

Policy Rules Database Technical Manual

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1. Overview

1.1 Purpose of the Policy Rules Database

The public assistance programs that support workforce participation in the United States are made up of a patchwork of policies, implemented and administered at the federal, state, and local levels and subject to a diverse array of policy rules. These programs are designed separately from each other and each has a unique structure and terminology. Public assistance program rules and tax policies are often buried in legislative documents or government websites and are frequently exceedingly difficult to interpret.

The key purpose of the Policy Rules Database (PRD) is to simplify the interpretation of all programs by creating a *common structure* and a *common terminology*. The PRD culls eligibility information into one simple-to-use database that describes policy rules in plain English and boils the complex program design down to a common set of logical or numeric fields. Importantly, the PRD is a resource for individuals trying to understand the general structure of how each public assistance program works as well as for programmers wanting to estimate the value of a particular program. The PRD enables the calculation of public assistance and tax amounts for any individual—subject to some limitations—without requiring specialized knowledge. Online tools such as the National Center of Children in Poverty (NCCP) Family Resource Simulator and the Federal Reserve Bank of Atlanta’s Career Ladder Identifier and Financial Forecaster (CLIFF) tool can be directly linked to the PRD parameters.

The PRD can be used in the following ways:

- Assess the general structure of any public assistance program or tax policy.
- Compare and contrast rules across public assistance programs and tax policies.
- Read in PRD parameters and determine the eligibility for a particular program and estimate the value of this program using provided formulas.

Several publicly available data sets exist that model some of these policies, but in some cases these sources are incomplete. In others, they are not up to date. In still other cases, these sources do not provide easily quantifiable data. For example, the Urban Institute publishes annual data sets of Child Care and Development Fund (CCDF) and Temporary Assistance for Needy Families (TANF) policies but reflect outdated policy rules. These data sets also make extensive use of footnotes that means these data can’t be easily used in software algorithms. Another example is the federally administered Low-Income Home Energy Assistance Program (LIHEAP) Clearinghouse, which includes a comprehensive listing of LIHEAP state plans that describe policy data but do so primarily in text boxes. When pulling data from these state plans, researchers need to translate the information in these text boxes into usable numbers and formulas. Thus, the PRD provides significant value added over what already exists in other databases by (1) collating public assistance program rules and tax policies, (2) making policy

rules easier to interpret, and (3) allowing for policy rule parameters to be incorporated into any programming language.

See Appendix A for an alphabetical list of abbreviations used in the PRD.

1.2 The PRD as a Collaborative Effort

The PRD is a collaboration between the National Center for Children in Poverty (NCCP) and the Federal Reserve Bank of Atlanta. These organizations engage with the community of trusted experts and state administrators to ensure that rules are accurately captured. This collaboration speeds the delivery of program updates, so that the PRD parameters are always up to date. It also allows for the output of research and online tools to provide consistent information that can inform both policy debates as well as individual decision-making on the part of families seeking to achieve improved financial stability.

The PRD currently supports the Atlanta Fed's CLIFF Dashboard and CLIFF Personal Planner.

The PRD and the tools it supports are used by a community of researchers, think tanks, policymakers, nonprofits, and government program administrators. Further, the PRD is designed so that tax policies and public assistance programs rules can be easily added and existing program rules can be easily modified. This enables the broader community of collaborators working with NCCP and the Atlanta Fed to conduct policy experiments or build customized client case management tools.

1.3 Public Assistance Programs and Tax Policies Included in the PRD

1.3.1 List of Public Assistance Programs

Supplemental Nutrition Assistance Program (SNAP), School Breakfast Program (SBP) and National School Lunch Program (NSLP), Housing Choice Voucher Program (Section 8), CCDF subsidies, Head Start, the Medicaid/Children's Health Insurance Program (CHIP), Health Insurance Marketplace Subsidies, LIHEAP

1.3.2 List of Taxes and Tax Credits

Federal personal income tax, state personal income tax, Federal Insurance Contribution Act (FICA) tax, state sales tax, Federal Earned Income Tax Credit (EITC), State Earned Income Tax Credit (EITC), Federal Child Tax Credit (CTC), State Child Tax Credit (CTC), Federal CDCTC, State CDCTC

1.4 Information Requirements for Benefit Calculations

The PRD requires users to have the following information to calculate eligibility and the value of all the government programs contained within the database for a particular family. This is an exhaustive list. Most programs require only a subset of the family attributes and expenses listed below. Default values are provided for all parameters listed below except for those under “family attributes.” This information has specific coding requirements, such as the range of values they can take on.

Family attributes (no default values)

- Age of each family member
- Total employment income of family
- Family assets
- County or town and state of residency
- Housing status (homeowner or renter)

Attributes of individual applying for benefits

- Marital status

Basic monthly expenses

Default values can be obtained using the Cost-of-Living Database (CLD) described below.

- Rent or mortgage
- Utilities
- Food/Grocery expenses
- Childcare expenses
- Health insurance premium for all family members
- Costs of meals at school
- Child support payments

Childcare and school-related variables

- Number of school days
- Amount of childcare during the school year and during summer
- Community Eligibility Provision (CEP) school (0 is default)
- Pre-K start age (5 is default)

1.5 Relationship to the Cost-of-Living Database

Public assistance programs are often targeted to subsidizing a specific family's expense by providing certain products and services at a reduced cost or for free. The PRD uses a combination of household-specific expenses, as specified above, and information from the CLD to estimate the full market cost of products and services. The CLD provides county-level estimates of the cost of living for different family types using a basic set of expenses. This includes housing, utilities, childcare, health insurance, food, transportation, and other miscellaneous expenses. The CLD is based on the methodology used in the University of Washington's Self-Sufficiency Standard.¹

If household-specific expenses are unavailable for a researcher, the CLD can supply default values of expenses depending on the family attributes and county and state. The CLD is also used for applying the PRD to hypothetical situations—such as when calculating the effective marginal tax rates and modeling the size of the benefits cliffs for an individual who currently is on Medicaid but, with income gains, becomes ineligible and must purchase health insurance on the private market or obtain it through their employer—or to estimate expenses from the list of household-specific expenses required for PRD use.

Calculations of values of public assistance programs often require knowledge of specific expenses faced by the household. For example, SNAP allows for childcare costs, housing costs, and utility costs to be deducted when determining eligibility and benefit amount. The total value of the Section 8 Housing Voucher depends on the household's rent while the program allows to deduct childcare expenses when determining eligibility and benefit amount. The value of the Marketplace subsidy is a function of the total health insurance premium, which varies by the person's age and location.

The data in the CLD vary by family composition as well as state and county of residency for most expenses. See the [CLD Technical Manual](#) for more information.

1.6 Limitations of the PRD

The PRD does not contain all the details outlined in every program. Instead, it is specifically designed to estimate eligibility and the value of benefit programs for nondisabled adults and their children. The following limitations apply:

- The PRD specifies rules for households with up to three adults and five children, for a maximum family size of eight.
- The PRD does not include information on the work requirements.
- Program rules vary only by the family characteristics specified above. Each program's guide lists information about what populations the PRD excludes. Some populations are frequently excluded are:

¹ See <http://www.selfsufficiencystandard.org/>.

- Adopted and foster children. The PRD does not distinguish among biological, adopted, and foster children. All children are considered biological children for the purposes of benefit calculations.
- Individuals with disabilities
- Individuals experiencing homelessness
- Formerly incarcerated individuals
- Individuals living on Native lands
- Individuals whose immigration status prevents them from being eligible to receive benefits
- Individuals age 65 or above
- Self-employed individuals
- Military personnel and veterans

Future iterations of the PRD will contain information relevant for adults and children with disabilities and for individuals age 65 or above.

1.7 Getting Started

To use the PRD, start with collecting the information specified in the Information Requirements section of this technical manual. When creating the data set, use the variable names specified in the List of Inputs section of this guide for each program. These inputs are referred to in formulas with “{“ and “}” on each side (e.g. {agePerson1} corresponds to the age of the first person in the family).

Next, assign PRD Eligibility Parameters and Value of Benefits Parameters to a family by matching the family characteristics with the variables indicated in the guide to each program. The parameters are referred to in equations with “[“ and “]” on either side (e.g. [Income Eligibility]).

Last, apply the steps and formulas specified in the Calculations section of this guide to each program to determine eligibility and estimate the value of the program. All formulas have similar structure for determining eligibility and calculating the estimated value of the program.

To determine income eligibility, start by counting up all sources of income listed in the corresponding field of the PRD, subtracting all deductions (or portions of these deductions) listed in the corresponding field of PRD, and compare the resulting net income amount with the eligibility threshold(s) specified.

Note: Eligibility thresholds are specified in the PRD for each program and thus do not need to be calculated by users of the PRD. Eligibility thresholds vary by program, with most determined by the Federal Poverty Level (FPL), State Median Income (SMI), or Area Median Income (AMI). The precise value of the threshold and how it is calculated is provided in the PRD.

2. A Review of Public Assistance Programs and Tax Policies and PRD User Guides

This section contains a review of each public assistance program and tax policy included in the PRD and instructions (called user guides) for how to use the PRD to estimate the value of each program. These user guides are intended to be used with the PRD Excel file, which contains exact values of parameters for each location and family type.

2.1 Public Assistance Programs

2.1.1 School Breakfast Program and National School Lunch Programs

Overview

The SBP and NSLP are federally assisted meal programs operating in public and nonprofit private schools and residential childcare institutions. They provide low-cost or no-cost breakfasts and lunches to children every school day. The PRD combines these two programs because they have the same eligibility and value-of-benefits determination structure.

Eligibility Determination

The eligibility rules are set nationally and based on the FPL. Thus, the income limit to determine eligibility will depend on the size of the family and which state the family lives in, as Alaska and Hawaii have a different FPL. The maximum income for eligibility is 185 percent of the FPL. Copays vary by two income levels. See the PRD for a complete description.

Children also gain *categorical eligibility* for free (completely reduced) school lunch and school breakfast if they are in a family that receives SNAP benefits or TANF cash assistance or if they are in a CEP school. CEP allows high-poverty schools to provide U.S. Department of Agriculture (USDA) school meals at no charge to all students. We do not have data about which schools participate in CEP and thus do not include this provision in the calculations.

Countable Income, Net Income, and Asset Tests

Countable Income

For the purposes of determining eligibility, we use a limited definition of countable income. The full list of countable income can be found in the Limitations section below. The list of countable income used for determination of countable income can be found in the [ListOfCountableIncome] field of the PRD.

Net Income & Deductions

No deductions, and therefore no calculation of net income

Asset Tests

No asset test

Value of Benefits Determination

The value of the benefits is the annual value of both the NSLP and the SBP programs. The daily value is obtained by subtracting the daily copay of breakfast and lunch from the daily cost of breakfast and lunch. To annualize, multiply this amount by the number of days in the school year and the number of school-age children. See the PRD for a complete description.

Using the PRD: List of Inputs and Calculations

List of Inputs

The required family-level information for determining eligibility modeled in the PRD are:

- The size of the family **{famsize}**. {famsize} can take on values between 1 and 8.
- Whether the family is located in Alaska or Hawaii or not **{AKorHI}**; {AKorHI}=1 if the family lives in AK or HI and 0 otherwise
- The age of each member of the household (up to 8) **{age_1}, {age_2}, {age_3}, {age_4}, {age_5}, {age_5}, {age_6}, {age_7}, {age_8}**
- Determination of school age. As noted below, the Atlanta Fed assumes children with access to free pre-K {freePre-Kstate==1} are school age if they are between 4 and 17. Otherwise {freePre-Kstate==0} children are considered school age if between 5 and 17.
- Annual countable income of the family **{income}**- see [ListofCountableIncome] specified in the PRD
- Number of school days: **{numberofSchooldays}**

Calculations

Copay is based on income, as specified in [IncomeBin] and [IncomeBinDescription] in the PRD. Follow the steps below to determine the eligibility and calculate copay amount and benefit amount.

Step 1: Calculate annual total countable income.

{annual countable income} = sum([ListofCountableIncome])

Step 2: Determine eligibility and daily copay amount for one school-age child.

Categorically Eligible=1 if [ListofCategoricalEligibility]

If {annual countable income} <= [IncomeBin1Max] OR *Categorically Eligible*=1 then *Copay* = [CopayBin1]

If {annual countable income} > [IncomeBin1Max] & {annual countable income} < [IncomeBin2Max] then *Copay* = [CopayBin2]

Step 3: Determine the daily benefit value.

Daily Benefit Value = {exp.schoollunches} - *Copay*

Step 4: Calculate the number of school-age children.

- 1) Set pre-K start age.

pre-Kstartage=4 if freePre-KState==1

pre-Kstartage=5 if freePre-KState==0

- 2) Determine number of school age children.

For persons i=1:8 {
schoolage_`i`=1 if *age_`i`* == (*pre-Kstartage*,17)
}

numschoolagekids=
sum(schoolage1,schoolage2,schoolage3,schoolage4,schoolage5,schoolage6,schoolage7,schoolage8)

Step 5: Annualize total benefit value and multiply by the number of school-age children.

Value.schoolMeals = *Daily Benefit Value**{number of school days}**Number of School Age Children*

Implementation-Specific Assumptions

Atlanta Fed

- The age at which children can access free pre-K varies by state.
- Set default *numberofSchooldays* to be 180.

Limitations

For the purposes of determining eligibility, we use a limited definition of countable income.

The full list of income counted for eligibility determination is: (1) Monetary compensation for services, including wages, salary, commissions or fees; (2) net income from nonfarm self-employment; (3) net income from farm self-employment; (4) Social Security; (5) dividends or interest on savings or bonds or income from estates or trusts; (6) net rental income; (7) public assistance or welfare payments; (8) unemployment compensation; (9) government civilian employee or military retirement, or pensions or veterans payments; (10) private pensions or

annuities; (11) alimony or child support payments; (12) regular contributions from persons not living in the household; (13) net royalties; and (14) other cash income. Other cash income would include cash amounts received or withdrawn from any source including savings, investments, trust accounts, and other resources that would be available to pay the price of a child's meal. *'Income*, as the term is used in this notice, does not include any income or benefits received under any federal programs that are excluded from consideration as income by any statutory prohibition. Furthermore, the value of meals or milk to children shall not be considered as income to their households for other benefit programs in accordance with the prohibitions in section 12(e) of the Richard B. Russell National School Lunch Act and section 11(b) of the Child Nutrition Act of 1966 (42 U.S.C. 1760(e) and 1780(b)). [source 2, "Definition of Income"].

We use only (1), (2), (3), (4), (7), and (11). All other income sources are assumed to be 0.

2.1.2 Supplemental Nutrition Assistance Program

Overview

SNAP is the largest federal nutrition assistance program. SNAP provides nutrition benefits to supplement the food budget of needy families so they can purchase healthy food and move toward self-sufficiency. SNAP provides benefits to eligible low-income individuals and families through an Electronic Benefits Transfer card. This card can be used like a debit card to purchase eligible food in authorized retail food stores.

Eligibility Determination

The eligibility rules for SNAP are set nationally, but states can override some of these rules under the broad-based categorical eligibility (BBCE) provisions. The federal gross income eligibility threshold is set at 130 percent of the FPL, and the asset limit is set at \$2,250.

To be eligible for SNAP, families must also have net income below 100 percent of the FPL. *Net income* is defined as total gross countable income minus certain deductions. See the Countable Income, Net Income, and Asset Tests section for details.

There are two types of work requirements that can be required of SNAP recipients: general work requirements and the Able-Bodied Adult without Dependents (ABAWD) work requirements. See the Limitations section below for a discussion of work requirements.

BBCE is a policy that allows states to consider cost of living, wages, and other local economic conditions when setting gross income eligibility limits and asset eligibility limits.² Under BBCE, some states set higher gross income limits and increase or remove asset limits. See the PRD for a complete description of state-level BBCE rules.

