

Estimating the Impact of Changes to USDA's Handling of SNAP Overpayments

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Estimated Budgetary Effects

Senator John Boozman, Ranking Member of the U.S. Senate Committee on Agriculture, Nutrition, and Forestry, asked the Agricultural and Food Policy Center (AFPC) to evaluate the impact of several proposed changes to the Supplemental Nutrition Assistance Program (SNAP) quality control process. AFPC estimates that SNAP benefits would total \$1,070 billion over the 10-year period from FY2025 to FY2034, of which \$91 billion would be attributed to overpayments to recipients. During the same period, overpayments due to state agency issuance errors in excess of 7 percent are estimated at \$23 billion.

AFPC also projects that reducing overpayment rates to 2.6 percent¹ by fiscal year 2027, *without* eliminating the error tolerance threshold for small errors, would decrease total benefits spending by \$58 billion. Additionally, AFPC projects that reducing the overpayment rates to 2.6 percent by fiscal year 2027, *after* eliminating the error tolerance threshold, would reduce total benefits spending by \$82 billion.

Further details of AFPC's estimates are displayed in Table 1. This table first summarizes the baseline projections of total SNAP benefits spending and overpayment amounts for each year over the next 10 fiscal years. It then provides simulation results for the two counterfactual policy scenarios mentioned above. This is followed by a brief overview of the empirical methods used to obtain the estimated budgetary effects.

¹ As shown in Figure 1 (Panel B), the overpayment rate in fiscal year 2013 was the lowest ever recorded, at 2.6 percent. AFPC adopted this overpayment rate in its budgetary effect estimates, as fully eliminating overpayment errors is likely not a realistic expectation.

Table 1. Baseline Projections of the Supplemental Nutrition Assistance Program and Summary of Estimated Effects on Total Benefits Spending Due to Correcting Overpayment Rates

	Fiscal Year											2025-	2025-
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2029	2034
Baseline Projections													
Total Benefits (Millions of Dollars)	97,700	97,922	97,160	98,758	101,296	103,306	105,956	109,023	114,171	119,270	122,810	498,442	1,069,672
Average Monthly Participation (Millions of People)	40.6	39.5	39.0	38.7	38.6	38.7	38.9	39.2	39.5	39.8	40.1	n.a.	n.a.
Average Monthly Benefit per Participant (Dollars)	200.7	206.6	207.8	212.9	218.7	222.4	226.8	231.6	240.7	249.6	255.3	n.a.	n.a.
Other Information													
Thrifty Food Plan, Estimated Change	n.a.	100.9	100.5	103.6	101.5	101.7	101.9	102.0	104.7	102.1	102.1	n.a.	n.a.
Unemployment Rate, Fiscal Year Average (Percent)	4.1	4.4	4.3	4.4	4.4	4.5	4.5	4.5	4.5	4.5	4.5	n.a.	n.a.
Overpayment Rate (Percent)	8.0	8.1	8.4	8.5	8.5	8.6	8.6	8.7	8.6	8.5	8.5	n.a.	n.a.
Overpayment Value (Millions of Dollars)	7,857	7,961	8,144	8,360	8,605	8,873	9,162	9,469	9,793	10,135	10,496	41,943	90,997
Overpayment Value for Issuance Errors in Excess of 7 Percent (Millions of Dollars)	1,624	1,721	1,932	2,061	2,162	2,302	2,425	2,541	2,576	2,626	2,760	10,179	23,106
Simulated Changes in Total Benefits Spending of Reducing Overpayment Rates to 2.6% by 2027													
<i>Scenario I: Before Eliminating Tolerance Threshold for Small Errors</i>													
Simulated Overpayment Rate (Percent)	8.0	6.2	4.4	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	n.a.	n.a.
Simulated Overpayment Value (Millions of Dollars)	7,857	6,097	4,288	2,568	2,634	2,686	2,755	2,835	2,968	3,101	3,193	18,273	33,124
Simulated Reduction in Total Benefits (Millions of Dollars)	0	-1,864	-3,856	-5,792	-5,971	-6,187	-6,407	-6,634	-6,825	-7,034	-7,303	-23,671	-57,873
<i>Scenario II: After Eliminating Tolerance Threshold for Small Errors</i>													
Adjusted Baseline Overpayment Rates (Percent)	10.5	10.6	10.9	11.0	11.0	11.1	11.1	11.2	11.1	11.0	11.0	n.a.	n.a.
Adjusted Baseline Overpayment Value (Millions of Dollars)	10,300	10,409	10,573	10,829	11,137	11,456	11,811	12,194	12,647	13,117	13,566	54,404	117,739
Simulated Overpayment Rate (Percent)	10.5	7.9	5.2	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	n.a.	n.a.
Simulated Overpayment Value (Millions of Dollars)	10,300	7,730	5,098	2,568	2,634	2,686	2,755	2,835	2,968	3,101	3,193	20,715	35,567
Simulated Reduction in Total Benefits (Millions of Dollars)	0	-2,679	-5,475	-8,261	-8,503	-8,770	-9,056	-9,359	-9,679	-10,016	-10,373	-33,689	-82,172

