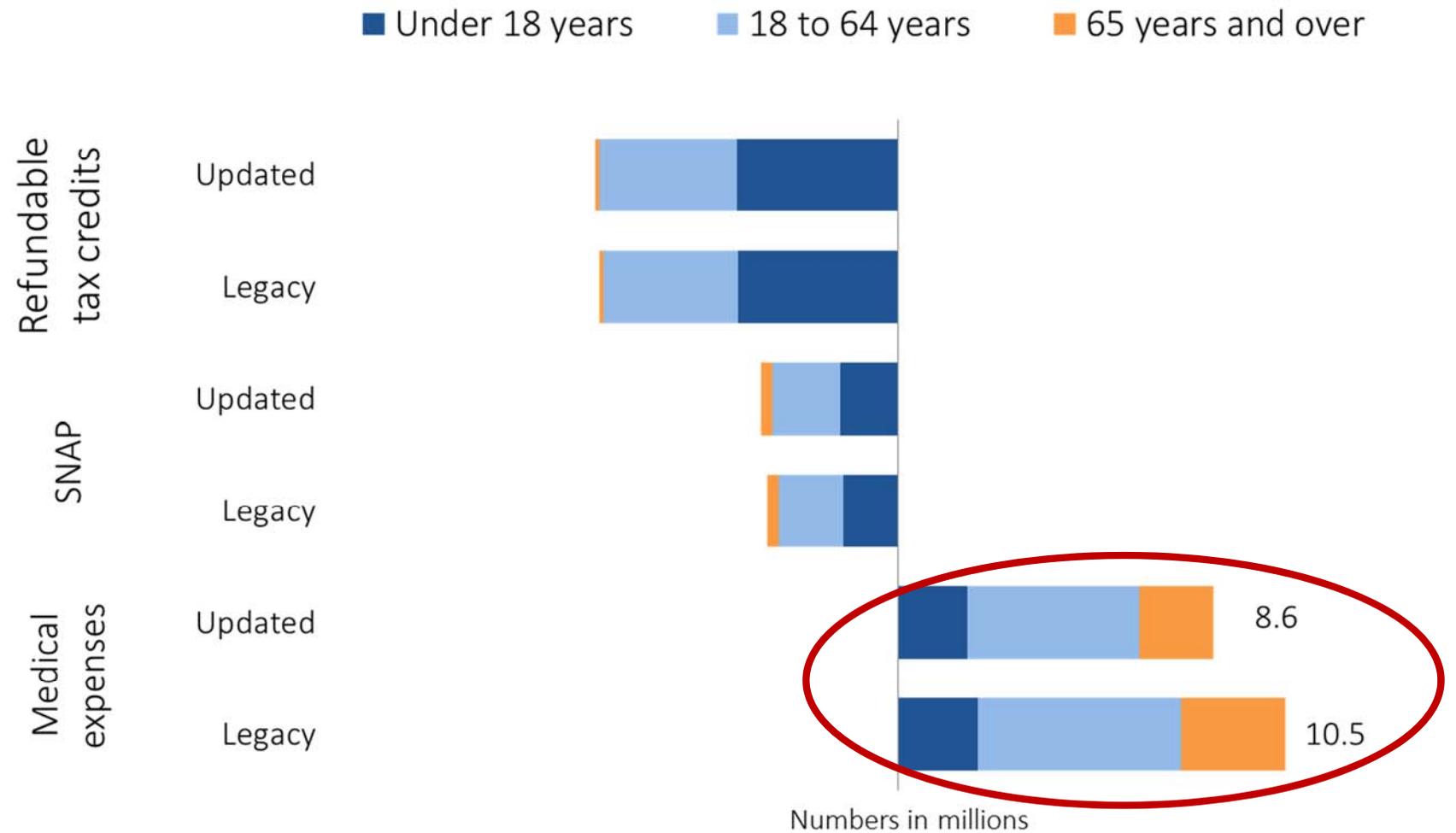
This conflicts with findings from the official poverty measure (OPM) where the only significant differences were for those aged 65 and older, where poverty *increased* under the updated processing system.



