Measuring the Impact of Income Imputation in the Consumer Expenditure Survey: A Multi-year Comparison of Income Data with Estimates from the Current Population Survey

From 1980—the year the Consumer Expenditure Survey (CE) became a continuous survey—until 2004, no procedures were employed to produce estimates for sources of income that respondents acknowledged receiving, but for which they did not provide values. However, the release of 2004 data marked the introduction of imputation for missing income responses. With a number of years of imputed income data now available, it is possible to evaluate the impact and efficacy of imputation by comparing pre- and post-imputation estimates of CE income with estimates from the Current Population Survey (CPS), a large-scale household survey that has employed imputation in producing its income estimates for many years.

Background

Survey managers have applied various methods developed by the statistics community for imputing missing income values when survey participants fail to provide a response. The choice of an appropriate imputation procedure depends on an accurate assessment of the distribution of missing values and the relationship of nonresponse to socioeconomic characteristics of the sample population. To the extent the chosen procedure misidentifies the mechanism leading to nonresponse, the resulting imputed values will lead to biased and inconsistent results when used for analytical purposes.

CE survey managers have been particularly concerned about the ramifications of selecting an improper procedure, because sampled consumer units (CUs) report expenditure data which are expected a priori to be highly correlated with income. Consequently, imputation for missing income was not done; and CE data releases from 1972 to 2003 instead identified sample households as either "complete" or "incomplete" income respondents.[7]

Given the unique requirements any income imputation procedure would have to satisfy, CE and Census staff began a systematic search for an appropriate method. While this research continued, changes were made in the collection instruments in 2001 to improve the reporting of income. Bracketing questions were added to follow the existing questions, so that if a respondent initially refused to report or did not know the amount received, the bracket question asked the respondent to select a range which best reflected the amount received. These bracketed responses added a layer of complexity to the task of choosing an imputation method.

Once the research was completed, the method chosen for the CE was a regression-based procedure that would preserve both means and variances for each source of income. The process produces five imputed values for each missing observation. The first step is to run a regression to obtain coefficients to use in creating imputed values. Random noise is then added to each coefficient and the resulting "shocked" coefficient is used to estimate an imputed value. Additional noise is added to the estimated values to insure that CUs with similar demographic characteristics do not receive similar imputed income. After the five imputed values are created for each missing value, an estimate representing the mean of those five values is calculated. Reported specific values are retained as is. If a respondent reports the value falls within a bracket, the imputed values must fall within the range defined for that bracket.

In a small number of instances, a CU will report not receiving income from any source. Since this is extremely unlikely, the income imputation procedure is run for such CUs with an additional step. A logistic regression based on the characteristics of the CU, such as retirement or student status, is run first to impute receipt status (yes or no) for each source of income. For those sources of income that a CU is imputed to have received, the model is run to produce imputed income values.

Data collection

By comparing CE income estimates with another established source of income data over a time period covering pre- and post-imputation years, one can measure both the impact of imputation on the relationship of aggregate CE income to the independent source, and the efficacy and quality of the imputation method in producing comparable estimates to that source. For this study, CE income data are compared with similar data from the CPS for the years 2002 to 2007.

Comparisons of mean or aggregate pre-tax income between the CE and the CPS have been a staple feature of

[7] See Thesia I. Garner and Laura Blanciforti, "Household Income Reporting: An Analysis of U. S. Consumer Expenditure Survey Data," *Journal of Official Statistics,* Vol. 10, No. 1, 1994, pp. 69-91 for more details.

BLS publications for almost 20 years.[8] These published comparisons were based on CE data before imputation and CPS data that included imputed values.

Income estimates for the CE are from the Interview Survey component of the survey, while the Annual Social and Economic Supplement (ASEC) is the source of comparable CPS income data.

The difference in timing of the collection of income data between the CE and the CPS poses challenges in constructing matching time periods for comparison purposes. The Interview Survey uses a rotating sample design, whereby sample units are being introduced every month. Income data are collected during the 2nd and 5th interviews, covering the 12 months prior to the month of interview. Thus, a CU undergoing their 2nd interview in June 2009 would report wage income received from June 2008 through May 2009.

