

Assessing the Effects of Imputation on Income Estimates in the U.S. Consumer Expenditure Survey: Comparison with the Current Population Survey

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Outline

- Imputation in the CE
- Methodological Differences between CE and CPS
 - ▶ Population Coverage
 - ▶ Timing of Data Collection
 - ▶ Coverage of Questions
 - ▶ Design of Questions
- Concordance of Income Items
- Selection of CE Estimators
- Analysis by Source of Income

Imputation in the CE

- No imputation for income nonresponse through 2003 and sample consumer units (CU's) identified as "complete" or "incomplete" income reporters in data releases.
- Paulin and Ferraro (1994) – examined issues related to selection of imputation method
 - ▶ Model-based method or hot deck method
 - ▶ Imputation at CU level or individual member level

Imputation in the CE – cont.

- Paulin and Ferraro (1994) – examined issues related to selection of imputation method – cont.
 - ▶ Imputation for total income or for each component
 - ▶ Inclusion of expenditures in models for predicting income
- Bracketing questions added to income questions in survey instrument in 2001 impact choice of imputation method.

Imputation in the CE – cont.

- Regression-based method chosen
 - ▶ Produces five imputed values for each missing observation
 - ▶ Coefficients obtained from regression model
 - ▶ Random noise added to coefficients
 - ▶ Imputed value is estimated
 - ▶ Additional noise added to insure CU's with similar characteristics receive different imputed income estimates

Imputation in the CE – cont.

- Regression-based method chosen – cont.
 - ▶ If bracketed value originally reported, imputed values must fall within bracket
 - ▶ Reported specific values are retained as is

Methodological Differences - CE and CPS

- Population coverage
 - ▶ CE designed to represent civilian noninstitutional population, plus portion of institutional population, including:
 - Boarding houses
 - College dormitories
 - Permanent living quarters in hotels & motels
 - Mobile home parks
 - ▶ CE excludes military personnel living on base

Methodological Differences - CE and CPS – cont.

- ▶ CPS designed to represent civilian noninstitutional population, plus military personnel who live with at least one other civilian adult
- Timing of data collection
 - ▶ CE – Quarterly Interview Survey
 - Income collected at 2nd and 5th interviews
 - Income questions cover 12 months prior to interview month
 - CU's enter (and leave) survey every month due to rotating sample design

Methodological Differences - CE and CPS - cont.

- Timing of data collection – cont.
 - ▶ CE – Quarterly Interview Survey – cont.
 - As an example:
 - A CU entering survey (1st interview) in November 2008 will have 2nd interview in February 2009.
 - CU will report income at 2nd interview covering 12-month period from February 1, 2008 through January 31, 2009
 - ▶ CPS – Annual Social and Economic Supplement
 - Income collected annually each March (some collected in February and April)
 - Income questions cover prior calendar year

Methodological Differences - CE and CPS - cont.

- Timing of data collection – cont.
 - ▶ CPS – Annual Social and Economic Supplement – cont.
 - As an example, a household completing ASEC in March 2008 reports income for calendar year 2007.
- Coverage of Questions
 - ▶ CE – Quarterly Interview Survey
 - Respondent instructed to report amount received from earned income, Social Security/Railroad Retirement, and Supplemental Security Income for each member of the CU 14 and over

Methodological Differences - CE and CPS - cont.

■ Coverage of Questions – cont.

▶ CE – Quarterly Interview Survey – cont.

- For all remaining sources of income, respondent reports amount received by the CU as a whole
- Respondent is asked to about the amount received over the last 12 months for each source of income with one exception
- For Social Security/Railroad Retirement, respondent reports the amount of the last payment received

Methodological Differences - CE and CPS - cont.

- Coverage of Questions – cont.
 - ▶ CE – Quarterly Interview Survey – cont.
 - If respondent cannot report amount of income received, respondent is asked to select an income bracket
 - ▶ CPS – Annual Social and Economic Supplement
 - Respondent instructed to report income for all income sources for each household member 15 and over
 - For income received on regular basis, such as wages and salaries, respondent first asked the time period

Methodological Differences - CE and CPS - cont.

- Coverage of Questions – cont.
 - ▶ CPS – Annual Social and Economic Supplement – cont.
 - over which income amount can be most easily recalled, followed by amount received over that period
 - For other income, respondent first reports an amount received over past year, then time period covered by that amount

Methodological Differences - CE and CPS - cont.

■ Design of Questions

▶ Wages and salaries

- CE asks for amount received for all jobs together
- CPS asks for amount from longest-held job first, then all other jobs combined
- CE includes severance pay and military allotments, while CPS collects as part of miscellaneous income at end of instrument

▶ Nonfarm and farm business income (or loss)

- CE asks for nonfarm business and farm income separately

Methodological Differences - CE and CPS - cont.

■ Design of Questions – cont.