Countable Income, Net Income, and Asset Tests

Countable Income

A family's SNAP net income eligibility, gross income eligibility, and benefits amount are based on the countable income. *Countable income* can be earned income and unearned income. *Earned income* includes wages, salaries, commissions, and profits. *Unearned income* includes some means-tested programs, education assistance, and support or alimony payments. See the PRD for details.

² Households are made categorically eligible through receiving or being authorized to receive a minimal TANF- or Maintenance-of-Effort-funded benefit or service, which has typically included such services as being given a brochure or being referred to a social service "800" telephone number. Recalling the USDA regulation, the brochure or telephone number must be funded with TANF or Maintenance-of-Effort dollars and thus must be directed at a TANF purpose.

Net Income and Deductions

Deductions that are used to calculate the net income of the family are: standard deductions, earned income deductions, out-of-pocket childcare expenses, and excess shelter costs. See the Calculations section for details.

Asset Tests

In states that did not eliminate asset limits, families must have assets below a certain amount. Countable assets include cash and money in checking and savings accounts. Some states count the value of vehicles towards asset tests. See the PRD for details.

Value of Benefits Determination

The annual value of SNAP benefits is calculated as an annual maximum SNAP benefits minus 30 percent of a family's net income. The annual SNAP amount is bounded from above and below by minimum and maximum payments. Minimum benefits are only applicable for family sizes of one and two. See the Calculations section for details.

Using the PRD: List of Inputs and Calculations

List of Inputs

The required family-level information for determining eligibility modeled in the PRD are:

- State identifiers: **{stateName}** - name of the state or **{stateFIPS}** - FIPS code of the state
- Whether the family is located in Alaska or Hawaii or not **{AKorHI}**. {AKorHI}=1 if the family lives in AK or HI and 0 otherwise.
- The size of the family - **{famsize}**. {famsize} can take on values between 1 and 8.
- Annual utility spending of the family - **{exp.utilities}**. (See the CLD for default values.)
- Annual rent of the family **{exp.rent}**. (See the CLD for default values.)
- Annual out-of-pocket childcare costs after subsidies - **{netexp.childcare}**. (See the CLD for default values.)
- Total countable assets of the family **{assets}** - see [ListofCountableAssets] specified in the PRD

Calculations

Step 1: Calculate annual total countable income.

{countableIncome} = sum([ListOfCountableIncome])

Step 2: Calculate total countable assets.

{countableAssets} = sum([ListOfCountableAssets])

Step 3: Calculate earned income deduction.

$EarnedIncomeDeduction = 0.2 * \{annual\ countable\ income\}$

Step 4: Calculate adjusted income.

$AdjustedIncome = \max(0, (\{countableIncome\} - EarnedIncomeDeduction - 12 * [StandardDeduction] - \{netexp.childcare\}))$

Step 5: Calculate utility deduction.

If $[exp.utilities] > 0$ OR $([LIHEAP\ received] > 0$ OR $[HeatAndEatState] = 1)$, then {
 if $[HCSUA] = Mandatory$, then $UtilityDeduction = [HCSUAValue]$
 if $[HCSUA] = Optional$, then $UtilityDeduction = \max([HCSUAValue], [netexp.utilities])$
} else {
 $UtilityDeduction = 0$
}

Step 6: Calculate net income.

$NetIncome = AdjustedIncome - \min((\{exp.rent\} + UtilityDeduction) - 0.5 * AdjustedIncome), 12 * [MaxShelterDeduction])$

Step 7: Determine eligibility, according to three criteria.

- a) $grossEligibilityTest = TRUE$ if $\{annual\ countable\ income\} < [GrossIncomeEligibility]$
- b) $netEligibilityTest = TRUE$ if $Net\ Income < [NetIncomeEligibility]$
- c) $assetTest = TRUE$ if $\{total\ countable\ assets\} < [AssetTest]$

Step 8: Determine annual benefit amount.

if $(grossEligibilityTest = TRUE \ \& \ netEligibilityTest = TRUE \ \& \ assetTest = TRUE)$ then {
Benefit Value = $\min(\max(12 * [MaxBenefit] - NetIncome * 0.3, 12 * [MinBenefit]), 12 * [MaxBenefit])$
}

Implementation-Specific Assumptions

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- We assume that the individual who is applying for SNAP and all family members meet work requirements (when applicable) for ABAWDs.
- We assume that utility expenses other than heating and cooling costs have no tangible effect on the total amount of SNAP benefits received (that is, we are not incorporating the limited or basic standard utility allowances, or SUAs).

Limitations

- People with disabled household members either do not face asset limits or have higher asset limits. The PRD does not include this logic.

- Every possible type of countable income is not listed in the PRD due to limitations on the amount of information is possible to collect and include in calculations. See <https://www.law.cornell.edu/cfr/text/7/273.9> Section b) for a precise definition of what income is countable and what is not.
- The PRD does not incorporate SNAP work requirements and time limits. *General* work requirements apply to SNAP recipients ages 16–59 and include “registering for work, participating in SNAP Employment and Training (E&T) or workfare if assigned by state SNAP agency, taking a suitable job if offered, and not voluntarily quitting a job or reducing your work hours below 30 a week without a good reason.”³ In addition to these general SNAP work requirements, many states have more stringent work requirements for ABAWDs ages 18–59. These additional work requirements can be met if ABAWDs satisfy any of the following requirements:
 - Attends school or training at least half-time
 - Works part-time (80 hours a month)
 - Is engaged in a workfare program

ABAWDs who do not meet these additional requirements can receive SNAP for only three months within three years.

SNAP has some exceptions to these ABAWD-specific requirements, including for those who

- are unable to work due to a physical or mental limitation
- are pregnant
- live in a household with someone who is under 18
- are excused from the SNAP general work requirements
- live in a geographic area with a waiver on ABAWD work requirements⁴

ABAWDs who meet the work requirements have no time limits on their SNAP benefits. In addition, adults ages 16–59 with dependents, adults ages 16–17 without dependents, and adults ages 50–59 without dependents have no limits.

- Alaska and New York State have geographical variations in the heating and cooling standard utility allowances (HCSUA) values. Our calculations of HCSUA values in Alaska are the average of the Central, Northern, South-Central, and Southeast regions. When computing the average, we exclude the Northwest and Southwest areas because the HCSUA in these areas is double the values in other areas and very few people live there.

³ See <https://www.fns.usda.gov/snap/work-requirements>.

⁴ A periodically updated source with the latest information on which states have waivers—and whether the waivers cover the whole state or just parts of the state—is available here: <https://www.fns.usda.gov/snap/ABAWD/waivers>.

- The calculation of utility deductions assumes that the family is paying for heating and cooling separately from the rent. Therefore, the calculations do not account for basic/limited utility allowances that can be granted to households who pay at least some of their utilities separately from rent. Examples of the variety of state approaches to additional SUAs beyond heating and cooling include those listed here: http://services.dpw.state.pa.us/oimpolicymanuals/snap/560_Income_Deductions/560_8_Shelter_UTILITY_Deduction.htm, [https://dhs.maryland.gov/documents/Manuals/FSP%20\(Food%20Supplement%20Program\)%20Manual/214%20Utility%20Allowances/214-Utility-Allowances-rev-JULY-2020.pdf](https://dhs.maryland.gov/documents/Manuals/FSP%20(Food%20Supplement%20Program)%20Manual/214%20Utility%20Allowances/214-Utility-Allowances-rev-JULY-2020.pdf) (which allows additional SUAs beyond heating and cooling), <https://www.dss.virginia.gov/files/division/bp/fs/manual/P10.pdf> (which allows no SUAs beyond heating and cooling), and https://eohhs.ehs.state.ma.us/DTA/PolicyOnline/BEACON5!/SSL!/WebHelp/SNAP/Expenses_and_Deductions/Household_Expenses/Standard_UTILITY_Expenses/Standard_UTILITY_Allowance_Expense_Introduction.htm (which allows SUAs beyond heating and cooling but does not allow SNAP recipients to claim more than one SUA).
- Some cars are excluded from the asset test (for example, if they are used primarily for income-producing purposes) and some cars are subject to an equity test. We do not include these custom logics. See http://help.workworldapp.com/wwwwebhelp/vehicles_food_stamps.htm for details.
- As described on the USDA website, the SNAP program’s *general* work requirements that can apply to SNAP recipients ages 16–59 include “registering for work, participating in SNAP Employment and Training (E&T) or workfare if assigned by your state SNAP agency, taking a suitable job if offered, and not voluntarily quitting a job or reducing your work hours below 30 a week without a good reason.”⁵ Several populations included in the PRD, including caretakers of children under six years old, are excluded from these general work requirements. Regardless, because these general SNAP work requirements do not require a set amount of work hours on the part of recipients but rather require engagement in services and not quitting a job or reducing hours—and there appears to be no state that mandates SNAP Employment and Training Program participation among non-ABAWD recipients—the PRD does not incorporate these general work requirements in SNAP.

⁵ See <https://www.fns.usda.gov/snap/work-requirements>.

2.1.3 Medicaid and Children’s Health Insurance Program

Overview

Medicaid is a federal and state program that helps with medical costs for some people with limited income and resources. Medicaid also offers benefits that Medicare does not normally cover, including nursing home care and personal care services. CHIP provides health coverage to eligible children, through both Medicaid and separate CHIP programs. CHIP is administered by states, according to federal requirements. The program is funded jointly by states and the federal government.

Eligibility Determination

Eligibility for Medicaid and CHIP is based on the FPL. Income-eligibility thresholds vary by state and depend on whether adults have dependents. See the PRD for details.

Adults and children can get insurance through Medicaid and CHIP even if they have access to employer-sponsored health insurance.⁶

At this time, there are no work requirements for Medicaid.^{7, 8}

Adults

- In those states that expand Medicaid, eligibility is 138 percent of the FPL (133 percent plus 5 percentage points income disregard).
- In states that did not expand Medicaid, adults without dependents are not covered by Medicaid.
- Under Section 1931 of the Social Security Act, low-income individuals with children are eligible for Medicaid if their income is below a certain threshold.⁹ The threshold varies by state. See the PRD for details.
- Some states have special Medicaid programs that extend Medicaid to adults to higher-income thresholds.

Children

- Eligibility limits are different for infants ages 0–1 and children ages 1–5 and 6–18.

⁶ This is our current conclusion based on the available information. See <https://khn.org/news/many-parents-with-job-based-coverage-still-turn-to-medicaid-chip-to-insure-kids/> as an example.

⁷ Some states have attained or submitted waivers to implement Medicaid work requirements, which would disallow certain populations (primarily ABAWDs) from retaining Medicaid coverage without working or being in approved training/educational programs for a minimum number of hours. However, as of October 2020, these Medicaid work requirements have all (1) been blocked by a court ruling, (2) been put on hold or halted by state governments themselves, (3) not yet been implemented, or (4) been submitted to the federal government but not yet approved.

⁸ Currently, there are no states that have an active work requirement. Monitor status updates on state work requirements at <https://www.commonwealthfund.org/publications/maps-and-interactives/status-medicaid-expansion-and-work-requirement-waivers>.

⁹ https://www.ssa.gov/OP_Home/ssact/title19/1931.htm.

- All states have Medicaid-funded coverage available for all children.
- Some states have CHIP-funded coverage for uninsured children with a higher eligibility threshold.
- Some states have a separate CHIP for uninsured children ages 0–18 with the highest eligibility limit.

Premium Determination

For families with incomes above 150 percent of the FPL, the amount that states can charge for premiums and other cost sharing, such as copays, is capped at 5 percent of family income, due to federal rules. No state can charge premiums for Medicaid coverage for families whose income (as determined by Medicaid rules) falls below 150 percent of the FPL, and no state charges CHIP premiums for families making less than 133 percent of the FPL. States set the premium rates based on various income levels and other characteristics. Logics for copayments and costs-sharing determination are excluded from the PRD. See the Limitations section for details.

Countable Income, Net Income, and Asset Tests

Countable Income

Eligibility is based on the modified adjusted gross income (MAGI).¹⁰ MAGI is calculated as gross income less certain tax-deductible expenses plus certain deductions.

Net Income and Deductions

See above.

Asset Tests

According to the Affordable Care Act (ACA) rules, no state can impose an asset or resource test on Medicaid applicants or recipients beginning in 2014.¹¹ Some states require asset tests for other programs adjacent to Medicaid programs, such as “spend-down” or “buy-in” programs, which primarily benefit families that include people with disabilities or long-term health conditions.

¹⁰ See <https://www.investopedia.com/terms/m/magi.asp>. *Gross income* includes alimony, business gains, capital gains, dividends, interest, farm income, rental and royalty income, retirement income, tips and wages. *Tax-deductible expenses* include certain business expenses for performing artists, reservists, and fee-basis government officials (educator expenses, half of any self-employment taxes, health insurance premiums (if you’re self-employed), health savings account contributions, moving expenses for members of the Armed Forces moving due to active duty, penalties on early withdrawal of savings, retirement plan contributions (including IRAs and self-employed retirement plan contributions), student loan interest, tuition, and fees). *Deductions* include any deductions you took for IRA contributions and taxable Social Security payments, excluded foreign income, interest from series EE savings bonds used to pay for higher education expenses, losses from a partnership, passive income or loss, rental losses, and the exclusion for adoption expenses.

¹¹ See <https://www.medicaidplanningassistance.org/medicaid-eligibility/>.

Value of Benefits Determination

To estimate the value of Medicaid, we use the data on spending per enrollee that include both state and federal payments to Medicaid minus the premium. See the CLD for details on the spending-per-enrollee data. The value of the Medicaid benefit for adults and children varies by state.

The premium amount depends on state, family size, and income. States have per-month, per-quarter, or per-year premiums.¹² In the PRD, we convert all premiums to annual amounts.

Special Rules and Provisions

Special State-Level Rules

Not all state-specific rules are included in the PRD. See the Limitations section for details.

- **Minnesota**

In Minnesota, the infant category under Title XIX-funded Medicaid includes insured and uninsured children up to age two whose family's income is below 275 percent of the FPL, and insured children up to age two from 275-288 percent of the FPL. PRD accommodates this state-specific logic by adjusting the age of one- and two-year-olds down to 0 in the function.

Minnesota has implemented Basic Health Programs established by the ACA for adults with incomes between 138–200 percent of the FPL.

- **New York**

New York has implemented Basic Health Programs established by the ACA for adults with incomes between 138–200 percent of the FPL.

- **Texas**

In Texas, the income limit for parents and other caretaker relatives is based on monthly dollar amounts that differ depending on family size and whether there are one or two parents in the family.¹³

The PRD includes Texas's eligibility thresholds for a single parent only. Eligibility limits might be different for two-parent households. The error range is between -\$420 per year (for the family of two) and +\$252 per year (for the family of five-plus).

¹² See <http://files.kff.org/attachment/Table-14-Medicaid-and-CHIP-Eligibility-as-of-Jan-2020.pdf>.

¹³ See <https://hhs.texas.gov/services/health/medicaid-chip/programs-services/children-families/medicaid-parents-caretakers>.

Medically Needy Program

This program is Also known as the Medicaid buy-in” or Medicaid “spend-down” program. A Medicaid spend down is a financial strategy used when an individual's income is too high to qualify for Medicaid. To be accepted into the program, some of an individual's income must be spent down to ensure that his or her income is low enough to qualify for Medicaid.¹⁴ Currently, the PRD does not include this provision.

Using the PRD: List of Inputs and Calculations

List of Inputs

The required family-level information for determining eligibility modeled in the PRD are:

- State identifiers: **{stateName}** - name of the state or **{stateFIPS}** - FIPS code of the state
- Whether the family is located in Alaska or Hawaii or not **{AKorHI}**. {AKorHI}=1 if the family lives in AK or HI and 0 otherwise.
- The size of the family - **{famsize}**. {famsize} can take on values between 1 and 8.
- Total countable assets of the family {countableAssets} - see [ListofCountableAssets] specified in the PRD
- Modified adjusted gross income **{MAGI}**
- Age of the individual applying - **{age}**
- Whether an individual applying has dependents (tax dependent) or not - **{hasdependent}**
- The estimated per-person cost of the Medicaid program - **{exp.healthcare.medicaid}** (See the CLD for default values.)

