Unemployment Insurance in Survey and Administrative Data

Jeff Larrimore
Federal Reserve Board

Jacob Mortenson
Joint Committee on Taxation

David Splinter
Joint Committee on Taxation

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Abstract

Unemployment Insurance (UI) benefits were a central part of the social safety net during the Covid-19 recession. UI benefits, however, are severely understated in surveys. Using administrative tax data, we find that over half of UI benefits were missed in major survey data, with a greater understatement among low-income workers. As a result, 2020 official poverty rates were overstated by about 2 percentage points, and corrected poverty reached a six-decade low. We provide data to correct underreporting in surveys and show that, compared to UI benefits, the UI exclusion tax expenditure was less targeted at low incomes.

Keywords: unemployment insurance, income underreporting, Covid-19, countercyclical policy, administrative data, survey data
JEL codes: D31, E24, H53, J65

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1. INTRODUCTION

Unemployment insurance (UI) was a centerpiece of the economic policy response to the Covid-19 recession. Measuring the degree to which poverty was mitigated is necessary for evaluating the policy's success. However, the Census Bureau's Current Population Survey (CPS) fails to accurately capture these benefits. Researchers rely on the CPS to evaluate UI benefits and the Census Bureau uses it to estimate official poverty rates. Therefore, underreporting of benefits has major implications for public policy research.

In this paper, we compare UI benefit receipt in the CPS to that observed in IRS tax data. This research builds on and complements existing research using data from administrative sources to supplement surveys and understand how measurement error affects research on financial outcomes (Meyer and Mittag, 2019). In doing so, we consider a critical component of the safety net that Census Bureau researchers have been unable to explore in the linked Census-IRS data (Bee and Rothbaum, 2019). We also extend previous research comparing national aggregates for UI receipt in the CPS to administrative totals (Gabe and Whittaker, 2012; Meyer, Mok, and Sullivan, 2015; Rothbaum, 2015) by providing detailed information on the distribution of UI benefits. We then consider the implications of UI benefits underreporting on income statistics during the Covid-19 recession and show that after correcting for underreporting, poverty reached a record low in 2020.

2. DATA

This paper uses two data sources. The first is a 5 percent random sample of all individuals aged 16 years and older in IRS tax data between 1999 and 2020 as of March 2022.[1] The underlying population from which the sample is drawn reflects nearly the entire adult population, as almost all U.S. residents appear on one or more tax forms (Larrimore, Mortenson, and Splinter, 2021). Because it is a 5 percent random sample, all individuals are given an equal weight of 20 to scale to the U.S. adult population. We determine UI receipt from annual tax returns (Form 1040) and information returns (Form 1099-G) that report UI benefits.[2] State governments provide information returns to anyone who receives UI benefits, even if the individual does not file a tax

[1] For details on the IRS data, see Larrimore, Mortenson, and Splinter (2021). Researchers can apply to the IRS to use these data for research projects through their Joint Statistical Research Program. Details of this program are available at https://www.irs.gov/statistics/soi-tax-stats-joint-statistical-research-program.

[2] IRS forms refer to this income as unemployment compensation, although we use the term UI to be consistent with other researchers. In both the IRS and CPS data, this includes supplemental unemployment benefits. The IRS amounts may include other payments made through UI offices, such as for family leave.

return. In some cases, not all UI payments are on the available 1099-G forms (Larrimore, Mortenson, and Splinter, 2022a). To address these cases, when a taxpayer self-reports UI benefits on their tax return, we treat this reporting as accurate if it exceeds the amount on the Form 1099-G. Total estimated payments in IRS data are between Bureau of Economic Analysis and Treasury department estimates and within 5 percent of both.[3] We compare UI benefits from administrative IRS tax data with survey-reported benefits in the next-year March CPS (i.e., CPS-ASEC) from Flood et al. (2022), using weights from Rothbaum and Bee (2021) that account for non-random nonresponse during the pandemic.

When comparing CPS and IRS results, we cannot directly link observations between the datasets. However, unlike the Census Bureau's linked IRS-Census dataset that identifies 1099-G recipients but not the amount of income on the form or whether it was from UI (Bee and Rothbaum, 2019), our data has full information about UI benefit amounts. We then use statistical matching techniques similar to those used by the Congressional Budget Office for their distributional analysis (Habib, 2018) to incorporate information from IRS data into the public-use CPS files. We provide data to allow other researchers to follow our approach.

