Advance Tax Credits:
Reconciliations and Repayments

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Abstract

Advance tax credits may require recipients to repay excess amounts. Policymakers have limited information about these repayments, their distributional impact, or the cost of protecting people from repayments. We estimate these using tax data for four advance credits: health insurance premium tax credits, child tax credits, earned income tax credits, and stimulus checks. Our estimates show credits targeting lower-income families have higher repayment rates. We also estimate the causes of repayments (e.g., changes in family size) and discuss how advancing credits can contribute to noncompliance. Our findings can help policymakers evaluate new proposals to advance tax credits.

Keywords: Advance child tax credit, earned income tax credit, stimulus checks, premium tax credit, electric vehicle tax credit, tax credit repayments, EITC, CTC, PTC, tax noncompliance

JEL: H22, H23, H24, H31, H53

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Redistribution in the United States increasingly takes the form of tax credits. This shifts redistribution away from monthly transfers and towards annual tax credits received upon filing tax returns. Advance tax credits can accelerate credit receipt such that they function more like monthly transfers. Advance credits, however, require reconciling final credit amounts with advanced amounts, which are based on earlier or predicted incomes. These reconciliations can result in repayments of excess advance credits and failure to reconcile can result in noncompliance. Using tax data, we estimate repayment amounts, distributions, and causes for various advance tax credits: health insurance premium tax credits (PTCs), child tax credits (CTCs), and earned income tax credits (EITCs). We also review estimates for stimulus checks, which were another advance tax credit. This shows the degree to which advancing impacts the fiscal costs and distributions of credits. These findings also provide benchmarks of costs and distributional impacts for new advance tax credit proposals.

The United States issues significant amounts of advance tax credits. Over $800 billion of stimulus payments were advanced in 2020 and 2021. About $94 billion of CTCs were advanced in 2021 during a temporary program and about $90 billion of advance PTCs were paid in 2023 (Centers for Medicare and Medicaid Service 2023). Advance PTCs now exceed total EITCs. These advance tax credits cover many people: nearly all individuals for recent stimulus checks, 62 million children for advance CTCs, and about 14 million individuals for recent advance PTCs. Given these large amounts and affected populations, the impact of repayments could have large welfare consequences. Moreover, protecting people from repayments can have large fiscal costs.

Advance tax credit amounts are generally based on earlier-year information.[1] Conventional final credit amounts, in contrast, are based on final-year information provided by taxpayers. Advance and final credit amounts can differ and therefore recipients must generally reconcile them on annual income tax returns. If the advance credit is more than the final credit, then a *repayment* may be required. If the advance portion of the tax credit is less than the final credit, then individuals receive an additional *true-up*. Advance and final credits usually differ due to changes in individual circumstances, such as the amount of income or number of children. For example, when tax filers earn more income or claim fewer children than in the earlier-year information used to determine advance credits, they may owe a repayment.

Potential credit repayments may be decreased, or even avoided, due to protections known as *safe harbors*. These differ for each credit and result in various repayment requirements (first column of Table 1). Stimulus checks had no repayments due to full safe harbors. That is, an individual's income increasing into the stimulus phase-out range—pushing the final credit below the advance credit—never triggered a stimulus repayment upon reconciliation. In contrast, the EITC had full repayments due to the lack of a safe harbor.

[1] Reconciliations of advance tax credits are administered by the Internal Revenue Service (IRS). Based on earlier-year tax returns, advance CTCs and stimulus were paid by the IRS, sometimes using information from other agencies. Based on expected income, advance PTCs are paid by health Exchanges and advance EITCs were paid by employers.

Table 1. Reconciliations of Advance Tax Credits

	Income Increase (advance credit > final)	Income Decrease (advance credit < final)
Full Safe Harbor	**No repayment (*Stimulus*)**	**True-up payment**
Partial Safe Harbor	**Partial repayment (*PTC, CTC*)**	
No Safe Harbor	**Full repayment (*EITC*)**	

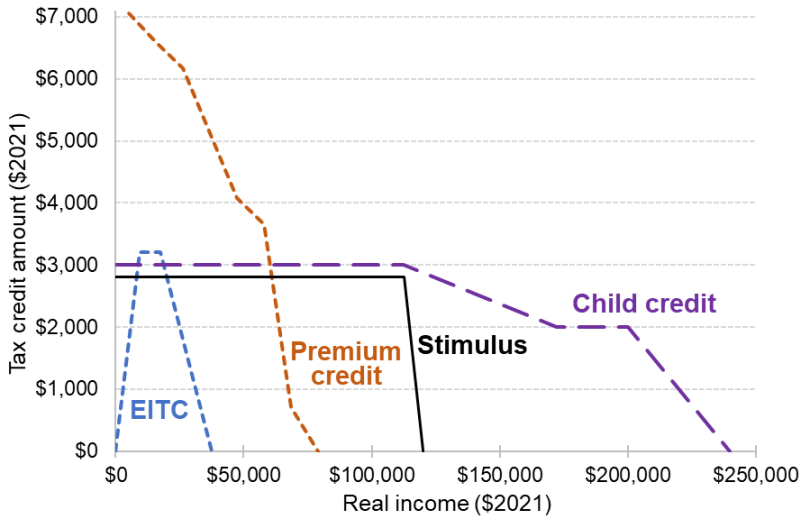
Notes: Advance tax credit repayments result from income increases when the income change overlaps with the phase-out range (holding other characteristics constant). Advance EITC true-ups (repayments) could result from income increases (decreases) if the earlier-year earned income was in the phase-in range. Advance PTCs had a full safe harbor in 2020.

Hence, income increases into the phase-out range always should have triggered full repayment of excess advance EITCs. Partial safe harbors for the PTC and CTC can result in partial or full repayments of excess amounts. The second column of Table 1 considers income decreases. When a tax filer's income decreases, and holding other characteristics constant, all advance credits allow for full true-up payments equal to the difference between the final and advance credit amounts. This occurs because these credits are fully refundable (except for stimulus before 2020), meaning true-up amounts exceeding tax liabilities are received by tax filers as payments.

Advancing tax credits may be thought of as only causing a timing shift. However, advancing credits increases fiscal costs due to safe harbors. Moreover, there are distributional impacts of repayments and safe harbors that differ across tax credits. These differences largely result from varying credit phase-out income ranges. Figure 1 shows how phase outs occur at low incomes for EITCs and PTCs, at middle incomes for stimulus, and at higher incomes for CTCs. Changes in income, number of children, or filing status that push individuals along or across these phase-out ranges can make advance credits (based on earlier-year income) differ from final credits (based on final-year income). *Reconciliation amounts*—repayments, safe harbors, and true-up payments—therefore tend to affect income groups near each credit's phase out.

This sensitivity to income phase-out ranges causes higher repayment rates among credits targeting lower-income families. Potential repayments before safe harbors were 22 percent of advance EITCs, 20 percent of advance PTCs, 12 percent of recent stimulus, and seven percent of advance CTCs. Safe harbors often mitigate these amounts. Repayments after safe harbors were still 22 percent of advance EITCs (no safe harbor), nine percent of advance PTCs (partial safe harbor), one percent of advance CTCs (large safe harbor), and zero for stimulus checks (full safe harbor). Thus, even after safe harbors, repayment rates are higher for the EITC and PTC, which target lower-income families.

Figure 1. Tax credit benefit schedules, unmarried filer with one child



Notes: EITCs are for 2010 (last year of advancing), premium credits for 2019, and stimulus and child credits for 2021. Credits and income are adjusted for inflation. Income is the greater of earned income or adjusted gross income (AGI) for the EITC, AGI for stimulus, and modified AGIs for premium and child tax credits. Premium credits are average amounts for $10,000 income bins. Child credits are for one child aged 6 to 17 years old (the credit was $600 larger for younger children). Values indexed with the PCE. *Sources*: Tax Policy Center (EITC), authors' calculations with INSOLE (PTC), and Internal Revenue Code.

This is the first paper to estimate reconciliation measures for the PTC, CTC, and EITC, and compare these across different advance tax credits. Our estimates highlight differences across advance credits along five margins. First, there are differences in the shares of credits that were advanced: nearly all PTC and stimulus payments were advanced, about half of CTCs, and under one percent of EITCs. This partly resulted from implementation: advance PTCs are the standard choice for families with Exchange-based insurance, the IRS automatically sent stimulus checks and CTCs (the latter for only half the year), and EITC advances required opting in through employers. Second, there are differences in repayment shares of advance credits. Third, there are differences in safe-harbor amounts, which directly translate into increased fiscal costs from advancing. Fourth, there are differences in the distributions of repayments and safe harbors, which tend to align with differences in credit phase-out ranges. We show that reconciliation policies (except for stimulus safe harbors) increase each credit's progressivity. Fifth, there are differences in what caused repayment and safe harbors, although these often result from changes in income. In the conclusion, Table 2 summarizes these findings. This paper's estimates of the PTC are particularly novel, as this tax credit has been mostly ignored in the literature despite now being larger than the heavily researched EITC.

