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Abstract: This paper investigates how changes in the accessibility and generosity of TANF and SNAP benefits from 1997 to 2015 have affected child poverty rates. Specifically, I measure whether increases in SNAP participation and benefit levels have ‘offset’ the income losses due to the decline of TANF throughout the past two decades. Indicators of accessibility measure the participation rate of TANF (and SNAP) among all income-eligible households in each state-year. The indicators of generosity capture state-year policy changes to the level of TANF (or SNAP) benefits, independent of compositional differences across state or year. Results from a two-way fixed effects model suggest that the steady decline of TANF accessibility after the 1996 ‘welfare reform’ has contributed to a higher likelihood that a child lives below each decile from 10 percent to 70 percent of median income. However, increases in SNAP generosity and accessibility during the same period appears to offset the poverty-reduction effect of TANF’s decline. A counterfactual analysis shows that if TANF accessibility and generosity in 2015 were the same as its 1997 levels, the estimated share of children living below 50 percent of median income in 2015 would fall by 6.4 percent (16.9 to 15.8 percent), though the share of children living below 10 percent of median would fall by 58 percent (0.43 to 0.18 percent). The results suggest that SNAP benefits have largely filled the social assistance gaps after TANF’s decline, but child poverty rates could nonetheless be far lower if TANF were accessible today as it was immediately following welfare reform.
INTRODUCTION

The decline of cash assistance has been a large focus of American poverty and policy research from 1996 onward. After welfare reform and the introduction of the state-administered Temporary Assistance for Needy Families (TANF) program, the provision of cash assistance has steadily declined across all states. This decline of TANF cash assistance has been cited as a key contributor to rising child poverty rates over time and differences in poverty rates between states (Edin & Shaefer, 2016; Parolin, 2018). During the same timeframe, however, spending on federally-administered Supplemental Nutrition Assistance Program (SNAP, or ‘food stamps’) benefits has steadily increased. This paper investigates how policy changes to SNAP and TANF between 1997 and 2015 have shaped child poverty outcomes. Specifically, I investigate the extent to which the rise of SNAP benefits has offset the declines in TANF benefits in shaping the likelihood that a child lives in a household with low levels of income.

Evaluations of the effects of TANF and SNAP often use indicators of maximum benefit values (Brady, Baker, & Finnigan, 2013), individual benefit receipt (Shaefer, Edin, & Talbert, 2015), or pre/post-transfer differences in household income (Tiehen, Jolliffe, & Smeeding, 2013; Wheaton & Tran, 2018) to estimate the effects of the program on the likelihood of living in poverty. This paper argues that each of these methods provides useful insights, yet features important shortcomings in appropriately estimating the effect of policy changes on poverty outcomes. I introduce two new indicators of SNAP and TANF policies – accessibility and generosity – that allow researchers to avoid many of the concerns that exist in prior evaluations of policy change. Specifically, the two indicators allow for estimates of policy design on poverty outcomes independent of composition effects and endogenous benefit receipt.

I then apply the indicators to estimate how policy changes to TANF and SNAP from 1997 to 2015 have shaped the likelihood that a child lives with household income below each decile of the country’s median income. In other words, I measure how policy changes affect the
likelihood that household income is below 10 percent of the national median, 20 percent of the national median, 30 percent, and so on, up until the median income benchmark.

First, I present descriptive statistics that show that child poverty rates have fallen for children in single-parent households and two-parent households between 1997 and 2015. Though the share of TANF benefits that households with children receive has fallen steeply from 1997 to 2015, the rise of SNAP benefit receipt households with children has almost offset TANF’s decline. This is partly due to the rise of SNAP benefit receipt among two-parent households, which have seen a net increase in share of household income composed of TANF and SNAP benefits from 1997 to 2015.

Second, I apply the SNAP and TANF policy indicators in a two-way fixed effects model to estimate their effect on the likelihood of a child living below each decile in the bottom half of the income-distribution. Consistent with descriptive findings, I find that the decline in accessibility and generosity of TANF policies have, ceteris paribus, increased the likelihood that a child in a single-parent household lives below 10, 20, 30, 40, or 50 percent of median income. For children in two-parent families, however, policy changes to TANF have had no significant effect (not surprising, given than TANF is primarily targeted toward lone-parent households). The rise of SNAP accessibility and generosity, meanwhile, has benefited both household types. The rise of SNAP take-up among eligible households (accessibility), in particular, has reduced the likelihood that a child in either household type lives below 50 percent of median income, and each decile below that mark.

Finally, I address the relationship between the policy changes and shifting rates of employment and educational status of the two household types. I demonstrate that policy changes to TANF and SNAP can explain roughly half of the decline in low-income rates of children between 1997 to 2015. The other half, however, is likely due to increases in household
employment rates of parents, as well as higher average levels of educational attainment among single parents.

