

Evaluating the 2013 CPS ASEC Income Redesign Content Test

Proceedings of the 2013 Federal Committee on Statistical Methodology (FCSM) Research Conference

Jessica L. Semega
Edward Welniak, Jr.

Disclaimer: These data are being released on request, despite concerns about their quality. The Census Bureau's policy is not to withhold data that are available, unless releasing such data would violate confidentiality requirements. The Census Bureau recommends using these data only for research or evaluation purposes, and not to make statements about characteristics of the population or economy, because they do not meet the criteria outlined in the Census Bureau's Statistical Quality standard: Releasing Information Product. The views expressed in this research, including those related to statistical, methodological, technical, or operational issues, are solely those of the authors and do not necessarily reflect the official positions or policies of the Census Bureau. The authors accept responsibility for any errors. This paper reports the research and analysis undertaken by Census Bureau staff. It has undergone more limited review than official publications.

Abstract

The Annual Social and Economic Supplement to the Current Population Survey (the CPS ASEC) is one of the most widely used socioeconomic surveys publishing national level medians and means. The CPS ASEC is the official source of the US national poverty statistics. The ASEC asks each person detailed questions categorizing income into over 50 sources. As one of the nation's longest running surveys, it has been over 30 years since the last major questionnaire redesign.¹ In an effort to take better advantage of an automated environment and to update questions on retirement income and health insurance, the Census Bureau conducted a field test in March 2013 of a redesigned instrument using a retired ASEC sample of 23,000 households. This paper looks into the outcomes of the field test and the specifics of the redesigned income portion of the ASEC instrument, including the use of income range brackets for respondent question refusals to income amounts (currently the instrument will move on to the next source of income) and a new “dual-pass” approach that asks all income sources first, followed by income amount collection.

Introduction

The Annual Social and Economic Supplement to the Current Population Survey (CPS ASEC) is the one of the most widely used surveys conducted by the government, it serves as the basis of national income measurement and the source of official poverty estimates. The CPS ASEC is mostly conducted in March but also February and April and asks income questions of the prior calendar year, as well as health insurance coverage (DeNavas-Walt et al., 2013). This paper only discusses the redesigned income questionnaire portion of the ASEC.² Previous research shows the ASEC suffers from misclassification of certain types of income, general underreporting of income, and historically under-reported enrollment in means-tested government programs (Meyer et al., 2009). To address these issues the Census Bureau contracted Westat Inc. and Mathematica in 2011 to evaluate the CPS ASEC questionnaire and to improve the instrument. In April of that year, Westat Inc. issued a report entitled “Cognitive Testing of Potential Changes to

¹ In 1994 the CPS ASEC paper questionnaire transitioned to a computer environment.

² This paper is one among a series of reports that describe the setup and results of that March 2013 CPS ASEC Content Test. Bee and Cantu (2013) evaluate the interview time difference between the redesigned ASEC and the production ASEC. Hornick (2013) describes the sample selection process for the Content Test. Medalia et al. (2013) describe the changes to the health insurance coverage section of the ASEC and summarizes the health insurance coverage estimates. Brault (2013) evaluates potential non-response bias from the March 2013 CPS ASEC Content Test.

the Annual Social and Economic Supplement of the Current Population Survey” which suggested potential changes to income questions to correct income errors of varying magnitudes across income types, and by particular subpopulations based on the results of conducting cognitive test. A nation-wide (sample of 23,000 households) content test was conducted by telephone interview of the redesigned ASEC in March of 2013 based on their suggestions. The content test included a redesigned health insurance section (see Medalia et al., 2013).

The objective of the redesigned income section of the ASEC instrument is to improve data quality by addressing misreporting of income amounts and item nonresponse, and to reduce error resulting from respondent fatigue. It is also an effort for the ASEC to address the changing retirement account environment. While retirement income is still dominated by Social Security and traditional pensions, the aggregate holdings in newer types of retirement accounts (such as tax-advantaged IRAs and 401k plans) already exceed those of traditional pension plans by a substantial margin. Retirement, pensions, and annuities are historically under-reported in the ASEC (see Czajka and Denmead 2008). Lastly, one of the largest aggregate shortfalls in measured ASEC income is in asset income. The redesigned ASEC better clarifies questions on asset income such as interest and dividends.

Summary of Changes

Changes to the ASEC questionnaire include:

- 1) the removal of the family income screener,
- 2) the dual-pass approach,
- 3) tailored skip patterns,
- 4) income range follow-up for “Don’t know” or “Refusals” to income amounts,

- 5) clarification on retirement accounts, pensions and other interest earning assets,
- 6) new questions on withdrawals and distributions from retirement accounts and
- 7) revised series of questions on social security disability income.

A discussion of each of these follows.