Policymakers currently have limited information about the cost of protecting people from repayments with safe harbors. Our estimates can help forecast the safe-harbor fiscal costs of advancing other credits. For example, advancing the clean vehicle credit in 2023 will increase the fiscal cost of this credit due to its generous safe harbor, as the income limit applies

to the lower of final-year and earlier-year incomes. This safe-harbor cost could be expected to be about five percent of this credit's total cost, based on our estimated safe-harbor costs for child tax credits, which also had relatively high income limits.[2]

The next section of this paper discusses prior research on each advance tax credit and reasons for and against advancing credits. Section II explains the data. Sections III to VI cover each of the four tax credits—PTC, CTC, EITC, and stimulus—showing amounts of advance credits, repayments, and safe harbors, as well as distributional estimates and decompositions by causes. Finally, we compare the four credits and discuss noncompliance and policy implications.

I. Prior Literature on Advance Tax Credits

This section reviews prior research on advancing the PTC, CTC, EITC, and stimulus.[3] The PTC was created by the Affordable Care Act to subsidize private health insurance purchased from Exchanges. Advance PTCs are sent directly to health insurers after a family signs up for coverage. Prior studies focused on income reporting effects and marriage responses to the PTC's structure. Kucko, Rinz, and Solow (2018) found evidence of lower-income PTC-eligible adults adjusting their self-employment income reporting on tax filings. Heim et al. (2021) found bunching of reported incomes near the PTC's income eligibility cliff, with more bunching among those receiving advance PTCs, having self-employment income, and using paid tax-return preparers. In addition to this likely income reporting noncompliance, they found real effects on retirement savings and labor supply. Isaac and Jiang (2022) found a small positive marriage response to the PTC. Prior literature, however, has generally ignored reconciliation of the advance PTC.

The CTC was temporarily made more generous in 2021 and advanced for half of the year. Earlier studies ignored advance CTC reconciliations and focused on behavioral responses to the removal of the earned income requirement and expansions in the credit amount (Enriquez, Jones, and Tedeschi 2023; Lippold and Luczywek 2023; Pac and Berger 2024), household spending responses to the expanded credit (Parolin et al. 2023; Schild et al. 2023), and the fiscal costs of extending these expansions (Goldin, Maag, and Michelmore 2022). More related to this paper, Michelmore and Pilkauskas (2023) used survey data to estimate reasons why families did not receive advance CTCs. Unfortunately, survey-based results are subject to child misreporting relative to how children are claimed in tax data (Jones and O'Hara 2016), in part from strategic reallocations of children (Splinter, Larrimore, and Mortenson 2017). Additionally, many caretakers not receiving advance CTCs received true-up credits when later filing tax returns.

[2] The clean vehicle credit of up to $7,500 has an income eligibility cliff of $150,000 for single filers and $300,000 for married filers. The *used* clean vehicle credit, which is also advanced, has income eligibility cliffs that are half as large.

[3] There are other advance tax credits. From 2002 to 2021 (excluding 2014), the health coverage tax credit was advanceable. Due to the narrow eligibility criteria, total payments were less than $0.3 billion annually. The 2003 CTC expansion was also advanced, but its $14 billion cost was much smaller than the 2021 advance CTC payments.

The advance EITC was an opt-in program between 1979 and 2010. Many reasons contributed to low take up and the program ending. The General Accounting Office (1992) highlighted three reasons why few people claimed advance EITCs: some eligible workers and employers were unaware of it, some workers preferred a larger lump-sum final amount to smaller advance payments, and some workers thought they had to repay all advance EITCs when they filed tax returns. The specific way the EITC was advanced may have also contributed to low take up. To claim advance EITCs, workers needed to fill out a Form W-5 and file tax returns every year and could only receive advance EITCs from a single employer. This could cause issues with mid-year job changes and among workers with multiple jobs, both of which are more common among the low-income target population. Additionally, employers (not the IRS) made advance payments each pay period and offset this cost by lowering their quarterly payroll taxes. This meant workers had to make employers aware when claiming the credit, perhaps causing fear of lower wages (Nichols and Rothstein 2016). These issues, as well as the lack of a safe harbor, contributed to advance EITC payments representing only 0.2 percent of full EITC credits when averaged between 2000 and 2010.

Stimulus checks, also called Economic Impact Payments (EIPs), are the advance portions of rate reduction and recovery rebate tax credits. Stimulus check reconciliations were estimated in Splinter (2023), which showed large effects of business cycles on reconciliations. Stimulus safe-harbor costs were twice as large in the 2021 economic recovery than the 2020 recession due to the higher prevalence of income gains during the recovery. Other research focused on the marginal propensity to consume from stimulus checks. Estimates suggested about two-thirds of stimulus checks in 2001 and 2008 were spent within three months (Johnson, Parker, and Souleles 2006; Parker et al. 2013)—although Orchard, Ramey, and Wieland (2023) argued this implies unreasonable counterfactual consumption and surveys showed lower spending responses (Sahm, Shapiro, and Slemrod 2010). Recent stimulus was less effective at stimulating demand, with 2021 payments having essentially no short-term spending effects (Chetty et al. 2022; Parker et al. 2022). This may be partially due to larger stimulus check amounts (Beraja and Zorzi 2024). Still, stimulus checks lowered poverty rates and stabilized incomes (Fox and Burns 2021; Larrimore, Mortenson, and Splinter 2023).

Despite our focus on differences between advance and final credits, most individuals receive advance tax credits that are close to final credits. Splinter (2023) estimated that for pandemic-era stimulus checks about 85 percent of checks were predicted within $100 of final credits when using earlier-year information. Maag et al. (2022) estimated that about 80 percent of predicted EITCs and CTCs (using first-quarter data) were within 10 percent of final credits. Still, overpayments with advance tax credits can be significant and could be reduced if the IRS received more up-to-date information, such as from online portals.

A. Why (and Why Not) Advance Tax Credits

We review reasons for and against advancing tax credits. Advancing accelerates the receipt of tax credits, which may mitigate short-term liquidity constraints (Maag, Roll, and Oliphant 2016). Research suggests the presence of these constraints. Most non-advance EITCs are spent on paying bills and debts and a large share on car purchases or repairs (Barrow and McGranahan 2000; Goodman-Bacon and McGranahan 2008; Davis 2024). About 30 percent are spent within two weeks of receipt (Aladangady et al. 2023). Similarly, advancing the PTC with direct payments to health insurers reduces the monthly out-of-pocket amount that families pay for insurance premiums. For stimulus, advancing payments could more quickly address short-term aggregate demand declines (although estimates for recent stimulus suggest otherwise). Additionally, the near-universal coverage of recent stimulus suggests that programs structured as advance tax credits could have higher coverage rates among eligible populations than other transfers programs. For example, Holtzblatt and Liebman (1998) suggested high EITC coverage rates resulted from low stigma effects and low transaction costs, as most families already file a tax return. Finally, the expansion of electronic deposits by the IRS—used for most advance CTCs and recent stimulus checks (Murphy 2022)—can help speed the receipt of advance credits.

There are also reasons against advancing credits. First, conventional credits function like forced savings and may be favored by those purchasing large durables or funding college (Manoli and Turner 2018). The spending of annual payments within short time periods, as discussed above, may result from planning around expected credit payments rather than liquidity constraints. Research has found little impact of changes to payment timing, with similar spending patterns for periodic payments and lump-sum payments (Coronado, Lumpton, and Sheiner 2005; Sahm, Shapiro, and Slemrod 2012). Second, advancing credits adds to complexity. Adjusting one's marginal tax rate to account for advance tax credit reconciliations can depend on multiple income phase outs. For example, 2020 stimulus had two phase outs and advance CTCs had up to three phase outs. Third, possible repayment of advance credits creates uncertainty for recipients. The fear of repayments was blamed for the low take up of advance EITCs (Holt 2008; Jones 2010). Relatedly, uncertainty reduces the utility of the current EITC by an estimated ten percent (Caldwell, Nelson, and Waldinger 2023). Fourth, policymakers may be concerned about the extra costs of advancing credits (especially from safe harbors), poor targeting due to the imperfect information used to advance credits, and noncompliance among those failing to reconcile advance credits.[4] Finally, opposition or indifference to advancing credits is common. Over half of surveyed child credit recipients preferred annual payments or had no preference between annual and monthly payments (Maag and Karpman 2022). Many people may be indifferent to advancing credits because they can instead reduce their tax withholding.

Adjustments to tax withholding can effectively advance any tax credit if an individual has a positive expected tax liability. Most CTCs and about half of EITCs result in tax reductions, as opposed to refundable payments to tax filers. Much of these tax

[4] With a full safe harbor, the cost of an individual's advance tax credit is the greater of the advance credit and the final credit. Without a safe harbor (and ignoring noncompliance), it equals only the final credit. Section VII discusses noncompliance.

reductions are effectively advanced through reduced monthly or semi-monthly tax withholding from wages. Some policy changes explicitly advanced tax changes through updated default withholding, addressing the issue of taxpayer inertia to changing tax withholding (Jones 2012). For example, the 2017 tax reductions were partially advanced through changes to withholding calculations. Similarly, the 2009 and 2010 Making Work Pay tax credit was partially distributed through decreased withholding (Boning 2018). However, withholding changes do not benefit lower-income individuals with no tax liability and the Making Work Pay credit was replaced with a payroll tax rate reduction that provided relief to all workers. Similarly, the advance credits discussed in this paper are fully refundable and therefore provide advance relief independent of withholding.

