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METHODOLOGICAL APPENDIX:
Safety Net Effective At Fighting Poverty But Has Weakened For the Very Poorest

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This Appendix describes how we performed these calculations, including how we determined individuals' poverty status and the numbers of people lifted out of poverty and deep poverty.

Determining Poverty Status and Deep Poverty

This analysis differs from past work by the Center and other organizations to examine the effect of the safety net on poverty. Like past work, it starts with household-by-household data from the Census Bureau's Current Population Survey (CPS). However, it goes further than past work in addressing well-known criticisms of the official Census Bureau poverty measure. These criticisms include:

- The Census measure does not include non-cash and tax-based benefits, which have grown as a means of support for poor families in the last three decades.
- The CPS significantly underreports receipt of certain benefits. (Census's counts of program participants typically fall well short of the totals shown in actual administrative records.)
- The Census measure does not take into account resources that households devote to taxes, work expenses, and health care and thus are unavailable to meet basic needs such as food, clothing, and shelter.
- The poverty line itself does not vary by geographic area to reflect the significant differences in the cost of living across the country.
- The poverty line is too low and does not keep up with the cost of basic needs.

To address these concerns, this analysis takes the following steps, following wherever possible the recommendations of the National Academy of Sciences' 1995 expert panel on poverty measurement:[1]

- **Measuring income on a post-tax, post-transfer basis.** As recommended by the NAS panel, we include in the measure of income the value of non-cash benefits (other than health benefits such as Medicaid and CHIP) and the net impact of taxes. Specifically, we include the market value of food stamps and housing subsidies, the family's share of low-income home energy assistance (from the CPS), and estimates of what each tax filer owes in federal and state income taxes and payroll taxes as calculated by the Census Bureau (available in the CPS file). We do not subtract state sales tax because the data needed to do that are not available.

- **Correcting for underreporting of benefits.** We go beyond the NAS recommendations by using data on TANF, SSI, and food stamp receipt from the Transfer Income Model (TRIM) developed for the Department of Health and Human Services.[2] The TRIM data start with the CPS data and add to it by assigning extra benefit income to some individuals in the CPS who did not answer all of the CPS questions. For example, someone who skipped a question about whether he or she received food stamps might be assigned food stamp income. (Unlike in the CPS, the total number of recipients in the TRIM data is designed to approximate actual administrative totals.[3]) TRIM data files are currently available through 2005. We also incorporate updated estimates of the value of housing subsidies.[4]

- **Subtracting out-of-pocket medical expenses and work expenses (including child care) from income.** Following the NAS recommendations, we subtract these expenses from the income measure. To estimate the size of these expenses, we follow procedures provided by the Census Bureau and Bureau of Labor Statistics.[5]

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[1] National Research Council, *Measuring Poverty: A New Approach* (National Academy Press: 1995).

[2] TRIM is developed and maintained by the Urban Institute under contract with the Office of the Assistant Secretary for Planning and Evaluation at the Department of Health and Human Services. Documentation of the TRIM Model is at http://trim3.urban.org/T3Technical.php. While the model was developed in large part to allow users to compare current policies with proposed policies, we use data only for TRIM's "baseline" (or current-policy) scenario.

[3] In producing the CPS files, the Census Bureau, like TRIM, also assigns benefits for some people with missing data. Unlike TRIM, however, Census does not use this process of assigning missing benefits to try to match the actual number of recipients shown in program records.

[4] Our estimates of the value of housing subsidies rely on CPS data to identify who lives in subsidized or publicly owned housing, combined with a Census Bureau formula for estimating the value of those subsidies. The formula equals the estimated fair market rent minus 30 percent of household cash income. (The precise fair market rent level for a family is typically unavailable because the Census data files, to preserve confidentiality, do not list the county in which a family lives. To get around this problem, we use a weighted average of HUD local Fair Market Rent levels for each family's state, broken down further by whether the family lives in a metropolitan or non-metropolitan area of the state, and by the estimated number of bedrooms in their housing unit.)

