

## Adjusting estimates of poverty reduction for behavioral effects

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### TAKEAWAYS

**Poverty-reduction effects may be strengthened by work-based policies** and programs that provide work incentives.

**Poverty-reduction effects may be weakened by income support-based policies** and programs that provide disincentives to work.

**Modeling of behavioral effects can increase the accuracy of estimates** of the expected effects of program and policy modifications, even though in this setting the behavioral adjustments do not dramatically change the overall poverty-reducing effects of the programs.



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### At first glance, estimating poverty reductions for any given

program may appear to be a straightforward calculation—estimating how many families are raised above the poverty threshold by the additional income provided by that program. One complication is that changes in antipoverty policies and programs can produce behavioral responses on the part of parents, such as increasing or decreasing labor market participation or hours of work of those employed. Accounting for these indirect effects on poverty may magnify or moderate the direct effects of the additional income. The National Academies of Sciences, Engineering, and Medicine were tasked by Congress with conducting a comprehensive study of child poverty in the United States, and identifying evidence-based programs and policies for reducing the number of children living in poverty—including those living in deep poverty—by half within 10 years. The committee appointed by the National Academies to conduct this study produced a report, *A Roadmap to Reducing Child Poverty*, from which the three articles in this issue are drawn.<sup>1</sup> Adjustments for behavioral effects were part of the committee's statement of task. This article details how the committee adjusted its estimates of child poverty reductions for behavioral responses.

Our research questions include:

- How should the poverty-reducing estimates of a program or policy change be adjusted for behavioral effects?
- How should these adjustments be incorporated when a package includes multiple policies, each with its own expected behavioral effects?

### What are behavioral effects?

The term behavioral effects refers to changes in household behavior in response to a change in policy. The most common behavioral effects associated with the kinds of programs and policies considered in this report take the form of increases or decreases in employment or, in the case of employed individuals, changes in the number of hours worked.

Most often, these effects result from voluntary decisions taken by household members, but they may also result from hiring and layoff decisions taken by firms. Behavioral responses will blunt the poverty-reducing impact of a policy change if the expansion of benefits reduces work and therefore also family earnings. Conversely, behavioral responses will magnify the poverty reduction if they increase work or hours and therefore also family earnings.

Behavioral responses could also include changes in marital status and living arrangements, as well as changes in childbearing, that may result from changes in policy. The potential effects of tax and transfer programs on marriage and fertility are more complex than the effects they may have on labor market behavior. For example, the Earned Income Tax Credit (EITC), like the broader tax system, provides marriage subsidies for some recipients and marriage penalties for others.<sup>2</sup> Income-tested transfers based on family income, on the other hand,

generally lead to marriage penalties, since some families are likely to lose eligibility for the benefit when the incomes of two earners are combined. And finally, while in theory programs that serve only families with children or provide higher benefits to families with more children increase incentives for additional childbearing, in practice families must weigh the large costs of having children against such potential fertility-related increases in benefits. Overall, the majority of available research on these family-related behaviors finds very small, often statistically insignificant, evidence of program effects on marriage and fertility. Consequently, the committee chose to focus on behavioral effects on labor supply and exclude estimates on the behavioral effects on marriage and fertility.

The committee examined 10 program and policy areas, and formulated two policy variations for each. In this article, we focus on behavioral adjustments for the programs and policy areas that are included in one of the four program and policy packages described in the previous article (detailed in Table 1).<sup>3</sup> For each of the program and policy areas, the committee surveyed the existing research and assessed the evidence on behavioral responses and their magnitudes. The conclusions of this assessment are summarized in the following sections. Further details can be found in Appendices D and F of the full report.<sup>4</sup>

**Table 1. Policy options included in four policy and program packages to reduce child poverty.**

Policy or program	Policy option	Work-based package	Work-based & universal support package	Means-tested supports & work package	Universal supports & work package
EITC A	Increase payments along the phase-in and flat portions of the EITC schedule.	✓	✓	✓	
EITC B	Increase all payments by 40 percent, keeping the current range of the phase-out region.				✓
Childcare	Convert the Child and Dependent Care Tax Credit to a fully refundable tax credit and concentrate its benefits on families with the lowest incomes and with children under the age of 5.	✓	✓	✓	✓
Minimum Wage	Raise the federal minimum wage to \$10.25 per hour and index it to inflation.	✓			✓
WorkAdvance	Expand eligibility for WorkAdvance programming to all male heads of families with children and income below 200 percent of the poverty line, and create training slots for 30 percent of them.	✓			
SNAP	Increase SNAP benefits by 35 percent, plus an additional \$360 per teenager per year, and an increase of \$180 in the summer benefit for each child in pre-kindergarten through twelfth grade.			✓	
Housing vouchers	Increase the number of vouchers directed to families with children so that 70 percent of eligible families not currently receiving subsidized housing would receive and use them.			✓	
Child allowance A	Pay a monthly benefit of \$166 per child to the families of all children under age 17 (born in the United States or naturalized citizens), replacing the Child Tax Credit, Additional Child Tax Credit, and the dependent exemption for children.		✓		
Child allowance B	Pay a monthly benefit of \$225 per child to the families of all children under age 18 (including currently nonqualified legal immigrants), replacing the Child Tax Credit, Additional Child Tax Credit, and the dependent exemption for children. Phase out child allowance benefits between 300 and 400 percent of the poverty line.				✓
Child support assurance	Set guaranteed minimum child support of \$100 per month per child.				✓
Immigrant policies	Restore program eligibility for nonqualified legal immigrants. <sup>a</sup>				✓

<sup>a</sup>This option eliminates eligibility restrictions for nonqualified parents and children in the SNAP, TANF, Medicaid, SSI, and other means-tested federal programs.