II. Data

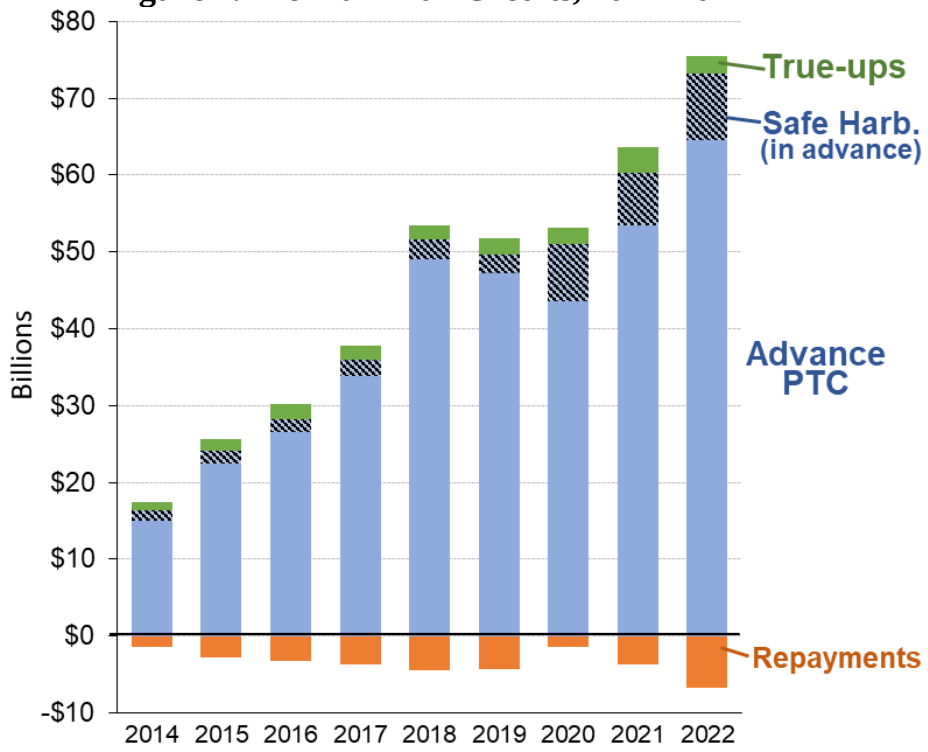
Our estimates are based on representative annual samples of tax returns. These confidential and detailed data are known as INSOLE files. We supplement these tax returns with Form 1095-A information returns for the advance PTC and, in some cases, the population of IRS tax records. The population data includes advance PTC, CTC, and stimulus amounts for all recipients, regardless of whether they filed a tax return. Additionally, these data include an embedded panel following the same individuals over time. By linking final-year and earlier-year data for the same individual, we observe the information used to determine advance credit amounts. This allows us to identify reasons for advance credit repayments, such as from income increases. Our analysis of the EITC is limited to individuals filing a tax return in the final year, which excludes final-year non-filers who failed to reconcile advance credits. For other credits, we consider final-year non-filers.

These tax data provide a more precise picture of advance tax credit receipt and reconciliation than survey data. This is because of differences in income reporting and how children are claimed in tax versus survey data, as well as ambiguity in how to split survey-based households into tax filing units (Larrimore, Mortenson, and Splinter 2021). These differences result in large underestimates of refundable tax credits with survey data (Meyer et al. 2022). Additionally, panel data are needed to study advance tax credit reconciliations, but survey data usually have limited prior-year information. For example, the PSID is now administered only every two years and CPS prior-year data is limited to households who did not move.

III. Premium Tax Credits

The Premium Assistance Credit, also known as the Premium Tax Credit (PTC), subsidizes the purchase of qualified health insurance plans offered through an Exchange created by the Affordable Care Act in 2010. Advance PTC payments for Exchange coverage began in 2014. Families who receive an advance PTC are required to file tax returns and reconcile their advance and final PTCs. Families whose final credit is greater than their advance credit can claim the additional amount as a true-up payment, as the PTC is fully refundable. Families whose final credit is less than their advance credit usually must repay some or all of the excess advance amount. For these families, safe harbors limit repayments of excess advance credits at repayment limitation amounts.

Figure 2. Premium Tax Credits, 2014–2022



Notes: Advance PTCs and safe harbors include final-year non-filers. These non-filers have no true-ups or repayments.
Source: Authors' calculations using INSOLE supplemented by population data (2014–2021) and population data for 2022.

Figure 2 presents an overview of PTC costs over time. Between 2014 and 2022, total advance PTC costs grew from $16 billion to $73 billion. In 2023, they increased to about $90 billion. True-ups and safe-harbors averaged five percent and eight percent of advance PTCs, respectively. Repayments averaged nine percent of advance PTCs. In 2022, PTC true-up costs were $2 billion, safe-harbor costs were $9 billion, and repayments were $7 billion. Note that these totals do not account for noncompliance. We estimate that if all advance PTC recipients had reconciled their 2022 advance PTCs then repayments would have been nearly $2 billion larger. Next, we provide background on how the PTC works and then present estimates of distributions and causes of advance PTC reconciliations.

A. Background: Premium Tax Credits

When a family signs up on an Exchange for health-insurance coverage, the Exchange determines an estimated PTC. The amount is based on the family's insurance premiums, location, and estimates of its expected end-of-year characteristics (income and tax-family size), and on the characteristics of their health-insurance family (number and ages of covered individuals). Note that people in a family's tax-filing unit and covered by a health insurance plan can differ (Centers for Medicare and Medicaid Services 2013). Families can elect to have some, or all, of that estimated PTC paid in advance directly to their insurance company. Alternatively, eligible families may elect to pay their health insurance premiums without advance payments and claim the PTC on their federal income tax return.

Families are eligible to claim the PTC if they are: lawfully present, enrolled in health-insurance coverage in an Exchange, not dependents on another tax return, and not eligible for or enrolled in other minimum essential coverage, such as Medicare, Medicaid, or employer-sponsored health insurance.[5] Families that apply for Exchange coverage are ineligible for advanced PTCs if their predicted income is less than 100 percent of the Federal Poverty Limit (FPL) or less than their state's Medicaid eligibility threshold. Further, prior to 2021, the PTC was only available for incomes below 400 percent of FPL. Family income is the adjusted gross income (AGI) of the tax filer plus excluded income for citizens or residents living abroad, tax-exempt interest, any excluded Social Security benefits, and the income of their dependents that file taxes.[6]

PTC amounts are determined in several steps. The maximum PTC is the insurance premium amount for the plan selected by the family or their benchmark plan, whichever is smaller.[7] That maximum PTC is reduced by the *family share* of premiums to give the PTC amount. Figure 3A shows how the family share varies by income level. In 2014, the family share of premiums was two percent of income for incomes below 133 percent of FPL. It increased piecewise-linearly to 9.5 percent for incomes between 300 and 400 percent of FPL. Families with incomes above 400 percent of FPL were not eligible to receive a PTC, causing an eligibility cliff and full repayments when final incomes increase to this level.

Safe harbors limit repayments for families with incomes less than 400 percent of FPL. These safe harbors have a progressive effect because they decline with income. For example, maximum repayments for singles in 2019 were $300 for lower incomes, increased to $1,325 for incomes just under 400 percent of FPL, and repayments were the full advance PTC for incomes above 400 percent of FPL. These advance PTC repayments are considered tax liabilities and can be offset by unused non-refundable tax credits (this further increases the fiscal cost of reconciliation and is excluded from our analysis).

The American Rescue Plan Act of 2021 (ARPA) made several changes to the PTC. First, the requirement to repay any excess advance PTC was temporarily removed, amounting to a full safe harbor for 2020. Still, some repayments were made for 2020 because many people filed tax returns before ARPA was signed in early March. Second, unemployment insurance recipients in 2021 could calculate their PTC as if their family

[5] If an Exchange determined they were eligible for advanced PTCs, individuals that are eligible for Medicaid may still be eligible for PTCs. The IRS typically does not observe an individuals' eligibility for Medicaid for reasons other than income. If an individual is offered minimum essential coverage from an employer and declines it, they may still be eligible for PTCs, e.g., if the offered coverage was unaffordable.

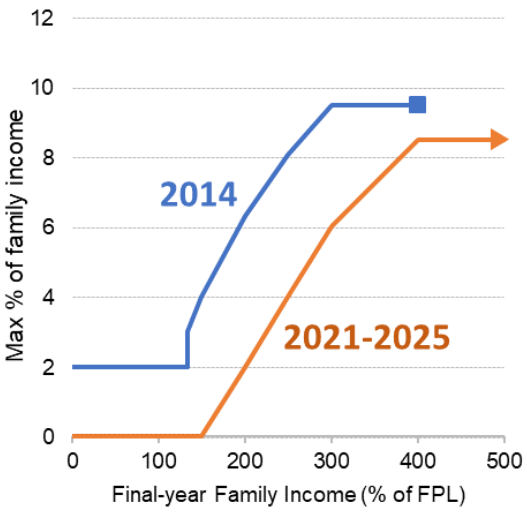
[6] We use the term "family income" to mean "household income" as defined in Sec. 36B of the Internal Revenue Code. The family or household concept here is distinct from same-residence households. We form families in the population data by first matching Form 1095-A to tax returns when members of the health-insurance and tax family matched, even on a partial basis. Individuals on unmatched Forms 1095-A are considered non-filer families, for whom incomes are based on various information returns, such as Form W-2 with wages.

[7] The benchmark plan is the family's second-lowest-cost silver plan in their rating area and increases with the number and ages of individuals who are part of the intersection of the tax family and health-insurance covered individuals.