The ASEC is conducted annually in March—though a limited number of eligible households are interviewed in February and April—and collects data on the previous calendar year's income from all sources. Households completing the ASEC in March 2009 report income for the 2008 calendar year. Conducting the ASEC in March is believed to provide better income data, because most households would either be completing or have just completed preparing tax returns and, thus, would be more likely to remember income sources and amounts.

While the structure and wording of income questions are similar in the CE and the CPS, there are differences that can affect the estimates. In the CE, the respondent reports the amount received from earned income, Social Security, Railroad Retirement, and Supplemental Security Income for each CU member age 14 years and over individually. For each of the remaining sources of income, the respondent reports the amount received by the consumer unit as a whole. In comparison, for the ASEC, the respondent is directed to report the amount received for each source of income by each individual household member 15 years or older.

The CE respondent is asked about the amount received over the last 12 months for each source of income, with the exception of Social Security/Railroad Retirement. As noted earlier, if the respondent either refuses or does not know the amount received, a card with ranges or brackets of income is shown to the respondent who is asked to report which bracket best reflects the amount received. In the ASEC, respondents are asked to report the amount received over the calendar year. Based on the response, they may also be asked for the periodicity of the report (weekly, monthly, etc.).

[8] See text tables 6 and 7, *Consumer Expenditure Survey, 1987*, Bulletin 2354, June 1990; text tables 8 and 9, *Consumer Expenditure Survey, 1990–91*, Bulletin 2425, September 1993; text tables 6 and 7, *Consumer Expenditure Survey, 1992–93*, Bulletin 2462, September 1995; text tables 10 and 11, *Consumer Expenditure Survey, 1994–95*, Bulletin 2492, December 1997; text tables 8 and 9, *Consumer Expenditure Survey, 1996–97*, Report 935, September 1999; text tables 20 and 21, *Consumer Expenditure Survey, 1998–99*, Report 955, November 2001; text tables 3–6, *Consumer Expenditure Survey, 2002–2003*, Report 990, March 2006.

With respect to the contents of the income questions, in general where the Interview Survey questionnaire collects data for an income source in one question, the ASEC contains multiple questions, each collecting a portion of the data for that source. These questions also ask for income data from additional sources. For example, the Interview Survey instrument collects pension and annuity income in one question. The ASEC does so in three questions. One collects such income resulting from retirement, a second collects such income resulting from disability, and the third collects such income originating as a survivor's benefit. Each of these ASEC questions also asks about other sources for retirement, disability, and survivor's benefit income besides pensions and annuities. Three sources of income that are exceptions to this general rule are: wages and salaries, self-employment income, and interest income.

Comparison of CE and CPS income: Sources and time Periods

The ASEC is designed to cover the civilian noninstitutional population, plus those military personnel who live with at least one other civilian adult, on or off base. The CE is also designed to represent the civilian noninstitutional population, plus a portion of the institutional population.

ASEC income data used in this article are derived from a table which CPS produces annually for its internal use. For each income source, the table shows the count of persons and mean amount of income, in total, by those directly reporting income, and by those for which imputation is done. The means and numbers of persons reporting each type of income are multiplied together to obtain aggregate income.

The income categories shown here are a subset of the categories that can be constructed from the detailed income sources reported for the CE and the ASEC. In addition to total aggregate income, results are shown for the following categories: wage and salary income; net nonfarm self-employment income; Social Security and Railroad Retirement income; pensions and annuities; interest; and dividends, rents, royalties, estates and trusts.

As noted earlier, annual estimates of income for the CPS match the calendar year, while the annual estimates of income for the CE Interview Survey cover the year prior to the month of interview. Thus, the creation of an estimator comparable to the CPS has to be resolved for CE income. After due consideration, three estimators of CE income were chosen.

The first replicates the method used for producing income estimates in CE publications.[9] Annual income reported by CUs in their second or fifth interview is divided by 12, thus creating a monthly amount, and then assigned to each of the 3 months covered by the interview. Second-interview income is carried forward through the third and fourth interviews until income data is collected again at the fifth interview. The annual CE estimate for any calendar year will be calculated from all income assigned to that year.

[9] Ibid.

