APPENDIX 1. Literature Search Methodology

* 1. General Approach

In order to ensure we have compiled a comprehensive literature on the benefits and costs of a child allowance, we followed a meta-analysis approach to gather evidence. We used a three-stage screening process to identify relevant studies for each benefit and cost. In panel A of table A1.1 and the text, we describe the process as it pertains to the impact of the child allowance on children’s future earnings. Details for other benefits and costs can be found in the remaining panels of table A1.1.

In the first stage, we searched the EconLit, SocINDEX, and the Social Work Abstracts databases through EBSCOHost, along with Google Scholar and PubMed, for articles. We searched for papers whose title, abstract, or keywords mentioned cash or near-cash transfers (i.e., cash transfer, NIT, UBI, EITC, child allowances, or Food Stamps) and children’s earnings (either earnings or income, paired with either child\*, long-term, or future). We scanned the titles of papers included in the search results for papers that possibly examined our questions of interest. In order to capture all relevant papers, we kept inclusion criteria general during this stage. For children’s earnings, our first-stage inclusion criteria were any mention of a cash or near-cash transfer and its impact on income, earnings, or any mention of impact/effect of a transfer without specifying an outcome. We scanned EBSCO and PubMed search results in their entirety for papers that fit the criteria. As indicated in table A1.1, Panel A, we found nine papers through EBSCO that fit the criteria. Google Scholar provided a large number of results in each search, but because that search engine sorts results by relevance, we examined only the first 20 pages of Google Scholar search results. We found six articles in the Google Scholar search for children’s future earnings that met our stage-one inclusion criteria. (Several of the same articles were found repeatedly in multiple searches. As a result, the number of articles found, as listed in table A1.1, row 5, may include duplicates found in multiple databases.)

In the second stage, we reviewed each identified paper to assess whether it met our more precise stage-two inclusion criteria. These included whether the paper provided an estimate of the appropriate cost or benefit, e.g., the change in earnings that occurred as a result of receiving a cash or near-cash transfer in childhood.

In the third and final stage, we reviewed papers to evaluate whether they met our expectations regarding internal, external, statistical, and construct validity. Operationally, we are limiting papers to those that are quasi-experimental or experimental. Given the judgment involved in Stage 3, in the interest of transparency, table A1.1 lists the papers cut and the type of validity we concluded the paper did not meet. A more detailed description of why each paper was removed from analyses can be found in the section A1.III, along with a summary of the exact search terms used in section A1.II.

In panels B through F of table A1.1, we summarize the search terms and the literature search methodology used to measure the impact of a $1,000 cash or near-cash transfer on children’s earnings, children’s health and longevity, parent health and longevity, crime, parent mental health, and children’s education. Separate literature searches were conducted to place a monetary value on children and parents’ health and longevity, as well as crime, using non-causal studies. The search terms used to find valuation studies are not listed here but are available from the authors upon request. To avoid double-counting, no monetary value was placed on parents’ mental health and children’s education. Initial literature searches were additionally conducted for children and parent taxes, other transfers, child health expenditures, and adult health expenditures. However, we could not find causal studies and instead searched for non-causal valuation studies. Children’s taxes and other transfers are estimated by applying the valuation studies’ findings to the causal impacts on children’s future earnings. Child and parent health expenditures were similarly estimated using the impacts on child and adult health. We determined parents’ taxes would be best estimated using a simulation framework, and therefore adopted the methodology included in the National Academy of Sciences report *A Roadmap to Reducing Child Poverty* (2019)*.* Lastly, causal child welfare literature was gathered based on the findings of an exhaustive literature search conducted by Pac et al. (forthcoming)

* 1. Search Terms Used
     1. Children’s Earnings

(child\* OR "long term" OR future OR “long-term”) AND ("cash transfer" OR "earned income tax credit" OR "food stamps" OR "supplementary nutrition assistance program" OR "negative income tax" OR "universal basic income" OR "child allowance" OR “afdc” OR “tanf” OR “supplemental security income” OR “survivors insurance”) AND (income OR earnings)

***A1.II.b. Children’s Health/Longevity***

(child\* OR "long term" OR future OR “long-term”) AND ("cash transfer" OR "earned income tax credit" OR "food stamps" OR "supplementary nutrition assistance program" OR "negative income tax" OR "universal basic income" OR "child allowance" OR “afdc” OR “tanf” OR “supplemental

security income” OR “survivors insurance”) AND ("health" OR “longevity”)

***A1.II.c. Parent Health/Longevity***

(health OR longevity) AND ("cash transfer" OR "earned income tax credit" OR "food stamps" OR "supplemental nutrition assistance program" OR "negative income tax" OR "universal basic income" OR "child allowance" OR “public housing” OR “housing allowance” OR “afdc” OR “tanf” OR “supplemental security income” OR “survivors insurance”) NOT child\*

A1.II.d. Crime

(incarceration OR arrest\* OR jail OR criminal OR prison) AND ("cash transfer" OR "earned income tax credit" OR "food stamps" OR "supplementary nutrition assistance program" OR "negative income tax" OR "universal basic income" OR "family allowance" OR “child allowance” OR “afdc” OR “tanf” OR “supplemental security income” OR “survivors insurance”)

***AI.II.e. Parent Mental Health***

(“mental health” OR “mental illness” OR depression OR anxiety) AND ("cash transfer" OR "earned income tax credit" OR "food stamps" OR "snap" OR "nit" OR "ubi" OR "cash allowance" OR “afdc” OR “tanf” OR “ssi” OR “survivors insurance”)

***A1.II.f. Children’s Educational Attainment***

(“educational attainment” OR school\* OR education) AND ("cash transfer" OR "earned income tax credit" OR "food stamps" OR "supplementary nutrition assistance program" OR "negative income tax" OR "universal basic income" OR "family allowance" OR “child allowance” OR “afdc” OR “tanf” OR “supplemental security income” OR “survivors insurance”)

* 1. Explanation of Why Papers Were Cut in Stage 3

1. **Muennig, Mohit, Wu, Jia, & Rosen, 2016:** This paper was cut due to the use of a weak difference-in-difference model that included few control variables and no fixed effects.
2. **Currie & Cole, 1993:** This paper uses an instrumental variable that we do not believe to be valid. At the time the paper was published the identification would have passed muster but it does not now, given modern standards for meeting the exclusion criterion.
3. **Lindahl, 2005:** We reject this study because of the order of magnitude increase in the instrumented variable and because the final estimates are unbelievably large, exceeding estimates from Chetty et al. (2016), which we consider as an upper bound estimate.
4. **Fenelon et al., 2017:** This paper was eliminated because we do not believe housing assistance is near enough to a cash transfer to be relevant for the purposes of this paper.
5. **Rehkopf, Strully, and Dow, 2014**: We eliminated this paper because the paper examines the effect of the timing of payments rather than the amount of payments on health outcomes.
6. **Snyder & Evans, 2014:** This paper was eliminated due to relevance, as it examines the effects on longevity of cash received at the end of life rather than during the child-rearing years.

**APPENDIX 2. CHILD ALLOWANCES AND TAX CREDITS: BRIEF INTERNATIONAL AND HISTORICAL CONTEXT**

Nearly all rich nations have Universal Child Allowance Programs. Most of these programs began after WWII (Garfinkel, Rainwater, and Smeeding 2010). Most of the programs make monthly payments to all families with children, although some exclude high income families. In most countries the child allowance benefit is relatively small, but in a few countries, including France, Sweden, and Canada, the benefits are quite generous (Garfinkel, Rainwater, and Smeeding 2010). Canada recently increased its child allowance substantially, providing the most generous benefits to lower-income families while reducing benefits for middle-income families and eliminating them for higher-income families (Collyer et al., 2020).

The United States stands out as an exception. Though the US has important cash and near- cash programs that aid families with children, the largest of which are SNAP (formerly Food Stamps) and the EITC, we do not have a child allowance program. But as described above, the partially refundable Child Tax Credit in the federal income tax code is akin to a child allowance, albeit one that currently leaves out the worst-off families. Making the credit fully refundable and converting it to a child allowance so that it reaches all children would constitute a continuation of a legislative effort by Congress that is now supported by most Democrats in Congress, along with a handful of Republicans.

Prior to 1997, the federal income tax provided child deductions rather than tax credits. In a progressive income tax, deductions are worth more to families who have more income and face higher marginal tax rates: because income tax deductions are subtracted from taxable income, the true value of the deduction is equal to face value of the deduction times the family’s marginal tax rate. For example, a $1000 deduction to taxpayers with a 40% marginal tax rate is worth $400 while it is worth only $200 to lower-income taxpayers who face a 20% marginal tax rate. In contrast, a tax credit is subtracted from taxes owed and is worth the same regardless of one’s tax bracket: a $200 credit reduces the taxes owed by someone in the 40% bracket by exactly $200, just as it does for someone in the 20% bracket.

Congress enacted the Child Tax Credit under the Tax Relief Act of 1997, setting it equal to $500. Families needed at least $10,000 in earnings to be eligible for the credit. Individual filers with incomes above $75,000 and joint filers with incomes above $110,000 were not eligible for the credit. The Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) increased the credit to $1,000 and made it partially refundable--that is, part of its value could now be distributed to the taxpayer even if the credit was larger than the tax liability. The 2009 American Recovery and Reinvestment Act (ARRA) lowered the earnings requirement from $10,000 to $3,000 for one year. The lower earnings requirement was extended at the end of 2010 and 2012, and subsequently made permanent in 2015.

The Tax Cuts and Jobs Act (TCJA) of 2018 doubled the value of the maximum credit from $1,000 to $2,000 and increased the highest qualifying income for the Child Tax Credit for single filers from $75,000 to $200,000 and for joint filers from $110,000 to $400,000. The TCJA further changed the refundability structure, capping refunds at $1,400 per child. This resulted in families who had previously been eligible for the full CTC, which they received in the form of a refund, to only be eligible for a partial credit. These changes transformed the CTC into the largest federal cash expenditure for children. Between 2013 and 2017 expenditures on the CTC were an average of $119 billion, or 1.6 times the $73 billion spent on the Earned Income Tax Credit (Joint Committee on Taxation, 2019).

The American Rescue Plan (ARP) would increase the value of the Child Tax Credit from $2,000 per year to $3,600 for children under age 6 and to $3,000 for children ages 6 to 17. Soon after his election, President Biden included the ARP child allowance as a replacement for the $2,000 Tax Credit for one year. Congress enacted the Plan in March 2021.

**APPENDIX 3. NON-MONETARY BENEFITS AND COSTS OF A CHILD ALLOWANCE**

The non-monetizable benefits and costs should not be ignored. To the extent that we can estimate the magnitude or at least identify the direction of impacts of a child allowance on these non-monetary benefits and costs, even though we cannot value the impacts in dollar terms, our benefit-cost analysis will be more complete, enabling readers to place their own values on the impacts.

The first non-monetizable benefit in row An, the reduction in poverty, illustrates the importance of including non-monetizable benefits and costs. Poverty reduction is one of the most important objectives of cash transfers, including child allowances. Consequently, how much a particular policy reduces poverty is of great concern to policy makers and researchers and any analysis that ignored the amount of poverty reduction achieved would be woefully incomplete. Microsimulation also enables us to calculate the poverty reduction impacts of a child allowance. Because poverty reduction is a widely shared value, taxpayers as well as beneficiaries derive some benefit from the achievement of this value. Similarly, taxpayers and beneficiaries both derive some value from increase in equality of opportunity—row Bn, and reductions in inequality—row Cn. This does not mean that all or even any taxpayers value the reduction in either poverty or inequality by a greater amount than the extra taxes they will pay to achieve the reductions, but rather that, other things equal, most taxpayers value less poverty and inequality (Page & Jacobs, 2009).

Prosocial outcomes (row Dn) as a result of better child development under child allowance transfer is another important non-monetary benefit as child recipients would become better citizens as adults.

Freedom (row En) is also a widely shared value, so reductions in incarceration benefit all of us, not just economically but also because of the achievement of the value. In this case, of course, the non-monetary value of freedom is especially large for those among beneficiary families who would otherwise have been incarcerated.

How members of society, both beneficiaries and taxpayers, value an increase in childbearing is more difficult to assess, as indicated by question marks in row Fn. On the one hand, many Western European nations have adopted child allowances in order to increase fertility. On the other hand, many in the U.S. oppose child allowances because of their potential pro-natal effects. We are unaware of any evidence on U.S. public opinion about this aspect of a child allowance. Indeed, because strongly held views about the potential impacts of child allowances on childbearing are likely to play an important role in the debate about child allowances, it is useful to know that research indicates the impacts of a child allowance on birthrates will be small (Gauthier & Hatzius, 1997).

Independence is another widely held value in the U.S. Dependence on government benefits (row Gn) is therefore viewed negatively by many Americans. This is especially true for dependence on means-tested benefits, like Temporary Assistance to Need Families (TANF) and even the Supplemental Nutrition Assistance Program (SNAP or Food Stamps). It is obviously less true for universal benefits such as free public education, Social Security, and in most rich nations, child allowances. Thus, we expect that there would be some costs related to reductions in independence following child allowance, but suspect they are very small.

Trust is another non-monetary value that universal programs as opposed to means-tested programs are likely to engender (row Hn). Means-tested programs reduce trust as beneficiaries are suspected by many of cheating and many politicians fan the flames by scapegoating beneficiaries. This particular dynamic of mistrust does not exist in universal programs. Quite the opposite, universal programs engender solidarity by their inclusiveness, which in turn generates trust (Kumlin & Rothstein, 2005). Since the child allowance studied in this paper is quite universal, we expect trust to increase, bringing benefits to everyone in the society.

Work (row In) is another widespread, strongly held value. Indeed, for some taxpayers, any work reductions that result from cash transfers are anathema. Once again, it is useful to know whether research indicates the effects on work will be small. As we note briefly below, these effects on work are indeed small. A child allowance will increase savings among beneficiaries (row Jn) but decrease savings by a greater amount among taxpayers because the rich save a greater proportion of their incomes than the poor, and therefore decrease savings for the economy as a whole. Finally, parents (and likely others in society as well) derive benefits from improved well-being of children now and into adulthood due to altruism toward them. Thus, we have altruism in row Kn as another nonmonetary benefit.

APPENDIX 4. Literature on Impacts of Income

In Appendix 4, we summarize literature examining the impact of cash or near-cash transfers on children’s outcomes (future earnings, birthweight, neonatal mortality, health between ages one and death, longevity, and educational attainment) and parent outcomes (physical health, mental health, longevity). We also estimate the declines in health expenditures that are associated with the improvements in both child and parent health and declines in expenditures on other transfer programs, child protective services, and the criminal justice system. We also estimate the increases in Social Security and Medicare payments associated with increased longevity of children and parents and the increases in cost associated with increased educational attainment of children. We summarize each study’s methodology, data, and findings and standardize the findings to reflect the effects of a $1,000 increase in household income on the outcomes of interest. We then monetize the value of each benefit and cost, using standard values for health and life, administrative data on costs, and a 3% social discount rate to discount the value of future benefits.

**A4.I. Children’s Future Earnings**

***A4.I.a. Aizer et al. (2016)***

Aizer et al. (2016) found that in adulthood, sons whose mothers had received Mothers’ Pensions between 1911 and 1935 experienced an increase in annual income of $90.93 (s.e. 35.976), a 14% increase. As discussed in sections on children’s longevity (A4.II.d.1) and children’s educational attainment (A4.VII.e), the authors also found an increase in longevity of 0.0158 (s.e. 0.007) or 1.16 years and an increase in educational attainment of 0.316 (s.e. 0.262) years. The authors matched administrative records, census records, and death records from 11 states to examine the long-term outcomes of male children who were raised in households who applied for the Mothers’ Pensions between 1911 and 1935 (n=1,960). The authors compared the outcomes of children of accepted and rejected applicants using linear regressions. Rejected applicants were deemed to be an appropriate comparison group because like the accepted mothers, the rejected mothers were also economically constrained and sought aid, but they were somewhat better off (which is why they were rejected). So, in the absence of aid, their sons would have been expected to do somewhat better than the accepted sons, which implies that these estimates may somewhat understate the impact.

According to Aizer et al. (2016), Mothers’ Pensions were $3,684 (2019$) annually and received for three years on average. A $1,000 transfer for one year would thus increase children’s future earnings by 1.27%[[1]](#footnote-1) (0.14\*((1000/3684)/3)). We believe that the level of future earning of children whose mothers received Mothers’ Pensions during Aizer et al’s study period approximates the 25th percentile income in 2019. According to the Current Population Survey, in 2019, annual earnings were on average $10,000 at the 25th percentile of the working-aged[[2]](#footnote-2) earnings distribution (authors’ calculations). Multiplying $10,000 by 1.27% yields an annual increase in earnings of $127. We calculate the present discounted value using equation 1 below. We assume a discount rate of i=0.03. According to our calculation above, the early benefit B=$127. The average child beneficiary is assumed to be age 9. We use this assumption in the calculation of all child benefits. Increased earnings are assumed to begin at age 22 (a=22) and end at age 64 (A=64). We use this assumption for all estimates on children’s future earnings. We conclude that the present discounted value of increased earnings in adulthood is $2,131 as a result of a $1,000 cash transfer during childhood.