3. PREVALENCE AND DISTRIBUTION OF UI BENEFITS

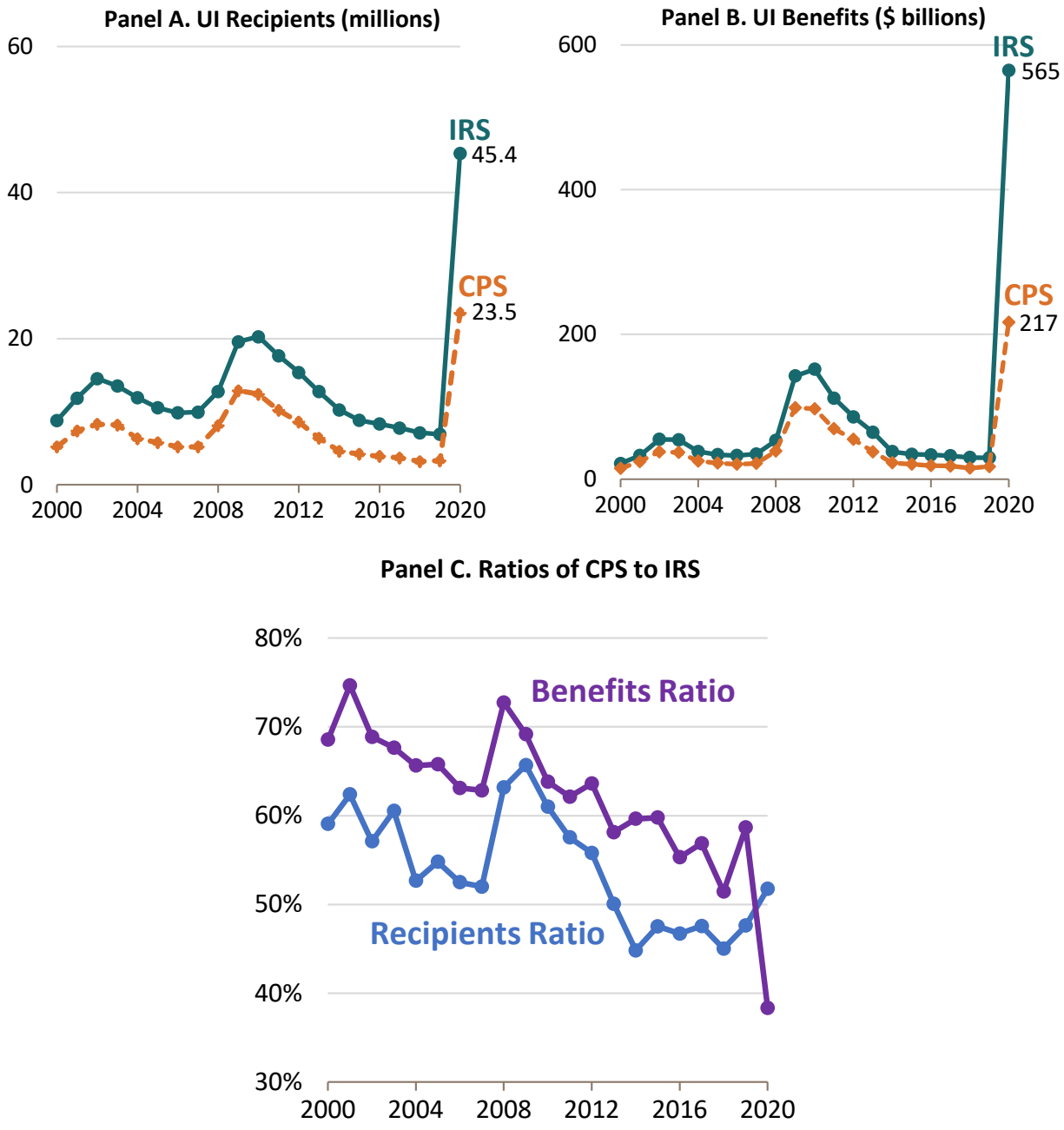
Relative to administrative data, the CPS dramatically understates the number of UI recipients and the level of UI benefits. In 2020, IRS data showed that 45.4 million people received UI benefits. The CPS has approximately half as many recipients: 23.5 million.[4] The understatement in aggregate UI benefits was even larger. In 2020, IRS data include $565 billion of UI benefits and the CPS only $217 billion, undercounting by 60 percent.

