

Reply to Dube (2026): The Debate on U.S. Income Inequality

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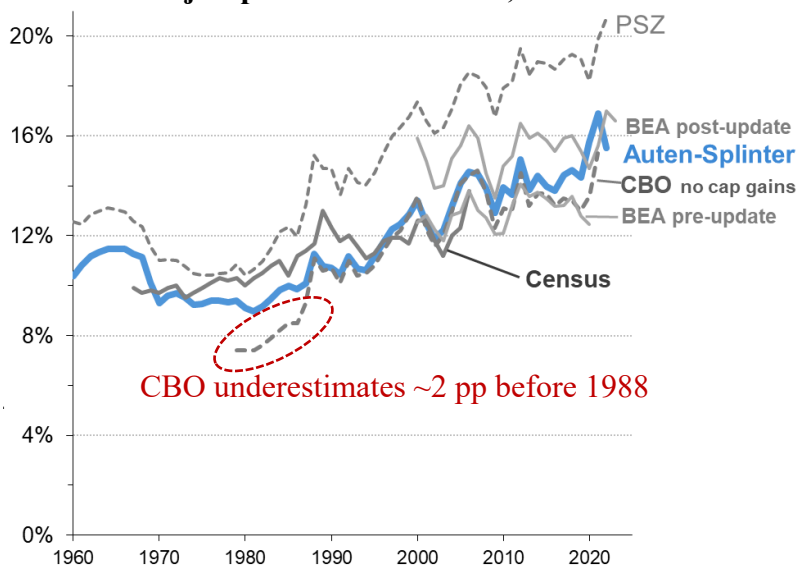
Abstract

This paper replies to Dube (2026), who reviews the debate over U.S. income inequality estimates from Piketty–Saez–Zucman and Auten–Splinter. It clarifies the inconsistency of the CBO income series, the allocation of underreported income and excess depreciation, wage inequality trends, and the treatment of deficits, government consumption, and sales taxes. Several claims in Dube’s review mischaracterize the Auten–Splinter approach or misdiagnose the sources of disagreement. The review also ignores the main factors lowering inequality relative to tax-reported income: the growth of untaxed employee compensation, transfers, and tax progressivity. The Auten–Splinter findings remain robust: after-tax top income shares show limited long-run growth.

Using tax data to estimate the distribution of national income requires allocating income missing from individual tax returns. Piketty, Saez, and Zucman (2018, PSZ) and Auten and Splinter (2024, AS) take different approaches. PSZ allocates missing income in ways that largely preserve the tax-reported (fiscal) distribution, yielding top 1% national-income shares similar to fiscal income shares. But this approach gives too little weight to tax-reporting changes over time and to empirical evidence on who receives missing income. AS instead accounts for reporting changes and uses additional data showing that missing income is disproportionately received outside the top 1%, so adding it lowers top income shares.¹ Missing income has also become more equal over time, meaning more comprehensive income measures show less inequality increase than fiscal income. This largely reflects the growth of missing employee compensation, including retirement contributions and health insurance, which disproportionately benefits the bottom 99%. Dube (2026) reviews AS–PSZ differences in class notes, but misses this central explanation. This paper responds to discussions in a Dube’s review.

¹ The largest original AS–PSZ gaps came from misreported income and retirement income. AS allocate misreported income using audit-study data while PSZ ignores the relevant data. For retirement income, PSZ acknowledged misallocating middle-class retirement wealth rollovers as top income.

**Figure 1: Top 1% income shares:
Tax-reported incomes jump after 1986 reform, but Census incomes do not**



Notes: All estimates exclude capital gains realizations. Sources: Auten and Splinter (2025b).

1. CBO series is inconsistent and does not measure economic income

Dube notes that “CBO estimates show a clear increase in pre-tax income concentration since 1979.” CBO estimates before 1988, however, are not comparable to later years. That discontinuity in tax-return income was a central motivation for the AS study: nearly half of the increase in CBO’s top 1% share over four decades occurred in just the two years after the 1986 tax reform. It is misleading to describe the CBO change across these periods as if it were a consistent measure of inequality; the series spans two radically different tax-reporting regimes and does not correct for this mid-series change.²

Relative to national income, CBO’s top 1% share in 1979 is underestimated by more than two percentage points because it omits corporate retained earnings and does not correct for changes in how income was reported before and after the 1986 tax reform (Auten and Splinter 2019). These omissions account for the gap with AS in those early years, as shown in Figure 1.