Calculations

Step 1: Calculate annual total countable income.

{countableIncome} = sum([ListOfCountableIncome])

Step 2: Calculate earned income deduction.

EarnedIncomeDeduction = 0.2*{annual countable income}

¹⁴ See an example of Florida's program:

<https://www.myflfamilies.com/programs/access/docs/medneedybrochure.pdf>. For more information on spending down, see this Kaiser Family Foundation report: <https://www.kff.org/report-section/medicaid-financial-eligibility-for-seniors-and-people-with-disabilities-findings-from-a-50-state-survey-issue-brief/>. See Appendix table 3 of the Kaiser Foundation report for states' eligibility requirements: <https://www.kff.org/report-section/medicaid-financial-eligibility-for-seniors-and-people-with-disabilities-findings-from-a-50-state-survey-appendix-tables/>.

Step 3: Determine what income eligibility limit is applied.

- a) If state = Minnesota and age =2 or age=1 then age =0
- b) if age >=0 & age <1 then *IncomeEligibility* = *incomelimit.childAge0*
- c) if age >=1 & age <5 then *IncomeEligibility* = *incomelimit.childAge1to5*
- d) if age >=5 & age <19 then *IncomeEligibility* = *incomelimit.childAge6to18*
- e) If age >=19 & *hasdependent*==1 then *IncomeEligibility* =
[*incomelimit.Adult.withDependent*]
- f) If age >=19 & *hasdependent*==0 then *IncomeEligibility* =
[*incomelimit.Adult.noDependent*]

Step 4: Determine eligibility.

- a) *grossEligibilityTest* = TRUE if {annual countable income} < *IncomeEligibility*

Step 5: Calculate CHIP premiums for children.

- a) If {income}<=[*IncomeBin1Max*] then *Premium.Child*=[*Premium.Child.Bin1*]
- b) If {income}>[*IncomeBin1Max*] & {income}<=[*IncomeBin2Max*] then
Premium.Child=[*Premium.Child.Bin2*]
- c) If {income}>[*IncomeBin2Max*] & {income}<=[*IncomeBin3Max*] then
Premium.Child=[*Premium.Child.Bin3*]
- d) If {income}>[*IncomeBin3Max*] & {income}<=[*IncomeBin4Max*] then
Premium.Child=[*Premium.Child.Bin4*]
- e) If {income}>[*IncomeBin4Max*] & {income}<=[*IncomeBin5Max*] then
Premium.Child=[*Premium.Child.Bin5*]

Step 6: Assign premium for adults and children.

- f) If {age} <19 & *grossEligibilityTest* = TRUE then *Premium*=*Premium.Child*
- g) If {age} >=19 & *grossEligibilityTest* = TRUE then *Premium*=[*Premium.Adult*]

Step 7: Determine the Medicaid/CHIP benefit amount.

Benefit={*exp.healthcare.medicaid*}-*Premium*

Implementation-Specific Assumptions

Atlanta Fed

For purposes of calculating the MAGI, we assume the household has no tax-deductible expenses or deductions.

Limitations

- Medicaid and CHIP logic for copayments and cost-sharing determination is excluded from the PRD. No state charges copayments for Medicaid or CHIP for families that have incomes under 150 percent FPL except for Tennessee, which has a longstanding federal waiver that includes charges for Medicaid copayments among families with less than

133 percent of the FPL. The copayment schedules and what copayments cover vary by state. For details, see this Kaiser Family Foundation report: <https://www.kff.org/report-section/medicaid-and-chip-eligibility-enrollment-and-cost-sharing-policies-as-of-january-2020-findings-from-a-50-state-survey-premiums-and-cost-sharing/>.

- Currently, the PRD does not include the Medically Needy program (also known as Medicaid buy-in or Medicaid spend-down” program).
- The PRD does not include the following state-specific rules:

- Wisconsin

In Wisconsin, children are not eligible for its separate CHIP program if they have access to health insurance coverage or employer-sponsored insurance that covers at least 80 percent of the cost.

- California, the District of Columbia, Hawaii, Massachusetts, New Mexico, New York, and Pennsylvania

Some income-eligible adults who are not otherwise eligible due to immigration status may use state-only funds. In some cases, the coverage is limited to targeted groups, such as lawfully present immigrants who are in the five-year waiting period for Medicaid coverage. See <https://www.urban.org/features/state-immigration-policy-resource> for details.

- Massachusetts

Massachusetts provides subsidies for Marketplace coverage for parents and childless adults with incomes up to 300 percent through its ConnectorCare program.

- The state's Section 1115 waiver also authorizes MassHealth coverage for HIV-positive individuals with incomes up to 200 percent of the FPL, uninsured individuals with breast or cervical cancer with incomes up to 250 percent of the FPL, and individuals with incomes up to 300 percent of the FPL who work for a small employer and purchase employer-sponsored insurance . The waiver also authorizes coverage through MassHealth CommonHealth for adults with disabilities with no income limit, provided that they have either met a one-time deductible or are working disabled adults.

- Virginia

In Virginia, eligibility levels for 1931 parents vary by region. PRD values are based on the eligibility level for region 2, the most populous region.

- Oklahoma

Oklahoma offers a premium assistance program to children ages 0 through 18 whose families have incomes up to 222 percent of the FPL and have access to employer-sponsored insurance through the state's Insure Oklahoma program.

Individuals without a qualifying employer who have incomes up to 100 percent of the FPL are eligible for more limited subsidized insurance through the Insure Oklahoma Section 1115 waiver program. Individuals working for certain qualified employers with incomes at or below 222 percent of the FPL are eligible for premium assistance for employer-sponsored insurance.

2.1.4 Health Insurance Marketplace Subsidies

Overview

The ACA gives subsidies for health insurance for those with incomes between 100 percent and 400 percent of the FPL. People pay a portion of their income toward health insurance. The individual responsibility portion varies by income level, age, and family size. The difference between the individual responsibility portion and the full cost of health insurance purchased on the health exchange is the estimated value of the program.

Eligibility Determination

The eligibility rules are set nationally and based on the FPL. Thus, the income limit to determine eligibility depends on the size of the family and which state the family lives in, as Alaska and Hawaii have a different FPL. Individual health contributions vary by six income levels. See the PRD for a complete description.

Individuals are not eligible for the Marketplace subsidies if they are able to access the affordable employer-sponsored health insurance plan. For example, in 2021, employer plans are considered affordable if the premium paid for a self-only plan is less than 9.835 percent of income. The affordability benchmark is updated every fiscal year.

Countable Income, Net Income, and Asset Tests

Countable Income

Eligibility is based on the MAGI.¹⁵ MAGI is calculated as gross income less certain tax-deductible expenses plus certain deductions.

Net Income and Deductions

See above.

Asset Tests

No asset tests.

¹⁵ See <https://www.investopedia.com/terms/m/magi.asp>. *Gross income* includes alimony, business gains, capital gains, dividends, interest, farm income, rental and royalty income, retirement income, and tips and wages. *Tax-deductible expenses* include certain business expenses for performing artists, reservists, and fee-basis government officials (educator expenses, half of any self-employment taxes, health insurance premiums [if you're self-employed], health savings account contributions, moving expenses for members of the Armed Forces moving due to active duty, penalties on early withdrawal of savings, retirement plan contributions [including IRAs and self-employed retirement plan contributions], student loan interest, and tuition and fees). *Deductions* include any deductions taken for IRA contributions and taxable Social Security payments, excluding foreign income, interest from series EE savings bonds used to pay for higher education expenses, losses from a partnership, passive income or loss, rental losses, and the exclusion for adoption expenses.

Value of Benefits Determination

The value of the Marketplace subsidy is the portion of the unsubsidized costs of health insurance on the health exchange covered by the government. The family is paying a fixed portion of its income towards health insurance and the government covers the rest. The monthly value is obtained by subtracting the individual contribution from the cost of health insurance on the exchange. An individual's contribution varies with income and age. The marketplace allows for a certain amount of premium discrimination based on age ("age curves"). States can set their own age curves or use the federal age curve. See the Calculations section for details.

Special Rules and Provisions

Special State-Level Rules

Vermont

Vermont also provides a 1.5 percent reduction in the federal applicable percentage of the share of premium costs for individuals who qualify for advance premium tax credits to purchase Marketplace coverage with income up to 300 percent of the FPL.

Using the PRD: List of Inputs and Calculations

List of Inputs

The required family-level information for determining eligibility modeled in the PRD are:

- The size of the family - **{famsize}**. {famsize} can take on values between 1 and 8.
- Whether the family is located in Alaska or Hawaii or not - **{AKorHI}**. {AKorHI}=AK if the family lives in AK, {AKorHI}=HI if the family lives in HI and 0 otherwise.
- The age of each member of the household **{age_1}, {age_2}, {age_3}, {age_4}, {age_5}, {age_5}, {age_6},{age_7},{age_8}**.
- Modified adjusted gross income - **{MAGI}**
- The cost of health insurance if purchased on the health exchange - **{exp.healthexchange}** (See the CLD for default values.)
- The cost of an individual plan if purchased through an employer **{premium.healthcare.individual}** (See the CLD for default values.)

Calculations

An individual's contribution is a proportion of his or her income. This proportion varies by [IncomeBin]. Follow the steps below to determine eligibility and to calculate the premium and value of the ACA benefit.

Step 1: Determine eligibility.

If {MAGI} < [IncomeLowerBound] & {MAGI} OR {MAGI} > [IncomeBin6Max]
| {premium.healthcare.individual}<[Affordability*MAGI] then
Premium = NA

Step 2: Determine the individual's contribution (premium).**a) Federal rules**

If {MAGI} >= [IncomeLowerBound] & {MAGI} <= [IncomeBin1Max] &
({premium.healthcare.individual}=NA | {premium.healthcare.individual}>[Affordability*MAGI] then
Premium = {MAGI}*([ShareOfIncomesBin1.Initial]+({MAGI}-
[IncomeLowerBound])*([ShareOfIncomesBin1.Final]-
[ShareOfIncomesBin1.Initial])/([IncomeBin1Max]-[IncomeLowerBound]))

If {MAGI} > [IncomeBin1Max] & {MAGI} <= [IncomeBin2Max] then
Premium = {MAGI}*([ShareOfIncomesBin2.Initial]+({MAGI}-
[IncomeBin1Max])*([ShareOfIncomesBin2.Final]-
[ShareOfIncomesBin2.Initial])/([IncomeBin2Max]-[IncomeBin1Max]))

If {MAGI} > [IncomeBin2Max] & {MAGI} <= [IncomeBin3Max] then
Premium = {MAGI}*([ShareOfIncomesBin3.Initial]+({MAGI}-
[IncomeBin2Max])*([ShareOfIncomesBin3.Final]-
[ShareOfIncomesBin3.Initial])/([IncomeBin3Max]-[IncomeBin2Max]))

If {MAGI} > [IncomeBin3Max] & {MAGI} <= [IncomeBin4Max] then
Premium = {MAGI}*([ShareOfIncomesBin4.Initial]+({MAGI}-
[IncomeBin3Max])*([ShareOfIncomesBin4.Final]-
[ShareOfIncomesBin4.Initial])/([IncomeBin4Max]-[IncomeBin3Max]))

If {MAGI} > [IncomeBin4Max] & {MAGI} <= [IncomeBin5Max] then
Premium = {MAGI}*([ShareOfIncomesBin4.Initial]+({MAGI}-
[IncomeBin4Max])*([ShareOfIncomesBin5.Final]-
[ShareOfIncomesBin5.Initial])/([IncomeBin5Max]-[IncomeBin4Max]))

If {MAGI} > [IncomeBin5Max] & {MAGI} <= [IncomeBin6Max] then
Premium = {MAGI}*([ShareOfIncomesBin4.Initial]+({MAGI}-
[IncomeBin5Max])*([ShareOfIncomesBin6.Final]-
[ShareOfIncomesBin6.Initial])/([IncomeBin6Max]-[IncomeBin5Max]))

b) Adjust for state-specific logics.

If state = Vermont (stateFIPS=5) & {MAGI} > [IncomeLowerBound] & {MAGI} <= [IncomeBin5Max] then
Premium = *Premium* - {MAGI}*0.015

Step 3: Determine the (annual) benefit value.

Annual Benefit Value = 12{exp.healthexchange} - Premium*

Implementation-Specific Assumptions/Limitations

Atlanta Fed

For purposes of calculating MAGI, we assume the household has no tax-deductible expenses or deductions.

Limitations

New York and Vermont have state-specific family tier ratios for the costs of the Second Lowest Cost Silver Plan. The PRD and CLD do not include this logic. See

<https://www.cms.gov/CCIIO/Programs-and-Initiatives/Health-Insurance-Market-Reforms/state-rating#age> for details.

2.1.5 The Housing Choice Voucher Program (Section 8)

Overview

The housing choice voucher program (*housing voucher*) is one of the major federal programs for assisting very low-income families, the elderly, and the disabled to afford decent, safe, and sanitary housing in the private market. Since housing assistance is provided on behalf of the family or individual, participants are able to find their own housing, including single-family homes, townhouses and apartments. The participant is free to choose any housing that meets the requirements of the program and is not limited to units located in subsidized housing projects. Housing choice vouchers are administered locally by public housing agencies (PHAs). The PHAs receive federal funds from the U.S. Department of Housing and Urban Development (HUD) to administer the voucher program. A housing subsidy is paid to the landlord directly by the PHA on behalf of the participating family. The family then pays the difference between the actual rent charged by the landlord and the amount subsidized by the program.

Eligibility Determination

Eligibility for admission into the housing voucher program is determined by HUD and based on the total annual gross income and family size. To be eligible for the Housing Voucher, family must be income-eligible in accordance with the federal law.¹⁶ To be income-eligible, a family must be (1) a “very-low-income-limit” family, with income below 50 percent of the median income for the county or metropolitan area in which the family chooses to live, or (2) a “low-income-limit” family, with income below 80 percent of the median income for the county or metropolitan area where the family live. The family is “continuously assisted” under the 1937 Housing Act, meaning the family is already receiving assistance under any 1937 Housing Act program—for example, public housing—when the family is admitted to the voucher program. Once admitted to the program, the family does not undergo any further income eligibility tests. HUD publishes median income levels (to determine VLIL and LIL), which vary by location. See the PRD for details.

There are additional criteria applied in certain cases to determine the eligibility of the family at the admission. See the Limitation section for details.

Countable Income, Net Income, and Asset Tests

Countable Income

Eligibility for a housing voucher is based on the total annual gross income of the members of the family residing or intending to reside in the dwelling unit. Section 8 gross income includes actual

¹⁶ <https://www.law.cornell.edu/cfr/text/24/982.201>

asset income and imputed income from financial assets such as IRAs, annuities, and trusts, as well as from any equity value in a home.

Net Income and Deductions

Eligibility for and value of a subsidy is based on the adjusted income. Adjusted income means annual gross income after the following deductions: (1) dependent deduction, (2) elderly/disabled deduction, (3) unreimbursed medical expenses of any elderly family or disabled family, and (4) any reasonable childcare expenses necessary to enable a member of the family to work or to further his or her education.

Asset Tests

No asset tests.

Value of Benefits Determination

The value of a housing voucher is based on the Total Tenant Payment (TTP) and gross rent. TTP is the minimum amount the family will pay toward rent and utilities. The TTP is either 30 percent of the monthly adjusted income or 10 percent of the monthly gross income, whichever is greater. The maximum housing assistance is the lesser of the payment standard TTP or the gross rent for the unit minus TTP. Gross rent includes utilities.