[5] Because medical expenditure data are not available directly from the CPS, they must be estimated using a formula. In this analysis, we estimate each family's out-of-pocket medical spending by starting with the medical share of the poverty line (specifically, a version of the NAS poverty line referred to in Census publications as "MIT" or "**M**edical-out-of-pocket-expenditures **I**n the **T**hresholds") for a standard family of two adults and two children. We adjust that amount up or down using a set of ratios provided by the Census Bureau that depend on the family's size, health insurance status, and age. That yields the family's own estimated medical out-of-pocket expenses. We subtract those expenses from family income prior to comparing family income to the poverty line. (The NAS poverty line we use is the appropriate

- **Counting unmarried partners.** Unlike the official poverty measure, we treat unmarried partners as part of the family, as recommended by the NAS panel. (We do not do this for relatively transient partners. Some boyfriends or girlfriends may not have been present in the household for most of the previous year and may not have been regular contributors to the family's budget. We count partners who have been present for 12 months.[6])

- **Adjusting the poverty line itself.** We use alternative poverty lines based on the NAS recommendations. These alternative poverty lines are based on the cost of very basic needs — food, clothing, shelter, utilities, and (in the words of the NAS panel) "a little more" — and vary geographically based on housing costs. The poverty line is initially set using the 33rd percentile of expenditures on food, clothing, shelter, and utilities — that is, the minimum amount that all but the bottom one-third of families spend on these basic needs. The table below shows NAS-style poverty lines for a standardized family of four, consisting of a couple with two children living in a community with average housing costs.[7] We calculate variations for different family sizes and geographic locations following procedures provided by the Census Bureau. Unlike the official Census poverty thresholds, NAS poverty lines are not increased each year using the consumer price index; instead they grow in proportion to increases in median family expenditures on basic needs. As a result, our NAS-style poverty lines start slightly higher than the official poverty lines and grow slightly faster (they are 1 percent higher than the official poverty line in 1995 and 8 percent higher in 2005).[8] However, this faster increase has only a

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one for this comparison, namely, the MIT line minus the medical share. The result is by definition identical to using the Census Bureau's MIT method. As a mechanical matter, however, we follow the original NAS recommendations by treating these medical expenses as an item to be subtracted from income rather than as part of the bundle of basic needs.)

Our estimates of work expenses also rely on formulas provided by the Census Bureau. The formulas are based on data on median weekly out-of-pocket child care expenses and other work-related expenditures from the Survey of Income and Program Participation. Values vary depending on year, weeks worked, number and ages of children (in the case of the child care formula), and other family characteristics. The estimated value of work expenses is capped at the value of the worker's earnings. A couple's child care expenses are further capped based on the earnings of the lower-earning spouse (although, in practice, few couples have estimated child care expenses large enough to be affected by this cap).

[6] Following the approach used in the TRIM model, we also treat unrelated household members younger than 15 living with no relatives as *de facto* family members of the head of household. This affects fewer than 200,000 poor children.

[7] As described in footnote 14, the version of the NAS threshold used here is essentially what Census publications call the MIT line with the medical share removed. Because 1995 thresholds were not available from Census, we estimated them by adjusting 1996 thresholds for inflation.

[8] Although the poverty line we use is based on NAS poverty lines found in Census publications, it may be too low. While it is designed to reflect a minimal spending level for food, clothing, and shelter, it leaves out the portion of shelter expenses that homeowners pay for mortgage principal. NAS poverty lines have excluded any amount for mortgage principal payments since the original 1995 NAS report, which noted that these payments were being left out only for reasons of "processing convenience." Preferably, the report said, an amount for these payments would be included in the poverty line. Recently, Census and Bureau of Labor Statistics staff have developed NAS poverty thresholds that would do so. This would raise the poverty line by about $2,000.

