

# State-Level Impacts of Government Aid Programs on the Supplemental Poverty Rate

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## Introduction

The Supplemental Poverty Measure (SPM) is an extension of the Official Poverty Measure (OPM) that accounts for governmental aid received in both cash and noncash form. The SPM also accounts for key expenses families incur when measuring their SPM status. Consequentially, the SPM can be used to identify the most impactful additions and subtractions to a family's resources.

This analysis will illustrate the state-level impacts of the most influential transfers and expenses considered by the SPM. Identifying state level variations may help researchers and policymakers better understand what programs are most beneficial and where those programs are having the greatest impact.

## Data

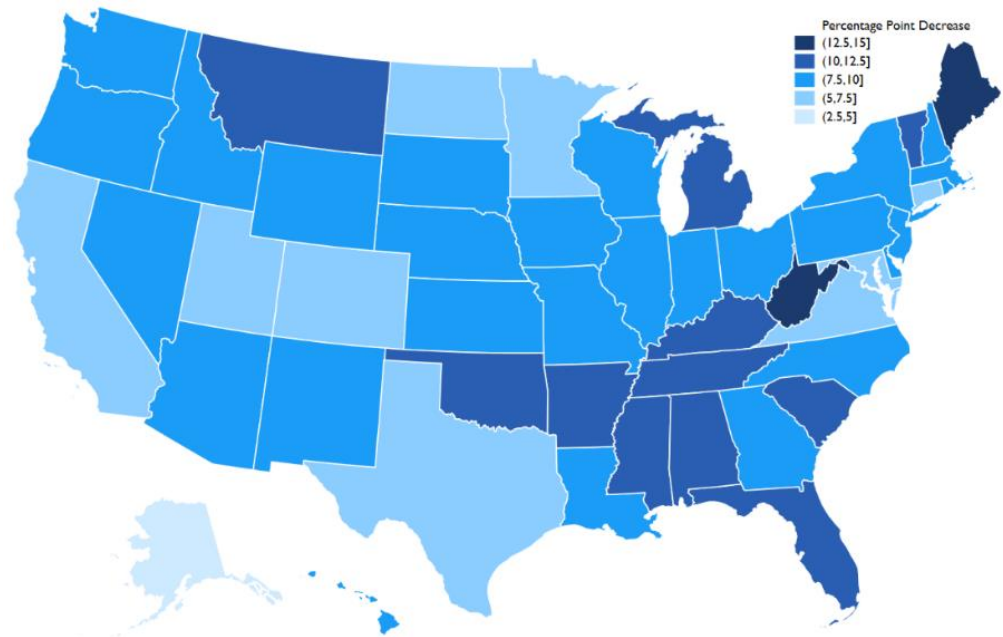
The SPM uses data collected by the Current Population Survey Annual Social and Economic Supplement. For state level estimates, the Census Bureau recommends using three years averages. Survey years 2016 through 2018 were used for this analysis.

## Benefits Considered

### Social Security

As the most impactful government program, Social Security was estimated to have pulled approximately 27 million people out of poverty each year<sup>1</sup>.

