



TECHNICAL REPORT

# Methods for Estimating SNAP Policy Impacts with an ACS-Based Simulation Model

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# Methods for Estimating SNAP Policy Impacts with an ACS-Based Simulation Model

This report describes how we used the Urban Institute's new state-level microsimulation model, (Analysis of Transfers, Taxes, and Income Security, or ATTIS) to examine the possible effects of work requirements and certain other policy changes in the Supplemental Nutrition Assistance Program (SNAP, formerly known as food stamps). The changes are proposed in the Agriculture and Nutrition Act of 2018 (the 2018 farm bill).<sup>1</sup> This proposal to reauthorize the 2014 farm bill cleared the House Committee on Agriculture in mid-April 2018 and includes several changes to SNAP that would affect how families' incomes are counted, how program eligibility is determined, and the work requirements placed on recipients. Many of the proposed changes are restrictions; others, such as an increase in the maximum allowable level of assets, could make some families newly eligible. (An analysis of the projected effects of the bill's work requirement provision is presented in a separate research brief; see Acs, Wheaton, and Waxman 2018)

Microsimulation modeling is a powerful tool for estimating the potential impacts of policy changes because it captures not only the impact of a single policy change but also the interactions among changes. The Urban Institute's new ATTIS model is applied to household data from the 2015 American Community Survey (ACS) to allow both national and state-level analysis. The model is comprehensive, estimating eligibility, benefits, and enrollment for all the major benefit programs—SNAP, Supplemental Security Income (SSI), Temporary Assistance to Needy Families (TANF), child care subsidies through the Child Care and Development Fund (CCDF), public and subsidized housing, the Low-Income Home Energy Assistance Program, and the Special Supplemental Nutrition Program for Women, Infants, and Children—and computing payroll taxes and federal and state income taxes.

A microsimulation model is particularly useful for estimating policy impacts such as those of the 2018 farm bill, which proposes several policy changes. For example, the number of recipients affected by work requirements could differ depending on what other changes are enacted simultaneously. We estimate the effects of the 2018 farm bill changes as if they had been effect in 2018. To enable 2018 estimates, we adjust the data (both the 2015 ACS household data and the simulations of current-law rules) to approximate the population, employment, income levels, and policies in 2018 (a process known as “aging”). The 2018 farm bill policy changes were then applied to the aged data.

This report describes how we aged the data to 2018, created 2018 simulations of SNAP and other key benefit programs, and then modified the SNAP simulation to impose key 2018 farm bill policy changes. More information on the underlying model, including the development of the 2015 “baseline” simulations, is in the appendix; a complete description of ATTIS is forthcoming from Urban Institute authors.

## Data Aging to 2018

We estimate the effects of the work requirements in the 2018 farm bill as if they were in effect in 2018.<sup>2</sup> This requires that we age the 2015 data to better represent the current year. Employment is substantially higher in 2018 than it was in 2015, real incomes are somewhat higher, and the population is larger; all those differences could affect the relative impact of policy changes. We adjusted the size of the population, the numbers of employed people, and the levels of various types of income.

- **Population adjustment:** According to the US Census Bureau, the projected population in 2018 is 2.2 percent larger than the 2015 population.<sup>3</sup> To reflect that increase, we inflated each of the sampling weights in the 2015 ACS data 2.2 percent. This simple approach does not capture possible variation from 2015 to 2018 in the population’s distribution by various demographic factors, such as family type or income level.
- **Employment adjustment:** Per the Congressional Budget Office (CBO), the unemployment rate, which was 5.3 percent in 2015, is expected to average 3.8 percent in 2018 (CBO 2018a). The CBO estimates that 155.6 million civilians will be employed on average during 2018—an increase of 4.6 percent from 148.8 million in 2015 (CBO 2017, 2018a). Further, state-specific employment data for 2015 and 2017 from the Bureau of Labor Statistics show employment increases in all but three states.<sup>4</sup> We computed a 2015-to-2018 percent change in employment for each state using a combination of the Bureau of Labor Statistics data and CBO estimates. We applied that percent change to the 2015 employment in the ACS data to obtain targeted employment. That target, 153.8 million at the national level, is somewhat below the CBO figure because the 2015 ACS employment is also below the 2015 CBO figure; we determined that it was more appropriate to capture the change in percentage terms rather than to match the CBO employment estimate.
  - » First, we assigned jobs to about three-quarters of the people who did not work at all in 2015, who appeared from the data to be looking for work (i.e., they were in the labor force), who were not students, and who did not appear to have a disability. For people selected to