Compared with the CPS estimate, this method creates an estimate using a significant amount of income reported from an earlier time period. Using 2008 as an example, the first month whose interviews would be used in the CE estimate is February 2008. One-twelfth of the income reported in that interview would be assigned to January 2008. However, the 12-month reference period for reporting would run from February 2007 through January 2008, meaning 11 months of the reference period were outside the calendar year of interest.

In fact, the only month whose interviews would span a recall period matching the ASEC calendar year is January of the following year. (For calendar year 2008, interviews conducted in January 2009 would have an annual reference period from January 2008 to December 2008.) This forms the basis for the second method of calculating CE estimates Only 2nd and 5th interviews conducted in January of the following year are used to construct the estimate. While such interviews exactly match the period covered by the ASEC, the number of interviews is very small at about 1/6th of the total number of interviews conducted in any one quarter. This would be detrimental to the statistical reliability of the estimate, potentially leading to wide annual swings in the estimate, particularly for some of the more thinly reported categories of income.

Because of the conceptual attractiveness of the second method in matching the ASEC time period, the third method for creating CE estimates essentially expands on it. Centering on January interviews, this method adds 2nd and 5th interviews conducted between October of the previous year and April of the current year, or three months before and after January, to expand the number of interviews used to create the estimate. For all three methods, weighting adjustments are made to insure that the aggregate estimates are representative of the entire population.

Comparison of CE with CPS: Results

Levels and ratios

The impact of imputation in the CE can be seen in text table 4 that shows aggregate incomes, total and by source, from the CE and CPS, along with the ratio of CE to CPS estimates for the years 2002–07. The CE did not impute in the first 2 years of this period, so the estimates are based on all reported income, regardless of whether the CU was considered a complete or incomplete income respondent.

Imputation significantly raises CE total income, bringing it into near equality with CPS estimates. On average, imputation adds about 20 percentage points to the CE/CPS ratio. For the pre-imputation years of 2002–-03, the mean CE/CPS ratio for total income, taking into account each estimator of CE income, is about 0.75. The average ratio for the post-imputation years of 2004–07 rises to about 0.94.

This increase in the ratio for total income is largely driven by the increase in wage and salary income after imputation was introduced in the CE. Wage and salary income comprises about 80 percent of total CE income and 77 percent of total CPS income over this period. Before imputation, CE total income averages about $1,650 billion less than CPS total income, with CE wage and salary income trailing CPS wage and salary income by about $1,123 billion. The CE/CPS ratio for wage and salary income averages about 0.78. After imputation, the gaps between total income and wage and salary income in the CE and CPS narrow to an average of about $446 billion and $143 billion, respectively. Wage and salary income for the CE almost matches the CPS, with an average ratio of more than 0.97.

Social Security and Railroad Retirement income is the next largest component of total income in the CE and CPS. The story here is similar to the one for wage and salary income. The mean 2002–03 CE/CPS ratio is just over 0.80 [.8045], while the 2004–07 ratio increases to about 0.95.

Imputation in the CE has a larger impact on the CE/CPS ratio for nonfarm self-employment income, the third largest contributor to total income, than for any other component of income. In fact, the ratio rises more than 50 percentage points after imputation, going from about 0.63 to about 1.15, making it the only source of income for which the CE estimate is, on average, higher than the CPS estimate.

Pension and annuity income is the next largest component of total income. Similar to Social Security/Railroad Retirement income, the CE/CPS ratio rises an almost equivalent amount after imputation. For 2002–03, the ratio averagesjust under 0.81, increasing to slightly under 0.94 for 2004–07.

No other income component represents as much as 2 percent of total income in the CE. For the CPS, however, two categories—interest and dividends, rents, royalties, estates and trusts—each make up more than 2 percent of total income. As such, the CE/CPS ratios for these items are fairly low, and historically have been among the lowest in the published tables. While still averaging 42 percent of the CPS estimate, the 2007 CE/CPS ratio rose 10 percentage points over the average of the previous 3 years. In addition, interest income is one of the few components whose CE/CPS ratio does not increase appreciably after imputation. The aggregate pre-imputation interest income estimate in the CE is about 28 percent of the CPS estimate. After imputation, the CE interest income estimate increases to more than 34 percent of the CPS estimate.