- ▶ Nonfarm and farm business income (or loss) – cont.
 - CPS combines nonfarm and farm business income in one question, but distinguishes longest-held from all other
- ▶ Social Security and Railroad Retirement
 - CE collects payments in one question, and includes survivor and disability benefits as well as retirement benefits

Methodological Differences - CE and CPS - cont.

- Design of Questions – cont.
 - ▶ Social Security and Railroad Retirement – cont.
 - CPS collects Social Security payments received by household member directly or for child under 19 in household in one question
 - CPS collects Railroad Retirement as portion of three questions on retirement income, survivor benefits, and health/disability benefits
 - ▶ Interest – CE and CPS questions are similar, however CPS probes for more sources of interest income

Methodological Differences - CE and CPS - cont.

- Design of Questions – cont.
 - ▶ Dividends, royalties, estates and trusts
 - CE asks for amount received from these sources in one question
 - CPS asks for dividends from stocks and mutual funds separately
 - CPS asks for trust and estate income in two places
 - one as a source for survivor benefits, the other as a class of property income
 - CPS asks for net royalty income as a class of property income

Methodological Differences - CE and CPS - cont.

- Design of Questions – cont.
 - ▶ Pension and annuity income
 - CE asks for amount received, whether due to retirement, disability, or as a survivor benefit in one question
 - As with Railroad Retirement, CPS asks for such income as part of three questions on retirement income, survivor benefits, and health/disability benefits
 - CPS asks for foreign government pension income as a source of miscellaneous income in final income question

Methodological Differences - CE and CPS - cont.

- Design of Questions – cont.
 - ▶ Unemployment compensation
 - CE asks for amount of unemployment compensation and supplemental unemployment compensation in one question
 - CPS asks for amount in three questions – one for state or federal compensation, one for supplemental compensation, and one for union unemployment or strike benefits
 - ▶ Worker's compensation and Veteran's benefits
 - CE asks respondents to combine income from these sources, excluding retirement benefits from the latter

Methodological Differences - CE and CPS - cont.

- Design of Questions – cont.
 - ▶ Worker's compensation and Veteran's benefits – cont.
 - CPS asks for worker's compensation separately, and in association with survivor benefits and health/disability income
 - CPS asks for veteran's benefits in its own question
 - ▶ Public assistance
 - CE asks for amount received as public assistance or welfare in one question, though examples of sources have changed
 - 2002 – AFDC, grants from Job Corps

Methodological Differences - CE and CPS - cont.

■ Design of Questions – cont.

▶ Public assistance – cont.

- CE asks for amount received as public assistance or welfare in one question, though examples of sources have changed – cont.
 - Post-2002 – cash assistance from state/local program, such as TANF, or short term emergency help
- CPS asks for cash assistance received from state/local program with name of representative state program as example
- CPS also lists welfare, emergency assistance, and other short-term cash assistance among types of income included in miscellaneous income

Methodological Differences - CE and CPS - cont.

- Design of Questions – cont.
 - ▶ Rental income
 - CE asks for rental income in two questions – one for income or loss from roomers or boarders, one for income or loss from other rental units
 - As part of property income question, CPS also asks for net income from rental property and receipts from roomers or boarders
 - ▶ Regular income from alimony or other sources, such as persons outside of CU
 - CE asks for amount received from these sources in one question

Methodological Differences - CE and CPS - cont.

- Design of Questions – cont.
 - ▶ Regular income from alimony or other sources, such as persons outside of CU
 - CE asks for amount received from these sources in one question
 - CPS asks for amount in two questions – one from alimony payments, one for regular financial assistance from friends or relatives not in household
 - ▶ Supplemental Security Income and child support payment (not lump sum)– CE and CPS questions are similar

Methodological Differences - CE and CPS - cont.

- Design of Questions – cont.
 - ▶ All other income (Miscellaneous income)
 - CE asks global other income question, with sources such as cash scholarships and fellowships, stipends not based on working, and care of foster children
 - All other income from a source not specified in previous questions is to be included in this global question
 - CPS asks for amounts for educational assistance which includes scholarships and grants; some assistance reported here, such as from non-household members may be reported elsewhere in CE

Methodological Differences - CE and CPS - cont.

- Design of Questions – cont.
 - ▶ All other income (Miscellaneous income) – cont.
 - CPS asks for amount of foster child care payments and any other income not already covered in previous questions in the miscellaneous income question at end of instrument

Concordance of Income Items

- Total aggregate income
 - ▶ Wage and salary income
 - ▶ Nonfarm self-employment income
 - ▶ Farm self-employment income
 - ▶ Social Security and Railroad Retirement income
 - ▶ Pensions and annuities
 - ▶ Interest
 - ▶ Dividends, rents, royalties, estates and trusts
 - ▶ Child support

Concordance of Income Items – cont.