be employed in 2018, the characteristics of the new job (weeks, hours per week, and hourly wage) varied by their educational attainment, for which we defined five categories: less than high school, high school, some college, associate's degree, and four-year degree or more. Within each educational group, a new worker was assigned one of three job profiles: full-time full-year, not full-time full-year but working at least 30 hours a week, and not full-time full-year and working under 30 hours a week. The likelihood of each profile and the specific characteristics of each profile (weeks, hours a week, and hourly wage) were based on averages computed from calendar-year 2016 Current Population Survey Annual Social and Economic Supplement (CPS ASEC) data, with separate profiles computed for each educational attainment group. Any unemployment compensation an individual appeared to have received in the 2015 data was changed to zero for individuals assigned to move from unemployment to employment.

- » Second, for about one-third of people who worked for part but not all of 2015 and who reported at least some weeks of looking for work, we assigned additional weeks of work.
- » Third, in the three states in which the 2018 targeted employment was slightly below 2015 employment after the population increase, a small number of employed people were changed to unemployed.

After these adjustments, average monthly employment is within 0.2 percent of the targeted figure, within 1 percent of the target in 32 states, and within 2 percent of the target in the remaining states.

- **Wage and salary adjustments:** To adjust earnings amounts to better reflect 2018, we relied on the CBO (2018a) estimate that aggregate wage and salary income will be 12.0 percent higher in 2018 than in 2015. The increase in the population and the increase in employment both led to increases to the 2015 aggregate wage and salary income. We accomplished the rest of the aggregate increase by increasing all wage and salary figures 7.9 percent, capturing both real and inflationary increases, to achieve the CBO's projected increase in aggregate wage and salary income in percentage terms. This simple approach does not capture the fact that wages and salaries may have increased more for individuals at some earnings levels than others. For example, this approach likely overstates the earnings increase for workers earning the federal minimum wage and for those earning a state or local minimum wage in areas that did not raise the minimum wage between 2015 and 2018.
- **Adjustments to other income amounts:** For two types of unearned income, survey-reported amounts were inflated by factors computed from CBO (2018a) projections. The total 2015-to-

2018 increases (including the impacts of population and real and inflationary change) were 5.4 percent for self-employment income and 19.1 percent for interest income. (The ACS does not distinguish among different types of asset income, and we assume that for the population relevant for our analyses, most asset income would be interest.) For Social Security, pensions, veterans' payments, workers' compensation, and unemployment compensation, amounts were inflated by the CBO estimate of price increases over the three-year period. Child support and alimony income were not increased, because most of the individuals receiving those awards in a given year had the awards established in prior years. Dollar amounts of SSI and TANF income were not explicitly adjusted in this way because those cash amounts are handled through the simulation process.

## Setting the Policy Baseline for 2018

Following the data adjustments, we simulated safety net program participation for the 2018 population. We created 2018 simulations for SSI, cash aid provided under TANF, child care subsidies through CCDF, and SNAP.<sup>5</sup> In these simulations, instead of using the 2015 policies (as in the 2015 baseline simulations that are described in the appendix) we used the actual or estimated 2018 policies under current law. The simulations were also adjusted to come close to expected 2018 caseloads. The assumptions for each program were as follows:

- **SSI**

- » **Policies:** National benefit levels and other policies are already available for 2018 on the Social Security Administration website. We assumed that state supplement amounts would remain at their 2015 levels, which was the most recent set of state supplement figures available. (From 2010 to 2015, six states that supplement SSI increased their supplements; five states decreased their supplements.)
- » **Caseload:** Following a projection by the Social Security Administration,<sup>6</sup> we assume that the 2018 caseload will be 1.3 percent lower than the 2016 caseload despite the population increase. Participation is recalibrated among the people simulated as eligible for SSI in the aged data to reach that target.

- **TANF**

- » **Policies:** Starting from the 2015 state-by-state policies used in the 2015 baseline, we inflated dollar-amount figures (income eligibility limits and dollar amounts used in



computing benefits) 0.7 percent for each year from 2015 to 2018. We chose that increase rate by computing the mean year-to-year change in dollar amounts over a 20-year period for each state (using data from the Welfare Rules Database)<sup>7</sup> and then averaging the state-level figures. We assumed that policies other than dollar amounts (e.g., the treatment of two-parent families, earnings disregards, child-only policies, and time-limit policies) were unchanged since 2015.

