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## Introduction

NCCP's Family Resource Simulator (FRS) online tool utilizes simulation modeling supported by a basic needs budget methodology to analyze the relationship between earnings, expenses, and benefits available to families. In 2017-18, NCCP worked with the District of Columbia Department of Human Services (DHS) to customize the simulator to program rules and services specific to the District of Columbia (the District).

Using the customized tool, DHS is taking a critical review of program rules to mitigate earnings cliffs and reduce income disincentives. Among other uses, DHS is applying the tool to:

- Model the potential policy change of matching eligibility rules of TANF applicants to those of TANF recipients, and
- Model the potential expansion of TANF disregards to address disincentives for attaining higher earnings.

To improve how the FRS estimates the impact of these and other scenarios, NCCP updated the FRS by, among other changes:

- Incorporating nontraditional working hours,
- Incorporating afterschool, and
- Accounting for DC's Universal Pre-K program.

## Methodology

### Basic needs budgets:

**Basic needs budgets** compare family earnings to a set of standard expenses that includes child care, health care, food, travel, and housing, specific to **local or regional costs**. They offer an alternative approach to the widely-used Official Poverty Measure, which does not incorporate geographic differences, and the more recent Supplemental Poverty Measure, which accounts for geographic variation using housing prices.

### Simulation Modeling:

The **Family Resource Simulator (FRS)** models a family's monetary resources (such as earnings, cash assistance, and child support) to their basic needs, inclusive of any reductions to these expenses due to public benefit programs, over a range of incomes. The FRS incorporates CCDF subsidies, SNAP, Medicaid, CHIP, the Housing Choice Voucher Program (Section 8), TANF, LIHEAP, Lifeline, Pre-K, state tax credits, federal tax credits (including premium tax credits), and, beginning with this project, WIC, SSI, afterschool, and free and reduced price meals. FRS modeling can allow jurisdictions to see clearly where design elements of these programs may result in "benefit cliffs" or other disincentives to increasing income.

### Model of nontraditional work schedules

The FRS was first developed in 2003, when working 9am-5pm, M-F was still the perceived norm. In 2017, NCCP included work schedule variables in the FRS that could also model nontraditional work, allowing for more granular estimations of child care costs. **Table 1** shows how these variables can be used to compare a traditional model of work to a parent who works two part-time jobs:

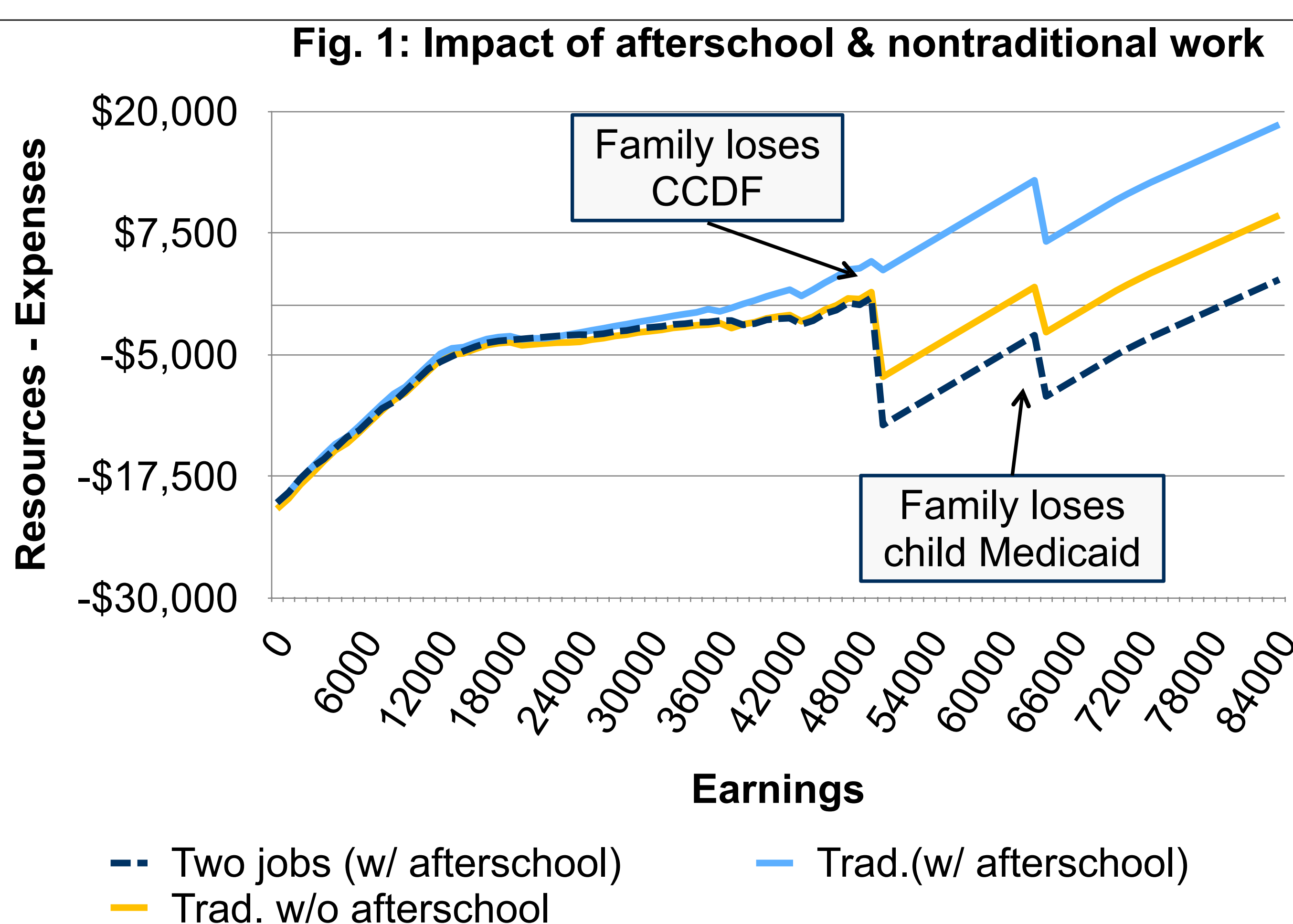
**Table 1: Work schedule variables in two example scenarios**

Measure	Traditional	Two jobs (ex.)
Max. hours parent works per week	40	60
Max. days parent works per week	5	6
Max. weekend days parent works	0	1
Starting time of workdays	9	7
Max. hours in each work shift	8	5
Max. weekend shifts	0	2
Hours between same-day shifts/jobs	0	1