Source: Agricultural and Food Policy Center analysis.

Notes: Adjusted baseline overpayment rates in simulation scenario II assume a small error tolerance threshold of 2.5 percent, based on a 6-year average of estimated error tolerance threshold over the period from FY2012 to FY2019 (excluding fiscal years 2015 and 2016).

Projected values of annual adjustments to the cost of Thrifty Food Plan and projected unemployment rates are adopted from Congressional Budget Office (CBO) baseline projections of SNAP as of February 2024.

Methods Overview

Projection of future values for SNAP overpayments is challenging for several reasons. First, the quality of the overpayment data are poor. There are two two-year gaps in official data² on overpayments (2015-2016 and 2020-2021). These official data reflect both payments to ineligible recipients and overpayments to eligible recipients. The public-use SNAP Quality Control (QC) microdata³ do not have a gap for 2015-2016, but do not reflect payments to ineligible recipients (Cronquist et al. 2020). Furthermore, reporting procedures were revised prior to the release of the federal data for 2017 and beyond, making them somewhat incomparable to earlier data.

Second, there have been structural changes to SNAP. Overpayment numbers prior to fiscal year 2017 are based on fixed dollar amount thresholds that must be crossed before a payment is considered an overpayment. Payments that are \$25 or more greater than the correct payment amount were considered overpayments through March 2009. The tolerance threshold was then fixed at \$50 from April 2009 through fiscal year 2013. The tolerance threshold has been floating since fiscal year 2014 (\$37 in 2014, \$38 in 2015 and 2017, \$37 in 2018 and 2019, and \$48 in 2022). This again renders earlier data incomparable to recent data. Moreover, the shift from fixed to floating tolerance thresholds occurred at the same time as changes to reporting procedures and the 2015-2016 gap in the federal data, making disentanglement of the effects of these simultaneous changes essentially impossible. Other structural changes that might affect states' caseloads and overpayment rates, such as states adopting Broad-Based Categorical Eligibility, have been ongoing (at different times for different states) over the course of the historical period as well.

Third, the COVID-19 pandemic and associated extensive economic disruption clearly represents a severe exogenous shock to the SNAP system. Not only did caseloads explode due to sudden increases in the number of eligible recipients, but the pandemic motivated adoption of temporary increases in benefits (Emergency Allotments) that may have affected overpayment rates. The pandemic also presented challenges to maintenance of administrative cadence, as state offices were forced to close and adopted work-from-home policies. It seems likely that in many cases these disruptions would lead to changes in payment accuracy and timely recognition of changes in recipients' eligibility status. As a result of this shock, it would be very difficult to know with any certainty to what extent the large increases in overpayments reflected in the 2022 data (the only data available since 2019) are due to transitory factors associated with the pandemic shock rather than durable changes in underlying overpayment propensities.

