The Center for Growth and Opportunity at Utah State University

How does targeted cash assistance affect incentives to work?

A proposed direct cash assistance program in Cambridge, Massachusetts would cut poverty, but also create welfare cliffs

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Research in Focus

Like dozens of cities across the country, Cambridge, Massachusetts has run a guaranteed income pilot—monthly payments to a sample of residents for a set period, without conditions after selection.[1] In September 2021, the city started giving $500 per month for 18 months to 130 single caregivers with incomes below 80 percent of the area median, in a program called Cambridge RISE.[2]

In April 2022, Mayor Sumbul Siddiqui announced plans to create a post-pilot program inspired by RISE. All eligible families—redefined to include families with dependents and income below 200 percent of the poverty line—would receive 18 monthly payments of $500.[3] As the press release noted, "This step makes Cambridge the first city in the country to expand its cash assistance program to every family living in poverty."[4]

In this report, I evaluate the distributional impact of the proposed policy and the incentives it creates. I also compare Cambridge's guaranteed income to a budget-neutral child allowance.

For the policy simulations, I use the open-source OpenFisca US microsimulation model of federal and state tax and benefit policy, which is built with support from The Center for Growth and Opportunity.[5]

If implemented across Massachusetts, I estimate that the policy would cut overall poverty by 15 percent and child poverty by 42 percent, though it would also create a significant welfare cliff—that is, a drop in net income when participants earn too much money to qualify for financial benefits. For example, a family of four that earns above $55,500 would lose enough benefits that their net income would fall unless they earned at least $81,400.

In contrast, a child allowance—a monthly payment for each child, regardless of household income—would require a budget two to three times larger to achieve the same poverty reduction. However, it would do so without distorting work incentives or biasing against children in larger families.

In order to fully understand the Cambridge guaranteed income policy, I've placed it in the context of the tax and benefit system in Massachusetts. The policy not only comes with its own welfare cliff, but it extends existing cliffs created by other programs. It is only natural that participants in these programs will ask themselves, "How much do I have to earn to make working worthwhile?"

A comprehensive model like OpenFisca US allows us to answer this question, both under current law and proposed reforms. As this research illustrates, welfare cliffs can be monumental, encouraging participants to qualify for programs by keeping their earnings low.

These policies are created by well-meaning policymakers seeking to lift people out of poverty. The impact of welfare cliffs can counter that intention. Policymakers would do well to note how different welfare policies interact so that they can minimize the impact of those cliffs and ensure that working doesn't make people poorer.

Tax and benefit policy in Massachusetts

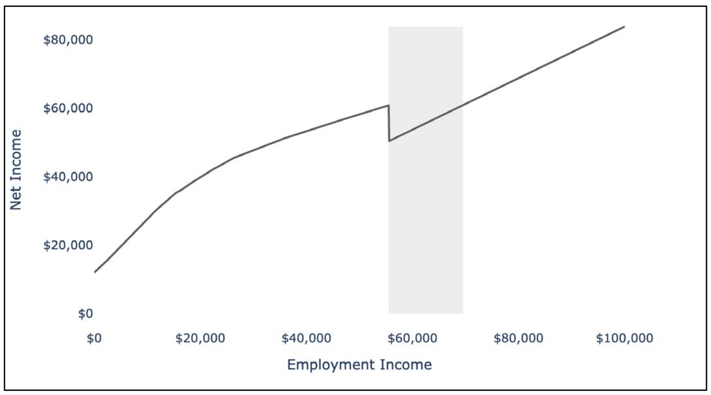
Understanding the impact of the Cambridge proposal requires understanding what Cambridge residents currently pay and receive. Although Cambridge does not have a local income tax, other state and federal policies affect these taxpayers.