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The term *behavioral effects* refers to changes in household behavior in response to a change in policy. The most common behavioral effects associated with the kinds of programs and policies considered in this report take the form of increases or decreases in employment or, in the case of employed individuals, changes in the number of hours worked.

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### Behavioral responses to expanding the EITC

The EITC is a refundable federal tax credit for low- and moderate-income workers. A central feature of the credit is that earned income is required for eligibility; it is phased in at low earnings levels until it reaches a maximum level where it remains until it is phased out at higher earnings levels. In the phase-in region, the credit increases for every additional dollar earned, and in the phase-out region the credit declines for every additional dollar earned. For families with two earners, the benefit begins to phase out at a higher income level compared to families with one earner. All four program and policy packages include expansions of the EITC; the first three increase payments along the phase-in and flat portions of the EITC schedule, and the fourth increases payments by 40 percent across the entire schedule, keeping the current range of the phase-out region.

#### *Theoretical predictions and research evidence*

For families with one earner, labor supply theory predicts that the EITC will increase employment by increasing the returns to work in the phase-in region. However, for those already in the workforce, labor supply theory predicts a reduction in hours worked for those with earnings in the flat region (where the credit remains the same as income rises) and in the phase-out region (and in some circumstances in the phase-in region).

The research bears out the first part of this hypothesis; for single women with children, the EITC does in fact lead to increases in employment.<sup>5</sup> The effects are large—a substantial expansion of the credit in 1993 led to a 7 percentage point increase in employment for low-educated single women. This reflects the high subsidy rate as the credit is phased in; for households with two or more children the subsidy rate is 40 percent.<sup>6</sup> As for single-parent workers with higher incomes, there is little research to support the prediction of reduced labor supply other than some evidence that self-employed workers are likely to report earnings that maximize the credit amount as it is phased in.<sup>7</sup>

For families with two earners, the theory is more complicated, but we expect most secondary earners to reduce both employment and hours of work. The research shows small reductions in employment and hours of work for secondary earners as a result of the EITC, with little effect on primary earners.<sup>8</sup>

It is also possible that the increase in labor supply generated by the EITC in the presence of a weak wage floor (minimum wage) will lead to lower market

wages because of the EITC. There is limited evidence on the size of this effect, but a recent review concluded, “Although none of the evidence is airtight, it appears that employers of low-wage labor capture a meaningful share of the credit through reduced wages and that this comes to some extent at the expense of low-skill workers who are not eligible for the credit (due, for example, to not having children).”<sup>9</sup>

### *Adjustments used in the report*

Based on the research evidence we reviewed, we assume an increase in employment for low-educated single mothers and no effect on hours worked of those already employed. Earnings levels were imputed to new workers based on average earnings of those already receiving the EITC (analogous imputation of earnings levels to newly employed workers was followed for the other programs discussed below). For married mothers, we assume a modest decrease in employment and hours worked. For men, we assume no change in employment or hours worked, whether single or married. Overall, we find that expanding the EITC in the phase-in and flat regions would result in more than 250,000 additional low-income workers in the economy, and a net earnings increase in the economy of almost \$5 billion. The second EITC policy we considered, a 40 percent increase in the credit, would result in almost 550,000 additional low-income workers and an increase in aggregate earnings of more than \$9 billion. These employment effects boost the poverty-reducing effects of an expansion of the EITC.

## Behavioral adjustments: EITC

**Policy A:** Increase payments along the phase-in and flat portions of the EITC schedule.

**Policy B:** Increase all payments by 40 percent, keeping the current range of the phase-out region.

**Effect on employment:** Net increase

**Effect on earnings:** Net increase

**Contribution of behavioral response to poverty reduction:** Large and positive

**Details for behavioral adjustments for an increase in the EITC:**

- **Single mothers:**

*Employment*—3 percentage point increase for Policy A (expand phase-in and flat) and 7.4 percentage point increase for Policy B (40 percent increase); all for women with educational achievement of some college or less

*Hours of work*—no adjustment in hours or earnings

- **Single fathers:**

*Employment and hours of work*—no adjustment

- **Married women:**

*Employment*—No adjustment for Policy A and a 0.8 percentage point reduction for Policy B

*Hours of work*—No adjustment for Policy A and a reduction of 100 annual hours for Policy B

- **Married fathers:**

*Employment and hours of work*—no adjustment

## Behavioral responses to expanding childcare subsidies

The Child and Dependent Care Tax Credit (CDCTC) is a nonrefundable tax credit that reimburses a portion of the qualifying childcare expenses of working parents with children under the age of 13. All four packages include converting the CDCTC to a fully refundable tax credit and concentrating its benefits on families with the lowest incomes and with children under the age of 5.