- *Removal of the Family Income Screener*

Currently the production ASEC asks only households that reported less than \$75,000 in combined family income about means-tested transfer programs such as food stamps and Temporary Assistance to Needy Families (TANF). The redesigned ASEC removes this family income screener because there is evidence that the ASEC instrument inappropriately screens out some households that would have been eligible for participating in one or more transfer programs.³ In the redesigned ASEC all households are asked all questions regardless of family income (including those above \$75,000).

- *Dual-Pass*

The production ASEC uses an interleaf design, for example, if a respondent answered affirmative to receiving a source of income then immediately a follow-up question is asked on the amount of the income or the easiest way to report the income (i.e. weekly, monthly, annually, etc). The redesigned ASEC uses a dual-pass approach. The “first pass” or first series of questions identifies all sources of income received by members of the household. After the “first pass” identifies all sources of income received by all members of the household, the “second pass” collects the income amounts from each identified source. Earnings from jobs,

³ Tabulations of 2008 American Community Survey (ACS) data show that 12% of SNAP recipient households and 20% of public assistance income recipients would have failed the family income screen test if it had been applied to the ACS.

unemployment income, and worker's compensation questions are unchanged in the redesigned ASEC. They do not follow the dual-pass approach and are always the first series of questions in the ASEC asked of each person in the household.⁴

- *Tailored Skip Patterns*

The redesign ASEC tailors the order of the questions asked based on known household characteristics. Using tailored skip patterns allows prioritization of more relevant questions to help reduce respondent fatigue by presenting the most likely sources of income for that household earlier in the interview. Because of the removal of the family income screener, the redesigned ASEC asks all questions regardless of household composition, just in different orders.

The three orders are:

- 1) **Low income** (family income less than \$75,000): prioritizes questions on public assistance, food stamps, WIC, and public housing;
- 2) **Senior** (householder/spouse age 62+): prioritizes questions on disability and retirement income; and
- 3) **Default:** presented to households that do not qualify as low income or senior, closely reflects the current instrument order.

- *Income Range Brackets*

The redesigned ASEC presents new range questions anytime a respondent "Doesn't know" or "Refuses" to provide a dollar amount for an income source they (or someone in the household) indicated as having received. The income amounts presented in the range questions depend on the source of income. The redesigned ASEC uses high, middle, and low ranges developed and assigned based on the type of income, as shown below. The objective of the income range

⁴ In a 2014 ASEC for a split-sample, all income questions except earnings (asked at the person-level) will be asked at the household-level and follow the dual-pass approach.

questions is to reduce item nonresponse by allowing respondents to provide a less precise amount. The three levels of income range follow-up questions were:

➤ **High-range income follow-up brackets:**

- Less than \$45,000
- Between \$45,000 and \$60,000
- \$60,000 or more

If the respondent selects the lowest bracket (less than \$45,000), the instrument presents the following ranges:

- Less than \$15,000
- Between \$15,000 and \$30,000
- \$30,000 or more

➤ **Mid-range income follow-up questions:**

- Less than \$10,000
- Between \$10,000 and \$20,000
- \$20,000 or more

If the respondent selects the lowest bracket (less than \$10,000), the instrument presents the following ranges:

- Less than \$1,000
- Between \$1,000 and \$5,000
- \$5,000 or more

➤ **Low-range income follow-up questions:**

- Less than \$1,000
- Between \$1,000 and \$3,000
- \$3,000 or more

If the respondent selects the lowest bracket (less than \$1,000), the instrument presents the following ranges:

- Less than \$100
- Between \$100 and \$500
- \$500 or more

Income Source	Range Level
Earnings	High
State or Federal Unemployment Compensation	Mid
Social Security	Mid
Supplemental Security Income (SSI)	Mid
Disability Income	Mid
Veteran's Payments	Mid
Survivor Benefits	Mid
Pensions/Retirement/Annuities	Mid
Retirement Interest	Mid
Property Income	Mid
Child Support	Mid
Nonretirement Interest	Low
Education Assistance	Low
Regular Financial Assistance	Low
Interest earning accounts	Low
Public Assistance/ TANF	Low
Food Assistance/ SNAP	Low

- *Changes to Retirement Accounts and Asset Income*

To capture more relevant retirement income the redesigned ASEC specifically asks if anyone in the household has a pension, and then if anyone has a retirement account (such as a 401(k), 403(b), IRA, or other account designed specifically for retirement savings), in contrast to production ASEC, which asks one broad question on pension and retirement income. If the respondent has a retirement account, the redesigned ASEC instrument asks the respondent to identify the specific type of account. The instrument will proceed to inquire if there was a withdrawal or distribution from that retirement account.⁵ For recipients over 70 years old the

⁵ The 2011 Data Analysis Report by the Urban Institute identified that the ASEC misses over 90 percent of retirement account withdrawals.

question text changes to add, “including distributions you may have been required to take.” To make sure the value of the withdrawal correctly counts as household income, there is a follow-up question on if the money was “rolled over” or reinvested to another account.