Each PHA sets a payment standard that determines the maximum amount of the rent subsidy. For each family size (number of adults and number of kids) and each area PRD proxies the payment standard with the Fair Market Rent (FMR) for a given family type in a given area.¹⁷

To assign the FMRs to the family types, the PRD uses the following mapping. Adults and children must occupy separate rooms, a maximum of two adults can live in one room, and a maximum of two children can live in one room.

The amount of a subsidy is calculated as a minimum of gross rent or a payment standard minus TTP. See the Calculations section for details.

Using the Policy Rules Database: List of Inputs and Calculations

List of Inputs

The required family-level information for determining eligibility modeled in the PRD are:

- State identifiers: **{stateName}** - name of the state or **{stateFIPS}** - FIPS code of the state

¹⁷ Average utility expenses for a specific family type are calculated using data from the Consumer Expenditure Survey. See the CLD for details.

- County identifiers: **{countyortownName}** - name of the state or **{countyFIPS}** - FIPS code of the county
- Number of adults in the household - **{numadults}**
- Number of kids in the household - **{numkids}**
- Childcare costs net of all subsidies - **{netexp.childcare}**
- Annual utility spending of the family - **{exp.utilities}** (See the CLD for default values.)
- Annual rent of the family - **{exp.rent}** (See the CLD for default values.)
- Total countable income of the household - **{income.countable}**
- The family is currently on Section 8 Housing Voucher - **{CurrentlyonSection8}**

Calculations

Step 1: Calculate annual total countable income.

$\{income.countable\} = \text{sum}([\text{ListOfCountableIncome}])$

Step 2: Calculate adjusted income.

$AdjustedIncome = \max(0, (\{income.countable\} - \{netexp.childcare\} - [\text{DependentDeduction}] * \{numkids\}))$

Step 3: Determine initial eligibility if necessary.

If $\{CurrentlyonSection8\} = \text{FALSE}$ {
initialEligibilityTest = TRUE if $\{income.countable\} < [\text{InitialEligibility}]$
 }
 OR
 If $\{CurrentlyonSection8\} = \text{TRUE}$ {
 Go to steps 4-6
 }

Step 4: Determine the Total Tenant Payment (TTP).

$TTP = \max(0.1 * \{income.countable\}, 0.3 * AdjustedIncome)$

Step 5: Determine benefit amount.

if (*initialEligibilityTest* = TRUE | $\{CurrentlyonSection8\} = \text{TRUE}$) then {
 Benefit Value = $\max(\min(\{exp.rent\} + \{exp.utilities\}, [\text{MaxRent}]) - TTP, 0)$
 }

Step 6: Reset subsidy recipient flag if necessary

If Benefit Value > 0 then $CurrentlyonSection8[_{n+1}] = \text{TRUE}$
 If Benefit Value = 0 then $CurrentlyonSection8[_{n+1}] = \text{FALSE}$

Implementation-Specific Assumptions

Atlanta Fed

- The calculations assume no disabled or elderly members of the household.
- The calculations assume that all childcare costs are “reasonable” as defined by each PHA.
- The calculations assume that the applicant is a citizen, or noncitizen who has eligible immigration status.

Limitations

- According to the law, some additional eligibility requirements may apply for certain families that PRD does not account for. For details, see <https://www.law.cornell.edu/cfr/text/24/982.201>.
- Determination of the TTP in certain cases includes welfare rent from the public agency and the PHA minimum rent. PRD does not include these provisions. For details, see https://www.hud.gov/sites/dfiles/PIH/documents/HCV_Guidebook_Calculating_Rent_and_HAP_Payments.pdf.
- Only U.S. citizens or noncitizens who have eligible immigration status are eligible for the subsidy. The law provides a definition of immigration statuses that fall under the eligible category. The PRD does not account for that. For details, see <https://www.law.cornell.edu/cfr/text/24/982.201>.
- A unified data source on the payment standard at the PHA level does not exist. For each family type and each area, the PRD approximates payment standards using FMR.
- The PRD does not account for the Small Area Fair Market Rents (SAFMRs) that are calculated at the ZIP code level and are required to be used to set Section 8 Housing Choice Voucher payment standards in areas designated by HUD. Instead PRD uses population-weighted average FMRs at the county level. For details about SAFMRS see <https://www.huduser.gov/portal/datasets/fmr/smallarea/index.html>.
- To assign an FMR to the family type, the PRD does not account for the HUD guideline that two children of opposite sex should occupy separate rooms.
- Childcare costs must be “reasonable,” as determined by the PHA. We do not account for these limits in calculations.¹⁸

¹⁸ See https://www.google.com/url?q=https://www.hud.gov/sites/documents/DOC_35615.PDF&sa=D&ust=1604595788636000&usg=AOvVaw33GhEfqUx6qLliKIKlcWzl.

- There are further deductions available for people 62 and over and the disabled that are not accounted for here.

2.2 Taxes and Tax Credits

2.2.1 Federal Personal Income Tax

Overview

The federal individual income tax is imposed on net taxable income of individuals by the federal government. The tax is progressive; that is, the tax rates on higher amounts of income are higher than on lower amounts. Federal tax rates in 2020 varied from 10 percent to 37 percent. The tax rates and some deductions are different depending on filing status. The Internal Revenue Code defines taxable income, and the Department of the Treasury and the Internal Revenue Service issue tax regulations.

Total Tax Liability Calculation

The federal individual income tax has seven tax rates ranging from 10 percent to 37 percent. The rates apply to taxable income—adjusted gross income (AGI) minus either the standard deduction or allowable itemized deductions. Income up to the standard deduction (or itemized deductions) is thus taxed at a zero rate. State income tax is allowed as a deduction in computing federal income tax, subject to limitations for individuals.¹⁹

Using the PRD: List of Inputs and Calculations

List of Inputs

The required family-level information for determining eligibility modeled in the PRD are:

- Filing status of the individual - **{filingStatus}**. There are four filing statuses: individual, married filing jointly, head of household, and married filing separately.
- Taxable income of the individual - **{income.AGI}**

Calculations

Step 1: Calculate annual total countable income.

$\{\text{countableIncome.AGI}\} = \text{sum}(\{\text{ListOfCountableIncome}\})$

Step 2: Calculate taxable income.

$\text{taxableIncome} = \{\text{countableIncome.AGI}\} - [\text{Standard Deduction}]$

¹⁹ Only taxpayers who itemize deductions on their federal income tax returns can deduct state and local real estate and personal property taxes, as well as either income taxes or general sales taxes. The Tax Cuts and Jobs Act limited the total state and local tax deduction to \$10,000.

Step 3: Calculate income amount taxable at each rate.

Taxable Income Bin 1 = $\max\{(\text{taxableIncome}-0) - \max\{\text{taxableIncome} - [\text{IncomeBin1Max}],0\},0\}$

Taxable Income Bin 2 = $\max\{(\text{taxableIncome}-[\text{IncomeBin1Max}]) - \max\{\text{taxableIncome} - [\text{IncomeBin2Max}],0\},0\}$

Taxable Income Bin 3 = $\max\{(\text{taxableIncome}-[\text{IncomeBin2Max}]) - \max\{\text{taxableIncome} - [\text{IncomeBin3Max}],0\},0\}$

Taxable Income Bin 4 = $\max\{(\text{taxableIncome}-[\text{IncomeBin3Max}]) - \max\{\text{taxableIncome} - [\text{IncomeBin4Max}],0\},0\}$

Taxable Income Bin 5 = $\max\{(\text{taxableIncome}-[\text{IncomeBin4Max}]) - \max\{\text{taxableIncome} - [\text{IncomeBin5Max}],0\},0\}$

Taxable Income Bin 6 = $\max\{(\text{taxableIncome}-[\text{IncomeBin5Max}]) - \max\{\text{taxableIncome} - [\text{IncomeBin6Max}],0\},0\}$

Taxable Income Bin 7 = $\max\{(\text{taxableIncome}-[\text{IncomeBin6Max}]),0\}$

Step 4: Calculate tax liability paid at each rate.

Value Tax Bin 1 = $[\text{Tax Rate 1}]*\text{Taxable Income Bin 1}$

Value Tax Bin 2 = $[\text{Tax Rate 2}]*\text{Taxable Income Bin 2}$

Value Tax Bin 3 = $[\text{Tax Rate 3}]*\text{Taxable Income Bin 3}$

Value Tax Bin 4 = $[\text{Tax Rate 4}]*\text{Taxable Income Bin 4}$

Value Tax Bin 5 = $[\text{Tax Rate 5}]*\text{Taxable Income Bin 5}$

Value Tax Bin 6 = $[\text{Tax Rate 6}]*\text{Taxable Income Bin 6}$

Value Tax Bin 7 = $[\text{Tax Rate 7}]*\text{Taxable Income Bin 7}$

Step 5: Calculate total tax liability.

Federal Income Tax Value = Value Tax Bin 1 +...+ Value Tax Bin 7

Implementation-Specific Assumptions*Atlanta Fed*

We assume that a person always takes the standard deduction and never claims itemized deductions.

Limitations

- The PRD does not include itemized deductions.
- Given that itemized deductions are not included, the PRD does not allow for interaction between state income tax and federal income tax.
- The PRD does not account for tax filers with different filing statuses in the same household.

2.2.2 State Personal Income Tax

Overview

Most states collect a state income tax in addition to federal income tax. Some local governments also impose an income tax, often based on state income tax calculations. Forty-three states and many localities in the United States may impose an income tax on individuals.

State income tax is imposed at a fixed or graduated rate on taxable income of individuals, corporations, and certain estates and trusts. The rates vary by state. Taxable income conforms closely to federal taxable income in most states, with limited modifications. The states are prohibited from taxing income from federal bonds or other obligations. Most do not tax social security benefits or interest income from obligations of that state. Many states allow a standard deduction or some form of itemized deductions.

States allow a variety of tax credits in computing tax. (See the EITC, CTC, and the CDCTC sections of the PRD.) State income tax is allowed as a deduction in computing federal income tax, subject to limitations for individuals (see the Federal Personal Income Tax section for details). Some states allow taxpayers to claim deductions for their federal income taxes.

Total Tax Liability Calculation

As of 2020, seven states—Alaska, Florida, Nevada, South Dakota, Texas, Washington, and Wyoming—levy no personal income tax. The number of tax brackets varies by state and ranges from one tax bracket to as many as ten.

The rates apply to taxable income—AGI minus either the standard deduction or allowable itemized deductions. Income up to the standard deduction (or itemized deductions) is thus taxed at a zero rate. Six states—Alabama, Iowa, Louisiana, Missouri, Montana, and Oregon—allow taxpayers to deduct their total federal tax liability less any federal tax credits. States have the ability to set their own standard deductions. Some states replicate federal personal income tax standard deductions.

Special Rules and Provisions

Special State-Level Rules

Two states—New Hampshire and Tennessee—do not tax wages. They do, however, impose taxes on investment income and interest, but are set to eliminate those taxes by 2025.

Using the PRD: List of Inputs and Calculations

List of Inputs

The required information for determining eligibility for the families modeled in the PRD are:

- State identifiers: **{stateName}** - name of the state or **{stateFIPS}** - FIPS code of the state
- Filing status of the individual - **{filingStatus}**. There are four filing statuses: individual, married filing jointly, head of household, and married filing separately.
- Taxable income of the individual - **{income.AGI}**
- Total federal income tax liability (sum of federal income tax and FICA tax) - **{tax.income.fed}**
- Total value of federal tax credits (sum of federal EITC, CTC and CDCTC) - **{value.taxcredits.fed}**

Calculations

Step 1: Calculate annual total countable income.

$\{\text{countableIncome.AGI}\} = \text{sum}(\{\text{ListOfCountableIncome}\})$

Step 2: Calculate deductible federal income tax.

$\text{fedincometax} = \{\text{tax.income.fed}\} - \{\text{value.taxcredits.fed}\}$

Step 3: Calculate taxable income.

If $[\text{FederalIncomeTaxDeductible}] == \text{"Yes"}$, then $\text{taxableIncome} = \{\text{countableIncome.AGI}\} - [\text{Standard Deduction}] - \text{fedincometax}$

If $[\text{FederalIncomeTaxDeductible}] == \text{"No"}$, then $\text{taxableIncome} = \{\text{countableIncome.AGI}\} - [\text{Standard Deduction}]$

Step 4: Calculate income amount taxable at each rate.

$\text{Taxable Income Bin 1} = \max\{(\text{taxableIncome} - 0) - \max\{\text{taxableIncome} - [\text{IncomeBin1Max}], 0\}, 0\}$

$\text{Taxable Income Bin 2} = \max\{(\text{taxableIncome} - [\text{IncomeBin1Max}]) - \max\{\text{taxableIncome} - [\text{IncomeBin2Max}], 0\}, 0\}$

$\text{Taxable Income Bin 3} = \max\{(\text{taxableIncome} - [\text{IncomeBin2Max}]) - \max\{\text{taxableIncome} - [\text{IncomeBin3Max}], 0\}, 0\}$

$\text{Taxable Income Bin 4} = \max\{(\text{taxableIncome} - [\text{IncomeBin3Max}]) - \max\{\text{taxableIncome} - [\text{IncomeBin4Max}], 0\}, 0\}$

$\text{Taxable Income Bin 5} = \max\{(\text{taxableIncome} - [\text{IncomeBin4Max}]) - \max\{\text{taxableIncome} - [\text{IncomeBin5Max}], 0\}, 0\}$

$\text{Taxable Income Bin 6} = \max\{(\text{taxableIncome} - [\text{IncomeBin5Max}]) - \max\{\text{taxableIncome} - [\text{IncomeBin6Max}], 0\}, 0\}$

$\text{Taxable Income Bin 7} = \max\{(\text{taxableIncome} - [\text{IncomeBin6Max}]) - \max\{\text{taxableIncome} - [\text{IncomeBin7Max}], 0\}, 0\}$

Taxable Income Bin 8 = $\max\{(\text{taxableIncome} - [\text{IncomeBin7Max}]) - \max\{\text{taxableIncome} - [\text{IncomeBin8Max}], 0\}, 0\}$

Taxable Income Bin 9 = $\max\{(\text{taxableIncome} - [\text{IncomeBin8Max}]) - \max\{\text{taxableIncome} - [\text{IncomeBin9Max}], 0\}, 0\}$

Taxable Income Bin 10 = $\max\{(\text{taxableIncome} - [\text{IncomeBin9Max}]), 0\}$

Step 5: Calculate tax liability paid at each rate.

Value Tax Bin 1 = [Tax Rate 1]*Taxable Income Bin 1

Value Tax Bin 2 = [Tax Rate 2]*Taxable Income Bin 2

Value Tax Bin 3 = [Tax Rate 3]*Taxable Income Bin 3

Value Tax Bin 4 = [Tax Rate 4]*Taxable Income Bin 4

Value Tax Bin 5 = [Tax Rate 5]*Taxable Income Bin 5

Value Tax Bin 6 = [Tax Rate 6]*Taxable Income Bin 6

Value Tax Bin 7 = [Tax Rate 7]*Taxable Income Bin 7

Value Tax Bin 8 = [Tax Rate 8]*Taxable Income Bin 8

Value Tax Bin 9 = [Tax Rate 9]*Taxable Income Bin 9

Value Tax Bin 10 = [Tax Rate 10]*Taxable Income Bin 10

Step 6: Calculate total tax liability.

State Income Tax Value = Value Tax Bin 1 +...+ Value Tax Bin 10

Implementation-Specific Assumptions

Atlanta Fed

We assume that the person always takes the standard deduction and never claims itemized deductions.