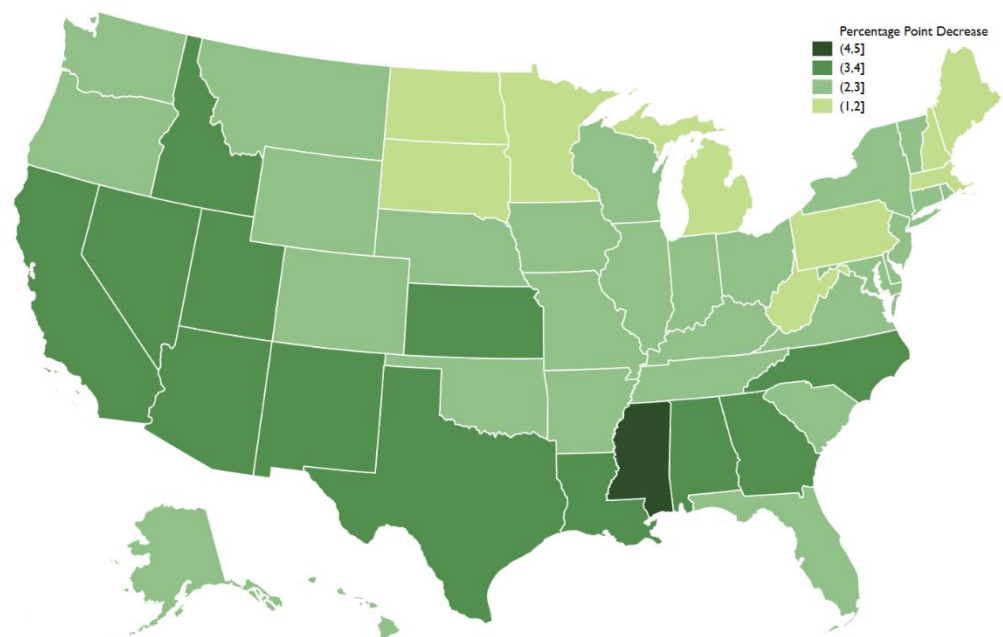
Figure 1. Impact of Social Security on the SPM: 2016 – 2018



Note that the District of Columbia has an estimated decrease of 4.5 percentage points.

Source: U.S. Census Bureau, Current Population Survey, 2016-2018 Annual Social and Economic Supplements

Figure 2. Impact of Refundable Tax Credits on the SPM: 2016 – 2018



Note that the District of Columbia has an estimated decrease of 1.8 percentage points.

Source: U.S. Census Bureau, Current Population Survey, 2016-2018 Annual Social and Economic Supplements

<sup>1</sup> See Table 2 in the Appendix for full table of estimates.

Figure 1 illustrates large variations in the percentage point impact this program had on state level SPM rates.

Social Security had the greatest impact in West Virginia, Maine and Mississippi, decreasing the SPM rate in each state by 14.8, 12.7 and 12.3 percentage points respectively. However, in the District of Columbia, this same program decreased the SPM rate by 4.5 percentage points. The range of Social Security's impact on supplemental poverty across states varies by over 10 percentage points. This magnitude of state level variation does not exist for any other program considered by the SPM.

### Refundable Tax Credits

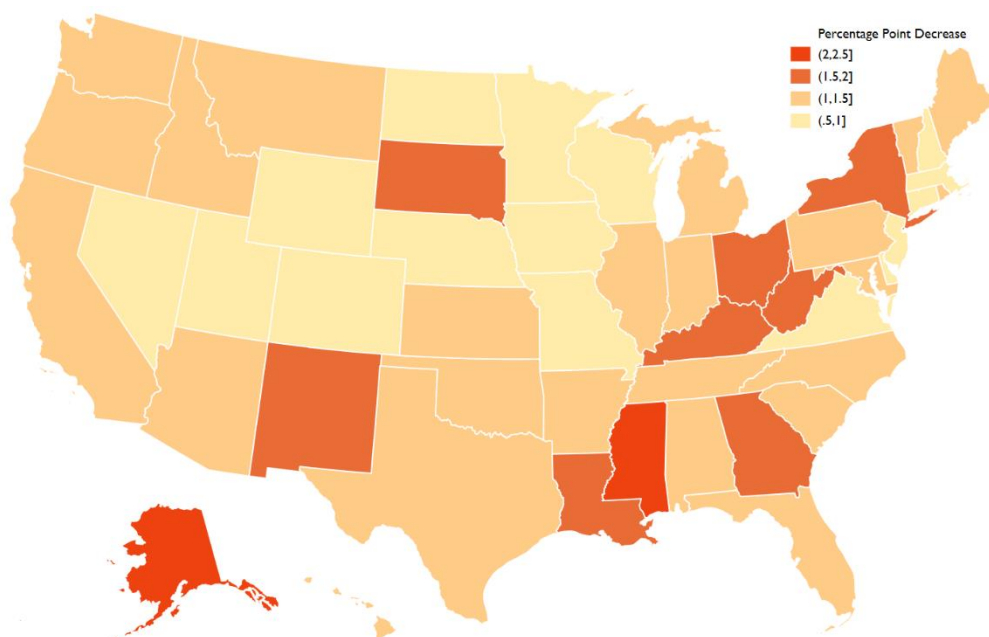
The SPM calculates refundable tax credits as a sum of earned income and child tax credits per family<sup>2</sup>. Figure 2 illustrates the impact of these credits on the poverty status of individuals across each state. Note that among the 17 southern states, all but West Virginia had an estimated decrease of at least 2 percentage points in their SPM rate due to this benefit. Additionally, five of the eight Mountain states had an estimated decrease of at least 3 percentage points due to refundable tax credits.