The initial level of the CE/CPS ratio is higher for income from dividends, rents, royalties, estates, and trusts than for interest income, and imputation has a marked impact on the ratio. The ratio for 2002–03 averages midway between 0.42 and 0.43, and increases to an average of 0.51 after imputation.

To complete the picture on the impact of imputation on the relationship between CE with CPS estimates, the next section looks more closely at the magnitude of imputation as it affects the aggregate estimates for total income and each source of income over the 2004–07 period where imputation is done for both surveys.

Text table 4. **Aggregate pretax income and ratios for Current Population Survey (CPS) and for three alternative measures of Consumer Expenditure Survey (CE), by total and source of income, 2002–07**

[In billions of dollars]

Year and survey	Total		Wage and salary income		Nonfarm self-employment income		Social Security and Railroad Retirement income	
	Aggregate	CE/CPS ratio	Aggregate	CE/CPS ratio	Aggregate	CE/CPS ratio	Aggregate	CE/CPS ratio
2002								
CPS	6,515.7		5,078.4		302.6		389.8	
CE, reference year 2002	4,629.0	71.0	3,736.3	73.6	197.8	65.4	312.9	80.3
CE, January 2003	4,858.1	74.6	3,880.9	76.4	204.3	67.5	299.1	76.7
CE, October 2002 - April 2003	4,838.7	74.3	3,890.2	76.6	198.6	65.6	315.9	81.0
2003								
CPS	6,707.2		5,157.1		331.6		410.1	
CE, reference year 2003	5,007.9	74.7	4,042.1	78.4	194.6	58.7	325.4	79.3
CE, January 2004	5,328.2	79.4	4,295.7	83.3	210.7	63.5	343.8	83.8
CE, October 2003 - April 2004	5,109.5	76.2	4,125.7	80.0	194.3	58.6	334.7	81.6
2004								
CPS	6,939.6		5,346.6		321.7		431.8	
CE, reference year 2004	6,322.2	91.1	5,021.3	93.9	338.4	105.2	400.0	92.6
CE, January 2005	6,689.9	96.4	5,119.7	95.8	566.6	176.1	431.0	99.8
CE, October 2004 - April 2005	6,636.6	95.6	5,206.3	97.4	435.1	135.2	411.4	95.3
2005								
CPS	7,352.4		5,630.6		366.5		449.2	
CE, reference year 2005	6,872.5	93.5	5,432.6	96.5	430.1	117.4	431.0	96.0
CE, January 2006	6,872.1	93.5	5,394.3	95.8	558.5	152.4	441.1	98.2
CE, October 2005 - April 2006	6,940.3	94.4	5,522.8	98.1	423.4	115.5	441.9	98.4
2006								
CPS	7,800.6		5,967.4		407.7		471.5	
CE, reference year 2006	7,170.8	91.9	5,718.6	95.8	414.0	101.5	446.0	94.6
CE, January 2007	7,332.3	94.0	5,994.1	100.4	445.0	109.1	409.1	86.8
CE, October 2006 - April 2007	7,286.8	93.4	5,815.2	97.5	380.1	93.2	452.2	95.9
2007								
CPS	8,013.6		6,141.5		390.6		500.2	
CE, reference year 2007	7,559.1	94.3	6,047.3	98.5	390.8	100.1	464.6	92.9
CE, January 2008	7,674.0	95.8	6,179.7	100.6	307.2	78.7	462.8	92.5
CE, October 2007 - April 2008	7,610.1	95.0	6,094.2	99.2	369.3	94.6	483.8	96.7

Text table 4. **Continued—Aggregate pretax income and ratios for Current Population Survey (CPS) and for three alternative measures of Consumer Expenditure Survey (CE), by total and source of income, 2002–07**

[In billions of dollars]