A4.I.b. Hoynes et al. (2016)

Hoynes et al. (2016) examine the long-term health and economic impact of exposure to food stamps between conception and age 5 using the Panel Study of Income Dynamics (PSID). They found that among individuals whose parents were without a high school diploma, exposure to food stamps from conception to age 5 increased earnings by $3,610 (s.e. 5,064). $3,610 (measured in 1995 dollars) is the equivalent of $6,063 in 2019 dollars[[3]](#footnote-3). As discussed in the section on children’s health (A4.II.c.2), they also found that among the full sample, exposure to food stamps from conception to age 5 decreased the probability of having metabolic syndrome by 0.438 (s.e. 0.204) standard deviations and increased the probability of reporting good health by 0.292 (s.e. 0.133) or 30 percentage points. The authors conducted difference-in-differences analyses taking advantage of variation in the introduction of the Food Stamp Program by county. The intent-to-treat group include individuals whose parents were without a high school diploma and who did not receive food stamps as well as those whose parents were without a high school diploma but did receive food stamps. Models controlled for county, year of birth fixed-effects, year of interview, whether child was born to a female-headed household, education of head of household, family income, the child’s gender, child’s marital status, child’s race, quadratic in age of child, state linear time trends, and 1960 county characteristics.

Hoynes et al. (2016) estimate that among families where heads had less than a high school degree, 43 percent participated in food stamps. Thus, in order to adjust results to reflect the impact on treated individuals we divide their results by 0.43, resulting in an estimate of $14,100 ($6063/0.43). Since individuals in the sample were exposed to food stamps for 7 years (from conception (age -1) to age 5), the estimate decreases to $2,014. Average annual food stamps values per person in 1972 (near the midpoint of the study period) were $994 per year in 2019 dollars (Department of Agriculture, 2021). Assuming average households have three individuals, the total household food stamps value would be $2,982 on average. Thus, the impact decreases to $675 ($2014\*(1000/2982). As the paper studies the impact of exposure from conception (age -1) to age 5, we (conservatively) assume that individuals were exposed to food stamps through the entirety of childhood (from age -1 to age 17) but only derived benefits for future earnings during the first 7 years of payments. To measure the impact per year of payments, we multiply results by the 7/19 of years in which they derive benefits, yielding an estimate of $249. Using equation 1, we conclude that the present discounted value of increased earnings in adulthood is $4,186 as a result of a $1,000 cash transfer during childhood.

***A4.I.c. Bailey et al. (2020)***

Bailey et al. (2020) found that exposure to food stamps from conception to age 5 increased future earnings by 0.0114 (s.e. 0.0034) or 1.14 percent. The authors find no additional effects for exposure at ages 6-18. As discussed in section A4.II.c.3 on children’s health, section A4.II.d.2 on children’s longevity, and section A4.IX.b. on crime reduction, they also discovered that as a result of exposure to food stamps, children’s physical ability and health increased by 0.0013 standard deviations (s.e. 0.0013), children’s longevity increased by 0.176 years (s.e. 0.030), children’s future earnings increased by 1.14 percent (s.e. 0.34 percent), adult economic self-sufficiency increased by 0.0043 standard deviations (s.e. 0.0016), and the probability of being incarcerated decreased by 0.0008 (s.e. 0.0004) or 0.08 percentage points. Based on data from the 2001-2013 American Community Survey matched with the 2000 Census Long Form (n=7,705,000), the authors use a difference-in-difference framework exploiting the county-by-county introduction of food stamps. Models control for county of birth, birth year, and birth state fixed effects as well as 1960 county-level characteristics interacted with a linear birth-cohort trend.

Since children in the sample were exposed to food stamps for 7 years (conception to age 5), we divide 1.14 percent by 7, arriving at 0.16 percent. Average annual food stamps values per person in 1972 (near the midpoint of the study period) were $994 per year in 2019 dollars (Department of Agriculture, 2021). Assuming average households have three individuals, the total household food stamps value would be $2,982 on average. Thus a $1,000 cash transfer would increase earnings by 0.055 percent (0.0016\*(1000/2982)). Then, we convert the intent-to-treat estimate to an estimate of the treatment effect on the treated. Using the Panel Study of Income Dynamics, the authors estimate that 16 percent of children participated in food stamps between 1975 and 1977. Thus, we divide 0.055 percent by 0.16, yielding 0.34 percent**.** The authors report that the natural log of the average labor income of the full samples is 10.57, which equals $38,948.67. Income data spans from year 2000-2013 so the midpoint is year 2006. $38,948.67 in 2006 dollars equals to $49,169 in 2019 dollars. Thus, the estimate becomes $168 (0.0034\*49169) increase in income per year. As the paper studies the impact of exposure from conception (age -1) to age 5, we (conservatively) assume that child recipients were exposed to food stamps through the entirety of childhood (from age -1 to age 17) but only derived benefits for future earnings during the first 7 years of payments. We multiply results by the 7/19 of years in which they derive benefits, decreasing the impact to $62. Using equation 1, we conclude that the present discounted value of increased earnings in adulthood is $1,040.

***A4.I.d. Bastian and Michelmore (2018)***

Bastian and Michelmore (2018) found that an additional $1,097 in EITC (2019 dollars) exposure during childhood was associated with an increase in earnings of $646.1 (s.e. 818.3) among children exposed between ages 0 and 5, an increase in earnings of $42.4 (s.e. 415.1) among children exposed between ages 6 and 12, and an increase in earnings of $564.0 (s.e. 244.9), among children exposed between ages 13 and 18. As discussed in the section on children’s educational attainment (section A4.VII.f), the exposure was also associated with a 0.012 (s.e. 0.003) or 1.2 percentage-point higher probability of completing high school, a 0.013 (s.e. 0.005) or 1.3 percentage-point higher probability of completing college and a 0.008 (s.e. 0.004) or 0.8 percentage-point higher chance of being employed in young adulthood among children exposed between ages 13-18. The 1968-2013 waves of the Panel Study of Income Dynamics (PSID) were used to examine the impact of exposure to the federal and state EITC between 1967 and 1995 (n=3,495). The authors measured EITC exposure using the maximum potential federal and state credit a household could receive based on the year, state, and number of children in the household. F-statistics using this maximum credit to predict increased family income were well above the critical value for weak instruments.

To simplify our calculations, we first determined an average impact across all ages by multiplying each of Bastian and Michelmore’s estimates for the three age groups times the proportion of children in that age group. According to Bastian and Michelmore (2018), children exposed to EITC from ages 0-5, from ages 6-12 and from ages 13-18 make up 21.6%, 40.4% and 38% of their samples, respectively. Thus, the weighted average impact is $371 ([646.1\*0.216]+[42.4\*0.404]+ [564.0\*0.38]). Bastian and Michelmore (2018) measure earnings in 2013 dollars. $371 in 2013 dollars is $407 in 2019 dollars. We find that $1,000 of EITC, in 2019 dollars, increased children’s earnings in adulthood by $371 (407\*(1000/1097)). However, these results are for multiple years of exposure to the EITC and include all children in states in which the maximum EITC increased, not just recipient children. We assume the child was exposed to the EITC from age 0-17 (a total of 18 years), yielding a $21 ($371/18) increase in earnings per year of exposure. To convert this intent-to-treat estimate to an estimate of the effects on the treated, we divide $21 by the percentage of EITC-eligible households that received the EITC in 1990 (the middle of the study period), which was 83% (Scholz 1994) [[4]](#footnote-4), resulting in a $25 increase in earnings for a $1000 transfer. Using equation 1, we conclude that the present discounted value of increased earnings in adulthood is $418, as a result of a $1,000 cash transfer during childhood.

***A4.I.e. Price and Song (2018)***

Price and Song (2018) found that an additional $2,962 (2019 dollars) in cash transfers annually for three to five years decreased children’s future earnings by $356 (s.e. 601). As elaborated in section A4.II.c.4 on children’s health, section A4.IV.a.4 on parent’s health and section A4.IV.b.1 on parent longevity, in consequence of the transfer, the probability of children applying for disability benefits (either means-tested and non-means-tested) in adulthood increased by 0.537 percentage points (s.e. 1.25), disability benefits application rate increased among parents by 0.063 (s.e. 0.0199) or 6.3 percentage points, and the likelihood of death rose among parents by 0.0138 (s.e. 0.0196) or 1.38 percentage points. They used long-term outcomes of the Seattle-Denver Income Maintenance Experiment (SIME/DIME) to examine the impact on families (n=52,867) who were randomized to receive cash transfers. On average, the treatment group received $2,962 (2019 dollars) more in transfers annually than the control group for either three or five years, depending on treatment group. Long-term outcomes were measured by matching experimental data with data from the Social Security Administration and Washington State Department of Health. Regressions were conducted via least square, with the main independent variable being a dummy on treatment status. Other controls in the model included indicators for treatment location, race, family type, gender, manpower treatment status, birth date/age and year fixed effects.

$356 is measured in 2013 dollars and in 2019 dollars it would be $391. Adjusting for years of exposure, we divide -$391 by 4 (the unweighted average of 3 and 5) and derive -$98. Finally, to estimate the impact of a 1,000 transfer, we multiply -$98 by (1000/2962). The final estimate is a $33 decrease in earnings per year.

**A4.II. Children’s Health**

**A4.II.a. Birthweight**

***A4.II.a.1. Kehrer & Wolin (1979)***

Kehrer & Wolin (1979) found that participation in the NIT through the Gary Income Maintenance Experiment (GIME) among the low-income Black population changed birthweight by between

-0.26 (s.e. 0.07) and 1.17 (s.e. 0.41) pounds. The GIME was conducted in Gary, Indiana between 1970 and 1974 and consisted of a negative income tax designed to replace welfare programs in place at the time (n= 1,799). Guarantees provided to families differed by family size— participants were randomly assigned to four treatment groups with a combination of tax rates (40% or 60%) and guarantee levels ($4,300, approximately the 1971 poverty line, or $3,300). The experiment was limited to the number of children born during the experiment. Tobin’s maximum likelihood method (Tobit) was conducted on four treatment groups and controlled for numerous household characteristics.

We use Kehrer and Wolin (1979)’s results to measure the impact of a $1,000 increase in household income in utero on birthweight. Using the midpoint of results, we find that participation in the NIT increased birthweight by 0.455 pounds, or 6.5 percent on average (out of an average birthweight of 7 pounds of the control group). The paper doesn’t specify the exact amount of payment received by an average treated family, but according to the report by U.S Senate and Congress, *Welfare Research and Experiment* (1978), by the end of 1973, average payment to a treated, female-headed family in the Gary experiment was $258 a month, the equivalent of $17,942 per year in 2019 dollars. Since the majority of participants in the Gary experiment were female-headed families, we take the $17,942 as the amount of payment received by an average participating family. Thus, $1,000 in an income transfer results in 0.36 percent (0.065\*1000/17942) increase in birthweight. However, only households in which there is already a child would receive the Child Tax Credit transfer during subsequent pregnancies. In other words, only the second children benefit from the transfer and the improvements in birthweight it brought. Since we have calculated through 2019 CPS data that 45% of children are not first-born, we multiply 0.36 percent by 0.45 and yield an estimate of 0.16 percent.

***A4.II.a.2. Almond et al. (2011)***

Almond et al (2011) found that having adjusted for program participation rate, receipt of income transfers from food stamps during the third trimester resulted in an 0.52 percent increased birthweight for White infants, 0.91 percent increased birthweight for Black infants, a 7.63 percent lower fraction of low-birth-weight infants (<2,500 grams) among White infants, and an 8.7 percent lower fraction of low-birth-weight infants among Black infants. The authors combined annual reports of food stamp caseloads from the USDA, county population data, and birth and death data from the National Center for Health Statistics between 1968 and 1977 (n=125,159). Treatment is measured as whether food stamps were introduced during the quarter prior to birth as a proxy for the third trimester. They used variation in the introduction of the food stamp program by county and year to examine the effects of program participation on birth outcomes and infant mortality using a difference-in-difference design.

We use Almond et al. (2011)’s results to measure the impact of a $1,000 increase in household income in utero on birthweight. White infants make up 78% of the sample while Black infants make up 22% of the sample. Average annual food stamps values per person in 1972 (near the midpoint of the study period) were $994 per year in 2019 dollars (Department of Agriculture, 2021). Assuming average households have three individuals, the total household food stamps value would be $2,982 on average. Taking a weighted average of the results for Black and White recipients, we find that a $1,000 income transfer in the form of food stamps yields an increase in birthweight of 0.2 percent ((0.52\*0.78+0.91\*0.22)\*(1000/2982)) and a decrease in the probability of low birthweight of 2.64 percent (7.63\*0.78+8.7\*0.22)\*(1000/2982)). Finally, we multiply 0.2 percent and 2.64 percent by 0.45 for the fact that 45% of children are not first-born and enjoy the benefit of the Child Tax Credit transfer, decreasing the estimate to a 0.09 percent increase in birthweight and 1.19 percent decrease in the probability of low birthweight.

A4.II.a.3. Hoynes et al. (2015)

Hoynes et al. (2015) found that the 1993 expansion of the federal EITC during the third trimester of pregnancy decreased the rate of low birthweight by 0.132 percentage points (s.e. 0.072) relative to an average rate of 8.1 percent among White participants, and 0.728 percentage points (s.e. 0.143) relative to an average rate of 14.4 percent among Black participants. White and Black participants make up 46 percent and 29 percent of the sample, respectively. The weighted average is thus 2.2 percent (0.46\*0.132/8.1 + 0.29\*0.728/14.4). The authors used the U.S. Vital Statistics Natality Data, which includes all births from 1983-1999, and the March Current Population Survey (CPS), focusing on single mothers 18 years or older with a high school education or less (n=76,444) because single filers with children made up about three-quarters of EITC payments and because less-educated parents are more likely to be eligible for the EITC.

The authors found that the impact of the EITC expansion on after-tax income was approximately $1,850 in 2019 dollars. Thus, a $1,000 increase in income as a result of a cash transfer decreases the rate of low birthweight by 1.2 percent (0.02\*1000/1850). Since only 45% of children are not first-born and enjoy the benefit of the Child Tax Credit transfer, we conclude that $1,000 in increased income as a result of a cash transfer is associated with a 0.54 percent (0.012\*0.45) decrease in the rate of low birthweight on average.

***A4.II.a.4. Markowitz et al. (2017)***

Markowitz, Komro, Livingston, Lenhart, & Wagenaar (2017) found that exposure to EITC increased birth weight by between 16.845 (s.e. 6.883) and 27.307 (s.e. 6.083) grams among states with a refundable credit, and between 9.441 (s.e. 3.605) and 12.681 (s.e. 3.680) grams among states with a non-refundable credit. The authors use U.S. National Vital Statistics System birth data, limiting to mothers with a high school education or less (n= 20,206,601), paired with characteristics of state EITCs, including generosity and refundability, from 1994-2013 to examine the impact of state EITC income on birthweight. Supplementary analyses were further conducted separately by marital status, but results did not differ significantly from the primary findings.

We use Markowitz et al. (2017)’s results to measure the impact of a $1,000 increase in household income during childhood on birthweight. Using the midpoint of results, EITC exposure increases birth weight by 22.076 grams, or 0.67 percent (the average birthweight of the sample is 3280.36 grams), in states with a refundable credit and 11.06 grams, or 0.34 percent, in states with nonrefundable credits. The median state EITC was 10 percent of the federal EITC over the period, representing approximately $248 in 2019 dollars (Internal Revenue Service, 2019). Rescaled to estimate the effect of $1,000 in income transfer, the study’s results indicate that birth weight would increase by 2.71 percent (0.0067\*1000/248) in states with a refundable credit and 1.36 percent (0.0034\*1000/248) in states with a nonrefundable credit. Adjusting these results to apply only to the 75 percent of EITC-eligible households that are “treated” through actual receipt of an income transfer in 2005 (near the middle of the study period 2004) (Internal Revenue Service, 2009), our estimates indicate an increase in birthweight of 3.62 percentamong states with a refundable credit and 1.81 percent among states with a nonrefundable credit as a result of a $1,000 cash transfer. Since only 45% of children are not first-born and enjoy the benefit of the Child Tax Credit transfer, the estimates decrease to a 1.63 percent increase in birthweight among states with refundable credit and a 0.82 percent increase in birthweight among states with a nonrefundable credit.