### SNAP

Figure 3 illustrates the impact SNAP has on the SPM rate of each state. Mississippi, Alaska and Louisiana experienced the greatest estimated percentage point decrease in poverty from this program. In each of these states, the SPM rate decreased by 2.3, 2.2 and 2.0 percentage points respectively.

SNAP is the most beneficial noncash aid program considered by the SPM. On average, this program prevented

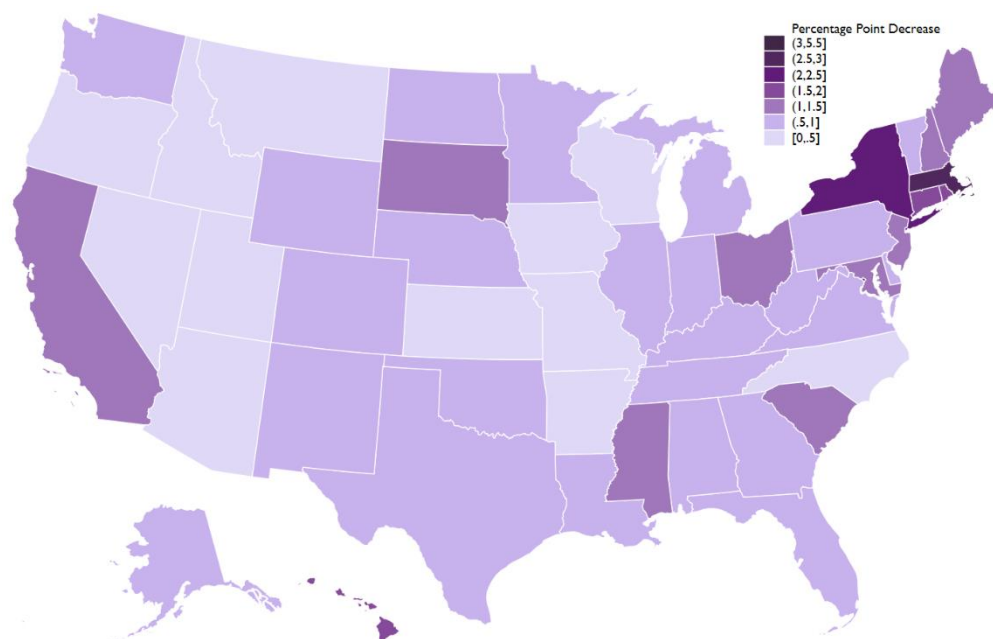
Figure 3. Impact of SNAP on the SPM: 2016 – 2018



Note that the District of Columbia has an estimated decrease of 1.7 percentage points.

Source: U.S. Census Bureau, Current Population Survey, 2016-2018 Annual Social and Economic Supplements

Figure 4. Impact of Housing Subsidies on the SPM: 2016 – 2018



Note that the District of Columbia has an estimated decrease of 4.7 percentage points.