BACKGROUND

The legislation that introduced TANF transformed three core components of state-administered social assistance. First, it strengthened the conditionality requirements attached to the receipt of cash assistance. Under Aid to Families with Dependent Children (AFDC), the predecessor program to TANF, families under a certain income threshold were entitled to cash support. With the introduction of TANF, however, that entitlement was ended and recipients would be required to engage in ‘work participation activities’ or employment to continue receiving cash support beyond a certain duration (Falk, 2014). Second, the legislation expanded the scope of the program’s objectives. While AFDC was primarily a cash assistance program, TANF funds can be allocated to any of the program’s four statutory purposes: “to provide assistance to needy families,” “to end the dependence of needy parents on government benefits by promoting job preparation, work, and marriage,” “to prevent and reduce the incidence of out-of-wedlock pregnancies,” and “to encourage the formation and maintenance of two-parent families”.\(^1\) Third, TANF replaced the open-ended federal matching scheme with non-indexed block grants and a mandatory ‘Maintenance of Effort’ (MOE) requirement (a level of expenditures that states must commit to the program) (Falk, 2016). Ending the federal-state match ensured that states would “no longer have the promise of increased federal funds as an incentive for greater outlays of state dollars” (Hoke, 1998, p. 128).

Since the implementation of TANF, cash assistance spending and caseloads have declined across all states. By 2015, the average state spent just over 20 percent of its TANF budget on cash assistance (Parolin, 2018). This retrenchment of TANF has been cited as a

central contributor to rising levels of poverty, and ‘extreme’ poverty in particular (Edin and Shaefer, 2016; Danziger et al., 2012).

During the same timeframe (1997 to 2015), however, caseloads for the federally-funded SNAP program have increased substantially. In 1997, for example, the number of SNAP participants is estimated around 19,791,000 with a total benefit dispersal of around $16.9 billion. By 2015, this had climbed to 45,767,000 SNAP participants and nearly $70 billion worth of SNAP benefits allocated. A particularly sharp rise in SNAP benefits occurred between 2008 and 2010 due to an expansion of benefits and an increase in demand for social assistance after the onset of the economic recession (Keith-Jennings, 2012).

Of course, ‘food stamps’ are not directly comparable to the cash benefits of TANF. The former can only be spent on food products. Still, evidence suggests that SNAP benefits generally substitute for cash (Shaefer & Guiterrez, 2012). SNAP benefits are counted as household income in estimating income poverty using the Supplemental Poverty Measure, as well in the measures of disposable household income commonly applied in cross-national research. Just as the decline of TANF is often credited with increasing poverty rates, the rise of SNAP is generally acknowledged as reducing levels of poverty (in addition to many non-income measures of wellbeing, such as food insecurity or health status) (Almond, Hoynes, & Schanzenbach, 2008; Hilary W. Hoynes & Schanzenbach, 2009; Hilary Williamson Hoynes & Schanzenbach, 2010).

Though many studies have evaluated the effects of either TANF or SNAP benefits on annual rates of poverty, few have investigated the net effects of the program’s diverging caseloads after welfare reform. Moreover, few have evaluated either program using tools of analysis that separate compositional and behavioral shifts in the population from actual policy change. Among the most common methods of estimating the anti-poverty effect of the programs is to calculate poverty rates before and after adding the transfer benefit to household income
This exercise shows, for example, that X percent of a population live in poverty before, say, SNAP benefits are counted as household income, but only Y percent after SNAP benefits are included. The difference between X and Y percent is generally recognized as the anti-poverty effect of the transfers.

While useful, this approach unfortunately does not distinguish between policy changes to the transfer programs versus changes in the composition or characteristics of the pre-transfer population. If SNAP appears to be more effective at reducing poverty rates over time, for example, it is useful to understand if this is due to more individuals acquiring eligibility to receive the benefit, more eligible individuals utilizing the benefit, an increase in the generosity of benefit levels, or because the pre-transfer incomes of the population have declined.

This paper presents and applies indicators of TANF and SNAP policies and an estimation strategy that allows for a decomposition of changes in poverty rates into four components: (1) changes due to the share of individuals who are eligible for the benefit (independent of compositional differences across state and year), (2) changes due to the generosity of benefit offer to those eligible (independent of compositional differences), (3) changes due to the take-up rate among those eligible for the benefit, and (4) changes due to compositional and behavioral shifts in the population.

**DATA & METHODS**

I use household income data from the Current Population Survey March Annual Social and Economic Supplement (CPS ASEC). In the paper’s primary analysis, I apply the Urban Institute’s TRIM3 adjustments to account for the underreporting of means-tested transfers (including TANF, SNAP, and SSI) in the CPS ASEC. Whereas the uncorrected CPS ASEC survey data misses about half of TANF and SNAP cash transfers in recent years (Meyer & Mittag, 2015), for example, the TRIM3-adjusted data comes much closer to capturing the full
amount of cash assistance identified in administrative data (Zedlewski & Giannarelli, 2015). TRIM3 matches administrative records on TANF and SNAP caseloads across states to impute benefits back into the survey data, allowing for more accurate estimates of SNAP, SSI, and TANF participation and benefit levels. The data cover each year from 1997 to 2015 — the first year of TANF implementation to the most recent year for which data on all variables is available. The sample is limited to children (dependents under the age of 18). This results in a sample size of 1,030,243 children across all years.