To better capture asset income, interest and dividend income received on retirement accounts is asked separately from non-retirement accounts. Production ASEC makes no distinction between investment income received in a retirement account and investment income received outside of a retirement account.⁶ Asking about the specific types of accounts or assets could help cue respondents and decrease underreporting.

Results

Income source recipiency, reporting of income values and aggregate income totals from the 2013 production ASEC is compared to data from the 2013 March content test to evaluate the performance of the redesigned ASEC.⁷ Table 1 shows the percentage point differences in recipiency of various income sources.⁸ The wording of earnings questions and the four unemployment questions, shown in Table 1, are unchanged in the redesigned ASEC. The percentage point differences between redesign and production ASEC for these unchanged questions show that the results from the content test are comparable. Continuing with Table 1 are sources of income that did change in the redesigned ASEC. Social security recipiency is about 14 percentage points higher in the redesign. Recipiency of retirement, pension or annuity income in the redesign is about 38 percentage points higher than the production ASEC and

⁶ Czajka and Denmead (2008) estimate that the ASEC misses about 40 percent of aggregate interest income and about 75 percent of dividend income.

⁷ The response rate was 43.1 percent of eligible households for the redesign sample (Hornick, 2013). Given the low response rate, these data are released on request, despite concerns about their data quality. The Census Bureau recommends using these data only for research or evaluation purposes.

⁸ The recipiency counts are using unedited and unweighted data.

respondents with interest-earning accounts not including retirement accounts (such as checking, savings, or money market accounts) is about 18 percentage points higher in the redesign.⁹

Table 2 shows the percent difference of recipients age 15 and older who reported amounts for each income source between redesigned ASEC and production ASEC.¹⁰ As stated above, questions on earnings and unemployment are unchanged in the redesigned ASEC, but income range questions are offered if the respondent refuses or does not know a discrete value. The percentages calculated for the redesigned ASEC include the number of people who provided discrete or range values. Collection of earnings and Social Security amounts are approximately 9 percentage points and 10 percentage points higher, respectively, in the redesign ASEC. Collection of interest amounts is about 32 percentage points higher in redesigned ASEC, which was one of the targeted income sources of the redesign.

Aggregate income total percent differences by source of income are shown in Table 3.¹¹ Calculations of income aggregates from the redesigned ASEC are with and without income range values.¹² Without adding the range values, total aggregate income is 31 percent higher in the redesign ASEC as compared to production, and approximately 44 percent higher when using the mean value of the range reported. Disability, retirement, interest and dividend aggregate income totals are all higher using the redesigned ASEC.

⁹ Some of the higher totals for retirement and asset income might be due to the higher average age of the content test sample.

¹⁰ The counts of reported income values are using unedited and unweighted data.

¹¹ Calculations are using weighted, unedited data.

¹² Mean range values calculated based on discrete amounts reported in the 2013 production ASEC. Range values will be used as an imputation variable in the future.

Conclusion

Based on this preliminary analysis, it appears that the redesigned 2013 ASEC content test captured more income recipiency and more reported amounts resulting in higher aggregate income than 2013 production ASEC. Going forward, the Census Bureau plans to do a second instrument test in 2014. The 2014 CPS ASEC will proceed with a split-sample test; 5/8ths of the national ASEC sample will receive the traditional production ASEC and 3/8ths of the sample will receive the redesigned ASEC.¹³ This split-sample will permit a better evaluation of the test instrument compared to the production instrument in a full production environment using fully edited and weighted data. This test will ultimately compare income and poverty estimates.

¹³ Redesigned ASEC health insurance questions will be administered to the full sample.

REFERENCES

- Bee, Adam and Aaron Cantu. 2013. "Evaluating Respondent Burden of the CPS ASEC Content Test with Timer Data." Paper presented at the 2013 meetings of the Federal Committee on Statistical Methodology.
- Brault, Matthew W. 2013. "Non-response Bias in the 2013 CPS ASEC Content Test." Paper presented at the 2013 meetings of the Federal Committee on Statistical Methodology.
- Czajka, John L. and Gabrielle Denmead. 2008. "Income data for Policy Analysis: A Comparative Assessment of Eight Surveys" Mathematica Reference No.: 6302-601 [<http://mathematica-mpr.com/publications/PDFs/incomedata.pdf>]
- DeNava-Walt, Carmen, Bernadette D. Proctor, and Jessica C. Smith. 2012. Income, Poverty, and Health Insurance Coverage in the United States: 2012. U.S. Bureau of the Census, Current Population Reports, P60-243. Washington, DC.: U.S. Government Printing Office.
- Hicks, Wendy and Jeffrey Kerwin, 2011. "Cognitive Testing of Potential Changes to the Annual Social and Economic Supplement of the Current Population Survey." Unpublished Westat report to the U.S. Census Bureau. July 25, 2011.
- Hornick, David. 2013. "The 2013 Annual Social Economic Supplement Health Insurance Questionnaire Test: The Sample Design." Paper presented at the 2013 meetings of the Federal Committee on Statistical Methodology.
- Medalia, Carla, Amy Steinweg, Brett O'Hara, David Lee, Jessica Smith, Joanne Pascale, and Jonathan Rodean. 2013. "Health Insurance in the Current Population Survey: Redesign and Production." Paper presented at the 2013 meetings of the Federal Committee on Statistical Methodology.
- Meyer, Bruce, Wallace K. C. Mok, and James X. Sullivan. 2009. "The Under-Reporting of Transfers in Household Surveys: Its Nature and Consequences." Harris School Working Paper #09.03.