Massachusetts residents pay state and federal income tax. Most taxpayers pay a roughly flat five percent income tax after exemptions and deductions. They may be eligible to receive state and federal benefits as well. Low-income residents may receive a state match of the Earned Income Tax Credit and other benefits provided through the tax code.[6]

Low-income residents qualify for means-tested benefits (benefits limited to those with low incomes) such as the Supplemental Nutrition Assistance Program (SNAP), free and reduced school meals, and the Affordable Connectivity Program (a broadband subsidy). These are mostly consistent across states, though Massachusetts has expanded SNAP during the COVID-19 pandemic by providing emergency allotments that give the maximum allotment to any qualifying household.[7]

What does all this mean for Massachusetts families? Let's consider the Sullivans, a family of four—two parents and two school-aged children—paying $2,000 for housing and $50 for broadband each month.[8] In general, as they earn more, they also have more money after taxes and benefits. But once they earn $55,500, they exceed 200 percent of the poverty line, which is the income limit to be eligible for SNAP. Because of the COVID emergency allotments, they lose the maximum amount available to SNAP-eligible families, as soon as they earn $1 more than 200 percent of the poverty line.

Figure 1. How earnings affect net income for a Massachusetts family with two parents and two children.



Source: Author's calculations using the OpenFisca US microsimulation model.

That drop is known as a *welfare cliff*, and it is typically characterized by how much the family loses—how far the drop is vertically. In this case, that drop is about $10,400 deep.

I've added another way of characterizing the cliff: how big an earnings range under which a family is worse off (shaded in figure 1). Before the Sullivans hit the cliff at $55,500 earnings, they would take home about $60,800 after taxes and benefits. To return to that level, they'd have to earn $69,500. I call that range—from $55,500 to $69,500—*the earnings dead zone*. Anything in between means a lower net income.

Welfare cliffs and earnings dead zones are barren territory in tax analysis. In theory, tax policies should be designed to avoid them, enabling models to treat charts like the above as continuous lines. The slope of that line relates to a fundamental concept in labor economics: the marginal tax rate, or how much of an extra dollar of earnings is claimed by the government in the form of taxes (or withdrawn benefits). When the line goes up and to the right, the marginal tax rate is below 100 percent. Marginal tax rates exceed 100 percent at welfare cliffs.

Marginal tax rates are about effective wages: If a worker is paid $10 per hour, how much do they keep from an extra hour of work? If they face a 20 percent marginal tax rate, they take home $8 for that extra hour. If they face a 100 percent marginal tax rate, they take home $0.

A rich economics literature shows that people work less when marginal tax rates are too high and welfare cliffs too steep.[9] If the Sullivans currently earn $55,500, they might turn down a raise or extra hours to avoid losing SNAP. If they currently earn more than $55,500, they might cut back their hours, or opt for one parent to stay at home instead of earning, to become eligible for the benefit.

Cambridge's direct cash assistance proposal

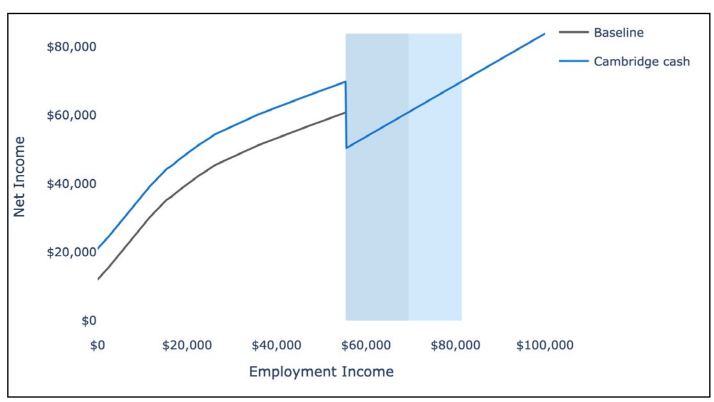
Against this policy backdrop, Mayor Siddiqui proposed Cambridge's direct cash assistance program on April 27. The announcement provided the following details:

- All eligible families with income below 200 percent of the poverty line would receive payments
- The payments would be "$500 dollars per month for approximately a year-and-a-half"[10]
- The city would allocate $22 million in American Rescue Plan funds to the program

These numbers did not immediately appear to add up. Cambridge has about 11,000 households below 200 percent of the poverty line, which would require 11,000 x $500 x 18 = ~$100 million to fund. In email communications, Chief of Staff Michael Scarlett clarified that their budgetary estimate was based on families with dependents.[11] The city found that about 2,300 families would be eligible, which comes to about $21 million. Scarlett also stated that the payment would not phase out gradually with income and that eligibility would be determined only once, while also emphasizing that details were still being finalized.

