Designing a Better Child Tax Credit: Accounting for Effects on Poverty, Parental Employment and Government Budgets

By Jacob Bastian

We have a collective responsibility to reduce the number of children living in poverty in the United States. The CTC is an instrumental tool for accomplishing this goal.

Executive Summary

In the ongoing debate about optimal strategies to reduce child poverty, policymakers have assessed cost-effective ways to reduce poverty that do not discourage parental employment. The policy at the center of this debate is the child tax credit (CTC), and a key question is whether CTC benefits should be available only to workers or also to the poorest nonworking or low-earning families.

The design of the CTC affects parental work incentives, which in turn affects the CTC's net effect on child poverty. While giving money to low-income families is sure to pull many out of poverty, if these payments have the unintended effect of discouraging parents from working, the net poverty decrease may end up being small. There is strong disagreement about how a permanent CTC change might affect poverty and parental employment.

Table of Contents

R Street
Free markets. Real solutions.

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

R Street Policy Study
No. 276

February 2023

This paper presents three distinct ways to adjust the CTC and analyzes the following for each: poverty, parental employment, total cost and cost per child pulled out of poverty. Each proposal increases maximum CTC benefits to $3,000 per child and phases out benefits in an identical way. The key difference among the three proposals is whether benefits are restricted to working families.

CTC proposal #1 increases the existing 2022 CTC and restricts benefits to workers; proposal #2 resembles the temporary 2021 CTC that was available to both working and nonworking families; and proposal #3 is a combination that provides some benefits to both workers and nonworkers, as well as additional benefits to working families.

Most political debate has focused on versions of proposals #1 or #2. Those on the political right tend to be more in favor of giving benefits only to those who work, such as the approach examined in proposal #1; those on the political left tend to favor benefits for both workers and nonworkers like the approach shown in proposal #2. Proposal #3 has the potential to be a bipartisan compromise—a policy that both reduces child poverty and has a small (potentially even positive) impact on parental employment.

By analyzing these CTC proposal options through these lenses, this paper provides policymakers with the tools needed to design a new CTC that pulls millions of children out of poverty in a cost-effective way while minimizing work disincentives for parents.

Introduction

In the United States, there is disagreement about how the CTC should be structured to decrease child poverty.[1] At the heart of this debate is how the design of the CTC affects parental work incentives and how potential changes in parental employment might affect the CTC's net effect on child poverty. While giving money to low-income families is sure to pull many out of poverty, if these payments have the unintended effect of discouraging parents from working, the net poverty decrease may end up being quite small. Some argue that guaranteeing CTC benefits for all families would have little effect on parental employment, leading to a large decrease in child poverty.[2] Others argue that guaranteed benefits would lead to a large disemployment effect that would offset much of the antipoverty effect.[3]

The 2022 CTC provides up to $2,000 per child, is aimed at working families (especially those with income between $50,000 and $200,000) and is estimated to cost $120 billion.[4] Between July and December 2021, the CTC was temporarily expanded to provide up to $3,000 per child ($3,600 for children younger than age 6) and to

Disagreement exists about how the CTC should be structured to decrease child poverty.

At the heart of the debate is how the design of the CTC affects parental work incentives and how potential changes in parental employment might affect the CTC's net effect on child poverty.

1. See, e.g., Bruce D. Meyer and Kevin Corinth, "Why extending the current child tax credit would do more harm than good," *The Washington Post*, Oct. 14, 2021. https://www.washingtonpost.com/opinions/2021/10/14/press-pause-rush-extend-child-tax-credit; Robert E. Rubin and Jacob J. Lew, "A Plan to Help Kids Without Increasing Inflation," *The New York Times*, May 2, 2022. https://www.nytimes.com/2022/05/02/opinion/child-tax-credit.html; Robert Doar, "The Bad Science Behind the Child Tax Credit Expansion," *WSJ*, Oct. 29, 2021. https://www.wsj.com/articles/bad-science-democrat-proposal-child-credit-tax-ctc-employment-nas-reconciliation-bill-11635539304; Michael R. Strain, "Evidence and the Child Credit," *National Review*, Jan. 3, 2022. https://www.nationalreview.com/corner/evidence-and-the-child-credit.

2. See, e.g., Greg Duncan and Suzanne Le Menestrel, "A Roadmap to Reducing Child Poverty," National Academies of Sciences, Engineering, and Medicine, 2019. https://nap.nationalacademies.org/catalog/25246/a-roadmap-to-reducing-child-poverty; Alex Brill et al., "Estimating the Labor Supply Response to a Permanent Child Tax Credit Expansion," American Enterprise Institute, 2021. https://grantseiter.com/CTC-Labor-Response/intro.html; Jacob Goldin et al., "Estimating the Net Fiscal Cost of a Child Tax Credit Expansion," National Bureau of Economic Research, October 2021. https://www.nber.org/papers/w29342; Jacob Bastian, "How Would a Permanent 2021 Child Tax Credit Expansion Affect Poverty and Employment?," Rutgers University, 2022. https://drive.google.com/file/d/1H5iNZZO_YFRIDz-3Tip4C-BpnD85bUjH/view.

3. Kevin Corinth et al., "The Anti-Poverty, Targeting, and Labor Supply Effects of Replacing a Child Tax Credit with a Child Allowance," National Bureau of Economic Research Working Papers, October 2021. https://www.nber.org/papers/w29366.

4. Taylor LaJoie, "The Child Tax Credit: Primer," Tax Foundation, April 14, 2020. https://taxfoundation.org/child-tax-credit.

R Street Policy Study
No. 276
February 2023

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

include all low-income families, even those without working parents.[5] The 2021 CTC cost around $15 billion per month and pulled millions of parents and children out of poverty.[6] While there is little evidence that this temporary policy affected parental employment, most economists believe that some parents would choose to stop working in response to a permanent version of the 2021 CTC.[7] Thus, as of the end of 2022, policymakers continue to debate how and whether to expand the CTC.

This paper proposes three possible ways to adjust the CTC and evaluates how each proposed approach would affect poverty, cost per child pulled out of poverty, parental employment and the program's fiscal cost. By analyzing various CTC designs, this paper explores how the antipoverty effect can be maximized while minimizing decreases in parental employment.

CTC Policy Background

The CTC was originally established in 1997 and has historically received bipartisan support.[8] It was targeted at middle-income families and designed to ease the financial burden of raising children. During its first decade, the tax credit was $400 per child under the age of 17 and was nonrefundable. Being a nonrefundable tax credit meant that only families that owed federal taxes could benefit from the CTC, while the poorest working families that owed no federal income tax did not. For example, married parents with three children in 1998 did not owe any net federal taxes if income was below $30,000 ($55,000 in 2022 dollars) and would not benefit from a nonrefundable tax credit.[9]

Since 1997, the CTC has undergone many changes. In 2001, the maximum credit was increased to $600 per child, with scheduled increases thereafter to $1,000.[10] The credit was also expanded to reach low-income families by making it partially refundable under the earned income formula. This portion of the CTC is referred to as the additional child tax credit (ACTC) and was available to taxpayers with more than $10,000 of earned income—a threshold referred to as the refundability threshold.[11]

From 2003 to 2017, the CTC underwent further changes that increased the maximum credit amount and expanded the ACTC, making more of the credit refundable and therefore more accessible to low-income families.[12] In 2009, the refundability threshold was lowered to $3,000. In 2017, maximum credits rose to $2,000, with the refundable portion rising to $1,400, and the refundability income threshold was lowered to $2,500. The phase-out income threshold was also raised to $400,000 for married filing jointly and $200,000 for head of household or single. These 2017 changes are temporary and set to expire in 2025.[13]

Established in 1997, the CTC has undergone many changes but has historically received bipartisan support.

5. "The Child Tax Credit," The White House, last accessed Jan. 4, 2023. https://www.whitehouse.gov/child-tax-credit/#:~:text=It%20has%20gone%20from%20 %242%2C000,increased%20from%20%242%2C000%20to%20%243%2C000.
6. "Treasury and IRS Announce Families of Nearly 60 Million Children Receive $15 Billion in First Payments of Expanded and Newly Advanceable Child Tax Credit," U.S. Department of the Treasury, July 15, 2021. https://home.treasury.gov/news/press-releases/Treasury-and-IRS-Announce-Families-of-Nearly-60-Million-Children-Receive-%2415-Billion-Dollars-in-First-Payments-of-Expanded-and-Newly-Advanceable-Child-Tax-Credit.
7. Bastian. https://drive.google.com/file/d/1H5iNZZO_YFRIDz-3Tip4C-BpnD85bUjH/view.
8. LaJoie. https://taxfoundation.org/child-tax-credit.
9. Ibid.
10. Margot L. Crandall-Hollick, "The Child Tax Credit: Legislative History," Congressional Research Service, Dec. 23, 2021. https://sgp.fas.org/crs/misc/R45124.pdf.
11. Ibid.
12. Ibid.
13. Ibid.

R Street Policy Study
No. 276

February 2023

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

In 2021, the American Rescue Plan (ARP) was signed into law to offset economic difficulties from the COVID-19 pandemic.[14] The ARP substantially—although temporarily—revamped the CTC: The maximum credit increased to $3,000 per child for children between the ages of 6 and 17 and to $3,600 per child for children under the age of 6. It also made the credit fully refundable, meaning that the maximum credit was made available to low-income families who were previously not eligible, including families with no earnings.[15] The ARP also made the CTC available in monthly payments; parents could receive $250 per month per child aged 6 to 17 and $300 per month per child aged 0 to 5. These monthly payments helped tens of millions of families meet their real-time needs under tumultuous pandemic conditions.[16]

The ARP's expansion of the CTC lasted from July to December 2021.[17] In 2021, President Joe Biden introduced the Build Back Better plan, which would have extended the expanded CTC for another year. Although the House of Representatives passed the plan on Nov. 19, 2021, the Senate did not. Therefore, in January 2022, the CTC reverted back to 2020 policy: a maximum credit of $2,000 per child, with a refundable portion of $1,400 and annual benefits that came once yearly instead of monthly.[18]

Effects of the Pre-2021 CTC

Before 2021, the CTC lifted approximately 4 million people (including 2 million children) out of poverty each year.[19] During this time, CTC benefits were available only to working individuals and phased in with earnings.[20] As with research on the Earned Income Tax Credit (EITC), research on the pre-2021 CTC has found generally positive effects on labor supply, poverty, and health and educational outcomes.[21]

Additionally, theoretical and empirical evidence suggests that the CTC increases maternal labor supply. Theoretically, CTC benefits are available only to workers, which essentially raises a worker's hourly wage and leads more women to want to enter the labor force. For example, a mother who is debating whether to join the labor force would be more inclined to work if she could earn $30,000 with the CTC, compared

Impact of CTC Prior to 2021

4 million people
(including 2 million children)

lifted out of poverty

14. "The Child Tax Credit." https://www.whitehouse.gov/child-tax-credit/#:~:text=It%20has%20gone%20from%20%242%2C000,increased%20from%20%242%2C000%20to%20%243%2C000.

15. Ibid.

16. Elaine Maag and Michael Karpman, "Many Adults with Lower Income Prefer Monthly Child Tax Credit Payments," Robert Wood Johnson Foundation, July 27, 2022. https://www.rwjf.org/en/library/research/2022/07/many-adults-with-lower-income-prefer-monthly-child-tax-credit-payments.html.

17. Robert Greenstein, "Next Steps on the Child Tax Credit," The Hamilton Project, Nov. 28, 2022. https://www.hamiltonproject.org/papers/next_steps_on_the_child_tax_credit.

18. Ibid.

19. "Policy Basics: The Child Tax Credit," The Center on Budget and Policy Priorities, last accessed Nov. 29, 2022. https://www.cbpp.org/sites/default/files/atoms/files/policybasics-ctc.pdf.

20. LaJoie. https://taxfoundation.org/child-tax-credit.

21. Nada Eissa and Jeffrey B. Liebman, "Labor supply response to the earned income tax credit," *The Quarterly Journal of Economics* 111:2 (May 1996), pp. 605-637. https://www.jstor.org/stable/2946689; Bruce D. Meyer and Dan T. Rosenbaum, "Welfare, the Earned Income Tax Credit, and the Labor Supply of Single Mothers," *The Quarterly Journal of Economics* 116:3 (August 2001), pp. 1063-1114. https://www.jstor.org/stable/2696426; Jacob E. Bastian and Maggie R. Jones, "Do EITC expansions pay for themselves? Effects on tax revenue and government transfers," *Journal of Public Economics* 196 (April 2021). https://www.sciencedirect.com/science/article/abs/pii/S004727272030219X; Austin Nichols and Jesse Rothstein, "The Earned Income Tax Credit," In: Robert A. Moffitt, ed., *Economics of Means-Tested Transfer Programs in the United States, Volume 1* (University of Chicago Press, 2015), pp. 137-218. https://www.nber.org/system/files/chapters/c13484/c13484.pdf; William N. Evans and Craig L. Garthwaite, "Giving Mom a Break: The Impact of Higher EITC Payments on Maternal Health," *American Economic Journal: Economic Policy* 6:2 (May 2014), pp. 258-290. https://www.aeaweb.org/articles?id=10.1257/pol.6.2.258; Raj Chetty, et al., "New Evidence on the Long-Term Impacts of Tax Credits," *National Tax Association Proceedings* 104 (2011), pp. 116-124. https://www.ntanet.org/wp-content/uploads/proceedings/2011/018-chetty-new-evidence-longterm-2011-nta-proceedings.pdf; Gordon B. Dahl and Lance Lochner, "The Impact of Family Income on Child Achievement: Evidence from the Earned Income Tax Credit," *American Economic Review* 102:5 (August 2012), pp. 1927-1956. https://www.aeaweb.org/articles?id=10.1257/aer.102.5.1927; Day Manoli and Nicholas Turner, "Cash-on-Hand and College Enrollment: Evidence from Population Tax Data and the Earned Income Tax Credit," *American Economic Journal: Economic Policy* 10:2 (2018), pp. 242-271. https://pubs.aeaweb.org/doi/pdfplus/10.1257/pol.20160298; Dayanand S. Manoli and Nicholas Turner, "Cash-on-Hand & College Enrollment: Evidence from Population Tax Data and Policy Nonlinearities," *National Bureau of Economic Research*, January 2014. https://www.nber.org/papers/w19836; Jacob Bastian and Katherine Michelmore, "The Long-Term Impact of the Earned Income Tax Credit on Children's Education and Employment Outcomes," *Journal of Labor Economics* 36:4 (October 2018), pp. 1127-1163. https://www.journals.uchicago.edu/doi/abs/10.1086/697477.