With these challenges and data limitations in mind, AFPC adopted a two-step approach to project SNAP overpayment rates. Initially, a state-level panel data model was developed to make baseline projections of overpayment amounts (in millions of dollars) for each fiscal year over the 2023-2034 period.⁴ In the second step, projections of total benefits spending were made using the AFPC's state-level panel data model for each fiscal year over the 2024-2034 period. AFPC then

² Available at: <https://www.fns.usda.gov/snap/qc/per>

³ Available at: <https://snapqcdata.net>

⁴ Because the most recent official overpayment data available is for fiscal year 2022, AFPC's projections also include fiscal year 2023.

calculated the projected overpayment rates as the ratio of projected overpayments to projected total benefits spending. Below is a brief overview of AFPC’s modeling efforts.

Modeling SNAP Overpayment Amounts

AFPC obtained annual state-level official overpayment rate data from the Food and Nutrition Service of the U.S. Department of Agriculture (USDA-FNS) for fiscal years 2003 to 2022. As noted above, data for four fiscal years (2015, 2016, 2020, 2021) were unavailable. Therefore, we used linear interpolation at the state level to impute the missing data for these years. To gauge the validity of the linear interpolation method for fiscal years 2015 and 2016, we constructed annual state-level underpayment and overpayment rates using the SNAP-QC microdata for the 2003-2019 period and compared them with corresponding official rates from USDA-FNS. As shown in Figure 1, similar patterns emerged in both datasets, providing some support for the use of linear interpolation of USDA-FNS overpayment rates for fiscal years 2015 and 2016. It should be noted that the overpayment rates from the SNAP-QC database are generally lower than those from USDA-FNS data, as the SNAP-QC microdata adjusts for ineligible households and those receiving disaster assistance.

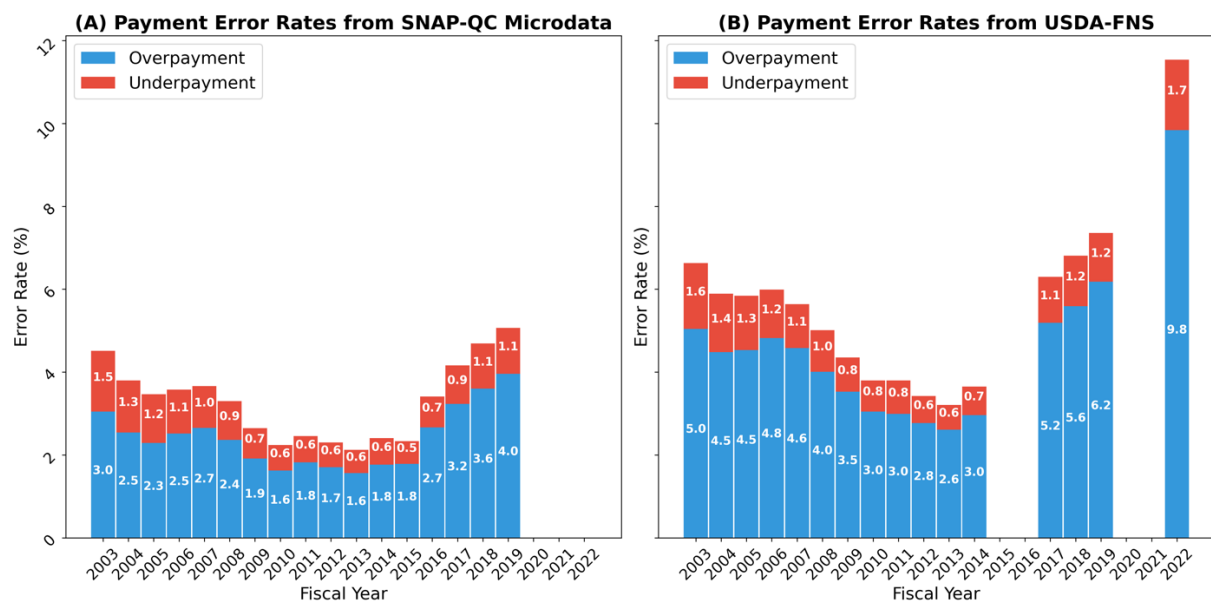


Figure 1. Overpayment and Underpayment Error Rates from SNAP Quality Control Microdata and USDA-FNS

Note: Public-use SNAP Quality Control (QC) microdata does not include payments to ineligible households. Additionally, SNAP-QC microdata for fiscal year 2020 is incomplete and cannot be used to construct payment error rates. Furthermore, SNAP-QC data is not available for fiscal years 2021 and 2022.

