

Revenue and Distributional Impacts of the American Rescue Plan Act

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Abstract: *The American Rescue Plan Act of 2021 provides over half a trillion dollars in tax benefits to Americans. We illustrate how the Act provides substantial tax benefits to the lowest income Americans. It also keeps a Biden campaign promise of not raising taxes on American taxpayers making less than \$400,000 per year, although some higher earning tax payers face increased tax liability due to ARPA.*

The American Rescue Plan Act of 2021 (ARPA) represents the third significant round of economic relief provided in response to the COVID-19 pandemic. Among these pieces of legislation, ARPA leverages the tax system to the greatest extent. This quantitative note provides an analysis of the revenue and distributional impacts of ARPA's major tax provisions.

1. Tax Provisions in ARPA

The American Rescue Plan Act specifies a number of changes in the taxation of individuals and businesses, as well as spending programs.¹ Here, we focus on the following provisions, which comprise the bulk of the tax benefits to individual taxpayers:

- Exclusion of unemployment insurance from taxable income
- Expansion of the Child Tax Credit
- Expansions of the Earned Income Tax Credit
- Expansions of the Child and Dependent Care Credit
- Extension of pass-through business loss limitations
- Recovery Rebate Credits

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¹Full text of the Act is available at <https://www.congress.gov/117/bills/hr1319/BILLS-117hr1319enr.pdf>.

Tax provisions of ARPA that were not modeled include the exclusion of federal student loan debt forgiveness, temporary credits for sick leave and family leave for self-employed filers, business and employer provisions, and changes to health insurance premium credits. Modeling these provisions requires data that are not available and/or are not provisions of the individual income or payroll tax systems that can be modeled with existing open source models.

2. Revenue Impacts

The ARPA provisions we model total just over half a trillion dollars in tax benefits over the next ten years, with most of this concentrated in 2021. Table 1 summarizes the revenue impacts of the major tax provisions modeled over the 2021-2030 window.

The Recovery Rebate Credits (the “\$1,400 checks”) represent almost 80% of these tax benefits. The generous expansion of the Child Tax Credit accounts for another 20% of the total benefits. Thus, the new credit and changes to the existing CTC system account for almost all the benefits.

3. Distributional Impacts

The benefits to individuals that mirror the revenue losses are highly targeted at lower income taxpayers. Table 2 shows that changes in after-tax income for those in the bottom 20% of the distribution of expanded income have an average increase in after-tax income of 35%.² This group accounts for about one quarter of the total amount received from the major tax provisions in the ARPA.

Figure 1 presents average tax rates by expanded income percentile. This graph shows a sharp decline in the average tax rates of lower income taxpayers. Those in the bottom one percent find their average tax rates decline from about -10% to -100%. Both the size of the tax benefits to Americans in the lowest income percentiles from ARPA as well as their refundability (so that those with no tax liability still can realize these benefits) allow the tax system to heavily supplement the income of those taxpayers at the bottom of the income distribution. From Figure 1 and Table 2, it’s also clear that these tax cuts fall almost entirely on filers with income below the 80th percentile. Taxpayers below the 80th percentile reap about 94% of the tax benefits from the ARPA.

To paint a more detailed picture of the distributional impacts of ARPA, consider Figure 2. Each dot in this figure represents a tax filing unit in our microdata and includes all filers making \$500,000 or less in adjusted gross income.³ Blue dots

²Expanded income is a broad definition of income that includes some non-tax sources of income as well as the consumption value benefits.

³Our microdata are based on the IRS Public Use File and provide a stratified random sample of all taxpayers.