Table 1. Comparison of Income Source Recipiency for Redesigned and Production ASEC¹

Income Source	Percentage Point Difference (Redesign - Production)
Earnings	
Worked at job/business	-2.9
Work seasonal	1.1
Unemployment/Worker's Compensation	
State or Federal unemployment	0.2
Supplemental unemployment benefits	0.0
Union unemployment/strike benefits	0.0
Worker's compensation	0.3
Disability	
Disability Income (excluding SSDI)	2.2
Social Security	
Social security	13.8
SSI	-0.4
Survivor Benefits	
Survivor benefits	1.0
Retirement	
Retirement/Pension income	37.7
Interest/Dividends	
Non-retirement accounts	17.5
Dividends	9.2
Public Assistance	
Public assistance	-0.3

¹ The counts of reported income recipiency are using unedited and unweighted data.

Source: U.S. Census Bureau, Current Population Survey, 2013 Annual Social and Economic Supplement and the 2013 CPS ASEC Content Test

Table 2. Percent of Recipients Reporting an Amount for Redesigned and Production ASEC¹

Income Source	Redesign ASEC Percent Provided Amount (range included)	Production ASEC Percent Provided Amount	Percentage Point Difference (Redesign-Production)
Earnings	52.8	43.7	9.1
Wages and Salary	8.0	4.6	3.5
Nonfarm Self-Employment	1.1	0.6	0.5
Farm Self-Employment	0.4	0.2	0.2
Unemployment Compensation	3.0	2.5	0.4
Workers Compensation	0.6	0.3	0.3
Social Security	20.8	10.9	9.9
SSI (Supplemental Security Income)	1.2	1.7	-0.5
Survivor Benefits	1.5	0.7	0.8
Public Assistance	0.3	0.6	-0.3
Veterans Benefits	1.5	0.9	0.7
Disability Benefits	3.5	0.4	3.1
Retirement Income	9.4	4.0	5.4
Interest	45.8	14.0	31.8
Dividends	13.7	4.1	9.7
Rents, Royalties, Estates or Trusts	5.0	2.8	2.2
Pell Grant	2.0	1.0	0.9
Other Education Assistance	1.5	1.5	0.0
Alimony	0.0	0.1	-0.1
Child Support	1.2	1.7	-0.5
Financial Assistance	0.7	0.6	0.1
Other Income	2.2	1.0	1.1

¹ The counts of reported income values are using unedited and unweighted data.

Source: U.S. Census Bureau, Current Population Survey, 2013 Annual Social and Economic Supplement and the 2013 CPS ASEC Content Test

Table 3. Comparison of Aggregate Income Redesigned and Production ASEC¹

Income Source	Percent Difference (Redesign <i>without</i> Range value/Production)	Percent Difference (Redesign <i>with</i> Range value/Production)
Total Income	31*	44*
Total Earnings	30*	43*
Earnings	30*	42*
Wages and Salary	46*	63*
Nonfarm Self-Employment	-58*	-21
Farm Self-Employment	-0.2	7
Unemployment Compensation	12	15
Workers Compensation	48	61*
Social Security	-4	-2
SSI (Supplemental Security Income)	-39*	-39*
Survivor Benefits	-11	16
Public Assistance	9	10
Veterans Benefits	-11	-3
Disability Benefits	488*	556*
Retirement Income	31*	41*
Interest	399*	598*
Dividends	50*	113*
Rents, Royalties, Estates or Trusts	-8	0.7
Pell Grant	61	102*
Other Education Assistance	8	20
Child Support	-7	-4
Financial Assistance	46	52
Other Income	160*	163*

¹ Aggregates calculated using unedited but weighted data.

* Statistically significant at the 90 percent confidence level.

Source: U.S. Census Bureau, Current Population Survey, 2013 Annual Social and Economic Supplement and the 2013 CPS ASEC Content Test