Another series also shows the sensitivity of CBO estimates to tax reforms. Census estimates are less affected by the 1986 tax-reporting changes. Figure 1 shows that the Census series from Burkhauser et al. (2012), which corrected for top-coding, has a modest post-reform increase in the top 1% share that was largely temporary. Figure 1 also shows that, relative to other prominent estimates, the PSZ estimates are outliers.

² Studies for other countries make the same point: measures of top income shares based on tax-reported business income can be highly sensitive to tax reforms that change reporting and payout behavior, either underestimating or overestimating top 1% shares by about one-third (Wolfson et al. 2016; Alstadsæter et al. 2025).

Dube relies on CBO measures for several arguments. But CBO does not present a measure of economic income in the sense relevant for this debate. CBO’s series is an expanded fiscal-income measure: income reported on tax returns supplemented with selected items. It does not attempt to construct a comprehensive measure of economic income, as PSZ and AS do. This matters because CBO misses important income components. First, CBO does not adequately capture C-corporation income before 1988 that later shifted toward individual returns after the Tax Reform Act of 1986. Second, it misses imputed rents of owner-occupied housing and ignores the more equally distributed half of corporate wealth held in retirement accounts. Third, CBO’s incomplete population coverage causes it to miss substantial transfers and health insurance (Auten and Splinter 2019). These omissions imply that CBO underestimates inequality in early years and overestimates it in recent years.

Treating CBO as a “standard” income measure obscures rather than resolves the issue. CBO provides a useful tax-data-based fiscal-income series. But it is not a comprehensive measure of economic income, and its omissions are quantitatively important for both levels and long-run changes in top income shares.

2. Misreported income

To construct national income, BEA includes misreported income based on special IRS audit studies. AS uses the distributions from those studies to allocate misreported income. In contrast, PSZ ignores the audit study data and allocates misreported income in proportion to positive reported income. The PSZ approach means that someone who becomes more compliant will be allocated more misreporting, which is backwards. The PSZ approach also fails to allocate any misreported income to those with reported business losses, even though this represents a large share of misreporting. This reallocates misreporting toward the top of the distribution and overstates PSZ top income shares.

Dube ignores the audit study evidence and instead repeats an unsubstantiated claim that the “AS methodology implicitly assumes more than 70 percent of business income earned by the bottom 99 percent goes untaxed.”³ But this misrepresents the AS estimates. Our allocations imply nothing close to that business-income misreporting rate for the bottom 99%. In 2019, for example, we allocate roughly \$580 billion of total noncorporate and corporate business misreporting to the bottom 99% (ranked after including misreporting). The bottom 99% has \$2.25 trillion of misreporting-inclusive business income, implying a misreporting rate of only one-quarter.⁴ Even restricting attention to

³ This claim is copied from Brookings/PSZ comments on AS. See Splinter (2023a, 2023b) for replies to that point.

⁴ AS online spreadsheet Table C4 columns V, AF, AZ, BJ for total less columns AA, AK BE, BO for the top 1%. Total misreporting from Table T1 columns M, Q, V, AJ and an assumed 10% C-corporation misreporting rate.

only passthrough businesses, the implied AS bottom 99% misreporting rate is about one-third. Both are far below the unsupported value that Dube repeats.

Higher misreporting rates among the bottom 99% follow from the evidence. First, roughly 40 percent of detected passthrough business misreporting is associated with returns reporting *negative* total income (Figure 3D in Auten and Langetieg 2023) and a negligible share of this is re-ranked into the top 1% (Government Accountability Office 2024). Second, farm income has a misreporting rate of 64 percent (IRS 2022). Third, most of the noncorporate business tax gap comes from self-employed individuals (Johns and Slemrod 2010) who are almost entirely in the bottom 99% and have an average misreporting rate on this business income of 57 percent (IRS 2022). Moreover, this self-employed misreporting rate is much higher at the bottom of the distribution. Self-employed business misreporting rates were 101% for those with negative reported incomes and 70–90% for those with incomes below about \$50,000, but below 20% for those with incomes over \$3.3 million (Table B3 in AS online appendix, in 2025 dollars).