Change in Number of SPM Poor by Resource Element: CY 2016

No significant difference on the impact of refundable tax credits or SNAP benefits across processing systems

Fewer people moved into poverty based on medical expenses under new editing procedures

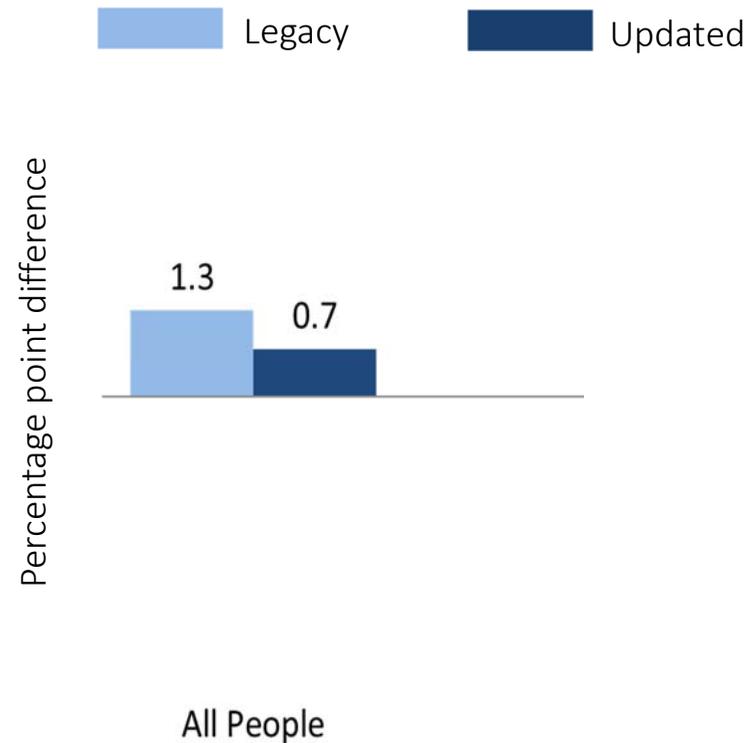


The Relationship Across the OPM and SPM: CY 2016

The difference across the OPM and SPM narrows to 0.7 percentage points when using the updated processing system

- No significant change in overall OPM rate while poverty declines using the SPM

Convergence is driven by changes among those aged 65 and older, under updated processing system OPM poverty rates increase and SPM rates decrease



Discussion

No significant overall change in the number or percent of OPM poor across files for reference years 2016 or 2017

Decrease in the number and percent of SPM poor for reference year 2016

- Removal of means-tested benefit caps and improvements in medical expense estimation decrease SPM poverty
- Household relationship recodes have no direct impact on SPM rates, but change composition of sub-groups

Goal: Improve the measurement of same-sex couples

- Identify 1.2 million individuals in same-sex married couple families
- Poverty estimates for individuals in same-sex marriages decline 8.9 percentage points

Goal: Improve the quality of income and program participation data

- We see *increases* in poverty across a number of demographic groups based on income processing changes
- At the 10th percentile, we see declines in Social Security and retirement income