- » **Caseload:** The most recent caseload data available from the Administration for Children and Families show that the TANF caseload was 15 percent lower in 2017 than it was in 2015. Absent any other information about the likely caseload in 2018, our target for 2018 is 15 percent lower than our 2015 targets. Increased employment reduced TANF eligibility but not by a sufficient amount to reach the new target; we adjusted downward the probabilities of participation used in the 2015 baseline until the caseload was 15 percent lower than in the 2015 baseline.

#### ■ Child care subsidies through CCDF

- » **Policies:** As with TANF, we started from the 2015 policies and inflated income limits 1.1 percent per year, which was the average annual increase over the past five years. However, we assumed that the state limits on the value of child care that families can obtain (often termed the “maximum rates”) would increase by the rate of inflation because states are required to update those rates in a way that considers a survey of actual child care costs. We assumed that the structure of states’ copayment policies would remain as in 2015.
- » **Caseload:** Funding for child care subsidies will be higher in 2018 than it was in 2015 because of the recent budget package. Although states could use their additional block grant funding in several different ways, one recent analysis estimates that the additional funds will allow 230,000 additional children to receive subsidies (CLASP 2018). We therefore adjust the CCDF caseload in the aged 2018 data so that the number of children with CCDF subsidies is about 230,000 higher than in the 2015 baseline.

#### ■ SNAP

- » **Policies:** We used the national eligibility rules and benefit levels for FY 2018 available on the Food and Nutrition Service website.<sup>8</sup> State-level rules were obtained from various sources and reflect the most recent readily available information. State broad-based categorical eligibility (BBCE) policies reflect the policies in effect in 2016. We modeled time limits for able-bodied adults without dependents (ABAWDs) according to the rules and

waivers in effect in 2017. State Heating and Cooling Standard Utility Allowances reflect 2015 values adjusted for inflation to 2018.

- » **Caseload:** We adjusted the simulated caseload to approximate the actual SNAP caseload in January 2018 (40.6 million participating persons according to the most recent data available). The simulation assigned SNAP participation to 41.3 million people in the average month of 2018, exceeding the January 2018 caseload figure by 1.6 percent.

## Modeling Alternative SNAP Policies

The steps discussed above create a baseline picture that approximates the 2018 environment in population, employment, income, and participation in key safety net programs. These data are the foundation for estimating the number of SNAP participants who would be subject to the 2018 farm bill work requirements who are not already compliant with them. Our approach to those estimates was to model key provisions of the 2018 farm bill *without* the new work requirements, then tabulate information about individuals in that hypothetical caseload. We did not apply the new work requirements in this simulation (in other words, no person is simulated as not receiving benefits because of the new work requirements), because our goal was to estimate the number of participants who would be subject to but not currently compliant with the requirements. We checked participants' employment status and other characteristics in each month to determine if they were (a) subject to the work requirement and (b) meeting the work requirement.

Our simulation captures the following provisions from the 2018 farm bill:

- **Update to categorical eligibility:** The bill would reduce states' ability to increase the income eligibility limit and waive asset tests through BBCE. We follow the CBO interpretation that states would continue to be able to waive the net income limit through BBCE but would no longer be able to raise the gross income limit above 130 percent of the federal poverty guideline (CBO 2018b).<sup>9</sup> We further assume that states would no longer be able to eliminate or modify the asset test through BBCE.
- **Increase in the earned income deduction:** Under the 2018 farm bill, the earned income deduction is increased from 20 to 22 percent of earnings.
- **Increase in the federal asset limit:** The 2018 farm bill raises the federal asset limit from \$2,250 to \$7,000 (from \$3,500 to \$12,000 for households with a member with disabilities or a member age 60 or older). Although this represents an increase in the federal limit, many states had

eliminated asset tests through their BBCE policies. With changes to categorical eligibility rules, asset limits will be reinstated for many households in these states.

- **Five months of transitional SNAP benefits for families leaving TANF:** Previously, states could provide five months of transitional SNAP benefits to families leaving TANF. The 2018 farm bill makes five months of transitional benefits mandatory.

Because of data limitations, we did not capture the 2018 farm bill's changes to vehicle tests, the child support deduction, the child support cooperation requirement, the military housing allowance, the homeless housing credit, or the standard utility allowance for nonelderly households receiving energy assistance.