Year and survey	Pensions and annuities		Interest		Dividends, rents, royalties, and estates and trusts	
	Aggregate	CE/CPS ratio	Aggregate	CE/CPS ratio	Aggregate	CE/CPS ratio
2002						
CPS	262.5		145.4		119.7	
CE, reference year 2002	178.7	68.1	36.9	25.4	50.3	42.1
CE, January 2003	217.4	82.8	39.8	27.4	48.9	40.9
CE, October 2002 - April 2003	203.4	77.5	41.7	28.7	57.3	47.8
2003						
CPS	276.3		148.3		152.4	
CE, reference year 2003	226.3	81.9	47.9	32.3	60.7	39.8
CE, January 2004	252.6	91.5	38.2	25.7	63.2	41.5
CE, October 2003 - April 2004	231.8	83.9	43.4	29.2	65.6	43.0
2004						
CPS	291.9		163.2		157.0	
CE, reference year 2004	280.1	96.0	59.0	36.2	85.3	54.3
CE, January 2005	300.0	102.8	59.0	36.1	50.6	32.2
CE, October 2004 - April 2005	316.3	108.3	49.8	30.5	81.0	51.6
2005						
CPS	310.3		186.9		169.8	
CE, reference year 2005	290.4	93.6	61.9	33.1	99.9	58.8
CE, January 2006	268.1	86.4	37.6	20.1	45.1	26.6
CE, October 2005 - April 2006	291.1	93.8	61.3	32.8	71.9	42.3
2006						
CPS	314.9		229.2		186.7	
CE, reference year 2006	283.5	90.0	69.7	30.4	106.9	57.3
CE, January 2007	213.6	67.8	66.8	29.1	80.1	42.9
CE, October 2006 - April 2007	302.6	96.1	85.7	37.4	109.5	58.6
2007						
CPS	323.3		242.8		191.0	
CE, reference year 2007	302.0	93.4	97.0	39.9	112.8	59.1
CE, January 2008	338.8	104.8	112.6	46.4	137.0	71.7
CE, October 2007 - April 2008	300.1	92.8	94.9	39.1	109.7	57.4

The role of imputation

Text table 5 shows the percentage of CE and CPS aggregate income for the sources included in text table 4 accounted for by imputation for the 4 years imputation has been done in the CE. Looking at total income, more than 38 percent of the CE aggregate is attributable to imputation compared with over 32 percent in the CPS. The percentage of imputed income in the CE has risen each year since the inception of imputation, while the percentage has remained stable in the CPS. Even though the CPS aggregates are larger than CE aggregates, a difference ranging between $390 and $537 billion, the dollar amounts imputed in the CE are uniformly larger than the amounts imputed in the CPS. The difference in imputed aggregate income has risen from about $35 billion in 2004 to about $562 billion in 2007.

As noted earlier, wage and salary income is the predominant component of total income, and consequently the contribution of imputation to aggregate wage and salary income essentially matches the contribution to total income. Imputation is a bigger factor in the CE estimates than the CPS estimates, both in terms of percentage of the estimate and actual dollar value. The percent of CE wage and salary income resulting from imputation has risen each year since 2004, going from 37.0 percent in 2004 to 41.9 percent in 2007. Over the same period, imputation accounts for about 30 percent of CPS wage and salary income. The amount imputed in the CE exceeds that imputed in the CPS by about $220 billion for 2004, rising to about $755 billion in 2007.

The two components of total income representing retirement income show remarkably similar patterns with each other and in relation to the CPS. Though starting from a lower level, the average percentage of imputed income in the CE estimates for Social Security and Railroad Retirement income and income from pensions and annuities increases each year from 2004 to 2007. For Social Security and Railroad Retirement, the percentage goes from 20.2 percent to about 23.6 percent; for pensions and annuities, the percentage rises from 18.3 percent in 2004 to 21.8 percent in 2007. Nonresponse has been less of an issue for the CE than for the CPS, as on average, the CPS imputes 33.6 percent of Social Security and Railroad Retirement income and 32.6 percent of income from pensions and annuities over the 4 years. With one exception, the income directly reported is about $20 billion to $55 billion more for Social Security income and $10 billion to $60 billion more for income from pensions and annuities in the CE than in the CPS.

Over one-half of the CE estimates for nonfarm self-employment income is derived from imputation. As with the sources previously mentioned, the average percentage of imputed income rises each year, but there is a sizable 15-percentage-point increase from 57.5 percent to 72.6 percent between 2005 and 2007. Imputation in the CPS averages 42.7 percent over the 4-year period. The amount imputed in the CE estimates is significantly greater than the amount imputed in the CPS each year, though somewhat paradoxically, the average difference is smallest, at about $92 billion in 2007, the year in which imputed income comprises the largest proportion of the CE estimate.