R Street
Free markets. Real solutions.

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

R Street Policy Study
No. 276

February 2023

to, say, $25,000 without the CTC. Empirically, studies have estimated a 1.1 to 1.7 percentage point increase in the employment of single mothers with a $1,000 increase in the average CTC benefit.[22] Similarly, when children turn 18 and families lose CTC eligibility, studies suggest that low-income parents are less likely to work.[23]

By increasing family income, the CTC has been shown to improve other outcomes for parents and children. For example, a $1,000 increase in the credit significantly improves mothers' self-reported health and also improves children's math and reading test scores, which extend to longer-term benefits by modestly increasing the likelihood of high school and college graduation.[24]

Effects of the 2021 CTC Expansion

Eligibility and Coverage of the CTC

The increased benefits in the 2021 CTC offered many struggling families much needed assistance during the economic hardships brought on by the COVID-19 pandemic.[25] In addition to increasing the maximum credit, the 2021 CTC expansion was fully refundable, which made the credit available to the poorest families that had previously been excluded from receiving benefits. For the first time, families also had the option of receiving benefits monthly (instead of annually).[26] While most families preferred the monthly payments, about one-quarter of families chose to receive benefits in one large annual payment.[27]

Additionally, although most families automatically received CTC payments, some did not, including families that had not filed taxes in recent years. In July 2021, 57 percent of parents reported receiving a CTC payment.[28] The fraction of eligible families receiving the CTC later rose to 79 percent.[29] However, this number could be underestimated, as some families may have received the payments not realizing the source.

How CTC Benefits Were Spent

Monthly CTC payments largely helped families purchase necessities. In a survey administered immediately before the first monthly CTC payments were issued, the most common reported intended uses of the credit were saving for emergencies; housing; utilities; clothing for children; more or better-quality food; and contributing to children's college funds.[30] This was especially true for lower-income households: Those with

2021 CTC Expansion Usage

A survey revealed that most common reported intended uses of the credit were saving for emergencies; housing; utilities; clothing for children; more or better-quality food; and contributing to children's college funds.

22. Zheng Wei, "Child Tax Credit and Maternal Labor Supply," University of Connecticut, Dec. 22, 2020. https://b6ad33f0-5c8f-4cae-8827 e0b202e9df5d.filesusr.com/ugd/727ad2_ebc7d866770149868145d8ad583cc10d.pdf; Hyein Kang, "Essays on Evaluating the Effects of the Child Tax Credit," University of Kentucky, 2022. https://uknowledge.uky.edu/economics_etds/61.
23. Naomi E. Feldman, et al., "Taxpayer Confusion: Evidence from the Child Tax Credit," *American Economic Review* 106:3 (March 2016), pp. 807-835. https://www.aeaweb.org/articles?id=10.1257/aer.20131189; Kye Lippold, "The Effects of the Child Tax Credit on Labor Supply," UC San Diego, November 2019, pp. 1-67. https://acsweb.ucsd.edu/~klippold/pdfs/Lippold_CTC_Paper.pdf.
24. Chuck Marr, et al., "EITC and Child Tax Credit Promote Work, Reduce Poverty, and Support Children's Development, Research Finds," Center on Budget and Policy Priorities, Oct. 1, 2015. https://www.cbpp.org/research/federal-tax/eitc-and-child-tax-credit-promote-work-reduce-poverty-and-support-childrens.
25. Greenstein. https://www.hamiltonproject.org/papers/next_steps_on_the_child_tax_credit.
26. Ibid.
27. Michael Karpman and Elaine Maag, "Lack of Awareness and Confusion over Eligibility Prevented Some Families from Getting Child Tax Credit Payments," Urban Institute, August 2022. https://www.urban.org/sites/default/files/2022-08/Lack%20of%20Awareness%20and%20Confusion%20over%20Eligibility%20Prevented%20Some%20Families%20from%20Getting%20CTC%20Payments.pdf.
28. Michael Karpman, et al., "Who Had Received Advanced Child Tax Credit Payments, and How Were the Payments Used? Patterns by Race, Ethnicity, and Household Income in the July-September 2021 Household Pulse Survey," Urban Institute, November 2021. https://www.urban.org/sites/default/files/publication/105023/who-has-received-advance-ctc-payments-and-how-were-the-payments-used.pdf.
29. Leah Hamilton et al., "The impacts of the 2021 expanded child tax credit on family employment, nutrition, and financial well-being," Brookings Global Working Paper No. 173, April 2022. https://www.brookings.edu/wp-content/uploads/2022/04/Child-Tax-Credit-Report-Final_Updated.pdf.
30. Leah Hamilton et al. "Employment, Financial and Well-being Effects of the 2021 Expanded Child Tax Credit: Wave 1 Executive Summary," Social Policy Institute Research, Sept. 1, 2021. https://openscholarship.wustl.edu/spi_research/56.

R Street Policy Study—Designing a Better Child Tax Credit: Accounting for Effects on Poverty, Parental Employment and Government Budgets

www.rstreet.org—5

R Street Policy Study
No. 276

February 2023

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

income below $50,000 were even more likely to plan on using the CTC for essential expenses.[31]

As far as how families actually spent their CTC payments, one survey of CTC recipients found that 30 percent of families spent CTC benefits on children's school expenses, and 25 percent used the payments to cover child care costs.[32] Another survey found that most families spent CTC benefits on routine and essential items, and about one-third spent the benefits on each of the following: health expenses, children's activities, child care, and more and better food.[33] Importantly, the monthly CTC payments reduced material hardship and food insecurity by about 30 percent.[34]

A key reason that the 2021 CTC improved family outcomes is that benefits were fully refundable. Before the 2021 CTC, nearly 27 million children were living in households that received only a partial CTC credit or no credit at all because their parents' income was too low.[35] After the monthly CTC payments began, the portion of adults with children who reported that their household did not get enough to eat fell from 13.7 percent to 9.5 percent.[36]

Short-Run Effects on Poverty

Most evidence suggests that the 2021 monthly CTC reduced poverty.[37] One study used public data and showed that the first month that the credit was issued—July 2021—saw a 3.9 percentage point drop in the monthly child poverty rate (25 percent from a baseline of 15.8 percent), representing 3 million children.[38] When the monthly payments ended in December 2021, the child poverty rate increased from 12.1 percent to 17 percent in January 2022, leaving 3.7 million more children in poverty.[39] In contrast, a different study that used proprietary data argued that the CTC's poverty effect was small and that poverty declines during this period were more likely due to pandemic relief payments.[40] However, the U.S. Census released new data in September 2022 showing that the official measure of child poverty fell from 9.7 percent in 2020 to a record low of 5.2 percent in 2021—a decline of 4.5 percentage points.[41] The report attributed 3.1 of this 4.5 percentage point decline in poverty to the 2021 CTC.[42]

From 2020 to 2021, child poverty fell.

2020
9.7%
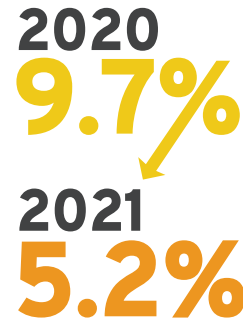
2021
5.2%

The U.S. Census released new data in September 2022 showing that child poverty fell 4.5 percentage points. The report attributed 3.1 of this 4.5 percentage point decline in poverty to the 2021 CTC.

31. Ibid.

32. Daniel J. Perez-Lopez and Yeris Mayol-Garcia, "Parents With Young Children Used Child Tax Credit Payments for Child Care," United States Census Bureau, Oct. 26, 2021. https://www.census.gov/library/stories/2021/10/nearly-a-third-of-parents-spent-child-tax-credit-on-school-expenses.html.

33. Hamilton et al., "The impacts of the 2021 expanded child tax credit on family employment, nutrition, and financial well-being." https://www.brookings.edu/wp-content/uploads/2022/04/Child-Tax-Credit-Report-Final_Updated.pdf.

34. Perez-Lopez and Mayol-Garcia. https://www.census.gov/library/stories/2021/10/nearly-a-third-of-parents-spent-child-tax-credit-on-school-expenses.html; Paul R. Shafer et al., "Association of the Implementation of Child Tax Credit Advance Payments With Food Insufficiency in US Households," *JAMA Network Open* 5:1 (Jan. 13, 2022). https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2788110.

35. Goldin et al. https://www.nber.org/papers/w29342.

36. Claire Zippel, "After Child Tax Credit Payments Begin, Many More Families Have Enough to Eat," Center on Budget and Policy Priorities, Aug. 30, 2021. https://www.cbpp.org/blog/after-child-tax-credit-payments-begin-many-more-families-have-enough-to-eat.

37. John Creamer et al., "Poverty in the United States: 2021," United States Census Bureau, Sept. 13, 2022. https://www.census.gov/library/publications/2022/demo/p60-277.html.

38. Zachary Parolin et al., "Monthly Poverty Rates among Children after the Expansion of the Child Tax Credit," *Poverty & Social Poverty Brief* 5:4 (Aug. 21, 2021), pp. 1-14. https://static1.squarespace.com/static/610831a16c95260dbd68934a/t/6125831bb2d0cb07e98375b9/1629848348974/Monthly-Poverty-with-CTC-July-CPSP-2021.pdf.

39. Zachary Parolin et al., "Absence of Monthly Child Tax Credit Leads to 3.7 Million More Children in Poverty in January 2022," *Poverty & Social Poverty Brief* 6:2 (Feb. 17, 2022), pp. 1-5. https://static1.squarespace.com/static/610831a16c95260dbd68934a/t/620ec869096c78179c7c4d3c/1645135978087/Monthly-poverty-January-CPSP-2022.pdf.

40. Jeehoon Han et al., "Real-Time Poverty, Material Well-Being, and the Child Tax Credit," National Bureau of Economic Research Working Papers, August 2022. https://www.nber.org/system/files/working_papers/w30371/w30371.pdf.

41. Creamer et al. https://www.census.gov/library/publications/2022/demo/p60-277.html.

42. Ibid.

R Street Policy Study
No. 276

February 2023

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

Short-Run Effects on Employment

Just before the first monthly CTC payment, 93.6 percent of all eligible parents said that they planned to continue working, although 19.7 percent also noted that they would use the credit to stay home more and spend more time with their children.[43] Theoretically, the CTC could increase labor supply by helping families pay for transportation and child care.[44]

Although most empirical research finds null effects of the monthly CTC on employment, the 2021 CTC was a temporary policy change, and labor supply responses often take several years to manifest.[45] This means that the null effects in these studies could underestimate the impact of a permanent CTC change. Furthermore, the CTC was paid out during a pandemic, when labor supply and labor demand were abnormal and other economic impact payments were given out; people may have reacted differently under more normal circumstances.

Predicting Long-Run Effects on Employment and Poverty

Employment

Although the 2021 CTC appears to have had a largely neutral effect on work incentives, it replaced a previous CTC that subsidized and encouraged work by phasing in benefits. Therefore, the 2021 CTC had a small work disincentive.[46] The number of parents that would choose to stop working in response to a permanent version of the 2021 CTC depends on several factors, including how the CTC changed the "return to work" (RTW) and labor supply elasticities. These two factors are defined and described below.

The RTW calculation describes how tax policy and tax credits affect work incentives. The RTW compares one's income if they choose to work versus their income if they do not work. One component of the RTW is how much public assistance is available for nonworkers: More benefits for nonworkers makes working less attractive and decreases the RTW. Of note, the RTW reflects average tax rates, which matter more than marginal tax rates for work incentives on the participation margin (i.e., whether to work at all).[47] To illustrate, consider someone earning $50,000 where the tax rate on the first $25,000 earned is 0 percent and the tax rate on all earnings over $25,000 is 20 percent. This individual's average tax rate would be 10 percent, as taxes owed

Predicting Long-Run Effects
Employment

43. Hamilton et al., "Employment, Financial and Well-being Effects of the 2021 Expanded Child Tax Credit." https://openscholarship.wustl.edu/spi_research/56.

44. Hamilton et al., "The impacts of the 2021 expanded child tax credit on family employment, nutrition, and financial well-being." https://www.brookings.edu/wp-content/uploads/2022/04/Child-Tax-Credit-Report-Final_Updated.pdf.

45. See, e.g., Elizabeth Ananat et al., "Effects of the Expanded Child Tax Credit on Employment Outcomes: Evidence from Real-World Data from April to December 2021," National Bureau of Economic Research Working Papers, March 2022. https://www.nber.org/papers/w29823; Hamilton et al., "Employment, Financial and Well-being Effects of the 2021 Expanded Child Tax Credit." https://openscholarship.wustl.edu/spi_research/56; Chuck Marr et al., "Build Back Better's Child Tax Credit Changes Would Protect Millions From Poverty – Permanently: Expanded EITC Extended for Adults Without Children," Center on Budget and Policy Priorities, Nov. 11, 2021. https://www.cbpp.org/research/federal-tax/build-back-betters-child-tax-credit-changes-would-protect-millions-from; and Hamilton et al., "The impacts of the 2021 expanded child tax credit on family employment, nutrition, and financial well-being." https://www.brookings.edu/wp-content/uploads/2022/04/Child-Tax-Credit-Report-Final_Updated.pdf.

46. Bastian. https://drive.google.com/file/d/1H5iNZZO_YFRIDz-3Tip4C-BpnD85bUjH/view.

47. Bradley T. Heim and Bruce D. Meyer, "Work costs and nonconvex preferences in the estimation of labor supply models," Journal of Public Economics 88 (2004), pp. 2323-2338. https://cpb-us-w2.wpmucdn.com/voices.uchicago.edu/dist/d/1370/files/2019/11/HeimMeyerJPubE2004.pdf; Henrik Jacobsen Kleven and Claus Thustrup Kreiner, "The marginal cost of public funds: Hours of work versus labor force participation," Journal of Public Economics 90 (2006), pp. 1955-1973. https://www.henrikkleven.com/uploads/3/7/3/1/37310663/kleven-kreiner_jpube2006.pdf; Nada Eissa et al., "Evaluation of four tax reforms in the United States: Labor supply and welfare effects for single mothers," Journal of Public Economics 92:3-4 (April 2008), pp. 795-816. https://www.sciencedirect.com/science/article/abs/pii/S0047272707001156.

R Street

![R Street logo] Free markets. Real solutions.

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

R Street Policy Study
No. 276

February 2023

would be $5,000 (= 0 percent x $25,000 + 20 percent x [$50,000-$25,000]) out of $50,000. The marginal tax rate would be the tax rate on the next dollar earned, which in this example would be 20 percent.