Figure 1. Average Tax Rates by Income Percentile, 2021

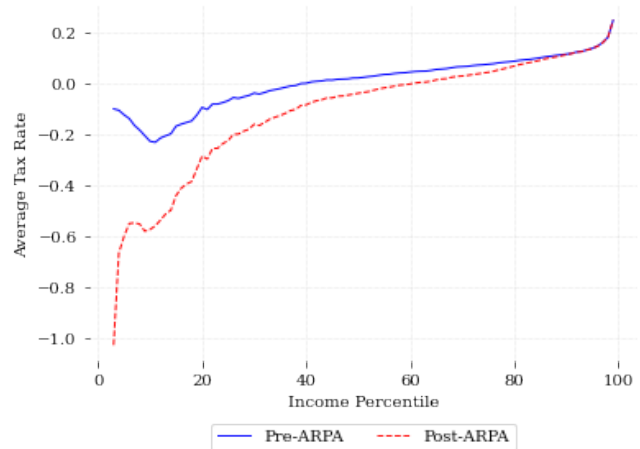
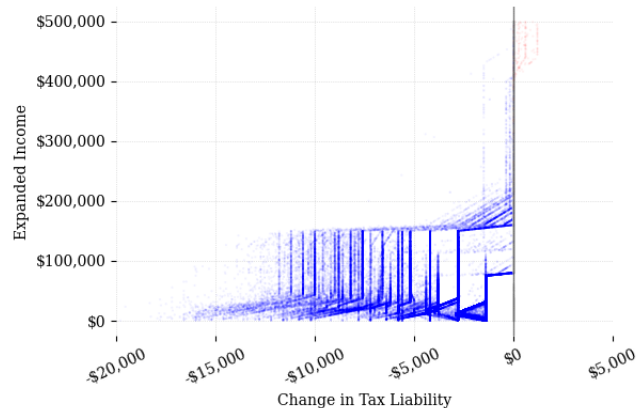


Figure 2. Tax Changes for All Filers in Sample, 2021



represent decreases in taxes, gray represent no tax change, and red dots represent increases in taxes. Figure 2 shows how some taxpayers with very low income receive large reductions in tax liability. Much of these reductions are in the form of refundable credits, so this represents a significant increase in after-tax income for these filers. Also apparent is that there are a large number of filers with no tax change, visible from the mass of gray dots right at zero tax change. The zero change tax units with AGI below \$150,000 are filers who are single filers who are claimed as dependents on other tax returns and so are not eligible for the Recovery Rebate Credits. In addition, we note that there are no tax increases for filers with income less than \$400,000. This keeps a campaign promise from President Biden to not raise taxes on these filers. However, above \$400,000, the new phase out for the Child and Dependent Care Credit (above \$400,000) increases tax liability on qualifying high income households.

We further decompose the change of each provision of ARPA on the average tax rates in 2021 in various quantiles of total income in Figure 3. This bar chart shows that the majority of the tax cut in each income group, up to the 90th percentile of earners, comes from the rebate checks. The CTC expansion

Table 1. Revenue Impacts of ARPA by Provision: Fiscal Years 2021-2030 (\$ billions)

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2021-2030
Extension of noncorporate loss limitation	—	—	—	—	—	+11.4	+3.8	—	—	—	+15.2
UI exemption ^a	-1.2	—	—	—	—	—	—	—	—	—	-1.2
Recovery Rebate Credit	-387.4	—	—	—	—	—	—	—	—	—	-387.4
CTC expansion	-25.2	-75.5	—	—	—	—	—	—	—	—	-100.7
EITC expansion for childless filers	-0.8	-18.5	—	—	—	—	—	—	—	—	-19.3
EITC extended to married separate filers	-0.5	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-1.1
Raise EITC investment income cutoff	-0.4	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-3.0
CDCC expansion	-1.4	-3.7	—	—	—	—	—	—	—	—	-5.1
Total	-417.0	-98.0	-0.3	-0.3	-0.3	+11.1	+3.4	-0.4	-0.4	-0.4	-502.6

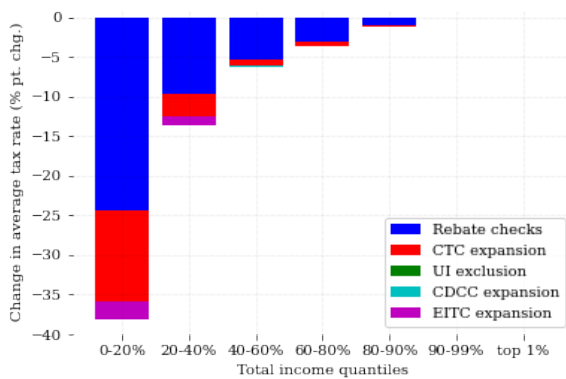
* Row and column totals may not add up due to rounding.

^a Unemployment insurance exemption is underestimated as our data do not account for recent trends in unemployment insurance participation.