### A4.II.b. Child Neonatal Mortality

Our literature search yielded one quasi-experimental study examining the relationship between cash or near-cash transfers and neonatal mortality (death in first 28 days), by Almond et al. (2011). The authors’ estimates relied on a dataset that combined annual reports of food stamp caseloads from the USDA, county population data, and birth and death data from the National Center for Health Statistics between 1968 and 1977 (n=125,159). Treatment was measured as whether food stamps were introduced during the quarter prior to birth (as a proxy for the third trimester). The authors used variation in the introduction of the Food Stamp Program by county and year to examine the effects of program participation on birth outcomes and infant mortality using a difference-in-difference design. They found that receipt of income transfers from food stamps during the third trimester resulted in a decrease in the neonatal mortality rate among White infants by between 0.0158 (s.e. 0.1194) and 0.0806 (s.e. 0.1242) per 1,000 live births, and among Black infants by between 0.0067 (s.e. 0.4610) and 0.6551 (s.e. 0.4793) per 1,000 live births. Adjusted for program participation rates, the treatment on the treated effect is a 3.4 percent lower neonatal mortality rate for White infants and a 4.02 percent lower rate for Black infants.

White infants make up 78% of the sample while Black infants make up 22% of the sample. Taking a weighted average of the results of Black and White infants results yields a decrease in neonatal mortality of 3.53 percent (3.4 percent\*0.78+4.02 percent\*0.22) at the time of food stamps rolling out. Average annual food stamps values per person in 1972 (near the midpoint of the study period) were $994 in 2019 dollars (Department of Agriculture, 2021). Assuming average households have three individuals, the total household food stamps value would be $2,982 on average. Therefore, we extrapolate that a $1,000 increase in annual food stamps would decrease neonatal mortality by 1.19 percent (0.0353\*(1000/2982)). According to UNICEF (2020), in 2019 the neonatal mortality rate in the United States was 0.37 percent. Therefore, the estimated change in neonatal mortality is 0.0044 percentage points (0.0119\*0.0037).

We monetize changes in mortality using a $9.88 million VSL. To calculate the value of the declines in neonatal fatalities, we multiply the VSL by the 0.0044 percentage-point reduction in mortality. Because the life saved by reducing neonatal fatalities comes during the first year of life rather than in a future year, there is no need to discount the value to the present. We conclude a $1,000 increase in household income as a result of a cash transfer decreases neonatal mortality by a value of $433 (9876998\*0.000044).[[5]](#footnote-5) However, the Child Tax Credit transfer, and therefore the reduction in neonatal mortality, only accrues if there is another child in the household already at the time of birth. In other words, firstborn children do not receive the benefit. To adjust for this, we multiply the result by 0.45, as we calculated through 2019 CPS data that among families with at least one child, 45% of children are not first-born. The value decreases to $195. Lastly, to account for the 19 years of exposure (from conception through age 17), during which time this benefit is only received in the first year, we divide results by 19, decreasing our final estimate of the effects of an annual $1,000 transfer during childhood on neonatal mortality to $10 (This is equivalent to a 0.0001 percentage-point decrease in neonatal mortality).

***A4.II.c. Children’s Health from One Month of Age Onward***

Many studies measuring improvements in health rely upon a self-rated health measure. Self-rated health, in most cases, includes five categories (poor, fair, good, very good, or excellent). We use the self-rated health scale to measure the quality component of QALY. However, self-rated health may not fully capture QALY as there is still some potential value in having poor health as opposed to death. Therefore, we include “death” as an additional category to all self-rated health measures. We assume the distance between each point is equal, ranging from zero (death) to five (excellent health).[[6]](#footnote-6)

***A4.II.c.1. Averett and Wang (2018)***

Averett and Wang (2018) found that increased income under the 1993 federal EITC expansion had the following effects among households with two or more children relative to one-child households with smaller EITC transfers: increased mother-rated reports of children’s health by 0.2294 points (s.e. 0.2000) on a scale from 1 to 4 (with 1 being *poor,* 2 being *fair,* 3 being *good* and 4 being *excellent)*, decreased accident rates by 0.0546 (s.e. 0.0275) or 5.46 percentage points, increased the frequency with which mothers sought medical attention for a child’s illness by 0.0274 (s.e. 0.0410) or 2.74 percentage points, and increased reports of behavioral problems (measured by a standardized z-score) by 0.2435 standard deviations (s.e. 1.1146). The study used the 1979 National Longitudinal Survey of Youth (NLSY79) and the NLSY79 Child and Young Adult (NLSCYA) data and focused on mothers with fewer than 13 years of education as a proxy EITC eligibility (n=12,686). Difference-in-difference and mother fixed effects frameworks were employed to measure the increase in mothers’ report of overall child health. Models controlled for characteristics of mothers and children and for state fixed effects.

We first use the result on mother-rated health for calculation. In order to examine the average impact of a $1,000 cash transfer we first establish that as a result of the EITC expansion, families with two or more children received an increase in EITC benefits that are $1,226 (2019$) greater than families with one child.[[7]](#footnote-7) Therefore, we estimate that mother-rated health of children would increase by 0.19 points (0.2294\*1000/1226) as a result of a $1,000 cash transfer. Next, we divide the impact by years of exposure. We assume children were exposed to the EITC through the entirety of childhood or 18 years (from age 0-17), decreasing the impact to 0.01 points per year.We value the benefit of improved health by utilizing the QALY value of $126,628, described in greater detail in children’s health section in the main text. To make sure that mother-rated health captures the full value of QALY, we add a category of “death” to the scale and give it a value of zero. Thus, death represents $0 of QALY while excellent health (value of 4) represents the full value of $126,628. A 0.01-point increase in absolute value of the scale thus represents a 0.26 percent improvement in health (0.01/4). We therefore estimate that a $1,000 cash transfer increases quality of life by a value of $329 every year ($126628\*0.0026) during childhood.

We then use the result on the frequency with which children suffer from accidents or injuries for the calculation. Having adjusted for $1,226 EITC benefits in 2019 dollars and 18 years of exposure, we obtain a decrease in frequency of 0.25 percentage points per year.To keep the calculation consistent throughout children’s health section, we assume that moving from having no accidents or injuries to having accidents or injuries captures one-sixth of the value of QALY (this assumption is tied to the calculation of metabolic syndrome index in Hoynes et al. 2016, as discussed later in section A4.II.c.2). We estimate that a 0.25 percentage points decrease in frequency of accident and injuries per year translates into a $52 increase in children’s health per year (($126628/6) \* 0.0025) during childhood.

The result on the frequency of illness that requires medical attention could suggest a decline in children’s health. Having adjusted for $1,226 EITC benefits in 2019 dollars and 18 years of exposure, we obtain a 0.12 percentage-point increase in the frequency per year. Assuming that having an illness that requires medical attention captures one-sixth of the value of QALY, we estimate that children’s health decreased by $26 per year during childhood.

The result on children’s behavioral problems also suggests a decline in children’s health. Having adjusted for $1,226 EITC benefits in 2019 dollars and 18 years of exposure, the increase in behavioral problems becomes 0.01 standard deviation per year. Assuming that one standard-deviation of the behavioral health measure represents one-sixth of $126,628, a 0.011 standard-deviation increase in behavioral problems per year represents a loss of $233 per year.

We calculate the present discounted value using equation (1). Using the result on mother-rated health as an example, we assume a discount rate of i=0.03 and yearly benefit of B=$329.We do not discount the yearly benefit at age 9 and start discounting the yearly benefit from age a=10 to A=21. We conclude that the present discounted value of health impact in childhood of a $1,000 cash transfer during childhood is $3,605. The results on the frequency with which children suffer from accidents or injuries, on the frequency of illness that requires medical attention, and on mother-rated behavioral health, yield a present discounted value of $572, -$287 and -$2,551, respectively. Giving all four present discounted values equal weight, we obtain a mean present discounted value of $335.

***A4.II.c.2. Hoynes et al. (2016)***

Hoynes et al. (2016) examine the long-term health and economic impact of exposure to food stamps between conception and age 5 using the Panel Study of Income Dynamics (PSID). They found that that among the full sample, exposure to food stamps from conception to age 5 decreased the probability of having metabolic syndrome by 0.438 (s.e. 0.204) standard deviations and increased the probability of reporting good health by 0.292 (s.e. 0.133) or 29.2 percentage points. Metabolic syndrome is measured using an average standardized z-score of five binary components (obesity, high blood pressure, diabetes, heart disease, and heart attack). Report of good health is based on a self-reported health measure, with scale from 1 to 5 (with 1 being excellent, 2 being very good, 3 being good, 4 being fair, and 5 being poor). Both results on metabolic syndrome and report of good health are treatment-to-treated effects and suggest improvement in health.

We first calculate an estimate using the result on metabolic syndrome.

As discussed above, average annual food stamps values per person in 1972 (near the midpoint of the study period) were $994 in 2019 dollars (Department of Agriculture, 2021); assuming average households have three individuals, the total household food stamps value would be $2,982 on average. Children in the sample were exposed to food stamps for 7 years (from conception (age -1) to age 5). As a result, a $1000 cash transfer would lead the probability of metabolic syndrome to decrease by 0.021 standard deviations (0.438\*(1000/(2982\*7))). As the paper studies the health impact of exposure from conception (age -1) to age 5, we (conservatively) assume that child recipients were exposed to food stamps through the entirety of childhood (from age -1 to age 17) but only derived benefits for future health during the first 7 years of payments. To measure the impact per year of payments, we multiply results by the 7/19 of years in which they derive benefits, decreasing the impact to 0.0077 (0.021\*7/19)) standard deviations per year. We assume that six standard deviations of the metabolic syndrome index approximately capture the full range of quality of life: a standard deviation of -3 would equate to a QALY value of $0 and a standard deviation of 3 would equate to a QALY value of $126,628. We assume the distance between each standard deviation (an absolute value of 6) is equal so one standard deviation captures 1/6 of the value of $126,628. If a $1000 increase in household income during childhood from a cash transfer decreases the probability of having metabolic syndrome by 0.0077 standard deviations per year, the benefit is then $163 (0.0077\*(126628/6)) per year. We assume the average age of child beneficiaries to be 9 and the average age of death to be 78 and that the increase in physical health occurred from age 22 to age 78. Using equation (1), assuming a discount rate of i=0.03 and yearly adult benefit of B=$163 from ages 22 to 78, we conclude that the present discounted value of increased health throughout a child’s adulthood is $3,107 as a result of a $1,000 cash transfer during childhood.

An estimate can also be calculated based on the result on probability of reporting good health. A $1,000 cash transfer would lead the probability of reporting good health to increase by 1.4 percentage points (0.292\*(1000/(2982\*7))). To measure the per year impact, we assume that children are exposed to food stamps during the entire childhood (age -1 to 17) but only derive health benefits for 7 years (age -1 to age 5). Thus, we multiply 1.4 percentage points by (7/19) and obtain a per year impact of 0.52 percentage points. We measure improved health using QALYs. We measure quality of life using a scale that includes death and the five categories in the self-rated health measure (poor, fair, good, very good, or excellent). With death having a value of 0 and excellent health having a value of 5, the maximum increase in health would be an increase of 5 points. We equate death to a QALY value of $0 and equate excellent health to a QALY value of $126,628. Therefore, an increase of one unit of health quality for one year would be valued at (126,628/5). A 0.52 percentage points per year increase in probability of good health would result in a benefit of $131 (0.0052\* (126,628/5) per year. Using equation (1), the present discounted value of improved health is $2,486.

Giving results on metabolic syndrome and probability of good health equal weight, we conclude that the present discounted value of improved health is $2,796.

***A4.II.c.3. Bailey et al. (2020)***

Bailey et al. (2020) found that exposure to food stamps from conception to age five increased physical ability and health, measured between the ages of 25 and 46 using a comprehensive index, by 0.0013 standard deviations (s.e. 0.0013).

The health index used by Bailey et al. (2020) is a standardized z-score and measures whether the respondent has a work disability, ambulatory difficulty, cognitive difficulty, independent living difficulty, vision or hearing difficulties, and/or self-care difficulty. The estimate of 0.0013 standard deviations improvement in physical health was derived from a sample that included all children who were exposed to food stamps rollout and was not limited to recipients. To adjust for this, we divide 0.0013 by the percentage of children in this age group who received food stamps, 16% (calculated by Bailey et al. using the PSID), increasing the impact to 0.008 standard deviations. Since children in the sample were exposed to food stamps for 7 years (conception to age 5), we divide 0.008 standard deviations by 7 and yield 0.001 standard deviations.

Again, the typical household food stamps value in 2019 dollars would be $2,982. The impact of a $1,000 benefit in 2019 dollars is thus 0.001 times the ratio of $1000/$2982, or 0.0004. As the paper studies the health impact of exposure from conception (age -1) to age 5, we (conservatively) assume that child recipients were exposed to food stamps through the entirety of childhood (from age -1 to age 17) but only derived benefits for future health during the first 7 years of payments. To measure the impact per year of payments, we multiply results by the 7/19 of years in which they derive benefits, decreasing the impact to 0.0001 (0.0005\*7/19)) standard deviations per year.

Assuming that one standard-deviation of the physical health measure represents one-sixth of $126,628,a 0.0001 standard-deviation increase in physical health per year is equivalent to $3 (0.000143\*126628/6) per year. Using equation (1), we conclude that the present discounted value of increased health in adulthood is $58 as a result of a $1,000 cash transfer during childhood.

#### A4.II.c.4. Price & Song (2018)

Price and Song (2018) found that a transfer of $2,962 (2019 dollars) for three to five years increased the probability of children applying for disability benefits (either means-tested and non-means-tested) in adulthood by 0.537 percentage points (s.e. 1.25).

Given that a treated family received an average of $2,962 (2019 dollars) more transfer income for 3 to 5 years, we adjust the 0.537 percentage point impact on future disability assistance participation based on the unweighted average of 4 years of exposure. A cash transfer of $1,000 would imply an impact of 0.181 percentage point (0.537\*1000/2962) for 4 years of exposure, or 0.0453 percentage points (0.181/4) higher disability assistance participation per year of childhood receipt. Assuming that moving from not applying for disability benefits to applying for disability benefits reflects a decline in one-sixth of value in health, we estimate that a $1,000 cash transfer decreases quality of life by a value of $10 every year (-0.000453\*126628/6). Using equation (1), we conclude that a $1,000 transfer is associated with a present discounted value of -$182 in children’s health in adulthood.

***A4.II.d. Child Longevity***

***A4.II.d.1. Aizer et al. (2016)***

Aizer et al. (2016) found that in adulthood, sons whose mothers had received Mothers’ Pensions experienced an increase in longevity of 0.0158 (s.e. 0.007) or 1.16 years.

The $20 monthly transfer in 1922 would be worth $307 in 2019, or $3,684 annually for on average three years. Therefore, a $1,000 transfer for one year would increase children’s life by 0.10496 years (1.16\*(1000/3684)/3). Applying the QALY value, an increase in longevity of 0.105 years would be valued at $13,291 (0.10496\*$126,628). Using assumptions described above, we calculate the present discounted value as B/(1+i) t-9, with B=13291, i=0.03 and t=78. We conclude that the present discounted value of increased longevity in adulthood is $1,729 as a result of a $1,000 cash transfer during childhood.

***A4.II.d.2. Bailey et al. (2020)***

Bailey et al. (2020) found that exposure to food stamps from conception to age 5 increased longevity by 0.176 years (s.e. 0.030). This estimate includes all children who were exposed to food stamps and is not limited to recipients. To adjust for this, we divide 0.176 by the percentage of children in this age group who received food stamps, 16% (calculated by Bailey et al 2020 using the PSID). Thus, the treatment-on-the-treated outcome is 1.1 years (0.176/0.16). Children in the sample were exposed to food stamps for 7 years (conception to age 5), so the impact decreases to 0.16 (1.1/7) years in longevity. As discussed above, family food stamps value in 2019 dollars was $2,982 on average. Thus, the impact becomes 0.05 years (0.16\*1000/2982). As the paper studies the impact of exposure from conception (age -1) to age 5, we (conservatively) assume that child recipients were exposed to food stamps through the entirety of childhood (from age -1 to age 17) but only derived benefits for future health during the first 7 years of payments. To measure the impact per year of payments, we multiply results by the 7/19 of years, decreasing the impact to 0.0194 years in longevity per year. We value this increase in life expectancy using QALY. The increase in longevity is thus worth $2458 (0.0194\*$126,628). Assuming that the extension of life occurred at age 78 (conservative, given that the mortality improvements in this study occurred at ages 25-64 so with our assumption we are discounting mortality improvements by more years), we calculate the present discounted value of increased longevity in adulthood as 2458/(1.03)69, which implies a benefit of $320 as a result of a $1,000 cash transfer during childhood.

