Working But Poor: Using the Supplemental Poverty Measure to Examine The Effects of the Safety Net on Poverty for Working Families

Laryssa Mykyta, U.S. Census Bureau

Abstract

The past several years have seen steady employment growth, yet earnings have not kept pace. Although individuals in working families have lower poverty rates than their counterparts, nearly 26.8 million individuals (9.8 percent) living in working families were poor and an additional 40.3 million had incomes just above the poverty line (between 100 and 150 percent of their poverty threshold) using the Supplemental Poverty Measure. I use the 2018 Current Population Survey Annual Social and Economic Supplement to examine supplemental poverty rates among working families and to identify factors – including safety net programs -- that contribute to or alleviate poverty. Preliminary findings suggest that while medical expenditures and child care costs contribute to poverty among working families, cash transfer programs (for example, social security and unemployment insurance) and noncash transfers (such as SNAP and housing subsidies) are vital in keeping working families out of poverty.

More than 8 million jobs were lost in the U.S. in the last recession, but more than 18 million have been gained since 2010. Indeed, the last several years have seen increases in the number of workers employed full-time, year round. Despite these gains, however, earnings have not kept pace with job growth. Real wages, particularly for service workers at the lower end of the wage scale, have been stagnant, and real earnings for full-time, full-year workers declined in the past year. In light of these conditions, it is important to examine how the recovery coupled with government policies has affected economic well-being among the most vulnerable workers. Although individuals in working families are less likely to live in poverty than the total population, in 2017, about 22.8 million individuals (8.4 percent) living in families with at least one worker were poor under the official poverty measure, which compares family money income to a threshold based on the number of persons and age of family head.[1] If we consider the

[1] The Census Bureau uses a set of income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty.

supplemental poverty measure (SPM) which takes into account additional expenditures faced by working families -- such as work expenses and child care expenses, taxes, as well as any additional resources provided through government noncash transfer programs -- then nearly 26.8 million individuals (9.8 percent) living in working families were poor, and an additional 40.3 million (14.9 percent) had incomes just above poverty (i.e. between 100 percent and 150 percent of the supplemental poverty threshold).

In this paper, we use the 2018 CPS Annual Social and Economic Supplement (CPS ASEC) to examine supplemental poverty rates for working families.[2] Specifically, we ask:

(1) How do the characteristics of individuals in working families differ, by poverty status?

(2) To what extent do government policies, including tax and transfer programs, alleviate poverty among working families?

(3) What factors are associated with entrances into and exits from poverty among individuals in working families?

Because the SPM enables researchers to examine the effects of programs on poverty rates, this analysis has the potential to inform policy solutions to alleviate poverty and improve well-being for individuals in working families.

Data and Methods

In this analysis, we use the 2018 Current Population Survey Annual Social and Economic Supplement (CPS ASEC) in order to examine poverty and wellbeing among working families.

[2] The estimates in this paper are from the 2018 Annual Social and Economic Supplement (ASEC) to the Current Population Survey (CPS). The estimates in this paper (which may be shown in text, figures, and tables) are based on responses from a sample of the population and may differ from actual values because of sampling variability or other factors. As a result, apparent differences between the estimates for two or more groups may not be statistically significant. All comparative statements have undergone statistical testing and are significant at the 90 percent confidence level unless otherwise noted. Standard errors were calculated using replicate weights. Further information about the source and accuracy of the estimates is available at <www2.census.gov/library/publications/2018/demo/p60_265.pdf>.

The CPS ASEC is well suited for this analysis since it serves as the basis for official poverty and supplemental poverty estimates in the U.S. The analytic sample is restricted to individuals living in working families (defined below), yielding a weighted sample of 272.2 million individuals (180,084 individuals unweighted).

The Supplemental Poverty Measure

In 2010 an interagency technical working group asked the Census Bureau to produce poverty estimates using the Supplemental Poverty Measure (SPM). The SPM differs from the official poverty measure in several important ways. First, while official poverty is measured at the family level, and includes as family members any individuals related by birth, marriage or adoption, the SPM acknowledges the growing importance of cohabitation as a family form and uses an expanded unit of analysis (SPM unit) that includes cohabiting partners and unrelated children, including foster children and unrelated individuals in the household under 15. Second, the SPM subtracts from resources expenses typically incurred by working families included, such as child care costs, commuting and other work expenses, and payroll taxes as well as out-of-pocket medical expenses and child support paid. Relevant to this analysis, the SPM also includes non-cash benefits, such as SNAP, housing subsidies, school lunch and energy assistance, and refundable tax credits, including the EITC as resources. These safety net programs are available to low-income families, including working families, to improve their economic well-being and ability to meet their needs. Finally, the SPM also uses thresholds that are adjusted for geographic differences in housing costs.