As a result of the simulated policy changes, some people who were estimated to receive SNAP in 2018 (under current 2018 law) became ineligible; some other people became eligible, and we modeled a portion of those people as receiving benefits consistent with observed participation rates in the 2015 baseline. The final numbers show 38.9 million people receiving SNAP in the average month of the year (compared with 41.3 million in the 2018 baseline), when the 2018 farm bill changes listed above are implemented, *without* imposing the 2018 farm bill work requirements.

Although SNAP has previously required adults without children to be working to receive benefits long term and has required many adults to register for work, the 2018 farm bill requires most nonelderly adults to work or be in training for at least 20 hours a week to continue receiving benefits. Many adults who would be subject to the work requirements are already compliant with them, but many others would have to start working or be enrolled in a qualifying program or else lose their benefits. The numbers of people falling in different groups will determine the potential changes in families' nutrition assistance as well as the potential cost of providing slots for employment and training.

For our analysis, we started with the population of individuals simulated to be receiving SNAP benefits in 2018 if other key provisions of the farm bill (but not the work requirement) were in effect. We then identified SNAP participants as subject to the 2018 farm bill's work requirements if they are ages 18 to 59 and are not receiving disability income. Caretakers of children under age 6 are exempt from the work requirement and we made the simplifying assumption that this exemption would be applied to all adults in the family. Because the ACS lacks information on full- versus part-time student status, we excluded students from the analysis.<sup>10</sup> We did not capture other potential exemptions, such as being physically or mentally unfit for work, pregnant, a caregiver for an incapacitated person, or

eligible for one of the state's 15 percent exemptions.<sup>11</sup> We also did not capture the effects of waivers to the work requirement that states would be able to request for areas with high unemployment.

We counted a person as meeting the work requirement if they worked an average of 20 or more hours a week in the month or had earnings equivalent to working at least 20 hours a week at the federal minimum wage.

# Appendix: 2015 Model Development

## ACS Data Adjustments

Our state-level modeling begins with the 2015 ACS data. The ACS, conducted by the US Census Bureau, provides ongoing information on the characteristics and economic circumstances of US households. The sample is sufficiently large that it can generate reliable estimates at the state level using a single year of data—over 1.2 million households are included in the 2015 public-use data. However, the ACS does have some limitations as a foundation for policy modeling. We adjust for those limitations as follows:

- **Calendar-year 2015 income amounts:** A single year of ACS data is not a true calendar-year picture. Respondents are surveyed in each month of the year, and each respondent is asked to report income in the 12 prior months; the January respondents are actually reporting 2014 income, and mid-year respondents are reporting income from a combination of 2014 and 2015. We apply a factor provided by the US Census Bureau to approximately adjust income amounts from the reported dollars to 2015.<sup>12</sup> We then treat the data as if they reflect calendar-year 2015 incomes.
- **Data on household interrelationships in the case of complex multifamily households:** We use the version of the ACS made available by the Integrated Public Use Microdata Series project of the University of Minnesota (Ruggles et al. 2000) to compensate for weaknesses in the data on household interrelationships. Integrated Public Use Microdata Series demographers have developed methods to impute information on relationships not captured in the survey, particularly the relationships among people who are unrelated to the household head.
- **Information on whether a cohabiting partner is also a parent:** The ACS data identify cases in which an unmarried parent is living with a partner, but they do not indicate whether that partner is also the second parent of one or more of the children. Because that information is important for modeling some benefit programs, we draw on probability models to estimate whether the unmarried partner of a parent is also the other parent of one or more of the children.<sup>13</sup>

- **Information on a noncitizen's legal status:** The ACS asks respondents if they are citizens but, like most surveys, does not ask a noncitizen about his or her legal status. Because that information is critical for estimating program eligibility, we impute a legal status to each noncitizen. The methods generally follow the approach initially developed by Passel and Clark (1998) and further refined as described by Passel and Cohn (2016).
- **Information on income from unemployment compensation and from child support:** The ACS asks for individual amounts for only a few different types of income and then asks a single combined question regarding a person's income from any other source. Two of the income types included in that "other" variable are unemployment compensation and child support income, which for modeling purposes must be separated from the total. We apply a statistical model estimated from CPS ASEC data to allocate the "other" amount into three portions: unemployment compensation, child support income, and all other income that is not reported separately.
- **Income from SSI versus Social Security:** Some respondents appear to confuse their reports of SSI and Social Security. We make adjustments to reclassify some reported SSI amounts as Social Security. In particular, we reclassify SSI as Social Security if reported by people who have too much other income (e.g., pensions) to qualify for SSI.
- **Income from TANF versus other public assistance income:** The ACS asks a single question about cash income from all public assistance programs other than SSI, presumably picking up income from state and local general assistance programs as well as from TANF. We classify this income as either TANF or other public assistance depending on whether the family appears to meet TANF eligibility requirements.
- **Monthly income:** All the income amounts reported in the ACS are annual. However, to model eligibility and benefits for safety net programs, monthly income amounts are needed. Different methods are used for different types of income. We allocate reported weeks of work across the year and assign the reported earnings to the months in which individuals will be treated as working. Unemployment compensation is allocated across weeks of apparent unemployment while accounting for the maximum possible weeks of unemployment compensation and each state's minimum and maximum weekly benefit amounts. Child support income is allocated while accounting for the irregularity of child support receipt as observed in data from the Survey of Income and Program Participation. Other types of unearned income are allocated evenly across the year.