Source: U.S. Census Bureau, Current Population Survey, 2016-2018 Annual Social and Economic Supplements

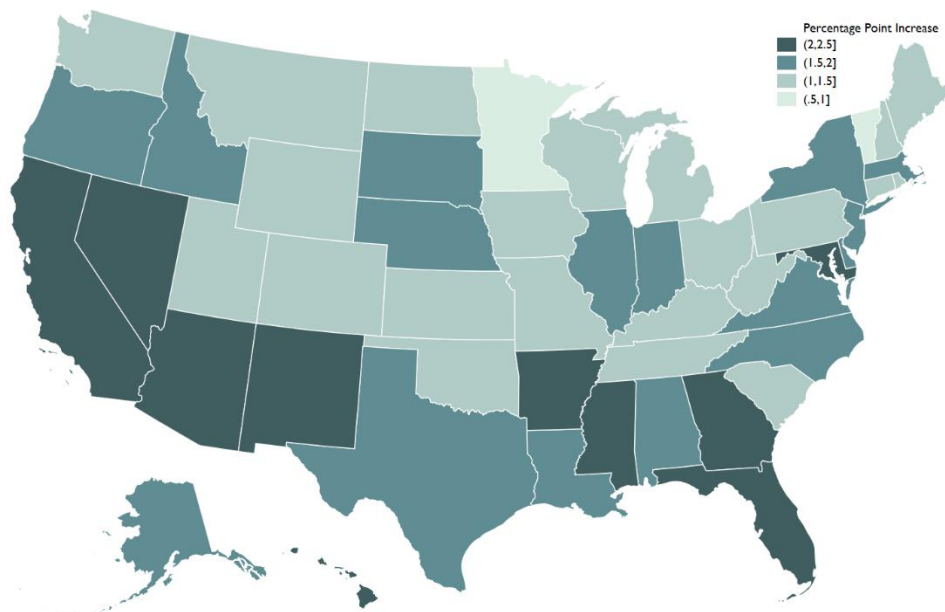
approximately 3.8 million people from falling below the supplemental poverty threshold each year.

### Housing Subsidies

The SPM considers a variety of federal, state and local housing assistance programs when considering their impact on a family's poverty status. Housing subsidies have the greatest poverty reducing impact in the District of Columbia, decreasing the area's SPM rate by 4.7 percentage points. In comparison, housing subsidies decreased the SPM rate by at most 2.5 percentage points in all other states.

<sup>1</sup> See Provencher (2011) for details on how SPM families are defined.

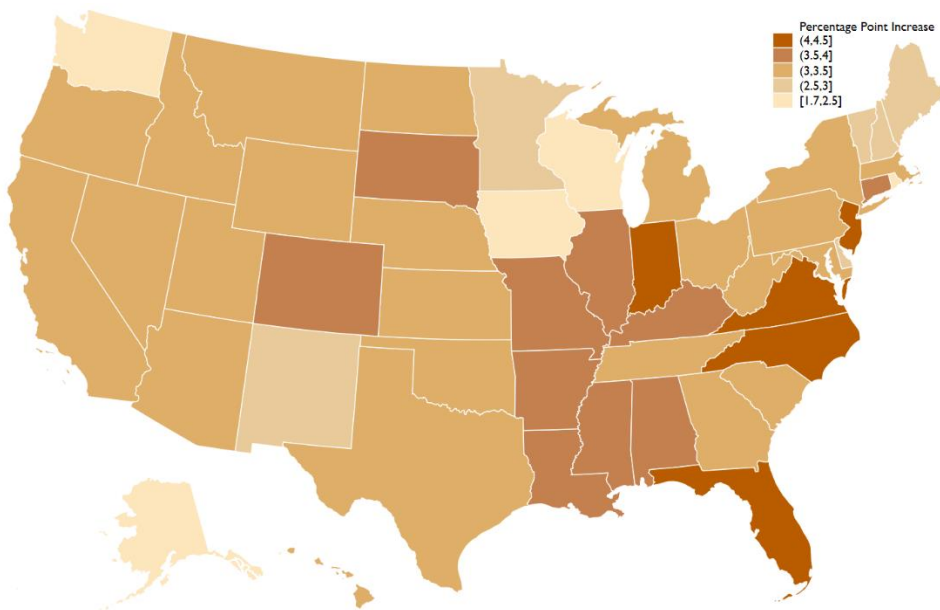
Figure 5. Impact of Work Expenses on the SPM: 2016 – 2018



Note that the District of Columbia has an estimated increase of 1.7 percentage points.