- Total aggregate income – cont.
 - ▶ Supplemental Security Income
 - ▶ Unemployment compensation
 - ▶ Workers' compensation and veterans' benefits
 - ▶ Public assistance
 - ▶ All other income, including accident & temporary insurance, educational assistance, alimony, financial assistance

Selection of CE Estimators

■ CE – Ref Yr.

- ▶ Estimates are based on income reported in interviews 2 and 5 in January of the year following the reference year. Thus, for 2004, estimates are based on income reported in 2nd and 5th interviews conducted in January 2005.

■ CE – Jan Ref Yr. + 1

- ▶ Estimates are based on income reported in interviews 2 and 5 in January of the year following the reference year. Thus, for 2004,

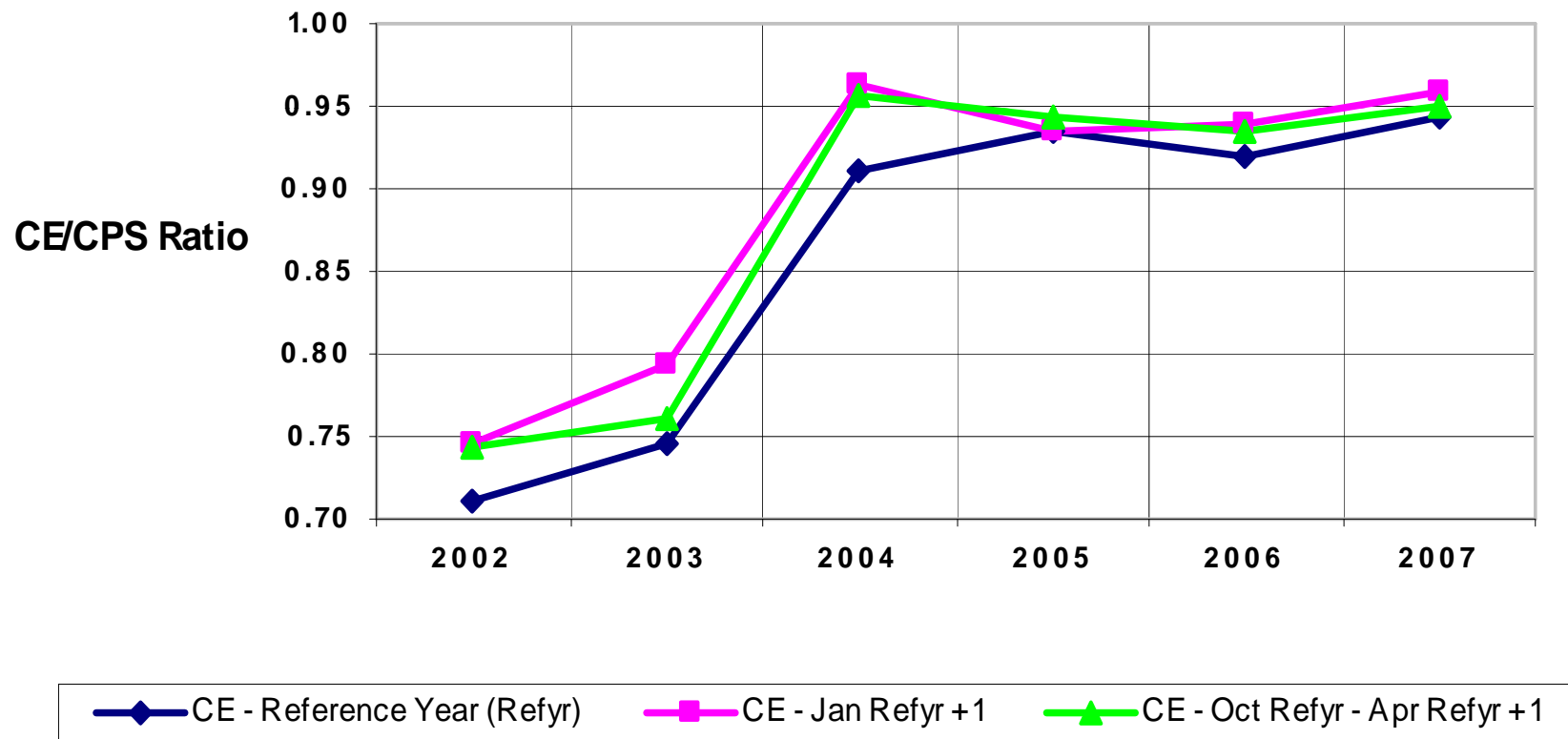
Selection of CE Estimators – cont.

- CE – Jan Ref Yr. +1 – cont.
 - ▶ estimates are based on income reported in 2nd and 5th interviews conducted in January 2005.
- CE – Oct Ref Yr. - Apr Ref Yr. +1
 - ▶ Estimates are based on income reported in interviews 2 and 5 between October of the reference year and April of the year following the reference year. Thus, for 2004, estimates are based on income reported in 2nd and 5th interviews conducted between October 2004 and April 2005.