- **Child care expenses:** Child care expenses are not reported in the ACS, but they are needed for detailed modeling of transfer programs because some policies allow families to deduct some of their child care expenses from their earned income. We impute the incidence and amount of working families' child care expenses using statistical models derived from other survey data, and we produce the same incidence and amounts of child care expenses as reported in CPS ASEC data.

## Baseline Policy Simulations for 2015

Any analysis of the potential impacts of policy changes must begin with a careful representation of the “baseline” situation that includes the size and characteristics of the caseload in the year of the survey data and uses the rules in place in that year.

In general terms, the microsimulation model “simulates” a program by applying the detailed rules of that program to the households in the survey data, one by one. The procedures that are implemented by the computer code are the same ones that would be applied by a caseworker: it determines what members of the household meet any overall program requirements (for example, SSI covers only people who are age 65 or older or who have a disability) and in some cases decides which members of a household will form a “filing unit”; it adds up gross income according to the program’s rules; it determines net income by subtracting disregards; it compares income to eligibility limits; it applies other eligibility tests, such as assets tests; and then it determines the potential benefit (or, for child care subsidies, the potential copayment and the potential subsidy). When rules vary by state, the simulation model picks up those variations. All these rules are modeled month by month and account for the fact that a family might be eligible for a program in some months of the year but not for the entire year.

From among the people who appear to be eligible for a program, the procedures select specific individuals or assistance units to represent the actual caseload. When the ACS includes information on reported program receipt, eligible people who reported receipt are always included in the simulated caseload. However, benefits are underreported in the ACS (as in other surveys, such as Meyer, Mok, and Sullivan 2015), so additional eligible individuals are selected to come up to the full caseload. As shown in tables A.1 through A.4, the final caseload for each simulated program comes very close to the size of each state’s actual caseload and the demographic characteristics of the actual caseload.

The simulations of the benefit programs were conducted sequentially and are internally consistent. For example, the simulation of the TANF program uses as part of its input the simulated information on

SSI (and, consistent with state rules, excludes the simulated SSI recipients from TANF filing units). In turn, the simulation of SNAP uses the simulated data on SSI and TANF income to compute cash income, calculate benefits, and identify a caseload that comes close to the characteristics of the actual caseload.

## SSI, TANF, and Child Care Subsidies in 2015

SNAP eligibility and benefits are affected by benefits received from SSI, TANF, and federally funded child care subsidies.<sup>14</sup> We briefly describe the methods used in those simulations and the results that we obtained for 2015.

The simulation of the SSI program uses both the federal-level rules and states' policies for supplementing federal SSI payments to identify people who appear to be eligible for SSI benefits and to compute benefit amounts consistent with their characteristics and income. The number of eligible people who report SSI in the survey data comes to about 60 percent of the actual caseload; the remainder of the caseload is selected from among the eligible people who did not report SSI but appear to be eligible for the program. The simulated caseload comes within 0.1 percent of the actual number of noninstitutionalized people with SSI during 2015 (table A.1). The simulated caseload of adult recipients is within 1 percent of the actual figure in 24 states and within 5 percent of the actual caseload in all but two states.