Table 2. Distributional Impacts by Income Group, 2021

Expanded income groups	Change in		Share of total tax change	Average tax rate		Diff
	after-tax income (%)	Avg tax change (\$)		Pre-ARPA	Post-ARPA	
Bottom quintile	35.70%	-3198.9	25.4%	-6.6%	-44.6%	-38.1%
Second quintile	14.30%	-3581.7	25.4%	4.9%	-8.7%	-13.6%
Third quintile	7.20%	-3123.2	22.2%	11.8%	5.5%	-6.3%
Fourth quintile	4.40%	-3200.3	21.0%	17.0%	13.4%	-3.6%
80 - 90	1.40%	-1549.3	4.7%	20.9%	19.8%	-1.1%
90 - 95	0.10%	-234.9	0.4%	22.2%	22.1%	-0.1%
90 - 99	0.10%	-152.6	0.2%	22.9%	22.8%	0.0%
Top 1%	0.00%	-94.9	0.0%	27.1%	27.0%	0.0%
All	4.30%	-2855.8	100.0%	19.2%	15.7%	-3.5%

Figure 3. Percentage Point Change in Average Tax Rates by Income Quintile, 2021



has its biggest effect on the lowest 20% of earners, with its effects decreasing as incomes rise. Further, it is interesting to note that the EITC expansion only modestly decreases average tax rates for the bottom 40% of earners.

We can summarize the progressivity of these changes with the Gini index, which was previously 0.568 based on after-tax income and falls 5.7% to 0.536 under ARPA.

Figure 4 shows shares of winners and losers under ARPA by

decile. ARPA's tax provisions benefit 86% of Americans, and 66% of Americans are in tax units whose after-tax income rises by 5% or more. Three-tenths of a percent of the population comes out behind, exclusively in the top decile, though 10% of this upper decile also gains. In the bottom half of the distribution, 96.4% gains 5% or more, and the remainder (mostly in the bottom decile) does not gain because they are claimed as dependents on other tax returns.

4. Benefits to Families

In addition to targeting income relief to low income Americans, the ARPA is focused on distributing that aid to households with children. Expansions of the Child Tax Credit, the Child and Dependent Care Credit, and the Recovery Rebate Credit all reflect this focus. Figure 5 relates the average tax benefits by quintile of adjusted gross income and the number of children under 18 in the tax filing unit. The patterns are consistent with the focus of the legislation on providing aid to low income families; within each quintile larger families receive higher benefits.

Figure 4. Distribution of Change to After-tax Income by Decile, 2021

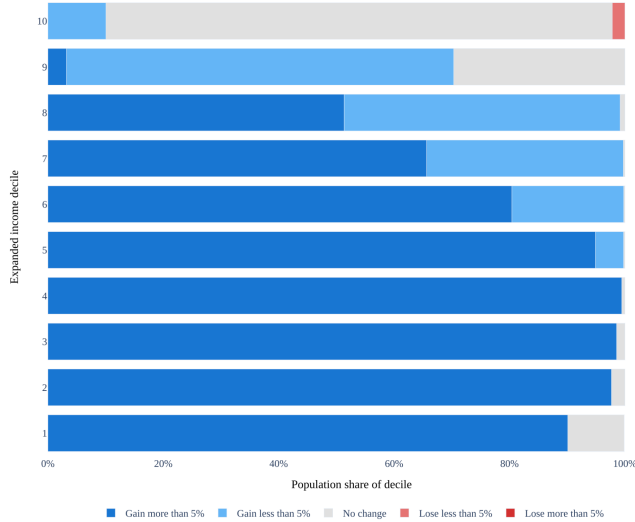


Figure 5. Average Tax Benefits by Family Size and Income Quintile, 2021

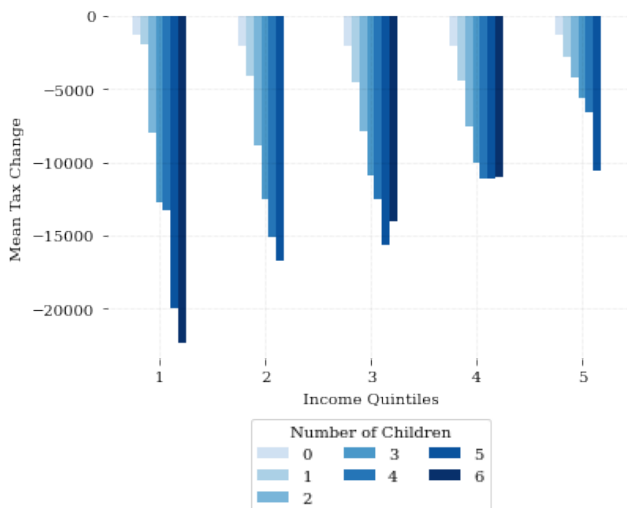
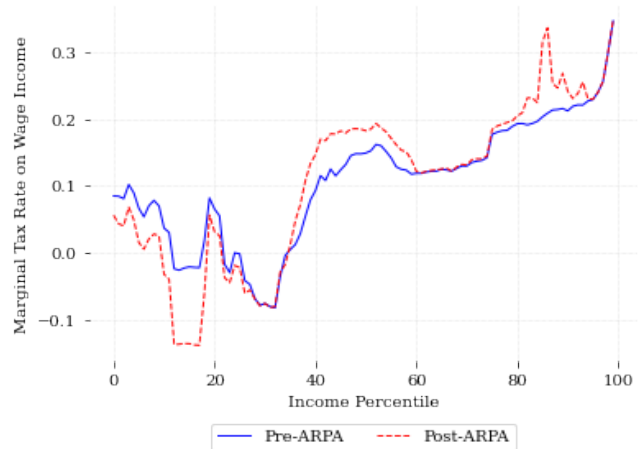