**Dependent Variable:** Rather than focusing on a single income cutoff to determine poverty status (i.e. 50 percent of national household median income), this papers investigates how policy changes shape the likelihood that a child lives with household income below 10 different percentiles of median income. Specifically, I look at the likelihood of living below 10 percent of national median household income, 20 percent of median income, and so on, up until the median income cutoff. I refer to these as “low-income rates.” As SNAP and TANF predominantly affect households below the median income, this paper does not explore the effects of policy changes in the upper-half of the income distribution.

In estimating the likelihood of living below a certain percentile of median income, we set a child’s low-income status (binary variable indicating whether the child’s household income is below the percentile of median income) as the dependent variable each of the analyses. This is similar to conventional estimates of binary poverty outcomes. The household income of the child is measured using the LIS definition of disposable income (all taxes and transfers included). I adjust household incomes using the square root equivalence scale.

**Explanatory Variables:** The estimation strategy primarily focuses on differences in the generosity of TANF/SNAP benefits and accessibility among eligible households of TANF and SNAP in each state-year as our primary explanatory variables. I now describe how these two concepts – accessibility and generosity – are defined.
To measure the accessibility of TANF or SNAP benefits, I calculate take-up rates among eligible households using indicators of household benefit eligibility and household benefit receipt from the Urban Institute’s TRIM3 microsimulations. When assessing an individual’s eligibility for TANF or SNAP, the TRIM3 simulations take into account income, citizenship status, household structure, categorical eligibility, and ownership of assets. It thus provides perhaps the most accurate representation yet (at least within public survey data) of how many individuals are eligible for a benefit, and how many of those individuals actually receive the benefit.2 As I primarily evaluate household-level income, I aggregate up from the individual and unit level to the household level: if any member in a household is eligible for TANF or SNAP, I deem the household as eligible. For each state-year, I then calculate the share of eligible households that actually receive the respective benefit (TANF or SNAP). To ensure adequate sample sizes, I calculate a three-year rolling average of states’ take-up levels. This value for each state-year is merged back into the original dataset to be applied in the estimations of low-income status.

2 The indicator does not take into account individuals who meet income and asset requirements, but are ineligible due to (for example) failure to meet work participation or drug test requirements. These barriers to benefit receipt are implicitly captured in our take-up variable.
Figure 1: Take-Up of Social Assistance Benefits among Income-Eligible Households

Figure 1 highlights the divergence between TANF and SNAP take-up rates. After welfare reform, states have increasingly implemented barriers to TANF access. These include strict lifetime time limits, drug test requirements, work participation and conditionality requirements, and so on. This measure of take-up implicitly captures the effect of these barriers to benefit access and can help us identify how such barriers (and the declining TANF take-up to which they lead) affect poverty outcomes. In 1997, the average state had a TANF take-up rate of more than 60 percent of income-eligible households. By 2015, this had fallen to 25 percent. Still, large variation exists across states: over 2013 to 2015, California featured a TANF take-up rate of more than 60 percent, while the rate was around 8 percent in Georgia during these years. SNAP take-up, meanwhile, has gradually increased over time with less
variance across states. By 2015, around 9 of every 10 households eligible for SNAP benefits received the benefit, according to the estimates. This is roughly in line with estimates from the U.S. Department of Agriculture (Cunnynham, 2017).

To calculate the generosity of TANF and SNAP benefits, I follow Hilary W. Hoynes and Luttmer (2010) and Hilary W. Hoynes and Patel (2015) in constructing a ‘simulated’ TANF and SNAP generosity variable that captures changes in TANF or SNAP benefit levels across year, state, and household size. Specifically, the generosity indicator is a combination of the level of benefits to which a household is entitled, as well as the income eligibility criteria used to define who can gain access to the benefit. This marks an improvement over simply applying the maximum TANF benefit level for a family of three in a given state-year, as the maximum benefit does not take into account changes in which income levels are actually eligible for benefits in a given state and year. While TANF generosity is set at the state level and thus varies across state-year, benefit levels and income eligibility criteria for SNAP are determined by the federal government, meaning that there is little variation across states, but plenty of variation across time.