**TABLE A.1**

### **Simulated SSI Receipt Compared with Actual SSI Caseload, 2015**

*Average monthly numbers, in millions*

	<b>Simulated</b>	<b>Actual</b>	<b>Simulated as a percentage of actual</b>
Total units receiving SSI	13.156	13.192	99.7%
Total people receiving SSI	8.206	8.210	99.9%
<b>Recipients by type</b>			
Elderly	2.119	2.115	100.2%
Disabled adults	4.835	4.842	99.9%
Disabled children	1.251	1.254	99.8%

**Source:** Urban Institute Analysis of Transfers, Taxes, and Income Security model and SSI program administrative data.

**Notes:** SSI= Supplemental Security Income. Sample is of noninstitutionalized population.

The TANF simulation captures the extensive state-specific detail in the determination of TANF eligibility and benefits using information from the Welfare Rules Database (Cohen et al. 2016). The model also picks up the “solely state-funded” benefits provided in many states. As with SSI, the number of families who appear eligible for TANF and who reported public assistance income in the survey



represent only a portion of the actual caseload. For TANF, the families reporting “public assistance” in the survey who appear to be eligible for TANF constitute only one-third of the actual TANF caseload; the remainder of the simulated caseload is selected from among other eligible families. Focusing on just the TANF benefits (paid for with federal funds or with closely related state money that is administratively reported as TANF) the simulated caseload is within 0.3 percent of the total number of assisted units in the average month of 2015. The simulated caseload also comes close to the actual caseload by type of unit (table A.2). At the state level, the simulated caseload is within 1 percent of the actual caseload in 9 states, within 5 percent in a total of 38 states, within 10 percent in a total of 44 states, and within 20 percent of target in a total of 48 states. In some cases, the very small size of the actual caseload (e.g., fewer than 400 TANF cases in Wyoming) precludes closer alignment.

**TABLE A.2**

**Simulated TANF Receipt Compared with Actual TANF Caseload, 2015**

*Average monthly numbers, in millions*

	Simulated	Actual	Simulated as a percentage of actual
Total units receiving TANF	1.322	1.326	99.7%
<b>TANF recipients by unit type<sup>a</sup></b>			
Child-only units <sup>b</sup>	0.579	0.587	98.8%
Two-parent units	0.060	0.061	97.8%
Other units with earnings	0.157	0.155	100.9%
Other units without earnings	0.526	0.523	100.7%

**Source:** Urban Institute Analysis of Transfers, Taxes, and Income Security model and Temporary Assistance for Needy Families program administrative data.

**Note:** Includes TANF and state maintenance-of-effort or state separate program benefits. These counts do not include solely state-funded benefits, which are also modeled.

<sup>a</sup> Unit type is based on the number of adults in the assistance unit.

<sup>b</sup> Units that are child-only because of parent sanctions are classified with “other units.”

The simulation of federally funded child care subsidies through CCDF uses detailed state-level eligibility and copayment policies as captured in the CCDF Policies Database (Stevens et al. 2016). No information about child care subsidies is available in the survey, so the caseload is identified solely through probabilistic methods in order to come close to a variety of targets from administrative data (table A.3). At the state level, the simulated CCDF caseload is within 1 percent of the target in 14 states, within 5 percent of the target in 38 states, and within 10 percent of target in all the states.

TABLE A.3

**Simulated CCDF Receipt Compared with Actual CCDF Caseload, 2015***CCDF caseload in the average month of the year, in millions*

	Simulated	Actual	Simulated as a percentage of actual
All children receiving subsidies	1.389	1.387	100.1%
<b>Children receiving subsidies by age</b>			
Age 0	0.069	0.070	99.0%
Age 1	0.142	0.141	100.5%
Age 2	0.185	0.176	105.1%
Age 3	0.191	0.192	99.7%
Age 4	0.178	0.182	98.1%
Age 5	0.143	0.142	100.7%
Ages 6–12	0.478	0.481	99.4%
Ages 13+	0.003	0.004	82.2%
<b>Children receiving subsidies by race and ethnicity</b>			
White, Asian, or multiracial, non-Hispanic	0.525	0.517	101.7%
Black, non-Hispanic	0.566	0.571	99.1%
Hispanic	0.298	0.299	99.5%

**Source:** Urban Institute Analysis of Transfers, Taxes, and Income Security model and CCDF program administrative data.

**Note:** CCDF = Child Care and Development Fund.

For each family simulated to receive a child care subsidy, a copayment is computed by applying the state's copayment policies to the family's characteristics. For those families, the simulated copayment is used as the family's child care expense instead of the amount produced by imputation equations.