A4.III. Avoided Health Expenditures for Children

A4.III.a. Beam et al. (2020)- Decline in Healthcare Expenditures in First Six Months of Life

Beam et al. (2020) examine healthcare expenditures among low-birthweight infants for the first six months of life. The study used data on approximately 45 million individuals with a private insurance plan through Aetna from January 2008 through February 2016. Healthcare expenditures include the total amount paid to providers of medical services from both insurer and patient. The authors descriptively find that in 2019 dollars, low-birthweight infants had a median healthcare cost of $51,975 (n=32,508) compared to a median cost of $4,066 for normal birthweight infants (n=727,538). The authors further conducted a generalized linear regression with a logarithmic link function and a gamma distribution to examine the association between birthweight and spending. Spending was measured in the regression analysis as a “spending multiplier,” which represents the multiplicative increase in average spending on a log scale. Regressions controlled for sex, gestational age in weeks, and the occurrence of adverse birth events. Compared to infants greater than 2000 grams, infants of 1750-1999 grams experience the smallest increase in expenditure, by a multiple of 1.34 [1.26, 1.43] (95-percent confidence intervals in brackets) and infants of 500-749 grams experience the largest increase in expenditure, by a multiple of 2.81 [2.27, 3.48]. The increased healthcare expenditures implied by these estimates ranges from $5,449 to $11,426 in 2019 dollars ($4,066 multiplied by 1.34 or 2.81)

As stated above in section A4.II.a.2., through estimates of Almond et al. (2011), we calculate that a $1,000 cash transfer decreases the probability of low birthweight by 1.19 percent. In 2017, 8.3 percent of live births were low birthweight (Beam et al., 2020). Therefore, a $1,000 cash transfer decreased low birthweight by 0.099 percentage points (0.083\*0.0119). Based on these results, we estimate the lower bound value of a $1,000 cash transfer on health expenditures in the first six months of life by multiplying 0.099 percentage points by the lower bound estimated savings of $5,449, which equals $5.37. The upper bound value is obtained by multiplying by the upper bound estimated value of savings, $11,426 yielding an estimated value of reduced medical expenditures of $11.27. The average estimate is thus $8 (we do not need to adjust this estimate further for percentage of children that are not first-born, as birthweight estimates from Almond et al. (2011) are already adjusted for that). We do not discount expenditures saved in the first six months of life.

***A4.III.b. Healthcare Expenditure Elasticity***

We rely on the results of three studies to determine the rate at which healthcare expenditures decrease in relation to increases in health status. Although the studies are not causal, no quasi-experimental study exists, to our knowledge, examining this relationship.

Chern, Wan, and Begun (2002) found that a one percent increase in SF-36 score was associated with 0.19 percent (p < 0.001; s.e. not available) decrease in health expenditures. The study sample included 4,255 randomly selected Trigon BlueCross/BlueShield policyholders in Virginia. The sample was limited to adults between the ages of 18 and 64. Health status was measured in 1994 using the MOS 36-Item Short-Form Health Survey (SF-36). The SF-36 measure used included five dimensions of health and ranged from 0-100 points (physical functioning, role limitations due to physical health problems, body pain, general health, and social functioning). Healthcare expenditures were measured in 1995 and include out-of-pocket expenditures and expenditures covered by insurance. Using a structural equation modeling framework, the authors examined the association between health status and healthcare expenditures, controlling for age, gender, marital status, educational attainment, occupation, race, smoking behavior, high cholesterol, high blood pressure, diabetes, household income, point-of-service (POS) health plans, and Preferred Provider Organization (PPO) health plans. Since their estimate indicates that a one percent increase in health leads to a 0.19 percent decrease in health expenditures, we infer an elasticity of 0.19.

Lima and Kopec (2005) use the 1994-1998 Canadian National Population Health Survey (n=2,084) to examine the impact of health status on health care expenditures. Health status was measured using the Health Utilities Index (HUI). Using a multivariate log-linear model, controlling for sociodemographic characteristics, they found that a 0.1 improvement in HUI is associated with a 10% reduction in annual health care costs (s.e. not available). We infer an elasticity of one.

Desalvo et al. (2009) examine healthcare expenditures by self-rated health status using the 2003-2005 Medical Expenditure Panel Survey (n=7,948). The authors descriptively find that the average healthcare expenditures for individuals with excellent, very good, good, fair, and poor health were $1,654, $2,640, $4,228, $9,831, and $12,709, respectively. To estimate the elasticity of healthcare expenditures in relation to health status we determine the change in healthcare expenditures associated with a one unit increase in health status; We measure the elasticity associated with moving from good to very good health because the average respondent in the sample reported their health to be good. We use DCG/HCC score to measure percentage change in health as it performs the best in predicting health expenditure according to the paper. Moving from good to very good health involves a 25 percent increase in health (good health corresponds to a DCG/HCC score of 1.66 and very good health corresponds to a score of 1.24). Improving health from good to very good is associated with a $1,588 or 38%, decrease in healthcare expenditures. The results imply that the elasticity of health expenditures in relation to health status is 1.48 (38% /25%). In conclusion, the results indicate that the elasticity of healthcare expenditures in relation to health status ranges from 0.19 to 1.48, for an average elasticity of 0.84.

***A4.III.c. Decline in Healthcare Expenditures from 6 Months of Age Onwards***

We rely on estimates from the Centers for Medicare & Medicaid Services (CMS, 2019) on average healthcare spending by age to estimate the value of decreased child healthcare expenditures.The CMS’s most recent estimate of healthcare spending by age was from 2010. Age was divided into five categories: 0-18, 19-44, 45-64, 65-84, and 85 or older. Healthcare expenditures include costs to insurer and patient but exclude non-personal health care spending (government administration and the net cost of private health insurance, noncommercial research, investment in structures and equipment, and government public health activities). Average per capita spending was $3,628 among children, $4,422 among adults 19-44, $8,370 among adults 45-64, $15,857 among adults 65-84, and $34,783 among adults 85 and older. CMS (2020) additionally estimate per capita healthcare expenditures projections for 2019. However, the projections were not disaggregated by age. In 2019, per capita healthcare expenditures were $9,825.[[8]](#footnote-8) This represents a 38% increase from 2010. Assuming growth in healthcare expenses was consistent by age group, we conclude that 2019 per capita health care spending was $5,007 (3628+(0.38\*3628)) among children, $6,102 among adults 19-44, $11,551 among adults 45-64, $21,883 among adults 65-84, and $48,001 among adults 85 and older.

In the section on children’s health, we find that children’s health in childhood (ages 9-21) would increase by 0.02 percent of QALY per year and children’s health in adulthood (ages 22-78) would increase by -0.008 percent, 0.002 percent or 0.116 percent of QALY per year as a result of $1,000 cash transfer. We also find that one percent increase/decrease in health would lead to 0.84 percent decrease/increase in health expenditures. To calculate the monetary value of change in health at a certain age, we multiply the percentage change in health by the healthcare expenditure elasticity and then by per capita health care spending of that age. To calculate the present discounted value, we assume children experience avoided health expenditures from ages 9-21 as a result of increase in health during childhood and experience avoided health expenditures from ages 22-78 as a result of increase in health in adulthood. We conclude that a $1,000 transfer is associated with a $12 decrease in healthcare expenditures from ages 9-21 and an average of $56 (individual values were -$11, $4, $175) decrease in healthcare expenditures from ages 22-78.

A4.IV. Parent health

A4.IV.a. Overall Parent Health

A4.IV.a.1. Larrimore (2011)

Larrimore (2011) found that a $1,541 (2019$) increase in income led to a 0.0032 (s.e. 0.0028) or 0.32 percentage-point increase in the likelihood of having excellent health, a 0.0013 (s.e. 0.0011) or 0.13 percentage-point decrease in the probability of being in poor health and a 0.0328 (s.e. 0.01659) or 3.28 percentage-point decrease in the probability of having any functional limitation. The author examined the impact of income on health among parents 22-62 years-old with incomes below 200% of the federal poverty line using the maximum state plus federal EITC as an instrumental variable for income. Results were examined using the 1992-2005 Survey of Income and Program Participation (SIPP) panels (n=85,397). F-statistic results indicated the maximum EITC was a strong predictor of post-tax income. Health was measured using self-reported health status. The two-stage least squares regressions controlled for state of residence, whether the 1996 welfare reform had been enacted at the time of the observation, year, age, age-squared, race/ethnicity, gender, education, marital status, health insurance status, number of children in the household, and whether the respondent lives in a metropolitan area.

To stay consistent with other studies cited in the parent health section, we use the result on probability of excellent health for calculation. The midpoint of the study period is 1999 and the author was estimating the average marginal effect of a $1000 increase. A $1,000 increase in household income in 1999 is equivalent to an increase of $1,541 in 2019. Thus, we find a 0.21 percentage point (0.32\*(1000/1541)) increase in the likelihood of having excellent health. Larrimore measures self-rated health the same year as the transfer was received so no adjustment for years of exposure is needed. We measure improved health using QALYs valued at $126,628, described in greater detail in the children’s health section in the main text. We measure quality of life using a scale that includes death and the five categories in the self-rated health measure (poor, fair, good, very good, or excellent). With death having a value of 0 and excellent health having a value of 5, the maximum increase in health would be an increase of 5 points. Therefore, an increase of one unit of health quality for one year would be valued at $25,326 ($126,628/5). A 0.21 percentage point increase in the likelihood of having excellent health would then result in a benefit of $53 (0.0021\*$126,628/5) per year.

We calculate the present discounted value assuming the parent is 38 at the first transfer and that parent recipients receive health benefits for the remainder of their life. We conclude that a $1,000 transfer improves the present discounted value of parent health by $1,268.

A4.IV.a.2. Evans and Garthwaite (2014)

Evans and Garthwaite (2014) found that the 1994 EITC expansion increased the probability of mothers’ reporting very good or excellent health by 0.0135 (s.e. 0.0075) or 1.35 percentage points, increased mothers’ poor physical health days in the past month by 0.0105 (s.e. 0.039) or 1.05% (out of an average of 2.65 days among the treatment group), decreased mothers’ poor mental health days in the past month by 0.0754 (s.e. 0.0328) or 7.54% (out of an average of 4.52 days among the treatment group), and decreased the total number of risky health conditions (i.e., total cholesterol, systolic blood pressure, any risky inflammatory condition) by 0.235 (s.e. 0.095) or 23.5% (out of an average of 1.108 conditions among the treatment group). The authors use a difference-in-difference framework, exploiting the 1994 EITC increase in the relative benefit for families with two or more children relative to those with one child. Analyses were conducted using the 1993-2001 Behavioral Risk Surveillance Survey (BRFSS) and the sample was restricted to mothers with a high school education or less (n=82,907). Models control for individual characteristics, state level fixed effects, and time fixed effects.

We use the 1.35 percentage-point increase in the probability of reporting very good or excellent health for the calculation. However, this result is not limited to EITC beneficiaries. In 1999 (near the midpoint of the study period of 1997), 75% of eligible households received the EITC (U.S. Government Accountability Office, 2001). Thus, we divide 1.35 percentage points by 75%, determining that the additional EITC cash transfer to larger families increased the probability of mothers having very good or excellent health by 1.8 percentage points among recipients. The authors find that conditional on receipt, on average, households with two or more children receive $864 (2019$) more in EITC benefits than families with one child, which suggests that a $1,000 increase in EITC payments would increase the likelihood of having very good or excellent health by 2.08 percentage points (1.8\*(1000/864)). The authors measure improved health for 6 years after the increase in transfers. Therefore, per year of exposure the probability of having excellent health increases by 0.35 percentage points (2.08/6). We measure the monetary value of improvements in health using QALYs of $126,628. QALYs are measured using a scale which includes death and the five self-rated health categories. Evans and Garthwaite (2014) examine the probability of having very good or excellent health, so we measure the benefit of moving up one unit, from good to very good health. An increase of one unit of quality would be valued at ($126,628/5). A 0.35 percentage point increase in the likelihood of having very good health then results in a benefit of $88 (0.0035\*126,628/5) per year.

We also use the 1.05 percent increase in the number of bad physical health days for the calculation, because unlike other results, it reflects a decline in mother’s health. To obtain the effect among recipients only, we divide 1.05 percent by 75% (the percent of eligible household that received EITC in 1999), yielding 1.4 percentage points. Adjusting the impact for a $1,000 increase, we increase the impact to 1.62 percentage points (1.4\*(1000/864)). Lastly, to obtain the impact of an exposure of one year, we divide 1.62 percentage points by 6, yielding 0.27 percentage points. The increase in the number of bad physical health days can be considered as an increase of the probability of having bad health. We measure the loss of moving down one unit, from fair to poor health. Multiplying 0.27 percentage points by ($126,628/5), we yield a loss of $68 per year.

We do not use the decrease in total number of risky conditions for the calculation because we are unsure whether such bio-marker measures the continuous health degradation or the probability of future health risks. We do not use the decrease in the number of poor mental health days for the calculation because it is a partial measure of overall health and we remain consistent in not counting the mental health outcome equally with the more comprehensive outcome (in this case the probability of reporting very good or excellent health).

We calculate the present discounted value assuming the parent is 38 at the first transfer and that parent recipients receive health benefits for the remainder of their life. We conclude that the result on probability of good/excellent health implies that a $1,000 transfer is associated with a present discounted value of $2,121. The result on the number of bad physical health days implies a present discounted value of -$1,649. Since the paper has four results on health, three of which suggest improvement in health and one suggests a deterioration in health, we give the result on probability of good/excellent health a weight of 3/4 and the result on bad physical health day a weight of 1/4. The weighted present discount value is $1,178.

***A4.IV.a.3. Morgan et al. (2020)***

Morgan et al. (2020) found that a 10-percentage point higher state EITC (relative to the federal EITC) was associated with a decrease in the prevalence of individuals having frequent poor mental health by 97 [-237.2, 42.6] individuals per 100,000 and a decrease in the prevalence of individuals with frequent poor physical health by 150 [-284.4, -14.9] individuals per 100,000, with 95-percent confidence intervals shown in brackets. The prevalence of having suboptimal overall health increased by 31 per 100,000 individuals [-123.3, 185.9]. The authors use a difference-in-difference framework to examine the impact of increased state EITC transfers on health using state and year variation in the EITC. Analyses were conducted using the 1993-2016 Behavioral Risk Factor Surveillance System survey. The sample was limited to adults with a high school education or GED equivalent or less (n=2,884,790). Frequent poor physical health is measured as whether the respondent reported having had 14 or more days in the past month in which they would describe their physical health as “not good.” Overall health is measured by a self-reported health scale from 1 to 5 (with 1 being excellent, 2 being very good, 3 being good, 4 being fair, and 5 being poor). Respondents with fair or poor health are regarded as having suboptimal health. States with non-refundable EITC’s were considered to not have an EITC and were lumped with non-EITC states. Models control for state minimum wage, state GDP, adoption of Medicaid expansion, state fixed effects, and year fixed effects.

Results indicated that a 10-percent higher state EITC (relative to the federal EITC) was associated with a decrease in the number of people reporting frequent poor physical health of 150 per 100,000 individuals, or 0.15 percentage points. In 2004 (the approximate midpoint of the study period), the average federal EITC was $1,834 (Kneebone, 2007). Therefore, a 10 percent increase in the state EITC, relative to the federal EITC, would be $183.4, the equivalent of $248 in 2019 dollars. Thus, we estimate that a $1,000 increase in cash transfers would decrease frequent poor physical health by 605 ((1000/248)\*150) per 100,000 individuals, or by 0.605 percentage points. However, these results include all households with a high school education or less and are not limited to treated individuals. According to Internal Revenue Service (2013), 20% of households with a high school education or less are eligible for the EITC. To estimate the effect of the treatment on the treated, we divide 0.605 by 0.2, yielding 3.03 percentage points. Lastly, we adjust results for years of exposure. The authors do not describe the average years of exposure. We assume state EITC programs were implemented or expanded at the midpoint of the study period on average, 2004. This would indicate the average years of exposure was 12. Thus, we conclude that per year, a $1,000 state EITC decreases the prevalence of frequent poor physical health by 0.25 (3.03/12) percentage points. To remain consistent with the valuing procedures used in the remainder of parent health estimates, we assume the frequent poor physical health measure captures the equivalent of moving one-fifth of a QALY. Thus, results indicate a 0.25 percentage-point decrease would result in a benefit of $64 (0.0025\*126628/5) per year.

Following the same process, we monetize the result on suboptimal health, which indicates a decline in parent health. Results indicate that a 10-percent higher state EITC was associated with a 0.031 percentage-point increase the prevalence of suboptimal health. A $1,000 transfer would increase the prevalence by 0.125 percentage points (0.031\*(1000/248)). The treatment on the treated effect would be 0.625 percentage point (0.125/0.2). Lastly, to adjust for years of exposure, we divide 0.625 by 12, yielding 0.05 percentage points per year. Multiplying -0.05 percentage point by ($126628/5), we arrive at a loss of -$13 in parent health per year.

We do not use the result on poor mental health for the calculation because it is a partial measure of overall health and we remain consistent in not counting the mental health outcome equally with the more comprehensive outcome (in this case the prevalence of having suboptimal overall health).