Analysis by Source of Income

Total income

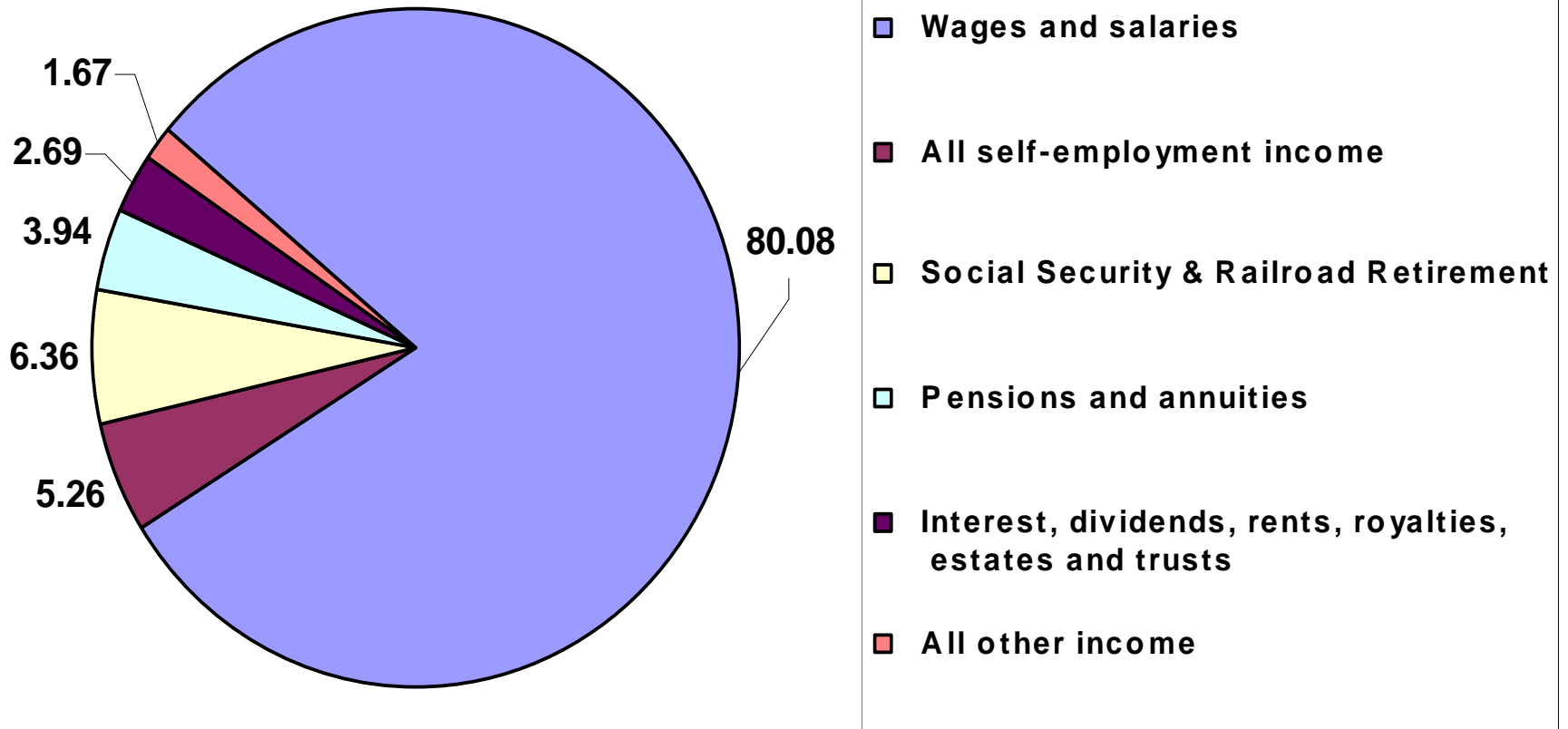
CE/CPS Ratio for Total Income



Total income

	Aggregate (billions of \$)	CE/CPS ratio	Percent imputed
2007			
CPS	8,013.6		32.3
CE - Reference Year 2007	7,559.1	94.3	40.4
CE - Jan 2008	7,674.0	95.8	44.6
CE - Oct 2007 - Apr 2008	7,610.1	95.0	39.1
2006			
CPS	7,800.6		33.0
CE - Reference Year 2006	7,170.8	91.9	39.3
CE - Jan 2007	7,332.3	94.0	39.5
CE - Oct 2006 - Apr 2007	7,286.8	93.4	38.3
2005			
CPS	7,352.4		31.6
CE - Reference Year 2005	6,872.5	93.5	37.1
CE - Jan 2006	6,872.1	93.5	37.0
CE - Oct 2005 - Apr 2006	6,940.3	94.4	36.5
2004			
CPS	6,939.6		33.7
CE - Reference Year 2004	6,322.2	91.1	37.6
CE - Jan 2005	6,689.9	96.4	35.5
CE - Oct 2004 - Apr 2005	6,636.6	95.6	35.6
2003			
CPS	6,707.2		
CE - Reference Year 2003	5,007.9	74.7	
CE - Jan 2004	5,328.2	79.4	
CE - Oct 2003 - Apr 2004	5,109.5	76.2	
2002			
CPS	6,515.7		
CE - Reference Year 2002	4,629.0	71.0	
CE - Jan 2003	4,858.1	74.6	
CE - Oct 2002 - Apr 2003	4,838.7	74.3	