Since Cambridge's program, like SNAP, limits direct cash assistance to below 200 percent of the poverty line, it would deepen the cliff created by SNAP. Once the Sullivans earned more than $55,500, they would lose about $19,400: $10,400 from SNAP plus $9,000 ($500 per month over 18 months) from the cash assistance.[12] As a result, they would want to avoid earning between $55,500 and $81,400—an earnings dead zone that is $25,900 wide (see figure 2, where the light blue shading shows how the Cambridge program widens the earnings dead zone).

Figure 2. How earnings affect net income for a Massachusetts family with two parents and two children under current law and Cambridge's cash assistance proposal.



Source: Author's calculations using the OpenFisca US microsimulation model.

In reality, the earnings dead zone would be larger still for many families. This analysis doesn't consider Affordable Care Act subsidies, childcare subsidies, housing choice vouchers, and other benefits that are withdrawn over this earnings range.

Poverty impact

The main advantage of targeted benefits is their cost-effective poverty reduction, and here the Cambridge program would have large effects.

When it comes to measuring poverty impacts, the official poverty thresholds Cambridge uses to define eligibility have drawbacks. The government classifies a household as in official poverty if their cash income is below their poverty threshold, which is based on household size. This ignores in-kind benefits like nutrition assistance programs, taxes, and local housing costs.[13] For these reasons, poverty researchers tend to prefer the Supplemental Poverty Measure (SPM), a joint venture between the Census Bureau and the Bureau of Labor Statistics.[14] The official SPM, however, is only available by state rather than local area, so I estimated the poverty impact as if the Cambridge program were rolled out across Massachusetts.[15]

Had the program existed in 2020, it would have cut poverty in Massachusetts by 15 percent, from 8.1 percent to 6.9 percent, at an annual cost of $1.2 billion ($1.8 billion for the 18-month period).[16] It also would have cut child poverty by 42 percent and eliminated deep child poverty, the share of children in households with income below half the poverty line. Empirical studies on the effects of child poverty suggest that these reductions would materially improve child development, educational outcomes, and long-term health and earnings.[17]

Benchmarking against a universal child allowance

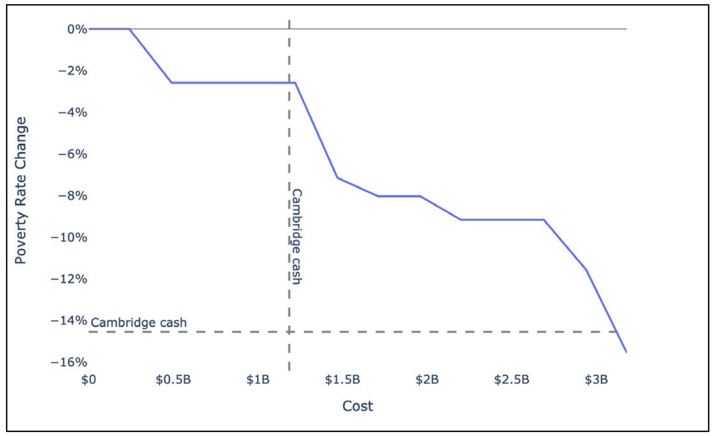
In announcing the direct cash assistance program, Mayor Siddiqui said, "Our commitment has always been to find a way to expand the impact of RISE and ensure that all families living in poverty in our city would similarly receive cash assistance."