The understatement of UI benefits is a recurring problem in the CPS, though 2020 is particularly severe. Figure 1 displays the number of UI recipients (Panel A) and total UI benefits (Panel B) in the two datasets since 2000. Over this period, the CPS captured an average of 54 percent of recipients and 62 percent of UI benefits, relative to IRS data (Panel C). In addition, the share of benefits captured in the CPS has been trending downward.

[3] See NIPA table 3.12 and Daily Treasury Statements at https://fsapps.fiscal.treasury.gov/dts/issues/collapsed

[4] The cause of this understatement of UI recipiency in the CPS is unclear. However, it does not appear to be due solely to consistent self-reporting error or recall bias since other surveys in early 2021 more closely reflected the IRS findings. For example, in the Census Bureau's Household Pulse Survey, respondents are asked whether they received UI benefits since the start of the pandemic in March 2020. In the January 2021 survey wave, 39 million people reported UI receipt over this period, well above the 24 million in the CPS.

Figure 1. Unemployment Insurance: Recipients and Benefits



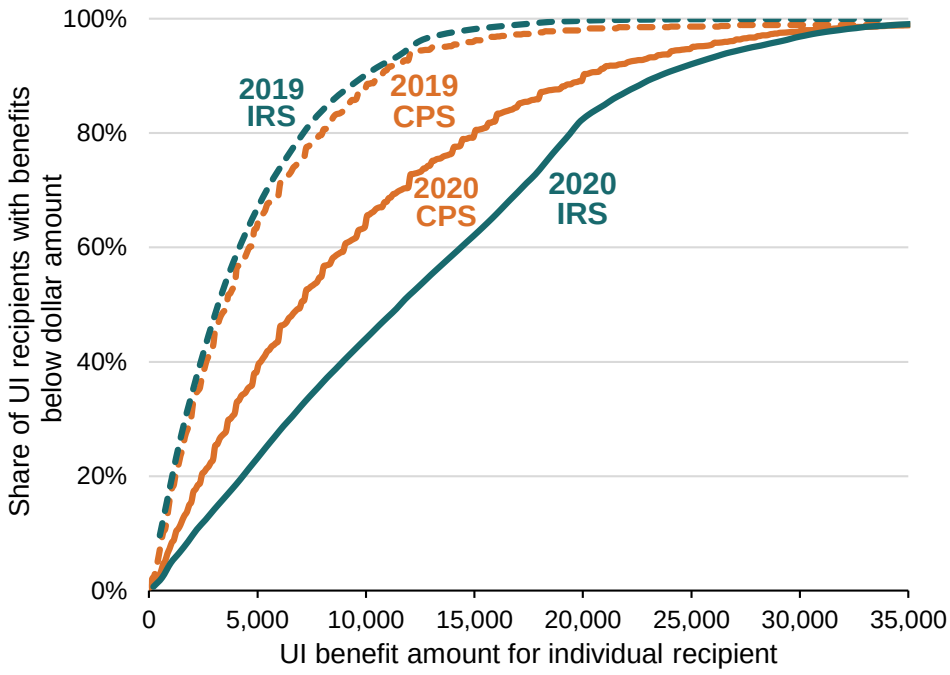
Source: Authors' calculations using CPS and IRS data.

There are two channels through which the CPS can misstate benefits, and the error source can guide correction techniques. The first is on the extensive margin—misstating the number of recipients. The second is on the intensive margin—misstating the benefit distribution among recipients. Figure 1 demonstrated that the CPS understates extensive margin recipiency rates. We now consider the distribution of benefits among recipients.

Figure 2 compares the cumulative share of UI benefits in the IRS and CPS data for two recent years. If undercounting in the CPS was only from extensive margin issues—recipients failing to report UI benefits in a manner uncorrelated with benefit amount—the two distributions will closely resemble one another. This was the case in 2019.