Poverty Lines for a Two-Adult-Two-Child Family: Official Thresholds and Thresholds Following NAS Recommendations

Year	Official	NAS	NAS ÷ Official
1995	$15,455	$15,593	1.01
2000	$17,463	$18,338	1.05
2005	$19,806	$21,395	1.08

Source: U.S. Census Bureau, Bureau of Labor Statistics, and Center calculations. (The version of the NAS threshold used here is consistent with our method of calculating medical out-of-pocket expenditures. It is the "MIT" threshold with the medical share removed. Note that this threshold does not include an amount for homeowners' mortgage principal payments. Including those payments would raise the NAS poverty line further.)

small effect on our results.[9]

Past Center analyses of the safety net have only included the first of these steps: measuring income on a post-tax, post-transfer basis.[10]

It is worth noting that Census staff and academic experts have experimented with a variety of ways to implement the NAS poverty measurement recommendations that vary in technical details. Recent Census Bureau publications have discussed and presented no fewer than 12 variations of the NAS poverty measure. For the purposes of this analysis, we have tried to adopt the choices that come closest to the original NAS recommendations[11] with the important addition of the TRIM corrections for underreported benefit income.

[9] If we had adjusted our poverty thresholds each year with the consumer price index, our findings on trends in deep poverty would have been very similar to those in this analysis. For example, the share of children below half the poverty line would have risen from 1.9 percent in 1995 to 2.8 percent (rather than to 3.2 percent) in 2005. The share of otherwise-deeply-poor children lifted above half the poverty line by means-tested benefits would have fallen from 87 percent in 1995 to 74 percent (rather than to 72 percent) in 2005.

In contrast to our deep poverty findings, our findings on trends in overall poverty would have shown greater improvement if we had used an inflation-adjusted threshold. For example, if we had adjusted our poverty thresholds each year with the consumer price index starting in 1995, the overall poverty rate for all ages would have declined from 13.1 percent in 1995 to 11.6 percent in 2005, rather than edging upward to 13.5 percent as in our series. This 1.5 percentage point decline resembles the decline in the official poverty rate (from 13.8 percent in 1995 to 12.6 percent in 2005, a decline of 1.2 percentage points).

[10] See Arloc Sherman, "Easing Poverty and Ensuring Medical Coverage," Center on Budget and Policy Priorities, revised August 17, 2005, www.cbpp.org/7-19-05acc.htm.

[11] Overall, the NAS poverty measure we calculate here is most similar in approach to the version that the Census Bureau calls MIT-GA-CE, or **M**edical out-of-pocket expenditures **I**n the **T**hresholds, with **G**eographic **A**djustment in the poverty lines, and adjustment of the poverty lines using **C**onsumer **E**xpenditures on basic needs. As previously noted, however, we address medical expenditures as an adjustment to income rather than to the poverty threshold, and we use a larger family unit.

We use the same income measure and poverty lines to determine deep poverty as we use for poverty. Because there is no official definition of deep poverty, we look at two levels of income: families with income below 75 percent and below 50 percent of the NAS poverty line.[12]

Calculating Who Is Lifted Out of Poverty and Deep Poverty

This analysis examines people whose family income is lifted above the poverty line — or above half or three-quarters of the poverty line — by one or more forms of government assistance.

In this analysis, a person is considered to be lifted out of poverty by a given program or group of programs if his or her family's total income from all sources is above the poverty line but would be below the poverty line if the income type in question were excluded.

In 2005, for example, 39.6 million people lived in families with income below the poverty line by our measure. But if income from all government safety-net programs (including both means-tested and non-means-tested programs) were excluded, 70.4 million people would have below-poverty income. The difference — 30.8 million — is the number lifted above the poverty line by the safety net.

Under this method, a family can be lifted above the poverty line by more than one program. For example, consider a family with $15,000 in earnings, $3,000 in food stamps, $4,000 in EITC, and a $20,000 poverty line. The family's non-EITC income (earnings plus food stamps) totals $18,000, which is below the poverty line. Adding the EITC brings the family to $22,000, or above the poverty line. Therefore, the family is considered to be lifted out of poverty by the EITC.

Our method also counts this family as lifted out of poverty by food stamps: the family's non-food-stamp income (earnings plus EITC) totals only $19,000, but adding food stamps pushes the family to $22,000. Many people are lifted out of poverty by a *combination* of benefits, so more than one of the benefits in our analysis can be credited with raising them above the poverty line.