The Mayor can reduce poverty without exacerbating welfare cliffs by implementing a policy with precedent from several developed countries. A universal child allowance, or universal child benefit, would provide a monthly payment to parents for each of their children without conditioning on income.

Countries from Ireland to Finland have universal child allowances, which avoid welfare cliffs because they are provided to everyone, regardless of income. Universal child allowances also avoid inequities embedded in other child benefit programs, such as smaller amounts for children in larger families and higher marginal tax rates for parents than non-parents.[18] These are some of the reasons Senator Mitt Romney proposed a near-universal child allowance last year;[19] why Representatives Rashida Tlaib and Mondaire Jones proposed a fully universal child allowance in February;[20] and why the newly formed Maryland Child Alliance is advocating for a state-level universal child allowance.[21]

For the $1.2 billion price tag of a Cambridge-style cash assistance program, Massachusetts could give $75 per month to each of its 1.35 million children. A far cry from $500 per month, no doubt, and it would only cut child poverty by 3 percent, a fifth of the Cambridge program's impact (though it also eradicates deep child poverty).[22] But add some funding, and the universal approach becomes competitive: A $200 per month child allowance would have a larger overall and child poverty impact than the Cambridge program, at about 2.7 times the cost, with no welfare cliff.

Figure 3. Cost and poverty outcomes of universal child allowances in Massachusetts relative to the Cambridge cash assistance program.



Source: Author's calculations using OpenFisca US and the 2020 Current Population Survey.

The Cambridge proposal and child allowance represent two ends of a spectrum, from cliff-based targeting to universality. Other intermediate options include tax credits like the Child Tax Credit (CTC) and Earned Income Tax Credit (EITC), which phase out gradually with income. The American Rescue Plan temporarily transformed the CTC to look more like the Cambridge proposal, as it provided the maximum amount to families even if they had no earnings.[23] In 2022, like years prior to 2021, the CTC gradually phases in with earnings, in addition to phasing out.

However, running child benefits through the tax system risks missing low-income children whose parents wouldn't otherwise file taxes. For example, an Urban Institute survey found that one in seven families that didn't receive advance CTC payments do not plan to file taxes, meaning they will not receive the CTC to which they are entitled.[24] Universal programs come at a higher cost, but they can be proactively administered through the Social Security Administration instead of requiring families to request it from the Internal Revenue Service.

Conclusion

Targeted cash assistance programs like the one tested and proposed in Cambridge deliver welfare relief to the poorest taxpayers at a minimal explicit cost. However, in these programs, a taxpayer may face a gross earnings dead zone range of tens of thousands of dollars under which they would be better off making less money. These welfare cliffs and earnings dead zones represent a real friction and loss in the economy that must be accounted for.

Cambridge might not finalize their policy design until later this year and might not launch it until 2023. In the meantime, parents would reasonably try to keep their income below 200 percent of the poverty line to avoid missing out when the program arrives. Those who do miss out may be rightfully upset at the consequences of their earnings or perhaps of not following their city's politics closely enough to optimize their income.

Giving cash to families with children relieves suffering and generates large social returns—up to ten times their cost according to a recent study.[25] However, studies also find that the structure of those programs can affect labor supply and ultimately the economy. As Cambridge officials design their cash assistance, they should consider more than just how to translate pilots to policy, but also how to align incentives and promote fairness in their tax-benefit system.