We calculate the present discounted value assuming the parent is 38 at the first transfer and that parent recipients receive health benefits for the remainder of their life. The result on physical health indicates that per $1,000 transfer, parent health increases by a present discounted value of $1,539. The result on suboptimal health indicates that per $1,000 transfer, parent health decreases by a present discounted value of $318. Since the paper reports three results on health, two of which suggest an improvement of health and one of which suggests a decline, we give the result on physical health a weight of 2/3 and the result on suboptimal health a weight of 1/3. The weighted present discounted value is $920.

***A4.IV.a.4. Price and Song (2018)***

Price and Song (2018) found that a $2,962 (2019 dollars) transfer for three to five years resulted in a 6.28 percentage-point increase in disability benefits application rate among parents (s.e. 0.0199).

Having adjusted the result to reflect the impact of a $1,000 dollars cash transfer, the impact decreases to 2.12 percentage points (6.28\* (1000/2962)). Having adjusted for 4 years (an unweighted average of 3 and 5) of exposure the impact further decreases to 0.53 percentage points (2.12/4). We value the benefit of improved health by utilizing QALY, valued at $126,628. To remain consistent with other impact studies in this section, we assume that moving from not applying for disability benefits to applying for disability benefits reflects a decline in one-fifth of the value of QALY. We multiply $126628/5 by 0.53%, yielding a loss of $134 in parent health per year. We calculate the present discounted value assuming the parent is 38 at the first transfer and that parent recipients receive health benefits for the remainder of their life. We conclude that a $1,000 transfer is associated with a present discounted value of -$3,237 in parent’s health.

***A4.IV.b. Longevity or Mortality***

***A4.IV.b.1. Price and Song (2018)***

Price and Song (2018) found that an additional $2,962 (2019 dollars) in cash transfers annually for three to five years increased the likelihood of death among parents by 0.0138 (s.e. 0.0196) or 1.38 percentage points.

When we adjust their estimate to measure the impact of a $1,000 transfer, the impact decreases to 0.47 percentage points (1.38\*(1000/2962)). To account for years of exposure, we divide by 4 (an unweighted average of 3 and 5), decreasing our estimate to 0.12 percentage points (0.47/4). We value the change in mortality by utilizing QALY, valued at $126,628. As a result, a 0.12 percentage point increase in the probability of death represents a QALY decrease of

$147 (126628\*0.0012). We calculate the present discounted value assuming that adults received the first transfer benefit at age 38 (based on the assumption that a parent is 29 at their child’s birth (based on the mean age of mothers at birth as of 2019 according to CDC Vital Statistics)) and that the extension of life occurred at age 78 (life expectancy in the U.S. in 2018). We plug zero into the equation from ages 38-77 and -$147 for age 78. We conclude that $1,000 transfer is associated with a present discounted value of -$45 in parent longevity.

A4.IV.b.2. Aizer et al. (2020)

Aizer et al. (2020) found that the Mothers Pension Program increased mother’s longevity by 0.247 years (s.e. 0.494). Sample was restricted to mothers who had applied for the program only once no later than 1930 (n=16,228). The causal impact of the program was evaluated through OLS regressions that controlled for county fixed effect, application year fixed effect, individual control, county control and state control.

Mothers participated in the program for an average of three years. The $20 monthly transfer in 1922 would be worth $307 in 2019, or $3,684 annually for on average three years. Adjusting the impact for a $1000 transfer, mother’s longevity would rise by 0.07 years (0.247\*(1000/3684)). Adjusting for years of exposure, mother’s longevity would rise by 0.02 years (0.07/3). We value the change in mortality using QALYs, valued at $126,628. Therefore, a 0.02-year of increase in longevity is equivalent of $2,830 (0.02\*126628) ($2,830 per year is around 2.23% of QALY per year) and the present discounted value is $868.

A4.IV.b.3. Chetty et al. (2016)

Chetty et al. (2016) found that an increase in income from $14,000 to $20,000 (moving from the 10th to the 15th income percentile) was associated with an increase in longevity of 0.7-0.9 years (s.e. not available). The authors used population-level tax records and Social Security death records between 1999 and 2014 to examine the relationship between pre-tax income and life expectancy. The study included all individuals with incomes above zero between the ages of 40 and 76 with a valid Social Security Number in the specified years, and measured income using tax records. The authors defined income as adjusted gross income plus tax-exempt interest income minus taxable Social Security and disability benefits. Respondents were assigned a percentile rank from 1 to 100 based on their income relative to all other individuals with the same sex and age during this period. The relationship between income percentile and life expectancy was approximately linear. Life expectancy was measured using the expected length of life for a hypothetical individual who faced a mortality rate at each age that matched those in the cross-section during a given year. Results were analyzed separately for men and women. To help mitigate concerns regarding reverse causality, mortality was measured two years after income (2001-2014). Their estimate of increased longevity implies that per $1,000 increase in household income, the present discounted value of longevity is $234. Even though the paper is not causal, its results do assist in establishing an upper-bound estimate.

Chetty et al. found that an increase in income from $14,000 to $20,000 (moving from the 10th to the 15th income percentile) was associated with an increase in longevity of 0.7-0.9 years (s.e. not available). Income was measured in 2012 dollars. The $6,000 increase is the equivalent of $6697 increase in 2019. Extrapolating from these results, a $1,000 increase in income was associated with between a 0.1 (0.7\*(1000/6697)) and 0.13 (0.9\*(1000/6697)) year increase in life expectancy. We use the approximate midpoint of this range for our final estimate, 0.12 years. A QALY is valued at $126,628 (described in greater detail in children’s health section in the main text). As a result, a 0.12-year increase in life represents a QALY increase of $15,127. To account for years of exposure, we divide results by 21.5 (assuming that on average parents will have 2 children. Through CPS data we found that in two-children families, siblings are spaced 3.5 years apart on average, leading to parent’s eligibility to receive a transfer for 21.5 years), decreasing our estimate to $704. We calculate the present discounted value assuming that adults received the first transfer benefit at age 38 (based on the assumption that a parent is 29 at their child’s birth (based on the mean age of mothers at births as of 2019 according to CDC Vital Statistics)) and that the extension of life occurred at age 78 (life expectancy in the U.S. in 2018). We conclude that $1,000 transfer is associated with a present discounted value of $216 in increased longevity.

Using three studies above, we conclude that the average present discounted value of increased parental longevity is $346.

**A4.V. Avoided Health Expenditures for Parents**

We rely on the Centers for Medicare & Medicaid Services (2019) to estimate average health expenditures. As explained in section A4.III.c, using the Centers for Medicare & Medicaid Services (2019)’s results, we estimate that 2019 per capita health care spending averaged $6,102 among adults 19-44, $11,551 among adults 45-64, and $21,883 among adults 65-84.

According to table 2, a $1,000 cash or near-cash transfer increases a parent’s health by

-0.106 percent, 0.03 percent, 0.039 percent or 0.042 percent of QALY per year. We use the same calculation method in the section on children’s health expenditures to convert this percentage change in health into monetary value of change in healthcare expenditures. We calculate the present discounted value of health expenditures, assuming that parents experience benefits in avoided health expenditures from ages 38-78. We conclude that a $1,000 transfer is associated with an average present discounted value of $3 in reduced health expenditures (individual values were -$264, $75, $96, and $104).

**A4.VI. Parents’ Mental Health**

A4.VI.a. Boyd-Swan et al. (2016)

Boyd-Swan, Herbst, Ifcher, & Zarghamee (2016) found that the 1990 EITC expansion increased married mothers’ reported self-worth by 0.0738 points (s.e. 0.0304), self-satisfaction by 0.0535 points (s.e. 0.0375), self-efficacy by 0.0841 points (s.e. 0.0379), happiness by 0.2413 points (s.e. 0.1210), and decreased married mothers’ Center for Epidemiological Studies-Depression (CES-D) score by 1.3810 points (s.e. 0.6500) out of an average of 8.78 points. The authors conducted a difference-in-differences examination using two waves of the National Survey of Families and Households (NSFH); the first wave was administered in 1987 and 1988 and the second from 1992-1994, providing an observation before and after the 1990 EITC expansion. The sample was limited to women aged 16-55 with no more than a high school education. The treatment group was married women living with EITC-qualifying children and the control group was married women who did not live with qualifying children. The CES-D scale asks respondents how many days in the previous week they experienced 11 depressive symptoms. Responses are coded as zero (zero days), one (one to two days), two (three to four days), or three (five to seven days). When summed, the scale ranged from zero to 33, with a higher score signaling a more severe level of depression.

We rely on the CES-D results as opposed to other mental health measures as it is the most comprehensive. The sample of the paper includes all mothers that were likely to receive the EITC, not just those who actually received it. In 1999 (near the midpoint of the study period of 1993), 75 percent of eligible households received the EITC (U.S. Government Accountability Office, 2001). Thus, to obtain the treatment to the treated effect, we divide 1.3810 points by 75 percent and obtain 1.8413 points. The authors also do not describe the amount of EITC that mothers’ households received on average. According to Scott and Crandall-Hollick (2014), in 1993 the average EITC household received a credit of 1,824 in 2019 dollars. Adjusting the impact for a $1,000 cash transfer yields an impact of 1.0095 points (1.8413\*(1000/1824)). Furthermore, recipients had been exposed for an average of three years, for a per-year impact of 0.3365 (1.0095/3) points. Since CES-D score ranges from zero to 33 points, a decrease of 0.3365 points represents an increase of mental health of 1 percent (0.3365/33).

***A4.VI.b. Gangopadhyaya et al. (2020)***

Gangopadhyaya, Blavin, Braga, & Gates (2020) found that a $1,000 increase in the maximum EITC benefit was associated with between a 0.016 (s.e. 0.006), or 1.6 percentage-point, and a 0.023 (s.e. 0.006), or 2.3 percentage-point, decrease in probability of having at least one poor mental health day in the past month among married and unmarried mothers, respectively. It was also correlated with between a 0.254-day (s.e. 0.106) and a 0.207-day (s.e. 0.119) reduction in the number of poor mental health days in the past month among married and unmarried mothers, respectively. They also discovered different employment responses between married and unmarried mothers: a 0.008 (s.e. 0.004) or 0.8 percentage-point reduction in employment among those married and a 0.031 (s.e. 0.005) or 3.1 percentage-point increase in employment among those unmarried. The authors examined the effect of EITC expansions on maternal mental health using both variation in maximum state EITC benefits over time and variation in maximum federal EITC benefits by family size. The authors used the 1993-2016 Behavioral Risk Factor Surveillance System (BRFSS). The sample was limited to nonelderly mothers with a high school education or less who had a child under the age of 19 in their household. Regression analyses control for state fixed effects, year-quarter fixed effects, number of children in the household, race/ethnicity, gender, age, education, marital status, state’s parental Medicaid eligibility income limit, ACA Medicaid expansion status, state minimum wage, TANF needs standards, whether the state’s governor is a Democrat, and share of the state’s population that is Black, Hispanic, other race, 0-17 years old, and 65 years or older.

In order to estimate the impact of a $1,000 cash transfer on mental health, we rely on the results for married mothers because, as mentioned previously, the paper found that married mothers experience a smaller change in employment. Therefore, their improvement in mental health is driven primarily by the EITC benefit itself and not changes in employment. We use the results on number of poor mental health days rather than the results on having at least one poor mental health day, because its specificity makes it easier to monetize. The sample is not limited to beneficiaries of the EITC, so adjustment is needed to obtain the treatment to the treated effect. The middle of the study period is 2005 and according to Internal Revenue Service (2009), 75 percent of eligible households have received EITC in the 2005 tax year. Dividing 0.254 days by 75 percent yields 0.339 days. Gangopadhyaya et al. (2020) estimated that a $1,000 increase in the maximum available EITC was associated with a $280 increase in the amount of imputed EITC benefits in 2016 dollars, the equivalent of $298 in 2019 dollars. Thus, a $1,000 increase in real EITC benefits decreased the number of poor mental health days by 1.136 days (0.339\*[1000/298]). On average, married mothers have 4.36 days of poor mental health days. A 1.136-day decrease represents a 26 percent improvement in mental health.

**A4.VII. Children’s Educational Attainment**

Based on six studies below, we found that a $1,000 cash transfer would increase children’s years of schooling by 0.002-0.03 years. The mean increase is 0.01 years.

***A4.VII.a. Akee et al. (2010)***

Akee et al. (2010) found among American Cherokee children, receiving tribal casino payments led to an increase in years of education of 0.379 (s.e. 0.447) and 0.117 (s.e. 0.304) years among the age 9 and age 11 cohorts, respectively, and an increase in the probability of graduating high school by age 19 of 0.156 (s.e. 0.073) or 15.6 percent for the age 9 cohort and 0.042 (s.e. 0.066) or 4.2 percent for the age 11 cohort. The authors used data from the Great Smoky Mountains Study (GSMS), which began in 1993 and included a representative sample of children aged 9, 11, and 13 in 11 counties in North Carolina (n=1,185). American Cherokee children within the included counties were oversampled (350). In 1996, the Eastern Band of Cherokees opened a casino. Each tribal member received a proportion of the casino’s profits. The two youngest age cohorts (ages 9 and 11) were identified as “after-treatment” cases and the oldest cohort (age 13) functioned as the “before-treatment” case. Casino payments began in 1997, when children were 13, 15, and 17; therefore, each age cohort lived in homes in which the parent(s) received payments for 6, 4, and 2 years, respectively. Linear regression models controlled for the number of adults in the household eligible for the casino payments, the age cohort of the child, an interaction term of the age cohort and number of adults, household poverty status prior to the opening of the casino, sex of child, race of child, and education levels of both parents. Outcomes were measured at ages 19 or 21.

According to Akee et al. (2010), annual payments were an average of $4,000 starting in 1996, which is the equivalent of $6,538 in 2019. Therefore, to determine the change in educational attainment associated with a $1,000 cash transfer, we divide results by (1000/6538). Age 9 cohort experienced a 0.06-year (0.379\*(1000/6538)) increase in years of education and a 2.39 percent (15.6 percent/\*(1000/6538)) increase in the probability of graduating high school. Age 11 cohort experienced a 0.02-year (0.117\*(1000/6538)) increase in years of education and a 0.64 percent (4.2 percent\*(1000/6538)) increase in the probability of high school graduation. The age 9 cohort was exposed to transfers for a total of 6 years and the age 11 cohort was exposed for 4 years. A one year $1,000 transfer increased the probability of graduating high school by between 0.16 percent (0.64 percent/4) and 0.4 percent (2.39 percent/6). It increased years of education by between 0.004-year (0.02/4) and 0.01-year (0.06/6). Since age 9-cohort makes up 54 percent of the post-treatment group and age-11 cohort makes up of 46 percent of the post-treatment group, the weighted increase in high school graduation is 0.29 percent (0.16 percent\*0.46+ 0.4 percent\*0.54) and the weighted increase in educational attainment is 0.007 years (0.004\*0.46 + 0.01\*0.54). If we want to express the increase in years of education in percentage, then given that the control group (households with no American Indian parent) has an average of 11.96 years of education, a one year $1,000 transfer increased years of education by between 0.04 percent (0.004/11.96) and 0.08 percent (0.01/11.96). The weighted increase in years of education is 0.06 percent (0.04 percent\*0.46 + 0.08 percent\*0.54).

***A4.VII.b. Maxfield (2015)***

Maxfield (2015) found that a $1,000 increase in maximum EITC led to a 0.0139 (s.e. 0.0078) or 1.39 percentage-point increase in the probability of completing one or more years of college at age 19, a 0.0207 (s.e. 0.0099), or 2.07 percentage-point increase in the probability of receiving a high school diploma or GED at age 19 and a 0.0295 (s.e. 0.0301) increase in years of schooling at age 19. The author used the 1979 National Longitudinal Survey of Youth (NLSY) and corresponding child file. The data included children of all ages linked to their mother between 1988 and 2000, covering all major federal EITC expansions, and long-term outcomes for the children as young adults between 1994 and 2010. The sample was limited to children whose family was ever eligible to receive the EITC and to children who have a sibling in the sample (n=2,720). EITC exposure is measured based on the maximum federal and state EITC the household was eligible for by year, number of children, and state. Ordinary least squares (OLS) analyses controlled for child age and age squared, mother’s score on the Armed Forces Qualification Test (AFQT), indicators for race, sex, birth order, and birth year, mother’s age and age squared, mother’s marital status, age of mother at birth of child, mother’s educational attainment, the age the child would be expected to graduate high school, number of children in the household, maximum welfare benefit by state and year for a family of three, per pupil spending on K-12 public education in state and year, and state, year, and family fixed effects.