In contrast, business entities whose income largely goes to the top 1% have lower misreporting rates. Businesses organized as S corporations and partnerships have an average misreporting rate of 18% in Gorman et al. (2025) and only 12% in IRS (2022). C corporations likely have a similar or slightly lower misreporting rate.⁵ The high misreporting among those disproportionately in the bottom 99% (with negative income, farm income, and self-employment income)—along with the lower misreporting rates among S corporations and partnerships largely in the top 1%—indicate much higher misreporting rates for the bottom 99%. These patterns explain why empirically grounded audit-based allocations, as in Auten–Splinter, assign relatively more underreported income outside the top 1% than PSZ’s proportional-to-positive-reported-income method, which ignores the audit data.

Recent work extending the IRS tax-gap methods reaches the same qualitative conclusion: estimated noncompliance rates are much higher at the bottom of the distribution than at the top. For example, the bottom-quintile tax noncompliance rate is about four times that of the top 1% (Gorman et al. 2025). Adding audit-detected misreported income *decreases* the top 1% share, with roughly a –0.4 pp change (DeBacker et al. 2020; Guyton et al. 2021; Auten and Splinter 2021). That evidence is consistent with the AS average effect of –0.1 pp; it is inconsistent with the PSZ’s *increases* of 1.2 pp.⁶ For details, see the Auten and Splinter (2025a) reply to PSZ.

⁵ The corporate tax misreporting rate is 14%: one less the recent voluntary tax compliance rate in Table 3 of IRS (2019). Income underreporting rates (unavailable for corporations) tend to be lower than tax underreporting rates.

⁶ In contrast, the AS after-tax top 1% share increases about 0.2 pp from misreporting (AS Table B6.). AS estimate that unreported offshore income (not part of national income) could increase top 1% shares one-third of a percentage point in 2013, though less in more recent years due to increased enforcement. Issues with assumed misreporting in Guyton et al. (2021) are discussed in Auten and Splinter (2021).

3. Excess Depreciation

Our main conceptual point is simple: excess depreciation reduces reported income, pushing beneficiaries lower in the reported income distribution. This suggests excess depreciation should be allocated lower in the distribution than the reported-partnership-income distribution used by PSZ. To estimate where excess depreciation is observed in the distribution, Auten and Splinter (2025a) use population tax data that link entity-level partnership depreciation to partnership owners, following Love (2021), and estimate that only about one-third of partnership excess depreciation goes to the top 1% before re-ranking effects, though the share is closer to two-thirds after upward re-ranking. The resulting increase in the AS top 1% income share is only about one-quarter of a percentage point in 2019, roughly one-fifth of the PSZ adjustment.⁷ Much of that effect, however, is likely temporary. The 2017 tax reform shifted depreciation forward in time, suggesting a one-time gap between tax and economic depreciation.

AS also estimate an alternative allocation following PSZ's suggestion to separate S-corporation excess depreciation from C-corporation depreciation. However, that approach lowers the AS top 1% share, increasing rather than closing the gap with PSZ.

4. Government Deficits

As Dube notes, PSZ allocate deficits equally between taxes and transfers. But using transfers here is odd. It lowers the incomes of transfer recipients, even though those transfers were largely consumed. Allocating deficits by taxes, as PSZ partly do, has a more natural intertemporal interpretation for higher-income households that may adjust savings. Reducing current transfers is less plausible for hand-to-mouth households that consume those transfers. Regardless, allocating deficits accounts for little of the total AS–PSZ difference, as discussed below.

5. Sales taxes

For sales taxes, Dube writes that “the PSZ approach is more consistent with standard public finance incidence analysis.” But PSZ deviate from the standard incidence assumption that consumers bear the burden of sales taxes, while the AS allocation by disposable income more closely aligns with the standard approach.