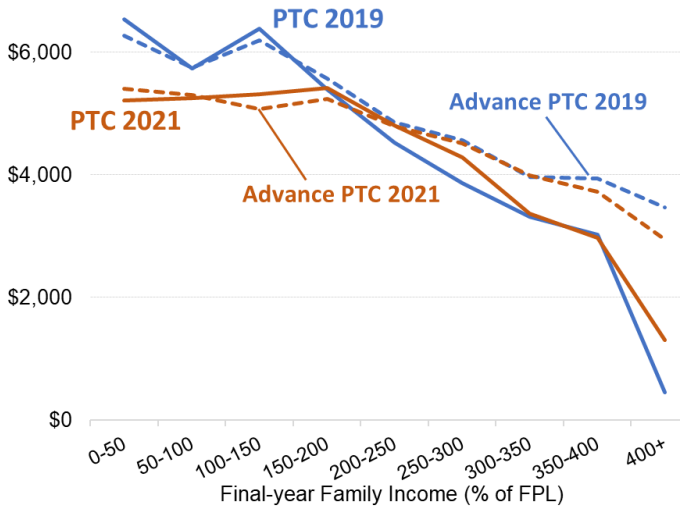
incomes were 133 percent of FPL, regardless of their actual incomes. Finally, ARPA increased PTC generosity and eligibility for tax years 2021 and 2022. The increased generosity was extended through 2025 by the Inflation Reduction Act of 2022. As seen in Figure 3A, the family share of premium costs for incomes below 150 percent of FPL decreased from two percent of income to zero, while for incomes between 150 and 400 percent of FPL it decreased between one to four percentage points. Eligibility was also expanded to those with incomes above 400 percent of FPL. These mid-year expansions resulted in temporarily higher true-up amounts in 2021.

Figure 3. Premium Tax Credits: Limits and Average Amounts by Income

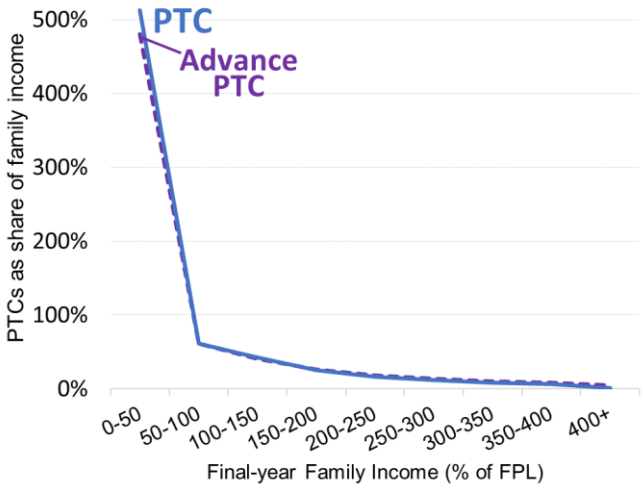
A: Family share of premiums



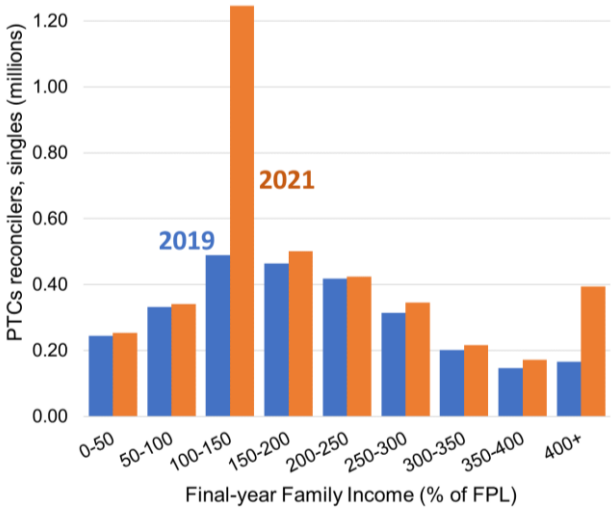
B: PTC to income ratios, singles, 2019



C: Average PTC amounts, singles, 2019



D. PTC reconcilers, singles (millions)



Notes: Family income is AGI plus excluded income for those living abroad, tax-exempt interest, excluded Social Security benefits, and the income of dependents filing taxes. Panels B, C, and D include only filers who reconciled PTCs. Panel C excludes incomes of less than $25. *Source*: Authors' calculations using INSOLE tax data.

Unlike other advance tax credits, the PTC does not have a defined maximum amount. For example, in 2019 the median PTC was nearly $5,000 and the largest PTCs were over $50,000. This heterogeneity results from differences in income and family sizes. However, even families with the same incomes and tax-family size can have different PTCs because the PTC is a function of both tax information (tax-family size and income) and health insurance information (plan selection, rating area, and number and ages of covered individuals). Holding constant income and family size, families with older individuals and families that live in more expensive areas will have higher premiums and thus higher PTCs.

Figure 3B shows, by FPL bin, the average advance and final PTCs in 2019 and 2021 for single filers (unmarried individuals without dependents). Advance and final PTCs are largest for those with the lowest incomes and tend to decrease as income grows due to the higher family share of premiums seen in Figure 3A. Average advance PTCs are generally similar to average final PTCs for lower incomes. For higher incomes, average advance PTC amounts are larger than average final PTCs. As discussed below, this mostly results from repayments due to safe harbors phasing out with income increases. Families with final 2019 incomes larger than 400 percent of FPL were not eligible for a PTC, usually resulting in full repayment of their advance PTC (although our pre-audit data show some of these families claiming the PTC). In 2021, however, ARPA extended PTC eligibility to those with incomes above 400 percent of FPL and coverage to those receiving unemployment compensation, regardless of income. For these reasons, singles with 2021 incomes over 400 percent of FPL received average PTCs of $1,300. Average low-income advance PTCs in 2021 were below those in 2019, despite the enhanced credit generosity. This was due to a special enrollment period in early 2021 that caused a larger number of part-year enrollees with relatively smaller annual PTCs.

Advance PTCs and final PTCs are progressive with respect to income. Figure 3C shows the ratios of advance PTC to family income and final PTC to family income, averaged within FPL bins for single filers in 2019. For single filers with incomes below 50 percent of FPL, both advance and final PTCs are five times as large as family income. Both ratios decline rapidly to less than one for single filers with incomes above 50 percent of FPL. They decline to about one-quarter or less of income for incomes above 100 percent FPL.

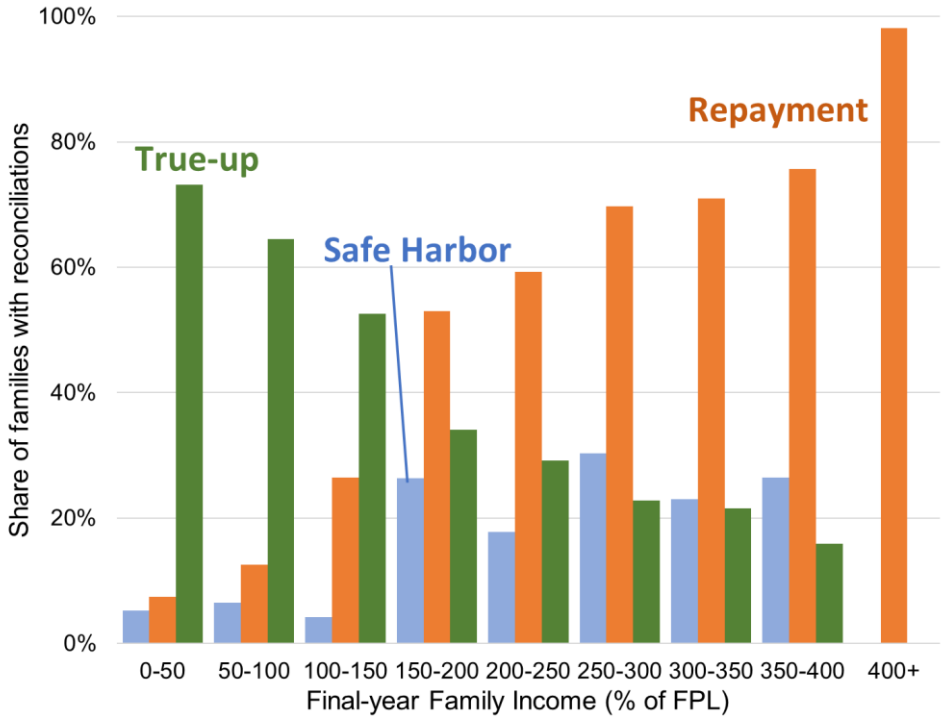
Figure 3D shows that the large PTC-to-income ratios of five among the lowest income group only apply to about one-quarter million single filers (about one-tenth of single filers reconciling PTCs). The number of single PTC reconcilers increases to about one-half million between 100 and 150 percent of FPL in 2019. This number is 1.25 million in 2021 due to the temporary pandemic policy expanding PTC generosity for certain families receiving unemployment insurance. The number of PTC reconcilers then falls for higher income groups. Overall, the inverse U-shaped pattern of PTC claiming over the income distribution results from lower-income individuals claiming Medicaid and higher-income individuals having access to employer-sponsored insurance.