Interest income and, to a lesser degree, income from dividends, rents, royalties, and estates and trusts show sharply different response patterns between the CE and the CPS. The percentage of imputed income in the CE estimates for this category has ranged from 45.8 percent to 58.6 percent. The endpoints of the range are from 2004 and 2005, respectively, years where the percentage of income imputed in the CE estimate derived from January interviews only differed considerably from the percentage of income imputed for estimates derived by the other two variables. In 2006 and 2007, all three estimators displayed similar percentages of imputed income. The CPS derives an average of 71.9 percent of their annual estimates from imputation, and the actual dollar amounts imputed dwarf the amounts of imputed interest income in the CE by $100 billion to $120 billion.

After averaging about 37 percent from 2004 to 2006, the average percentage of imputed income for CE dividends, rents, royalties, estates and trusts leaped to over 51 percent in 2007. CPS estimates for dividends, rents, royalties, and estates and trusts have consisted of a steadily increasing percentage of imputed income over the 4-year period, rising from 47.9 percent in 2004 to 51.1 percent in 2007, matching the CE imputation percentage. In actual dollar amounts, the CPS uniformly imputes much higher amounts than the CE; on average, $86.8 billion dollars are imputed annually in the CPS, compared with $50.4 billion in the CE.

Text table 5. **Aggregate pretax income and percent distribution, total and by reported and allocated status, by source of income, Current Population Survey (CPS) and three alternative measures of Consumer Expenditure Survey (CE), 2004–07**

[In billions of dollars]

Year, category of income, and survey	Total	Reported	Percent reported	Allocated	Percent allocated
2004					
Total aggregate income:					
CPS	6,939.6	4,603.6	66.3	2,336.0	33.7
CE, reference year 2004	6,322.2	3,944.6	62.4	2,377.5	37.6
CE, January 2005	6,689.9	4,318.1	64.5	2,371.7	35.5
CE, October 2004 - April 2005	6,636.6	4,274.2	64.4	2,362.3	35.6
Wage and salary income:					
CPS	5,346.6	3,672.9	68.7	1,673.8	31.3
CE, reference year 2004	5,021.3	3,084.1	61.4	1,937.3	38.6
CE, January 2005	5,119.7	3,251.8	63.5	1,868.0	36.5
CE, October 2004 - April 2005	5,206.3	3,331.5	64.0	1,874.8	36.0
Nonfarm self-employment income:					
CPS	321.7	183.5	57.0	138.3	43.0
CE, reference year 2004	338.4	145.2	42.9	193.3	57.1
CE, January 2005	566.6	261.2	46.1	305.4	53.9
CE, October 2004 - April 2005	435.1	179.9	41.3	255.2	58.7
Social Security and Railroad Retirement income:					
CPS	431.8	283.1	65.6	148.6	34.4
CE, reference year 2004	400.0	312.4	78.1	87.7	21.9
CE, January 2005	431.0	349.6	81.1	81.4	18.9
CE, October 2004 - April 2005	411.4	329.9	80.2	81.5	19.8
Pensions and annuities:					
CPS	291.9	193.6	66.3	98.4	33.7
CE, reference year 2004	280.1	221.4	79.0	58.7	21.0
CE, January 2005	300.0	256.9	85.6	43.1	14.4
CE, October 2004 - April 2005	316.3	254.5	80.5	61.8	19.5
Interest:					
CPS	163.2	41.3	25.3	121.8	74.7
CE, reference year 2004	59.0	27.8	47.0	31.3	53.0
CE, January 2005	59.0	38.8	65.9	20.1	34.1
CE, October 2004 - April 2005	49.8	24.7	49.7	25.0	50.3
Dividends, rents, royalties, and estates and trusts:					
CPS	157.0	81.8	52.1	75.3	47.9
CE, reference year 2004	85.3	53.7	62.9	31.6	37.1
CE, January 2005	50.6	34.4	67.9	16.3	32.1
CE, October 2004 - April 2005	81.0	48.6	60.0	32.4	40.0
2005					
Total aggregate income:					
CPS	7,352.2	5,026.8	68.4	2,325.7	31.6
CE, reference year 2005	6,872.5	4,322.3	62.9	2,550.1	37.1
CE, January 2006	6,872.1	4,332.7	63.0	2,539.4	37.0
CE, October 2005 - April 2006	6,940.3	4,405.6	63.5	2,534.6	36.5
Wage and salary income:					
CPS	5,630.6	4,002.1	71.1	1,628.4	28.9
CE, reference year 2005	5,432.6	3,376.8	62.2	2,055.8	37.8
CE, January 2006	5,394.3	3,400.0	63.0	1,994.5	37.0
CE, October 2005 - April 2006	5,522.8	3,493.0	63.2	2,029.8	36.8