Next Steps

More detailed analysis

- Presentation at PAA and JSM 2019 with this information

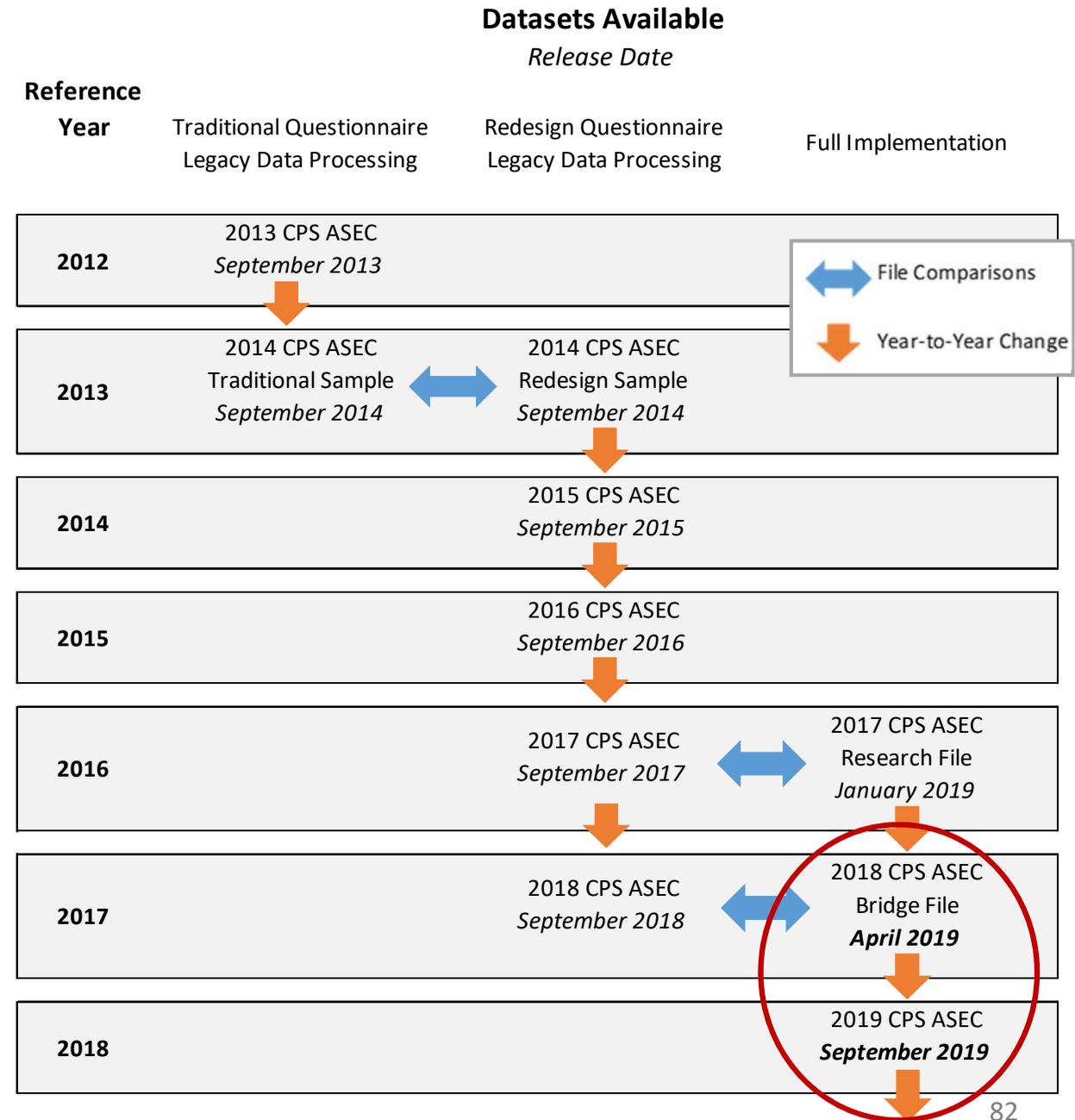
The 2019 CPS ASEC File will be released in September 2019, reflecting all processing changes

- 2017 CPS ASEC Research File released January 2019
- 2018 CPS ASEC Bridge Public Use File released April 2019



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Income & Demographic Content Implementation Timeline



Resources & Contact

For additional information see <<https://census.gov/topics/income-poverty/poverty.html>>.

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¹ The Census Bureau reviewed this data product for unauthorized disclosure of confidential information and has approved the disclosure avoidance practices applied to this release. DRB-FY19-ROSS-B0090. This presentation is intended to inform interested parties of ongoing research and to encourage discussion of work in progress. The views expressed on methodological or operational issues are those of the authors and are not necessarily those of the U.S. Census Bureau. Any error or omissions are the sole responsibility of the authors.

Questions and Discussion

Health Insurance in the United States: Evaluating the Effects of Changes in the CPS ASEC

Edward Berchick & Heide Jackson
Health and Disability
Statistics Branch

Laryssa Mykyta
Health and Disability
Statistics Branch

Roadmap

- Background on improvements to the CPS ASEC
- Comparison of estimates across processing systems
 - Key estimates for 2016
 - Why estimates changed
- Newly available measures
- Key takeaways

Roadmap

- **Background on improvements to the CPS ASEC**
- Comparison of estimates across processing systems
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Improvements to the CPS ASEC

- Two-Stage Process:
 - Redesign of questionnaire (debuted in 2014; 2014-2018 CPS ASEC)
 - See Pascale et al. 2016 for more information
 - To ensure timely release, missing and incomplete data were handled through the traditional processing system
 - Redesign of processing system (debuted in 2019; 2017 CPS ASEC Research File, 2018 CPS ASEC Bridge File, 2019+ CPS ASEC)

Redesign of Processing System

Legacy System

- Instrument output mapped into old variables – loss of information about types of coverage
- No information about subannual coverage
- Missing data was imputed for each individual one type at a time, leading to potential over-estimates of multiple coverage

Updated System

- Instrument output used with full 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
- New imputation process groups people into health insurance units and fills missing data based on the characteristics of that unit

Redesign of Processing System (Continued...)