The construction of the simulated TANF and SNAP generosity variables proceeds in five steps. I detail the process here for TANF. First, I open the sample of children in 1997, the first year of our analysis, and create 18 identical copies of the sample to represent each subsequent year of examination (1998 to 2015). Thus, we now have 19 copies of the exact same sample of children with the only difference in each being the year (1997 through 2015) attached to the samples. Second, I convert the income values in each of the replicated samples (the 19 copies) from 1997 USD to current dollars using the CPI-U. After this step, we now have the same sample of children in each year from 1997 to 2015 with the only difference in the 19 samples being the inflation adjustments in household incomes. Third, I create 51 identical copies of each year’s sample to represent the 50 states and Washington, D.C. For example, we
take the 1997 version of our sample of single parents and copy it 51 times, then do the same for our 1998 sample, and so on for each year. Within each of the 51 samples I have just created, I transfer all households within the sample to the same state of residence. In the first of the 51 samples for each year, for example, I ‘move’ all households to the state of Alabama. In the second sample for each year, I move all households to the state of Alaska, and so on. The purpose of this step is to ensure that demographic differences across states will not affect the value of the TANF generosity calculation; all of the simulated state-year samples now have the exact same population of single parents, so differences in TANF generosity can only be attributed to differences in policy. Fourth, I use TANF policy parameters from the Urban Institute’s Welfare Rules Database to calculate income eligibility for TANF and, if eligible, the TANF benefit value that each household could receive in each of the replicated samples based on policy rules in the specific state and year. In doing so, I take into account the number of children in the household (1, 2, 3, or 4+) when assessing income eligibility and the level of benefits to which the household, if eligible, could receive. This calculation is explained in more detail in Appendix I. Finally, I compute the average TANF benefit value for each ‘year-state-household size’ cluster (19 years * 51 states * 4 household sizes) in real dollars. For example, our sample of single parents with two children in the state of Washington in 1997 could receive an average TANF benefit of $113 per household; for the same family type living in Washington in 2015, however, the average TANF benefit is $71 (both values in 2009 USD). This difference in average benefit is only due to policy changes made within the state of Washington between 1997 and 2015, and not due to demographic characteristics of the state that have changed over time.

The average values for each cluster are merged back into our original dataset (based on the ‘year-state-household size’ cluster of each respective household) and operationalized as the simulated TANF generosity variable. I depict the evolution of both the mean TANF and SNAP
generosity over time in Figure 2. The gradual decline in TANF generosity over time is evident, as is the increase in SNAP generosity, particularly after policy changes to increase benefit levels during the Great Recession.

**Figure 2: SNAP & TANF Benefit Generosity for Households with Children (1997 – 2015)**

Note: Generosity variables measure the mean benefit entitlement of all households with children based on state-year benefit levels and eligibility criteria. The mean generosity in each state-year includes zero values for ineligible households.

*Control Variables:* I include a variety of individual, household, and state-year controls in the analyses. Individual and household controls include the number of children in the household, the employment status of the household head, education level of the household head, age of the household head, race/ethnicity of the child, household type (single parent versus multi-parent), a dummy if the two-earner household is a dual-earner family, and dummy variables indicating the nativity of the child and citizenship status of the household.
head. State-year controls include a state’s real GDP per capita, union density, and unemployment rate.

**Estimation Strategy**

I apply a two-way fixed effects estimate to focus on how changes in TANF and SNAP policies within states from 1997 to 2015 affect low-income rates. A similar method has been used in prior research to estimate the effects of policy-induced changes in the Earned Income Tax Credit, income tax brackets, healthcare expansion, and other social assistance programs (Cutler & Gruber, 1996; Eissa & Hoynes, 2004; Hilary W. Hoynes & Patel, 2015; Jones & Michelmore, 2016; Milligan & Stabile, 2011; Schmidt, Shore-Sheppard, & Watson, 2013). This model focusing on within-state policy changes is specified as follows:

\[ y_{istf} = \beta_0 + \beta_1 \text{TANFGen}_{stf} + \beta_2 \text{SNAPGen}_{stf} + \beta_3 \text{TANFAccess}_{st} + \beta_4 \text{SNAPAccess}_{st} + \beta_5 X_i + \beta_6 \alpha_{st} + \delta_s + \gamma_t + \epsilon_i \]  

(1)

where \( i \) indexes individuals, \( s \) indexes states, \( t \) indexes years, and \( f \) indexes the size of the household. \( y_{istf} \) is the binary low-income variable indicating whether the child’s household income is below the specified percentile of median income. \( \beta_1 \) and \( \beta_2 \) provide the estimated effects of the TANF and SNAP generosity variables, respectively, which are merged in at the state, year, and household size level. \( \beta_3 \) and \( \beta_4 \) estimate the effect of our TANF and SNAP take-up (accessibility) indicators, merged in at the state-year level. \( X_i \) is a vector that contains the individual and household controls, while \( \alpha_{st} \) controls for the state-year characteristics described previously. State (\( \delta_s \)) and year (\( \gamma_t \)) fixed effects control for, respectively, time invariant differences on the outcome variable that vary across state, and national trends or policies that apply across all states but vary by year. I apply robust standard errors clustered at the state level. I perform linear probability models when assessing the
effect of the policy parameters on the likelihood of poverty. Results are robust when estimated using logistic regression.