Percentage Distribution of CE Income by Source, 2007, Oct Refyr - Apr Refyr + 1



Wage and salary income

	Aggregate (billions of \$)	CE/CPS ratio	Percent imputed
2007			
CPS	6,141.5		29.4
CE - Reference Year 2007	6,047.3	98.5	40.6
CE - Jan 2008	6,179.7	100.6	45.9
CE - Oct 2007 - Apr 2008	6,094.2	99.2	39.2
2006			
CPS	5,967.4		30.2
CE - Reference Year 2006	5,718.6	95.8	39.7
CE - Jan 2007	5,994.1	100.4	38.5
CE - Oct 2006 - Apr 2007	5,815.2	97.5	38.7
2005			
CPS	5,630.6		28.9
CE - Reference Year 2005	5,432.6	96.5	37.8
CE - Jan 2006	5,394.3	95.8	37.0
CE - Oct 2005 - Apr 2006	5,522.8	98.1	36.8
2004			
CPS	5,346.6		31.3
CE - Reference Year 2004	5,021.3	93.9	38.6
CE - Jan 2005	5,119.7	95.8	36.5
CE - Oct 2004 - Apr 2005	5,206.3	97.4	36.0
2003			
CPS	5,157.1		
CE - Reference Year 2003	4,042.1	78.4	
CE - Jan 2004	4,295.7	83.3	
CE - Oct 2003 - Apr 2004	4,125.7	80.0	
2002			
CPS	5,078.4		
CE - Reference Year 2002	3,736.3	73.6	
CE - Jan 2003	3,880.9	76.4	
CE - Oct 2002 - Apr 2003	3,890.2	76.6	

Nonfarm self-employment income

	Aggregate (billions of \$)	CE/CPS ratio	Percent imputed
2007			
CPS	390.6		42.7
CE - Reference Year 2007	390.8	100.1	70.1
CE - Jan 2008	307.2	78.7	72.8
CE - Oct 2007 - Apr 2008	369.3	94.6	75.0
2006			
CPS	407.7		44.2
CE - Reference Year 2006	414.0	101.5	65.0
CE - Jan 2007	445.0	109.1	75.3
CE - Oct 2006 - Apr 2007	380.1	93.2	65.1
2005			
CPS	366.5		41.0
CE - Reference Year 2005	430.1	117.4	56.4
CE - Jan 2006	558.5	152.4	58.9
CE - Oct 2005 - Apr 2006	423.4	115.5	57.2
2004			
CPS	321.7		43.0
CE - Reference Year 2004	338.4	105.2	57.1
CE - Jan 2005	566.6	176.1	53.9
CE - Oct 2004 - Apr 2005	435.1	135.2	58.7
2003			
CPS	331.6		
CE - Reference Year 2003	194.6	58.7	
CE - Jan 2004	210.7	63.5	
CE - Oct 2003 - Apr 2004	194.3	58.6	
2002			
CPS	302.6		
CE - Reference Year 2002	197.8	65.4	
CE - Jan 2003	204.3	67.5	
CE - Oct 2002 - Apr 2003	198.6	65.6	

Farm self-employment income

	Aggregate (billions of \$)	CE/CPS ratio	Percent imputed
2007			
CPS	29.9		51.3
CE - Reference Year 2007	23.1	77.3	54.0
CE - Jan 2008	16.5	55.1	65.2
CE - Oct 2007 - Apr 2008	30.8	103.0	40.7
2006			
CPS	31.7		51.0
CE - Reference Year 2006	14.7	46.5	65.7
CE - Jan 2007	13.1	41.5	78.6
CE - Oct 2006 - Apr 2007	26.7	84.3	34.4
2005			
CPS	37.3		63.3
CE - Reference Year 2005	12.5	33.7	82.3
CE - Jan 2006	20.1	53.9	39.9
CE - Oct 2005 - Apr 2006	10.6	28.5	42.1
2004			
CPS	29.0		56.1
CE - Reference Year 2004	22.6	77.8	64.1
CE - Jan 2005	15.7	54.0	51.9
CE - Oct 2004 - Apr 2005	11.3	38.9	63.3
2003			
CPS	28.0		
CE - Reference Year 2003	15.8	56.3	
CE - Jan 2004	8.2	29.1	
CE - Oct 2003 - Apr 2004	14.8	53.0	
2002			
CPS	20.4		
CE - Reference Year 2002	14.9	72.8	
CE - Jan 2003	4.2	20.3	
CE - Oct 2002 - Apr 2003	18.5	90.7	