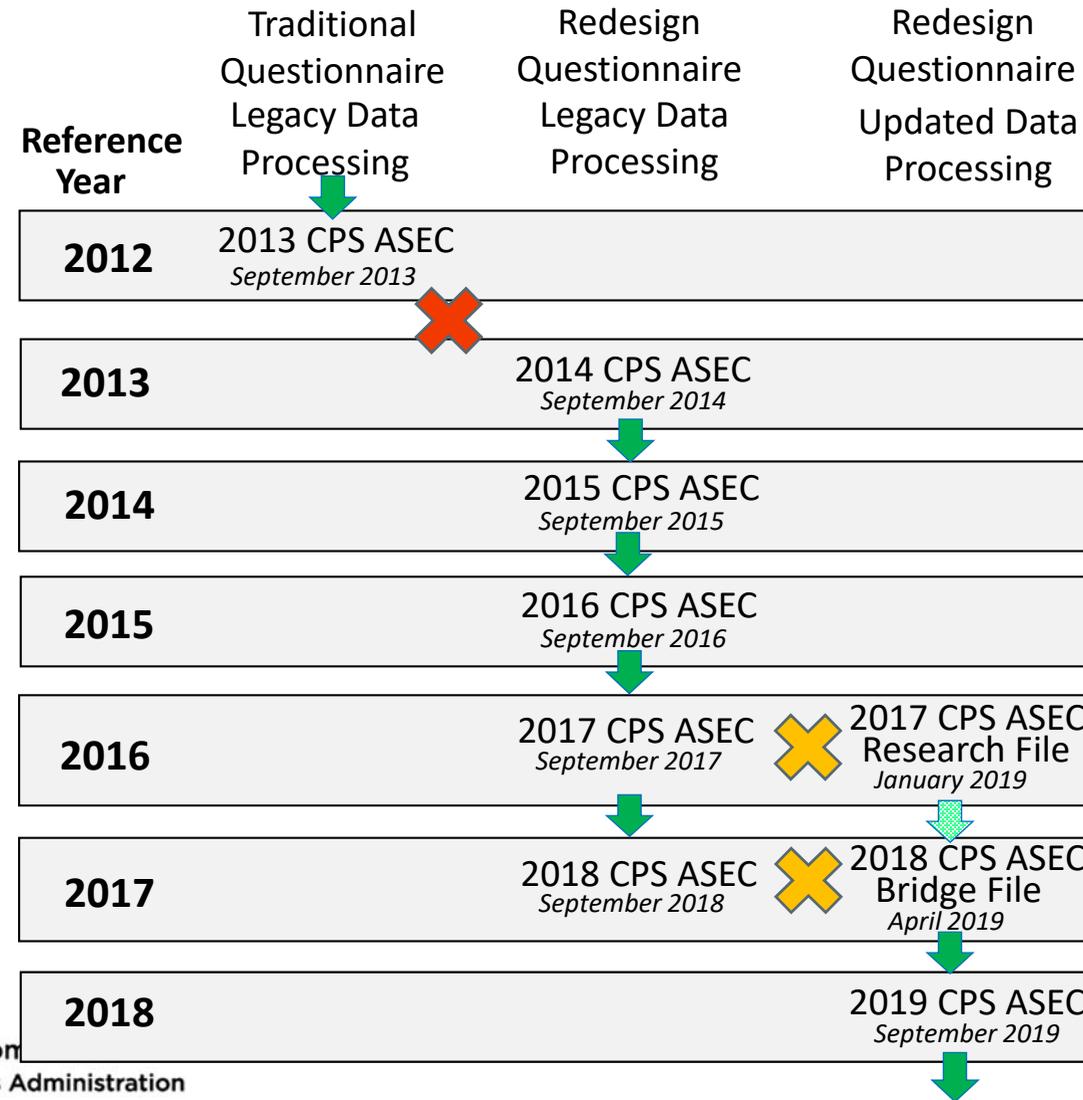
Legacy System

- Contains calendar-year coverage information for all persons
- Measures any military coverage as public insurance

Updated System

- Excludes calendar-year coverage information for infants born after the calendar year ended
- Contains three measures of military coverage (TRICARE, VA, CHAMPVA) and defines TRICARE as private insurance and VA and CHAMPVA as public insurance