The RTW calculation is defined as $RTW = \frac{(Income_{work} - Income_{not\,work})}{Income_{work}}$, with $Income_{work}$ equal to total income if one works and $Income_{not\,work}$ equal to total income if one does not work.[48] For example, if there were no taxes or public assistance, $RTW = \frac{Income_{work} - 0}{Income_{work}} = 1$, which can be interpreted as each $1 earned leads to $1 more income on net. If welfare payments are available only to nonworkers, then $RTW = \frac{Income_{work} - Welfare}{Income_{work}} < 1$. In this case, each $1 earned leaves someone with less than $1 more income on net because they lose welfare payments when they work. A program like the EITC or 2022 CTC, for instance, is essentially a "negative income tax" that increases with each $1 earned for lower-income families. For these programs, $RTW > 1$. Higher values of RTW mean that each hour of work leads to higher take-home pay, similar to getting a raise, which some would say makes working more attractive and increases the incentive to join the labor force.

Having defined RTW, it is important to understand how responsive labor supply is to changes in the RTW. If labor supply is very responsive, then a given RTW change will lead to a large change in labor supply; but if labor supply is not very responsive, then RTW changes will lead to smaller changes in labor supply.[49] Labor supply elasticities denote how responsive people are to RTW changes. Elasticities are defined as the percent change in labor supply divided by the percent change in RTW. An elasticity of 0.1 means that a 10 percent increase in the RTW leads to a 1 percent increase in labor supply (0.1 = 1 percent/10 percent), and, similarly, a 10 percent decrease in the RTW leads to a 1 percent decrease.[50]

Economists define two types of labor supply elasticities: substitution effects and income effects. Substitution effects are where people work less as the RTW decreases, and they work more as the RTW increases. When the RTW decreases, people respond by "substituting" their time away from work with nonwork activities. Income effects can be described as people work less when their income goes up, and people work more when their income goes down.[51] Basically, more income allows people to "afford" to work less and to enjoy more nonwork activities. Income effect elasticities are small (between 0.0 and -0.1), both for the full population and for various subgroups, meaning that changes in income are associated with small changes in labor supply.[52]

Most evidence on the substitution effect shows that male labor supply elasticities are low (between 0.0 and 0.1) and minimally affected by tax credit programs like the CTC

RTW
f(x)

Key Definition

Elasticities:
The percent change in labor supply divided by the percent change in RTW. An elasticity of 0.1 means that a 10 percent increase in the RTW leads to a 1 percent increase in labor supply (0.1 = 1 percent/10 percent), and, similarly, a 10 percent decrease in the RTW leads to a 1 percent decrease.

48. Bastian. https://drive.google.com/file/d/1H5iNZZO_YFRIDz-3Tip4C-BpnD85bUjH/view.

49. Ibid.

50. Ibid.

51. Ibid.

52. See, e.g., Jacob Mortenson et al., "The Absence of Income Effects at the Onset of Child Tax Benefits," SSRN, Nov. 26, 2018. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3290744; Michael Baker et al., "The Effects of Child Tax Benefits on Poverty and Labor Supply: Evidence from the Canada Child Benefit and Universal Child Care Benefit," National Bureau of Economic Research Working Papers, March 2021. https://www.nber.org/papers/w28556; Guido W. Imbens, et al., "Estimating the Effect of Unearned Income on Labor Earnings, Savings, and Consumption: Evidence from a Survey of Lottery Players," *American Economic Review* 91:4 (September 2001), pp. 778-794. https://www.aeaweb.org/articles?id=10.1257/aer.91.4.778; David Cesarini et al., "The Effect of Wealth on Individual and Household Labor Supply: Evidence from Swedish Lotteries," *American Economic Review* 107:12 (December 2017), pp. 3917-3946. https://www.aeaweb.org/articles?id=10.1257/aer.20151589.

R Street Policy Study—Designing a Better Child Tax Credit: Accounting for Effects on Poverty, Parental Employment and Government Budgets

www.rstreet.org—8

R Street Policy Study
No. 276

February 2023

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

and EITC.[53] Female labor supply elasticities are larger but have declined over time, especially among married women, from a high of about 1.0 historically, to 0.6 to 0.3 from 1980 to 2000, to 0.1 in recent years (i.e., converging on elasticities for men).[54] One group of workers with relatively large elasticities are lower-income unmarried mothers.[55] Different statistical analyses have been used to estimate this group's elasticities over time, and studies have calculated effects ranging from 1.2 to 0.3 through the 1980s to 0.32 to 0.33 in the 1990s to 2000s.[56] Lower-income unmarried mothers have a larger elasticity because they qualify for several out-of-work transfer programs and they face high fixed costs in order to work, including finding help taking care of their children.

Elasticity estimates such as those discussed above are taken into account when calculating the long-run effect of a permanent version of the 2021 CTC on parental employment.[57] To calculate employment effects, researchers first calculate the change in the RTW for each working parent (and ignore nonworking parents, as they cannot stop working). The change in the RTW depends on the family's taxable income, how much 2021 CTC they were eligible for and how much pre-2021 CTC they were eligible for. Researchers then make assumptions about labor supply elasticities (both for the substitution effect and for the income effect). Finally, they calculate the probability that each parent stops working by multiplying the change in the RTW with the elasticity.[58] For example, if a hypothetical person had a RTW change of -10 percent and an assumed elasticity of 0.2, then this person would have a 2 percent predicted probability of choosing to stop working. By doing this for every working parent and adding up probabilities, researchers can calculate the expected number of parents that will choose to stop working.

It's in the numbers.

53. Robert McClelland and Shannon Mok, "A Review of Recent Research on Labor Supply Elasticities," Congressional Budget Office Working Paper Series, No. 2012-12, October 2012. https://www.cbo.gov/sites/default/files/112th-congress-2011-2012/workingpaper/10-25-2012-recentresearchonlaborsupplyelasticities.pdf; Nada Eissa and Hilary Williamson Hoynes, "Taxes and the labor market participation of married couples: the earned income tax credit," *Journal of Public Economics* 88:9-10 (2004), pp. 1931-1958. https://gspp.berkeley.edu/assets/uploads/research/pdf/Eissa-Hoynes-JPUBE-2004.pdf; Jacob Bastian, "The Rise of Working Mothers and the 1975 Earned Income Tax Credit," *American Economic Journal: Economic Policy* 12:3 (August 2020), pp. 44-75. https://www.aeaweb.org/articles?id=10.1257%2Fpol.20180039; Jacob Bastian and Lance Lochner, "The EITC and Maternal Time Use: More Time Working and Less Time with Kids?," National Bureau of Economic Research Working Papers, January 2021. https://www.nber.org/papers/w27717.

54. McClelland and Mok. https://www.cbo.gov/sites/default/files/112th-congress-2011-2012/workingpaper/10-25-2012-recentresearchonlaborsupplyelasticities.pdf; Chinhui Juhn et al, "Current Unemployment, Historically Contemplated," Brookings Papers on Economic Activity 2002:1 (2002), pp. 79-116. https://www.jstor.org/stable/1209174; Bradley T. Heim, "Structural Estimation of Family Labor Supply with Taxes Estimating a Continuous Hours Model Using a Direct Utility Specification," *The Journal of Human Resources* 44:2 (Spring 2009), pp. 350-385. https://www.jstor.org/stable/20648901; Claudia Goldin, *Understanding the gender gap: An economic history of American women,* (Oxford University Press, 1990); Francine D. Blau and Lawrence M. Kahn, "Changes in the Labor Supply Behavior of Married Women: 1980–2000," *Journal of Labor Economics* 25:3 (July 2007), pp. 393-438. https://www.jstor.org/stable/10.1086/513416; Bradley T. Heim, "The Incredible Shrinking Elasticities: Married Female Labor Supply, 1978–2002," *Journal of Human Resources*, 42:4 (2007), pp. 881-918. http://jhr.uwpress.org/content/XLII/4/881.abstract; Emily Y. Lin and Patricia K. Tong, "Married couple work participation and earnings elasticities: evidence from tax data," *International Tax and Public Finance* 24 (Aug. 1, 2017), pp. 997-1025. https://link.springer.com/article/10.1007/s10797-017-9470-3.

55. Nada Eissa and Jeffrey B. Liebman. "Labor Supply Response to the Earned Income Tax Credit," *The Quarterly Journal of Economics* 111:2 (May 1996), pp. 605-637. https://www.jstor.org/stable/2946689; Bruce D. Meyer and Dan T. Rosenbaum, "Welfare, the Earned Income Tax Credit, and the Labor Supply of Single Mothers," *The Quarterly Journal of Economics* 116:3 (August 2001), pp. 1063-1114. https://www.jstor.org/stable/2696426; Jeffrey Grogger, "The Effects of Time Limits, the EITC, and Other Policy Changes on Welfare Use, Work, and Income Among Female-Headed Families," *The Review of Economics and Statistics* 85:2 (May 2003), pp. 394-408. https://direct.mit.edu/rest/article-abstract/85/2/394/57401/The-Effects-of-Time-Limits-the-EITC-and-Other?redirectedFrom=fulltext; V. Joseph Hotz and John Karl Scholz, "Examining the Effect of the Earned Income Tax Credit on the Labor Market Participation of Families on Welfare," National Bureau of Economic Research Working Papers, January 2006. https://www.nber.org/papers/w11968; Austin Nichols and Jesse Rothstein, "The Earned Income Tax Credit," In: Robert A. Moffit, ed., *Economics of Means-Tested Transfer Programs in the United States, Volume 1,* (University of Chicago Press, 2015), pp. 137-218. https://www.nber.org/system/files/chapters/c13484/c13484.pdf.

56. McClelland and Mok. https://www.cbo.gov/sites/default/files/112th-congress-2011-2012/workingpaper/10-25-2012-recentresearchonlaborsupplyelasticities.pdf; Raj Chetty, "Bounds on Elasticities With Optimization Frictions: A Synthesis of Micro and Macro Evidence on Labor Supply," *Econometrica* 80:3 (May 28, 2012), pp. 969-1018. https://onlinelibrary.wiley.com/doi/epdf/10.3982/ECTA9043; Kelly Bishop et al., "Single Women's Labor Supply Elasticities: Trends and Policy Implications," *ILR Review* 63:1 (Oct. 1, 2009). https://journals.sagepub.com/doi/abs/10.1177/001979390906300108?journalCode=ilra; Bastian, "The Rise of Working Mothers and the 1975 Earned Income Tax Credit." https://www.aeaweb.org/articles?id=10.1257%2Fpol.20180039; Hilary W. Hoynes and Ankur J. Patel, "Effective Policy for Reducing Poverty and Inequality? The Earned Income Tax Credit and the Distribution of Income," *Journal of Human Resources* 53:4 (Fall 2018), pp. 859-890. https://muse.jhu.edu/article/706370/pdf; Jacob E. Bastian and Maggie R. Jones, "Do EITC expansions pay for themselves? Effects on tax revenue and government transfers," *Journal of Public Economics* 196 (April 2021). https://www.sciencedirect.com/science/article/abs/pii/S004727272030219X.

57. Bastian, "How Would a Permanent 2021 Child Tax Credit Expansion Affect Poverty and Employment?" https://drive.google.com/file/d/1H5iNZZO_YFRIDz-3Tip4C-BpnD85bUjH/view.

58. Ibid.

R Street Policy Study—Designing a Better Child Tax Credit: Accounting for Effects on Poverty, Parental Employment and Government Budgets

www.rstreet.org—9

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

R Street Policy Study
No. 276
February 2023

Of note, studies generally come to similar conclusions about RTW changes and make similar assumptions about income effect elasticities, but they tend to make rather different assumptions about substitution effect elasticities. For the income effect calculation, many researchers use similar income effect elasticities (between 0.05 and 0.085, varying by gender and marital status) and predict that about 140,000 parents would stop working in response to a permanent version of the 2021 CTC.[59] Combining income and substitution effects, research has predicted that a permanent version of the 2021 CTC would have a net employment effect somewhere between 296,000 and 1.46 million; this wide range is largely explained by different assumptions about substitution effect elasticities.[60]

Poverty

Studies predicting the long-run effects of the 2021 CTC on poverty assess both static and dynamic effects.[61] Static effects assume no change in parental labor supply or earnings, whereas dynamic effects include the previously discussed predicted changes in parental labor supply and earnings. While a static calculation can give a good approximation of the net effect when behavioral responses to a policy are small, they can be misleading when a policy induces a large change in labor supply and earnings. Because some parents might stop working in response to a permanent version of the 2021 CTC, static calculations show larger poverty declines than dynamic calculations. Larger decreases in employment would lead to smaller dynamic poverty decreases. Most studies come to similar conclusions about the "static" effect of a permanent version of the 2021 CTC on poverty but differ about the "dynamic" effects because of the different employment effects.[62]

In assessing the three different CTC designs presented in this paper, the "static" effect of the 2021 CTC on poverty was calculated using household income (because poverty is defined at the household level), subtracting the old CTC benefits, adding 2021 CTC benefits that each family is eligible for and recalculating poverty status based on this new total income.

When accounting for employment effects, it is important to note that some families with a parent who stops working may stay poor or become newly poor, whereas others would not fall into poverty. To understand the CTC's dynamic effects on poverty, consider seven types of families: (1) Poor parents who do not stop working and are pulled out of poverty by the CTC; (2) Poor parents who do not stop working but are not pulled out of poverty; (3) Poor parents who stop working and are pulled out of poverty; (4) Poor parents who stop working and are not pulled out of poverty; (5) Non-poor parents who do not stop working and remain non-poor; (6) Non-poor parents who stop working and remain non-poor; and (7) Non-poor parents who stop working and become poor. The dynamic effect of the CTC on poverty will depend on how many families fall into each of these categories.

Predicting Long-Run Effects
Poverty

59. Greg Duncan and Suzanne Le Menestrel, "A Roadmap to Reducing Child Poverty," National Academies of Sciences, Engineering, and Medicine, 2019. https://nap.nationalacademies.org/catalog/25246/a-roadmap-to-reducing-child-poverty; Goldin et al. https://www.nber.org/papers/w29342; Kevin Corinth et al. https://www.nber.org/papers/w29366.
60. Alex Brill et al, "Model Introduction: Estimating the Labor Supply Response to a Permanent Child Tax Credit Expansion," AEI, 2021. https://grantseiter.com/CTC-Labor-Response/intro.html; Goldin et al. https://www.nber.org/papers/w29342; Bastian, "How Would a Permanent 2021 Child Tax Credit Expansion Affect Poverty and Employment?" https://drive.google.com/file/d/1H5iNZZO_YFRIDz-3Tip4C-BpnD85bUjH/view; Kevin Corinth et al., "The Anti-Poverty, Targeting, and Labor Supply Effects of Replacing a Child Tax Credit with a Child Allowance," National Bureau of Economic Research Working Papers, October 2021. https://www.nber.org/papers/w29366.
61. Bastian, "How Would a Permanent 2021 Child Tax Credit Expansion Affect Poverty and Employment?" https://drive.google.com/file/d/1H5iNZZO_YFRIDz-3Tip4C-BpnD85bUjH/view.
62. Ibid.