Defining working families

Although official poverty rates are measured at the family level, as noted above supplemental poverty rates are calculated for SPM units which includes cohabiting partners,

foster children. In this analysis, a working family is defined as an SPM unit in which at least one individual reported working in 2017. Therefore, any member of the SPM unit, whether or not they themselves worked in 2017, would be considered as a member of a working family.

Describing poverty among working families

In order to examine whether there are differences in poverty status among working families, I compare the characteristics of individuals in working families by poverty status using the SPM.

In order to determine the extent to which government tax policies and noncash transfer programs alleviate poverty for working families, I compare SPM poverty rates with poverty rates excluding each element or program in turn. For example, to examine the effect of the EITC on poverty rates for working families, the SPM poverty rate (which includes the EITC) is compared with a simulated SPM poverty rate that excludes only the EITC.

Identifying factors contributing to or alleviating poverty among working families

In order to examine poverty for working families, I run two sets of logit models predicting factors associated with changes in working families' poverty status using the supplemental poverty measure. The first set of models is restricted to individuals who classified as poor using the official poverty measure. The dependent variable in this set of models is coded as 1 if the individual is classified as not poor using the SPM and 0 if the individual is classified as poor using the SPM. Thus, the first set of models examines the impacts of government policies, including taxes and noncash transfer programs, on alleviating SPM poverty in working families. The second set of models is restricted to individuals who are *not* poor using the official poverty measure. The dependent variable for these models is coded as 1 if the individual is classified as poor using the supplemental poverty measure and 0 if the individual is not poor

using the SPM. Thus, the second set of models examines the impact of additional expenses borne by working families, including child care costs and commuting expenses, as well as taxes, on the likelihood of falling into SPM poverty for working families.

For both sets of models, I estimate nested models. All models control for individual and SPM unit characteristics, including age, sex, race/ethnicity, foreign-born status, educational attainment, whether the SPM unit includes any member employed full-time, year-round, whether the SPM unit includes any disabled person, the number of individuals under 18 years of age, the number of individuals over 65 years of age, the kind of SPM unit[3], household tenure and mortgage status, metropolitan residence and region. Model 1 includes variables indicating whether or not any unit member paid child support, had child care or commuting expenses or out-of-pocket medical expenses. Model 1 also includes variables indicating receipt of child support and workers' compensation as additional household resources. Model 2 includes variables indicating whether or not the unit paid federal taxes (before credits), or payroll taxes (FICA), and whether or not the unit received refundable tax credits or the earned income tax credit (EITC). Model 3 specifically examines the role of safety net ---that is whether or not the SPM unit received cash or noncash transfers from government programs, including Social Security, SSI, unemployment insurance, Temporary Assistance for Needy Families (TANF), Supplemental Nutrition Assistance Program (SNAP), WIC, School Lunch, housing assistance and energy assistance. Finally Model 4 represents the full model incorporating all of the covariates described above. In addition, I run these sets of models with variables reflecting the

[3] Kind of SPM unit distinguishes whether or not the SPM unit is headed by a married head, a female head, a male head, or represents a new SPM unit including a cohabiting partner and their relatives, an unrelated individual under 15 years, or a foster child under 18 years.

values of the additional expenses and resources. Standard errors are estimated using replicate weights to account for survey design effects.

Preliminary Results

Descriptive results

Table 1 describes characteristics of individuals in working families. As shown in Table 1, about 272 million people, or 84.2 percent of the civilian, noninstitutionalized population in the U.S., lived in working families, i.e. a family unit including at least one worker. While the official poverty rate for individuals in working families was 8.4 percent, the Supplemental Poverty Measure, incorporating noncash transfers, taxes, work and out-of-pocket medical expenses as well as the cost of child care, yields a rate of 9.8 percent.