Appendix Table 1 shows, for each program, the steps in the calculation. The second and third rows of the table show the actual number and percentage of people below the poverty line. The next nine rows show how many people *would be* poor if a particular benefit were excluded.

For example, while almost 34.7 million Americans were actually in poverty in 1995 by our measure, 39.6 million would have been in poverty without the income they received from the

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[12] Traditionally, analysts have considered those with incomes below 50 percent of the poverty line to be in "deep" or "extreme" poverty. Typically, however, the 50 percent threshold has been used in conjunction with a measure of *cash* income. That is, a family with cash income below 50 percent of the official poverty line was considered to be in "deep poverty" even if the family received food stamps or housing assistance that lifted its total purchasing power above this threshold. Using the 50 percent threshold results in a narrower, more stringent definition of deep poverty when one adopts, as we do, the NAS income definition and NAS poverty thresholds. That is chiefly because our income measure includes non-cash and tax-based benefits, as well as adjustments for underreported benefit income. A 75-percent-of-poverty standard under an NAS-based measure may be more comparable to the traditional 50-percent-of-poverty standard under the official cash measure.

EITC.[13] The difference between these two figures, roughly 4.9 million, is the number of people lifted above the poverty line by the EITC.

The bottom section of Appendix Table 1 shows the percentage by which the particular benefit reduced the number of poor people. For instance, the EITC reduced the number of poor people in America in 1995 by 12 percent. (Put another way, the 4.9 million people lifted above the poverty line by the EITC in 1995 made up 12 percent of those whose income *not counting the EITC* was below the poverty line.)

Appendix Tables 2 and 3 repeat this information for people in families below 75 percent and 50 percent of the poverty line, respectively. For example, Appendix Table 2 shows that the EITC reduced the number of Americans below 75 percent of the poverty line by 19 percent in 1995. Appendix Table 3 shows that the EITC reduced the number of Americans below 50 percent of the poverty line by 15 percent in 1995.

[13] These calculations assume that a family's other income sources remain unchanged.

APPENDIX TABLE 1. Effects on Poverty of Specified Income Sources

Poverty is measured using NAS methods. TANF, SSI, and food stamp amounts are corrected for underreporting using data from HHS's TRIM model. Figures assign unmarried partners, and unrelated persons under 15, to the head of household's family. Appendix Tables 2 and 3 (figures on deep poverty) exclude families with negative cash income.

Numbers are in thousands.

	All Ages			Under 18		
	1995	2000	2005	1995	2000	2005
Population	264,314	276,540	293,834	71,148	72,553	73,985
Poor	34,690	32,842	39,575	11,881	10,745	11,221
As a percentage of population	13.1%	11.9%	13.5%	16.7%	14.8%	15.2%
Would be poor if the following family income were <u>not</u> counted:						
All public benefits*	64,331	59,140	70,357	18,778	15,692	17,790
Social Security	54,172	51,831	60,661	13,166	11,816	12,413
Unemployment Insurance	35,910	33,661	40,733	12,367	11,096	11,598
Means-tested benefits	50,490	45,345	53,588	19,203	16,213	17,215
TANF	38,842	34,294	40,957	14,351	11,577	11,991
SSI	38,545	36,421	43,212	13,140	11,768	12,235
Food stamps	40,119	35,540	43,611	14,927	12,322	13,446
Housing assistance	39,498	36,500	43,860	14,139	12,246	12,865
EITC	39,610	37,721	44,642	14,471	13,369	13,841
Home energy assistance	34,835	32,983	39,776	11,931	10,790	11,291
(Example: In 1995, 40.1 million Americans lived in families whose non-food stamp income was below the poverty line.)						
Lifted above the poverty line by the following family income:**						
All public benefits*	29,641	26,297	30,782	6,898	4,946	6,569
Social Security	19,482	18,988	21,086	1,286	1,071	1,192
Unemployment Insurance	1,219	819	1,158	486	351	377
Means-tested benefits	15,800	12,502	14,013	7,323	5,468	5,994
TANF	4,152	1,451	1,382	2,470	832	770
SSI	3,855	3,579	3,637	1,259	1,023	1,014
Food stamps	5,429	2,697	4,036	3,047	1,577	2,225
Housing assistance	4,808	3,657	4,285	2,258	1,500	1,644
EITC	4,920	4,879	5,067	2,590	2,624	2,620
Home energy assistance	145	141	201	51	45	70
(Example: In 1995, 5.4 million Americans lived in families whose income was lifted above the poverty line by food stamps.)						
Lifted above, as a percentage of those who would be poor without the specified income source:						
All public benefits*	46	44	44	37	32	37
Social Security	36	37	35	10	9	10
Unemployment Insurance	3	2	3	4	3	3
Means-tested benefits	31	28	26	38	34	35
TANF	11	4	3	17	7	6
SSI	10	10	8	10	9	8
Food stamps	14	8	9	20	13	17
Housing assistance	12	10	10	16	12	13
EITC	12	13	11	18	20	19
Home energy assistance	0	0	1	0	0	1
(Example: In 1995, food stamps lifted above the poverty line 14 percent of Americans who would otherwise have been poor.)						