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

R Street Policy Study
No. 276

February 2023

After accounting for parental employment changes, the effects of a permanent version of the 2021 CTC on "dynamic" poverty differs across studies. One study found that a permanent version of the 2021 CTC would reduce child poverty by 5.9 percentage points, representing 4.3 million children.[63] Others have estimated rates of reduction between 22 percent and 40 percent.[64] While different papers make various labor supply elasticity assumptions and come to somewhat different conclusions, the common finding is that a permanent version of the 2021 CTC would lift millions out of poverty, even after accounting for changes in parental employment.

Furthermore, not only would permanently expanding the credit reduce child poverty, but it would also reduce deep child poverty and help close racial disparities. Deep poverty is defined as a family having an income below 50 percent of that family's poverty threshold.[65] One study projected that a permanent expansion of the CTC could reduce deep child poverty by 1.5 percentage points.[66] Another found that it would reduce deep child poverty by 2.2 percentage points.[67] Additionally, although children from all racial groups would benefit from a permanent CTC expansion, studies have estimated that poverty would fall by 10.3 percentage points among Black children, 3.6 points among Asian American and Pacific Islander children, and 7.2 points among Hispanic children, compared with a 3.3-point effect for white children.[68]

These potentially large effects on poverty can be attributed to the full refundability provision. For example, estimates have projected that increasing the maximum credit amount by $1,000 (to $3,000) and allowing families to claim their 17-year-old children would decrease the child poverty rate by only 5 percent; alternatively, adding full refundability to these changes results in a decrease of 40 percent.[69]

Analysis

Data Sources

This paper proposes various CTC policy changes and evaluates how each would affect employment and poverty. The analyses herein are based on 2017 Current Population Survey (CPS) Annual Social and Economic Supplement data.[70] This paper uses CPS data because it includes detailed information on many income sources and is used to construct official U.S. poverty statistics. Following the approach of other research on the 2021 CTC, we designated 2017 as our baseline year, as that is the time period just before the 2018 CTC expansion and allows for a fixed representation of households before policy changes. This paper focuses on families with at least one child between ages 0 and 17, as these are the families eligible for the CTC and affected by CTC policy changes.

> Not only would permanently expanding the credit reduce child poverty, but it would also reduce deep child poverty and help close racial disparities.

Analysis: Data Sources

63. Gregory Acs and Kevin Werner, "How a Permanent Expansion of the Child Tax Credit Could Affect Poverty," Urban Institute, July 2021. https://www.urban.org/sites/default/files/publication/104626/how-a-permanent-expansion-of-the-child-tax-credit-could-affect-poverty.pdf.

64. Marr et al. https://www.cbpp.org/research/federal-tax/build-back-betters-child-tax-credit-changes-would-protect-millions-from; Bastian, "How Would a Permanent 2021 Child Tax Credit Expansion Affect Poverty and Employment?" https://drive.google.com/file/d/1H5iNZZO_YFRIDz-3Tip4C-BpnD85bUjH/view; Corinth et al. https://www.nber.org/papers/w29366.

65. "What is 'deep poverty'?," Center for Poverty and Inequality Research, Dec. 14, 2022. https://poverty.ucdavis.edu/faq/what-deep-poverty.

66. Acs and Werner. https://www.urban.org/sites/default/files/publication/104626/how-a-permanent-expansion-of-the-child-tax-credit-could-affect-poverty.pdf.

67. Bastian, "How Would a Permanent 2021 Child Tax Credit Expansion Affect Poverty and Employment?" https://drive.google.com/file/d/1H5iNZZO_YFRIDz-3Tip4C-BpnD85bUjH/view.

68. Acs and Werner. https://www.urban.org/sites/default/files/publication/104626/how-a-permanent-expansion-of-the-child-tax-credit-could-affect-poverty.pdf.

69. Marr et al. https://www.cbpp.org/research/federal-tax/build-back-betters-child-tax-credit-changes-would-protect-millions-from.

70. Sarah Flood et al., "IPUMS USA: Version 10.0," IPUMS, last accessed Jan. 5, 2023. https://www.ipums.org/projects/ipums-usa/d010.v10.0.

R Street Policy Study—Designing a Better Child Tax Credit: Accounting for Effects on Poverty, Parental Employment and Government Budgets

www.rstreet.org—11

R Street Policy Study
No. 276
February 2023

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

Table 1: Baseline Traits and Static Effects of Three CTC Proposals

Group	Unmarried Mothers	Married Mothers	Fathers and Other Guardians	Total Parents	Total Children
Panel A: Baseline Traits					
Population (Millions)	11.68	25.05	26.78	63.51	72.98
Employed (Millions)	8.64	16.86	23.83	49.34	0
Employed (%)	73.9	67.3	89.0	77.7	0
Poor (Millions)	3.03	1.87	1.81	6.71	10.16
Poor (%)	25.9	7.5	6.8	10.6	13.9
Panel B: CTC Proposal #1					
Still Poor (Millions)	2.60	1.42	1.37	5.39	7.87
No Longer Poor (Millions)	0.43	0.45	0.44	1.32	2.29
Static Poverty Rate (%)	22.3	5.7	5.1	8.5	10.8
Static Poverty Reduction (%)	14.0	24.3	24.2	19.6	22.6
Panel C: CTC Proposal #2					
Still Poor (Millions)	2.13	1.36	1.32	4.81	6.49
No Longer Poor (Millions)	0.90	0.51	0.49	1.90	3.67
Static Poverty Rate (%)	18.2	5.4	4.9	7.6	8.9
Static Poverty Reduction (%)	29.6	27.3	27.3	28.3	36.1
Panel D: CTC Proposal #3					
Still Poor (Millions)	2.24	1.37	1.33	4.94	6.77
No Longer Poor (Millions)	0.79	0.50	0.48	1.77	3.39
Static Poverty Rate (%)	19.2	5.5	4.9	7.8	9.3
Static Poverty Reduction (%)	25.9	26.9	26.9	26.5	33.4

Table 1 shows baseline poverty and employment numbers for the 2017 population of unmarried mothers; married mothers; fathers and other guardians (e.g., grandparents); all parents; and all children. Data for these subgroups is provided to give the reader an understanding of the population's family composition. The United States has 11.68 million unmarried mothers, 25.05 million married mothers, and 26.78 million fathers and other guardians, totaling 63.51 million parents with 72.98 million children. Table 1 shows the number (and percentage) of working individuals in each group: 73.9 percent of unmarried mothers work, compared to 67.3 percent of married mothers and 89.0 percent of fathers and other guardians. Table 1 also shows that 25.9 percent of unmarried mothers are poor, compared to 7.5 percent of married mothers and 6.8 percent of fathers and other guardians. Overall, 10.6 percent of all parents are poor, and 13.9 percent of all children are poor.

Measuring Poverty

U.S. poverty is measured in two main ways. One is the official poverty measure (OPM), which factors in family structure, family size and pretax/pretransfer total household income.[71] If two families are living in the same household, their income is combined

**Analysis: Measuring Poverty**

71. Liana E. Fox and Kalee Burns, "What's the Difference Between the Supplemental and Official Poverty Measures?," United States Census Bureau, Sept. 9, 2021. https://www.census.gov/newsroom/blogs/random-samplings/2021/09/difference-between-supplemental-and-official-poverty-measures.html.

R Street Policy Study
No. 276

February 2023

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

to calculate a household level measure of poverty. The second poverty measure is the supplemental poverty measure (SPM), which builds on the official poverty measure by including tax credits and most government transfers.[72] The SPM also subtracts nondiscretionary expenses (e.g., taxes, medical out-of-pocket expenses and work expenses) from income, adjusts for geographic differences in the cost of living, and better accounts for cohabiters and relatives.[73] This paper uses the SPM because tax credits like the CTC affect the SPM but not the OPM, and the SPM is the most common way to evaluate the effects of public policy on poverty.

For this paper's analyses, CPS data is supplemented with SPM information to determine which households would be classified as poor in 2017.[74] Figure 1 shows the number of children—and poor children—at different household income levels in 2017; it accounts for all 73 million children living in the United States, 10.2 million of whom were poor.[75] Each bar in the figure represents a $20,000 household income range, and the highest bar captures income over $180,000. The most common income levels are $20,000 to $40,000 (13 million children); $40,001 to $60,000 (16 million children); $60,000 to $80,000 (12 million children); and $80,001 to $100,000 (10 million children). About 18 million children (about 25 percent of all children) live in a household with income over $100,000, and about 5 million children live in a household with income below $20,000.

Figure 1 also illustrates how many children in each income range are poor (different children have different poverty thresholds based on family size and other factors). All children living in households with an annual income of $20,000 or less are poor, about 50 percent of children living in the $20,001 to $40,000 income range are poor, about 10 percent of children living in the $40,001 to $60,000 income range are poor, and a small fraction of children living in households with incomes of $60,001 or more are poor.

In 2017, there were

73 million
children living in
the United States

10.2 million
of whom were poor.

Figure 1: Household Income Distribution of U.S. Children in 2017
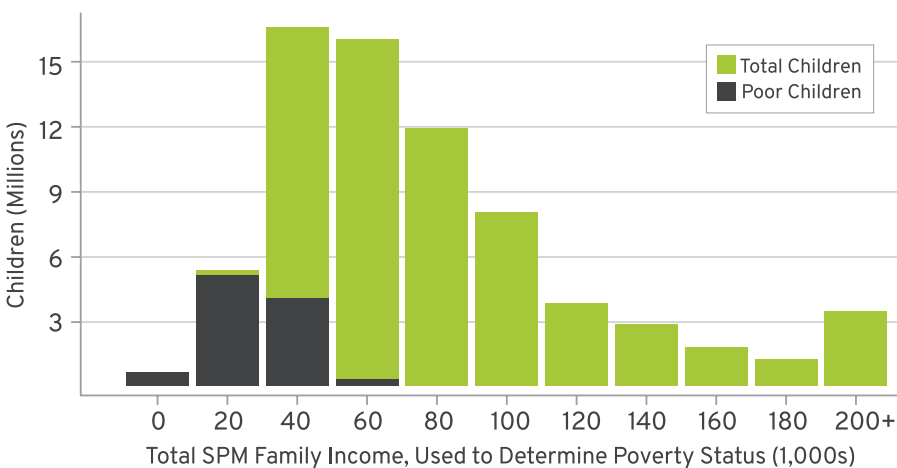
Source: Sarah Flood et al., "IPUMS USA: Version 10.0," IPUMS, last accessed Jan. 5, 2023. https://www.ipums.org/projects/ipums-usa/d010.v10.0.

72. Ibid.
73. Benjamin Bridges and Robert V. Gesumaria, "The Supplemental Poverty Measure (SPM) and Children: How and Why the SPM and Official Poverty Estimates Differ," *Social Security Bulletin* 75:3 (2015). https://www.ssa.gov/policy/docs/ssb/v75n3/v75n3p55.html.
74. "ACS Supplemental Poverty Measures (SPM) Research Files: 2009 to 2019," United States Census Bureau, Oct. 21, 2021. https://www.census.gov/data/datasets/time-series/demo/supplemental-poverty-measure/acs-research-files.html.
75. Bastian, "How Would a Permanent 2021 Child Tax Credit Expansion Affect Poverty and Employment?" https://drive.google.com/file/d/1H5iNZZO_YFRIDz-3Tip4C-BpnD85bUjH/view.

R Street Policy Study—Designing a Better Child Tax Credit: Accounting for Effects on Poverty, Parental Employment and Government Budgets

www.rstreet.org—13

R Street Policy Study
No. 276
February 2023

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

The 2022 Baseline CTC

In this section, the 2022 CTC is described, which will serve as the baseline CTC against which other CTC proposals will be evaluated. Figure 2 shows the baseline 2022 CTC, which was created in the 2017 Tax Cuts and Job Act.[76] Families with earnings below $2,500 are not eligible for any benefits. CTC benefits phase in at a 15 percent rate for each dollar of earnings over $2,500. Benefits reach a maximum of $2,000 per eligible child. Families are eligible for the maximum benefits until earnings reach $200,000 ($400,000 if married), at which point benefits phase out at a 5 percent rate until they reach zero.[77] Figure 2 combines refundable and nonrefundable benefits.
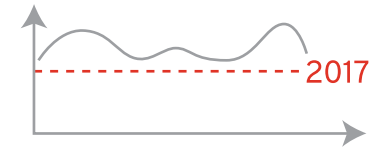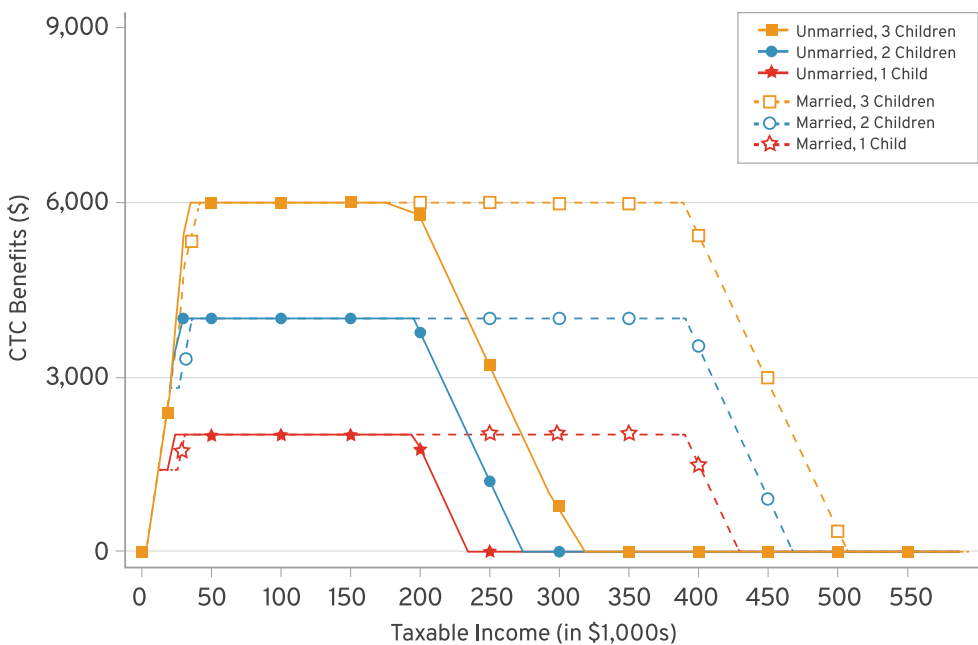
Analysis: The 2022 Baseline CTC