### *Theoretical predictions and research evidence*

A large body of research indicates that government childcare subsidy programs increase employment rates among mothers in low-income families. For example, a review of numerous studies of local-area childcare reforms conducted in the 1980s and early 1990s showed positive effects on maternal employment.<sup>10</sup> There is little evidence on the impact of childcare subsidies on hours of work.

### *Adjustments used in the report*

Based on a review of the effects of childcare subsidies on maternal labor supply, we assume an increase in employment in response to reductions in childcare costs but make no adjustment to hours worked. We find that converting the CDCTC to a fully refundable tax credit and concentrating its benefits on families with the lowest incomes and with children under the age of 5 would result in more than half a million additional low-income workers in the economy, and a net earnings increase in the economy of more than \$9 billion. These employment effects would boost the poverty-reducing effects of an expansion in childcare subsidies. Since the research literature focuses almost exclusively on the impacts of childcare costs on employment rather than on hours of work conditional on employment, we did not make any adjustment based on changes in hours worked.

## Behavioral adjustments: Childcare

**Policy:** Convert the Child and Dependent Care Tax Credit (CDCTC) to a fully refundable tax credit and concentrate its benefits on families with the lowest incomes and with children under the age of 5.

**Effect on employment:** Net increase

**Effect on earnings:** Net increase

**Contribution of behavioral response to poverty reduction:** Large and positive

**Details for behavioral adjustments for an expansion of the CDCTC:**

- **Single mothers:**

*Employment*—8.5 percent increase

*Hours of work*—no adjustment in hours or earnings

- **Single fathers:**

*Employment and hours of work*—no adjustment

- **Married women:**

*Employment*—1.0 percent decrease

*Hours of work*—No adjustment

- **Married fathers:**

*Employment and hours of work*—no adjustment

## Behavioral responses to raising the minimum wage

Two of our program and policy packages raise the current \$7.25 per hour federal minimum wage to \$10.25 and index it to inflation after that.

### *Theoretical predictions and research evidence*

By raising the cost of labor, increases in the minimum wage are expected to reduce employment, while raising earnings for those receiving the minimum wage is expected also to induce some nonworkers to enter the labor market. We use estimates of the net employment impact from the Congressional Budget Office (CBO) to model the behavioral adjustment of the minimum wage increase.<sup>11</sup>

### *Adjustments used in the report*

The CBO estimated that a 10 percent increase in the minimum wage would reduce teen employment by 3.4 percent and adult employment by 1.1 percent. Employment effects were calculated for each person in the model, using the actual changes in wages for each individual and multiplying those by the relevant CBO estimates. An estimated 28 percent of families with children and incomes under 200 percent of the Supplemental Poverty Measure poverty line had at least one worker who would be affected by a minimum wage increase. Simulations of an increase of the minimum wage to \$10.25 show a loss of 42,000 jobs among individuals in low-income families. The net increase in earnings for those who continue to work would be \$3.5 billion. The effect of these behavioral adjustments on the poverty-reducing impact of the minimum wage is negligible.

### Behavioral adjustments: Minimum wage

**Policy:** Raise the current \$7.25 per hour federal minimum wage to \$10.25 per hour and index it to inflation.

**Effect on employment:** Net decrease

**Effect on earnings:** Net increase

**Contribution of behavioral response to poverty reduction:** Negligible

**Details for behavioral adjustments for a minimum wage increase:**

*Employment*—4.7 percent decrease for teens (male and female) and a 1.3 percent increase for adults (male and female) among individuals living in families with income below 200 percent of the poverty line

*Hours of work*—No adjustment

## Behavioral responses to WorkAdvance

WorkAdvance is a promising employment and training program approach, in which program staff work closely with employers to place disadvantaged individuals with moderate job skills into training programs for specific sectors that have a strong demand for local workers. One of our program and policy packages includes an expansion of eligibility for WorkAdvance programming to all male heads of families with children and income below 200 percent of the poverty line, and the creation of training slots for 30 percent of them.

### *Theoretical predictions and research evidence*

Because the research evidence on WorkAdvance is much stronger for adult men than for adult women, who were represented in significant numbers in only one of four sites and that site showed effects quite different than the other three, our proposal and policy simulations focus on men, with the understanding that actual policy would offer the program more broadly.<sup>12</sup>

### *Adjustments used in the report*

The nature of the program is such that it has effects only through increased employment and earnings, so there is no estimated impact except through a behavioral response. The number of program enrollees is estimated to be 1,464,000, with an aggregate earnings increase of \$2.4 billion. The poverty reduction from WorkAdvance is small.

### Behavioral adjustments: WorkAdvance

**Policy:** Expand eligibility for WorkAdvance programming to all male heads of families with children and income below 200 percent of the poverty line, and create training slots for 30 percent of them.