Limitations

- The PRD does not include information on local (county or municipality) taxes
- Itemized deductions such as home mortgage interest deduction are not included to the PRD.
- PRD does not account for tax filers with different filing statuses in the same household.
- State-specific rules not in in the PRD include:

- Idaho

Idaho has a special tax deduction called Tax Subtraction for Child and Dependent Care Expenses that allows families to deduct childcare expenses. The amount of expenses claimed under the federal CDCTC is subtracted from income, before deductions are taken. The amount of tax savings is worth the amount of expenses

multiplied by the taxpayer's Idaho income tax rate. For details, see <http://www.taxcreditsforworkersandfamilies.org/state-tax-credits/idaho/>.

- Maryland

Maryland has a special tax deduction called Subtraction for Child and Dependent Care Expenses, that allows families to deduct childcare expenses. The amount of expenses claimed under the federal CDCTC is subtracted from income, before deductions are taken. The amount of tax savings is worth the amount of expenses multiplied by the taxpayer's Maryland income tax rate. For details, see https://nwlc-ciw49tixqw5lbab.stackpathdns.com/wp-content/uploads/2018/12/Final_Report_NWLC_MCLT.pdf.

- Massachusetts

Massachusetts has a special tax deduction called the Tax Deduction for Child and Dependent Care Expenses that allows families to deduct childcare expenses. Families who claim the federal CDCTC may subtract up to \$4,800 (for one child or dependent) or up to \$9,600 (for two or more children or dependents) in expenses from Massachusetts income. The amount of tax savings is worth the amount of expenses multiplied by the taxpayer's Massachusetts income tax rate.

Massachusetts also has a Dependent Member(s) of Household under Age 12, or Dependents Age 65 or Older, and Disabled Dependents Deduction. These deductions allow filers to claim a deduction of \$3,600 per qualifying dependent living in their household, not to exceed \$7,200. A qualifying dependent must be a household member that is either under age 12 or over age 65 at the close of the tax year.

For details, see <http://www.taxcreditsforworkersandfamilies.org/state-tax-credits/massachusetts/>.

- Montana

Montana has a special tax deduction, the Child and Dependent Care Expense Deduction, that allows families to deduct childcare expenses. For families who are itemizing deductions, child and dependent care expenses are deducted from the state AGI. Expenses must be for the care of a child under age 15, or dependents or a spouse who are physically or mentally incapable or caring for themselves. The amount of expenses that can be claimed is limited to \$2,400 for one child or dependent, \$3,600 for two children or dependents, or \$4,800 for three or more children or dependents. For families with an AGI exceeding \$18,000, the amount of eligible expenses is reduced by one-half the amount of income over \$18,000. The amount of tax savings from the deduction is worth the amount of expenses multiplied

by the taxpayer's Montana income tax rate. For details, see https://nwlc-ciw49tixgw5lbab.stackpathdns.com/wp-content/uploads/2018/12/Final_Report_NWLC_MCLT.pdf.

- Virginia

Virginia has a special tax deduction, the Deduction for Child and Dependent Care, that allows families to deduct childcare expenses. For families who are itemizing deductions, the amount of expenses on which the family's federal CDCTC is based is deducted from the Virginia AGI. The amount of tax savings is worth the amount of expenses multiplied by the taxpayer's Virginia income tax rate. In order to qualify, expenses must be eligible for the federal CDCTC. Maximum deductions are \$3,000 for one qualifying dependent and \$6,000 for two or more. For details, see <http://www.taxcreditsforworkersandfamilies.org/state-tax-credits/virginia/>.

2.2.3 State Sales Tax

Overview

Sales taxes are placed on the sale or lease of goods and services. Sales tax is governed at the state level and no national general sales tax exists. The District of Columbia, the territories of Puerto Rico, Guam, and 45 states impose general sales taxes that apply to the sale or lease of most goods and some services, and states also may levy selective sales taxes on the sale or lease of particular goods or services. States may grant local governments the authority to impose additional general or selective sales taxes. The definitions of taxable items vary among the states.

Total Tax Liability Calculation

Sales taxes are imposed only on taxable transfers of goods or services. The tax is computed as the tax rate times the taxable transaction value. Rates vary by state and by locality within a state. Not all types of transfers are taxable. The tax may be imposed on sales to consumers and to businesses.

The definitions of taxable items vary among the states. Nearly all jurisdictions provide numerous categories of goods and services that are exempt from sales tax or taxed at reduced rates. The purchase of goods for further manufacture or for resale is uniformly exempt from sales tax. Most jurisdictions exempt food sold in grocery stores, prescription medications, and many agricultural supplies. Among those states that tax food, the sales tax rate on food items is generally lower than that on regular items. See the PRD for details.

Using the PRD: List of Inputs and Calculations

List of Inputs

The required family-level information for determining eligibility modeled in the PRD are:

- State identifiers: **{stateName}** - name of the state or **{stateFIPS}** - FIPS code of the state
- Taxable expenses of a family: **{taxableexpenses}** - total spending of the family that is taxable across all states. (Can be proxied by the miscellaneous expenses from the CLS. Miscellaneous expenses include essential costs such as clothing, shoes, paper products, diapers, nonprescription medicines, cleaning products, household items, personal hygiene items, and telephone service.)
- Food expenses: **{exp.food}** (See the CLD for default values.)

Calculations

Step 1: Calculate total sales tax liability.

Sales Tax = {taxableexpenses}*[SalesTaxRate]+{exp.food}*[SalesTaxRate.Food]

Implementation-Specific Assumptions

Atlanta Fed

In the calculations of the sales tax, we assume that miscellaneous and food expenses are the family's only taxable spending.

Limitations

- The PRD does not include a detailed breakdown of items that are taxable/exempt from the sales tax. It does not provide information on sales tax rates for special items (such as tobacco or alcohol).
- The PRD does not include information on municipal and county sales taxes.

2.2.4 Federal Insurance Contributions Tax

Overview

FICA is a tax mechanism codified in Title 26, Subtitle C, Chapter 21 of the United States Code.²⁰ FICA mandates a payroll tax on the paychecks of employees, as well as contributions from employers, to fund the Social Security and Medicare programs. For self-employed persons, there is an equivalent law called the Self-Employed Contributions Act. FICA contributions are mandatory, with rates set annually, although not necessarily changed annually.

Total Tax Liability Calculation

FICA tax is a combination of a Social Security tax and a Medicare tax that the IRS imposes on employee earnings. As of 2020, the Social Security tax rate is 6.2 percent and the Medicare tax rate is 1.45 percent. Employers match these percentages for a total of 15.3 percent. Social Security tax has a wage-based limit that doesn't vary by filing status. As of 2020, individuals pay Social Security tax only on the first \$137,700 of their wages. A 0.9% additional Medicare tax may apply if earnings exceed \$200,000 for single filers and heads of households, \$250,000 for those filing jointly, and \$125,000 for those with married-filing-separately status. Employers are not responsible for the additional 0.9 percent Medicare tax.

Using the PRD: List of Inputs and Calculations

List of Inputs

The required family-level information for determining eligibility modeled in the PRD are:

- Filing status of the individual - **{filingStatus}**. There are four filing statuses: individual, married filing jointly, head of household, and married filing separately.
- Taxable income of the individual - **{income.AGI}**

Calculations

Step 1: Calculate Social Security tax liability.

Social Security Tax = $\min(\{\text{income.AGI}\}, [\text{SocialSecurityTaxBase}]) * [\text{SocialSecurityTaxRate}]$

Step 2: Calculate the taxable income at each Medicare tax rate.

Taxable Income Bin 1 = $\max(\{\text{income.AGI}\} - 0) - \max(\{\text{income.AGI}\} - [\text{IncomeBin1Max}], 0), 0)$

Taxable Income Bin 2 = $\max(\{\text{income.AGI}\} - [\text{IncomeBin1Max}], 0)$

²⁰ <https://www.law.cornell.edu/uscode/text/26/subtitle-C/chapter-21>

Step 3: Calculate Medicare tax liability.

Medicare Tax = Taxable Income Bin 1*[MedicareTaxRateBin1]+Taxable Income Bin 2*[MedicareTaxRateBin2]

Step 4: Calculate total FICA tax.

FICA tax = Social Security Tax + Medicare Tax

Implementation-Specific Assumptions

Atlanta Fed

The PRD assumes the tax filer does not have income from self-employment.

Limitations

The PRD does not include provisions related to the Self-Employed Contributions Act. For details, see <https://www.inc.com/encyclopedia/self-employment-contributions-act-seca.html>.

2.2.5 Federal Earned Income Tax Credit

Overview

The EITC is a benefit for working people with low to moderate income. To qualify, workers must meet certain requirements and file a tax return, even if they do not owe any taxes or are not required to file. The EITC is a refundable tax credit; it reduces the amount of tax owed and may result in a refund.

Eligibility Determination

The EITC benefits only working families, which means that families must have earned income to qualify. The EITC has two income eligibility tests. The first is based on the earned income, and the second is based on the AGI. Individuals with an AGI or earned income above the eligibility threshold are not eligible for the EITC. The income eligibility threshold varies according to the number of dependents and tax filing status. Additionally, families with investment income above a certain threshold cannot claim the EITC. See the PRD for details.

Workers who do not claim eligible children must be at least age 25 but under age 65. If a worker is married filing a joint return, either the worker or spouse must be at least age 25 but under age 65 at the end of fiscal year. It doesn't matter which spouse meets the age test as long as one of them does.

Those who are married and filing separately are not eligible.

Countable Income, Net Income, and Asset Tests

Countable Income

Eligibility is based on both the AGI and earned income. AGI is calculated as gross income less certain deductions.²¹ Earned income includes taxable employee compensation and net earnings

²¹ <https://www.investopedia.com/terms/a/agi.asp> Some of the most prominent deductions made to reach an individual's AGI include: certain retirement plan contributions, such as individual retirement accounts (IRA), SIMPLE IRA, SEP-IRA, and qualified plans; Half of the self-employment tax; Healthcare savings account (HSA) deductions; Alimony paid (included in the recipient's gross income); Moving expenses (but since 2018, only if you're active-duty military moving due to military orders); Losses incurred from the sale or exchange of property; Early-withdrawal penalties levied by financial institutions; School tuition, fees, and student loan interest (exceptions and limits usually apply); Jury duty pay turned over to a filer's employer; Some business-related expenses incurred by performing artists, teachers, fee-basis government officials, and reservists

from self-employment as well as certain disability payments.²² The EITC also has restrictions on the amount of investment income.²³

Net Income and Deductions

See above.

Asset Tests

No asset test.

Value of Benefits Determination

Workers receive a credit equal to a percentage of their earned income up to a maximum. After the credit reaches the maximum, it remains flat until earnings reach the phaseout point. Both the credit rate and the credit maximum vary by family size. Families with children receive a much larger credit than do workers without qualifying children. A qualifying child must meet requirements based on relationship, age, residency, and tax filing status. In 2020, the maximum credit for families with one child is \$3,584, while the maximum credit for families with three or more children is \$6,660. See the PRD for details.

Additionally, if a family's AGI is higher than the income threshold for the maximum value of the tax credit, the EITC must be recalculated using the AGI instead of unearned income. See the Calculations section for details.

The EITC is fully refundable. That is, if a refundable credit exceeds a taxpayer's federal income tax, the taxpayer receives the excess amount as a payment from the federal government.

Using the PRD: List of Inputs and Calculations

List of Inputs

The required family-level information for determining eligibility modeled in the PRD are:

- Filing status of the individual - **{filingStatus}**. There are four filing statuses: individual, married filing jointly, heads of household, and married filing separately.
- Number of eligible children - **{numkids}**
- Age of tax credit claimer **{ageRespondent}**

²² According to the IRS, the following are considered taxable earned income: wages, salaries, tips, and other taxable employee compensation; union strike benefits; disability retirement benefits received prior to minimum retirement age; and net earnings from self-employment. See <https://www.irs.gov/credits-deductions/individuals/earned-income-tax-credit/earned-income>.

²³ Investment income is income that comes from interest payments, dividends, capital gains collected upon the sale of a security or other assets, and any other profit made through an investment vehicle. See <https://www.investopedia.com/terms/i/investmentincome.asp>.

- Age of spouse (if available) **{ageSpouse}**
- Adjusted gross income - **{income.AGI}**
- Earned income - **{income.earned}**

Calculations

Step 1: Calculate the number of eligible dependents.

numkids = sum(age_i < 19)

Step 2: Compute benefit amount based on earned income.

if {income.earned} < [IncomeBin1Max], then Benefit = 0

if {income.earned} >= [IncomeBin1Max] & {income.earned} < [IncomeBin2Max], then Benefit = [PhaseInRate]*({income.earned}-0)

if {income.earned} >= [IncomeBin2Max] & {income.earned} < [IncomeBin3Max], then Benefit = [MaxCredit]

if {income.earned} >= [IncomeBin3Max] & {income.earned} < [IncomeBin4Max], then Benefit = [PhaseOutRate]*({income.earned}-[IncomeBin4Max])

if {income.earned} >= [IncomeBin4Max], then Benefit = 0

Step 3: Adjust EITC calculations based on AGI.

If {income.AGI} != {income.earned} & {income.AGI} > [IncomeBin3Max], then

Benefit = [PhaseOutRate]*({income.AGI}-[IncomeBin4Max])

if {income.AGI} >= [IncomeBin4Max], then Benefit = 0

Step 4: Apply a special rule for those who do not claim children.

if {numkids} == 0 & ({filingStatus} == "Individual" | {filingStatus} == "Head of the Household")

{ageRespondent} < 25 , then Benefit = 0

if {numkids} == 0 & ({filingStatus} == "Married Filing Jointly") ({ageRespondent} < 25 & {ageSpouse} < 25) , then Benefit = 0

Implementation-Specific Assumptions

Atlanta Fed

- The PRD calculations assume that individuals have a valid Social Security number and are U.S. citizens or permanent residents.
- The PRD calculations assume that anyone in the household under the age of 19 meets all qualifying child rules and are counted as children.

Limitations

- The IRS has special rules about who is counted as a child. The PRD does not include these provisions. For details, see <https://www.irs.gov/credits-deductions/individuals/earned-income-tax-credit/qualifying-child-rules>.
- The PRD does not include special EITC rules related to the military and members of the clergy. For details, see <https://www.irs.gov/credits-deductions/individuals/earned-income-tax-credit/special-eitc-rules>.
- The PRD does not include special EITC rules related to people with disabilities and people who have a qualifying child with a disability. For details, see <https://www.irs.gov/credits-deductions/individuals/earned-income-tax-credit/disability-and-earned-income-tax-credit>.

2.2.6 State Earned Income Tax Credit

Overview

In 2020, 28 states and the District of Columbia offered their own EITC. States typically set their credits as a percentage of the federal EITC. However, unlike the federal credit, some state EITCs are not refundable. In all but six states—Delaware, Hawaii, Ohio, Oklahoma, South Carolina, and Virginia—state EITCs, like the federal credit, are refundable. That is, if a refundable credit exceeds a taxpayer’s state income tax, the taxpayer receives the excess amount as a payment from the state. A nonrefundable EITC can only offset state income taxes, so the benefit is limited for low-income families with little taxable income.

Eligibility Determination

All states but one (Minnesota) set their credits as a percentage of the federal credit. See the Federal EITC section for details.

Countable Income, Net Income, and Asset Tests

Countable Income

See the Federal EITC section for details.

Net Income and Deductions

See the Federal EITC section for details.

Asset Tests

See the Federal EITC section for details.

Value of Benefits Determination

All states but one set their credits as a percentage of the federal credit, the exception being Minnesota, which calculates its credit separately as a percentage of income (see the Special Rules and Provisions section for details on the Minnesota EITC).

In all but six states—Delaware, Hawaii, Ohio, Oklahoma, South Carolina, and Virginia—state EITCs, like the federal credit, are refundable.

State credits as a percentage of the federal credit ranged from 3 percent in Montana to a nonrefundable 62.5 percent in South Carolina. The highest refundable credit is in the District of Columbia (40 percent).

Special Rules and Provisions

Special State-Level Rules

Some states have special EITC provisions related to income eligibility and/or refundability that are briefly described here. See the PRD for details.