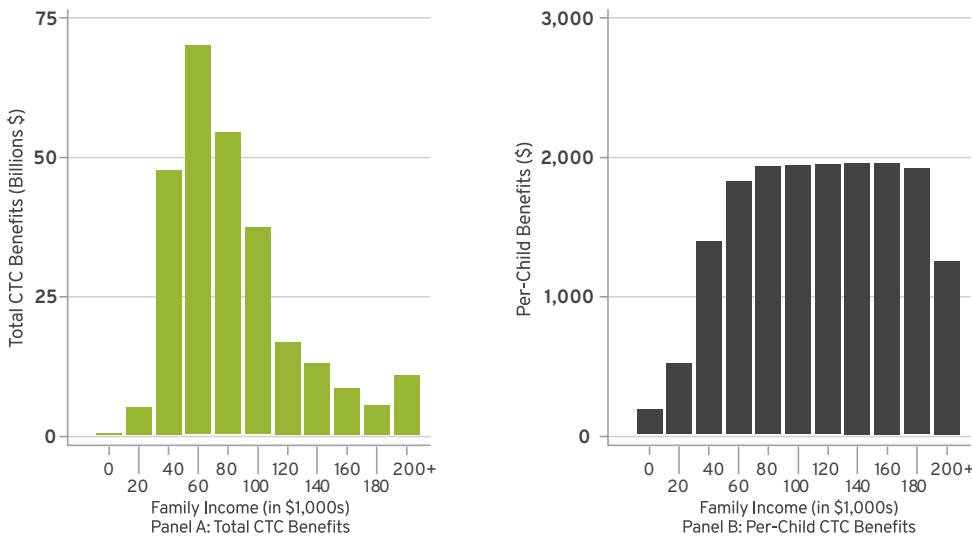**Figure 2:** Baseline 2022 CTC Schedule, Refundable and Nonrefundable Benefits

Data derived from Sarah Flood et al., "IPUMS USA: Version 10.0," IPUMS, last accessed Jan. 5, 2023.
https://www.ipums.org/projects/ipums-usa/d010.v10.0.

To later serve as a comparison against our three CTC proposals, Figure 3 has been designed to illustrate the total CTC benefits and the average per-child CTC benefits for the baseline 2022 CTC allocated to each income grouping. Each bar represents a $20,000 income range; the highest bar captures income over $180,000. Panel A shows that most CTC benefits go to families with income between $40,000 and $100,000, which makes sense, as Figure 3 shows that this income range includes the most households. However, Panel B shows that the pattern of per-child CTC benefits looks different: Households with income between $80,000 and $200,000 receive the most benefits, lower-income households receive less benefits and the lowest-income households (with income $20,000 or less) receive almost no CTC benefits at all. Thus, the 2022 CTC is most beneficial for middle- and upper-middle-income households.

76. LaJoie. https://taxfoundation.org/child-tax-credit.
77. Ibid.

R Street Policy Study
No. 276

February 2023

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

Figure 3: Total Benefits and Average Per-Child Benefits
Per Income Group, 2022

Data derived from Sarah Flood et al., "IPUMS USA: Version 10.0," IPUMS, last accessed Jan. 5, 2023.
https://www.ipums.org/projects/ipums-usa/d010.v10.0.

Three New CTC Proposals

Describing the Three CTC Proposals

In the sections that follow, this paper explores three possible CTC expansions through the lenses of family income, parental employment and poverty:

- **Proposal #1 (Figure 4):** CTC benefits equal zero for those with zero earnings, but benefits begin phasing in at the first earned dollar of income (instead of accruing after $2,500) and phase in at 25 percent instead of 15 percent.

- **Proposal #2 (Figure 5):** CTC benefits do not phase in; instead, they equal the maximum possible amount for those with no or very low earnings.

- **Proposal #3 (Figure 6):** This is a hybrid of the first and second proposal in that some CTC benefits are available to nonworkers and additional benefits phase in with earnings.

These three proposals represent three different approaches to helping low-income families. Of note, proposal #1 is most similar to the baseline 2022 CTC, proposal #2 is similar to the temporary 2021 CTC, and proposal #3 is a hybrid. Across these three proposals, the only difference is how benefits phase in for the lowest-income households, as this detail is the most relevant for reducing poverty and influencing work incentives.
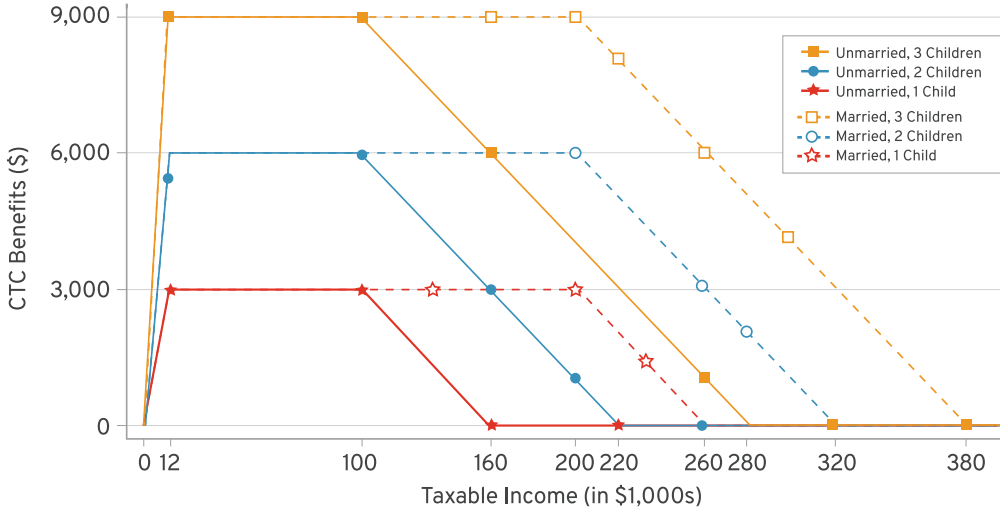
Figures 4 to 6 show the CTC benefits of each of these proposals by taxable income for families with one, two or three children. In each proposal, benefits are worth a maximum of $3,000 per child (compared to $2,000 in the baseline CTC) and begin phasing out at a 5 percent rate for income over $100,000 ($200,000 if married).

Three CTC Proposals

☑ Proposal #1
☑ Proposal #2
☑ Proposal #3

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

Figure 4: CTC Schedule for Proposal #1

Figure 5: CTC Schedule for Proposal #2
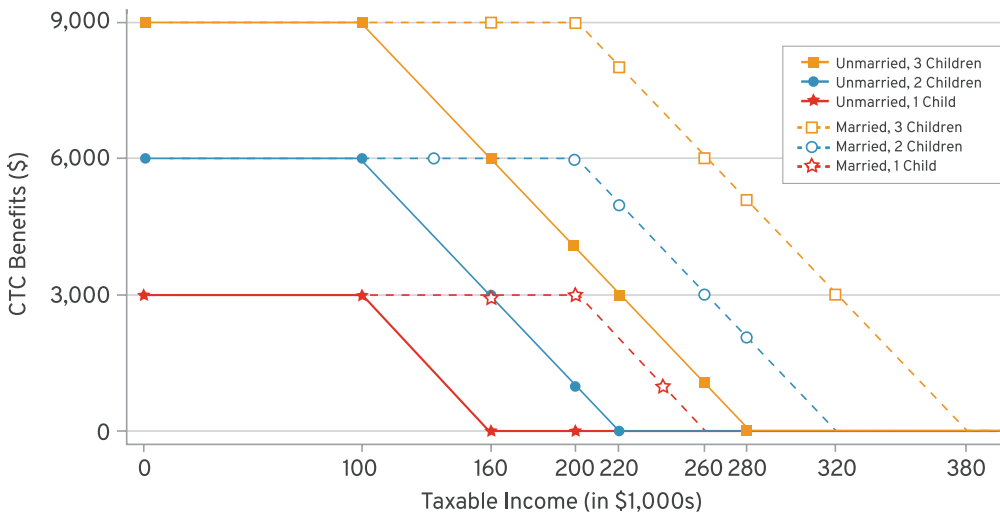
Figure 6: CTC Schedule for Proposal #3

R Street Policy Study—Designing a Better Child Tax Credit: Accounting for Effects on Poverty, Parental Employment and Government Budgets

www.rstreet.org—16

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets
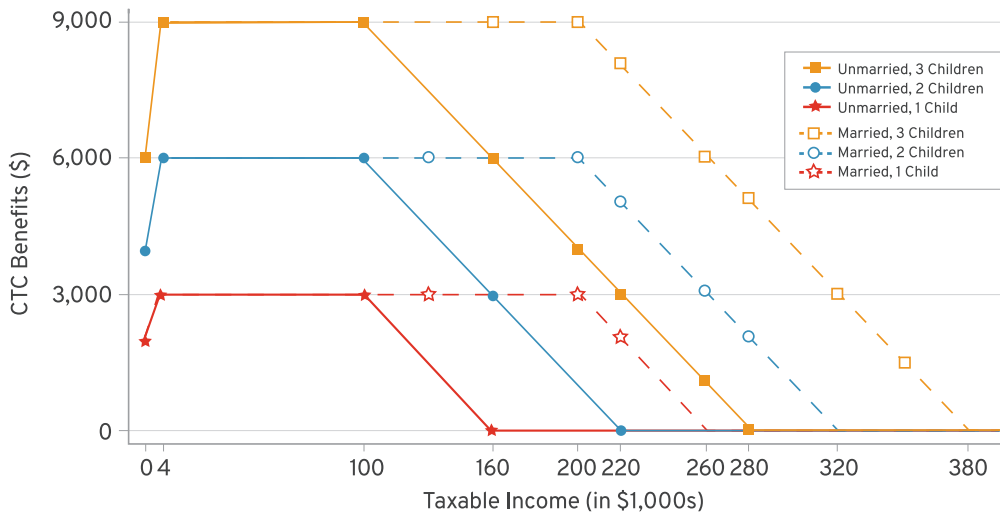
Figures 7 to 9 show the difference in CTC benefits for proposals #1, #2 and #3 compared to the baseline 2022 CTC, by taxable income for families with one, two or three children. Figures 7 to 9 have two panels: Panel A shows the difference in benefits for families earning below $550,000, and Panel B zooms in to illustrate the difference for families earning below $60,000.

Figure 7 shows that, under proposal #1, nonworkers do not receive any CTC benefit (as with the baseline 2022 CTC), but workers earning under $100,000 ($200,000 if married) receive more CTC benefit than they do with the baseline CTC.

Figure 7: Difference in CTC Proposal #1 Benefits vs 2022 Baseline CTC

Figure 8 shows that under proposal #2, nonworkers and workers with very low income receive more CTC benefits than they do under the 2022 baseline CTC, and workers earning under $100,000 ($200,000 if married) also receive more benefits than they do under the baseline CTC.

Figure 8: Difference in CTC Proposal #2 Benefits vs 2022 Baseline CTC

Figure 9 shows that, under proposal #3, nonworkers and workers with very low income receive notably more CTC benefit than they do under the 2022 baseline CTC, and workers earning under $100,000 ($200,000 if married) receive more CTC benefit than they do under the baseline CTC.

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

Figure 9: Difference in CTC Proposal #3 Benefits vs 2022 Baseline CTC
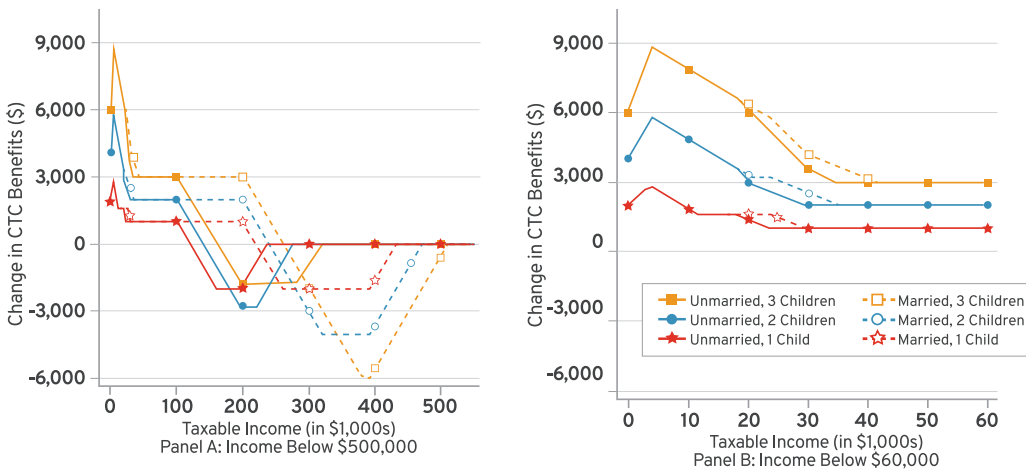
Difference in CTC Proposal Benefits vs 2022 Baseline CTC

☑ Proposal #1
☑ Proposal #2
☑ **Proposal #3**

Figures 10 to 12 show the total CTC benefits and the average per-child CTC benefits across the income distribution for proposals #1, #2 and #3. These are static estimates that remove the 2022 baseline CTC and add CTC benefits to each family based on their income and family structure. Each bar in these figures represents a $20,000 income range; the highest bar captures income over $180,000. In each figure, most CTC benefits go to families with income between $20,000 and $80,000, which makes sense, given that Figure 1 shows that this range has the most children. However, the pattern of per-child CTC benefits looks different for the three proposals.

Figure 10 shows that per-child benefits under proposal #1 are the largest for families with income between $40,000 and $140,000. This proposal helps lower-income families more than the baseline 2022 CTC (see Figure 3) but still offers little assistance for the lowest-income households.