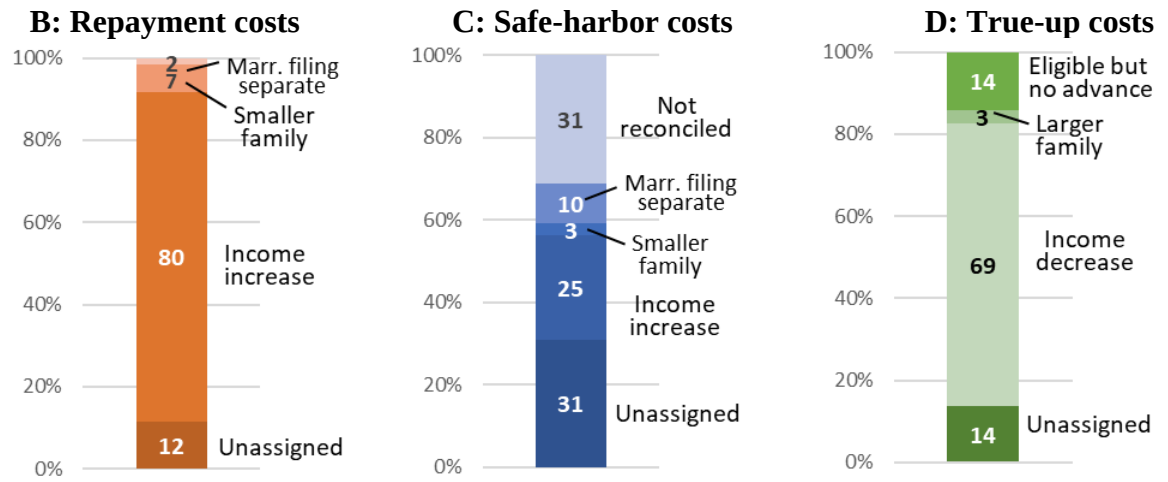
B. Reconciliations of Premium Tax Credits

We consider PTC reconciliation distributions and reasons. Figure 4A shows the distributions of advance PTC repayments, safe harbors, and true-ups among unmarried individuals with one dependent in 2019. The share of these families with repayments increases from about 10 percent for incomes below 100 percent of FPL to about 98 percent for incomes above 400 percent of FPL (about $70,000 for this family type). This is consistent with our finding that repayments are mostly due to income increases, which push families into higher income groups. The share with safe harbors is modest at low incomes where income decreases are more likely and repayments are uncommon, plateaus for incomes between the 150 and 400 percent of FPL, and then disappears due to the safe-harbor phase out at higher incomes. The share of families with true-ups decreases from 73 percent for incomes below 50 percent of FPL to about 20 percent or less for incomes above 300 percent of FPL. This is consistent with our finding that true-ups are mostly due to income decreases. Overall, the high true-up rates at lower incomes and high repayment rates at higher incomes (in part from safe-harbor phase outs) show PTC reconciliations are progressive.

Figure 4. Advance premium tax credit reconciliations, 2019

A: Reconciliation distributions, unmarried and one dependent





Notes: All panels include filers and non-filers receiving an advance or final PTC. Safe-harbor costs include all unpaid excess advance PTCs, largely among non-reconciling filers and non-filers, some of which may be from noncompliance. *Source*: Authors' calculations using INSOLE data (Panel A) and population tax data.

Next, we consider reasons for repayment, safe-harbor, and true-up costs. Using the family's prior-year family size combined with information reporting about their advance PTC, we impute the estimated income families reported to the Exchanges. We use this estimated income to determine counterfactual advance PTCs, although actual prior-year incomes show similar results. To simplify the decomposition, we follow Splinter (2023) and assign each tax credit recipient's entire reconciliation cost to a single reason based on a sequential order starting at the top of each figure. Figure 4B shows that 80 percent of repayment costs were due to income increases. Meanwhile, only seven percent of repayments were from smaller family sizes and two percent from ineligibility due to a tax-filing status of married filing separately. Families were in the unassigned category due to discrepancies between the tax-filer and Exchange-reported values and cases where prior-year tax values were not a good proxy for constructing advance PTCs. Families may also be in the unassigned category if they were (or mistakenly believed they were) ineligible for the PTC due to being eligible for other minimum essential coverage.

Figure 4C shows that 31 percent of safe-harbor costs were among those not reconciling their advance and final PTCs—who we estimate would have had a safe harbor had they reconciled.[8] Other safe-harbor costs are mostly unassigned or due to income increases. Figure 4D shows that 69 percent of true-up costs were due to income decreases. Additionally, 14 percent of true-ups were claimed by families eligible for an advance PTC but who did not claim it. These families only received a final PTC upon filing their tax return.

[8] The non-reconciled amount is only the part of the unreconciled advance PTC that we estimate would have been protected by safe harbors if recipients had reconciled. That is, it excludes noncompliance from required repayments. Estimated revenue increases of removing safe harbors would be less than the safe-harbor amounts here to the degree safe-harbor removal would cause noncompliance.

IV. Child Tax Credits

Advancing child tax credits (CTCs) was a temporary policy, although there is continued interest in advancing these credits (e.g., Maag et al. 2023). In the second half of 2021, the IRS advanced half of estimated annual CTCs totaling to $94 billion. In this section, we discuss the 2021 CTC expansions, total fiscal costs, and reconciliations. For repayments and safe harbors, we show distributions and reasons for these reconciliations. Like the PTC, reconciliations for advance CTCs were progressive due to its safe harbor, which phased out with income.

A. Background: Child Tax Credits

Besides advancing half of the annual credit, the 2021 CTC was expanded in three primary ways. First, annual credit amounts were increased from $2,000 per child to $3,600 per child under age six and $3,000 otherwise. Second, eligibility of children was expanded to include 17-year-olds. Third, the earned income phase in and refundability cap were removed, so that CTC receipt and amounts were no longer conditional on earned income or tax liabilities. This essentially converted the CTC into a fully refundable child allowance. In contrast, the prior-year's CTC phased in at 15 percent of earned income exceeding $2,500 and the refundable amount was capped at $1,400 per child.

The CTC phases out as modified AGIs exceed $400,000 for married individuals filing jointly and $200,000 otherwise between 2018 and 2025. In 2021, the credit increases above $2,000 per child were phased out at lower income thresholds: $150,000 for married individuals filing jointly, $112,500 for heads-of-household, and $75,000 otherwise. For both the baseline credit amount and the increased amount, the phase-out rate was five percent above these thresholds.

For advancing, the $3,600 and $3,000 expanded annual credits translated to $300 and $250 per month. Only half of the estimated annual credit was advanced between July and December of 2021. The expansions and phase outs were accounted for when the IRS estimated advance CTCs using earlier-year modified AGI and filing status. Thus, 16-year-olds from the preceding year were included for advance CTCs due to the temporary age expansion. Newborns, however, were not considered for advance CTCs because online portals did not allow this information to be added.

Advancing the CTC also increased fiscal costs due to the generous reconciliation safe harbor. This safe harbor was only available to those claiming fewer children than in the earlier years used by the IRS to estimate advance CTCs. The maximum repayment reduction was $2,000 per child no longer claimed. This was a generous safe harbor because it exceeded the maximum advance per-child amounts of $1,800 and $1,500, which are half the maximum annual per-child credits. This safe harbor also targeted lower-income ranges with a third phase out. Safe-harbor phase outs began at $60,000 for married individuals filing jointly, $50,000 for heads-of-household, and $40,000 otherwise. Safe harbors above these income thresholds phased out by the ratio of the maximum repayment reduction and the threshold.

B. Reconciliations: Child Tax Credits

Figure 5A presents an overview of recent CTC fiscal costs. In 2020, total CTCs were $118 billion, of which $34 billion was paid as a refundable credit. In 2021, total CTCs nearly doubled to $217 billion. Advance CTC payments were made for 62 million children among 38 million tax-filing units and totaled $94 billion.[9] These advance credit payments were 43 percent of total CTC costs. This is just under half because advance payments excluded newborns (about five percent of CTC costs) and $500 non-refundable credits for other dependents (about two percent). Some individuals also opted out of advance payments.

Repayments are a modest share of advance CTCs. Relatively few advance credits exceeded final credits because only half of estimated CTCs were advanced and potential repayments were often mitigated by safe harbors. Repayments totaled about $1 billion, or 1.3 percent of advance CTCs. In contrast, safe harbors totaled about $5 billion, or 5.4 percent of advance CTCs. This safe-harbor estimate includes about $4 billion of assumed safe harbors among final-year non-filers. Specifically, we assume that filing among these non-filers would result in all being fully protected from repayments by safe harbors. This assumption is consistent with the number of final-year non-filers receiving advance CTCs with implied fewer children due to child reallocations, i.e., children claimed by the non-filer in 2020 but then claimed by a different adult filer in 2021.[10]

Figure 5B shows the share of tax returns across the income distribution with safe harbors and repayments. Safe harbors were common among low- and middle-income groups and repayments were common in high-income groups.[11] These result from differences in phase outs for safe harbors and main credits, which can cause repayments. For married filers, safe harbors phased out above $60,000, while the main credit phased out for incomes above $400,000. Hence, among tax units with advance CTCs, safe harbors mostly benefited those with incomes below $80,000 and repayments were made by most tax units with final-year incomes above $400,000. Overall, this implies advance CTC reconciliation policies increased tax progressivity.

Repayments were mostly due to filing-status changes and income increases, as seen in Figure 5C. Often, repayments resulted from interactions between these two types of changes and the main CTC phase out: divorces could push the main credit phase out below one's income or an income increase could push one's income above the phase-out threshold. For the CTC, both affected higher-income people.