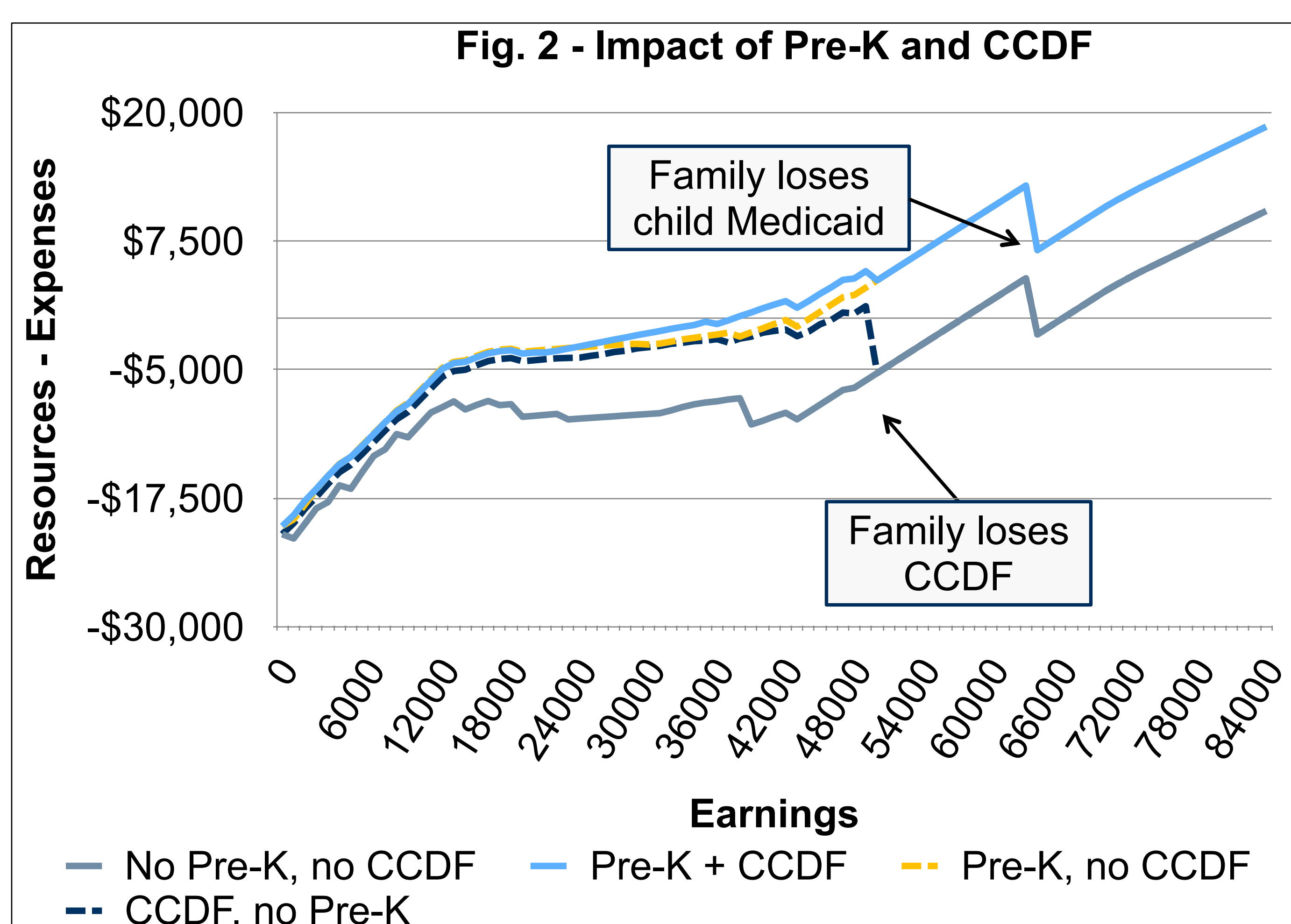
## Preliminary Findings

### NCCP findings

The new work schedule variables improve how the model measures the impacts of programs such as afterschool, Pre-K, and CCDF subsidies. **Figure 1** shows how nontraditional work and afterschool non-enrollment can alter the finances of families – in this example, a single-parent with two children (ages 3 and 6) with access to a full range of benefits. While families can reduce child care costs by relying on informal child care (e.g. friends and family), doing so runs the risk of placing children in substandard care or potentially dangerous situations.



Similarly, **Figure 2** shows how CCDF subsidies and Pre-K can reduce child care costs for low-income families, and how Pre-K can drastically reduce such costs for families who do not receive CCDF subsidies.