The author found that the average probability of obtaining a high school diploma or GED at age 19 is 75 percent, the average probability of completing one or more years of college at age 19 is 25 percent, and the years of schooling completed at age 19 on average is 12.07 years. Therefore, a 2.07 percentage-point increase in the probability of obtaining a high school diploma or GED represents a 2.76 percent increase, a 1.39 percentage-point increase in the probability of completing one or more years of college represents a 5.56 percent increase, and a 0.0295-year increase in years of schooling represents a 0.24 percent increase. The author states that a $1,000 increase in maximum EITC benefit increased average estimated EITC payments by $328 in 2008 dollars, the equivalent of $384 in 2019 dollars. Therefore, a $1,000 increase in real EITC payments increases the probability of receiving a high school diploma or GED by 7.19 percent (2.76 percent\*(1000/384]), increases the probability of completing one or more years of college by 14.48 percent (5.56 percent\*(1000/384)) and increases years of schooling by 0.64 percent (0.24 percent\*(1000/384]). Children in the sample were an average of 8 years old, meaning they were exposed to the increased EITC for an average of 10 years (age 8-17). Thus, a one-year, $1,000 increase in EITC payments increases the probability of receiving a high school diploma or GED by 0.72 percent, increases the probability of completing one or more years of college by 1.45 percent, and increases years of schooling by 0.06 percent. Lastly, since the sample includes children whose families were ever eligible for EITC, not those whose families have actually received EITC, we divide all impacts by 75 percent (U.S. Government Accountability Office, 2001), which is the percentage of eligible households that claimed EITC in 1999 (near the middle of the study period of 1994). The impact on receiving high school diploma or GED becomes 0.96 percent, on completing one or more years of college becomes 1.93 percent, and on years of schooling becomes 0.08 percent. If we express the increase in schooling in terms of years, then the increase is 0.01 years (((0.0295\*(1000/384))/10)/0.75).

***A4.VII.c. Michelmore (2013)***

Michelmore (2013) found that a $1,000 increase in the maximum state EITC increased the likelihood of being enrolled in college by 0.015 (s.e. 0.012), increased the likelihood of ever being enrolled in college by 0.027 (0.012), increased years of educational attainment by 0.107 years (s.e. 0.051) or 0.89 percent (0.107 years out of an average of 11.97 years), and increased the probability of high school completion by 0.023 (s.e. 0.012) or 3.29 percent (2.3 percentage points out of an average of 70 percent). Data was derived from the Survey of Income and Program Participation (SIPP), pooling panels from 1990 through 2008. Data when individuals were 18-23 years old was used for this analysis, with parental educational attainment as a proxy for EITC eligibility. Participants living with parents who had no schooling beyond a high school degree were considered EITC-eligible (n=25,337). The study employed a difference-in-differences analysis with variation in treatment dosage to determine the impact of state EITCs on educational attainment. Analyses examined the impact of within state EITC expansions on educational attainment relative to changes in outcomes among individuals in untreated states. Models controlled for demographic characteristics and year and state fixed effects.

To remain consistent with other literature, we focus on results for high school completion and years of education. The author does not describe the change in dollars received associated with a $1,000 increase in the maximum EITC. We assume the increase is $384 in 2019 dollars, as found by Maxfield (2015). This results in a 8.57 percent (0.0329\*(1000/384)) increase in the likelihood of completing high school and a 2.32 percent (0.0089\*(1000/384)) increase in years of education. Individuals were exposed to the EITC for between 7 and 18 years (individuals in the sample were younger than 12 years old). We take the midpoint of the range of exposure, 12.5 years. Thus, a one-year, $1,000 increase in EITC benefits increased the likelihood of completing high school by 0.69 percent (8.57 percent/12.5) and increased years of education by 0.19 percent (2.32 percent/12.5). Next, we adjust results to apply only to the 75 percent of EITC-eligible households that are “treated” through actual receipt of an income transfer (U.S. Government Accountability Office, 2001). We find that per $1,000 cash transfer the probability of completing high school increased by 0.91 percent and increased years of education by 0.25 percent. If we express the increase in education in terms of years, then the increase is 0.03 years (((0.107\*(1000/384))/12.5)/0.75).

***A4.VII.d. Hoynes et al. (2016)***

Hoynes et al. (2016)found that exposure to food stamps in early childhood increased the probability of receiving more than a high school education by 0.184 standard deviations (s.e. 0.108). We do not use this result to measure the impact of a $1,000 transfer on educational attainment because the outcome differs slightly from remaining literature and we are unable to convert results presented in z-scores to percentage terms due to absence of the standard deviation of the mean.

***A4.VII.e. Aizer et al. (2016)***

Aizer et al. (2016) found that in adulthood, sons whose mothers had received Mothers’ Pensions experienced an increase in years of schooling of 0.316 years (s.e. 0.262), a 3.4 percent increase.

As previously stated, the $20 monthly transfer in 1922 would be worth $307 today, or $3,684 annually for on average three years. Therefore, a $1000 transfer for one year would increase years of education by 0.31 percent [0.034\* ((1000/3684)/3)]. If we express the increase in education in terms of years, then the increase is 0.03 years ((0.316\*(1000/3684))/3).

***A4.VII.f. Bastian and Michelmore (2018)***

Bastian and Michelmore (2018) found that an exposure of $1,097 in EITC benefit (2019 dollars): prior to age five, decreased the probability of graduating high school by 0.005 (s.e. 0.005) or -0.5 percent and decreased educational attainment by 0.024 years (s.e. 0.071) or -0.18 percent (based on an average of 13.7 years); between the ages of 6 and 12, decreased the probability of graduating high school by 0.003 (s.e. 0.003) or -0.3 percent, and increased schooling by 0.008 years (s.e. 0.022) or 0.06 percent (based on an average of 13.7 years); and between the ages of 13 and 18, increased the probability of graduating high school by 0.012 (s.e. 0.003) or 1.2 percent and increased schooling by 0.081 years (s.e. 0.025) or 0.59 percent (based on an average of 13.7 years).

To simplify calculations, we first calculate an average impact across all ages by multiplying each of Bastian and Michelmore’s estimates for the three age groups times the proportion of children currently in that age group. According to Bastian and Michelmore (2018), children exposed to EITC from ages 0-5, from ages 6-12 and from ages 13-18 make up 21.6%, 40.4% and 38% of their samples, respectively. This results in an increase in the probability of graduating high school by 0.23 percent and increase the average years of schooling by 0.21 percent. However, these results are for multiple years of exposure to EITC and include all children in states in which the maximum EITC increased, not just recipient children. We assume the child was exposed to the EITC in all 18 years, yielding a 0.01 percent increase in the probability of graduating high school and a 0.01 percent increase in the average years of schooling. To convert this intent-to-treat estimate to an estimate of the effects on the treated, we divide each estimate by 83 percent (Scholz 1994), which was the EITC participation rate in 1990 (the middle of the study period). It results in a 0.02 percent increase in the probability of graduating high school and a 0.01 percent increase in schooling for a $1000 transfer. Finally, to obtain the impact of a $1,000 increase, we multiply the estimate by (1000/1097), resulting in a 0.01 percent increase in the probability of graduating high school and a 0.01 percent increase in years of schooling. If we express the increase in schooling in terms of years, then the increase is 0.002 years, calculated as the following:

(((((-0.024\*0.216)+ (0.008\*0.404)+(0.081\*0.38))/18)/0.83)\*(1000/1097)).

***A4.VII.g. Thompson (2019)***

Thompson (2019) found that exposure to an average-sized casino operation over the entirety of childhood increased the probability of receiving an associate’s degree by 0.057 (s.e. 0.027) or 5.7 percentage points, increased the probability of receiving a bachelor’s degree by 0.010 (s.e. 0.009) or 1 percentage point, increased educational attainment by 0.328 years (s.e. 0.070), and increased the probability of high school graduation by 0.041 (s.e. 0.011) or 4.1 percentage points. The author examined educational attainment among self-identified American Indians in 36 counties where a tribal casino was opened during respondents’ childhood. Analyses were conducted using the 2000 Decennial Census IPUMS samples and American Communities Survey (ACS). A difference-in-differences framework was used to compare the educational attainment of American Indian individuals from the same county with differing levels of exposure to tribal casino payments. The within-county differences were then compared to determine whether results differed based on the size of the county’s casino operations. The sample was limited to self-identified American Indian individuals from counties that opened a casino between 1987 and 2004. The author was able to identify respondents’ current county of residence (during adulthood) and state of birth but was unable to identify what county the individual resided in throughout childhood. As selective migration might bias findings, the author limited the sample to individuals currently living in a county in the same state as they were born (n=11,647). Casino exposure was measured by dividing the number of slot machines operated by the American Indian casino in the county by the size of the American Indian population per county and year. The casino exposure measure was then scaled so that a one-unit increase corresponded to an individual spending their full childhood in a county with an average-sized gaming operation and American Indian population. Outcomes were measured between the ages of 22 and 40. Analyses controlled for county and cohort fixed effects, age at time of survey, tribal identity, and gender.

Transfer income increased by $304.9 (s.e. 47.1) in the average American Indian household. Hourly wage increased by $1.56 (s.e. 0.093) and unemployment decreased by 0.020 (s.e. 0.004) or 2 percentage points. Results indicate that increased educational attainment of children was likely a result of both improved labor market opportunities and transfer payments for the family. Of the total $3,548 increase in income among American Indian families, 8.6 percent ($305 in 2016 dollars or $325 in 2019 dollars) was a result of transfer income. We assume the same proportion of increased educational attainment was a result of transfer income. Therefore, the income transfer increased educational attainment by 0.03 (0.086\*0.328) years or 0.23 percent (out of the control group mean of 12.33 years) and increased the probability of high school graduation by 0.35 (0.086\*0.041) percentage points or 0.46 percent (out of the control group mean of 76 percent). A $1,000 transfer would then increase educational attainment by 0.7 percent (0.0023\*(1000/325)) and the probability of high school graduation by 1.43 percent (0.0046\*(1000/325)). Results represent the impact of exposure to the transfer for 18 years, so we adjust results for years of exposure. We find that a $1,000 cash transfer increased educational attainment by 0.04 percent (0.007/18) and the probability of high school graduation by 0.08% (0.0143/18). If we express the increase in educational attainment in terms of years, then the increase is 0.005 years (((0.328\*0.086)\*(1000/325))/18).

**A4.VIII. Child Welfare**

***A4.VIII.a. Berger et al. (2017)***

Berger et al. (2017) found that $1,000 in potential EITC is associated with a decrease in the probability of neglecting a child, a decrease in the probability of abusing a child, and a 0.0027 (s.e. 0.0038) or 0.27 percentage-point decrease in the probability of being investigated by Child Protective Services (CPS). Using the Fragile Families and Child Wellbeing Study (4,040 family-wave observations), the authors use an instrumental variable strategy to examine the effect of income on child maltreatment. Income is instrumented using state and national variation in EITC generosity. The sample is limited to unmarried families with AGIs of no more than $45,000 per year (nominal dollars). EITC generosity is measured using TAXSIM based on year, income, filing status, number of dependents, and state of residence. F-statistic results indicated the EITC was a strong predictor of post-tax income. Child maltreatment is measured using mothers’ self-reports of having been investigated by CPS, indicators of physical violence, and indicators of neglect. Analyses control for race/ethnicity, maternal education, number of biological children in household, family structure, age of youngest child, mother’s age, whether the mother reported no household income, average of lagged and current household income, census tract unemployment rate, census tract public assistance receipt rates, wave of observation, and state of observation.

The authors find that a $1,000 increase in potential EITC benefits is associated with a $936 to $1,030 increase in income in 2009 dollars; We use the average of this range of earnings, $983, which is the equivalent of $1,167 in 2019 dollars. Thus, the impact on the probability of CPS investigation becomes 0.23 percentage points (0.27\*(1000/1167)). Fang et al. (2012), based on federal, state, and local expenditures on child welfare activities (CPS investigations and foster care) and the number of CPS-involved children, estimate that the average per-year cost per investigated child is $7,728 (2010 dollars), the equivalent of $9,082 (2019 dollars). Therefore, we estimate that a $1,000 transfer is associated with $21 (9082\*0.0023) in decreased spending on child welfare investigations. Berger et al. (2017)’s sample is limited to unmarried mothers. However, based on correspondence with Berger, who reported finding similar, but much less precisely estimated, effects for married mothers, we assume the impact of a $1,000 transfer on CPS involvement does not differ among married mothers. We conclude that a $1,000 transfer decreased the present discounted value of expenditures on child welfare by $21.

A4.IX. Decreases in Crime

A4.IX.a. The Value of Crime Reduction

Utilizing data from the Perry Preschool randomized control trial (RCT) along with Uniform Crime report data, Heckman (2010) estimates that each dollar invested in the Perry Preschool Program returns, in present value terms, 7 to 12 dollars (2006$) (s.e. 2.3-5.3) with 41 percent to 66 percent coming from reductions in crime. Perry Preschool Program participants, at the time this paper was written, had conducted follow-up interviews through age 40. The authors extrapolate lifetime crime using Uniform Crime report data to impute crimes committed after age 40. Heckman’s upper bound estimates for the total lifetime costs of crime committed by males and females in the control group for the Perry Preschool Program equal $1199,290 and $479,463, respectively, in 2019 dollars. Because boys and girls are nearly equally share of the beneficiaries of a child allowance, we use the un-weighted average of the male and female results, $839,376. The un-weighted average for the lower bound estimate is $415,649. Total crime costs are the sum of police/court costs, correctional costs, and victimization costs. Victimization costs differ by type of crime. The difference between the lower and upper bound estimates derives from the different treatment of murder in the calculation of victim costs. We use the average of the upper and lower bound estimates, or $627,513. Seventy-seven percent, or $483,185, of the total costs are attributable to victimization costs, 16 percent, or $100,402, to police/court costs, and 7 percent, or $43,926, to correctional costs.

Garcia et al. (2020)’s methodological approach to measuring the value of crime reduction is very similar to Heckman et al. (2010). Both rely on data from randomized control trials (RCT) examining the impact of early childhood programs on committing crimes in adulthood. Garcia et al. (2020) estimate that each dollar invested in the Carolina Abecedarian Project (ABC) and the Carolina Approach to Responsive Education (CARE) early-childhood programs’ returns 7.3 dollars (2014$) (s.e. 1.84) with 71 percent coming from reductions in crime. ABC/CARE were evaluated after launching in the 1970’s. Children participated in the program from 8 weeks old through age 5 and were followed through their mid-30s. Full life-cycle benefits of the program were forecasted using the National Longitudinal Survey of Youth 1979. Garcia’s upper-bound estimates for the total lifetime costs of crime committed by individuals in the control group equals $1,235,885, in 2019 dollars. The lower bound estimate is $118,215. Total crime costs are the sum of police/court costs, correctional costs, and victimization costs. Costs differ by type of crime. The difference between the lower and upper bound estimates derives from the exclusion of intangible costs of crime (i.e., pain and suffering) in the lower-bound estimate and the different treatment of murder in the calculation of victim costs.

Garcia et al. (2021), similar to Heckman, examine the dollar value of reductions in crime as a result of the Perry Preschool Program. Garcia et al. (2021) use follow-up interviews with Perry Preschool Program participants through age 54. The authors posit that by this age, the program treatment effects across the life course have largely materialized and there is no need for additional crime forecasts, given that the vast majority of crimes are committed by people younger than 54. The authors further expand on previous literature by including changes to physical health, as measured through QALY’s, that result from victimization. Victimization costs utilized by Heckman consider the costs that result from a loss of life but not changes to a victim’s health across the lifespan. Findings indicate that the lifetime cost of crime committed by participants in the control group for the Perry Preschool Program equals a present discounted value of $552,921 in 2019 dollars. If changes to QALYs were excluded, the cost of crime decreases to a present discounted value of $176,520. Thus, 69 percent of total costs are attributable to the QALY cost to victims. Garcia et al. (2021) do not report the undiscounted cost of crime. Therefore, in order to estimate an undiscounted cost of crime with QALY’s included, we assume Heckman’s result would increase by 69 percent. This would increase Heckman’s cost of crime estimate to $1,060,497.

To use Heckman’s and Garcia’s estimates of the lifetime costs of crime for the Perry preschool and ABC/CARE control groups to value the reductions in incarcerations, we make two assumptions: (1) the percentage reductions in incarceration are equal to the percentage reductions in crime and (2) the crimes committed by the control groups are representative of the crimes for a national sample of children from low-income families. We conclude that the average lifetime cost of crime, based on the three studies presented in this section is $974,632.

***A4.IX.b. Bailey et al. (2020)***

Bailey et al. (2020) find that exposure to food stamps at age five or younger decreased the probability of being incarcerated by 0.0008 (s.e. 0.0004) or 0.08 percentage points.