Figure 10: Total Benefits and Average Per-Child Benefits Per Income Grouping (CTC Proposal #1)
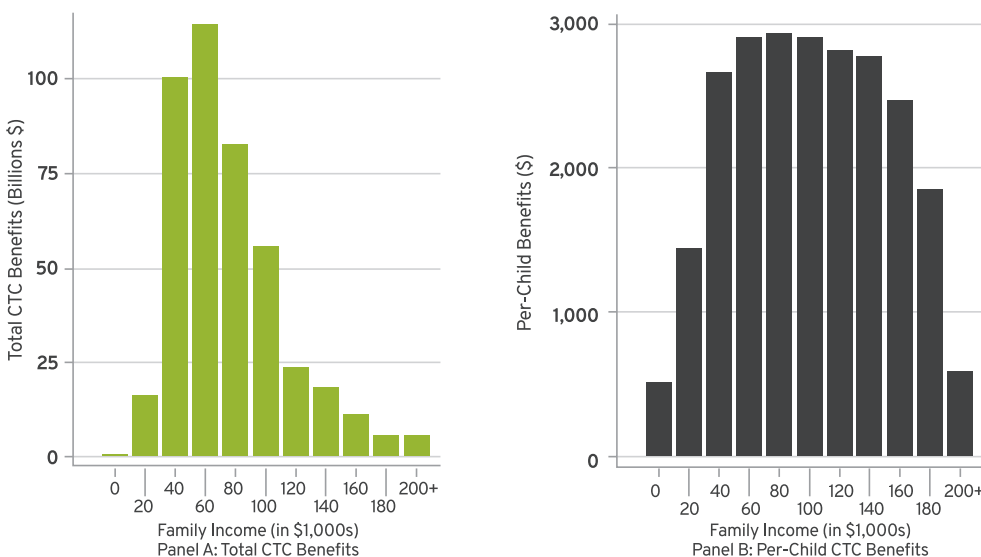
Total Benefits and Average Per-Child Benefits Per Income Grouping

☑ Proposal #1
☑ Proposal #2
☑ Proposal #3

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

R Street Policy Study
No. 276
February 2023

Figure 11 shows that per-child benefits under proposal #2 are largest for families with income between $0 and $140,000. This proposal helps the poorest families much more than the baseline 2022 CTC and proposal #1.

Figure 11: Total Benefits and Average Per-Child Benefits Per Income Grouping (CTC Proposal #2)

Panel A: Total CTC Benefits
Panel B: Per-Child CTC Benefits

Total Benefits and Average Per-Child Benefits Per Income Grouping
- [x] Proposal #1
- [x] Proposal #2
- [x] Proposal #3
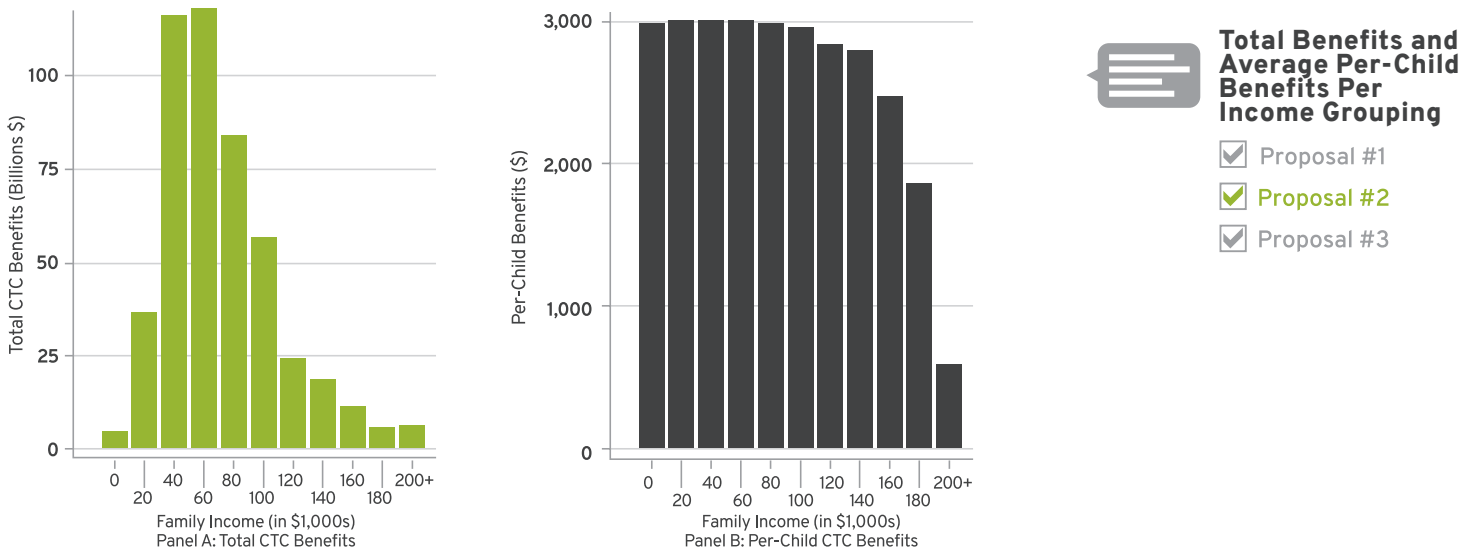
Figure 12 shows that CTC proposal #3 helps poor families more than the 2022 baseline CTC and proposal #1, but less than proposal #2. Proposal #3 is a hybrid approach of proposals #1 and #2, as it helps the poorest households but also encourages work by offering working parents additional CTC benefits.

Figure 12: Total Benefits and Average Per-Child Benefits Per Income Grouping (CTC Proposal #3)

Panel A: Total CTC Benefits
Panel B: Per-Child CTC Benefits

Total Benefits and Average Per-Child Benefits Per Income Grouping
- [x] Proposal #1
- [x] Proposal #2
- [x] Proposal #3
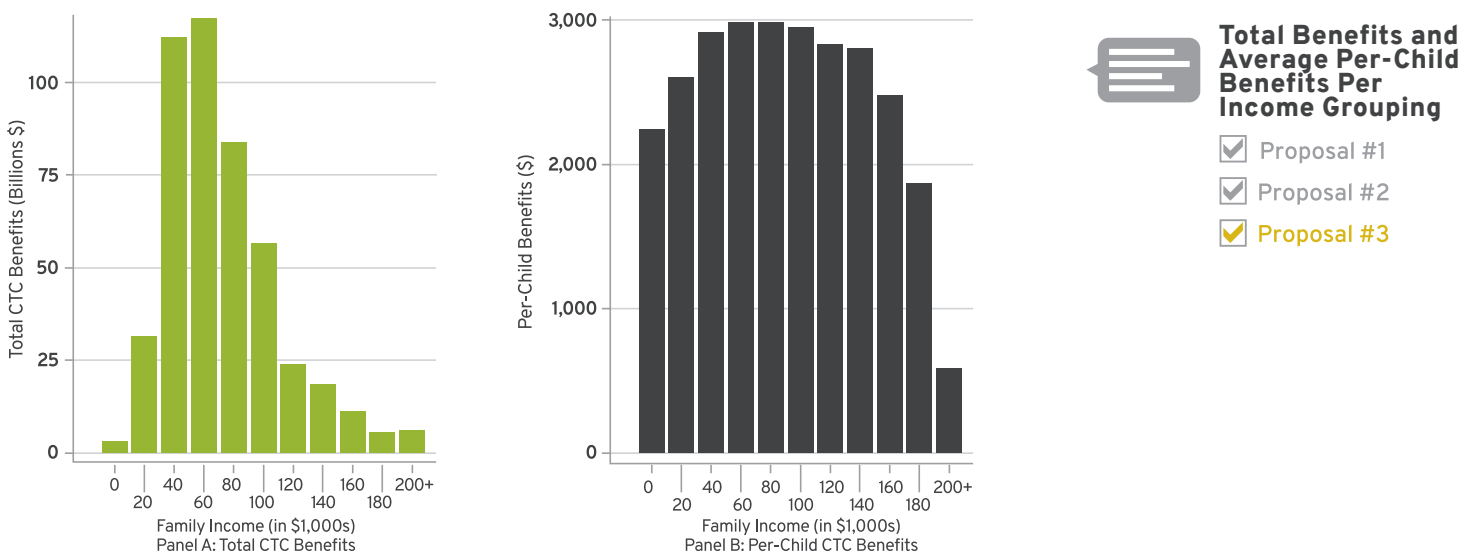
Static Effect on Poverty

Table 1 shows the static effect of CTC proposals #1, #2 and #3 on poverty. Table 1, Panel A shows the total population of parents and children, as well as the number of unmarried mothers, married mothers and fathers plus other guardians (e.g., grandparents). For each

R Street Policy Study—Designing a Better Child Tax Credit: Accounting for Effects on Poverty, Parental Employment and Government Budgets

www.rstreet.org—19

R Street Policy Study
No. 276
February 2023

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

group, Table 1 shows the baseline population, the percentage and number of employed individuals, and the fraction and number of poor parents and children.

Proposal #1 would lead to poverty decreases of 14 percent for unmarried mothers, 24.3 percent for married mothers, 24.2 percent for fathers and other guardians, 19.6 percent for all parents and 22.6 percent for all children. Proposal #2 would lead to poverty decreases of 29.6 percent for unmarried mothers, 27.3 percent for married mothers, 27.3 percent for fathers and other guardians, 28.3 percent for all parents and 36.1 percent for all children. Proposal #3 would lead to poverty decreases of 25.9 percent for unmarried mothers, 26.9 percent for married mothers, 26.9 percent for fathers and other guardians, 26.5 percent for all parents and 33.4 percent for all children. The poverty decreases in proposal #3 are a bit smaller than those resulting from proposal #2, but much larger than those from proposal #1.

Figure 13 illustrates the static effect of proposals #1, #2, and #3 on child poverty (displaying data from Table 1, Column 5) and illustrates the number of children that are poor and would be pulled out of poverty by each proposal according to family income ($0, $1 to $20,000, $20,001 to $40,000, $40,001+). Proposal #1 would pull 2.29 million children out of poverty (a 23 percent child poverty decrease). Proposal #2 would pull 3.67 million children out of poverty (a 36 percent child poverty decrease), which is 1.38 million more than proposal #1. Proposal #3 would pull 3.39 million children out of poverty (a 33 percent child poverty decrease), which is 1.1 million more than proposal #1, but 280,000 less than proposal #2. Each proposal would have the largest antipoverty effect on households earning between $20,001 and $40,000.

Figure 13: Static Estimates of Children Pulled Out of Poverty from the Three CTC Proposals
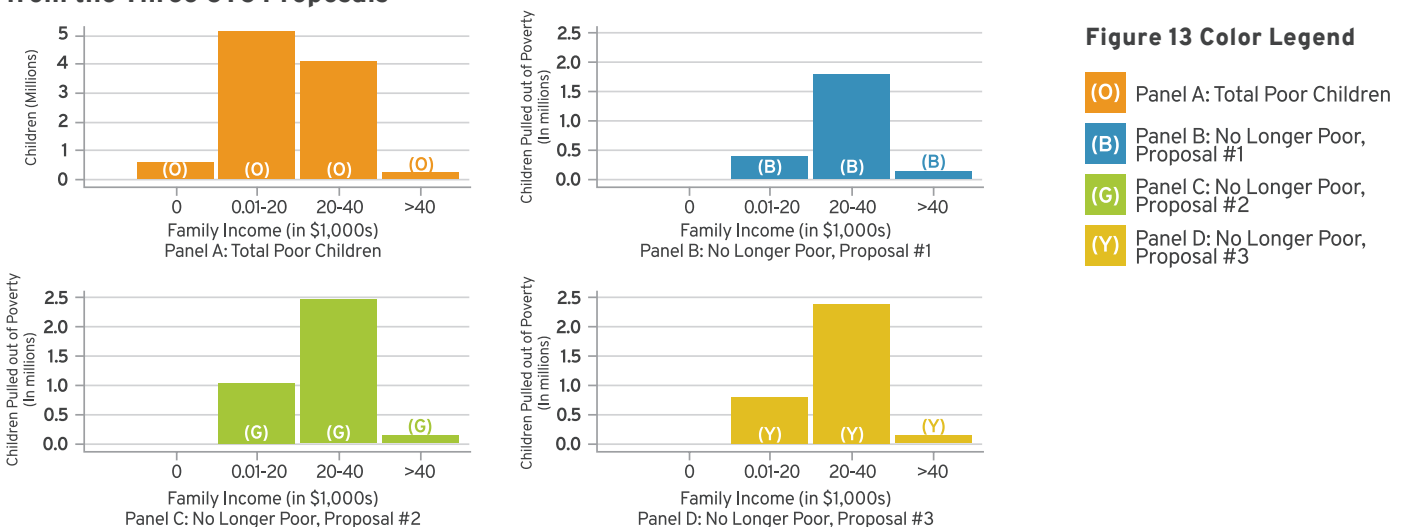
Effect on Work Incentives and Parental Employment

Figures 14 to 16 show the change in the RTW under proposals 1 to 3 compared to the baseline CTC. These changes are shown by taxable income, children and marital status. Panel A shows the impact on income below $400,000; Panel B highlights income below $60,000.

Figure 14 shows that, relative to the baseline CTC's 15 percent phase-in rate, proposal #1 has a 25 percent phase-in rate and further encourages work. Panels A and B show a large

R Street Policy Study
No. 276

February 2023

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

increase in the RTW for the first few thousand dollars earned (25 percent, 50 percent and 75 percent for families with one, two and three children, respectively) before quickly and steadily falling back to zero (where work incentives are the same as they are under the 2022 baseline CTC) and dipping slightly below zero at high-income levels (as benefits phase out sooner than they do under the baseline CTC). For families earning $20,000, the RTW remains about 10 percent, 20 percent and 30 percent higher for families with one, two and three children, respectively. For families earning $40,000, the RTW remains about 3 percent, 6 percent and 9 percent higher for families with one, two and three children, respectively. For higher-income households, the change in the RTW is close to zero (sometimes positive and sometimes negative).

Figure 14: Proposal #1 RTW and Change in RTW vs Baseline 2022 CTC

Panel A: All Income Levels

Panel B: Income < $60,000

RTW and Change in RTW vs Baseline 2022 CTC

☑ Proposal #1
☑ Proposal #2
☑ Proposal #3

Figure 15 shows that, relative to the baseline CTC, proposal #2 has a negative effect on the RTW for the lowest-income households, which falls to -12 percent, -15 percent and -18 percent for incomes of $10,000, $20,000 and $30,000 for families with one, two and three children, respectively. Because CTC benefits do not require work in this proposal, these households face a work disincentive. For incomes above these thresholds, the RTW stays negative and slowly approaches zero. For families earning $50,000, the change in the RTW is -12 percent, -8 percent and -4 percent for families with one, two and three children, respectively. For households earning between $100,000 and $500,000, the change in the RTW ranges from about -1 percent to -5 percent.