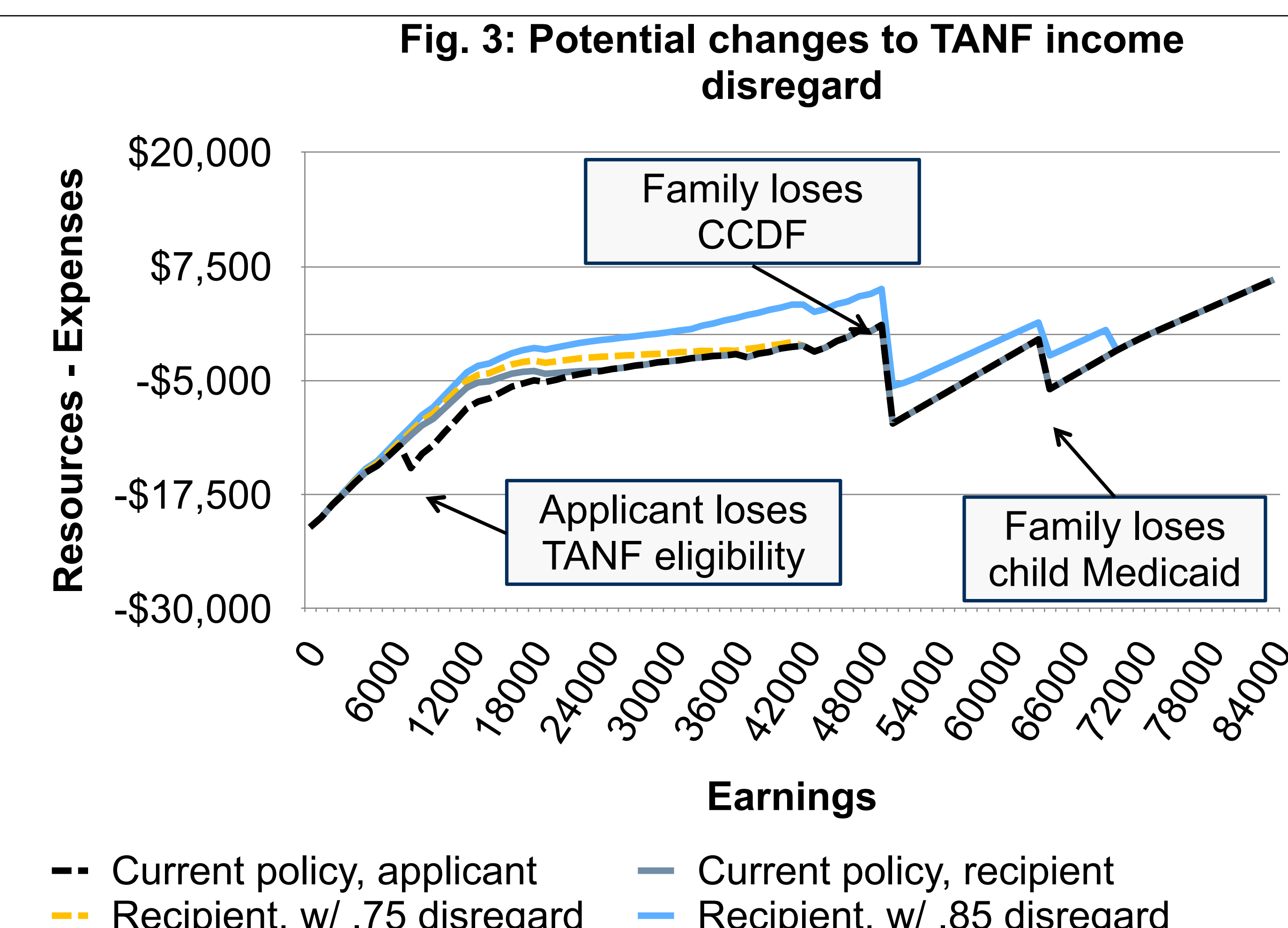
## Further Information

- Visit and use the preliminary version of the 2017 District of Columbia Family Resource Simulator at: [stage.nccp.org/tools/frs](http://stage.nccp.org/tools/frs)
- Once finalized, the tool will be available at: [nccp.org/tools/frs](http://nccp.org/tools/frs)
- Please contact us for any feedback or suggestions, or if you are interested in an updated simulation model for your state:  
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## Preliminary Findings (continued)

### DC DHS findings

DC DHS is actively using the FRS to model the impacts of potential TANF policy changes at the family level, including allowing applicants to access a 2/3 earned income disregard currently available only to TANF recipients, and increasing that disregard among eligible families. These potential changes are illustrated in **Figure 3** below, which models a 1-parent family with children ages 2 and 6. DHS is also using the tool to model the impacts of housing subsidy models on incentives to earn.



In the District, allowing TANF applicants to claim this disregard would have the impact of removing the "benefit cliff" that TANF applicants currently face. Additionally, increasing the proportion of the earned income disregard can help increase the slope of the "net resources" curve, supporting incentives to achieve higher earnings. Changes to the disregard structure would come with an impact to the program cost, but the FRS allows jurisdictions to model multiple concurrent policy changes and understand the potential cost impacts.

## Conclusions and potential future research

The expenses that families face are multi-variable, and can shift depending on basic needs, earnings, work location, work schedules, and the availability of public supports, among other factors. Potential future applications of simulation models like the FRS, which incorporate these variables, include informing cost-benefit analyses for policy decisions and adapting such modeling into financial literacy tools for case managers and their clients.

Additionally, the "benefit cliffs" and relatively flat slopes of "net resources" curves such as those above are potential disincentives that could be further examined through various quantitative analyses (e.g. regression discontinuity), to determine whether policy design elements have detrimental effects and to evaluate potential remedies.

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