In Table 2, we examine poverty status using the official and supplemental poverty measures among working families. As shown in Table 2, 20.3 million individuals – 7.5 percent of those in working families – change poverty status across the different measures. Specifically, 8,1 million people in working families who were poor using the official measure were not poor using the SPM, which takes into account noncash transfers, work expenses and taxes, including refundable tax credits. Thus, 35.8 percent of those who were poor using the official measure were not poor under the SPM. In addition, Table 2 shows that 12.1 million individuals in working families were not poor using the official measure but were poor using the SPM, representing 4.9 percent of those who were not poor using the official measure, but 45.2 percent of those who were poor using the SPM. Thus, accounting for noncash transfers and additional expenses in the SPM moves more individuals in working families into poverty than out of it. Table 3 examines the change in poverty rates from accounting for specific government safety net programs and tax policies. As shown. payroll taxes -- which are not accounted for in the official

poverty measure -- increase poverty rates for working families by 1.7 percentage points. In contrast the earned income tax credit, which is designed to benefit low-income working families, reduced the supplemental poverty rate by 2.1 percentage points.

In terms of safety net programs, among cash transfers social security had the largest impact reducing poverty. Social security reduced supplemental poverty rates by 3.3 percent. Of all cash transfers, 15.8 percent of individuals lived in working families receiving some assistance from social security, compared to just 3.6 receiving unemployment compensation; 2.9 percent receiving SSI and 1.3 percent receiving TANF. Among noncash transfer programs SNAP, which was received by 8.6 percent of individuals in working families, had the largest effect reducing poverty by 0.9 percentage points.

Factors associated with poverty exits for working families using the SPM

Finally, in Table 4 we report results for our multivariate analysis, with Panel A reporting results from the full model (Model 4) examining factors associated with exiting SPM poverty among individuals in working families classified as poor using the official poverty measure and Panel B reporting results from the full model examining factors associated with entering SPM poverty among individuals classified as not poor using the official poverty measure.

As shown in Panel A, receiving child support was positively associated with exiting poverty. Unexpectedly, both work expenses and taxes were positively associated with poverty exits under the SPM for those who were poor using the official poverty measure.

In terms of public safety net programs, among those who were poor under the official poverty measure, cash transfers like social security and unemployment insurance increased the odds of exiting SPM poverty by nearly 90 percent. Yet, noncash transfers, which are not incorporated in the official poverty rate, also reduce SPM poverty. For example, receiving SNAP

increased the odds of not being poor by 50 percent and free or reduced price school lunch was also positively associated with not being poor using the SPM.

Individual characteristics were also associated with the likelihood of exiting poverty using the SPM. For example, children under age 18 and young adults aged 25 to 34 years were more likely to exit poverty using the SPM than adults ages 35 to 64, while adults 65 years and older who were poor using the official measure were significantly less likely to exit poverty using the SPM. Among minorities, being of Hispanic origin was negatively associated with exiting poverty using the SPM. Not surprisingly working families that included at least one full-time, full-year worker also had greater log odds of exiting poverty using the SPM, as did homeowners who owned their homes free and clear.

Factors associated with poverty entrances for working families using the SPM

Among individuals who were not considered poor under the official poverty measure, subtracting child support paid from resources increased the likelihood of being classified as poor using the SPM. In contrast, receiving child support was negatively associated with being poor for these working families. Other expenses not incorporated in the official measure also increased SPM poverty for working families – specifically incorporating child care expenses and medical out-of-pocket expenditures increased the odds of SPM poverty by 23 percent (OR=1.23) and 39 percent (OR=1.39) respectively. Strikingly, work expenses and taxes were negatively associated with being classified as poor using the SPM among those who were not poor under the OPM.

When included in the SPM, several government safety net programs reduced the likelihood of entering SPM poverty for working families. Specifically receiving cash transfers such as TANF, social security, unemployment insurance reduce the log odds that individuals in a working family will experience poverty. However, even noncash transfers were negatively

associated with being poor using the SPM. Specifically, receiving school lunch, or a housing subsidy reduced the log odds of living in SPM poverty. Although SNAP was not significant in the full model, it was negatively associated with entrance into SPM poverty in model 3 including only government transfers and controlling for individual and household characteristics (results not shown).