The distributions in 2020, however, were different. In the CPS, the median UI payment was $7,000—well below the approximately $11,400 median payment in IRS data. The IRS distribution lies to right of the analogous CPS distribution, implying that the CPS understated 2020 benefits among recipients.[5]

Figure 2. Cumulative Share of UI Benefits, among recipients (by year)



Source: Authors' calculations using CPS and IRS data.

[5] In 2009, the IRS distribution among recipients was also to the right of the CPS distribution, although not to the same extent as in 2020. This suggests that the degree of skewness is somewhat unique to the pandemic and may have resulted from the supplemental benefits in 2020. Results for 2009 are available in the online data.

4. DISTRIBUTION OF UI BY INCOME

A major implication of UI benefit underreporting in the CPS is an overstatement of poverty rates—especially in 2020 when UI benefits were more prevalent and more generous. Poverty rates, however, are only affected when the missing benefits are among low-income populations.

Figure 3 shows the distribution of UI benefits by income decile in two recessionary years, 2020 (Panel A) and 2009 (Panel B), and one expansionary year, 2019 (Panel C). In both the CPS and IRS data, income deciles are based on current-year modified market income—market income, alimony, and Social Security benefits—reflecting income that appears in both datasets but excluding UI. Other transfer benefits in the CPS will not affect this comparison, since those sources are excluded from both datasets. Incomes are aggregated at the tax-unit level for ages 16 and older and then split equally between spouses, following Larrimore, Mortenson, and Splinter (2022b). Decile income thresholds are calculated for each data source separately. Also note that some UI recipients may have been higher in the income distribution in the prior year before their job loss but have low current-year income (excluding UI benefits) due to their lost wages.

In 2020, the CPS underreported UI benefits in the bottom two deciles by $133 billion. For context, this exceeds the $105 billion of total modified market income in the bottom two deciles in the CPS. Near the top of the income distribution, the CPS and IRS results were closer.

During the 2009 recession year, a similar pattern of underestimating benefits for low-income groups occurred—although UI benefit levels were smaller (note the vertical axis change). In contrast, during the 2019 expansion UI benefits were proportionally underreported over nearly the entire income distribution.

To facilitate correcting for UI underreporting in CPS data, in the online data we provide detailed estimates using tax data which can be used by researchers to correct for the underreporting in the public-use CPS data. For 1999 to 2020, we provide the share of individuals in IRS data receiving any UI, average UI benefits, and the standard deviation of benefits for each income percentile. Using these data, we can impute corrected UI benefits and re-estimate 2020 poverty rates in the CPS.[6]

The imputation procedure is as follows. For any individual with UI benefits in the raw CPS data, we leave their reported benefits unchanged. We then observe how many individuals in each income percentile (based on modified market income excluding UI) would be expected to receive

[6] Using more recent tax data, Larrimore (2022) re-estimated 2021 poverty rates and found similar results.

benefits if the percentile-level recipiency rates matched that in the IRS data. We then randomly impute recipients such that the percentile-level recipiency rates are the same in both datasets—prioritizing those with labor earnings since UI is tied to employment before the job loss. Finally, we impute benefit levels for these imputed recipients based on a normal distribution such that the final percentile mean matches the IRS data and the standard deviation of imputed benefits also matches the IRS data for that percentile. This brings up the amount of UI benefits within each income percentile in the CPS to that observed in IRS data.