**Effect on employment:** Net increase

**Effect on earnings:** Net increase

**Contribution of behavioral response to poverty reduction:** Small.

**Details for behavioral effects of the WorkAdvance program:** Policy increases earnings for selected (male) workers. The number of enrollees is simulated to be 1,464,000, with an aggregate earnings increase of \$2.4 billion per year.



## Behavioral responses to expanding SNAP

One of our program and policy packages includes a 35 percent increase in SNAP benefits, plus an additional \$360 per teenager per year, and an increase of \$180 in the summer benefit for each child in pre-kindergarten through twelfth grade. This is a modification of one of the 20 program and policy changes we simulated; that expansion raised SNAP benefits by 30 percent rather than 35 percent.

### *Theoretical predictions and research evidence*

As with housing vouchers, SNAP benefits take the form of a typical income support program, where the maximum benefit is provided if a family has no income and is phased out as earnings increase. With this structure, we predict a reduction in employment and hours worked. A small number of studies estimate the effects of the SNAP program and its predecessor, the Food Stamp Program, on employment, earnings, and labor supply.<sup>13</sup> Most of these found modest negative effects of the program, possibly because the rate at which benefits are phased out as income increases (30 percent) is also modest, or because the transfer accounts for a relatively low fraction of income.

### *Adjustments used in the report*

Our estimates of employment and earnings reductions resulting from an increase in SNAP benefits are based on an analysis that used the expansion of the Food Stamp Program in the 1970s to assess the effects of the program on work effort.<sup>14</sup> For single mothers, for a 20 percent increase in SNAP benefits, we assume a 2.4 percentage point reduction in employment and a 64 hour reduction in annual hours. For single mothers made newly eligible for SNAP because of the higher income eligibility level (and thus lower benefits), we assume no employment reduction but a 25 hour per year reduction. There is much less research on effects of the program on work effort of married men and married women with children. We assume that a 20 percent increase in SNAP leads to no employment reduction for men and a 0.25 percentage point reduction in employment for married women. These behavioral responses reduce the poverty-reductions of SNAP expansion by a modest amount, small in comparison to the total poverty reduction.

## Behavioral adjustments: SNAP

**Policy:** Increase SNAP benefits by 35 percent, plus an additional \$360 per teenager per year, and an increase of \$180 in the summer benefit for each child in pre-kindergarten through twelfth grade.

**Effect on employment:** Net decrease

**Effect on earnings:** Net decrease

**Contribution of behavioral response to poverty reduction:** Modest and negative

**Details for behavioral adjustments for an expansion of SNAP benefits:**

- **Single mothers eligible under current income eligibility level:**

*Employment*—4.2 percentage point reduction

*Hours of work*—reduction of 113 annual hours

- **Newly eligible single mothers:**

*Employment*—no change

*Hours of work*—reduction of 43 annual hours

- **Men:**

*Employment*—no change

- **Married women:**

*Employment*—0.44 percentage point reduction

*Hours of work*—reduction of 22 annual hours

- **Newly eligible married mothers:**

*Employment and hours of work*—no change



## Behavioral responses to expanding housing programs

The Housing Choice Voucher Program makes subsidized housing available to low-income families, but because only a fixed number of vouchers are available, about one-quarter of all eligible families actually receive vouchers. One of our program and policy packages includes an increase in the number of vouchers directed to families with children so that 70 percent of eligible families not currently receiving housing vouchers would receive and use them.

### *Theoretical predictions and research evidence*

Most research on the behavioral effects of subsidized housing programs has examined their effect on employment and earnings. Housing vouchers are structured so that they provide a set benefit amount if the family has no earnings, and the voucher value is phased out with earnings or income. This, like typical income support programs, leads to predictions of a reduction in employment and hours worked. A study of an expansion of housing vouchers in Chicago, where some of those on the waiting list were randomly selected to be offered a voucher, found that vouchers reduced employment and earnings, but that those reductions sometimes differed by gender and headship status.<sup>15</sup>

### *Adjustments used in the report*

Based on the available research, we assumed no employment response for male heads of household; a 3.3 percentage point reduction in the employment rate for female heads and married women; and a 7.3 percent reduction in annual hours worked for all adults in the labor market. These adjustments make the poverty reductions from housing assistance expansion smaller by a modest amount.

## Behavioral adjustments: Housing vouchers

**Policy:** Increase the number of vouchers directed to families with children so that 70 percent of eligible families not currently receiving housing vouchers would receive and use them.