Individual demographic and socioeconomic characteristics were also significantly associated with entrances into SPM poverty. For example, children under 18 years of age as well as young adults 25 to 34 had lower log odds of being classified as poor using the SPM conditional on not being poor under the official poverty measure compared to their counterparts 35 to 64 years old. On the other hand, males were significantly more likely to enter SPM poverty than females. Racial/ethnic minorities, the least educated (i.e. those without a high school diploma) and individuals living with a disabled person in the household also had higher odds of being poor using the SPM *even* if they were not poor under the official poverty measure.

Discussion

In this paper, I use the 2018 CPS Annual Social and Economic Supplement (CPS ASEC) to examine supplemental poverty rates for working families. Specifically, I examine the extent to which government safety net programs alleviate poverty among working families and explore the factors associated with entrances and exits into poverty among individuals in working families. Preliminary findings discussed above suggest the importance of government safety net programs – including social security and noncash transfers such as SNAP and housing subsidies in preventing poverty among working families. Results from multivariate models are consistent with these findings. Although findings are preliminary, the counterintuitive results for tax policy warrant further examination, but may reflect the association between higher income (reflecting

lower likelihood of poverty) and higher tax burden. In terms of next steps, I plan to estimate models using values of expenses and resources as discussed above, and to estimate models for working families under 200 percent of the federal poverty level, since these families are most at risk for experiencing poverty.

Table 1. Sample characteristics (N=272,219)

	Percent	SE
Official poverty rate	8.4	0.150
Supplemental poverty rate	9.8	0.177
In a "working family" with at least one full-time, full-year worker	84.8	0.193
Age		
Less than 18 years	25.9	0.059
18 to 24 years	10.1	0.049
25 to 34 years	15.8	0.039
35 to 64 years	41.3	0.064
65 and older	7.0	0.080
Sex		
Female	50.1	0.045
Male	49.9	0.045
Race/ethnicity		
White non-Hispanic	59.1	0.078
Black non-Hispanic	11.8	0.065
Hispanic	19.8	0.046
Other non-Hispanic	9.3	0.058
Foreign born	14.6	0.151
Educational attainment		
Less than high school	32.8	0.106
High school graduate	20.2	0.157
Some college	21.4	0.138
Bachelors' degree or higher	25.6	0.193
SPM Unit Type		
With married householder	62.8	0.263
Female householder	9.8	0.137
Male householder	17.0	0.191
In new SPM unit	10.3	0.172
Disabled individual in unit	5.4	0.096
Owned home	66.4	0.268
Metropolitan residence	87.4	0.498
Region		
Northeast	17.2	0.095
Midwest	21.0	0.074
South	37.5	0.010
West	24.3	0.084

Source: Current Population Survey Annual Social and Economic Supplement 2018

Table 2. Poverty status using the official poverty measure and the Supplemental Poverty Measure

	SPM: Not Poor	SPM: Poor	ROW TOTAL
Official Poverty Measure: Not Poor	237,234	12,114	249,348
Official Poverty Measure: Poor	8,188	14,683	22,871
COLUMN TOTAL	245,422	26,797	272,219

Note: Grey shaded columns represent a change in poverty status using different measures

Source: Current Population Survey Annual Social and Economic Supplement 2018

Table 3. Change in percent of individuals in working families in SPM poverty after accounting for taxes and government safety net programs

	Number	Percent
Poor using the supplemental poverty measure	26,736	9.8
TAX POLICY		
Federal income taxes	1,438	0.5
Payroll tax (FICA)	4,678	1.7
Earned income tax credit (EITC)	-5,703	-2.1
Refundable tax credits	-8,332	-3.1
SAFETY NET		
Cash Transfers		
Social security	-8.753	-3.3
Unemployment insurance	-550	-0.2
SSI	-1,322	-0.5
Temporary Assistance for Needy Families (TANF)	-379	-0.2
Noncash transfers		
Supplemental Nutritional Assistance Program (SNAP)	-2,459	-0.9
Housing subsidies	-1,488	-0.6
School lunch	-1,087	-0.4
WIC	-294	-0.1
Energy assistance	-117	-0.1

Note: + $p<0.10$; * $p<0.05$; ** $p<0.01$; $p<0.001$

Source: Current Population Survey Annual Social and Economic Supplement 2018

Table 4. Coefficients from Logit Models Predicting Likelihood Entrance Into and Exit Out of SPM Poverty