Social Security and Railroad Retirement

	Aggregate (billions of \$)	CE/CPS ratio	Percent imputed
2007			
CPS	500.2		33.5
CE - Reference Year 2007	464.6	92.9	24.1
CE - Jan 2008	462.8	92.5	23.4
CE - Oct 2007 - Apr 2008	483.8	96.7	23.2
2006			
CPS	471.5		33.7
CE - Reference Year 2006	446.0	94.6	22.5
CE - Jan 2007	409.1	86.8	24.4
CE - Oct 2006 - Apr 2007	452.2	95.9	22.6
2005			
CPS	449.2		32.8
CE - Reference Year 2005	431.0	96.0	20.9
CE - Jan 2006	441.1	98.2	20.2
CE - Oct 2005 - Apr 2006	441.9	98.4	23.0
2004			
CPS	431.8		34.4
CE - Reference Year 2004	400.0	92.6	21.9
CE - Jan 2005	431.0	99.8	18.9
CE - Oct 2004 - Apr 2005	411.4	95.3	19.8
2003			
CPS	410.1		
CE - Reference Year 2003	325.4	79.3	
CE - Jan 2004	343.8	83.8	
CE - Oct 2003 - Apr 2004	334.7	81.6	
2002			
CPS	389.8		
CE - Reference Year 2002	312.9	80.3	
CE - Jan 2003	299.1	76.7	
CE - Oct 2002 - Apr 2003	315.9	81.0	

Pensions and annuities

	Aggregate (billions of \$)	CE/CPS ratio	Percent imputed
2007			
CPS	323.3		32.2
CE - Reference Year 2007	302.0	93.4	23.5
CE - Jan 2008	338.8	104.8	21.5
CE - Oct 2007 - Apr 2008	300.1	92.8	20.3
2006			
CPS	314.9		32.7
CE - Reference Year 2006	283.5	90.0	22.0
CE - Jan 2007	213.6	67.8	24.7
CE - Oct 2006 - Apr 2007	302.6	96.1	24.6
2005			
CPS	310.3		31.9
CE - Reference Year 2005	290.4	93.6	21.0
CE - Jan 2006	268.1	86.4	16.8
CE - Oct 2005 - Apr 2006	291.1	93.8	22.7
2004			
CPS	291.9		33.7
CE - Reference Year 2004	280.1	96.0	21.0
CE - Jan 2005	300.0	102.8	14.4
CE - Oct 2004 - Apr 2005	316.3	108.3	19.5
2003			
CPS	276.3		
CE - Reference Year 2003	226.3	81.9	
CE - Jan 2004	252.6	91.5	
CE - Oct 2003 - Apr 2004	231.8	83.9	
2002			
CPS	262.5		
CE - Reference Year 2002	178.7	68.1	
CE - Jan 2003	217.4	82.8	
CE - Oct 2002 - Apr 2003	203.4	77.5	

Interest

	Aggregate (billions of \$)	CE/CPS ratio	Percent imputed
2007			
CPS	242.8		71.4
CE - Reference Year 2007	97.0	39.9	53.0
CE - Jan 2008	112.6	46.4	55.3
CE - Oct 2007 - Apr 2008	94.9	39.1	51.8
2006			
CPS	229.2		70.7
CE - Reference Year 2006	69.7	30.4	55.5
CE - Jan 2007	66.8	29.1	59.7
CE - Oct 2006 - Apr 2007	85.7	37.4	52.4
2005			
CPS	186.9		70.7
CE - Reference Year 2005	61.9	33.1	52.2
CE - Jan 2006	37.6	20.1	66.4
CE - Oct 2005 - Apr 2006	61.3	32.8	57.3
2004			
CPS	163.2		74.7
CE - Reference Year 2004	59.0	36.2	53.0
CE - Jan 2005	59.0	36.1	34.1
CE - Oct 2004 - Apr 2005	49.8	30.5	50.3
2003			
CPS	148.3		
CE - Reference Year 2003	47.9	32.3	
CE - Jan 2004	38.2	25.7	
CE - Oct 2003 - Apr 2004	43.4	29.2	
2002			
CPS	145.4		
CE - Reference Year 2002	36.9	25.4	
CE - Jan 2003	39.8	27.4	
CE - Oct 2002 - Apr 2003	41.7	28.7	