**Effect on employment:** Net decrease

**Effect on earnings:** Net decrease

**Contribution of behavioral response to poverty reduction:** Modest and negative

**Details for behavioral adjustments for an expansion of the Housing Choice Voucher Program:**

- **Male heads of household:**

*Employment*—no adjustment

- **Female heads of household and married women:**

*Employment*—3.3 percentage point reduction

- **All adults in labor market:**

*Hours of work*—7.3 percent reduction

## Behavioral responses to the child allowance

A child allowance is a monthly cash payment to families for each child living in the home. Two of our program and policy packages include child allowances. In one, families of all children under age 17 (born in the United States or naturalized citizens) would receive a monthly benefit of \$166 per child, replacing the Child Tax Credit, Additional Child Tax Credit, and the dependent exemption for children. In the other, families would receive a monthly benefit of \$225 per child, the benefit would also be extended to nonqualified legal immigrants, and benefits would be phased out between 300 percent and 400 percent of the poverty line. This second child allowance policy is a modification of one of the 20 program and policy changes we simulated; that child allowance would have been \$250, and would not have provided benefits to nonqualified legal immigrants.

### *Theoretical predictions and research evidence*

Economic theory predicts that increases in income that are not tied to work, and the phasing out of those benefits, will reduce the incentive to work. Research evidence supports this prediction, although the size of the reduction differs across studies. For our calculations, we draw on a comprehensive review of the literature, using the rough midpoint of the estimates included in that review.<sup>16</sup>

### *Adjustments used in the report*

We assume that a 10 percent increase in family income will reduce the employment rate by 0.5 percent for men, 1.2 percent for married women, and 0.9 percent for single mothers. We multiply the number of children in the family by the child allowance amount (which differs for the two levels of the benefit simulated), divide by each family's income to calculate the percentage increase in income, and then apply the appropriate employment reduction rates. We also assume that a 10 percent increase in family income will reduce hours of work by 0.5 percent for men, 0.9 percent for married women, and 0.7 percent for single mothers. For the policy option where the child allowance would be phased out at higher income levels, we calculated employment reductions and hours of work reductions separately for those in the phase-out region; however, this had virtually no effect on any of our simulation results, because a negligible fraction of families had their incomes reduced by work disincentives by enough to place them in the low-income sample for whom we examined effects. With a \$166 monthly child allowance, these behavioral responses are estimated to reduce employment by 68,000 jobs and earnings by \$1.6 billion. With a \$225 monthly allowance, behavioral responses would reduce employment by 104,000 jobs and earnings by \$2.6 billion. Despite the sizes of these reductions, the poverty reduction from the child allowance programs is only slightly reduced.

## Behavioral adjustments: Child allowance

**Policy A:** Pay a monthly benefit of \$166 per child to the families of all children under age 17 (born in the United States or naturalized citizens), replacing the Child Tax Credit, Additional Child Tax Credit, and the dependent exemption for children.

**Policy B:** Pay a monthly benefit of \$225 per child to the families of all children under age 18 (including currently nonqualified legal immigrants), replacing the Child Tax Credit, Additional Child Tax Credit, and the dependent exemption for children. Phase out child allowance benefits between 300 and 400 percent of the poverty line.

**Effect on employment:** Negligible (negative)

**Effect on earnings:** Net decrease

**Contribution of behavioral response to poverty reduction:** Small and negative

**Details for behavioral adjustments for the introduction of a child allowance:** We simulated reductions in employment and annual hours using income elasticities from the literature applied to the simulated percent change in each household's income.

- **Female heads of household:**

*Income elasticity of employment*— -0.085

*Income elasticity of hours*— -0.07

- **Married women:**

*Income elasticity of employment*— -0.12

*Income elasticity of hours*— -0.09

- **Men:**

*Employment*—no effect

*Income elasticity of hours*— -0.05

## Behavioral responses to a child support assurance policy

A child support assurance policy would guarantee that a custodial parent would consistently receive at least a minimum amount of child support each month, regardless of how much was paid by the noncustodial parent. One of our program and policy packages includes setting a guaranteed minimum monthly child support amount of \$100 per child.

### *Theoretical predictions and research evidence*

The policy simulation identifies families with a noncustodial parent who is legally required to pay child support, and determines the amount of monthly support being received per child. The publicly provided child support payment is the difference between \$100 and the actual amount of child support received. Employment effects are assumed to occur only through the types of effects discussed above for the child allowance, and we drew on that same research evidence for estimating behavioral response to the child support assurance. We calculate employment effects only for the custodial parent, who would receive the increased income. We find that the income increase from the relatively low child support assurance amount is too small to cause any significant reduction in work effort, and thus has essentially no effect on the poverty reductions of the policy.

### **Behavioral adjustments: Child support assurance**

**Policy:** Set guaranteed minimum child support of \$100 per month per child.

**Effect on employment:** Negligible

**Effect on earnings:** Negligible

**Contribution of behavioral response to poverty reduction:** Negligible

**Details for behavioral adjustments for the child support assurance:** Same elasticities as for child allowance applied to the resident parent.

## Behavioral response to immigrant policies

Historically, immigration has been an important component of U.S. population and labor force growth. A 2017 National Research Council report shows that overall, immigration has contributed to long-run economic growth and innovation.<sup>17</sup> Immigrants' contributions to the labor force also reduce the prices of some goods and services. However, because immigrant parents are more likely to have lower educational attainment and to live in poverty than their U.S.-born counterparts, immigration may increase child poverty rates in the short-run. These short-term negative effects may be offset since as adults, the children of immigrants (the second generation) contribute more in taxes than either their parents or the rest of the native-born population. Eligibility rules for federal antipoverty programs explicitly exclude several classes of immigrants, including many legal immigrants. One of our program and policy packages includes the restoration of program eligibility for nonqualified legal immigrants.