Text table 5. Continued—**Aggregate pretax income and percent distribution, total and by reported and allocated status, by source of income, Current Population Survey (CPS) and three alternative measures of Consumer Expenditure Survey (CE), 2004–07**

[In billions of dollars]

Year, category of income, and survey	Total	Reported	Percent reported	Allocated	Percent allocated
2005					
Nonfarm self-employment income:					
CPS	366.5	216.4	59.1	150.1	41.0
CE, reference year 2005	430.1	187.7	43.6	242.4	56.4
CE, January 2006	558.5	229.6	41.1	328.9	58.9
CE, October 2005 - April 2006	423.4	181.0	42.8	242.3	57.2
Social Security and Railroad Retirement income:					
CPS	449.2	301.8	67.2	147.5	32.8
CE, reference year 2005	431.0	341.0	79.1	90.1	20.9
CE, January 2006	441.1	351.8	79.8	89.3	20.2
CE, October 2005 - April 2006	441.9	340.3	77.0	101.6	23.0
Pensions and annuities:					
CPS	310.3	211.4	68.1	98.8	31.9
CE, reference year 2005	290.4	229.5	79.0	60.9	21.0
CE, January 2006	268.1	223.2	83.2	44.9	16.8
CE, October 2005 - April 2006	291.1	224.9	77.3	66.2	22.7
Interest:					
CPS	186.9	54.8	29.3	132.1	70.7
CE, reference year 2005	61.9	29.6	47.8	32.4	52.2
CE, January 2006	37.6	12.7	33.6	25.0	66.4
CE, October 2005 - April 2006	61.3	26.1	42.7	35.1	57.3
Dividends, rents, royalties, and estates and trusts:					
CPS	169.8	87.3	51.4	82.5	48.6
CE, reference year 2005	99.9	63.7	63.8	36.2	36.2
CE, January 2006	45.1	22.3	49.5	22.8	50.5
CE, October 2005 - April 2006	71.9	45.7	63.6	26.2	36.4
2006					
Total aggregate income:					
CPS	7,800.6	5,226.9	67.0	2,573.7	33.0
CE, reference year 2006	7,170.8	4,354.7	60.7	2,816.2	39.3
CE, January 2007	7,332.3	4,435.1	60.5	2,897.3	39.5
CE, October 2006 - April 2007	7,286.8	4,492.4	61.7	2,794.4	38.3
Wage and salary income:					
CPS	5,967.4	4,163.5	69.8	1,803.9	30.2
CE, reference year 2006	5,718.6	3,447.2	60.3	2,271.5	39.7
CE, January 2007	5,994.1	3,685.0	61.5	2,309.1	38.5
CE, October 2006 - April 2007	5,815.2	3,566.6	61.3	2,248.7	38.7
Nonfarm self-employment income:					
CPS	407.7	227.3	55.7	180.4	44.2
CE, reference year 2006	414.0	144.9	35.0	269.1	65.0
CE, January 2007	445.0	109.7	24.7	335.3	75.3
CE, October 2006 - April 2007	380.1	132.8	34.9	247.3	65.1
Social Security and Railroad Retirement income:					
CPS	471.5	312.7	66.3	158.8	33.7
CE, reference year 2006	446.0	345.5	77.5	100.6	22.5
CE, January 2007	409.1	309.2	75.6	99.9	24.4
CE, October 2006 - April 2007	452.2	349.9	77.4	102.3	22.6