- California

California's EITC is not available for those with earned income above \$30,000.

- Ohio

Ohio's EITC is limited to 50 percent of liability for Ohio taxable income above \$20,000. That is, the credit amount cannot exceed more than half of a taxpayer's state income tax liability.

- Oregon

In Oregon, the EITC is 12 percent of federal credit for filers with children under the age of three and 9 percent of federal credit for all other eligible filers.

- Maryland

Maryland has one refundable credit (at 28 percent of federal EITC) and another credit that allows for a nonrefundable credit of any remaining amount after subtracting the refundable credit from tax liability (at 50 percent of the federal EITC, less the amount of the refundable credit).

- Maryland also allows filers without children who qualify for the federal EITC except for the age requirements to receive a state EITC, at 50 percent of the amount that the federal credit would have been if there was no age requirement.
- Maryland has an additional nonrefundable state Poverty Level Credit that allows workers to claim a credit of 5 percent of their earned income. Eligibility requirements are the following:
 - Maryland state tax exceeds 50 percent of a worker's federal EITC.
 - A worker's earned income and federal AGI are below the poverty income threshold. The Maryland Poverty Level Credit is not included in the PRD.

- Minnesota

Minnesota’s Working Family Credit is not calculated as a proportion of federal credit but rather has its own structure. The structure of the Working Family Credit replicates a structure of the federal EITC but has different income limits. See https://www.revenue.state.mn.us/sites/default/files/2020-01/m1wfc_19.pdf for details. The PRD does not include this provision. See the Limitations section for details.

Using the PRD: List of Inputs and Calculations

List of Inputs

The required family-level information for determining eligibility modeled in the PRD are:

- State identifiers: **{stateName}** - name of the state or **{stateFIPS}** - FIPS code of the state
- Number of eligible children - **{numkids}**
- Adjusted gross income - **{income.AGI}**
- Earned income - **{income.earned}**
- Total state personal income tax liability - **{tax.income.state}**
- Value of federal EITC - **{value.eitc.fed}**
- Age of tax credit claimer **{ageRespondent}**
- Age of spouse (if available) **{ageSpouse}**
- Age of the youngest child - **{ageOfYoungestChild}**

Calculations

Step 1: Calculate the tax credit amount.

Benefit = [PercentOfFederal]*{value.eitc.fed}

Step 2: Adjust for refundability/nonrefundability.

If [Refundable] == “Yes”, then Benefit = Benefit

If [Refundable] == “No”, then Benefit = min(Benefit, {tax.income.state})

Step 3: Reflect special state-level rules.

If stateFIPS==6 (California)

Benefit = [PercentOfFederal]*{value.eitc.fed}

If [Refundable] == “Yes”, then Benefit = Benefit

If [Refundable] == “No”, then Benefit = min(Benefit, {tax.income.state})

If {income.AGI}>30000, then Benefit=0

If stateFIPS==24 (Maryland)

value.eitc.fed = (replicate steps from the Federal EITC)
Benefit.refundable = 0.28*{value.eitc.fed}
Benefit.nonrefundable = min(0.5*{value.eitc.fed}, {tax.income.state}-Benefit.refundable)
Benefit = Benefit.refundable + Benefit.nonrefundable

If stateFIPS==39 (Ohio)

If {income.earned} > 20000 then Benefit = min(Benefit, 0.5*{tax.income.state})

If stateFIPS==41 (Oregon)

If {ageOfYoungestChild} < 3 then Benefit = 0.12*{value.eitc.fed}

If {ageOfYoungestChild} >= 3 then Benefit = 0.09*{value.eitc.fed}

Step 4: Apply special rule for those who do not claim children (except Maryland)

if {numkids} == 0 & ({filingStatus} == "Individual" | {filingStatus} == "Head of the Household")

{age_1} < 25 & stateFIPS !=24 , then Benefit = 0

if {numkids} == 0 & ({filingStatus} == "Married Filing Jointly") ({age_1} < 25 & {age_2} < 25) &

stateFIPS !=24 , then Benefit = 0

Implementation-Specific Assumptions

Atlanta Fed

- See the Federal EITC section.

Limitations

- Provisions of Maryland's State Poverty Level Credit are not included in the PRD. See the Special Rules and Provisions section for details.
- The PRD does not include the full structure of the Minnesota Working Family Credit. Rather, it approximates the proportion of federal credit with an average value of 34 percent of the federal credit.

2.2.7 Federal Child Tax Credit

Overview

The CTC is a partially refundable tax credit available to parents with qualifying dependents under the age of 17. It is targeted to help working families offset the cost of raising children. The CTC was enacted in 1997 and has been expanding gradually with a bipartisan support since 2001. This tax credit, in combination with other refundable tax credits, is explicitly designed to benefit low-income families with workers and children and can significantly boost incomes and lift families above the poverty line.

Eligibility Determination

CTC is available to parents with qualifying dependents under the age of 17. A family that earns less than \$2,500 is ineligible for the credit. Those with incomes above \$480,000 (\$280,000 for singles and household heads) receive no CTC.

Countable Income, Net Income, and Asset Tests

Countable Income

Eligibility is based on the AGI. The AGI is calculated as gross income less certain deductions.²⁴

Net Income and Deductions

See above.

Asset Tests

No asset test.

Value of Benefits Determination

Working families can receive a refund equal to 15 percent of their earnings above \$2,500. This refund can be worth up to \$1,400 per child. Families can claim a maximum tax credit of \$2,000. The CTC starts to phase out at income levels of \$400,000 (\$200,000 for single or head-of-household filers).

²⁴ See <https://www.investopedia.com/terms/a/agi.asp>. Some of the most prominent deductions made to reach an individual's AGI include: certain retirement plan contributions, such as individual retirement accounts (IRA), SIMPLE IRA, SEP-IRA, and qualified plans; half of the self-employment tax; HSA deductions; alimony paid (included in the recipient's gross income); Moving expenses (but since 2018, only if you're active-duty military moving due to military orders); losses incurred from the sale or exchange of property; early-withdrawal penalties levied by financial institutions; school tuition, fees, and student loan interest (exceptions and limits usually apply); jury duty pay turned over to a filer's employer; and some business-related expenses incurred by performing artists, teachers, fee-basis government officials, and reservists.

Using the PRD: List of Inputs and Calculations

List of Inputs

The required family-level information for determining eligibility modeled in the PRD are:

- Filing status of the individual - **{filingStatus}**. There are four filing statuses: individual, married filing jointly, head of household, and married filing separately.
- Number of eligible children - **{numkids}**
- The age of each member of the household **{age_1}, {age_2}, {age_3}, {age_4}, {age_5}, {age_5}, {age_6}, {age_7}, {age_8}**
- Adjusted gross income - **{income.AGI}**
- Total federal tax liability (federal personal income tax and FICA) - **{tax.income.federal}**

Calculations

Step 1: Calculate the number of children that the family can claim.

$\text{numberofdependents} = \text{sum}(\text{age}_i > [\text{AgeOfDependentMin}] \ \& \ \text{age}_i < [\text{AgeOfDependentMax}])$

Step 2: Calculate the value of the tax credit per eligible child.

if $\{\text{income.AGI}\} < [\text{IncomeBin1Max}]$, then Benefit = 0

if $\{\text{income.AGI}\} > [\text{IncomeBin1Max}] \ \& \ \{\text{income.AGI}\} < [\text{IncomeBin2Max}]$, then Benefit = $\text{min}(\text{max}(\{\text{tax.income.federal}\}, [\text{RefundableCredit}]), [\text{MaxCredit}])$

if $\{\text{income.AGI}\} > [\text{IncomeBin2Max}]$, then $\text{Benefit} = [\text{MaxCredit}] - [\text{PhaseOutSlope}] * (\{\text{income.AGI}\} - [\text{IncomeBin2Max}])$

Step 3: Calculate the total value of the tax credit.

$\text{Benefit} = \text{Benefit} * \text{numberofdependents}$

Implementation-Specific Assumptions

Atlanta Fed

- The PRD calculations assume that the child meets all other qualification requirements outside of age requirements.

Limitations

- The PRD does not include information on other requirements that a child must meet in order for the family to claim this child. For details, see <https://www.irs.gov/publications/p972>.
- The CTC also includes a \$500 nonrefundable credit for families with qualifying non-child dependents. The PRD does not include this provision. For details, see https://apps.irs.gov/app/vita/content/globalmedia/4491_child_tax_credit.pdf.

2.2.8 State Child Tax Credit

Overview

Six U.S. states—California, Colorado, Idaho, New York, North Carolina, and Oklahoma—have their own child tax credits. States' CTC is typically structured either as a lump-sum payment for each eligible child or as a fixed percent of the federal credit. New York has a combination of both approaches. Some states' CTCs are nonrefundable.

Eligibility Determination

Idaho and New York replicate the eligibility structure of the federal CTC. Other states set their own income-eligibility thresholds. All states but Colorado follow federal credit rules and allow families to claim tax credits for children under the age of 17. In Colorado, tax credit is available only for children ages 5 and younger. Some states have a restriction on the minimum age of children. See the PRD for details.

Countable Income, Net Income, and Asset Tests

Countable Income

See the Federal CTC section for details.

Net Income and Deductions

See the Federal CTC section for details.

Asset Tests

See the Federal CTC section for details.

Value of Benefits Determination

States' CTC is typically structured either as a lump-sum payment for each eligible child or as a fixed percent of the federal credit. New York has a combination of both approaches. Both the amount of lump-sum payments and percentage of federal credit vary by income bins. Families with a lower income typically receive higher credits. In some states, credit is fully nonrefundable while in others, refundability of credit follows a federal credit structure. See the PRD for details.

Using the PRD: List of Inputs and Calculations

List of Inputs

The required family-level information for determining eligibility modeled in the PRD are:

- Filing status of the individual - **{filingStatus}**. There are four filing statuses: individual, married filing jointly, head of household, and married filing separately.
- The age of each member of the household **{age_1}**, **{age_2}**, **{age_3}**, **{age_4}**, **{age_5}**, **{age_5}**, **{age_6}**, **{age_7}**, **{age_8}**
- Adjusted gross income - **{income.AGI}**
- Total state personal income tax liability - **{tax.income.state}**
- Value of federal CTC - **{value.ctc.fed}**

Calculations

Step 1: Calculate the number of children that the family can claim.

numberofdependents = sum(age_i > [AgeOfDependentMin] & age_i < [AgeOfDependentMax])

Step 2: Calculate the value of the tax credit per eligible child.

if {income.AGI} <= [IncomeBin1Max] then Benefit=max([ValueBin1], [PercentOfFederalBin1]*{value.ctc.fed})

if {income.AGI} > [IncomeBin1Max] & {income.AGI} <= [IncomeBin2Max] then Benefit=max([ValueBin2], [PercentOfFederalBin2]*{value.ctc.fed})

if {income.AGI} > [IncomeBin2Max] & {income.AGI} <= [IncomeBin3Max] then Benefit=max([ValueBin3], [PercentOfFederalBin3]*{value.ctc.fed})

if {income.AGI} > [IncomeBin4Max] then Benefit=0

Step 3: Adjust for refundability/nonrefundability.

If [Refundable] == "Yes", then Benefit = Benefit

If [Refundable] == "No", then Benefit = min(Benefit, {tax.income.state})

Step 4: Calculate the total value of the tax credit.

Benefit = Benefit*numberofdependents

Implementation-Specific Assumptions

Atlanta Fed

- See the Federal Child Tax Credit section.

Limitations

- See the Federal Child Tax Credit section.

2.2.9 Federal Child and Dependent Care Tax Credit

Overview

The CDCTC is a nonrefundable tax credit that reduces a taxpayer's federal income tax liability based on child- and dependent-care expenses incurred. The policy objective is to assist taxpayers who work or who are looking for work. Taxpayers must have earned income and meet a variety of eligibility criteria including incurring qualifying child- and dependent-care expenses for a qualifying individual.

Eligibility Determination

A qualifying individual for the CDCTC is either (1) the taxpayer's dependent child under 13 years of age or (2) the taxpayer's spouse or dependent who is incapable of caring for himself or herself. A taxpayer must have earned income to claim the credit. For married couples, both spouses must have earnings unless one is a student or incapable of self-care. There is no upper income eligibility threshold—taxpayers at all income levels can claim the CDCTC. Many lower-income taxpayers receive little or no credit since the credit is nonrefundable.

Countable Income, Net Income, and Asset Tests

Countable Income

Eligibility is based on both the AGI and earned income. The AGI is calculated as gross income less certain deductions.²⁵ Earned income includes taxable employee compensation and net earnings from self-employment, as well as certain disability payments.²⁶

Net Income and Deductions

See above.

Asset Tests

No asset test.

²⁵ See <https://www.investopedia.com/terms/a/agi.asp>. Some of the most prominent deductions made to reach an individual's AGI include certain retirement plan contributions, such as individual retirement accounts (IRA), SIMPLE IRA, SEP-IRA, and qualified plans; half of the self-employment tax; HSA deductions; alimony paid (included in the recipient's gross income); moving expenses (but since 2018, only if you're active-duty military moving due to military orders); losses incurred from the sale or exchange of property; early-withdrawal penalties levied by financial institutions; school tuition, fees, and student loan interest (exceptions and limits usually apply); jury duty pay turned over to a filer's employer; and some business-related expenses incurred by performing artists, teachers, fee-basis government officials, and reservists

²⁶ According to the IRS, the following is considered taxable earned income: wages, salaries, tips, and other taxable employee compensation; union strike benefits; disability retirement benefits received prior to minimum retirement age; and net earnings from self-employment. See <https://www.irs.gov/credits-deductions/individuals/earned-income-tax-credit/earned-income>.

Value of Benefits Determination

The CDCTC is calculated by multiplying the amount of expense—a maximum of \$3,000 if the taxpayer has one qualifying individual, and up to \$6,000 if the taxpayer has two or more qualifying individuals—by the appropriate credit rate. The credit rate depends on the taxpayer's AGI, with a maximum credit rate of 35 percent—declining as AGI increases—to 20 percent for taxpayers with an AGI above \$43,000.

Using the PRD: List of Inputs and Calculations

List of Inputs

The required family-level information for determining eligibility modeled in the PRD are:

- Number of qualifying dependents under the age of 13 - **{NumberOfKidsUnder13}**
- Adjusted gross income - **{income.AGI}**
- Earned income - **{income.earned}**
- Earned income of a spouse - **{income.spouse.earned}**
- Total federal tax liability (federal personal income tax and FICA) - **{tax.income.federal}**
- Qualifying childcare-related expense - **{expense}**

Calculations

Step 1: Compute the value of the tax credit.

if {filingStatus} != 2 & if {income.earned} < 1, then Benefit = 0

if {filingStatus} == 2 & if ({income.earned} < 1 & {income.spouse.earned} < 1), then Benefit = 0

if {income.AGI} <= [IncomeBin1Max], then Benefit = [CreditRateBin1]*(min({qualifying expense}, [MaxExpense]))

if {income.AGI} > [IncomeBin1Max] & {income.AGI} <= [IncomeBin2Max], then Benefit = ([CreditRateBin1]-({income.AGI}-[IncomeBin1Max])*[PhaseOutRate])*(min({qualifying expense}, [MaxExpense]))

if {income.AGI} > [IncomeBin2Max], then Benefit = [CreditRateBin2]*(min({expense}, [MaxExpense]))

Step 2: Adjust EITC calculations based on the AGI.

If {income.AGI} != {income.earned} & {income.AGI} > [IncomeBin3Max], then

Benefit = [PhaseOutRate]*({income.AGI}-[IncomeBin4Max])

if {income.AGI} >= [IncomeBin4Max], then Benefit = 0

Step 3: Adjust for nonrefundability.

Benefit = min(Benefit, {tax.income.federal})

Implementation-Specific Assumptions

Atlanta Fed

The PRD calculations assume that a family does not have members who are incapable of caring for themselves.