* "All public benefits" includes the listed benefits plus workers' compensation, veterans' benefits, and the net effect of all federal and state income taxes and payroll tax.

** Equals the number who would be poor without the income minus the actual number in poverty.

APPENDIX TABLE 2. Effects on Deep Poverty (Below 75% of Poverty Line) of Specified Income Sourc

Poverty is measured using NAS methods. TANF, SSI, and food stamp amounts are corrected for underreporting using data from HHS's TRIM model. Figures assign unmarried partners, and unrelated persons under 15, to the head of household's family. Appendix Tables 2 and 3 (figures on deep poverty) exclude families with negative cash income.

Numbers are in thousands.

	All Ages			Under 18		
	1995	2000	2005	1995	2000	2005
			287			
Population	264,280	276,257	293,548	71,144	72,460	73,918
Below 75% of Poverty Line	15,970	15,645	20,776	4,988	4,678	5,468
As a percentage of population	6.0%	5.7%	7.1%	7.0%	6.5%	7.4%

Would be below 75% of poverty if the following family income were <u>not</u> counted:

All public benefits*	52,556	46,606	56,907	14,984	11,518	13,491
Social Security	35,484	34,637	42,615	6,328	5,708	6,704
Unemployment Insurance	16,812	16,284	21,390	5,299	4,923	5,632
Means-tested benefits	36,334	30,453	37,153	14,748	11,330	12,634
TANF	21,602	17,573	22,466	8,488	5,794	6,486
SSI	20,538	19,685	25,237	6,289	5,664	6,542
Food stamps	22,113	19,412	25,648	8,445	6,697	8,002
Housing assistance	19,641	18,514	24,297	7,017	6,120	7,025
EITC	19,740	19,353	24,243	6,958	6,652	7,263
Home energy assistance	16,044	15,765	20,882	5,013	4,739	5,509

(Example: In 1995, 22.1 million Americans lived in families whose non-food stamp income was below the 75% of the NAS poverty line.)

Lifted above 75% of the poverty line by the following family income:*

All public benefits*	36,586	30,961	36,131	9,996	6,840	8,023
Social Security	19,514	18,992	21,839	1,341	1,030	1,237
Unemployment Insurance	841	639	614	311	245	165
Means-tested benefits	20,364	14,808	16,377	9,760	6,652	7,166
TANF	5,632	1,928	1,690	3,501	1,115	1,018
SSI	4,567	4,040	4,461	1,302	986	1,074
Food stamps	6,143	3,767	4,872	3,457	2,019	2,534
Housing assistance	3,671	2,869	3,521	2,029	1,442	1,558
EITC	3,770	3,708	3,467	1,971	1,974	1,796
Home energy assistance	74	120	106	25	61	42

(Example: In 1995, 6.1 million Americans lived in families whose income was lifted above 75% of the poverty line by food stamps.)