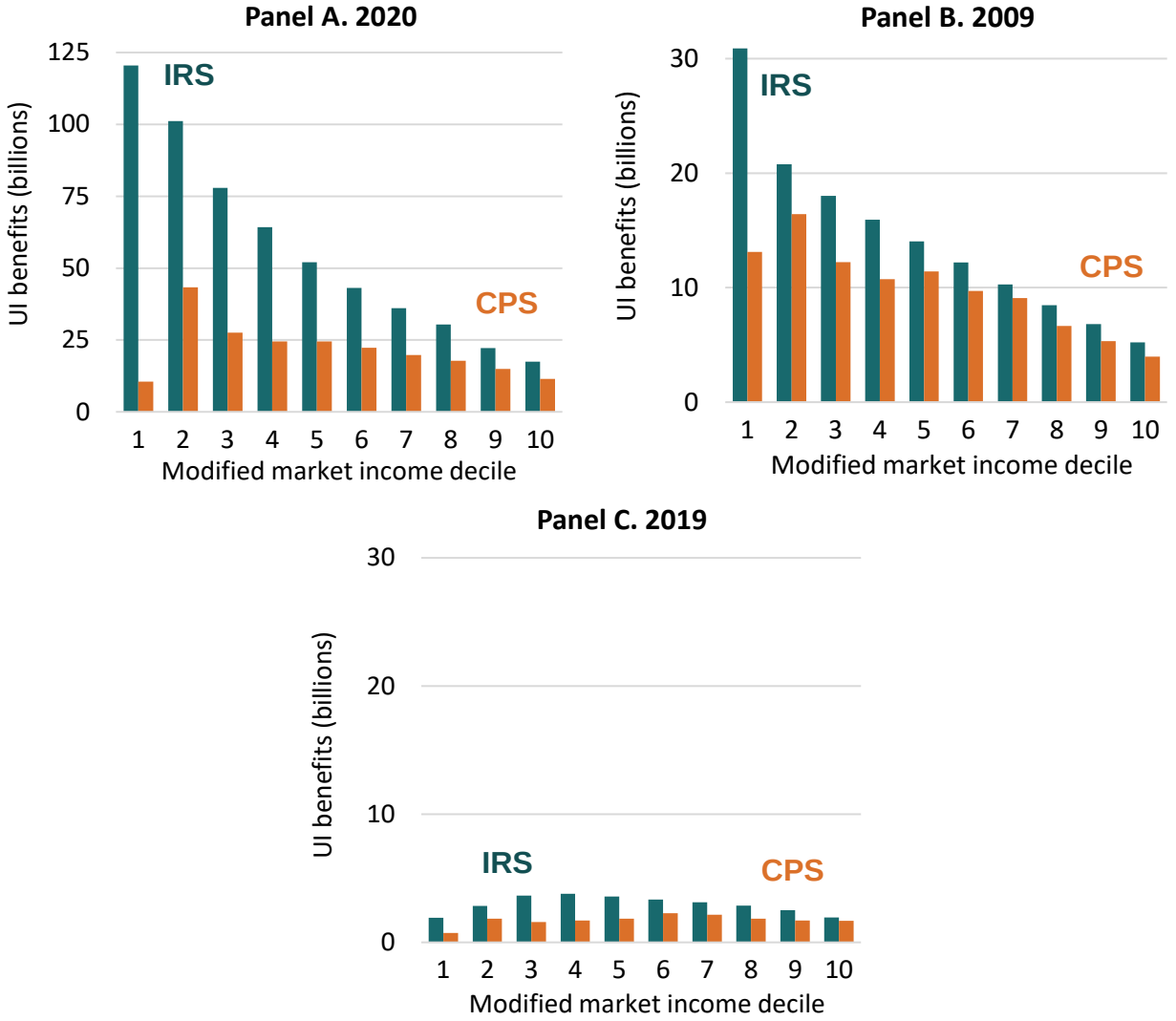
Since incomes are similar for people within each percentile, estimates of aggregate poverty rates will generally not be sensitive to which individuals are assigned to receive UI benefits in this imputation procedure. However, there are two exceptions. First, we assume that after controlling for recent employment, the receipt of unreported benefits within each income percentile is uncorrelated with family size, which determines how many individuals were lifted out of poverty when incorporating underreported benefits.[7] Second, we assume that underreported benefits within each income percentile are uncorrelated with non-taxable transfers, which do not appear in tax data and therefore cannot be incorporated into the imputation procedure. For researchers using these data to estimate poverty for subgroups, such as by race or age, an additional assumption is that underreporting of benefits is not correlated with the subgroup characteristics after controlling for income and recent employment.

Because UI underreporting is most severe among low-income populations during recessions, poverty rates were overestimated in 2020. Using the imputation approach above to fully incorporate UI benefits in the CPS, the poverty rate in 2020 would have fallen to 9.6 percent, rather than the increase to 11.4 percent reported by the Census Bureau.[8] This would have been the first time that the official poverty rate fell below 10 percent over the more than six decades for which Census computes the measure.