Limitations

- The CDCTC rule specifies that a taxpayer can claim the taxpayer's spouse or dependent who is incapable of caring for himself or herself as a qualifying individual. The PRD does not include this calculation.
- In addition to the CDCTC, taxpayers can exclude from their income up to \$5,000 of employer-sponsored child- and dependent-care benefits, often as a flexible spending account. The PRD does not include this provision. For details, see <https://fas.org/sqp/crs/misc/R44993.pdf>.

2.2.10 State Child and Dependent Care Tax Credit

Overview

As of 2020, 28 states and the District of Columbia had enacted their own CDCTCs to help families meet their child and dependent care costs. States are free to create the structure of their credits. For example, some states have set their credits as a share of the federal credit while other states calculate it as a share of expenses. In some states, credit is fully refundable, while in others it is nonrefundable.

Eligibility Determination

Some states replicate the eligibility rules of the federal credit. See the Federal CDCTC section for details. Other states set their own income eligibility thresholds. See the PRD for details.

Countable Income, Net Income, and Asset Tests

Countable Income

See the Federal CDCTC section for details.

Net Income & Deductions

See the Federal CDCTC section for details.

Asset Tests

See the Federal CDCTC section for details.

Value of Benefits Determination

Most states set their credit as a share of the federal credit. In some states, it is a fixed share, while in others it changes with the family's income. Some states set their credits as either a share of a family's income or a share of eligible expenses. See the PRD for details.

Special Rules and Provisions

Special State-Level Rules

Some states have special CDCTC provisions that are briefly described here. See the PRD for details. Not all state-specific rules are included in the PRD. See the Limitations section for details.

- Colorado

Under the provision of the Low-Income Child Care Expenses Credit, families who do not have sufficient tax liability to claim the federal CDCTC can receive a credit worth 25 percent of the childcare expenses that the family incurred during the taxable year, up to a specified maximum credit value of \$500 per dependent, up to \$1,000 for a family. The childcare expenses cannot exceed a single taxpayer's earned income for the year or, for joint filers, the earned income of the lower earner.

- Hawaii

Hawaii has a special structure for credit phaseout: 25 percent of eligible expenses if the taxpayer earns \$22,000 or less. This percentage is reduced by 1 percent for each additional \$2,000 for an income up to \$40,000. Filers with incomes exceeding \$40,000 can claim 15 percent of eligible expenses.

Hawaii's tax credit is limited to \$2,400 for one child or dependent and \$4,800 for two children or dependents

- Idaho

The Idaho state income tax code has a provision that allows filers to deduct certain childcare expenses. See the State Personal Income Tax section for details.

- Louisiana

In Louisiana, the tax credit is refundable if the federal AGI is \$25,000 or less.

- Maine

In Maine, the tax credit is refundable up to \$500.

- Maryland

In Maryland, the tax credit is a share of the federal credit. This share varies by income bins that are different for individual tax filers and for those married filing jointly.

The Maryland credit is refundable for single filers with incomes below \$50,000, and for married filers with incomes below \$75,000.

The Maryland state income tax code has a provision that allows filers to deduct certain childcare expenses. See the State Personal Income Tax section for details.

- Massachusetts

The Massachusetts state income tax code has a provision that allows filers to deduct certain childcare expenses. See the State Personal Income Tax section for details.

- Minnesota

The tax credit is equal to 100 percent of the federal CDCTC up to \$1,400 if income is \$25,350 or less. If income exceeds \$25,350, the credit is phased out. Filers with income above \$39,000 are ineligible. (These amounts are adjusted for inflation each year.)

- Montana

The Montana state income tax code has a provision that allows filers to deduct certain childcare expenses. See the State Personal Income Tax section for details.

- Nebraska

The Nebraska tax credit is refundable for families with income below \$29,000.

- New Mexico

In New Mexico, the tax credit is calculated as a proportion of expenses for a qualifying dependent under the age of 15: 40 percent of qualifying expenses, up to a maximum credit of \$480 for each qualifying dependent or a total of \$1,200 for all qualifying dependents.

- New York

New York has a special structure for the credit phaseout. The tax credit is 110 percent of the federal CDCTC if the state AGI is \$25,000 or less (including negative income), between 109 and 100 percent if the state AGI is \$25,001–\$39,999, then phasing down to \$64,999, and 20 percent if the state AGI is \$65,000 or more.

- South Carolina

Credit is calculated as 7 percent of qualifying expenses, up to a maximum credit of \$210 for each qualifying dependent or a total of \$420 for all qualifying dependents.

Spouses filing separately are ineligible for the CDCTC.

- Virginia

The Virginia state income tax code has a provision that allows filers to deduct certain childcare expenses. See the State Personal Income Tax section for details.

Using the PRD: List of Inputs and Calculations

List of Inputs

The required family-level information for determining eligibility modeled in the PRD are:

- Filing status of the individual - **{filingStatus}**. There are four filing statuses: individual; married filing jointly; head of household, and married filing separately.
- Number of qualifying dependents under the age of 13 - **{NumberOfKidsUnder13}**
- Adjusted gross income - **{income.AGI}**
- Total state personal income tax liability - **{tax.income.state}**
- Qualifying childcare-related expense - **{expense}**
- Value of federal CDCTC - **{value.cdctc.fed}**

Calculations

Step 1: Calculate the value of a credit.

if {income.AGI} <= [IncomeBin1Max] then

Benefit=max([PercentOfFederalBin1]*{value.cdctc.fed}, [PercentOfExpensesBin1]*(expense))

if {income.AGI} > [IncomeBin1Max] & {income.AGI} <= [IncomeBin2Max] then

Benefit=max([PercentOfFederalBin2]*{value.cdctc.fed}, [PercentOfExpensesBin2]*(expense))

if {income.AGI} > [IncomeBin2Max] & {income.AGI} <= [IncomeBin3Max] then

Benefit=max([PercentOfFederalBin3]*{value.cdctc.fed}, [PercentOfExpensesBin3]*(expense))

if {income.AGI} > [IncomeBin3Max] & {income.AGI} <= [IncomeBin4Max] then

Benefit=max([PercentOfFederalBin4]*{value.cdctc.fed}, [PercentOfExpensesBin4]*(expense))

if {income.AGI} > [IncomeBin4Max] & {income.AGI} <= [IncomeBin5Max] then

Benefit=max([PercentOfFederalBin5]*{value.cdctc.fed}, [PercentOfExpensesBin5]*(expense))

if {income.AGI} > [IncomeBin5Max] & {income.AGI} <= [IncomeBin6Max] then

Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*(expense))

if {income.AGI} > [IncomeBin6Max] & {income.AGI} <= [IncomeBin7Max] then

Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*(expense))

Step 2: Adjust for nonrefundability.

If [Refundable] == "Yes", then Benefit = Benefit

If [Refundable] == "No", then Benefit = min(Benefit, {tax.income.state})

Step 3: Reflect special state-level rules.If stateFIPS==8 (Colorado)

Calculate Steps 1 - 3

Adjust for Low-Income Child Care Expenses Credit:

If {value.cdctc.fed}==0 & {expense}>0 , then Benefit=0.25*{expense}

If {NumberOfKidsUnder13}<=2, then Benefit = min(Benefit, 500*{NumberOfKidsUnder13})

If {NumberOfKidsUnder13}>2, then Benefit = min(Benefit, 1000)

If stateFIPS==15 (Hawaii)

If {NumberOfKidsUnder13}==1, then {expenses}=min({expenses},2400)

If {NumberOfKidsUnder13}>=21, then {expenses}=min({expenses},4800)

if {income.AGI} <= [IncomeBin1Max] then

Benefit=max([PercentOfFederalBin1]*{value.cdctc.fed}, [PercentOfExpensesBin1]*{expense})

if {income.AGI} > [IncomeBin1Max] & {income.AGI} <= [IncomeBin2Max] then

Benefit=max([PercentOfFederalBin2]*{value.cdctc.fed}, ([PercentOfExpensesBin1]-
[PhaseOutRate]*({income}-[IncomeBin1Max]))*{qualifying expenses})

if {income.AGI} > [IncomeBin2Max] & {income.AGI} <= [IncomeBin3Max] then

Benefit=max([PercentOfFederalBin3]*{value.cdctc.fed}, [PercentOfExpensesBin3]*{expense})

if {income.AGI} > [IncomeBin3Max] & {income.AGI} <= [IncomeBin4Max] then

Benefit=max([PercentOfFederalBin4]*{value.cdctc.fed}, [PercentOfExpensesBin4]*{expense})

if {income.AGI} > [IncomeBin4Max] & {income.AGI} <= [IncomeBin5Max] then

Benefit=max([PercentOfFederalBin5]*{value.cdctc.fed}, [PercentOfExpensesBin5]*{expense})

if {income.AGI} > [IncomeBin5Max] & {income.AGI} <= [IncomeBin6Max] then

Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense})

if {income.AGI} > [IncomeBin6Max] & {income.AGI} <= [IncomeBin7Max] then

Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense})

If [Refundable] == "Yes", then Benefit = Benefit

If [Refundable] == "No", then Benefit = min(Benefit, {tax.income.state})

If stateFIPS==22 (Louisiana)

if {income.AGI} <= [IncomeBin1Max] then

Benefit=max([PercentOfFederalBin1]*{value.cdctc.fed}, [PercentOfExpensesBin1]*{expense})

if {income.AGI} > [IncomeBin1Max] & {income.AGI} <= [IncomeBin2Max] then

Benefit=max([PercentOfFederalBin2]*{value.cdctc.fed}, [PercentOfExpensesBin2]*{expense})

if {income.AGI} > [IncomeBin2Max] & {income.AGI} <= [IncomeBin3Max] then

Benefit=max([PercentOfFederalBin3]*{value.cdctc.fed}, [PercentOfExpensesBin3]*{expense})

if {income.AGI} > [IncomeBin3Max] & {income.AGI} <= [IncomeBin4Max] then

Benefit=max([PercentOfFederalBin4]*{value.cdctc.fed}, [PercentOfExpensesBin4]*{expense})

if {income.AGI} > [IncomeBin4Max] & {income.AGI} <= [IncomeBin5Max] then

Benefit=max([PercentOfFederalBin5]*{value.cdctc.fed}, [PercentOfExpensesBin5]*{expense})

if {income.AGI} > [IncomeBin5Max] & {income.AGI} <= [IncomeBin6Max] then

Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense})

if {income.AGI} > [IncomeBin6Max] & {income.AGI} <= [IncomeBin7Max] then

Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense})

If {income.AGI} <= [IncomeBin1Max], then Benefit = Benefit

If {income.AGI} > [IncomeBin1Max], then Benefit = min(Benefit, {tax.income.state})

If stateFIPS==23 (Maine)

if {income.AGI} <= [IncomeBin1Max] then

Benefit=max([PercentOfFederalBin1]*{value.cdctc.fed}, [PercentOfExpensesBin1]*{expense})

if {income.AGI} > [IncomeBin1Max] & {income.AGI} <= [IncomeBin2Max] then

Benefit=max([PercentOfFederalBin2]*{value.cdctc.fed}, [PercentOfExpensesBin2]*{expense})

if {income.AGI} > [IncomeBin2Max] & {income.AGI} <= [IncomeBin3Max] then

Benefit=max([PercentOfFederalBin3]*{value.cdctc.fed}, [PercentOfExpensesBin3]*{expense})

if {income.AGI} > [IncomeBin3Max] & {income.AGI} <= [IncomeBin4Max] then

Benefit=max([PercentOfFederalBin4]*{value.cdctc.fed}, [PercentOfExpensesBin4]*{expense})

if {income.AGI} > [IncomeBin4Max] & {income.AGI} <= [IncomeBin5Max] then

Benefit=max([PercentOfFederalBin5]*{value.cdctc.fed}, [PercentOfExpensesBin5]*{expense})

if {income.AGI} > [IncomeBin5Max] & {income.AGI} <= [IncomeBin6Max] then

Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense})

if {income.AGI} > [IncomeBin6Max] & {income.AGI} <= [IncomeBin7Max] then
Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense})

if Benefit <=500 then Benefit=Benefit
if Benefit >500 then Benefit=min(Benefit,{state income tax})

If stateFIPS==24 (Maryland)

If {filingStatus} == "Married Filing Jointly", then

[IncomeBin1Max] = 75000

[IncomeBin2Max] = 110000

[IncomeBin3Max] = 125000

[IncomeBin4Max] = 141000

if {income.AGI} <= [IncomeBin1Max] then
Benefit=max([PercentOfFederalBin1]*{value.cdctc.fed}, [PercentOfExpensesBin1]*{expense})

if {income.AGI} > [IncomeBin1Max] & {income.AGI} <= [IncomeBin2Max] then
Benefit=max([PercentOfFederalBin2]*{value.cdctc.fed}, [PercentOfExpensesBin2]*{expense})

if {income.AGI} > [IncomeBin2Max] & {income.AGI} <= [IncomeBin3Max] then
Benefit=max([PercentOfFederalBin3]*{value.cdctc.fed}, [PercentOfExpensesBin3]*{expense})

if {income.AGI} > [IncomeBin3Max] & {income.AGI} <= [IncomeBin4Max] then
Benefit=max([PercentOfFederalBin4]*{value.cdctc.fed}, [PercentOfExpensesBin4]*{expense})

if {income.AGI} > [IncomeBin4Max] & {income.AGI} <= [IncomeBin5Max] then
Benefit=max([PercentOfFederalBin5]*{value.cdctc.fed}, [PercentOfExpensesBin5]*{expense})

if {income.AGI} > [IncomeBin5Max] & {income.AGI} <= [IncomeBin6Max] then
Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense})

if {income.AGI} > [IncomeBin6Max] & {income.AGI} <= [IncomeBin7Max] then
Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense})

If {income.AGI} <= [IncomeBin1Max], then Benefit = Benefit

If {income.AGI} > [IncomeBin1Max], then Benefit = min(Benefit, {tax.income.state})

If stateFIPS==27 (Minnesota)

if {income.AGI} <= [IncomeBin1Max] then

Benefit=max([PercentOfFederalBin1]*{value.cdctc.fed}, [PercentOfExpensesBin1]*{expense})

if {income.AGI} > [IncomeBin1Max] & {income.AGI} <= [IncomeBin2Max] then
Benefit=max((([PercentOfFederalBin1]-[PhaseOutRate]*({income.AGI}-
[IncomeBin1Max]))*{value.cdctc.fed}, [PercentOfExpensesBin2]*{expense}))

if {income.AGI} > [IncomeBin3Max] & {income.AGI} <= [IncomeBin4Max] then
Benefit=max([PercentOfFederalBin4]*{value.cdctc.fed}, [PercentOfExpensesBin4]*{expense}))

if {income.AGI} > [IncomeBin4Max] & {income.AGI} <= [IncomeBin5Max] then
Benefit=max([PercentOfFederalBin5]*{value.cdctc.fed}, [PercentOfExpensesBin5]*{expense}))

if {income.AGI} > [IncomeBin5Max] & {income.AGI} <= [IncomeBin6Max] then
Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense}))

if {income.AGI} > [IncomeBin6Max] & {income.AGI} <= [IncomeBin7Max] then
Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense}))

If [Refundable] == "Yes", then Benefit = Benefit
If [Refundable] == "No", then Benefit = min(Benefit, {tax.income.state})