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Endnotes

1. The Stanford Basic Income Lab, "Map of Universal Basic Income Experiments and Related Programs," accessed June 10, 2022, https://basicincome.stanford.edu/experiments-map.
2. "Cambridge RISE," Cambridge RISE, accessed June 10, 2022, https://www.cambridgerise.org. The homepage states that the program targets families below 200 percent of the poverty line. However, both the eligibility page (https://www.cambridgerise.org/eligibility) and the FAQ page (https://www.cambridgerise.org/faqs) state the 80 percent of area median income criterion.
3. The limitation to families with dependents is based on email communication with Michael Scarlett, Chief of Staff to Mayor Siddiqui.
4. "Mayor Siddiqui Announces $22 Million Allocation Towards Direct Cash Assistance to Build on Cambridge RISE," accessed April 28, 2022, https://www.cambridgema.gov/Departments/mayorsoffice/News/2022/04/directcashassistanceannoucement.
5. The OpenFisca US microsimulation model documentation is available at https://policyengine.github.io/openfisca-us and the open-source code repository is https://github.com/PolicyEngine/openfisca-us. All analyses in this report are available and replicable in https://github.com/TheCGO/cambridge-cash-assistance, and the notebook can be executed at https://colab.research.google.com/github/TheCGO/cambridge-cash-assistance/blob/main/analysis.ipynb.
6. "Massachusetts Income Tax – OpenFisca-US Documentation," June 10, 2022, https://openfisca.us/programs/states/ma/income-tax.
7. "SNAP COVID-19 Emergency Allotments Guidance | Food and Nutrition Service," accessed June 10, 2022 https://www.fns.usda.gov/snap/covid-19-emergency-allotments-guidance.
8. Sullivan is Massachusetts' most common surname, according to: "Most Common Last Names in Massachusetts, with Meanings," accessed June 10, 2022 https://forebears.io/united-states/massachusetts/surnames.
9. For example, a 2012 review by the Congressional Budget Office pegged the substitution elasticity at 0.25; that is, a worker will respond to a 10 percent increase in their effective wage (after taxes and benefits) by earning 2.5 percent more. That might mean working more hours, getting a raise, or entering the labor force. See Congressional Budget Office, 2012, *How the Supply of Labor Responds to Changes in Fiscal Policy*, report prepared by Felix Reichling and David Weiner, 112th Cong., 2d sess., 2012, https://www.cbo.gov/sites/default/files/cbofiles/attachments/10-25-2012-Labor_Supply_and_Fiscal_Policy.pdf.

   This review also found that low-income workers responded more to wage changes than higher income workers. The elasticity of those in the bottom decile being 0.31 vs. 0.25 overall. Furthermore, a lab experiment found that subjects were more likely to reduce their working time when their incentive structure was framed in terms of benefit loss rather than taxation.

   See Silvia Avram, "Benefit Losses Loom Larger than Taxes: The Effects of Framing and Loss Aversion on Behavioural Responses to Taxes and Benefits," ISER Working Paper Series, 2015–17 (August 20,2015), https://www.iser.essex.ac.uk/research/publications/working-papers/iser/2015-17.
10. City of Cambridge, "Mayor Siddiqui Announces $22 Million Allocation Towards Direct Cash Assistance to Build on Cambridge RISE," 2022, https://www.cambridgema.gov/Departments/mayorsoffice/News/2022/04/directcashassistanceannoucement (April 28, 2022).
11. The American Community Survey 5-year estimates find 20,134 people below 200 percent of the poverty line and 2.13 people per household. The survey defines poverty status for 101,479 people in Cambridge. The 2020 Census estimates a total population of 118,403. Assuming household size doesn't vary by poverty status and extrapolating based on available poverty proportions, this suggests that (20,134 / 2.13) x (118,403 / 101,479) = 11,029 Cambridge households have income below 200 percent of the poverty line in 2020.

    US Census Bureau, "2020: ACS 5-Year Estimates Subject Tables, S1701, Poverty Status in the Past 12 Months, Cambridge City, Massachusetts," American Community Survey, Census.gov, accessed May 23, 2022, https://data.census.gov/cedsci/table?g=1600000US2511000&tid=ACSST5Y2020.S1701&moe=false;

    US Census Bureau, "2020: ACS 5-Year Estimates Subject Tables, S1101, Households and Families, Cambridge City, Massachusetts," American Community Survey, Census.gov, accessed May 23, 2022, https://data.census.gov/cedsci/table?q=cambridge%20massachusetts%20households&tid=ACSST5Y2020.S1101&moe=false;