Source: U.S. Census Bureau, Current Population Survey, 2016-2018 Annual Social and Economic Supplements

Figure 6. Impact of Medical Expenses on the SPM: 2016 – 2018



Note that the District of Columbia has an estimated increase of 2.7 percentage points.

Source: U.S. Census Bureau, Current Population Survey, 2016-2018 Annual Social and Economic Supplements

## Expenses Considered

### Work Expenses

Work related expenses considered by the SPM include those for travel, uniforms and tools (Fox, 2018). Work expenses leave families with less household income for necessities, thus the measure accounts for this spending when determining their poverty status. States with the most burdensome work-related expenses include California, Georgia and Maryland, increasing each states SPM rate by 2.3, 2.2 and 2.2 percentage point respectively.

## Medical Expenses

Is it known among researchers that health care spending in the United States is more than that of any other country in the world (Brink, 2017). Due to the cost of such care, many individuals are pushed into poverty. Each year (on average) medical expenses pushed approximately 10.9 million individuals below the SPM threshold. States where medical expenses were the most burdensome include Florida, North Carolina and New Jersey. In each of these states, medical expenses increased the SPM rate by 4.4, 4.3 and 4.2 percentage points respectively.

## Conclusion

The SPM considers a variety of benefits that the OPM does not.

Consequentially, researchers can estimate the impact that government aid programs and major expenses have on either decreasing or increasing the SPM rate. Knowing how each benefit or expense impacts smaller geographic regions is useful for understanding the welfare of families across the country. State level estimates on the poverty reducing impact of aid programs can also signal to policymakers their effectiveness and help pinpoint where additional aid may be needed.

## References

- Fox L. (2017). The Supplemental Poverty Measure: 2016. U.S. Census Bureau. September.
- Provencher A. (2011). Unit of Analysis for Poverty Measurement: A Comparison of the Supplemental Poverty Measure and the Official Poverty Measure. U.S. Census Bureau. March.
- Brink S. (2017). What Country Spends The Most (And Least) on Health Care Per Person? National Public Radio.

## Appendix

Table 1. Percentage Point Impact of Each Benefit or Expense on the SPM Rate: 2016 – 2018