If stateFIPS==31 (Nebraska)

if {income.AGI} <= [IncomeBin1Max] then
Benefit=max([PercentOfFederalBin1]*{value.cdctc.fed}, [PercentOfExpensesBin1]*{expense}))

if {income.AGI} > [IncomeBin1Max] & {income.AGI} <= [IncomeBin2Max] then
Benefit=max([PercentOfFederalBin2]*{value.cdctc.fed}, [PercentOfExpensesBin2]*{expense}))

if {income.AGI} > [IncomeBin3Max] & {income.AGI} <= [IncomeBin4Max] then
Benefit=max([PercentOfFederalBin4]*{value.cdctc.fed}, [PercentOfExpensesBin4]*{expense}))

if {income.AGI} > [IncomeBin4Max] & {income.AGI} <= [IncomeBin5Max] then
Benefit=max([PercentOfFederalBin5]*{value.cdctc.fed}, [PercentOfExpensesBin5]*{expense}))

if {income.AGI} > [IncomeBin5Max] & {income.AGI} <= [IncomeBin6Max] then
Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense}))

if {income.AGI} > [IncomeBin6Max] & {income.AGI} <= [IncomeBin7Max] then
Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense}))

If {income.AGI} <= [IncomeBin2Max], then Benefit = Benefit
If {income.AGI} > [IncomeBin2Max], then Benefit = min(Benefit, {tax.income.state})

If stateFIPS==35 (New Mexico)

if {income.AGI} <= [IncomeBin1Max] then

Benefit=max([PercentOfFederalBin1]*{value.cdctc.fed}, [PercentOfExpensesBin1]*{expense})

if {income.AGI} > [IncomeBin1Max] & {income.AGI} <= [IncomeBin2Max] then

Benefit=max([PercentOfFederalBin2]*{value.cdctc.fed}, [PercentOfExpensesBin2]*{expense})

if {income.AGI} > [IncomeBin2Max] & {income.AGI} <= [IncomeBin3Max] then

Benefit=max([PercentOfFederalBin3]*{value.cdctc.fed}, [PercentOfExpensesBin3]*{expense})

if {income.AGI} > [IncomeBin3Max] & {income.AGI} <= [IncomeBin4Max] then

Benefit=max([PercentOfFederalBin4]*{value.cdctc.fed}, [PercentOfExpensesBin4]*{expense})

if {income.AGI} > [IncomeBin4Max] & {income.AGI} <= [IncomeBin5Max] then

Benefit=max([PercentOfFederalBin5]*{value.cdctc.fed}, [PercentOfExpensesBin5]*{expense})

if {income.AGI} > [IncomeBin5Max] & {income.AGI} <= [IncomeBin6Max] then

Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense})

if {income.AGI} > [IncomeBin6Max] & {income.AGI} <= [IncomeBin7Max] then

Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense})

If [Refundable] == "Yes", then Benefit = Benefit

If [Refundable] == "No", then Benefit = min(Benefit, {tax.income.state})

If {NumberOfKidsUnder13}<=2, then Benefit = min(Benefit, 480*{NumberOfKidsUnder13})

If {NumberOfKidsUnder13}>2, then Benefit = min(Benefit, 1200)

If stateFIPS==36 (New York)

if {income.AGI} <= [IncomeBin1Max] then

Benefit=max([PercentOfFederalBin1]*{value.cdctc.fed}, [PercentOfExpensesBin1]*{expense})

if {income.AGI} > [IncomeBin1Max] & {income.AGI} <= [IncomeBin2Max] then

Benefit=max([PercentOfFederalBin2]*{value.cdctc.fed}, [PercentOfExpensesBin2]*{expense})

if {income.AGI} > [IncomeBin2Max] & {income.AGI} <= [IncomeBin3Max] then

Benefit=max((([PercentOfFederalBin2]-[PhaseOutRate]*({income.AGI}-[IncomeBin2Max]))*{value.cdctc.fed}, [PercentOfExpensesBin3]*{expense})

if {income.AGI} > [IncomeBin4Max] & {income.AGI} <= [IncomeBin5Max] then

Benefit=max([PercentOfFederalBin5]*{value.cdctc.fed}, [PercentOfExpensesBin5]*{expense})

if {income.AGI} > [IncomeBin5Max] & {income.AGI} <= [IncomeBin6Max] then
Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense})

if {income.AGI} > [IncomeBin6Max] & {income.AGI} <= [IncomeBin7Max] then
Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense})

If [Refundable] == "Yes", then Benefit = Benefit
If [Refundable] == "No", then Benefit = min(Benefit, {tax.income.state})

If stateFIPS==45 (South Carolina)

if {income.AGI} <= [IncomeBin1Max] then
Benefit=max([PercentOfFederalBin1]*{value.cdctc.fed}, [PercentOfExpensesBin1]*{expense})

if {income.AGI} > [IncomeBin1Max] & {income.AGI} <= [IncomeBin2Max] then
Benefit=max([PercentOfFederalBin2]*{value.cdctc.fed}, [PercentOfExpensesBin2]*{expense})

if {income.AGI} > [IncomeBin2Max] & {income.AGI} <= [IncomeBin3Max] then
Benefit=max([PercentOfFederalBin3]*{value.cdctc.fed}, [PercentOfExpensesBin3]*{expense})

if {income.AGI} > [IncomeBin3Max] & {income.AGI} <= [IncomeBin4Max] then
Benefit=max([PercentOfFederalBin4]*{value.cdctc.fed}, [PercentOfExpensesBin4]*{expense})

if {income.AGI} > [IncomeBin4Max] & {income.AGI} <= [IncomeBin5Max] then
Benefit=max([PercentOfFederalBin5]*{value.cdctc.fed}, [PercentOfExpensesBin5]*{expense})

if {income.AGI} > [IncomeBin5Max] & {income.AGI} <= [IncomeBin6Max] then
Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense})

if {income.AGI} > [IncomeBin6Max] & {income.AGI} <= [IncomeBin7Max] then
Benefit=max([PercentOfFederalBin6]*{value.cdctc.fed}, [PercentOfExpensesBin6]*{expense})

If [Refundable] == "Yes", then Benefit = Benefit
If [Refundable] == "No", then Benefit = min(Benefit, {tax.income.state})

If {NumberOfKidsUnder13}<=2, then Benefit = min(Benefit, 210*{NumberOfKidsUnder13})
If {NumberOfKidsUnder13}>2, then Benefit = min(Benefit, 420)

Implementation-Specific Assumptions

Atlanta Fed

- See the Federal Child and Dependent Care Tax Credit section.

Limitations

State-specific rules not Included in the PRD.

- Arkansas

Arkansas has a refundable version of the CDCTC called the Early Childhood Program Tax Credit that is available for children under the age of six in an “approved childcare facility, which is defined as a facility that provides an “appropriate early childhood program. That is itself defined as a “developmentally appropriate program for young children...approved by the Department of Education as complying with the regulatory guidelines” of the Department of Human Services and the Department of Education. Ark. Code Ann. § 26-51-502(c)(1)(C); Ark. Code Ann. § 6-45-103(1). For details, see https://nwlc-ciw49tixgw5lbab.stackpathdns.com/wp-content/uploads/2018/12/Final_Report_NWLC_MCLT.pdf.

- Louisiana

This state has a separate Child Care Expense Tax Credit, which is one of the School Readiness Tax Credits. Credit is calculated as a percentage of the Louisiana CDCTC received for care for a child under age six at a child care facility rated two stars or higher by the state’s quality rating system (200 percent per child for a 5-star facility; 150 percent for a 4-star facility; 100 percent for a 3-star facility; and 50 percent for a 2-star facility).

Louisiana has a separate Household Expense for Physically and Mentally Incapable Persons Credit, which is equal to 100 percent of the federal CDCTC received for employment-related expenses related to the care of any dependent who is physically or mentally incapable of self-care.

For details, see https://nwlc-ciw49tixgw5lbab.stackpathdns.com/wp-content/uploads/2018/12/Final_Report_NWLC_MCLT.pdf.

- Maine

The credit rate as a share of the federal CDCTC increases to 50 percent (from 25 percent) of the federal credit if a child attends a quality childcare facility certified through the Maine Department of Health and Human Services. For details, see <http://www.taxcreditsforworkersandfamilies.org/state-tax-credits/maine/>.

Maine has a separate, refundable Adult Dependent Care Credit. Credit is equal to a percentage, based on the federal AGU, of dependent care expenses not claimed for the federal CDCTC, up to \$3,000 for one dependent and \$6,000 for two or more dependents. For details, see

https://www.maine.gov/revenue/forms/credits/2017/17_adult%20dep%20care%20credit%20wksht.pdf.

- New Mexico

The tax credit is equal to 40 percent of qualifying childcare expenses. For a filer with a federal tax liability, this percentage is reduced by the amount that the filer's federal CDCTC offsets the liability. The PRD does not include this logic.

- Oklahoma

Families can claim *either* 5 percent of the federal CTC *or* 20 percent of the federal CDCTC, whichever is greater.

- Oregon

Families can claim a percentage of childcare expenses eligible for the federal CDCTC according to how close they are to the FPL and the age of their youngest child at the close of the tax year. The credit is not to exceed \$12,000 for one qualifying dependent or \$24,000 for two or more qualifying dependents. Rather than accounting for variation in the family's position relative to the FPL or by the age of the youngest child, the PRD approximates the share of childcare expenses a family can claim using average values. For details, see <http://www.taxcreditsforworkersandfamilies.org/state-tax-credits/oregon/>.

- Vermont

This state has a separate refundable Low-Income Child and Dependent Care Credit. Credit is calculated as 50 percent of the federal CDCTC received, if care was provided by a regulated childcare provider with federal accreditation or a 3-, 4-, or 5-STAR quality designation in the state's quality recognition and improvement system, known as STARS (Step Ahead Recognition System). Find eligible providers: https://dcf.vermont.gov/sites/dcf/files/CDD/Docs/Eligible_programs_for_tax_credit.pdf.

2.3 Policy Interactions

Public assistance programs and tax policies are often interrelated. For example, one can deduct net childcare expenses (total childcare expenses net of any government subsidies such as from the CCDF, Head Start, or pre-K) and net utility expenses (the family's spending on utility net of LIHEAP subsidies) for the determination of eligibility for and value of SNAP funds. TANF cash assistance is counted as income across several benefit programs, including SNAP. The value of state tax credits is often proportional to the size of federal credits. Moreover, when several health insurance options are available to the household, some behavioral assumptions have to be made on how families make decisions regarding the source of health care coverage.

In this section, we provide descriptions of how public assistance programs and tax policies interact and suggest algorithms that minimize the out-of-pocket costs to families.

2.3.1 Childcare Cost Minimization Algorithm

The PRD includes three sources of subsidized childcare: CCDF subsidies, Head Start (including Early Head Start), and Voluntary Pre-K. Depending on the state of residency and income level, a family can be eligible for more than one of these programs and may need to choose which program to participate in.

The PRD calculations assume that for all income-eligible families with age-eligible children, pre-K is the best option, Head Start is the second-best option, and childcare providers accepting CCDF subsidies separate from any Voluntary Pre-K or Head Start program is the third best option. This ordering minimizes the total out-of-pocket costs to the family.

2.3.2 Health Insurance Costs Minimization Algorithm

There are three sources of health insurance available to families: employer-sponsored, Medicaid/CHIP, and the Health Insurance Marketplace (subsidized and unsubsidized). Availability of employer-sponsored health insurance does not automatically make families ineligible for public health care programs; families can still receive Medicaid/CHIP as well as Marketplace subsidies if they pass those programs' income tests.

The PRD calculations assume that all families decide about the source of health insurance using the following cost-minimization algorithm. Algorithms are slightly different for families who have access to health insurance through their employers and for those who do not.

Those families who **do not have access to employer-sponsored health care** follow these steps:

1. An *income-eligible family* enrolls all qualifying family members in Medicaid/CHIP, as it is the cheapest option.
2. The *income-eligible family* enrolls all remaining members to the subsidized health insurance plan through the Marketplace.
3. *Income-ineligible families* purchase unsubsidized insurance through the Marketplace.

Those families who **have access to employer-sponsored health care** follow these steps:

1. An *income-eligible family* enrolls all family members in Medicaid/CHIP, as it is the cheapest option.
2. To get access to subsidies, families who are *income-eligible for the Marketplace subsidies and have access to employer-sponsored health insurance* must prove that the employer-provided plan is not affordable (see the Health Insurance Marketplace Subsidies section for details). If they prove the employer-provided insurance is unaffordable, these families calculate the total costs of purchasing insurance through the employer, compare it to the total costs of buying subsidized health care on the Marketplace, and choose the cheapest option.
3. *Income-ineligible families* compare the costs of the Marketplace unsubsidized health insurance to the costs of employer-sponsored health insurance and choose the cheapest option.

2.3.3 Interactions among Public Assistance Programs

Several public assistance programs interact either directly through the categorical eligibility provisions or gross income calculations, or indirectly through the net expenses deductions. The following list shows the suggested order of calculating values of public assistance programs to ensure accurate calculations.

1. Calculate all child-care-related subsidies (Child Care Development Fund, or CCDF; Head Start; and Voluntary Pre-K and compute net childcare costs.
2. Compute the value of the Housing Choice Voucher Program (Section 8). Take into account the deduction of net childcare expenses from step 1 that can affect eligibility for and value of the subsidy. Calculate corresponding net housing expenses.
3. Compute the value of LIHEAP subsidies along with the corresponding value of net utility expenses
4. Calculate the value of the SNAP subsidies. SNAP calculations take net childcare expenses (from step 1), net housing expenses (from step 2), and net utility expenses (from step 3) as inputs to produce an accurate subsidy value. Deduct these net expenses from the family's income to determine eligibility for and value of a subsidy.
5. Calculate the federal CDCTC using net childcare costs (from step 1). See the Interactions between Taxes and Tax Credits section for details.

2.3.4 Interactions between Taxes and Tax Credits

A family's tax liabilities and corresponding tax credits must be computed in a specific order to get accurate estimates. The following list shows the suggested order, as implemented in the PRD.

1. Calculate total federal tax liabilities: federal personal income tax liabilities and the employee portion of the FICA tax liabilities.
2. Calculate the total federal tax liability (which is the sum of the family's federal personal income tax and FICA tax from step 1).
3. Calculate payroll taxes.
4. Calculate the values of federal EITC, CTC, and CDCTC. Calculations of federal CTC and CDCTC take as an input the total federal tax liability (step 2). Calculations of federal CDCTC use net childcare expenses as an input, so you must estimate this value first. See the Interactions between Public Assistance Programs section for details.
5. Calculate the value of total federal tax credits (the sum of federal EITC, CTC, and CDCTC from step 3).
6. Calculate the state personal income tax, taking total federal tax liability (step 2) and total federal tax credits (step 4) as inputs for the calculations.
7. Calculate the values of state EITC, CTC, and CDCTC, taking corresponding federal tax credits (step 3) and state personal income tax (state 5) as inputs.

Appendix A. List of Abbreviations Used in the PRD

Abbreviation	Definition
ABAWD	Able-Bodied Adult without Dependents
ACA	Affordable Care Act
AGI	Adjusted gross income
BBCE	Broad-based categorical eligibility
CCDF	Child Care Development Fund
CDCTC	Child and Dependent Care Tax Credit
CEP	Community Eligibility Provision
CHIP	Children's Health Insurance Program
CLD	Cost-of-Living Database
CLIFF	Career Ladder Identifier and Forecaster
CTC	Child Tax Credit
EITC	Earned Income Tax Credit
FICA	Federal Insurance Contributions Act
FIPS	Federal Information Processing Standards
FMR	Fair Market Rent
FPL	Federal poverty level
HCSUA	Heating and cooling standard utility allowance
HSA	Healthcare Savings Account
HUD	Department of Housing and Urban Development
LIHEAP	Low-Income Home Energy Assistance Program
MAGI	Modified adjusted gross income
NSBP	National Student Breakfast Program
NSLP	National Student Lunch Program
PHA	Public housing agencies
PRD	Policy Rules Database

Abbreviation	Definition
SAFMRS	Small Area Fair Market Rents
SBP	School Breakfast Program
SNAP	Supplemental Nutrition Assistance Program
SUA	Standard utility allowance
TANF	Temporary Assistance for Needy Families
TTP	Total Tenant Payment
USDA	United States Department of Agriculture