### *Theoretical predictions and research evidence*

The immigrant policy would expand eligibility for SNAP, Supplemental Security Income, and Temporary Assistance for Needy Families. We assumed that each program would have the same employment effect that has been estimated for those programs in the general research literature (and that, for SNAP, are discussed above). We first assessed the importance of behavioral effects by counting the number of immigrants with children who would be newly eligible, and would participate in, each of the three programs. These calculations showed that receipt of SNAP would far outweigh receipt of either of the other two programs; thus we chose to simulate employment responses only for SNAP.

### *Adjustments used in the report*

We used the same SNAP estimates based on the research literature described above, but scaled to fit the immigrant proposals. We took note of the fact that some households who had already been receiving SNAP benefits would become ineligible because the immigrant income would raise household income above the eligibility limit. The results show that a small number of immigrants will begin work, but a larger number will stop work. However, the poverty reductions from the immigrant policy are little affected by these behavioral responses.

## Behavioral adjustments: Immigrant policies

**Policy:** Restore program eligibility for nonqualified legal immigrants.

**Effect on employment:** Net decrease

**Effect on earnings:** Net decrease

**Contribution of behavioral response to poverty reduction:** Small and negative

**Details for behavioral adjustments for restoring program eligibility to nonqualified legal immigrants:** We modeled the employment and earnings changes from one program, SNAP, due to its major component of the simulated policies. Due to mixed status families, this expansion could lead to a reduction in SNAP benefits for some (due to new countable income).

- **Newly eligible single mothers:**

*Employment*—12 percentage point reduction

*Hours of work*—reduction of 322 annual hours

- **Men:**

*Employment*—no change

- **Married women:**

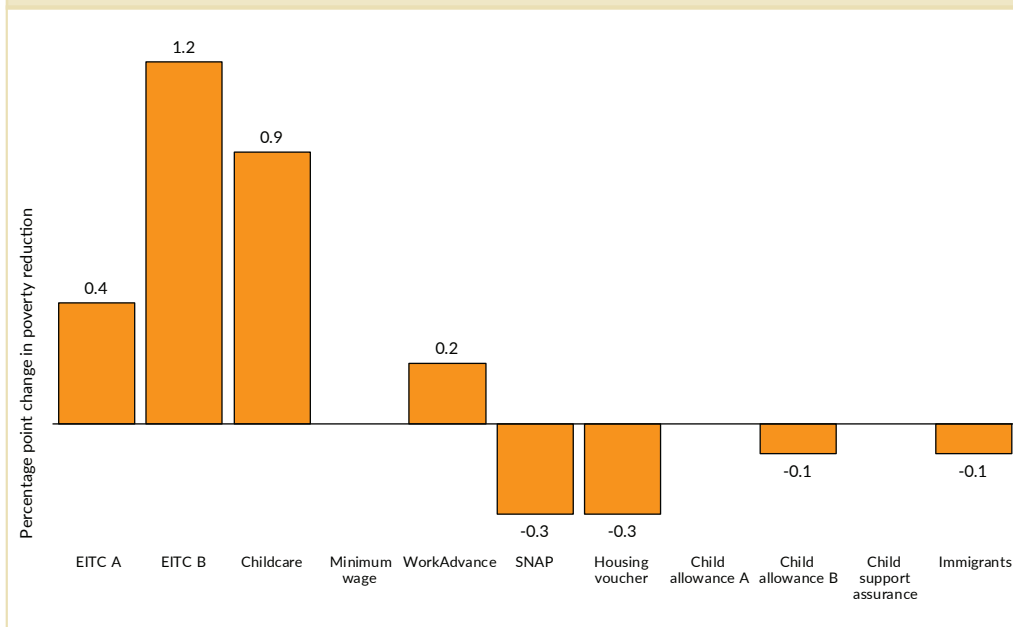
*Employment*—1.25 percentage point reduction

*Hours of work*—reduction of 63 annual hours

## Summary of effects of behavioral responses

Figure 1 shows the magnitudes of net effects of adjusting for behavioral responses on the poverty-reducing effects of the possible program and policy modifications. A positive number indicates that poverty reduction impacts were increased by behavioral response and a negative number indicates that those impacts were reduced. For example, EITC A would make the poverty reduction 0.4 percentage points greater than it would otherwise have been. Of the nine program and policy areas examined, there are only two—the EITC and childcare—where behavioral adjustments result in a notable change in the poverty-reduction estimates. For both of these programs, expanding benefits results in a work increase, which in turn results in a large increase in poverty reduction. Figure 1 also shows that for the program and policy areas where an expansion would have negative employment and earnings effects—SNAP, housing vouchers, a child allowance, and immigrant program eligibility—the size of those negative effects, and the corresponding moderating effect on poverty reduction, is only modest (SNAP and housing vouchers) or very small (child allowance and immigrant program eligibility). In addition, these moderating effects are small relative to the total poverty reduction of the policies.