    US Census Bureau, "ACS Supplemental Poverty Measures (SPM) Research Files: 2009 to 2019," Census.gov, accessed May 23, 2022, https://www.census.gov/data/datasets/time-series/demo/supplemental-poverty-measure/acs-research-files.html;

    US Census Bureau, "2020: DEC Redistricting Data (PL 94-171), P1, Race, Cambridge city, Massachusetts," Decennial Census, Census.gov, accessed May 23, 2022, https://data.census.gov/cedsci/table?q=cambridge%20ma%20population&tid=DECENNIALPL2020.P1.
12. All net income figures reflect income, taxes, and benefits over a 12-month period, except the cash assistance program. Since the program determines eligibility for all 18 monthly payments on a single year's income, I include all 18 months, reflecting that it is essentially a $9,000 lump sum paid out over 18 installments.
13. Official poverty thresholds vary by household size and state with Alaska and Hawaii having higher thresholds than the contiguous US. See "Poverty Guidelines," Office of the Assistant Secretary for Planning and Evaluation, accessed June 10, 2022 https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines.
14. US Census Bureau, "Supplemental Poverty Measure," Census.gov, accessed June 10, 2022, https://www.census.gov/topics/income-poverty/supplemental-poverty-measure.html. See also Allison Abner, Kevin Falls, and Aaron Sorkin, "The Indians in the Lobby," The West Wing, Season 3, Episode 7, No. 51 (November 21, 2001), https://youtu.be/q9EehZlw-zk.
15. See also US Census Bureau, "ACS Supplemental Poverty Measures (SPM) Research Files: 2009 to 2019," Census.gov, accessed June 10, 2022, https://www.census.gov/data/datasets/time-series/demo/supplemental-poverty-measure/acs-research-files.html.
16. I implemented the policy in OpenFisca-US as a $6,000 payment to all SPM units (groups of people in the same household who share resources) with at least one person under age 18. See https://github.com/TheCGO/cambridge-cash-assistance/blob/main/analysis.ipynb.
17. Max Ghenis, "Child Allowance - Empirical Studies," UBI Center, accessed June 10, 2022, https://child-allowance.ubicenter.org/empirical.

18. Parents would face the withdrawal of means-tested child benefits as they earn more, which is essentially a marginal tax on their earnings in addition to their normal tax. Non-parents only face the normal tax, so they have lower marginal tax rates. See Matt Bruenig, "The Folly of Means-testing a Child Allowance," People's Policy Project, December 24, 2021, https://www.peoplespolicyproject.org/2021/12/24/the-folly-of-means-testing-a-child-allowance.

19. Max Ghenis, "Analysis of Senator Romney's Family Security Act," UBI Center, February 12, 2021, https://www.ubicenter.org/family-security-act.

20. Rashida Tlaib and Mondaire Jones, *End Child Poverty Act*, n.d., https://tlaib.house.gov/sites/tlaib.house.gov/files/End%20Child%20Poverty%20Act%20-%20TwoPager.pdf

21. Maryland Child Alliance, accessed June 10, 2022, http://marylandchildalliance.org.

22. This may be due to a small number of surveyed households in deep poverty—under two percent—though the Current Population Survey also suggests that a $75 per month child allowance would eradicate deep child poverty US-wide.

23. US Congress, House, *American Rescue Plan Act of 2021*, HR 1319, 117th Cong., 1st sess., introduced in the House February 24, 2021, https://www.congress.gov/bill/117th-congress/house-bill/1319.

24. Elaine Maag and Michael Karpman, "Many Low-Income Families May Not Get the Full Child Tax Credit Because They Won't File a Tax Return," Tax Policy Center, March 8, 2022, https://www.taxpolicycenter.org/taxvox/many-low-income-families-may-not-get-full-child-tax-credit-because-they-wont-file-tax-return.

25. Irwin Garfinkel et al., "The Benefits and Costs of a US Child Allowance," Working Paper 29854, Working Paper Series, National Bureau of Economic Research, March 2022, https://www.nber.org/papers/w29854.