State	SPM		Benefits								Expenses			
			Social		Refundable		SNAP		Housing		Work		Medical	
	Est.	m.o.e	Est.	m.o.e	Est.	m.o.e	Est.	m.o.e	Est.	m.o.e	Est.	m.o.e	Est.	m.o.e
<b>United States</b>	14.1	0.2	-8.3	0.1 *	-2.8	0.1 *	-1.2	0.1 *	-0.9	0.1 *	1.7	0.1 *	3.4	0.1 *
Alabama	13.9	1.5	-11.6	0.8 *	-3.3	0.5 *	-1.4	0.4 *	-0.6	0.2 *	1.6	0.4 *	3.8	0.6 *
Alaska	12.1	1.3	-4.7	0.8 *	-2.9	0.9 *	-2.2	0.7 *	-0.9	0.4 *	1.7	0.6 *	1.9	0.6 *
Arizona	15.4	1.2	-8.2	1.1 *	-3.7	0.7 *	-1.1	0.3 *	-0.5	0.2 *	2.0	0.6 *	3.2	0.6 *
Arkansas	14.2	0.9	-11.6	1.0 *	-3.0	0.5 *	-1.2	0.3 *	-0.5	0.3 *	2.0	0.4 *	3.9	0.5 *
California	19.0	0.5	-6.1	0.3 *	-3.3	0.3 *	-1.1	0.2 *	-1.3	0.2 *	2.3	0.2 *	3.3	0.2 *
Colorado	10.8	1.1	-5.8	0.8 *	-2.4	0.7 *	-0.7	0.3 *	-0.6	0.2 *	1.3	0.3 *	3.6	0.7 *
Connecticut	12.4	1.5	-6.3	0.9 *	-2.2	0.6 *	-0.9	0.3 *	-1.5	0.5 *	1.3	0.5 *	3.7	0.8 *
Delaware	11.6	1.1	-9.2	1.0 *	-2.2	0.7 *	-0.7	0.3 *	-0.6	0.3 *	1.6	0.5 *	2.7	0.5 *
District of Columbia	20.2	1.2	-4.5	0.5 *	-1.8	0.4 *	-1.7	0.4 *	-4.7	0.7 *	1.7	0.5 *	2.7	0.4 *
Florida	18.0	0.9	-10.5	0.6 *	-2.6	0.3 *	-1.2	0.2 *	-0.8	0.2 *	2.1	0.3 *	4.4	0.4 *
Georgia	15.6	1.0	-8.0	0.6 *	-3.6	0.7 *	-1.6	0.4 *	-0.6	0.2 *	2.2	0.5 *	3.3	0.6 *
Hawaii	15.0	1.3	-7.7	0.7 *	-2.1	0.5 *	-1.3	0.4 *	-1.9	0.4 *	2.1	0.5 *	3.1	0.5 *
Idaho	9.8	1.2	-9.2	0.8 *	-3.3	0.6 *	-1.1	0.3 *	-0.4	0.2 *	1.5	0.3 *	3.1	0.5 *
Illinois	12.6	0.9	-7.8	0.7 *	-2.7	0.4 *	-1.0	0.3 *	-0.7	0.2 *	1.7	0.3 *	3.5	0.4 *
Indiana	12.1	1.1	-9.1	1.1 *	-2.8	0.6 *	-1.2	0.5 *	-0.6	0.3 *	2.0	0.5 *	4.1	0.6 *
Iowa	8.6	0.9	-8.1	0.8 *	-2.8	0.8 *	-0.8	0.5 *	-0.4	0.2 *	1.1	0.4 *	2.5	0.5 *
Kansas	10.1	0.9	-8.6	0.7 *	-3.7	0.9 *	-1.0	0.4 *	-0.4	0.3 *	1.5	0.5 *	3.1	0.6 *
Kentucky	13.6	1.1	-11.1	1.0 *	-3.0	0.9 *	-1.6	0.6 *	-1.0	0.3 *	1.3	0.4 *	3.7	0.6 *
Louisiana	17.8	1.6	-8.8	0.7 *	-3.3	0.6 *	-2.0	0.4 *	-0.8	0.2 *	1.7	0.4 *	4.0	0.6 *
Maine	10.3	1.4	-12.7	1.5 *	-1.4	0.7 *	-1.0	0.6 *	-1.0	0.6 *	1.5	0.5 *	3.0	0.8 *
Maryland	13.6	1.3	-5.7	0.7 *	-2.5	0.6 *	-1.2	0.4 *	-1.3	0.5 *	2.2	0.6 *	3.5	0.6 *
Massachusetts	13.1	1.1	-7.5	0.7 *	-1.8	0.4 *	-1.0	0.3 *	-2.5	0.5 *	1.7	0.3 *	3.3	0.5 *
Michigan	11.3	1.0	-10.3	0.8 *	-2.0	0.4 *	-1.2	0.3 *	-0.8	0.3 *	1.3	0.3 *	3.1	0.6 *
Minnesota	8.1	1.3	-6.7	0.9 *	-1.7	0.6 *	-0.9	0.4 *	-0.9	0.3 *	0.7	0.3 *	2.8	0.6 *