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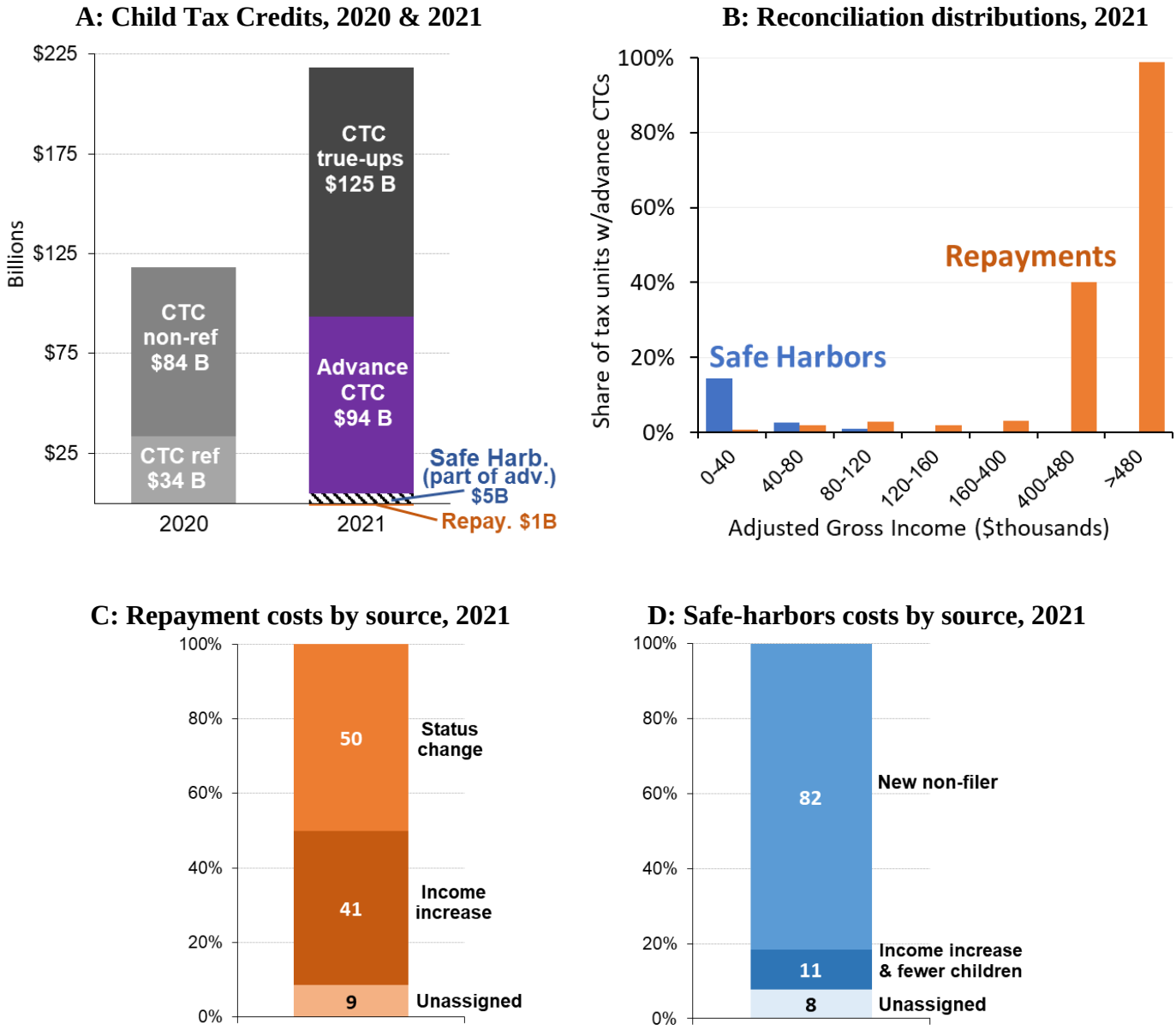
[9] This estimate from IRS includes essentially all adults who claimed child tax credits the preceding year (see www.irs.gov/pub/irs-soi/21in01actc.xls). Cole (2022) presented similar evidence. We estimate that about one million individuals opted out of advance CTC payments during the six months of payments, although the number of individuals increasing withholding to offset advance CTCs is not observed.

[10] We account for nearly 2 million non-filers who received advance CTCs and had not filed by early 2024. With older data as of Oct. 2022, the Treasury Inspector General for Tax Administration (2023, p. 1) estimated that "approximately 4.1 million taxpayers who were issued about $9 billion in advance payments had not yet filed a tax return."

[11] Note that these are shares within income groups, not counts. Safe harbors occur in income ranges with many CTC recipients; hence the apparently low shares do not translate into lower absolute numbers. About one million tax returns made repayments and over one-half million had safe harbors (about 2.5 million tax units had safe harbors when including non-filers, as in Figure 5B).

Figure 5. Advance CTC reconciliations: Distributions and reasons



Notes: Safe-harbor costs are included in advance CTC amounts but increase total costs by preventing the repayment of any excess payments relative to final-year circumstances. CTC true-ups include the $500 nonrefundable other dependent credit and estimates exclude payments made directly to territorial governments. Late filers are excluded. Panel B estimates are averages within adjusted gross income groups among resident, non-dependent tax returns, but non-filing tax units are added to the lowest income group. *Source*: Authors' calculations using tax data.

Safe harbors were conditional on claiming fewer children in the final year than earlier years. Taking this common reason across all CTC safe harbors as given, safe-harbor costs were mostly among earlier-year tax filers who did not file a 2021 tax returns and became new non-filers (Figure 5D). As discussed above, the children claimed the prior year among these new non-filers were mostly reallocated to other filers. While the 2021 CTC was independent of earned income, the EITC earnings requirement still provided an incentive to reallocate children away from workers with large earnings declines (Splinter, Larrimore, and Mortenson 2017). The large safe-harbor effect from new non-filers could also indicate noncompliance due to new non-filers avoiding repayments by not filing, but the safe-harbor generosity suggests this was not a significant issue.

V. Earned Income Tax Credits

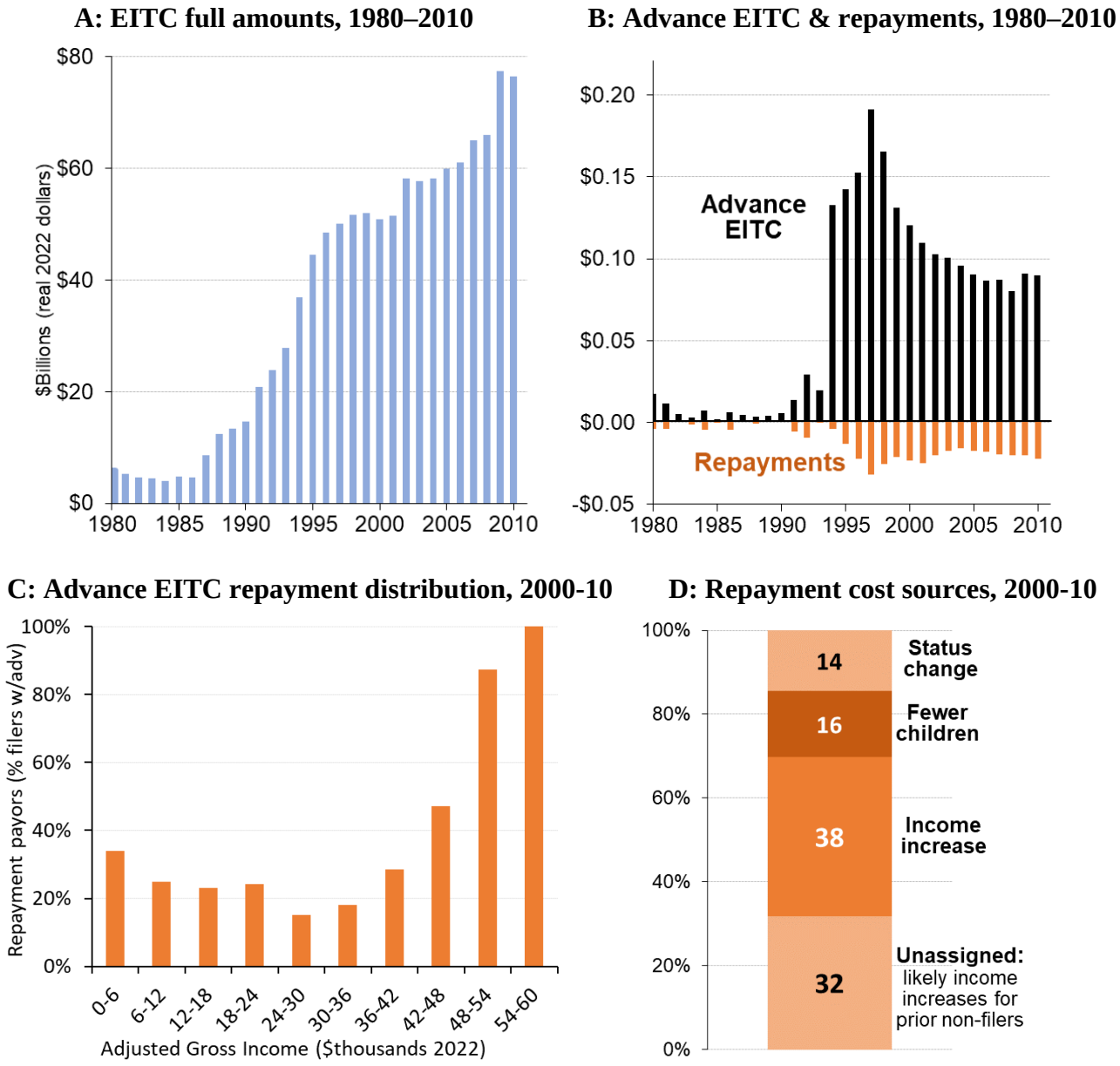
Advance EITCs started in 1979 and stopped after 2010. Only an average of 0.2 percent of credits were advanced in the final decade of the program. Unlike other advance credits, excess advance EITC payments required full repayment because they had no safe harbor. Unlike the CTC and stimulus, advance EITC payments were not automatically distributed, but required workers to opt in with annual documentation sent to the IRS.