## SNAP Program in 2015

The ATTIS SNAP model, like the models of the other safety net programs, captures the actual program's eligibility and benefit policies in as much detail as possible. Unlike other safety net programs that serve individuals or families with specific demographic characteristics (e.g., people age 65 or older or with a disability for SSI, or families with children for TANF), SNAP is potentially open to most low-income households. However, people ages 18 to 49 who the program classifies as ABAWDs must be working to receive benefits beyond a limited period (3 months in a 36-month period) unless a state has requested and received a waiver for their geographic area because of high unemployment. As of the fourth quarter of 2017, 6 states and the District of Columbia had waivers covering the entire state, and 27 states were approved for waivers in part of the state.<sup>15</sup>

Most rules for SNAP eligibility and benefits are established nationally. Generally, households must have gross income under 130 percent of the federal poverty guideline and net income (after deductions) under 100 percent of the federal poverty guideline; they must also have countable assets

under specified limits. Households containing a person with disabilities or age 60 or older are not subject to the gross income test and have a higher asset limit. The SNAP benefit is computed by subtracting 30 percent of net income (the portion of income the unit is assumed to be able to spend on food) from a maximum allotment that increases as unit size increases. One-person and two-person assistance units also have a minimum benefit; that is, if the unit passes the eligibility tests, the monthly benefit will be at least a certain amount, which is currently \$15 for the continental US.

Although most rules are established federally, states have some options. One key option is the extent to which the state offers BBCE. Under BBCE policies, households not meeting the federal income or asset limits may qualify for SNAP if they receive a noncash benefit or service funded by TANF block grant dollars. States can confer eligibility through BBCE by offering a product, such as an informational brochure, that is funded by TANF.<sup>16</sup>

Most states with BBCE policies eliminate the assets test; others set a higher limit than under the federal rules. States with BBCE policies typically eliminate the net income test and may increase the gross income limit above the federal level. In some states, BBCE policies can provide SNAP eligibility to households with incomes up to 200 percent of the federal poverty guidelines. However, because the benefit formula remains unchanged under BBCE, households made eligible through BBCE don't necessarily qualify for a benefit.<sup>17</sup>

States also have other options, such as how they require recipients to report income changes, whether they provide transitional benefits to families leaving TANF, and how they set standard utility allowances used for the excess shelter expense deduction.

Key steps in the modeling of SNAP include

- determining whether a household's members would also file for benefits as one filing unit or if they would form more than one filing unit;
- determining whether some individuals are ineligible for SNAP because of their immigration status;
- applying rules for ABAWDs;
- calculating the unit's gross income based on its earned income and unearned income (including simulated SSI and TANF benefits);
- determining net income by subtracting the earned income deduction, child care deduction, medical expense deduction, and excess shelter expense deduction from gross income;<sup>18</sup>

- determining if a unit is exempt from income and asset tests because all unit members receive cash assistance from SSI, TANF, or a state-run General Assistance program;
- applying income eligibility tests (under federal limits, unless modified by state BBCE rules);
- applying assets tests (using federal limits, unless waived or increased under state BBCE rules);<sup>19</sup> and
- calculating the potential benefit.

These steps are all performed monthly and account for real-world rules (including state variations) governing when units do and do not have to report month-to-month income changes.

The simulated caseload comprises the eligible units that report receiving SNAP in the survey plus additional units selected from among eligible units that do not report receiving SNAP in the survey. Of the 28.6 million units simulated to receive SNAP benefits in at least one month of the year, approximately 43 percent report receiving SNAP in the ACS.

The simulated caseload comes very close to the actual caseload. Nationally, the simulated average monthly number of participating SNAP units is 0.7 percent below the actual, and the average monthly number of participating persons is 2 percent above the actual (table A.4). At the state level, the simulated number of participating units is within 1 percent of the actual in 26 states, within 2 percent of the actual in 45 states, and within 4 percent of the actual in all the states.

**TABLE A.4**

**Simulated SNAP Receipt Compared with Actual SNAP Caseload**

*SNAP caseload in average month of year, in millions*

<b>SNAP benefit recipients</b>	<b>Simulated</b>	<b>Actual</b>	<b>Simulated as a percentage of actual</b>
<b>All units</b>	<b>22.3</b>	<b>22.4</b>	<b>99.3%</b>
Units with children	9.7	9.6	101.1%
Units with person aged 60+	4.6	4.4	104.0%
Units with person with disabilities	4.2	4.5	92.0%
Other	5.6	5.6	100.8%
<b>Total number of people</b>	<b>46.3</b>	<b>45.4</b>	<b>102.0%</b>

**Source:** Urban Institute Analysis of Transfers, Taxes, and Income Security model and SNAP program administrative data.