We use Bailey et al. (2020)’s results to measure the impact of a $1,000 increase in household income on the present discounted value of crime. To translate their estimate of the intent to treat to an estimate of the treatment on the treated, we divide 0.08 percentage points by the percentage of children in this age group who received food stamps, 16 percent. Thus, the treatment-on-the-treated outcome is a 0.5 percent increase for a cumulative exposure of 7 years, or a 0.07 percent decrease in the probability of being incarcerated per year. Average annual food stamps values per person in 1972 (near the midpoint of the study period) were $994 per year in 2019 dollars (Department of Agriculture, 2021). Assuming average households have three individuals, the total household food stamps value would be $2,982 on average. The impact of a $1,000 benefit in 2019 dollars is thus 0.07 percent times the ratio of $1000/2982, or 0.024 percent. The average lifetime cost of crime according to Heckman (2010) and Garcia et al. (2020 and 2021) equals $974,632 in $2019. Assuming that (1) the percentage reductions in incarceration are equal to the percentage reductions in crime and (2) the crimes committed by the control groups are representative of the crimes for a national sample of children from low-income families, a $1,000 benefit decreases the cost of crime by $234 (0.00024\*974,632). As the paper studies the impact of exposure from conception (age -1) to age 5, we (conservatively) assume that child recipients were exposed to food stamps through the entirety of childhood (from age -1 to age 17) but only derived benefits for future earnings during the first 7 years of payments. We multiply results by the 7/19 of years in which they derive benefits, decreasing the benefit to $86 per year (the equivalent of 0.009 percent decrease in the probability of being incarcerated).

Since in Bailey et al. (2020), the probability of incarceration is measured at the time of the survey, the 0.08 percentage-point reduction in incarceration is crime reduction in a single year, not crime reduction ever in a person’s life. Since the sample for probability of incarceration includes individuals 22-54 years old, we take the midpoint—age 38, and consider $86 as the benefit in crime reduction at age 38. To calculate the life-long benefit of crime reduction, we take into account the age distribution of crime, which we obtain from the Criminal Justice Information Services Division (2019) on percentage of arrest by age in 2019. We assume that average child beneficiary to be age 9 and benefit in crime reduction starts at age 10 and continues to age 78 (we start at age 10 because according to the data by the Criminal Justice Information Services Division, arrests of people before age 10 makes up less than one percent of total arrests). The undiscounted benefit of crime reduction at age X is calculated as: $86\*(percentage of arrests at age X / percentage of arrests at age 38). Discounting the benefit at every age by a social discount rate of 3%, we obtain a present discounted value of $1,746 in crime reduction.

A4.X. Other Transfers

As there were not published findings appropriate to our question, we conducted our own analyses on the relationship between earnings and other transfers using the 2014 Survey of Income and Program Participation. Respondents were interviewed annually between 2013-2016. Transfers are measured as the sum of annual EITC, housing subsidies, disability, workers compensation, WIC, unemployment compensation, TANF, SSI, general assistance, and food stamps. SIPP respondents report the amount received for each transfer excluding the EITC and housing subsidies. EITC transfers are estimated using the NBER’s Taxsim. Respondents report receipt of housing subsidies but not the amount received. The amount of housing subsidies received is estimated based on the difference between the amount of rent paid and the fair market rent in the state (estimated separately for urban and rural areas) for the corresponding household size. The sample includes individuals between the ages of 18 and 64. The sample is limited to individuals with a high school education or less, a proxy for eligibility for mean-tested programs. Linear regressions were conducted controlling for race, the number of children in the household, and marital status (n=634,678). Further analyses were conducted expanding the sample to include individuals with less than a college degree; results, as expected, are smaller, increasing our confidence in the findings (Regression results presented in table A4.1 and A4.2 below).

In children’s earnings section in the main text, we find that a $1,000 cash transfer during childhood increases earnings in adulthood by -$33, $25, $62, $127, and $249 per year. We estimate that $1,000 in earnings reduces transfers by $13.61. Therefore, we find that that the corresponding decrease in transfers is -$0.45 (13.61\*(-33/1000)), $0.34 (13.61\*(25/1000)), $0.84 (13.61\*(62/1000)), $1.72 (13.61\*(127/1000)), and $3.39 (13.61\*(249/1000)). We estimate the present discounted value of the decrease in other transfers, assuming to begin at age 22, and end at age 64. The average child beneficiary is assumed to be age 9. We conclude that the present discounted value of decreased transfers is -$8, $5.69, $14.16, $29, and $56.97 in adulthood as a result of a $1,000 cash transfer during childhood.

**A4.XI. Increased Payments Due to Increased Children’s and Parent’s Longevity**

With the increased children’s longevity comes a cost. Two major components of the cost are Social Security and Medicare payments. According to the Social Security Administration (2019), retired workers received an average of $1,461 in Social Security per month in 2018. This means that the annual Social Security payment was $17,532 in 2018, the equivalent of $17,821 in 2019 dollars. According to the Kaiser Family Foundation, Medicare spending per enrollee was $10,536 in 2019. We thus assume that one year of increase in longevity requires $28,357 of payments from Social Security and Medicare. To estimate the total increase in Social Security and Medicare payments, we turn to our previous estimates on longevity.

Our estimates indicate that a $1,000 increase in cash transfer for one year would increase children’s longevity by 0.0194 (Bailey et al., 2020) or 0.105 years (Aizer et al., 2016). A 0.0194-year increase in longevity would thus require $551 (0.0194\*28357) more Social Security and Medicare payments. Since we assume that the extension of longevity occurs at age 78, we assume that payments are made to children at age 78 as well. The present discounted value of increased payments is $72. A 0.105-year increase in longevity would require $2976 (0.105\*28357) more Social Security and Medicare payments. The present discounted value is $387. Using the mean of these two present discounted values, we conclude that as a result of the impact of a $1,000 cash transfer on children’s longevity, there would be a $229 increase in Social Security and Medicare payments to children once in adulthood.

For parent’s longevity, the average increase in longevity based on three studies is 0.0089-year. A 0.0089-year increased longevity would require $253 in increased payments (0.0089\*28357). The present discounted value is $77. We conclude that due to the impact of the $1,000 cash transfer on parent’s longevity, there would be $77 increase in Social Security and Medicare payments made to parents.

**A4.XII. Increased Costs Due to Increased Education of Children**

Increased schooling poses direct costs to child beneficiaries in the form of tuition and fees and to taxpayers in the form of tax payments used to support national and local educational systems. Our estimates on increased schooling suggests that a $1,000 dollar increase in household income from a child allowance for one year would increase years of schooling by 0.0018-0.0297 years. Since for most of our impact studies, an average child in the sample has 12 years of education, we regard the 0.0018-0.0297 increase as increase in postsecondary education. We use data provided by Abel and Deitz (2014) to calculate the increased direct costs. The study estimated that for a 4-year bachelor degree, the price charged for one year was $14,750 but students paid only $6550, with $8,200 offset by grants, scholarships and tax benefits to students. For a 2-year associate degree, price charged for one year was approximately $3,000, but was completely offset by grants, scholarships and tax benefits to students that summed up to $4,300, implying that students gained $1,300 in tuition and fees. Taking an average of $6,550 and -$1,300, the average direct costs to child beneficiaries in the form of tuition and fees are worth $2,625, the equivalent of $2,880 in 2019 dollars. Taking an average of $8,200 and $4,300, the direct costs to taxpayers in the form of tax payments used for grants and scholarship are worth $6,250, the equivalent of $6,856 in 2019 dollars. Multiplying 0.0018-0.0297 years of schooling by $2,880 yields increase in yearly cost for child beneficiaries of $5-$86. Multiplying 0.0018-0.0297 years of schooling by $6,856 yields increase in yearly taxpayers cost of $12-$204. Assuming that increase in schooling takes place at age 18, the average of the present discounted values of child beneficiaries’ and taxpayers’ costs would be $30 and $72 respectively.

Increased schooling also poses opportunity cost for child beneficiaries in the form of lost wages while attending school. We again use the opportunity cost of college estimated by Abel and Deitz (2014). The study found that students would forgo $96,000 in annual earnings (in 2013 dollars) over a 4-year bachelor degree and $46,000 in annual earnings over a 2-year associate degree. Thus, per year, students would forgo $24,000 in annual earnings for a bachelor degree and $23,000 for an associate degree, yielding an average of $23,500, the equivalent of $25,778 in 2019 dollars. We thus assume that individuals would give up $25,778 in earnings in the labor market for every one-year increase in postsecondary education. Multiplying our estimates on increased schooling by $25,778 gives us $45-$766 of opportunity cost. Assuming that child beneficiaries are age 9 and increase in schoolings happen at age 18, the present discounted values of the opportunity cost of schooling range from $35-$587, with an average of $271.

Thus, for child beneficiaries, total costs of increased schooling amounts to an average of $301 ($30+ $271), $302 if rounded. For taxpayers, total costs of increased schooling amounts to an average of $72.

**APPENDIX 5. MICRO-SIMULATION**

In the section below, we discuss our micro-simulation work on our three child allowances of interest: the $3,000/$3,600 child allowance, the less generous $2,000 child allowance in the NAS report and the more generous $3,000/$4,200 child allowance in Family Security Act proposed by Senator Romney.

**A5.I. The $3,000/$3,600** **child allowance**

***A5.I.a. Cost of $3,000/$3,600 child allowance***

To begin, we calculated the cost of the Child Tax Credit under current law. We made these calculations using the National Bureau of Economic Research’s tax simulator (TAXSIM27), which can be used to calculate taxes owed and credits received for all tax filers in the dataset. With this information, we estimated the current cost of the Child Tax Credit at $112.4 billion.[[9]](#footnote-9)

Next, we calculated the cost of the $3,000/$3,600 child allowance. The $3,000/$3,600 child allowance would replace the Child Tax Credit with a child allowance of $3,600 per child ages 0-5 and $3,000 per child ages 6-17. The allowance would begin to phase out when incomes reached $112,500 for single filers and $150,000 for joint filers. To estimate the cost of this proposal, we estimate the allowance for each family in the data based on their tax-filing status, the number of eligible children in the family, and the ages of those children. We estimated the net cost of the $3,000/$3,600 child allowance at $96.8 billion. Note that these cost estimates do not account for changes in administrative costs. At full implementation, where all eligible families are receiving the credit, around 72 million children and 39 million parents (as discussed below, we make the conservative assumption that only one parent in a two-parent household benefit from the cash transfers because many of our impact studies focus on mothers) would benefit from the expansion.

We also calculated the net increase in the credit/allowance amount per family ($2,464) and per child ($1,352) under the $3,000/$3,600 child allowance (table A5.2). Families across the income distribution would benefit from it because those who currently receive the full Child Tax Credit of $2,000 would also see their credit/allowance values increase. However, lower-income families and children would see the greatest gains, as they receive the least from the Child Tax Credit under current law. Under the $3,000/$3,600 child allowance, the average child in a low-income family would gain $2,134 and the average child in a higher-income family would gain $427.

***A5.I.b. Reductions in Work and Earnings***

A child allowance increases parents’ income and thereby leads to some reduction in employment, hours worked, and earnings. The decrease in earnings is neither a benefit nor a cost to recipients, as they are simply spending some of their increased income on less work. But reductions in earnings lead to reductions in taxes paid, which is a benefit to recipients but a cost to taxpayers. In this section we describe how we estimate the reduction in earnings from the micro-simulation.

To take account of the expected reduction in work and earnings in response to the child allowance, we adopt the methodology included in the National Academy of Sciences report, *A Roadmap to Reducing Child Poverty* (2019).[[10]](#footnote-10) Based on their review of the literature, the authors of the report assume that converting the Child Tax Credit into a child allowance would lead some mothers to stop working, and some mothers and fathers to reduce the number of hours that they work per week. We report the income elasticities of employment and hours that the report’s authors arrived at in table A5.3.

To estimate the reduction in earnings resulting from the changes in labor force participation, we use a simulation framework that is described in the National Academy of Sciences report.[[11]](#footnote-11) With these techniques, we find that 233,000 parents/caretakers would stop working if the $3,000/$3,600 child allowance were enacted (table A5.4). We also estimated the reduction in the number of hours worked per week by some parents/caretakers. In the methodology employed in the NAS report, researchers first estimated the total reduction in hours worked that they would expect based on the increase in income from the child allowance and the income elasticities of hours in table A5.3. They then randomly selected a share of parents/caretakers in the CPS-ASEC data who would reduce their labor force participation by 1 hour per week such that the total reduction in hours worked by these parents/caretakers would match the total reduction they estimated using the income elasticity of hours. Accounting for both the share of parents who would stop working and the share who would reduce the number of hours worked, we see a reduction in earnings of $11.4 billion with the $3,000/$3,600 child allowance (table A5.4).

***A5.I.c. Decreased Parent Taxes***

The amount of taxes paid by parents is expected to decrease as a result of the child allowance due to the expected reduction in labor force participation and hours worked.  As described in table A5.4, we find a reduction in earnings of $11.4 billion with the $3,000/$3,600 child allowance.  As described in children’s future taxes section in the main text, among the poorest 40% of households, 21% of the increase in earnings would be paid in federal, state, and local taxes. Therefore, we estimate an aggregate decrease in taxes of $2.4 billion with the $3,000/$3,600 child allowance. There are 39,284,448 recipient parents according to our micro-simulation result (under the assumption that only one parent in the household receives the benefit of child allowance). Decrease in taxes is $61 per recipient parent.

**A5.II. $3,000/$4,200** **child allowance in Family Security Act of Senator Romney**

***A5.II.a. Details of the Family Security Act and its financing***

The Family Security Act of Senator Romney includes a generous child allowance that is $4,200 per child ($350 per month) ages 0-5 and $3,000 ($250 per month) per child ages 6-17. All children with valid SSN would be eligible and pregnant mothers would also be eligible starting from their third trimester of pregnancy. The program is financed by cuts in other benefit programs and tax reforms, including an elimination of Temporary Assistance for Needy Family (TANF), Child and Dependent Care Tax Credit (CDCTC), state and local tax deduction (SALT) and tax filing status of head of household. It also simplifies Earned Income Tax Credit (EITC) so its value no longer depends on the number of dependent children a filer has. Under the new rule, single filers and head of household would receive a maximum EITC of $1,000 and joint filers would receive a maximum credit of $2,000, which are much lower compared to the current EITC benefits; according to the Tax Policy Center (2021), in 2021, maximum credit for a family with one child is $3,618 and $6,728 for a family with three or more children. Meanwhile, since certain families qualify for Supplemental Nutrition Assistance Program (SNAP) through TANF, the elimination of TANF would also change the categorical eligibility for SNAP.

***A5.II.b. Micro-simulation***

Because the Family Security Act includes both the introduction of a new child allowance and the elimination of TANF and categorical eligibility for SNAP, we use data from the Urban Institute’s Transfer Income Model (TRIM) to adjust for under-reporting of these benefits and to identify SNAP recipients who are eligible due to categorical eligibility. As of this writing, the TRIM data is only available to be merged with 2018 CPS data instead of 2019 CPS data we have used for our other cost estimates. Results show that the child allowance component imposes a cost of $132 billion. Changes of tax codes and cuts of welfare programs would offset part of this cost (for details please see Table A5.5). Elimination of head of household filing status and the simplification of EITC provide the biggest offset-reducing the total cost by $21 and $15 billion respectively. The net cost of the program is $87 billion. This is an overestimate of the net cost because we are not able to simulate the savings from elimination of the SALT deduction. Reduction in employment and hours work would lead to a $11 billion decrease in earnings (see Table A5.6 for details), further decreasing taxes paid by parents by $2 billion.

**A5.III. $2,000 child allowance in the NAS report**

The $2,000 child allowance in the NAS report is proposed as part of two policy packages that aim to reduce poverty. We ignore other components of the policy packages and concentrate on the $2,000 child allowance. Since the report has not discussed financing of the child allowance, we assume that like the $3,000/$3,600 child allowance, it would be financed by taxes on families with incomes over $100,000. For details on this child allowance policy please see the NAS report.

***A5.III.a. Microsimulation***

We use 2019 CPS data for the micro-simulation. The net cost of the $2,000 child allowance would be $30 billion. Reduction in employment and hours work would lead to a $2 billion reduction in earnings (see Table A5.6 for details), further causing a $0.5 billion reduction in tax paid by parents.