[7] This assumption results in parental statuses of UI recipients that are consistent with the raw CPS data. After the imputation, 40 percent of UI recipients in 2020 are in a family with a child under age 18, which compares to 37 percent of UI recipients with children in the raw CPS data. Additionally, the practical effects of this assumption on aggregate poverty rates are minimal. Prioritizing the largest families within each percentile for our imputation reduces 2020 poverty rates by 0.1 percentage point from those we report, and prioritizing the smallest families increases the poverty rate by less than 0.1 percentage point.

[8] The 2019 official poverty rate of 10.5 percent (10.9 percent using Rothbaum and Bee's correction) was largely unaffected from the UI correction, declining by less than 0.1 percentage point. The 9.6 percent poverty rate in 2020 after correcting UI incorporates revised weights from Rothbaum and Bee. Using original CPS weights, poverty in 2020 would have been 9.4 percent after our UI imputation. Of course, to the extent that other income sources in the CPS are underreported (or overreported), it will result in lower (or higher) poverty rates than we observe here. For details on underreporting of other income sources, see Meyer and Mittag (2019).

Figure 3. Distribution of UI Benefits by recipient income (by year)



Notes: Income is market income, alimony, and Social Security benefits of tax units, split equally for married couples. *Source*: Authors' calculations using CPS and IRS data.

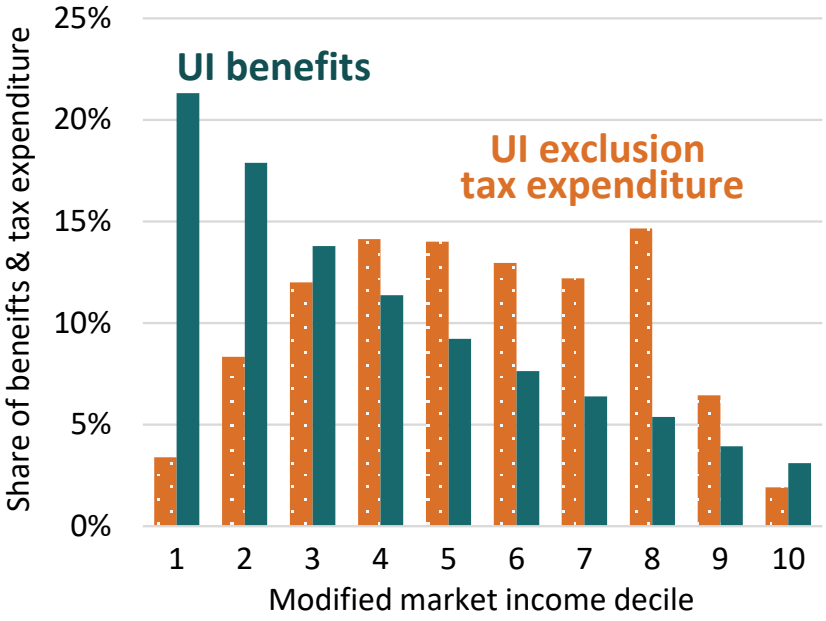
5. UI EXCLUSION TAX EXPENDITURE

Tax data are well-suited to evaluate a policy that provided additional relief to most UI recipients: the 2020 exclusion of UI benefits from income taxes. We estimate this $21 billion tax expenditure by multiplying the maximum allowed exclusion (i.e., assuming full take up) by recipients' marginal tax rates, adjusted for bracket changes.

Because the exclusion of UI benefits from taxation was more valuable for those with higher marginal tax rates, this benefit is less targeted at low-income individuals than are UI benefits. The bottom decile received 21 percent of UI benefits but only 3 percent of UI exclusion tax

expenditures (Figure 4). The top half of the income distribution received only one-quarter of UI benefits but half of exclusion tax expenditures.[9]

Figure 4. Distribution of UI benefits vs. UI exclusion tax expenditure, 2020



Notes: See Figure 3 for details. *Source*: Authors' calculations using IRS data.

6. CONCLUSION

Unemployment insurance benefits made up a large share of fiscal relief during the Covid-19 recession. Yet, over half of UI benefits were missed in the CPS with severe understatement among low-income workers. UI was therefore more important during the Covid-19 recession than is apparent in survey data and official poverty statistics. However, the exclusion of UI benefits from taxation was less targeted at low incomes. Finally, we provide data to ameliorate UI underreporting in surveys.

[9] The tax exclusion declines for the top decile because the benefit is limited to taxpayers with a modified adjusted gross income of less than $150,000.

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