Lifted above, as a percentage of those who would be below 75% without the specified income source:

All public benefits*	70	66	63	67	59	59
Social Security	55	55	51	21	18	18
Unemployment Insurance	5	4	3	6	5	3
Means-tested benefits	56	49	44	66	59	57
TANF	26	11	8	41	19	16
SSI	22	21	18	21	17	16
Food stamps	28	19	19	41	30	32
Housing assistance	19	15	14	29	24	22
EITC	19	19	14	28	30	25
Home energy assistance	0	1	1	1	1	1

(Example: In 1995, food stamps lifted above 75% of the poverty line 28 percent of Americans who would otherwise have been that deeply poor.)

* "All public benefits" includes the listed benefits plus workers' compensation, veterans' benefits, and the net effect of all federal and state income taxes and payroll tax.

** Equals the number who would be below 75% of the poverty line without the specified income minus the actual number below 75% of the poverty line.

APPENDIX TABLE 3. Effects on Deep Poverty (Below 50% of Poverty Line) of Specified Income Sources

Poverty is measured using NAS methods. TANF, SSI, and food stamp amounts are corrected for underreporting using data from HHS's TRIM model. Figures assign unmarried partners, and unrelated persons under 15, to the head of household's family.

Appendix Tables 2 and 3 (figures on deep poverty) exclude families with negative cash income.

Numbers are in thousands.

	All Ages			Under 18		
	1995	2000	2005	1995	2000	2005
Population	264,280	276,257	293,548	71,144	72,460	73,918
Below 50% of Poverty Line	6,514	6,834	10,278	1,354	1,730	2,356
As a percentage of population	2.5%	2.5%	3.5%	1.9%	2.4%	3.2%
Would be below 50% of poverty if the following family income were not counted:						
All public benefits*	41,754	35,566	44,652	11,419	7,752	9,655
Social Security	23,249	23,414	29,986	2,275	2,449	3,385
Unemployment Insurance	6,935	7,034	10,666	1,492	1,796	2,464
Means-tested benefits	24,615	18,935	24,358	10,576	7,178	8,523
TANF	9,999	7,899	11,317	3,563	2,379	3,002
SSI	9,594	10,034	14,046	2,002	2,286	3,094
Food stamps	10,271	8,989	13,650	3,493	2,880	4,085
Housing assistance	7,230	7,828	11,610	1,665	2,216	2,943
EITC	7,642	8,382	11,776	1,908	2,530	3,125
Home energy assistance	6,540	6,868	10,313	1,360	1,740	2,370
(Example: In 1995, 10.3 million Americans lived in families whose non-food stamp income was below the 50% of the NAS poverty line.)						
Lifted above 50% of the poverty line by the following family income:*						
All public benefits*	35,241	28,732	34,374	10,065	6,021	7,299
Social Security	16,735	16,580	19,708	921	718	1,029
Unemployment Insurance	421	201	388	139	65	108
Means-tested benefits	18,101	12,101	14,081	9,222	5,447	6,166
TANF	3,485	1,065	1,039	2,209	649	645
SSI	3,081	3,201	3,768	649	556	737
Food stamps	3,757	2,155	3,372	2,139	1,150	1,729
Housing assistance	717	994	1,332	311	485	586
EITC	1,128	1,549	1,498	554	799	768
Home energy assistance	26	34	35	6	10	13
(Example: In 1995, 3.8 million Americans lived in families whose income was lifted above 50% of the poverty line by food stamps.)						
Lifted above, as a percentage of those who would be below 50% without the specified income source:						
All public benefits*	84	81	77	88	78	76
Social Security	72	71	66	40	29	30
Unemployment Insurance	6	3	4	9	4	4
Means-tested benefits	74	64	58	87	76	72
TANF	35	13	9	62	27	21
SSI	32	32	27	32	24	24
Food stamps	37	24	25	61	40	42
Housing assistance	10	13	11	19	22	20
EITC	15	18	13	29	32	25
Home energy assistance	0	0	0	0	1	1
(Example: In 1995, food stamps lifted above 50% of the poverty line 37 percent of Americans who would otherwise have been that deeply poor.)						

* "All public benefits" includes the listed benefits plus workers' compensation, veterans' benefits, and the net effect of all federal and state income taxes and payroll tax.

** Equals the number who would be below 50% of the poverty line without the specified income minus the actual number below 50% of the poverty line.