Health Insurance Implementation Timeline



Roadmap

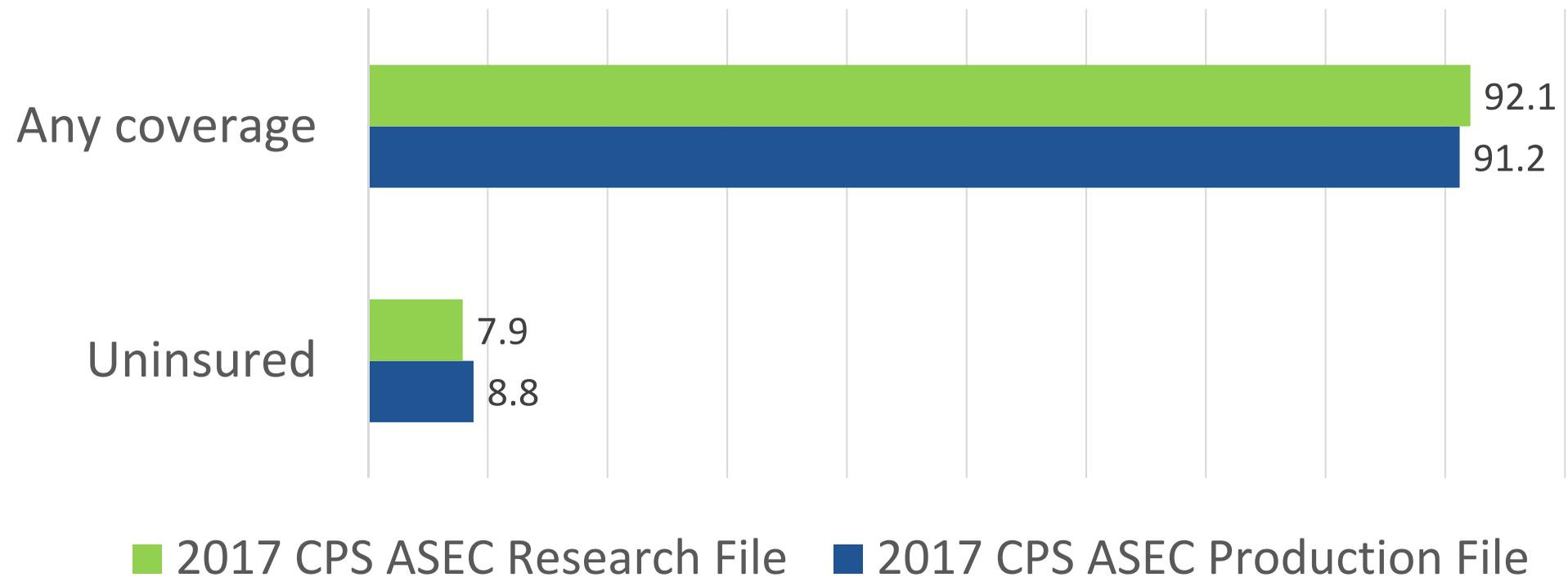
- Background on improvements to the CPS ASEC
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Data Files for 2016