Figure 6A shows total EITC costs during the years with advance credits. Expansions in the late 1980s and early 1990s increased the credit, including a 1994 doubling of the one-child credit maximum amount and tripling of the two-or-more-children maximum amount (Congressional Research Service 2018). Between 1986 and 1997, the total cost of the EITC increased from $5 billion to $50 billion (all values in 2022 dollars). In 2009, the credit expanded to provide third-child benefits, increasing the total credits to $77 billion. Figure 6B focuses on advance EITCs and repayments. The jump in 1994 advanced amounts is likely related to the credit expansions, but reforms that year also reduced the share of the credit advanced to mitigate repayments and noncompliance. Note that data limitations mean these estimates exclude advance credits among final-year non-filers.

Advance EITC payments stopped after 2010. That year, advance payments were made for a small share of claimants: only 0.1 million tax returns had advance EITCs while about 30 million tax returns had EITCs. Repayments of excess advance EITCs, however, were a large share of advance credits because of the lack of safe harbors. In 2010, repayments were paid by over one-quarter of tax returns with advance EITCs. This is a much higher repayment share than for other advance credits.

Across income groups, Figure 6C shows the share of tax returns receiving advance EITCs with repayments. This figure combines data for 2000 to 2010 and indexes incomes to real amounts. Repayments occurred across all final-year income groups, but repayments were more common for incomes above $42,000. All advance EITC recipients in the top income group (AGIs over $54,000) made repayments. This resulted from the credit fully phasing out at about $60,000 for three-child married claimants and at lower levels for other claimants.

Figure 6. EITC reconciliation: Trend, distribution, and reasons



Notes: Amounts and income indexed with the PCE. Advance amounts only among final-year filers.
Source: Authors calculations using tax data (INSOLE file and population data for Panel B since 1996).

Repayments of the advance EITC were largely due to income increases (Figure 6D). Income increases among consistent filers caused 38 percent of advance EITC repayments, when assuming prior-year incomes and family characteristics were used to estimate advance EITCs. Income increases that move incomes along or above the EITC phase out result in repayments. For example, an unmarried filer with one child in 2010 whose income increased from $20,000 to $40,000 would have to repay all their advance EITC. This large impact of income changes is consistent with prior findings that about 61 percent of people

claim the EITC for only one-year or two-year spells, often due to income changes (Dowd and Horowitz 2011). Marriages combine incomes and can also result in repayments. Thus, marriages account for most of the 14 percent of repayments explained by changes in filing status. An additional 16 percent of repayments were due to filers with fewer children. The remaining repayments were likely from income increases among prior-year non-filers who were excluded from our main analysis due to lack of prior-year income.[12]

VI. Stimulus Checks

Stimulus checks were distributed in the last three U.S. recessions. This section summarizes estimates from Splinter (2023) of costs, distributions, and reasons for stimulus safe harbors and true-ups. Unlike the other credits reviewed in this paper, stimulus had full safe harbors and hence no repayments. That is, the stimulus safe harbor made it a tax credit calculated using the lesser of income from two years, rather than one year, often resulting in more generous credits. This caused substantial fiscal costs. Across the three rounds of pandemic stimulus, safe harbors cost nearly $70 billion and tended to benefit higher-income individuals.

Stimulus payments have become more generous over time, as seen in Figure 7A. The 2001 stimulus advanced tax liability reductions. As many individuals have no income tax liability (Splinter 2019), only about two-thirds of tax units received these rate reduction credits—usually $300 per adult and $500 per head-of-household filer. The 2008 stimulus expanded to become partially refundable. This stimulus was up to $600 per adult and $300 per child. These expansions increased total stimulus payments, including true-ups, from $43 billion in 2001 to $109 billion in 2008. The 2020 stimulus was expanded to many non-filers and made fully refundable. Combined first-round and second-round stimulus was usually $1,800 per adult and $1,100 per child. The 2021 stimulus was $1,400 for most adults and dependents. The expanded eligibility and higher credit levels resulted in stimulus payments of $459 billion in 2020 and $427 billion in 2021.[13]

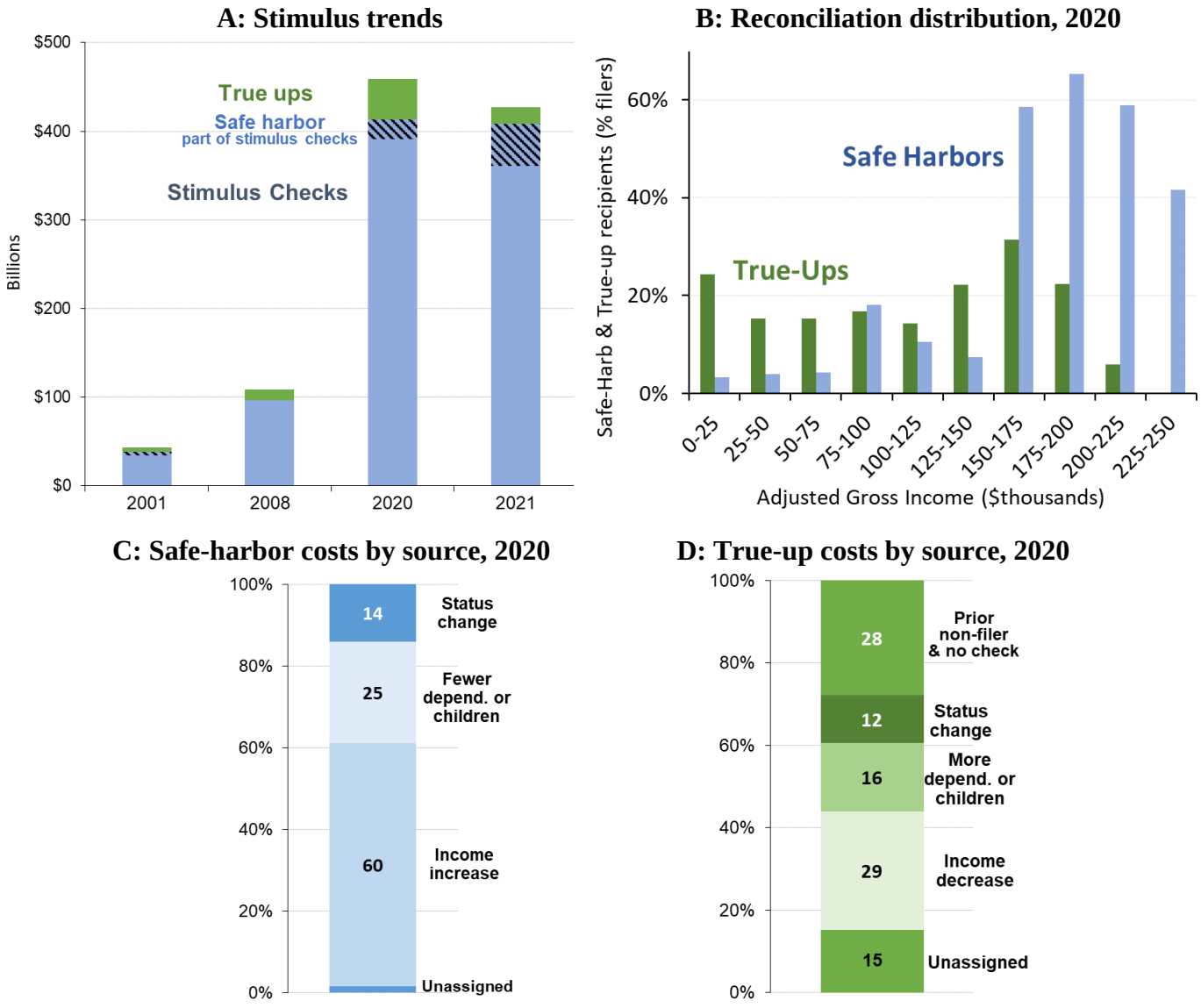
Across these stimulus payments, safe-harbor costs averaged 9 percent and true-up costs averaged 11 percent of stimulus checks. This implies combined safe-harbor and true-up costs of nearly one-fifth the amount of stimulus checks. Reconciliation changes between 2020 and 2021 reflect opposite movements of safe harbors and true-ups. Safe-harbor costs increased from $22 billion in the 2020 recession to $47 billion in the 2021 recovery. Increasing safe-harbor costs resulted from more individuals having income increases, implying safe-harbors are generally more costly in economic expansions. Meanwhile, true-up costs decreased from $46 billion in the recession to $19 billion in the recovery, in part from fewer individuals with income decreases.