FINDINGS

I first present descriptive findings on changes in child poverty outcomes between 1997 and 2015. Figure 3, below, breaks down share of children living in single-parent households (left) and two-parent households (right) living below each decile of median income in 1997 and 2015. For both household types, the lower position of the 2015 line (dashed, lighter color) indicates that low income rates for children have fallen between 1997 and 2015 across most percentiles of median income. The share of children in single-parent households below 50 percent of median income, for example, has declined from 42.7 percent to 31.9 percent between 1997 and 2015. For children in two-parent families, the share below 50 percent of median income has declined from 13.9 percent to 10.7 percent.
Figure 3: Change in Low-Income Rates among Children, 1997 to 2015

![Graph showing change in low-income rates among children](image)

Note: Figure shows share of children with disposable household incomes below the decile of median income. Income distribution includes all households (with and without children) in U.S. in respective year. Authors’ calculations using CPS ASEC with TRIM3 adjustments for benefit underreporting. 95 percent confidence intervals displayed.

Figure 4 builds on this descriptive portrait, presenting the relative change in low income rates at each decile below median income. Here, we see that the largest relative reductions for both household types have come around the 10th, 40th, and 50th percentiles. The share of children in single-parent households living below 10 percent of the median has fallen by around 30 percent, and by around 40 percent for two-parent households (though with wide confidence intervals, as Figure 4 indicates, due to the relatively small sample sizes at this level of income). In contrast, we see no significant difference in the share of children in either family type living below 20 percent of median income.
**Figure 4**: Relative Change in Low-Income Rates by Percentile of Median Income (1997-2015)

At 50 percent of median income, we see a more than 20 percent relative reduction in low income rates for children in both family types. Moving up the income distribution to 100 percent of median income, the changes become smaller in relative terms, but remain negative.

The relative consistency of poverty patterns for children in single-parent versus two-parent households stands out: with the exception of shares of children below the 20th percentile, the relative changes in low income rates tend to mirror each other. This suggests that the factors affecting the low income rates – whether changes to policy or employment rates – might affect both household types in a similar manner.

As a final descriptive portrait, Figure 5 presents the mean share of household income
composed of TANF and/or SNAP benefits from 1997 onward. This measure of a household’s ‘transfer share’ provides another indication of the shifting relevance of SNAP and TANF benefits after welfare reform. In 1997, SNAP and TANF benefits made up an average of 16.2 percent of the average single-parent household’s disposable income. The 16.2 percent was split about half and half between SNAP and TANF benefits. In 2015, SNAP and TANF benefits made up an average of 13.5 percent of a single-parent household’s disposable income. Now, however, 11.3 percentage points of this total (86 percent) is composed of SNAP benefits, and only 1.8 percentage points (14 percent) is composed of TANF benefits. Despite the large decline in TANF benefits, falling from 8 percent to 1.8 percent of mean household income among single parents, the rise of SNAP benefits has mitigated the net reduction in transfer share.

While children in single-parent households have seen a small net reduction in transfer share, children in two-parent households have seen an increase, on average, from 2.4 percent to 3.6 percent. This rise has been driven entirely by the increase in SNAP benefits among two-parent households (a rise in transfer share from 1.3 to 3.2 percent).
Figure 5: Mean share of household income composed of TANF and/or SNAP benefits

Note: Author’s calculations using CPS ASEC with TRIM3 adjustments for benefit underreporting. 95 percent confidence intervals displayed.

Though not displayed, we can also compute the change in SNAP and TANF transfer share for all children – not disaggregated by household type. Doing so reveals that the mean transfer share of households with children in 1997 was 6.1 percent, but 6.3 percent in 2015. The differences are not statistically significant. Again, the rise of SNAP benefits (3.2 percent to 5.6 percent for the average child’s household income from 1997 to 2015) has offset the decline in TANF benefits (2.9 percent to 0.7 percent). To sum up the descriptive findings, the share of the average child’s household income composed of TANF and SNAP benefits is roughly the same in 2015 as it was in 1997, despite the steady decline of the TANF program.
Estimation Results

I now turn toward the empirical estimations of TANF and SNAP accessibility and generosity on the likelihood that a child lives below each low-income benchmark. Table 1 presents the findings. For brevity, I only display the effect (in standardized coefficients) of the TANF and SNAP indicators, but all models also include the individual, household, and state-level controls mentioned before, as well as state and year fixed effects.

An initial observation of the estimates in Table 1 is that all the coefficients are negative. There should be little doubt, then, that higher generosity or accessibility of TANF or SNAP, independent of the controls, reduces the likelihood that a child lives with household income beneath the low-income thresholds. At 10 percent of median income, we see that each of the four indicators is significant at the 10 percent level or lower. A one standard deviation (SD) increase in SNAP generosity is estimated to reduce the share of children living below 10 percent of the median by 0.3 percent, which would equate to an approximately 50 percent relative reduction in 1997. A one SD increase in TANF generosity is estimated to reduce the rate by 0.2 percent, while a one SD change in SNAP and TANF accessibility (take-up among eligible) are estimated to have a 0.1 percent effect. These patterns generally hold at the 20 percent of median level. It seems clear, then, that TANF and SNAP both play an important role in shaping levels of ‘deep’ or ‘extreme’ poverty among households with children.