**Figure 1. Adjusting for behavioral responses increases the poverty-reducing effects of expansions to the EITC and childcare; for those programs where an expansion would temper poverty reduction, the effect is relatively small.**



**Source:** Estimates commissioned by the committee using the TRIM3 microsimulation model.

**Notes:** Figure shows the change in poverty reduction of a given policy option after adjusting for employment and earnings effects. Positive changes indicate that employment and earnings increases boost poverty reduction, while negative changes indicate that employment and earnings decreases dampen poverty reduction. See Table 1 for details of the 11 policy and program modifications.

## Simulating employment and earnings effects due to the policy packages

Simulating the effects of packages of programs is more difficult than simulating effects of individual program and policy changes because it requires combining what might be a work disincentive with one policy and a work incentive with another policy, as well as estimating the total behavioral response of families who are affected by more than one policy in a package. All four of our packages include expansions of both the EITC and the CDCTC, and each of these two policies induce entry into the labor force. But since an individual can enter the labor market only once in response to the package, the estimated impact of both policies cannot be simply added together to produce this effect for a given individual.

Because the committee's employment and earnings assumptions for various policy areas were based on the available literature covering the behavioral responses to that type of benefit or tax credit, and because there is very little literature on the combined effects of multiple programs, assumptions had to be made regarding the expected combined employment and earnings changes. For example, in the case of the work-based policy package, the EITC policy when modeled individually included new jobs for 307,000 women (based on research on the effects of EITC expansions), and the CDCTC expansion included new jobs for 600,000 women (based on research on the effects of childcare prices); a decision had to be reached regarding the number of new jobs to expect when both of those policies were combined.

The committee chose to make the following assumptions regarding employment changes in the policy packages:

When more than one policy in a package added jobs for a particular demographic group, the target for new jobs in the package was calculated as the midpoint between the lower bound (the unduplicated count of the number of people with a new job in any of the individual simulations) and the upper bound (the sum of the numbers of new jobs across the simulations). For example, in the case of the work-based policy package, the committee calculated that 307,000 women would start working as a result of the EITC policy modification, and 600,000 as a result of the CDCTC policy modification, with an unduplicated count of 636,000. The targeted number of newly working women for this package was thus the midpoint between 636,000 and 907,000 (the sum of the two individual job-increase numbers), or 771,500. The new jobs were assigned to a random subset of the people gaining jobs in any of the individual policy simulations in a particular package.

When more than one policy in a package caused job loss for a demographic group, the same process was followed as for job gains.

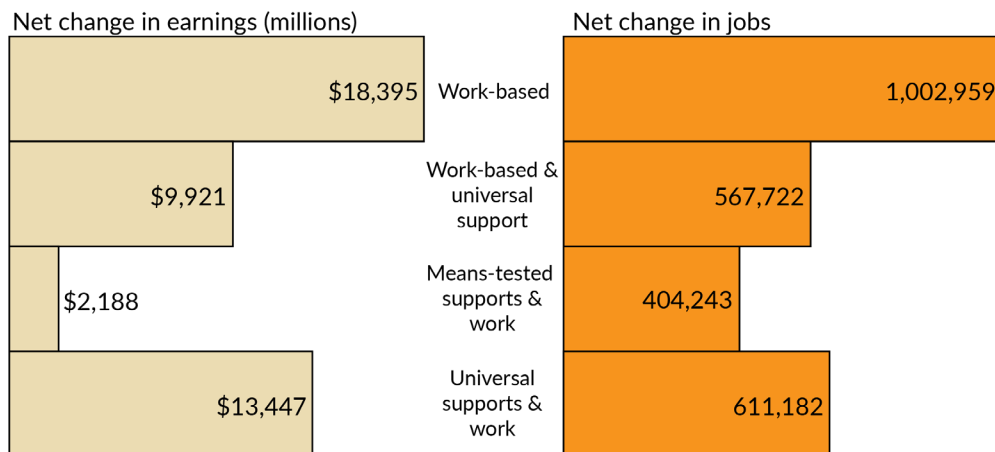
The minimum wage and WorkAdvance policies were considered as having employment and earnings effects independent from any other policy. For example, the reduction in jobs due to the minimum wage policy was assumed to be the same when the minimum wage was simulated as part of a package as when the minimum wage was simulated as an individual policy.

When more than one policy in a package caused changes in hours of work for people who remained employed, preliminary work was done to determine each person's appropriate hours-of-work change for the package. If a person's

hours were modified by only one individual policy in the package, that same change was imposed in the simulation of the package. If a person’s hours were modified by more than one policy in the package, the hours change for the simulation of the policy package was set equal to the smaller hours change plus half of the difference between the smaller number of hours and the larger number of hours.