[12] About four percent of EITC repayments were among filers with income decreases into the credit's phase-in range, controlling for status changes and fewer children. Other prior-year EITC recipients had large earnings declines, but no longer qualified for EITCs the next year and therefore did not file tax returns. As we only observe advance EITCs among final-year filers, we cannot estimate the repayments from earnings declines and unrepaid excess advance EITCs (i.e., noncompliance) among final-year non-filers who received advance EITCs.

[13] Stimulus checks, the advance portion of stimulus payments in 2001, 2008, 2020, and 2021 were: $38 billion, $96 billion, $413 billion, and $408 billion.

Figures 7B shows 2020 true-up and safe-harbor receipt rates by income group, i.e., the share of tax return filers with either reconciliation effect. The distribution of true-up recipients is relatively proportional for incomes below $200,000. Safe-harbor recipiency, however, is clearly regressive. Stimulus safe harbors benefit higher-income individuals because those individuals had income increases across the relatively high stimulus phase outs. Stimulus phase outs in 2020 began at $150,000 for married individuals filing jointly and $75,000 otherwise.[14]

Figure 7. Stimulus reconciliations: Trends, distributions, and reasons



Notes: 2020 includes all first-round and second-round pandemic stimulus checks and true ups. *Source*: Splinter (2023).

[14] The 2008 and 2020 stimulus phased out at a five-percent rate as AGI exceeded $150,000 for married individuals filing jointly and $75,000 otherwise. The 2021 stimulus increased phase-out rates and added a head-of-household phase out. The 2021 distributions and reconciliation reasons are nearly the same as for 2020 (Splinter 2023).

Safe-harbor costs for 2020 stimulus mostly resulted from income increases (Figure 7C). Otherwise, most safe-harbor costs were from individuals claiming fewer children or dependents than in earlier years. True-up reasons were more varied (Figure 7D). Individuals not receiving advance credits (stimulus checks) or with income decreases account for over half of 2020 stimulus true-up costs. Some individuals did not receive stimulus checks because the IRS lacked up-to-date information, especially for non-filers or non-residents in earlier years. Still, most non-filers received stimulus checks because the IRS used non-filer information from other agencies. Additionally, true-ups went to some people who changed their tax-filing status, including individuals who filed a tax return and were claimed as dependents in earlier years but who were no longer a dependent in the final year (resulting in the double payments discussed below). Finally, true-ups went to those claiming more children or dependents than in earlier years, mostly from child reallocations and the IRS not observing newborns until they were claimed on tax returns.

VII. Noncompliance and Double Payments

Advance tax credits introduce a new dimension of noncompliance: reconciliation noncompliance. For standard tax credits, received only upon filing a tax return, noncompliance comes from (intentional or unintentional) misstatement of income or other eligibility criteria.[15] As with standard credits, evidence of noncompliance for advance credits is suggested by income bunching near phase-out thresholds. Heim et al. (2021) found income bunching near the PTC's income eligibility cliff. Splinter (2023) found modest income bunching at phase-out thresholds for stimulus. Advance tax credit noncompliance also results from reconciliation mistakes or failing to reconcile advance amounts, in part from not filing a tax return. For example, the Treasury Inspector General for Tax Administration (2022) estimated that potentially improper reconciliations represented about two percent of stimulus true-up payments. Failure to reconcile advance credits on tax returns was the main reason identified for advance EITC noncompliance (Government Accountability Office 2007).

On 2021 tax returns, about $8 billion of advanced PTCs were not reported for reconciliation. Failure to reconcile any advance PTCs occurred among 0.8 million filers and 1.4 million non-filers. There were nearly two million additional filers with incomplete reconciliations, who filed a reconciliation Form 8962 but did not include the full advance PTC amount. In 2021, we estimate that non-reconciliation and incomplete reconciliation resulted in about $1 billion of unrecaptured excess advance PTCs (after safe harbors). In 2022, this estimated noncompliance increased to $2 billion. Note that our tax data is before audits and therefore we cannot observe how audits may have increased repayments.

[15] Prior studies documented these forms of noncompliance (e.g., for the EITC see Nichols and Rothstein 2016). The Government Accountability Office (2016) reported dollar overclaim rates of 29 percent for the EITC and 12 percent for the CTC. Mortenson and Whitten (2020) found significant income bunching on tax returns that maximized (non-advance) refundable tax credits.

Health insurance Exchanges and the IRS have worked to limit noncompliance from non-reconciliation of advance PTCs. Families failing to reconcile can subsequently be blocked from Exchanges. Also, starting in tax year 2021, tax filers are required to reconcile their PTCs in order to submit electronic tax filings if Forms 1095-A sent to the IRS by insurance plans indicate any family member received advanced PTCs. However, the share of advance PTC amounts not reconciled was 12 percent in 2021, which was the same as the average between 2015 and 2019. This suggests limited effect of this new requirement, which likely only captures the presence of the reconciliation form, but not incorrect amounts, or that this restriction can cause some people to not file at all. Note that this comparison is complicated due to pandemic-era policies. For example, the removal of the requirement to reconcile advanced PTCs for 2020 may have led some tax filers to believe they did not need to reconcile for 2021. Also, the expanded eligibility and enhanced credit amounts were implemented partway through 2021, which may have induced new enrollment by individuals who were unfamiliar with the reconciliation requirement.

To address some non-reconciliation or reconciliation mistakes, the IRS corrects certain incorrect amounts. For example, the IRS corrected misstated stimulus amounts. These mistakes were common because there were no information returns for stimulus checks and third-round stimulus was sent after some people already filed their 2021 tax returns.

Double payments for the same individual can result from advancing tax credits. Due to the generous safe harbor, child tax credits can go both to individuals claiming a child in an earlier year (as advance credits) and to different individuals claiming the same child on a 2021 tax return (as standard final credits). Third-round stimulus for a dependent was sent both to parents who claimed that dependent in earlier years (as a stimulus check) and to the prior-year dependent if they were no longer a dependent in 2021 (as a full true-up). Additionally, advancing tax credits can result in payments to deceased individuals because the IRS relies on earlier-year tax returns. Over one million first-round 2020 stimulus checks were sent to deceased individuals (Government Accountability Office 2020). Payments to deceased individuals can be mitigated with the constantly updated Death Master File, as done with later rounds of stimulus.

VIII. Comparing Credits and Conclusion

Advance tax credits function like monthly transfers issued through the tax system. Like other transfers, they phase out with income. Unlike other transfers, large shares of advance tax credits may have to be repaid.[16] Repayments result from tax credits based on final-year characteristics being smaller than advance credits based on earlier-year characteristics. We present repayment rates and causes for four advance tax credits. Additionally, we show how safe harbors mitigate repayments, affect distributions, and increase fiscal costs.

[16] Small shares of overpayments and then repayments occur for programs administered by the Social Security Administration, often due to delayed processing of reported earnings changes (Government Accountability Office 2023).

Table 2: Comparisons of Advance Tax Credits

	Advanced (% total $)	Repayments (% adv. $)	Safe harbor (% adv. $)	Repayments	Safe harbors
PTC - Premium tax credit, 2019	105	9	5	All FPL >400% *Main reason* income↑	FPL<400% *Main reason* Not reconciled
CTC - Child tax credit, 2021	43	1	5	Most AGI >$400K *Main reasons* filing status chg. income↑	AGI <$120K *Reasons* only if children↓ mostly non-filers
EITC - Earned income tax credit	0.1	22	---	Full repayment AGI > $54K *Main reason* income↑	No safe harbor
Stimulus, 2020/21	90/96	---	5/12	---	Full safe harbor Most AGI >$150K *Main reasons* income↑ children↓

Notes: EITC for 2000 to 2010. *Sources*: Authors' calculations using tax data and Splinter (2023).

Our estimates of advance tax credits and reconciliations are summarized in Table 2. The first column shows the shares of final-year credits that were advanced: one-tenth of one percent of EITCs, nearly half of CTCs, and about all of PTCs and stimulus payments. The advance PTC share exceeds 100 percent due to the large amount of repayments. The second column shows repayments were zero for stimulus checks, one percent of advance CTCs, nine percent of advance PTCs, and 22 percent of advance EITCs. The third column shows safe-harbor costs were zero for advance EITCs, five percent of advance CTCs and advance PTCs, and up to 12 percent of stimulus checks. The last two columns summarize reconciliation distributions and reasons. Distributions of repayments and safe harbors tend to align with credit phase-out ranges, although the PTC and CTC safe harbors target lower income groups than the overall credits. Except for stimulus safe harbors, reconciliations tend to increase each credit's progressivity. Reasons for repayment and safe-harbor costs often resulted from changes in income or the number of children claimed.

Advancing child tax credits in 2021 renewed interest in advance tax credits. Advancing was later extended to clean vehicle credits. While advancing credits can accelerate their receipt, it can also result in credit repayments. This study provides the first analysis of repayments of advance PTCs, CTCs, and EITCs. It also reviews similar estimates for stimulus checks. We highlight how repayments of advance credits can arise from changing family circumstances, especially from income changes. We also consider how safe harbors limit repayments and how these policies differ across advance tax credits. For example, safe harbors are often designed to protect lower-income individuals but benefit those with higher incomes in the case of stimulus payments. Advancing tax credits shifts the timing of payments, but including safe harbors adds to the fiscal cost of tax credits. Our comparison across four advance tax credits shows a range of feasible policy options for advancing and reconciling tax credits. These estimates can help quantify certain policy trade-offs particular to advancing tax credits.

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