	PANEL A SPM Poor Entrance Into SPM Poverty for Individuals Who Were Not Poor Using Official Poverty Measure			PANEL B: SPM Not Poor Exit Out of SPM Poverty for Individuals Who Were Poor Using Official Poverty Measure		
	B	SE		B	SE	
Age						
Less than 18	-0.972	0.066	***	0.464	0.091	***
18 to 24	0.013	0.057		-0.027	0.087	
25 to 34	-0.285	0.059	***	0.211	0.076	**
65+	0.170	0.091	+	-0.797	0.174	***
Male	0.054	0.029	+	-0.094	0.043	*
Race						
Black non-Hispanic	0.299	0.083	***	-0.318	0.149	*
Hispanic	0.507	0.075	***	-0.239	0.119	*
Other non-Hispanic	0.533	0.089	***	-0.110	0.148	
Foreign-born						
Educational attainment						
Less than high school	0.139	0.064	*	-0.170	0.100	+
Some college	-0.305	0.051	***	0.176	0.088	*
Bachelors or higher	-0.726	0.068	***	0.064	0.108	
FTFY worker	-0.539	0.042	***	0.237	0.078	**
Household type						
Female head	0.386	0.089	***	-0.769	0.222	**
Male head	0.406	0.072	***	-0.275	0.154	+
New SPM Unit	0.157	0.111		1.233	0.161	***
Metropolitan residence	0.465	0.093	***	-0.361	0.138	**
Region						
Midwest	-0.507	0.104	***	0.801	0.177	***
South	-0.321	0.088	***	0.370	0.151	*
West	-0.073	0.091		0.304	0.156	+
Temure & mortgage status						
Owned home, with mortgage	-0.334	0.084	***	0.536	0.165	**
Rented	0.370	0.066	***	-0.063	0.128	
Disabled person in household	0.226	0.096	*	-0.318	0.165	+
Number of children	-0.305	0.047	***	0.147	0.037	***
Constant	0.499	0.810		-6.806	1.044	***
Government Safety Net						
Cash Transfers						
TANF	-1.129	0.328	**	0.022	0.239	
Social Security	-0.604	0.104	***	0.676	0.173	***
Unemployment insurance	-0.421	0.159	**	0.668	0.230	**
SSI	-0.438	0.153	**	0.271	0.247	
Noncash transfers						
SNAP	-0.097	0.103		0.529	0.119	***
School lunch	-0.222	0.083	**	0.285	0.116	*
WIC	-0.201	0.146		0.061	0.152	
Energy assistance	0.027	0.168		0.191	0.188	
Housing Subsidy	-0.673	0.230	**	1.688	0.165	***

Note: + $p<0.10$; * $p<0.05$; ** $p<0.01$; $p<0.001$

Table 4. Coefficients from Logit Models Predicting Likelihood Entrance Into and Exit Out of SPM Poverty *(continued)*

	PANEL A: SPM Poor Entrance Into SPM Poverty for Individuals Who Were Not Poor Using Official Poverty Measure			**PANEL B: SPM Not Poor** Exit Out of SPM Poverty for Individuals Who Were Poor Using Official Poverty Measure		
	B	SE		B	SE	
Tax Policy						
Federal taxes before credits	-1.406	0.095	***	1.315	0.143	***
FICA	-0.009	0.640		2.148	0.783	**
Refundable tax credits	0.668	0.285	*	0.789	0.533	
EITC	0.819	0.273	**	-0.451	0.525	
Additional expenses and resources						
Additional expenses deducted from resources						
Child support paid	0.671	0.162	***	0.015	0.448	
Child care	0.207	0.101	*	-0.081	0.163	
Work expenses	-2.827	0.859	**	1.892	0.729	*
MOOP	0.329	0.121	**	0.129	0.179	
Additional resources						
Child support received	-1.052	0.174	***	0.617	0.205	**
Workers compensation	-1.203	0.515	*	0.381	0.541	
N	237,641			22,620		

Note: + $p<0.10$; * $p<0.05$; ** $p<0.01$; $p<0.001$

Source: Current Population Survey Annual Social and Economic Supplement 2018