Between 30 and 50 percent of median income, levels of TANF generosity lose their explanatory power (significant at the 10 percent level only for the 40 percent of median indicator), though SNAP generosity remains statistically significant with a strong reduction effect on low-income rates. TANF take-up remains significant at each of the low-income rates, though SNAP take-up is only significant at the 40th and 50th percentiles of the median.
Table 1: Linear Probability Model Estimating Effect of TANF and SNAP Policies on Likelihood that a Child Lives Below Specified Percentile of Median Income

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<td>TANF Generosity</td>
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<td>-0.008†</td>
<td>-0.014***</td>
<td>-0.021***</td>
<td>-0.025***</td>
</tr>
<tr>
<td></td>
<td>(-0.42)</td>
<td>(-2.04)</td>
<td>(-4.61)</td>
<td>(-7.07)</td>
<td>(-8.70)</td>
</tr>
<tr>
<td>TANF Take-Up among Eligible</td>
<td>-0.007**</td>
<td>-0.006*</td>
<td>-0.005†</td>
<td>-0.004</td>
<td>-0.004</td>
</tr>
<tr>
<td></td>
<td>(-3.00)</td>
<td>(-2.13)</td>
<td>(-1.78)</td>
<td>(-1.24)</td>
<td>(-1.14)</td>
</tr>
<tr>
<td>SNAP Generosity</td>
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<td>-0.034***</td>
<td>-0.030***</td>
<td>-0.029***</td>
<td>-0.024***</td>
</tr>
<tr>
<td></td>
<td>(-9.43)</td>
<td>(-5.98)</td>
<td>(-6.45)</td>
<td>(-8.39)</td>
<td>(-6.88)</td>
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<tr>
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<td>-0.003</td>
<td>-0.006†</td>
<td>-0.006*</td>
<td>-0.007†</td>
</tr>
<tr>
<td></td>
<td>(0.50)</td>
<td>(-1.05)</td>
<td>(-1.97)</td>
<td>(-2.06)</td>
<td>(-2.45)</td>
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</table>

All models include state, year, and family size fixed effects. t statistics in parentheses. X-standardized coefficients are presented for state-level variables. Constant not displayed.

† < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Between 60 percent and 100 percent of median income, we see that SNAP generosity maintains its negative and significant effect, though SNAP take-up appears to be relevant above the 80th percentile of the median. Higher TANF generosity, meanwhile, appears to reduce the likelihood of living below the 70th through 100th percentiles of median income, while TANF take-up is only significant until the 80th percentile.
**Figure 6**: Relative change in share of children below percentile of median income in 2015 with 1997 SNAP and TANF accessibility (state-year take-up rates of benefits among eligible households)

Note: Author’s calculations using CPS ASEC with TRIM3 adjustments. Figure displays counterfactual changes in 2015 low-income rates if SNAP and TANF policies were unchanged from 1997.

To further contextualize the results from the estimation, I calculate and display a series of counterfactual poverty rates in 2015 if TANF and SNAP accessibility were kept at their 1997 levels, but all else remained the same. This provides a look at partial equilibrium effects of the policy changes on the low-income rates, though it does not yet take into account changes in employment rates, for example, that might also be affected by the policy changes. I present relative changes in low-income rates in 2015 by family type to narrow in on how the policy changes differentially affect single-parent versus two-parent households.

In Figure 6, for example, we see the relative change in share of children below each percentile in median income in 2015 if the 1997 TANF and SNAP accessibility levels were
applied. The first observation, on the left-hand side of the figure, is that changes in TANF accessibility have had no effect on the low-income rates of children in two-parent households, *ceteris paribus*. This is unsurprising, as TANF primarily targets single-parent households (the right-hand side of the figure). The rise of SNAP take-up among eligible households, however, has had very large estimated effects on children in two-parent households toward the bottom of the income distribution. We can estimate that reverting to 1997 levels of SNAP take-up would lead to a doubling (0.3 percent to 0.7 percent in absolute terms) of the share of children in two-parent households living below 10 percent of median income. At 20 percent of median income, 1997 SNAP take-up levels would increase the low-income rate by more than 50 percent (1.0 to 1.6 percent of children). The effect then declines progressively, but remains statistically significant at each decile except for the 60th. Put simply, we can conclude that the rise of SNAP accessibility has greatly benefited children in two-parent households. This is consistent with the increases in transfer share observed in descriptive figure, as well as the estimation results presented in Table 1.