The procedures described here create an augmented version of the 2015 ACS data in which the receipt of key benefit programs come close to actual data and that had internal consistency across the reported income data and the benefit amounts.

# Notes

- <sup>1</sup> The Agriculture and Nutrition Act of 2018, H.R. 2, 115th Congress (2018).
- <sup>2</sup> Although the proposed bill would give states until 2021 to implement the revised work requirements, for simplicity, we model the changes based on 2018 baseline data.
- <sup>3</sup> See "Table 1. Projected Population by Single Year of Age, Sex, Race, and Hispanic Origin for the United States, 2016 to 2060," from "2017 National Population Projections Datasets," US Census Bureau, last revised March 13, 2018, <https://www.census.gov/data/datasets/2017/demo/popproj/2017-popproj.html>.
- <sup>4</sup> "Civilian Noninstitutional Population and Associated Rate and Ratio Measures for Model-Based Areas," Bureau of Labor Statistics, Local Area Unemployment Statistics, last modified March 12, 2018, <https://www.bls.gov/lau/rdscnp16.htm>.
- <sup>5</sup> SSI provides cash payments to low-income people with serious disabilities or and low-income people age 65 or older (<https://www.ssa.gov/ssi/>). The TANF block grant allows states to provide cash payments and other assistance to low-income families with children (<https://www.acf.hhs.gov/ofa/programs/tanf/about>). The CCDF block grant funds subsidized child care for families with employed parents (<https://www.acf.hhs.gov/occ/resource/child-care-and-development-fund>).
- <sup>6</sup> See page 7 of "Budget Summary Table and Other Key Tables" at "SSA Budget Information: FY 2018," Social Security Administration, accessed May 11, 2018, <https://www.ssa.gov/budget/>.
- <sup>7</sup> See the Welfare Rules Database at <http://wrd.urban.org>.
- <sup>8</sup> "Program Data: Supplemental Nutrition Assistance Program (SNAP)," Food and Nutrition Service, last published May 4, 2018, <https://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap>.
- <sup>9</sup> The gross income test does not apply to households with a member age 60 or older or a member with disabilities.
- <sup>10</sup> College students attending school more than half time are ineligible for SNAP unless they meet certain exemptions. Among students who are eligible for SNAP, being in school at least half time provides an exemption from the work requirement.
- <sup>11</sup> Under the 2018 farm bill, states would be granted exemptions equal to 15 percent of the number of people who would be subject to but not meeting the work requirement in fiscal year 2019.
- <sup>12</sup> The CY 2015 inflation factor is 1.001264 (see "Note on the Standardization of ACS/PRCS Income Variables and Other Dollar-Amount Variables," IPUMS USA, accessed May 11, 2018, <https://usa.ipums.org/usa/acsincadj.shtml>).
- <sup>13</sup> We used CPS ASEC data that identifies cohabiting parents to estimate the probability based on characteristics that the cohabiting partner is the child's parent. We then used those probabilities to randomly assign parent status. This type of estimation is a standard practice in microsimulation when an important variable is not available in the survey data.
- <sup>14</sup> Child care subsidies affect a family's child care expenses, which are deducted when determining net income for SNAP eligibility and benefit determination.
- <sup>15</sup> "Status of State Able-Bodied Adult without Dependents (ABAWD) Time Limit Waivers Fiscal Year 2017 – 4<sup>th</sup> Quarter," Food and Nutrition Service, US Department of Agriculture, last updated September 15, 2017, accessed November 15, 2017, <https://fns-prod.azureedge.net/sites/default/files/snap/FY-2017-Quarter-4-ABAWD-Waiver-Status.pdf>.

<sup>16</sup>Forty-two states and territories had BBCE policies in effect by the end of fiscal year 2015 (Gray, Fisher, and Lauffer 2016).

<sup>17</sup>Households with one or two members are guaranteed to receive at least the minimum SNAP benefit. However, there is no minimum benefit for households with three or more members. To receive SNAP, these households must have income that is low enough to qualify for a benefit under the SNAP benefit formula.

<sup>18</sup> The medical expense deduction is only available to units with a member age 60 or above or a member with disabilities. Because of data limitations, the model does not simulate the deduction for payment of child support.

<sup>19</sup> Because of data limitations, the model does not simulate ineligibility as a result of vehicle assets; over half of states now exclude all vehicles from the assets test (Gray, Fisher, and Lauffer 2016).

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