Figure 2 shows the earnings and employment effects of the four program and policy packages. The work-based package, which adds minimum wage increases and expansion of WorkAdvance programming to EITC and childcare expansions, would provide the largest increases in earnings and employment. The means-tested supports and work package, which combines expansions of the two tax credits in the work-based package with expansions of two existing income support programs—SNAP and housing voucher programs, would provide the smallest increases in earnings and employment. The effects on employment and earnings are positive even for the packages that include expanded income support programs, because the work incentives of the work-based programs in the package are larger than the work disincentives arising from the income support programs.

Figure 2. Of the four program and policy packages considered by the committee, the work-based package would provide the largest increases in employment and earnings among low-income workers, and the means-tested support and work package would provide the least.

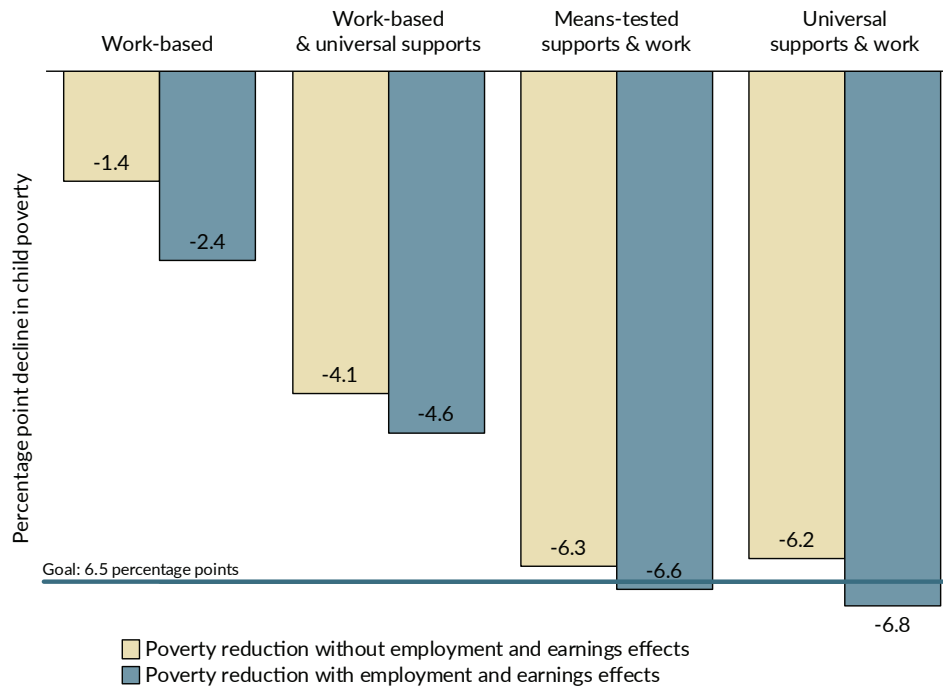


Source: Estimates commissioned by the committee using the TRIM3 microsimulation model.

Figure 3 shows how the behavioral adjustments affect the poverty-reducing effects of each package. Behavioral adjustments almost double the poverty-reducing effects of the work-based package, from 1.4 percentage points to 2.4 percentage points. Behavioral adjustments result in more modest increases in the poverty-reducing effects of the other three packages, although these small increases are just enough to bring both the means-tested supports and work package and the universal supports and work package above the 50 percent poverty-reduction goal.



**Figure 3. Behavioral adjustments have the largest impact on the poverty-reducing effects of the work-based package, although the smaller behavioral adjustments bring the means-tested supports and work package and the universal supports and work package above the 50 percent poverty-reduction goal.**



Source: Estimates commissioned by the committee using the TRIM3 microsimulation model.

## Conclusion

A large volume of scholarly research on behavioral effects of policies over the last 40 years has shown that policies can affect employment and hours of work, although the magnitude of these effects varies across studies and often appear for only some population groups. The committee determined that for programs with a large number of participants and significant outcomes, it is necessary to adjust poverty-reduction estimates for behavioral effects on labor market participation. We hope that this discussion will be useful to others considering similar large-scale simulations. ■

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<sup>1</sup>National Academies of Sciences, Engineering, and Medicine, *A Roadmap to Reducing Child Poverty* (Washington, DC: The National Academies Press, 2019) <https://doi.org/10.17226/25246>. Adapted and reproduced with permission from the National Academy of Sciences, Courtesy of the National Academies Press.

<sup>2</sup>N. Eissa and H. Hoynes, “Explaining the Fall and Rise in the Tax Cost of Marriage: The Effect of Tax Laws and Demographic Trends, 1984–97,” *National Tax Journal* 53, No. 3 Part 2 (2000): 683–712.

<sup>3</sup>For two of these possible modifications—SNAP and one of the child allowance policies—the version included in the packages was a variation on the version considered as a stand-alone policy.

- <sup>4</sup>National Academies of Sciences, Engineering, and Medicine, *A Roadmap to Reducing Child Poverty* (Washington, DC: The National Academies Press, 2019). <https://doi.org/10.17226/25246>
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This publication was supported by Cooperative Agreement number AE000103 from the U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation to the Institute for Research on Poverty at the University of Wisconsin–Madison. The opinions and conclusions expressed herein are solely those of the author(s) and should not be construed as representing the opinions or policy of any agency of the Federal government.



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