Dividends, rents, royalties, estates and trusts

	Aggregate (billions of \$)	CE/CPS ratio	Percent imputed
2007			
CPS	191.0		51.1
CE - Reference Year 2007	112.8	59.1	43.9
CE - Jan 2008	137.0	71.7	63.2
CE - Oct 2007 - Apr 2008	109.7	57.4	47.3
2006			
CPS	186.7		49.2
CE - Reference Year 2006	106.9	57.3	33.5
CE - Jan 2007	80.1	42.9	28.4
CE - Oct 2006 - Apr 2007	109.5	58.6	38.3
2005			
CPS	169.8		48.6
CE - Reference Year 2005	99.9	58.8	36.2
CE - Jan 2006	45.1	26.6	50.5
CE - Oct 2005 - Apr 2006	71.9	42.3	36.4
2004			
CPS	157.0		47.9
CE - Reference Year 2004	85.3	54.3	37.1
CE - Jan 2005	50.6	32.2	32.1
CE - Oct 2004 - Apr 2005	81.0	51.6	40.0
2003			
CPS	152.4		
CE - Reference Year 2003	60.7	39.8	
CE - Jan 2004	63.2	41.5	
CE - Oct 2003 - Apr 2004	65.6	43.0	
2002			
CPS	119.7		
CE - Reference Year 2002	50.3	42.1	
CE - Jan 2003	48.9	40.9	
CE - Oct 2002 - Apr 2003	57.3	47.8	

Supplemental Security Income

	Aggregate (billions of \$)	CE/CPS ratio	Percent imputed
2007			
CPS	33.0		26.8
CE - Reference Year 2007	25.5	77.2	26.9
CE - Jan 2008	15.1	45.8	22.4
CE - Oct 2007 - Apr 2008	26.3	79.8	20.1
2006			
CPS	31.6		25.2
CE - Reference Year 2006	23.6	74.6	20.0
CE - Jan 2007	26.6	84.1	15.4
CE - Oct 2006 - Apr 2007	25.9	81.8	17.9
2005			
CPS	31.1		26.9
CE - Reference Year 2005	25.0	80.4	18.2
CE - Jan 2006	25.9	83.3	9.5
CE - Oct 2005 - Apr 2006	26.4	84.7	22.4
2004			
CPS	30.6		28.7
CE - Reference Year 2004	20.8	67.9	18.4
CE - Jan 2005	13.4	43.8	10.3
CE - Oct 2004 - Apr 2005	18.9	61.9	17.9
2003			
CPS	28.0		
CE - Reference Year 2003	19.1	68.2	
CE - Jan 2004	14.6	52.0	
CE - Oct 2003 - Apr 2004	15.5	55.4	
2002			
CPS	25.9		
CE - Reference Year 2002	23.3	90.0	
CE - Jan 2003	19.5	75.2	
CE - Oct 2002 - Apr 2003	20.8	80.3	

Child support

	Aggregate (billions of \$)	CE/CPS ratio	Percent imputed
2007			
CPS	24.7		24.8
CE - Reference Year 2007	20.5	83.0	9.0
CE - Jan 2008	15.5	62.7	0.4
CE - Oct 2007 - Apr 2008	20.3	82.2	10.3
2006			
CPS	25.4		28.5
CE - Reference Year 2006	22.6	88.9	9.4
CE - Jan 2007	18.1	71.3	13.4
CE - Oct 2006 - Apr 2007	21.3	84.0	9.4
2005			
CPS	26.0		25.0
CE - Reference Year 2005	19.2	73.8	8.0
CE - Jan 2006	17.0	65.4	13.0
CE - Oct 2005 - Apr 2006	19.6	75.4	9.6
2004			
CPS	27.0		27.7
CE - Reference Year 2004	19.2	71.1	13.2
CE - Jan 2005	21.7	80.5	12.1
CE - Oct 2004 - Apr 2005	21.0	77.7	10.1
2003			
CPS	25.1		
CE - Reference Year 2003	17.1	67.9	
CE - Jan 2004	21.5	85.4	
CE - Oct 2003 - Apr 2004	16.9	67.4	
2002			
CPS	24.0		
CE - Reference Year 2002	13.3	55.3	
CE - Jan 2003	13.3	55.3	
CE - Oct 2002 - Apr 2003	14.3	59.6	

Unemployment compensation

	Aggregate (billions of \$)	CE/CPS ratio	Percent imputed
2007			
CPS	21.9		25.4
CE - Reference Year 2007	12.5	57.2	23.8
CE - Jan 2008	14.1	64.4	41.5
CE - Oct 2007 - Apr 2008	12.8	58.4	27.1
2006			
CPS	20.7		25.4
CE - Reference Year 2006	12.8	61.9	25.8
CE - Jan 2007	16.0	77.3	34.3
CE - Oct 2006 - Apr 2007	11.0	53.5	25.6
2005			
CPS	22.3		23.8
CE - Reference Year 2005	13.1	58.8	15.4
CE - Jan 2006	9.9	44.4	34.3
CE - Oct 2005 - Apr 2006	11.6	52.1	19.4
2004			
CPS	25.0		25.1
CE - Reference Year 2004	18.6	74.3	19.3
CE - Jan 2005	22.4	89.5	40.1
CE - Oct 2004 - Apr 2005	16.4	65.4	20.5
2003			
CPS	36.9		
CE - Reference Year 2003	18.8	51.0	
CE - Jan 2004	20.6	55.8	
CE - Oct 2003 - Apr 2004	20.0	54.1	
2002			
CPS	37.9		
CE - Reference Year 2002	14.7	38.7	
CE - Jan 2003	13.2	34.8	
CE - Oct 2002 - Apr 2003	20.1	53.0	