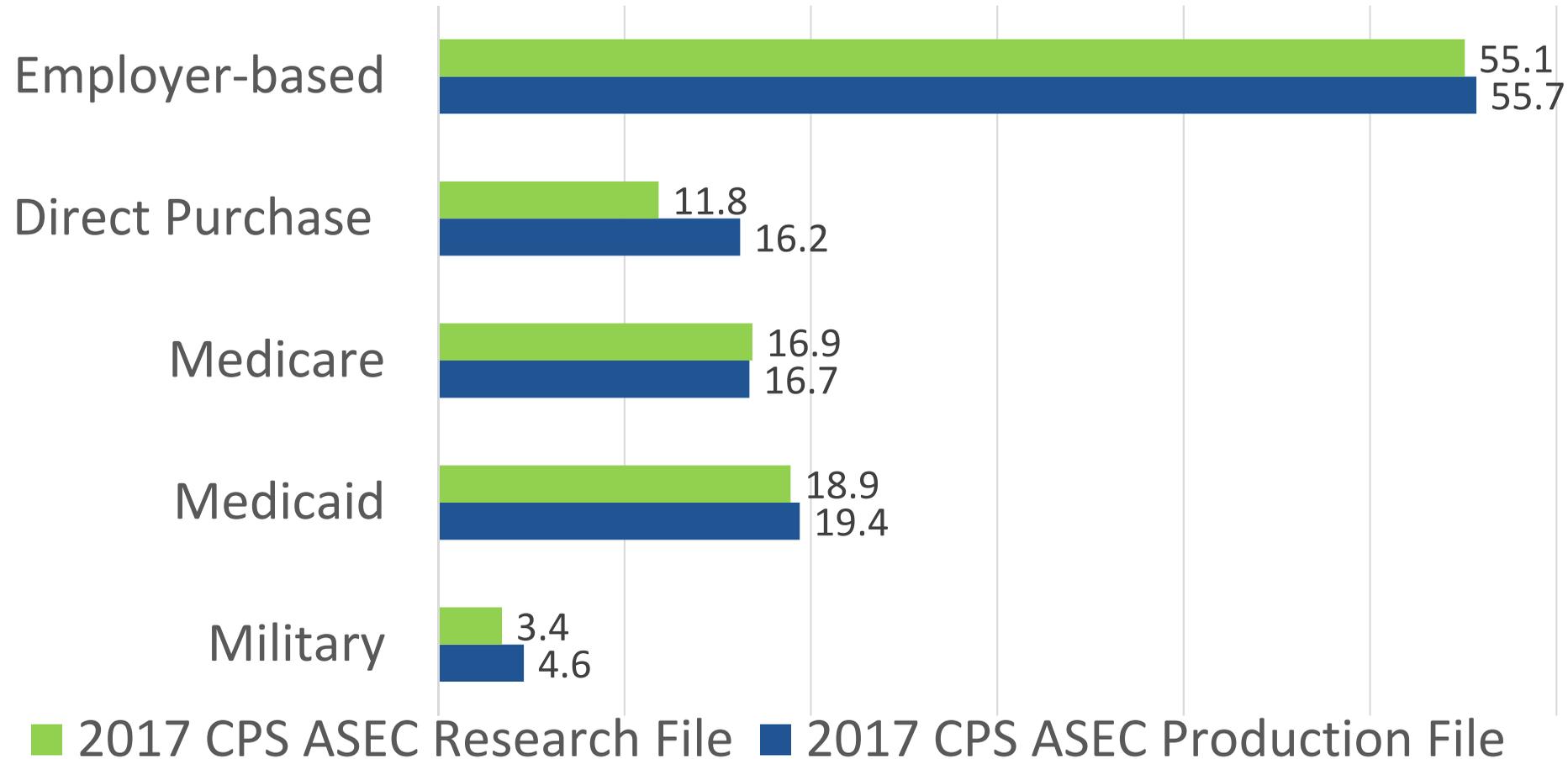
- 2017 CPS ASEC (also known as 2017 CPS ASEC Production File)
 - Collects information from redesigned instrument
 - Data set relies on legacy processing system
- 2017 CPS ASEC Research File
 - Collects information from redesigned instrument
 - Data set relies on updated processing system

NOTE: We compare estimates across files to highlight differences. The new processing system represents a break in series, and we do not recommend comparisons across processing systems.

Changes to (Un)insured Rate



Changes to Coverage Types



Reports of Multiple Coverage Types

	Research File (RF)	Production File (P)	Difference (RF-P)*
Any Combination of Coverage	13.5	19.6	-6.1
Private and Public	10.1	13.5	-3.4
Medicaid	18.9	19.4	-0.5
Medicaid Alone	15.1	12.9	2.2
Direct-Purchase	11.8	16.2	-4.4
Direct-Purchase Alone	6.5	6.8	-0.3

Source: 2017 CPS ASEC and 2017 CPS ASEC Research File.

*All differences significant at the $p < 0.05$ level

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Source: 2017 CPS ASEC and 2017 CPS ASEC Research File.

*All differences significant at the $p < 0.05$ level

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)
 - Refinements to how we construct estimates of annual coverage (i.e. by building up from the monthly level)

For additional information see:

Berchick & Jackson. 2019. "Health Insurance Coverage in the 2017 CPS ASEC Research File." SEHSD WP 2019-01.

Roadmap

- Background on improvements to the CPS ASEC
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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
- Sub-annual coverage
- Military coverage
 - Distinguish TRICARE from other types of military coverage
- Type of coverage at the time of interview

Roadmap

- Background on improvements to the CPS ASEC
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Key Takeaways

- New processing system addresses data quality limitations of previous production files
- Differences in the interpretation of some variables
 - Especially definition of private and public coverage
- New information is available on health insurance subannual estimates and marketplace coverage

Thank you

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Questions and Discussion