Figure 6. Marginal Tax Rates by Income Percentile, 2021



5. Effects on Marginal Tax Rates

Marginal tax rates represent the tax burden on an additional dollar of income. In Figure 6, we plot marginal tax rates on wage and salary income under pre- and post-ARPA tax law by percentile of expanded income. Figure 2 clearly shows the sharp decline in benefits between \$150,000 and \$160,000 in income, which comes from the phase-out for the Recovery Rebate Credit and other credits. These phaseouts increase marginal tax rates, and in Figure 6 we see a spike around the 90th percentile, which corresponds to those benefit phaseout thresholds. There is a smaller increase in marginal tax rates around from the 35th to 60th percentile, which is also related to the Recovery Rebate Credit and reflects the phaseout from \$75,000 to \$80,000 in income for single filers and the elimination of the phase-in for the Child Tax Credit through the Additional Child Tax Credit.

However, the story is somewhat complicated. The Recovery Rebate Credit is based on 2019, 2020, and 2021 income. The initial payment is based on 2019 or 2020 income (if the taxpayer has already filed a 2020 return). Taxpayers can also use their 2020 income to claim a larger credit later in 2021, once their return is filed. Since income from 2019 and 2020 have already been determined, they should not impact marginal tax rates or filer behavior (with an exception, perhaps of taxpayers who might choose to file a corrected return for those past years). But if one does not qualify for the credit (or the full credit amount) based on 2019 or 2020 income, then 2021 income can be used (in which case the credit would be claimed when filing a tax return in 2022 for tax year 2021). In this instance, the phaseout of the threshold does affect marginal tax rates on 2021 income and could affect taxpayer behavior to earn or report income in 2021.

6. Conclusion

We find that about \$500 billion of the total \$1.9 trillion for ARPA come from the major tax provisions in the Act, and from the Recovery Rebate Credit and expansions to the Child Tax Credit, in particular. These tax benefits disproportionately accrue to lower income households, with approximately 94% of the benefits falling on those below the 80th percentile and about a quarter of all benefits falling on those with income in the bottom 20%. Furthermore, in keeping with a campaign promise, the Act does not increase incomes on taxpayers with income below \$400,000, but does raise taxes for some filers with income above \$400,000. While new credit phaseouts increase marginal tax rates, some of the largest increases in marginal tax rates are not likely to affect behavior because liability is, at least partially, based on past income.

Modeling Notes

For this analysis, we used [Tax-Calculator](#) version 3.1.0 at commit `4789cfcc`. Tax-Calculator is an open source microsimulation model that is able to simulate a rich set of policy changes to the U.S. federal individual income and payroll tax systems. In conjunction with micro data that represent the U.S. population and a set of behavioral assumptions, Tax-Calculator can be used to conduct static revenue scoring and distributional analyses of tax policies. For documentation and source code please visit <http://taxcalc.pslmodels.org>.

The microdata used in this analysis were prepared by [TaxData](#) and use the IRS Public Use File (PUF) together with the Current Population Survey (CPS), which allows us to capture non-filers who are not represented in the PUF.

We model the major tax provision of ARPA using the [ARPA.json](#) reform file from the Tax-Calculator reforms in the [PSL Models Examples repository](#).

We define percentiles based on expanded income divided by the square root of the number of people in the tax unit, such that each centile has equal population. We omit tax units with negative expanded income from decile analysis and include them in overall estimates. Figure 3 also omits tax units with negative baseline after-tax income.