Text table 5. **Continued—Aggregate pretax income and percent distribution, total and by reported and allocated status, by source of income, Current Population Survey (CPS) and three alternative measures of Consumer Expenditure Survey (CE), 2004–07**

[In billions of dollars]

Year, category of income, and survey	Total	Reported	Percent reported	Allocated	Percent allocated
2006					
Pensions and annuities:					
CPS	314.9	212.0	67.3	102.9	32.7
CE, reference year 2006	283.5	221.1	78.0	62.4	22.0
CE, January 2007	213.6	160.8	75.3	52.9	24.7
CE, October 2006 - April 2007	302.6	228.1	75.4	74.5	24.6
Interest:					
CPS	229.2	67.0	29.2	162.1	70.7
CE, reference year 2006	69.7	31.0	44.5	38.7	55.5
CE, January 2007	66.8	26.9	40.3	39.9	59.7
CE, October 2006 - April 2007	85.7	40.8	47.6	44.9	52.4
Dividends, rents, royalties, and estates and trusts:					
CPS	186.7	94.8	50.8	91.9	49.2
CE, reference year 2006	106.9	71.1	66.5	35.8	33.5
CE, January 2007	80.1	57.3	71.6	22.8	28.4
CE, October 2006 - April 2007	109.5	67.6	61.7	41.9	38.3
2007					
Total aggregate income:					
CPS	8,013.6	5,425.3	67.7	2,588.3	32.3
CE, reference year 2007	7,559.1	4,505.3	59.6	3,053.8	40.4
CE, January 2008	7,674.0	4,252.7	55.4	3,421.3	44.6
CE, October 2007 - April 2008	7,610.1	4,634.0	60.9	2,976.1	39.1
Wage and salary income:					
CPS	6,141.5	4,336.8	70.6	1,804.7	29.4
CE, reference year 2007	6,047.3	3,590.9	59.4	2,456.4	40.6
CE, January 2008	6,179.7	3,343.8	54.1	2,835.9	45.9
CE, October 2007 - April 2008	6,094.2	3,708.2	60.8	2,386.0	39.2
Nonfarm self-employment income:					
CPS	390.6	223.9	57.3	166.6	42.7
CE, reference year 2007	390.8	116.7	29.9	274.1	70.1
CE, January 2008	307.2	83.7	27.2	223.6	72.8
CE, October 2007 - April 2008	369.3	92.2	25.0	277.1	75.0
Social Security and Railroad Retirement income:					
CPS	500.2	332.8	66.5	167.4	33.5
CE, reference year 2007	464.6	352.5	75.9	112.0	24.1
CE, January 2008	462.8	354.3	76.6	108.5	23.4
CE, October 2007 - April 2008	483.8	371.4	76.8	112.4	23.2

Text table 5. Continued—**Aggregate pretax income and percent distribution, total and by reported and allocated status, by source of income, Current Population Survey (CPS) and three alternative measures of Consumer Expenditure Survey (CE), 2004–07**

[In billions of dollars]

Year, category of income, and survey	Total	Reported	Percent reported	Allocated	Percent allocated
2007					
Pensions and annuities:					
CPS	323.3	219.3	67.8	104.0	32.2
CE, reference year 2007	302.0	231.2	76.5	70.9	23.5
CE, January 2008	338.8	266.0	78.5	72.8	21.5
CE, October 2007 - April 2008	300.1	239.2	79.7	60.9	20.3
Interest:					
CPS	242.8	69.4	28.6	173.5	71.4
CE, reference year 2007	97.0	45.6	47.0	51.4	53.0
CE, January 2008	112.6	50.4	44.7	62.2	55.3
CE, October 2007 - April 2008	94.9	45.8	48.2	49.1	51.8
Dividends, rents, royalties, and estates and trusts:					
CPS	191.0	93.4	48.9	97.6	51.1
CE, reference year 2007	112.8	63.3	56.1	49.5	43.9
CE, January 2008	137.0	50.4	54.0	86.6	63.2
CE, October 2007 - April 2008	109.7	57.9	52.7	51.8	47.3