Workers' compensation and veterans' benefits

	Aggregate (billions of \$)	CE/CPS ratio	Percent imputed
2007			
CPS	43.8		29.2
CE - Reference Year 2007	13.5	30.8	15.9
CE - Jan 2008	3.0	6.8	0.0
CE - Oct 2007 - Apr 2008	13.6	31.0	13.7
2006			
CPS	41.6		31.0
CE - Reference Year 2006	11.8	28.4	28.6
CE - Jan 2007	8.4	20.1	44.4
CE - Oct 2006 - Apr 2007	13.5	32.4	22.9
2005			
CPS	43.9		31.1
CE - Reference Year 2005	10.8	24.5	22.2
CE - Jan 2006	7.5	17.1	0.6
CE - Oct 2005 - Apr 2006	10.3	23.4	25.8
2004			
CPS	39.9		30.6
CE - Reference Year 2004	8.9	22.4	26.5
CE - Jan 2005	11.6	29.0	7.9
CE - Oct 2004 - Apr 2005	8.9	22.4	20.1
2003			
CPS	36.1		
CE - Reference Year 2003	8.0	22.2	
CE - Jan 2004	8.1	22.5	
CE - Oct 2003 - Apr 2004	9.9	27.3	
2002			
CPS	36.4		
CE - Reference Year 2002	7.7	20.4	
CE - Jan 2003	6.5	17.2	
CE - Oct 2002 - Apr 2003	7.1	18.7	

Public assistance

	Aggregate (billions of \$)	CE/CPS ratio	Percent imputed
2007			
CPS	5.2		28.5
CE - Reference Year 2007	3.9	75.2	21.8
CE - Jan 2008	1.0	19.6	0.0
CE - Oct 2007 - Apr 2008	3.3	62.2	27.7
2006			
CPS	5.6		25.5
CE - Reference Year 2006	5.2	92.9	21.1
CE - Jan 2007	4.9	87.9	43.3
CE - Oct 2006 - Apr 2007	5.0	90.2	24.6
2005			
CPS	6.6		23.6
CE - Reference Year 2005	5.2	78.7	19.6
CE - Jan 2006	4.9	74.8	15.9
CE - Oct 2005 - Apr 2006	5.5	83.8	18.3
2004			
CPS	5.8		29.6
CE - Reference Year 2004	4.7	82.1	22.6
CE - Jan 2005	5.6	97.5	18.6
CE - Oct 2004 - Apr 2005	5.0	87.4	25.3
2003			
CPS	7.1		
CE - Reference Year 2003	4.1	57.4	
CE - Jan 2004	2.6	36.9	
CE - Oct 2003 - Apr 2004	3.9	55.7	
2002			
CPS	6.0		
CE - Reference Year 2002	4.1	67.8	
CE - Jan 2003	4.2	69.6	
CE - Oct 2002 - Apr 2003	4.6	76.6	

All other income, including accident & temporary insurance, educational assistance, alimony, financial assistance

	Aggregate (billions of \$)	CE/CPS ratio	Percent imputed
2007			
CPS	65.7		37.1
CE - Reference Year 2007	45.6	69.3	26.9
CE - Jan 2008	70.8	107.6	16.3
CE - Oct 2007 - Apr 2008	51.0	77.5	24.6
2006			
CPS	66.6		34.2
CE - Reference Year 2006	41.4	62.1	33.4
CE - Jan 2007	36.6	55.0	25.3
CE - Oct 2006 - Apr 2007	38.0	57.0	31.1
2005			
CPS	72.0		38.0
CE - Reference Year 2005	40.7	56.5	26.1
CE - Jan 2006	41.9	58.1	40.8
CE - Oct 2005 - Apr 2006	43.9	60.9	34.7
2004			
CPS	70.2		38.7
CE - Reference Year 2004	43.1	61.4	22.7
CE - Jan 2005	72.6	103.5	20.0
CE - Oct 2004 - Apr 2005	55.2	78.6	22.9
2003			
CPS	70.0		
CE - Reference Year 2003	28.0	40.0	
CE - Jan 2004	48.5	69.2	
CE - Oct 2003 - Apr 2004	32.9	47.0	
2002			
CPS	66.7		
CE - Reference Year 2002	38.1	57.2	
CE - Jan 2003	107.0	160.5	
CE - Oct 2002 - Apr 2003	46.3	69.5	

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