On the right-hand side of Figure 6, we see that children in single-parent households have also benefited from the rise in SNAP benefits, though not to the same (relative) extent as children in two-parent households. Reverting to 1997 levels of SNAP accessibility would increase the share of children in single-parent households living below 10 percent of median income by around 40 percent (0.72 to 0.98 percent), with declining effects thereafter. Unlike for two-parent households, we see that the decline of TANF accessibility has negatively affected single-parent households. If TANF take-up rates were the same in 2015 as they were in 1997, the share of children living below 10 percent of median income would fall by an estimated 70 percent (0.72 to 0.23 percent) – much larger than the estimated increase if SNAP benefits were to revert their generosity levels. Put differently, the rise of SNAP benefits has not completely offset the decline of TANF for children in single-parent households at the very
bottom of the income distribution. This remains true at the 20th, 30th, 40th, and 50th percentiles of median income, as well.

**Figure 7:** Relative change in share of children below percentile of median income in 2015 with 1997 SNAP and TANF generosity

![Graph showing relative change in share of children below percentile of median income in 2015 with 1997 SNAP and TANF generosity.](image)

Note: Author’s calculations using CPS ASEC with TRIM3 adjustments. Figure displays counterfactual changes in 2015 low-income rates if SNAP and TANF policies were unchanged from 1997.

I now present the same figures, but for the generosity of TANF and SNAP benefits. What would low-income rates look like today if benefit generosity remained at 1997 levels? Remember from Figure 2 that SNAP benefit levels have become more generous over time, while TANF benefits have become slightly less generous. Figure 7 presents the results. For children in two-parent households, we again see that the decline of TANF generosity has had no significant effect on low-income rates, while the rise of SNAP generosity has led to declines in low-income rates particularly at the 10th and 40th percentiles of median income. Specifically, the figure shows that the share of children in two-parent households living below
40 percent of median income would increase by an estimated 29 percent (5.2 to 6.7 percent) in 2015 if SNAP generosity were set to its lower 1997 levels. At no percentile of median income is the effect of changes in generosity more substantial than changes in take-up rates, as presented before. This suggests that the rise in benefit receipt among eligible households, rather than the rise of benefit levels among those receiving SNAP, is more consequential to the observed declines in child poverty outcomes. For children in single-parent households, the increase in SNAP generosity has made up for the declines in TANF generosity at the 10th through 60th deciles of median income. In other words, we can estimate that low-income rates of children in single-parent households would be higher if SNAP and TANF generosity were both at their 1997 levels.

**Figure 8:** Relative change in share of children below percentile of median income in 2015 with 1997 SNAP/TANF generosity and SNAP/TANF accessibility

Note: Author’s calculations using CPS ASEC with TRIM3 adjustments. Figure displays counterfactual changes in 2015 low-income rates if SNAP and TANF policies were unchanged from 1997.
What can we say about the aggregate effects of each of these policy changes for the two household structures? Figure 8 presents the counterfactual is the generosity and accessibility of TANF and SNAP were reset to their 1997 levels. As we can infer from the previous figures, children in two-parent households have benefited more, particularly due to the rise of SNAP benefits. We can estimate that the share of children living below 10, 20, 30, or 40 percent of median income would be more than 50 percent higher in 2015 if SNAP accessibility and generosity remained at their 1997 levels. In absolute terms, this is equivalent to 8.3 percent of children in two-parent households living below 40 percent of median income, for example, rather than the observed 5.2 percent. For children in single-parent households, the net effects are slightly negative, though only at the 10th and 30th percentile of median income. Across most of the below-median income distribution, the rise of SNAP benefits have offset the decline of TANF benefits for children in single-parent households.

Finally, we can test the reliability of the counterfactuals by comparing the relative change in low-income rates from 1997 to 2015 to a simulated change in 1997 if the 2015 TANF and SNAP policies were applied during that year. If changes to the generosity and accessibility of TANF and SNAP were the only factors driving changes in low-income rates, then the two sets of changes would be identical: observed changes from 1997 to 2015 would exactly match simulated changes in 1997 if the 2015 policies were applied. That is, of course, an unrealistic assumption: changes to the composition of the population, individual behavior, and other contextual factors also affect the likelihood of living with low income. Nonetheless, the comparison provides some detail on ‘how much’ of the difference in poverty rates that the policy changes to TANF and SNAP can explain. Figure 9 presents the results.

The solid black bar in Figure 9 represents the relative change (from 1997 to 2015) in children living below each percentile of median income. As already detailed in Figure 4, the reductions in low-income rates are mostly negative (in relative terms) at the 10th, 40th, and 50th
percentiles of median income. Only at the 20th percentile do we see a slight increase in the low-income rate.

**Figure 9:** Simulated change in 1997 low-income rates among all children if 2015 SNAP and TANF policies were applied (compared to observed changes from 1997 to 2015)

The dashed grey line represents the simulated low-income rates in 1997 if the generosity and accessibility of TANF and SNAP in 2015 were applied. To reiterate, this would perfectly match the solid black line if changes to TANF and SNAP were the only factors driving the low-income rates. Instead, the simulated 1997 rates tend to fall just short of the solid black line, indicating that policy changes to TANF and SNAP explain a large share, but not all, of the differences in low-income rates among children between 1997 and 2015.