For fiscal years 2020 and 2021, the absence of complete SNAP-QC microdata prevented a similar analysis. Given the significantly higher official error rates in 2022, as illustrated in Figure 1, Panel B, interpolating data for fiscal years 2020 and 2021 could significantly alter the trajectory of our baseline projections for the 2023-2034 period. Consequently, we created two sets of baseline projections: one using historical data from fiscal years 2003-2019 and another using data covering fiscal years 2003-2022. Using the data for 2003-2019 as in-sample for model

estimation and projections is consistent with assuming that the 2022 datum largely reflects the severe shock associated with pandemic disruptions, and an expectation that overpayment rates will return to more conventional levels. Using the 2003-2022 data for model estimation and projections is tantamount to assuming that the 2022 datum largely reflects durable changes to the overpayment propensities. We assigned a probability weight of 50 percent to each approach to derive composite final baseline projections of SNAP overpayments for fiscal years 2024-2034.

Regarding the development of a state-level panel data model for projecting overpayment amounts, AFPC compared out-of-sample predictive ability of several two-way fixed effects (TWFE) models (with state and time fixed effects) that varied based on model predictors and methods to project time fixed effects out of sample. The out-of-sample predictive abilities of various models were then evaluated by splitting historical data, on time dimension, into in-sample (2003-2015) for model estimation and out-of-sample (2016-2019) for out-of-sample projection evaluation. We considered a fairly large number of potential predictors of overpayments based on our previous work to build forecasting models of state-level administrative expenses, including state-level economic variables (e.g., unemployment rate, real annual wages, real GDP per capita), state-level policy variables (e.g., state-level SNAP policy options, outreach spending), and SNAP caseload characteristics (e.g., household size, share of households with earnings, share of households with elderly/disabled members). Figure 2 shows composite baseline projections of SNAP overpayment amounts (in million dollars) from AFPC’s preferred model, for the 2023-2034 period:

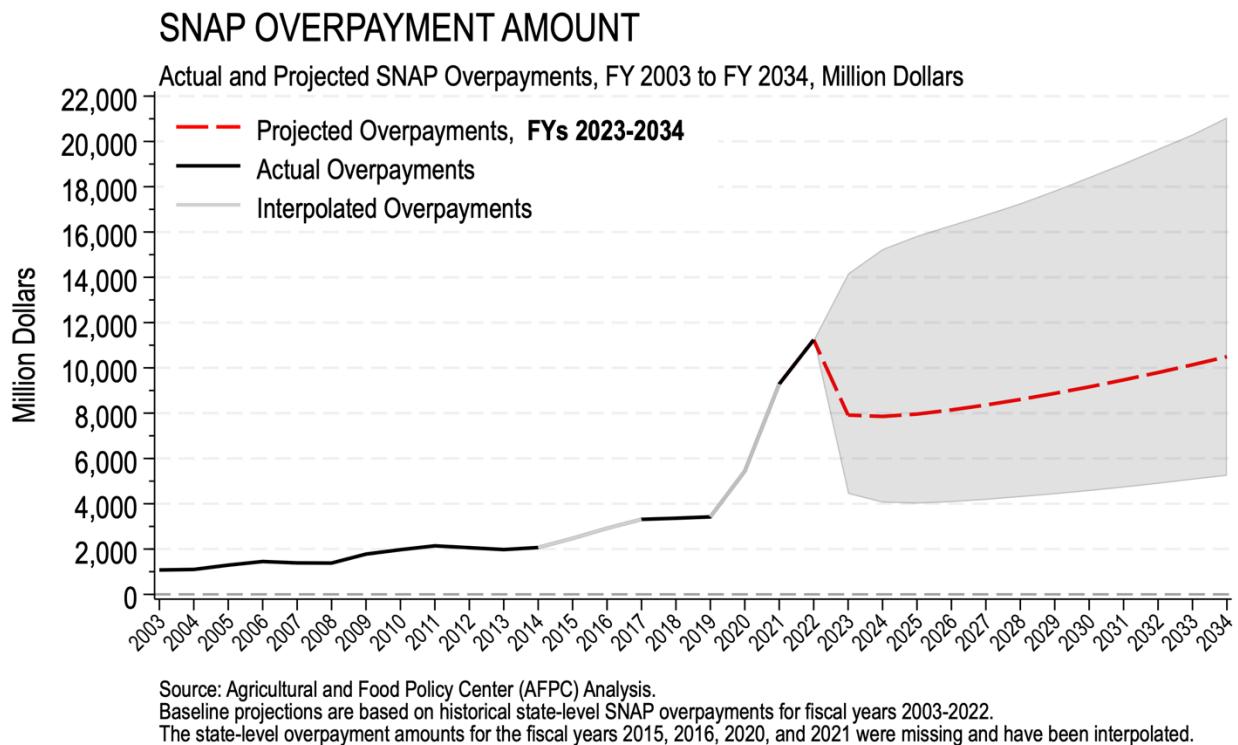


Figure 2. Baseline Projections of SNAP Overpayment Amounts, FYs 2023-2034, Million Dollars

Note: Projections are accompanied by 90 percent forecast uncertainty intervals, derived from 5,000 Monte Carlo simulations, assuming a normal distribution for forecast errors.

Modeling SNAP Overpayment Rate

To obtain baseline projections of SNAP overpayment rates, AFPC projected total SNAP benefits spending for the 2024-2034 period. This was accomplished using AFPC’s state-level panel data model for SNAP spending, which initially projects SNAP enrollment and average monthly benefits per person, and then projects total benefits spending by multiplying these figures. In making these baseline projections, AFPC adopted the same assumptions made by the Congressional Budget Office (CBO) regarding June-to-June changes in the estimated cost of the Thrifty Food Plan. AFPC also assumed future unemployment rates would mirror those projected/used by the CBO. Overall, AFPC’s model yields baseline projections of total SNAP benefits spending that are similar to those made by the CBO in their baseline projections of SNAP as of February 2024. These projections are used, along with the overpayment amount projections described in the previous section, to estimate overpayment rates shown in Figure 3:

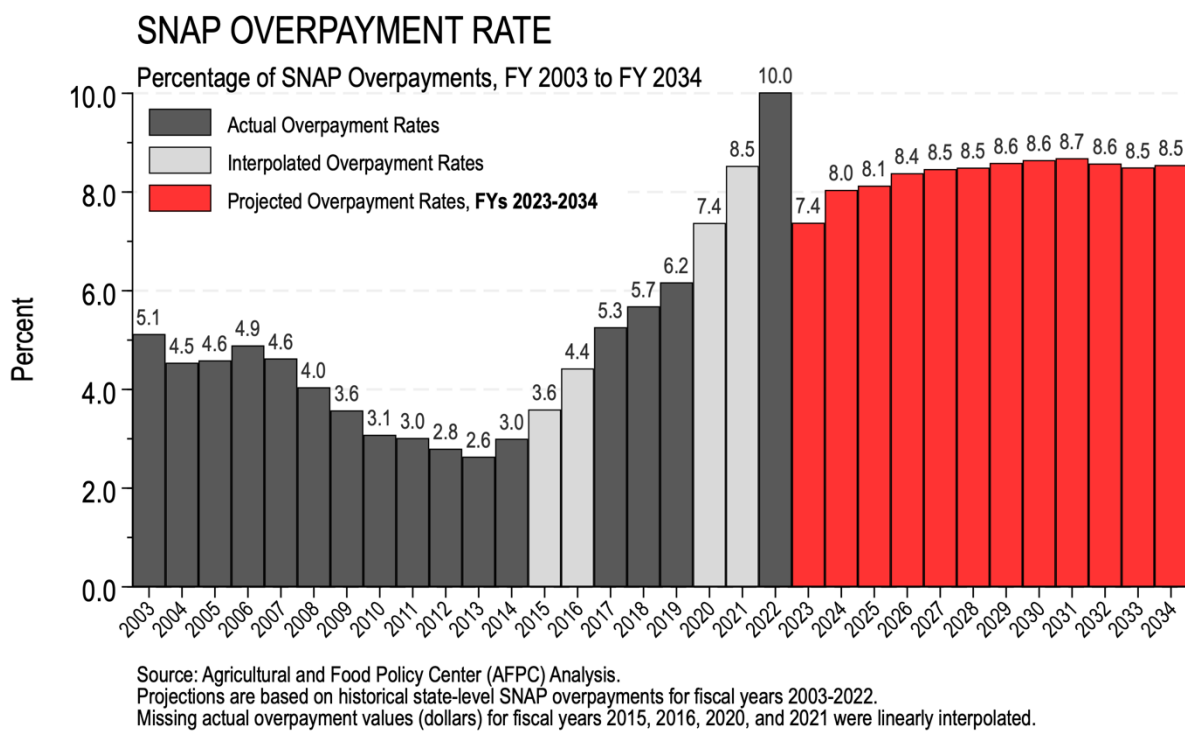


Figure 3. Baseline Projections of SNAP Overpayment Error Rates, FYs 2023-2034, Percents

To estimate the spending effects of eliminating the tolerance threshold for small errors, AFPC assumed a constant rate of 2.5 percent of total benefits spending for small overpayments. This estimate was derived using SNAP-QC microdata from 2012 to 2019, where AFPC estimated that approximately 1 percent of total annual benefits were issued as small overpayments to eligible households. A similar analysis for small overpayments to ineligible households was not feasible, as SNAP-QC microdata does not include details for overpayments to ineligible households. Instead, we obtained aggregate estimates of the total benefits issued to ineligible households from the QC Technical Documentation for each year over 2012-2019, which essentially represent

the total value of any overpayments made to ineligible households. We then decomposed these figures into small and large overpayments using the observed differences between the SNAP-QC overpayment rates and those from USDA-FNS (Figure 1). We estimated that small overpayments to ineligible households were, on average, about 1.5 percent of the annual total benefits spending over 2012-2019 (excluding 2015-2016) period. Therefore, we considered a constant rate of 2.5 percent for small overpayments to eligible and ineligible households in our analyses.

Estimation of Overpayment Values due to State Agency Issuance Errors in Excess of 7 Percent

As outlined above, AFPC uses state-level panel data for its forecasting models to estimate total spending on SNAP benefits, including overpayments. Using historical overpayment data from 2003 to 2019 and 2003 to 2022, AFPC generated two sets of baseline projections for each state using a panel data model (i.e., this analysis was not done using time series models for each state separately). As before, these two sets of projections were used to derive final composite baseline projections of overpayments for fiscal years 2024-2034 for each state, with each set assigned an equal probability weight of 50 percent. The state-level projected overpayment values were then translated into state-level overpayment error rates using the projected total benefits spending for each state.

AFPC then calculated the difference between each state's overpayment rate and the 7 percent threshold. For example, if a state's error rate was projected at 9 percent in fiscal year 2027, the difference would be calculated as 2 percent (9 percent minus 7 percent). This difference was then applied to the state's projected total benefits spending for that fiscal year to estimate the amount of overpayment. This method was applied consistently across all states due to the panel structure of AFPC's model. Finally, these state-level estimates of overpayment values due to errors exceeding 7 percent were aggregated to the national level for each fiscal year.

References

Cronquist, K., Lauffer, S., Tadler, C., & Hong, S. (2020). Technical Documentation for the Fiscal Year 2018 Supplemental Nutrition Assistance Program Quality Control Database and the QC Minimodel. *United States Department of Agriculture, Food and Nutrition Service*. Available at: <https://snapqcdata.net/sites/default/files/202012/FY%202019%20SNAP%20QC%20Technical%20Documentation.pdf>