**TABLES IN THE APPENDIX**

**Table A1.1** Methodology of literature search.

**Panel A.** Children’s future earnings

|  |  |
| --- | --- |
| Summary of search term used | (child or long-term or future) and (cash transfer or earned income tax credit or food stamps or supplemental nutrition assistance program or negative income tax or universal basic income or cash allowance or public housing or housing assistance or AFDC or TANF or supplemental security income or survivor’s insurance) and (income or earnings) |
| # of EBSCO results | 1,218 |
| # of Google Scholar results | 93,100 |
| Stage 1 inclusion criteria | Title mentions a cash transfer and one of the following: impact/effect on income, earnings, or educational attainment, or unspecified outcome (for example the long-term impact of…) |
| # of papers passed 1st stage parameters  (EBSCO/Google Scholar) | EBSCO: 9  Google Scholar: 6 |
| Other papers included | 1, Unpublished paper mentioned in literature review of Hendren & Sprung-Keyser (2019) |
| Stage 2 inclusion criteria | Papers that examine the causal impact of a U.S. cash or near-cash transfer on the future earnings of children |
| Final papers used (source) | 1. Aizer, Eli, Ferrie, & Lleras-Muney, 2016 (EBSCO)  2. Bailey, Hoynes, Rossin-Slater, & Walker, 2020 (Google Scholar)  3. Bastian & Michelmore, 2018 (EBSCO and Google Scholar)  4. Hoynes, Schanzenbach, & Almond, 2016 (other)  5. Price & Song, 2018 (Google Scholar) |

**Panel B.** Children’s health/neonatal mortality/longevity

|  |  |
| --- | --- |
| Summary of search term used | (child or long-term or future) and (cash transfer or earned income tax credit or food stamps or supplemental nutrition assistance program or negative income tax or universal basic income or cash allowance or public housing or housing assistance or AFDC or TANF or supplemental security income or survivor’s insurance) and (health or longevity or birthweight) |
| # of EBSCO results | 597 |
| # of Google Scholar results | 93,100 |
| Stage 1 inclusion criteria | Title mentions a U.S. cash or near-cash transfer and either health, birthweight, longevity, or unspecified outcome |
| # of papers passed 1st stage parameters (EBSCO/Google Scholar) | EBSCO: 18  Google scholar: 12 |
| Other papers included | 1, Kehrer and Wolin, 1979 – discovered in literature review of Almond et al. (2016) |
| Stage 2 inclusion criteria | Quasi-experimental papers with a U.S. sample that examine the impact of a cash or near-cash transfer on children’s health |
| Stage 3: Papers cut due to validity concerns | Currie & Cole, 1993 (internal validity) |
| Final papers used (source) | 1. Aizer, Eli, Ferrie & Lleras-Muney, 2016 (EBSCO)  2. Almond, Hoynes, & Schanzenbach, 2011 (Google Scholar)  3. Bailey, Hoynes, Rossin-Slater, & Walker, 2020 (Google Scholar)  4. Hoynes, Miller, & Simon, 2015 (EBSCO and Google Scholar)  5. Kehrer & Wolin, 1979 (Other)  6. Averett & Wang, 2018 (Google Scholar)  7. Markowitz, Komro, Livingston, Lenhart, & Wagenaar, 2017 (EBSCO & Google Scholar)  8. Price & Song, 2018 (Google Scholar)  9. Hoynes, Schanzenbach & Almond, 2016 (other) |

**Panel C.** Adult health/longevity

|  |  |
| --- | --- |
| Summary of search term used | (Health or longevity) and (cash transfer or earned income tax credit or food stamps or supplemental nutrition assistance program or negative income tax or universal basic income or cash allowance or public housing or housing assistance or AFDC or TANF or supplemental security income or survivor’s insurance) not child\* |
| # of EBSCO results | 379 |
| # of Google Scholar results | 417,000 |
| Stage 1 inclusion criteria | Title mentions income, a cash, or near-cash transfer in any country and health and does not mention children |
| # of papers passed 1st stage parameters (EBSCO/Google Scholar) | EBSCO: 17  Google Scholar: 17  PubMed: 1 |
| Other papers included | 2, Snyder and Evans (2006) and Lindahl (2005) both found in Larrimore (2011) |
| Stage 2 inclusion criteria | Quasi-experimental papers in high-income countries examining the impact of income, cash, or near-cash transfer on the health of adults |
| Stage 3: Papers cut due to validity concerns | Muennig, Mohit, Wu, Jia, & Rosen, 2016 (Internal validity)  Lindahl, 2005 (internal validity)  Fenelon et al., 2017 (relevancy- not near enough to cash)  Rehkopf, Strully, and Dow, 2014 (external validity)  Snyder and Evans, 2006 (external validity) |
| Final papers used (source) | 1. Evans & Garthwaite, 2014 (EBSCO)  2. Price & Song, 2018 (Google Scholar)  3. Larrimore, 2011 (Google Scholar)  4. Morgan, Hill, Mooney, Rivara, & Rowhani-rahbar, 2020 (PubMed)  6. Aizer, Eli & Lleras-Muney, 2020 (Direct Correspondence with Author) |

**Panel D.** Crime

|  |  |
| --- | --- |
| Summary of search term used | (incarceration OR arrest\* OR jail OR criminal OR prison) AND (cash transfer or earned income tax credit or food stamps or supplemental nutrition assistance program or negative income tax or universal basic income or cash allowance or public housing or housing assistance or AFDC or TANF or supplemental security income or survivor’s insurance) |
| # of EBSCO results | 82 |
| # of Google Scholar results | 4,030 |
| Stage 1 inclusion criteria | Title mentions a cash or near-cash transfer and jail, incarceration, arrest, crime, criminal, or prison |
| # of papers passed 1st stage parameters (EBSCO/Google Scholar) | 8 |
| Stage 2 inclusion criteria | Quasi-experimental papers in high-income countries examining the impact of income, cash, or near-cash transfer on the crime |
| Final papers used (source) | 1. Bailey, Hoynes, Rossin-Slater, Walker, 2020 (Other)  2. Heckman, Moon, Pinto, Savelyev & Yavitz, 2010 (Other) |

**Panel E.** Parent mental health

|  |  |
| --- | --- |
| Summary of search term used | (“mental health” OR “mental illness” OR depression OR anxiety) AND (cash transfer or earned income tax credit or food stamps or supplemental nutrition assistance program or negative income tax or universal basic income or cash allowance or public housing or housing assistance or AFDC or TANF or supplemental security income or survivor’s insurance) |
| # of EBSCO results | 203 |
| # of Google Scholar results | 418,000 |
| Stage 1 inclusion criteria | Title mentions a cash or near-cash transfer and mental health, mental illness, depression, or anxiety |
| # of papers passed 1st stage parameters (EBSCO/Google Scholar) | 16 |
| Stage 2 inclusion criteria | Quasi-experimental papers in high-income countries examining the impact of income, cash, or near-cash transfer on the mental health of adults |
| Final papers used (source) | 1. Boyd-Swan et al., 2016 (EBSCO)  2. Gangopadhyaya et al., 2020 (Google Scholar) |

**Panel F.** Children’s educational attainment

|  |  |
| --- | --- |
| Summary of search term used | (“educational attainment” OR school\* OR education) AND (cash transfer or earned income tax credit or food stamps or supplemental nutrition assistance program or negative income tax or universal basic income or cash allowance or public housing or housing assistance or AFDC or TANF or supplemental security income or survivor’s insurance) |
| # of EBSCO results | 1039 |
| # of Google Scholar results | 16700 |
| Stage 1 inclusion criteria | Title mentions a cash or near-cash transfer and education or schooling |
| # of papers passed 1st stage parameters (EBSCO/Google Scholar) | 28 |
| Stage 2 inclusion criteria | Quasi-experimental papers in high-income countries examining the impact of income, cash, or near-cash transfer on educational attainment |
| Final papers used (source) | 1. Aizer, Eli, Ferrie & Lleras-Muney, 2016 (other)  2. Akee, Copeland, Keeler, Angold & Costello, 2010 (EBSCO)  3. Bastian & Michelmore, 2018 (other)  4. Hoynes, Schanzenbach & Almond, 2016 (other)  5. Michelmore, 2013 (EBSCO and Google Scholar)  6. Thompson, 2019 (Google Scholar)  7. Maxfield, 2015 (Google Scholar and EBSCO) |

**Table A3.1.** Conceptual table of benefits (+) and costs (-) of a near-universal child allowance.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Direct +** | **Indirect =** | **Total** |
|  | **Beneficiaries** | **Taxpayers** | **Society** |
| **Non-monetary** |  |  |  |
| **An. Reduction in poverty** | + | + | + |
| **Bn. Increase in equality of opportunity** | + | + | + |
| **Cn. Reduction in inequality** | + | + | + |
| **Dn. Increase in prosocial outcomes** | + | + | + |
| **En. Increase in freedom (avoided incarceration)** | + | 0 | + |
| **Fn. Fertility and childbearing** | ? | ? | ? |
| **Gn. Dependence on government** | ? | ? | ? |
| **Hn. Trust** | + | + | + |
| **In. Work reduction** | ? | - | ? |
| **Jn. Savings** | + | - | - |
| **Kn. Altruism** | + | + | + |

**Table A4.1.** Linear regression examining impact of earnings on annual transfers received among adults between 18 and 64 years of age with a high school education or less (2019$).

|  |  |
| --- | --- |
|  | (1) |
| Earnings ($1,000s) | -13.61 |
|  | (0.10)\*\*\* |
| Race |  |
| White (reference) |  |
| Black | 820.25 |
|  | (10.35)\*\*\* |
| Asian | -290.54 |
|  | (18.89)\*\*\* |
| Other | 242.63 |
|  | (18.70)\*\*\* |
| Number of Children in household |  |
| 0 (reference) |  |
| 1 | 64.27 |
|  | (9.57)\*\*\* |
| 2 or 3 | 507.98 |
|  | (8.99)\*\*\* |
| 4 or more | 1,354.71 |
|  | (17.09)\*\*\* |
| Marital Status |  |
| Married, spouse present (reference) |  |
| Married, spouse absent | 559.92 |
|  | (25..76)\*\*\* |
| Widowed | 898.74 |
|  | (24.16)\*\*\* |
| Divorced | 949.03 |
|  | (11.63)\*\*\* |
| Separated | 1,590.19 |
|  | (20.72)\*\*\* |
| Never married | 675.06 |
|  | (8.36)\*\*\* |

*Note*: Standard errors are presented in parentheses. Transfers include EITC, housing subsidies, disability, workers compensation, WIC, unemployment compensation, TANF, SSI, general assistance, and food stamps.

**Table A4.2.** Linear regression examining impact of earnings on annual transfers received among adults between 18 and 64 years of age with less than a college degree (2019$).

|  |  |
| --- | --- |
|  | (1) |
| Earnings ($1,000s) | -9.72 |
|  | (0.07)\*\*\* |
| Race |  |
| White (reference) |  |
| Black | 717.20 |
|  | (7.67)\*\*\* |
| Asian | -344.49 |
|  | (14.30)\*\*\* |
| Other | 251.27 |
|  | (13.86)\*\*\* |
| Number of Children in household 0 (reference) |  |
|  |
| 1 | 115.90 |
|  | (7.10)\*\*\* |
| 2 or 3 | 566.53 |
|  | (6.83)\*\*\* |
| 4 or more | 1,485.10 |
|  | (13.73)\*\*\* |
| Marital Status |  |
| Married, spouse present (reference) |  |
| Married, spouse absent | 635.62 |
|  | (20.48)\*\*\* |
| Widowed | 898.10 |
|  | (19.36)\*\*\* |
| Divorced | 878.16 |
|  | (8.84)\*\*\* |
| Separated | 1,530.47 |
|  | (16.61)\*\*\* |
| Never married | 436.61 |
|  | (6.21)\*\*\* |

*Note*: Standard errors are presented in parentheses. Transfers include EITC, housing subsidies, disability, workers compensation, WIC, unemployment compensation, TANF, SSI, general assistance, and food stamps.

**Table A5.1.** Cost of the $3,000/$3,600 child allowance ($billions, annual).

|  |  |
| --- | --- |
| Total costs of the federal Child Tax Credit | $112.4 |
| Total costs the $3,000/$3,600 child allowance | $209.3 |
| Net cost of a fully refundable $3,000/$3,600 child allowance | $96.8 |

**Table A5.2.** Net increase in credit/allowance amount from the $3,000/$3,600 child allowance (annual).

|  |  |  |  |
| --- | --- | --- | --- |
|  | Net increase in credit/allowance amount | | |
|  | Overall  (billions) | Per family | Per child |
| Overall | $96.8 | $2,464 | $1,352 |
| Lower Income: Under $50,000 | $63.8 | $3,838 | $2,134 |
| Moderate Income: 50,000 to 100,000 | $23.1 | $2,284 | $1,244 |
| Higher Income: $100,000 + | $9.8 | $786 | $427 |

*Note*: In this analysis, we refer to tax units (including tax filers and their dependents) as families. We categorized income levels using the Adjusted Gross Income amount of the family (i.e., tax unit), as calculated by TAXSIM27.

**Table A5.3.** Income elasticity of employment and hours.

|  |  |  |
| --- | --- | --- |
|  | Income Elasticity of  Employment | Income Elasticity of  Hours |
| Men  (Married or Single) | 0 | -0.05 |
| Married Women | -0.12 | -0.09 |
| Unmarried Women | -0.085 | -0.07 |

**Table A5.4.** Income elasticity of employment and hours.

|  |  |
| --- | --- |
|  | $3,000/$3,600 child allowance |
| Number of caretakers/parents who stop working | 233,000 |
| Number of caretakers/parents who reduced work hours by 1 hour per week | 7,704,000 |
| Total number of parents/caretakers with reduced earnings | 7,937,000 |
| Decrease in earnings from caretakers/parents leaving work ($billions) | $3.1 |
| Decrease in earnings from individuals reducing hours ($billions) | $8.3 |
| Total decrease in earnings ($billions) | $11.4 |

**Table A5.5**. Financing of Family Security Act

|  |  |
| --- | --- |
| Added cost of child allowance (FSA allowance net cost of TCJA CTC) | $132,418,888,906 |
| Savings from … |  |
| EITC changes | $15,056,665,851 |
| SNAP changes | $1,040,112,171 |
| Eliminating TANF - cash assistance | $5,632,117,244 |
| Eliminating Head of Household filing status | $20,575,226,797 |
| Eliminating the CDCTC | $2,880,180,327 |
| **Cost of the child allowance net other proposed savings** | **$87,234,586,517** |

**Table A5.6.** Decrease in earnings under child allowance of Family Security Act and NAS report.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Number of parents** | **Total lost wages** |
| Family Security Act ($3,000/$4,200 child allowance) | Stop working | 190,238 | 2,408,610,928 |
|  | Cut hours | 5,973,268 | 8,550,267,449 |
| NAS  ($2,000 child allowance) | Stop working | 53,786 | 465,925,474 |
|  | Cut hours | 1,932,946 | 1,946,195,911 |

1. Note that 1.27% is a rounded number. Even though in calculations we use the unrounded number, in the text we present the rounded number. [↑](#footnote-ref-1)
2. By working-aged, we refer to ages 25 to 64. [↑](#footnote-ref-2)
3. The paper starts measuring economic outcomes such as earnings in adulthood when individuals reach age 25. Since the sample includes individuals born between 1956-1981, this means that earnings in adulthood is first measured in 1981. The last wave of PSID data used by the paper is 2009. Thus, we assume that $3610 is measured in 1995 dollars (the middle of the period 1981-2009). [↑](#footnote-ref-3)
4. Scholz (1994) estimated an EITC participation rate of 80.5-86.4 percent. We use the average of this range of values, which is approximately 83%. [↑](#footnote-ref-4)
5. One may realize that $439 is not a direct result of (10,000,000\*0.00004). As discussed above, this is because even though for presentation purpose, we have a rounded number of 0.00004 in the equation, in calculation, we are using the unrounded number of (0.0354\*(1000/2982))\*0.37% to multiply by 10,000,000. As long as a number is used for further calculation, we do not round it. We stick with this rule throughout the rest of the paper. [↑](#footnote-ref-5)
6. Ideally, valuing quality of life is done with a more detailed measure of current health. The National Center for Health Statistics has used similar measures of self-reported health (paired with physical limitations) to measure quality of life using a scale in which zero is death and 1 is excellent health (Gold et al., 1996)***.*** [↑](#footnote-ref-6)
7. According to Averett and Wang (2018), families with one eligible child receive an average EITC benefit of $822 in 1992 dollars pre-expansion and $1374 post-expansion. Families with two or more eligible children receive an average EITC benefit of $747 pre-expansion and $1970 post expansion. The increase for families with two or more eligible children is $671 in 1992 dollars greater than the increase for families with only one child. [↑](#footnote-ref-7)
8. Centers for Medicare & Medicaid Services (2020) estimate per capita spending using both person and non-personal health expenses ($11,559). Results further indicate that aggregate personal healthcare expenses make up 85% of total healthcare spending. As a result, we assume that per capita personal healthcare spending is 85% of total per capital healthcare spending, providing a final per capita spending of $9,825. [↑](#footnote-ref-8)
9. Through the Child Tax Credit, families can receive a non-refundable credit of $500 per dependent for qualifying dependents over age 16. This cost estimate is limited to credits received by tax filers for their children ages 0-16 and does not include the costs of credits received for older dependents. [↑](#footnote-ref-9)
10. National Academies of Sciences, Engineering, and Medicine, A Roadmap to Reducing Child Poverty (Washington, D.C.: National Academies Press, 2019). [↑](#footnote-ref-10)
11. See Appendix F in National Academies of Sciences, Engineering, and Medicine, A Roadmap to Reducing Child Poverty (Washington, D.C.: National Academies Press, 2019). [↑](#footnote-ref-11)