Mississippi	15.8	0.8	-12.3	0.9 *	-4.3	1.1 *	-2.3	0.6 *	-1.0	0.3 *	2.1	0.4 *	3.9	0.5 *
Missouri	11.2	1.3	-9.7	0.9 *	-2.5	0.7 *	-0.8	0.3 *	-0.4	0.3 *	1.1	0.3 *	3.6	0.9 *
Montana	10.1	1.0	-10.3	1.0 *	-2.2	0.5 *	-1.1	0.3 *	-0.4	0.2 *	1.4	0.3 *	3.3	0.7 *
Nebraska	9.8	1.1	-8.3	0.8 *	-2.6	0.6 *	-0.7	0.3 *	-0.6	0.3 *	1.7	0.4 *	3.5	0.5 *
Nevada	13.6	1.3	-8.4	0.9 *	-3.4	0.8 *	-1.0	0.4 *	-0.4	0.2 *	2.2	0.6 *	3.3	0.6 *
New Hampshire	8.6	1.0	-7.9	1.0 *	-1.7	0.4 *	-0.6	0.3 *	-1.2	0.4 *	1.0	0.3 *	3.0	0.6 *
New Jersey	15.1	1.1	-7.6	0.7 *	-2.5	0.6 *	-0.8	0.3 *	-1.3	0.3 *	1.7	0.3 *	4.2	0.6 *
New Mexico	15.2	1.2	-9.2	1.2 *	-3.1	0.6 *	-1.5	0.3 *	-0.8	0.2 *	2.2	0.4 *	2.7	0.6 *
New York	15.5	0.7	-8.5	0.6 *	-2.9	0.4 *	-1.8	0.3 *	-2.2	0.3 *	1.7	0.3 *	3.1	0.4 *
North Carolina	14.2	0.9	-9.8	0.9 *	-3.1	0.5 *	-1.4	0.3 *	-0.4	0.1 *	1.9	0.3 *	4.3	0.5 *
North Dakota	10.8	1.0	-6.3	1.0 *	-1.9	1.2 *	-0.9	0.6 *	-0.7	0.5 *	1.5	0.4 *	3.2	0.5 *
Ohio	11.4	0.9	-8.9	0.7 *	-2.4	0.4 *	-1.9	0.3 *	-1.0	0.3 *	1.3	0.3 *	3.1	0.4 *
Oklahoma	11.8	1.6	-10.0	0.9 *	-2.9	0.6 *	-1.0	0.4 *	-0.6	0.3 *	1.3	0.3 *	3.1	0.6 *
Oregon	12.5	1.3	-8.9	1.1 *	-2.9	0.5 *	-1.2	0.4 *	-0.3	0.2 *	1.8	0.3 *	3.3	0.7 *
Pennsylvania	11.7	0.9	-9.5	0.7 *	-1.9	0.4 *	-1.3	0.3 *	-1.0	0.2 *	1.5	0.3 *	3.2	0.4 *
Rhode Island	10.1	1.4	-8.2	1.0 *	-2.2	0.6 *	-1.4	0.6 *	-1.7	0.6 *	1.2	0.4 *	1.7	0.5 *
South Carolina	13.7	1.1	-10.9	0.9 *	-2.4	0.6 *	-1.2	0.4 *	-1.0	0.4 *	1.0	0.3 *	3.2	0.6 *
South Dakota	10.4	1.2	-8.2	0.9 *	-1.5	0.5 *	-1.8	0.3 *	-1.3	0.3 *	1.8	0.6 *	3.8	0.7 *
Tennessee	13.1	1.1	-10.6	0.7 *	-2.5	0.5 *	-1.1	0.3 *	-0.6	0.2 *	1.2	0.3 *	3.1	0.4 *
Texas	14.7	0.7	-6.6	0.4 *	-4.0	0.3 *	-1.1	0.2 *	-0.6	0.1 *	1.8	0.2 *	3.5	0.3 *
Utah	9.3	1.0	-5.3	0.8 *	-3.3	0.6 *	-0.8	0.4 *	-0.3	0.2 *	1.1	0.4 *	3.3	0.6 *
Vermont	10.2	1.1	-10.5	1.0 *	-2.2	0.6 *	-1.3	0.4 *	-0.9	0.3 *	0.9	0.3 *	2.8	0.6 *
Virginia	14.6	1.2	-7.2	0.6 *	-2.3	0.5 *	-0.6	0.2 *	-0.7	0.2 *	1.9	0.4 *	4.2	0.7 *
Washington	10.7	0.9	-7.6	0.9 *	-2.5	0.5 *	-1.1	0.3 *	-0.9	0.3 *	1.5	0.4 *	2.5	0.5 *
West Virginia	13.3	1.3	-14.8	2.3 *	-1.9	0.3 *	-1.7	0.6 *	-0.7	0.3 *	1.4	0.2 *	3.3	0.5 *
Wisconsin	8.9	1.0	-8.7	0.9 *	-2.4	0.5 *	-0.9	0.3 *	-0.5	0.3 *	1.2	0.3 *	2.2	0.4 *
Wyoming	10.6	1.3	-7.8	0.7 *	-2.7	0.5 *	-0.7	0.3 *	-0.58	0.23 *	1.2	0.3 *	3.2	0.5 *