Figure 15: Proposal #2 RTW and Change in RTW vs Baseline 2022 CTC

Panel A: Change in RTW

Panel B: Income < $60,000

RTW and Change in RTW vs Baseline 2022 CTC

☑ Proposal #1
☑ Proposal #2
☑ Proposal #3

R Street Policy Study
No. 276
February 2023

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

Figure 16 shows that, relative to the baseline CTC, proposal #3 has an increase in the return to the first few thousand dollars earned (25 percent, 50 percent and 75 percent for families with one, two and three children, respectively) before quickly falling toward zero. For families with one, two and three children, the RTW falls to zero for incomes of about $10,000, $15,000 and $20,000, respectively. Above these cutoffs, the RTW change is small and negative, averaging -2 percent, -3 percent and -4 percent (with maximum negative values of -4 percent, -6 percent and -8 percent) for families with one, two and three children, respectively.

Figure 16: Proposal #3 RTW and Change in RTW vs Baseline 2022 CTC

RTW and Change
in RTW vs Baseline
2022 CTC
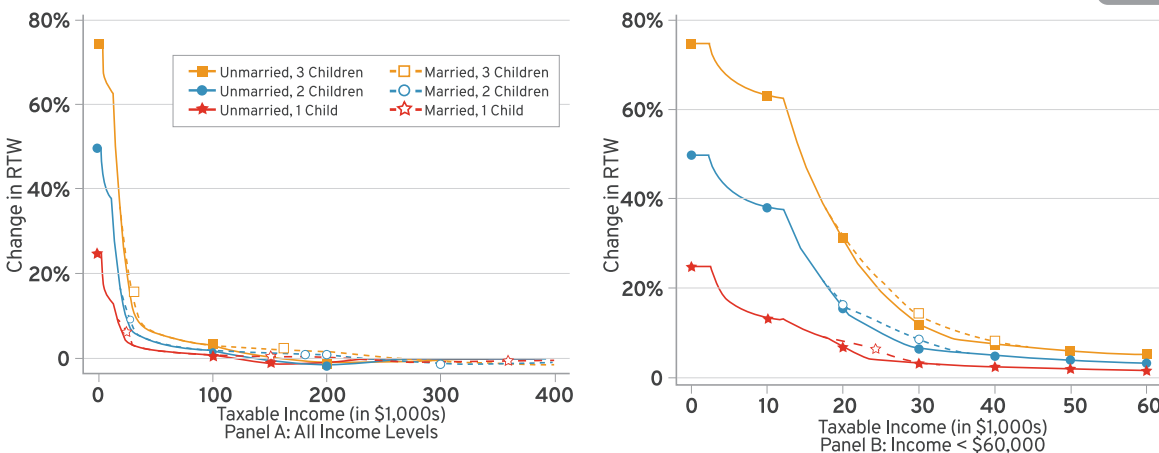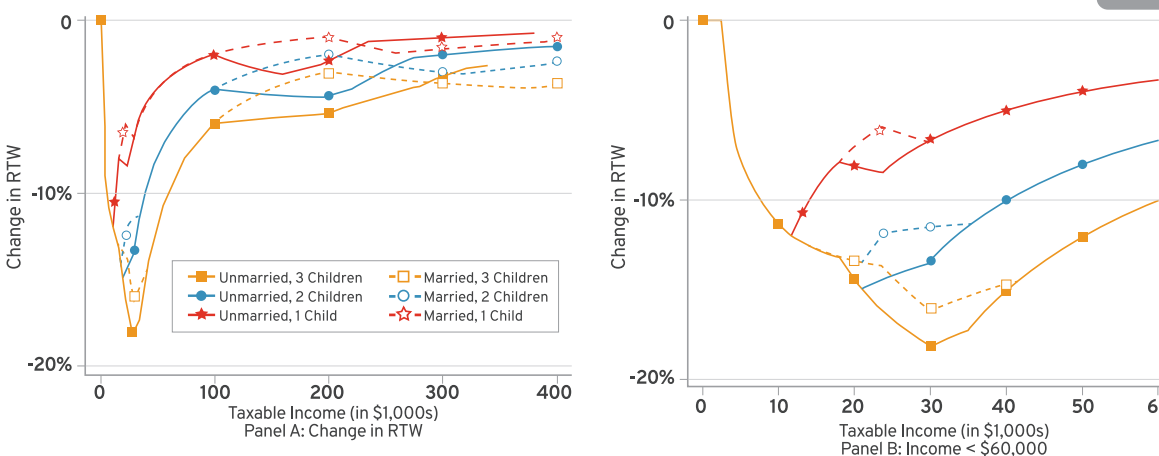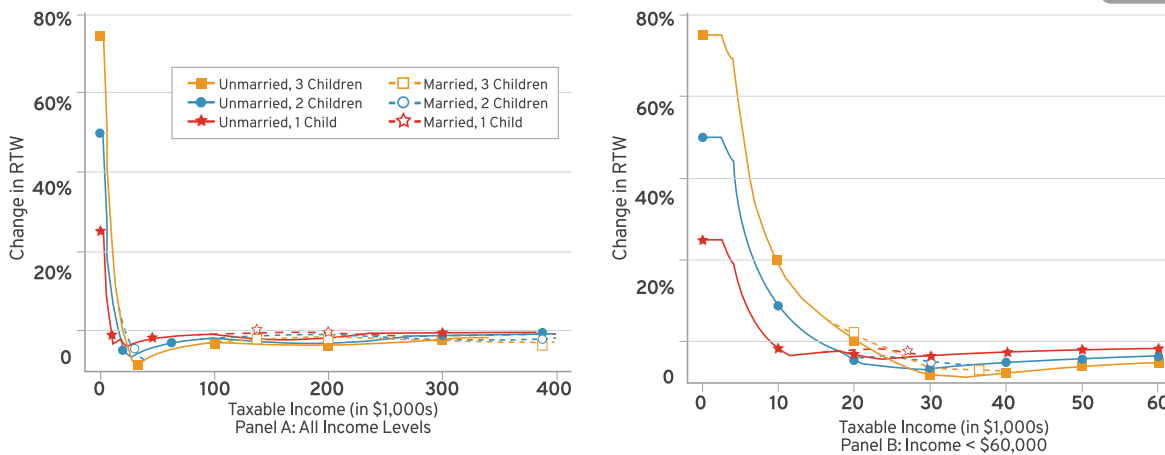
☑ Proposal #1
☑ Proposal #2
☑ **Proposal #3**

To predict the employment effects of a CTC proposal, one must make assumptions about labor supply elasticities. As noted previously, this paper uses substitution effect elasticities of 0.05 for men (and other guardians like grandparents), 0.2 for married women, and three different elasticities for unmarried women: low (0.2), middle (0.4) and high (0.75). This paper's discussion focuses on results using the middle elasticities, and income effect elasticities of -0.08 are used for everyone, following the approach in previous research.[78]

After multiplying the change in RTW with the elasticity, the probability of stopping work is multiplied with CPS sample weights to estimate the total number of U.S. parents projected to start or stop working. We then calculated the number of parents who would stop working under each proposal, both by subgroup and for the full population of parents. All numbers are rounded to the nearest 1,000.

Figures 14 to 16 show that, on net, proposal #1 would increase employment, proposal #2 would decrease employment, and proposal #3 would encourage work for some and discourage work for others. Figure 17 shows the number of parents that would be projected to stop working under each proposal within household income bins ($1 to $20,000, $20,001 to $40,000, $40,001 to $60,000, $60,001 to $80,000 and more than $80,000). Panels A to C use lower, middle and higher elasticities. Panel B in Figure 17 shows that, under proposal #1, few families would face a decrease in the RTW, and only 2,000 parents would stop working, of which almost none would be poor or

78. Greg Duncan and Suzanne Le Menestrel, "A Roadmap to Reducing Child Poverty," National Academies of Sciences, Engineering, and Medicine, 2019. https://nap.nationalacademies.org/catalog/25246/a-roadmap-to-reducing-child-poverty; Kevin Corinth et al et al., "The Anti-Poverty, Targeting, and Labor Supply Effects of Replacing a Child Tax Credit with a Child Allowance," National Bureau of Economic Research Working Papers, October 2021. https://www.nber.org/papers/w29366.

R Street Policy Study
No. 276

February 2023

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

would become newly poor. Under proposal #2, 537,000 parents would choose to stop working, 84,000 of which were poor, and 122,000 would become newly poor. Under proposal #3, 196,000 parents would choose to stop working, 13,000 of which were poor, and 52,000 would become newly poor. For each estimate, the smaller elasticities (Panel A) yield estimates about 20 percent lower, and the larger elasticities (Panel C) yield estimates about 50 percent larger. Proposal #1 is not visible on Figure 17 because no workers would stop working, and proposal #2 has the largest employment effects.

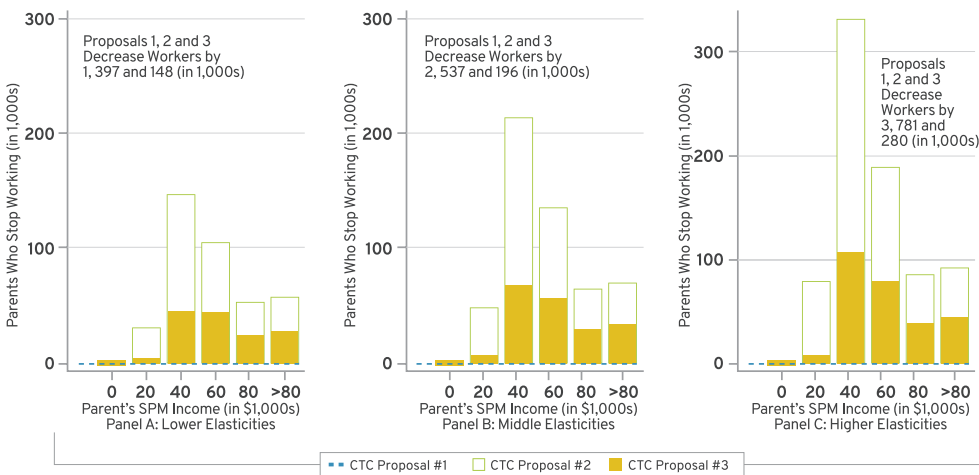**Figure 17: Parents Predicted to Choose to Stop Working, Under 3 Sets of Elasticities**

Figure 18 shows parents who currently do not work but who are projected to start working. This report projects how many parents would start working in a rather different way than the approach used to project how many would stop working. To understand the change in work incentives for nonworkers, one would ideally know their potential earnings. As an approximation, how much each nonworking parent would earn if they chose to start working is imputed based on personal and household traits. (Predicted earnings for nonworkers are imputed based on the observed relationship between annual earnings and age, age squared, years of education, marital status, number of children, gender, race, living in a household with more than one core family, spousal gender, spousal age and age squared.) These counterfactual earnings are added to the family's taxable income to calculate the counterfactual RTW for CTC proposals #1, #2 and #3 shown in Figures 14 to 16. The same calculation is used for predicting the number of parents who would stop working (in Figure 17), except now the change in the RTW is positive instead of negative.

Figure 18, Panel B shows that proposal #1 would lead to 156,000 new working parents. Most of these parents have predicted earnings below $40,000. Of these newly working parents, 87,000 were poor and 55,000 would be projected to become no longer poor because their earnings would pull the household over the poverty line. Proposal #2 would not lead any parents to start working. Proposal #3 would lead 17,000 parents to start working, of which 10,000 were poor and 2,000 would become no longer poor. Smaller elasticities (Panel A) yield estimates about 20 percent lower, and larger elasticities (Panel C) yield estimates about 50 percent higher than the main set of elasticities. Proposal #2 is not visible on Figure 18 because no workers would start working, and proposal #1 has the largest employment effects.

R Street Policy Study—Designing a Better Child Tax Credit: Accounting for Effects on Poverty, Parental Employment and Government Budgets

www.rstreet.org—23

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

R Street Policy Study
No. 276

February 2023

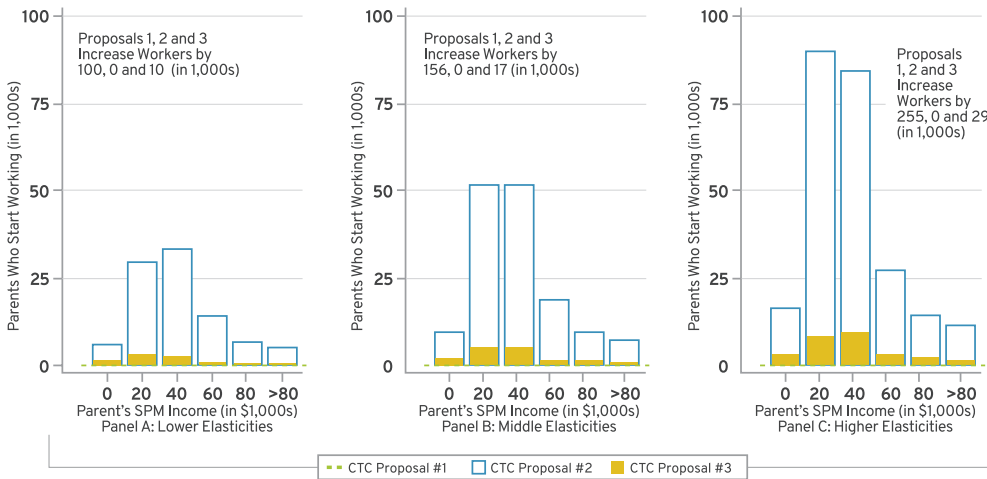**Figure 18: Parents Predicted to Choose to Start Working Under 3 Sets of Elasticities**

Table 2 combines the information in Figures 17 and 18 to summarize the net change in parental employment from the three CTC proposals. Table 2 also breaks down the effects for unmarried mothers, married mothers, and fathers and other guardians.

For proposal #1, 154,000 more parents would work (156,000 start working and 2,000 stop working), resulting in 55,000 fewer poor parents. For proposal #2, 537,000 fewer parents would work, resulting in 122,000 additional poor parents. For proposal #3, 179,000 fewer parents would work (196,000 stop working and 17,000 start working), resulting in 17,000 additional poor parents.