If the 2015 policies were applied to 1997, but no other compositional or contextual factors changed, we can estimate the share of children living below 10 percent of the median
would fall by around 20 percent. In reality, the rate decreased by around 25 to 45 percent. From these two findings, we can estimate that changes to TANF and SNAP policies explain roughly half of the decline in the share of children living below 10 percent of the median income. The other half is likely due to a rise in household employment – a topic I turn to in greater detail in the next section.

Only at 20 percent of median income do the simulated 1997 levels overestimate the change in low-income rates. Rather than seeing a decline, as the policy changes would suggest, the observed change points toward a slight increase in the share of children living below 20 percent of median income. At the 30th percentile, the simulated 1997 levels match the observed changes in 2015. From the 40th to 50th percentiles, the policy changes again appear to explain roughly half of the relative decline in children beneath the low-income benchmarks.

**DISCUSSION & CONCLUSION**

This paper introduced and applied two indicators of TANF and SNAP policies to estimate how changes to the policies from 1997 onward have shaped child poverty outcomes. Specifically, I was interested in whether the rise of SNAP benefits have offset the decline in TANF benefits with respect to the likelihood that a child lives below certain percentiles of median income. The primary findings and next steps for this paper are described below.

I first presented descriptive statistics that show that child poverty rates have fallen for children in single-parent households and two-parent households between 1997 and 2015. Though the share of TANF benefits that households with children receive has fallen steeply from 1997 to 2015, the rise of SNAP benefit receipt households with children has nearly offset TANF’s decline. This is partly due to the rise of SNAP benefit receipt among two-parent
households, which have seen a net increase in share of household income composed of TANF and SNAP benefits from 1997 to 2015.

Second, I applied the SNAP and TANF policy indicators in a two-way fixed effect model to estimate their effect on the likelihood of a child living below each decile in the bottom half of the income-distribution. Consistent with descriptive findings, I found that the decline in accessibility and generosity of TANF policies have, ceteris paribus, increased the likelihood that a child in a single-parent households lives below 10, 20, 30, 40, or 50 percent of median income. For children in two-parent families, however, policy changes to TANF have had no significant effect. The rise of SNAP accessibility and generosity, meanwhile, has benefited both household types. The rise of SNAP take-up among eligible households (accessibility), in particular, has reduced the likelihood that a child in either household type lives below 50 percent of median income, and each decile below that mark.

Finally, I estimated that policy changes to TANF and SNAP can explain roughly half of the decline in several of the low-income rates of children between 1997 to 2015. The other half is likely due to increases in household employment rates of parents, as well as higher average levels of educational attainment among single parents.

In future iterations of this paper, I plan to more thoroughly address the relationship between TANF and SNAP policy changes and shifts in the employment status of parents. Though I cannot, with the tools available, identify a causal relationship effect of TANF and SNAP policy changes on employment rates, I can estimate the association and predict a series of counterfactual low-income rates if household employment had not changed from 1997 levels. I can perform similar estimates to understand how the increase in educational attainment among single parents has shaped declines in child poverty from 1997 onward.
REFERENCES


APPENDICES

Appendix I: Calculation & Trends in Simulated TANF Generosity

I largely follow Hilary W. Hoynes and Luttmer (2010) and Hilary W. Hoynes and Patel (2015) in calculating our simulated TANF generosity variable. I define ‘generosity’ as a combination of the level of potential TANF cash benefits and the income eligibility criteria used to define who can gain access to TANF benefits in a given state and year.

I first determine whether each household meets the income eligibility criteria given the household’s respective state, year, and family size. Importantly, I only assess income eligibility and not eligibility rules relating to asset tests, lifetime time limits, work requirements, drug testing, or other parameters that may vary across state and time. Income eligibility criteria are derived from the Urban Institute’s Welfare Rules Databook and Database (2015). If the household’s gross and/or net income exceed the eligibility cutoff in the respective state and year, we deem it ineligible and set its simulated TANF benefit to zero. Among income-eligible households, the TANF benefit formula is then applied as follows:

\[ B = M - P \times (I - D) \]

where \( B \) is the calculated TANF benefit level; \( M \) is the maximum TANF benefit level given the state, year, and family size; \( I \) is the net countable income (market wages and unearned income) for benefit calculation purposes; \( P \) is the relative earnings disregard (a share of net countable income that goes uncounted for benefit calculation purposes); and \( D \) is the flat earnings disregard (a dollar value that goes uncounted in benefit calculation purposes).

As described in the paper, I estimate the mean benefit level for each state, year, and family-size cluster, then merge the mean benefit value back into the primary dataset matching based on the cluster to which each household belongs.