Margin of errors were calculated using replicate weights.

Percentage point changes noted with an asterisk are statistically significant at the 95 percent confidence interval.

Source: U.S. Census Bureau, Current Population Survey, 2016–2018 Annual Social and Economic Supplements



Table 2. Impact of Each Benefit or Expense on the Number of People in Poverty: 2016 – 2018  
(Numbers in Thousands)

	SPM	Benefits				Expenses	
		Social Security	Refundable Tax Credits	SNAP	Housing Subsidies	Work	Medical
<b>United States</b>	45,184	-26,629	-9,113	-3,872	-3,306	5,539	10,949
Alabama	671	-561	-157	-66	-74	76	181
Alaska	86	-33	-21	-16	-3	12	14
Arizona	1,060	-562	-254	-76	-70	138	220
Arkansas	416	-339	-88	-35	-42	59	115
California	7,453	-2,374	-1,279	-431	-428	920	1,276
Colorado	592	-315	-132	-39	-30	68	199
Connecticut	443	-226	-79	-31	-35	45	130
Delaware	111	-88	-21	-6	-7	15	26
District of Columbia	138	-31	-12	-12	-11	12	19
Florida	3,696	-2,159	-536	-246	-234	433	903
Georgia	1,593	-820	-370	-166	-89	222	335
Hawaii	209	-107	-29	-17	-10	30	43
Idaho	165	-155	-56	-18	-11	26	52
Illinois	1,588	-980	-336	-130	-73	212	443
Indiana	785	-594	-186	-81	-61	128	265
Iowa	265	-249	-86	-25	-20	33	77
Kansas	287	-245	-106	-29	-23	42	89
Kentucky	596	-487	-130	-72	-68	58	163
Louisiana	813	-403	-148	-91	-69	80	182
Maine	136	-168	-19	-14	-21	19	40
Maryland	807	-339	-149	-72	-62	129	208
Massachusetts	887	-510	-123	-66	-103	115	223
Michigan	1,114	-1,018	-195	-123	-122	129	302
Minnesota	446	-370	-96	-51	-36	41	154
Mississippi	465	-362	-126	-69	-64	61	115
Missouri	664	-574	-147	-47	-48	65	215
Montana	104	-106	-22	-11	-8	15	34
Nebraska	182	-155	-48	-14	-10	31	65
Nevada	399	-246	-99	-29	-26	63	97
New Hampshire	113	-104	-22	-8	-11	14	39
New Jersey	1,345	-678	-224	-75	-57	151	379
New Mexico	311	-189	-63	-31	-17	44	54
New York	3,041	-1,674	-577	-343	-293	331	612
North Carolina	1,429	-990	-313	-142	-100	196	432
North Dakota	81	-47	-15	-7	-4	11	24
Ohio	1,306	-1,014	-275	-213	-136	153	351
Oklahoma	458	-388	-114	-40	-46	49	119
Oregon	515	-367	-118	-48	-40	73	137
Pennsylvania	1,474	-1,195	-237	-166	-170	186	397
Rhode Island	106	-86	-23	-15	-21	13	18
South Carolina	667	-531	-115	-61	-45	50	155
South Dakota	89	-70	-13	-16	-10	15	32
Tennessee	872	-706	-168	-77	-94	82	204
Texas	4,067	-1,835	-1,108	-303	-193	484	967
Utah	286	-162	-101	-24	-10	34	102
Vermont	62	-64	-14	-8	-6	5	17
Virginia	1,197	-589	-192	-48	-61	159	341
Washington	780	-554	-183	-82	-46	108	183
West Virginia	240	-266	-34	-30	-40	25	60
Wisconsin	513	-501	-137	-49	-44	71	124
Wyoming	60	-44	-15	-4	-4	7	18

Source: U.S. Census Bureau, Current Population Survey, 2016-2018 Annual Social and Economic Supplements