Table 2: Evaluating Dynamic Effects of Three CTC Proposals, Relative to 2022 CTC Baseline

Group	Unmarried Mothers	Married Mothers	Fathers and Other Guardians	Total Parents			Total Children		
Elasticity Scenario	Middle	Middle	Middle	Low	Middle	High	Low	Middle	High
Panel A: CTC Proposal #1									
Net Change in Employment (1,000s)	112	31	11	98	154	252	—	—	—
Parents Who Start Working (1,000s)	113	31	12	100	156	255	—	—	—
Parents Who Become Newly Non-Poor (1,000s)	49	5	2	31	55	98	—	—	—
Parents Who Stop Working (1,000s)	1	1	0	1	2	3	—	—	—
Parents Who Become Newly Poor (1,000s)	0	0	0	0	0	0	—	—	—
Dynamic Poverty Rate (%)	21.9	5.6	5.1	8.4	8.4	8.3	10.7	10.6	10.5
Dynamic Poverty Reduction (%)	**15.6**	**24.6**	**24.3**	**20.1**	**20.5**	**21.1**	**23.2**	**23.7**	**24.5**
Dynamic Poverty Reduction (Millions)	**0.47**	**0.46**	**0.44**	**1.35**	**1.37**	**1.41**	**2.36**	**2.41**	**2.49**
Panel B: CTC Proposal #2									
Net Change in Employment (1,000s)	-321	-91	-125	-397	-537	-781	—	—	—
Parents Who Start Working (1,000s)	0	0	0	0	0	0	—	—	—
Parents Who Become Newly Non-Poor (1,000s)	0	0	0	0	0	0	—	—	—
Parents Who Stop Working (1,000s)	321	91	125	397	537	781	—	—	—
Parents Who Become Newly Poor (1,000s)	104	11	7	76	122	204	—	—	—
Dynamic Poverty Rate (%)	19.1	5.8	5.3	7.7	7.7	7.9	9.0	9.0	9.2
Dynamic Poverty Reduction (%)	**26.2**	**21.7**	**21.6**	**27.5**	**26.8**	**25.6**	**35.6**	**35.1**	**34.3**
Dynamic Poverty Reduction (Millions)	**0.79**	**0.41**	**0.39**	**1.84**	**1.80**	**1.71**	**3.61**	**3.56**	**3.48**

R Street Policy Study—Designing a Better Child Tax Credit: Accounting for Effects on Poverty, Parental Employment and Government Budgets

www.rstreet.org—24

**Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets**

**R Street Policy Study
No. 276
February 2023**

Group	Unmarried Mothers	Married Mothers	Fathers and Other Guardians	Total Parents			Total Children		
Elasticity Scenario	Middle	Middle	Middle	Low	Middle	High	Low	Middle	High
Panel C: CTC Proposal #3									
Net Change in Employment (1,000s)	-91	-40	-48	-139	-179	-251	—	—	—
Parents Who Start Working (1,000s)	14	0	3	10	17	29	—	—	—
Parents Who Become Newly Non-Poor (1,000s)	2	0	0	1	2	5	—	—	—
Parents Who Stop Working (1,000s)	105	40	51	148	196	280	—	—	—
Parents Who Become Newly Poor (1,000s)	43	5	4	32	52	86	—	—	—
Dynamic Poverty Rate (%)	19.5	5.6	5.1	7.8	7.8	7.9	9.3	9.3	9.4
Dynamic Poverty Reduction (%)	**24.6**	**24.6**	**24.6**	**26.1**	**25.9**	**25.4**	**33.2**	**33.0**	**32.7**
Dynamic Poverty Reduction (Millions)	**0.75**	**0.46**	**0.44**	**1.75**	**1.73**	**1.70**	**3.37**	**3.35**	**3.32**

Dynamic Effect on Poverty

Table 2 expands on the static poverty estimates shown in Table 1 by accounting for changes in parental employment and earnings to calculate the net (i.e., "dynamic") effect on poverty.

Proposal #1 leads to dynamic poverty decreases of 0.47 million unmarried mothers (a 15.6 percent decrease), 0.46 million married mothers (a 24.6 percent decrease), and 0.44 million fathers and other guardians (a 24.3 percent decrease), for a total of 1.37 million parents and 2.41 million children (representing 20.5 percent and 23.7 percent decreases, respectively). These dynamic poverty reductions are a bit larger than the static poverty reductions in Table 1 because proposal #1 encourages more parents to work.

Proposal #2 leads to dynamic poverty decreases of 0.79 million unmarried mothers (a 26.2 percent decrease), 0.41 million married mothers (a 21.7 percent decrease), and 0.39 million fathers and other guardians (a 21.6 percent decrease), for a total of 1.80 million parents and 3.56 million children (representing 26.8 percent and 35.1 percent decreases, respectively). These dynamic poverty reductions are a bit smaller than the static poverty reductions because some parents stop working. Although proposal #2 leads some parents to stop working, it still has a larger antipoverty effect than proposal #1.

Proposal #3 leads to dynamic poverty decreases of 0.75 million unmarried mothers (a 24.6 percent decrease), 0.46 million married mothers (a 24.6 percent decrease), and 0.44 million fathers and other guardians (a 24.6 percent decrease), for a total of 1.73 million parents and 3.35 million children (representing 25.9 percent and 33.0 percent decreases, respectively). These dynamic poverty reductions are a bit smaller than the static calculation, because (on net) fewer parents will choose to work. These poverty reductions are a bit smaller than proposal #2, but larger than proposal #1.

While proposal #2 has the largest anti-poverty effect, determining which proposal is "best" is subjective and depends on how one values the tradeoff between reducing poverty and reducing parental employment. If the main goal is to reduce child poverty, proposal #2 would be the preferred option. If the main goal is to increase parental employment, proposal #1 would be favored. If the goal is to reduce child poverty and minimize parental disemployment, proposal #3 is optimal.

Dynamic Effect on Poverty

☑ Proposal #1
   A total **decrease** of 1.37 million parents and 2.41 million children

Dynamic Effect on Poverty

☑ Proposal #2
   A total **decrease** of 1.80 million parents and 3.56 million children

Dynamic Effect on Poverty

☑ Proposal #3
   A total **decrease** of 1.73 million parents and 3.35 million children

R Street Policy Study
No. 276

February 2023

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

Cost of These CTC Proposals

Table 3 shows the cost of the three CTC proposals. Cost estimates are calculated by adding the imputed benefits for which each family is eligible. Static cost calculations are shown because dynamic (after changes in employment) calculations are very similar (within 1 percent of the static cost). Table 3 also shows the cost per U.S. child and the cost per child pulled out of poverty.

Table 3: Cost of Three CTC Proposals

	Total Cost (Billions $)	Total Cost vs 2022 CTC (Billions $)	Total Cost Per U.S. Child ($)	Cost Per Child Pulled Out of Poverty ($)
Baseline 2022 CTC	119	--	1,631	--
CTC Proposal #1	188	69	2,574	78,000
CTC Proposal #2	206	87	2,824	57,900
CTC Proposal #3	202	83	2,762	60,300

The Three Proposal Costs

The baseline 2022 CTC is calculated to cost $119 billion (close to the actual 2018 cost of $110 billion). Divided by 72.98 million children in the United States, this comes out to $1,631 per child. Proposal #1 would cost $188 billion ($69 billion more than the baseline CTC), or $2,574 per child. Proposal #2 would cost $206 billion ($87 billion more than the baseline CTC), or $2,824 per child. Proposal #3 would cost $202 billion ($83 billion more than the baseline CTC), or $2,762 per child.

Isolating the cost per child pulled out of poverty, proposals #1, #2 and #3 cost $78,000, $57,900 and $60,300, respectively. Not only does proposal #2 lift the most children out of poverty, but it is the most cost efficient at doing so. However, it is worth noting that reductions in parental employment will have a small negative effect on economic growth and government tax revenue, pushing up the cost of proposals #2 and #3.

Fine-Tuning a CTC Expansion Beyond CTC Proposals 1 to 3: A Tailored Approach for Policymakers

Table 4 outlines several variations of these CTC proposals and shows the impact on poverty, parental employment, cost and cost per child pulled out of poverty. Each variation has some benefits available to nonworkers, and some benefits phase in at 25 percent (each component ranges from $0 to $4,000). Table 4, Panels A to E show $0 to $4,000 in benefits that do not require work, and columns 1 to 5 show phase-in benefits of $0 to $4,000. Together, Table 4 shows 25 combinations. Table 4 captures CTC proposal #1 in Panel A, column 4; CTC proposal #2 in Panel D, column 1; and CTC proposal #3 in Panel C, column 2.

R Street Policy Study
No. 276

February 2023

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

Table 4: Estimated Effects of Variations of CTC Proposals (Relative to 2022 Baseline CTC)

	Benefits that Phase-In at 25% and Require Work				
	$0	$1,000	$2,000	$3,000	$4,000
	(1)	(2)	(3)	(4)	(5)
Panel A: Benefits = $0 for Everyone					
Change in Child Poverty (%)	+28.4	+6.1	-1.0	-22.0	-29.4
Change in Employment (1,000s)	-390	-128	+53	+154	+248
Total Cost vs 2022 CTC (Billions)	-$119	-$56.7	$6.4	$68.9	$130.3
Cost Per Child Pulled Out of Poverty (1,000s)	—	—	$1,229.4	$83.7	$83.1
Panel B: Benefits = $1,000 for Everyone					
Change in Child Poverty (%)	+2.3	-14.5	-27.8	-36.7	-41.8
Change in Employment (1,000s)	-397	-133	+52	+153	+247
Total Cost vs 2022 CTC (Billions)	-$51.9	$12.4	$76.6	$139.8	$201.6
Cost Per Child Pulled Out of Poverty (1,000s)	—	$88.8	$69.0	$69.1	$75.2
Panel C: Benefits = $2,000 for Everyone					
Change in Child Poverty (%)	-18.1	-32.9	-43.0	-49.1	-52.8
Change in Employment (1,000s)	-424	-179	+50	+152	+246
Total Cost vs 2022 CTC (Billions)	$17.2	$82.6	$147.5	$211.2	$273.2
Cost Per Child Pulled Out of Poverty (1,000s)	$73.8	$60.1	$60.8	$65.9	$72.8
Panel D: Benefits = $3,000 for Everyone					
Change in Child Poverty (%)	-35.7	-46.6	-53.8	-58.4	-61.2
Change in Employment (1,000s)	-537	-226	+49	+151	+245
Total Cost vs 2022 CTC (Billions)	$87.4	$153.5	$218.8	$282.8	$345.1
Cost Per Child Pulled Out of Poverty (1,000s)	$56.7	$57.3	$61.6	$67.5	$74.3
Panel E: Benefits = $4,000 for Everyone					
Change in Child Poverty (%)	-49.5	-57.4	-62.9	-66.6	-69.2
Change in Employment (1,000s)	-651	-274	+47	+150	+244
Total Cost vs 2022 CTC (Billions)	$158.30	$224.80	$290.40	$354.70	$417.10
Cost Per Child Pulled Out of Poverty (1,000s)	$54.9	$58.7	$63.8	$69.7	$76.0

A few highlights from Table 4 are important to discuss. First, having benefits for nonworkers leads to larger poverty reductions and lower costs per child pulled out of poverty. Second, having benefits for workers and additional benefits that phase in can offset disincentives to work. For example, Panel C, column 3 shows that $2,000 for everyone and another $2,000 that phase in would have a net positive employment effect. This outcome follows from the fact that substitution effect elasticities are larger than income effect elasticities (i.e., guaranteeing benefits to families has a relatively small impact on employment, whereas the phase-in benefits have a relatively large impact).

Notably, Table 4, Panel A, column 1 shows that removing the baseline 2022 CTC would lead 390,000 parents to stop working (operating through the substitution effect). In other words, the 2022 CTC is responsible for 390,000 working parents, similar to previous estimates and relevant for debates about the employment effects from a permanent

TABLE 4: KEY TAKEAWAYS

RStreet
Free markets. Real solutions.

Designing a Better Child Tax Credit:
Accounting for Effects on Poverty, Parental
Employment and Government Budgets

R Street Policy Study
No. 276

February 2023

version of the 2021 CTC. Also notable, Table 4, Panels A and D, column 1 show that having zero phase-in benefits with $0 vs $3,000 in nonwork benefits leads to 147,000 less workers via the income effect, lining up with previous analysis of the 2021 CTC.

Conclusion

This paper proposed three ways to redesign the CTC to balance concerns about decreases in parental labor supplies, fiscal cost and antipoverty effects: increasing the existing 2022 CTC and restricting benefits to workers (proposal #1); reviving the temporary 2021 CTC that was available to all working and nonworking families (proposal #2); and a hybrid plan that would provide some benefits to everyone and additional benefits to working families (proposal #3).

Proposals #1, #2 and #3 would decrease child poverty by 23 percent, 35 percent and 33 percent, and would cost $69, $87 and $83 billion more, respectively, than the baseline 2022 CTC. As noted previously, those on the right tend to favor proposal #1 because of the lower cost and largest positive effect on parental employment; those on the left tend to favor proposal #2 because it would have the largest effect on reducing poverty.

If the goal is bipartisan compromise, proposal #3 may be the most attractive option, as it could significantly reduce child poverty with a minimal—and maybe even positive—effect on parental employment. As this paper showed, if proposal #3's approach were to provide $2,000 in CTC benefits for everyone and another $2,000 that phase in for workers, it could lead to a large, 43 percent reduction in child poverty and a small, positive employment effect.

If the goal is cost-effective poverty reduction, proposal #2 would be the best option. This proposal costs $57,900 per child pulled out of poverty, less than the $78,000 and $60,300 estimated under proposals #1 and #3. After accounting for the number of parents who would choose to stop working, proposal #2 pulls the most children out of poverty.

Finally, to help offset the cost of a CTC expansion, policymakers could lower the income threshold where CTC benefits begin to phase out or increase the phase-out rate. Under the baseline 2022 CTC, benefits begin phasing out at $400,000 ($200,000 for unmarried parents) at a 5 percent rate and do not reach zero until annual earnings surpass $500,000 for a family with three children; this could be adjusted to optimize the cost per child pulled out of poverty.

We have a collective responsibility to reduce the number of children living in poverty in the United States. The CTC is a key tool that—if crafted properly—can be instrumental in accomplishing this goal. With the CTC proposal analyses provided in this paper, policymakers have a path forward to compromise in a way that can meet the primary concerns of both political sides while benefitting millions of children.

Balancing Concerns

If the goal is bipartisan compromise, proposal #3 may be the most attractive option, as it could significantly reduce child poverty with a minimal—and maybe even positive—effect on parental employment.

About the Author

Jacob Bastian is a Senior Fellow in R Street Institute's Competition Policy. His research has been featured in *The New York Times* and *The Economist* and has been published in top economics journals including *American Economic Journal: Economic Policy*, *Journal of Public Economics*, *Journal of Labor Economics* and *National Tax Journal*.