First, PSZ use a biased proxy for consumption. PSZ (2018, p. 570) explain that they intend to allocate sales and excise taxes “so that they are borne by consumers.” Despite this correct intention, they allocate sales taxes by factor income less saving, which omits

⁷ Despite about two-thirds of excess depreciation going to the top 1% after re-ranking, the effects on top 1% shares are less than a no-ranking approach (like in PSZ) would imply because returns moving into the top must displace other returns, and only the net income increase affects top 1% income shares.

low-income and middle-income consumption funded by transfer and retirement income and exaggerates high-income consumption by failing to remove taxes. In contrast, AS apply the incidence principle more accurately by allocating sales taxes by disposable income less saving, which includes transfers and retirement income and excludes income and payroll taxes. Relative to PSZ, this AS approach results in more regressive sales taxes, which attenuates the main AS conclusion that U.S. taxes are highly progressive.

Second, the updated PSZ method appears even farther from the standard consumer-incidence assumption. In their updated method, PSZ argue that sales taxes should be added by uniformly scaling factor-price income, effectively ignoring incidence. But for after-tax income they still deduct sales taxes using a distributional allocation that does reflect incidence. That is an inconsistent treatment. If sales taxes are borne by consumers, then a consumption-based allocation should be used when adding them to construct pre-tax income and when subtracting them to construct after-tax income. If one instead wants to ignore incidence when constructing pre-tax income, it is unclear why incidence should reappear only when constructing after-tax income.

6. Wage inequality

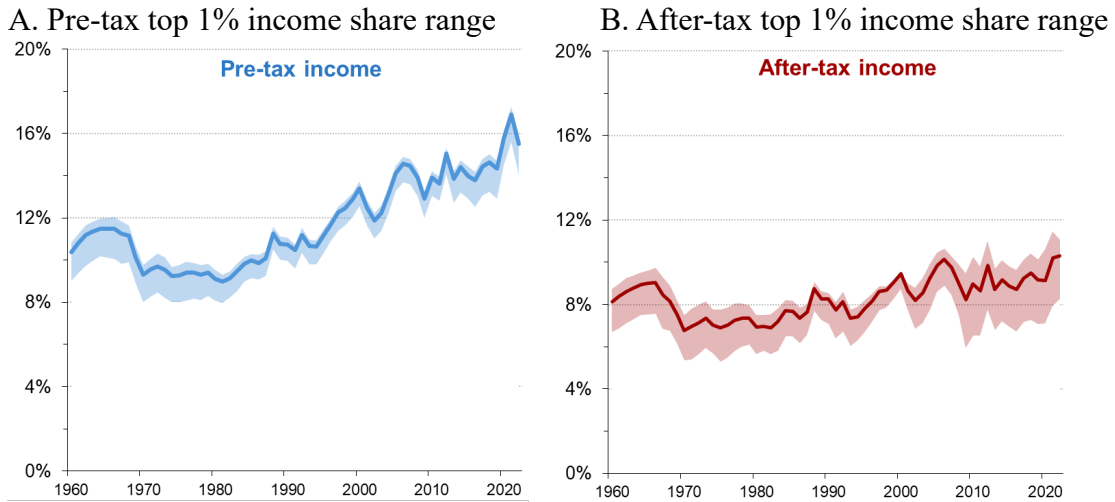
Dube writes that “today’s inequality is largely driven by labor income—the enormous salaries paid to executives and professionals.” But tax-data measures of top wages are themselves affected by the Tax Reform Act of 1986. When business activity shifted from C corporations to S corporations after TRA86, some income that previously remained inside C corporations had to be reported on individual returns, partly as wages. One implication is that some high-income “wage” income observed after the reform was effectively missing from pre-reform individual tax data.

The AS [appendix](#) provides suggestive evidence. Between 1986 and 1988, the top 1% fiscal-income share rose by four percentage points. Half of that increase appeared as wages. S-corporation net income accounted for nearly another percentage point and partnership net income for half a percentage point. Since active S-corporation owners split their business income between wages and distributions, a meaningful portion of the apparent post-1986 wage increase likely reflects business-entity conversions rather than a sudden surge in executive compensation.

More broadly, in both the PSZ and AS estimates, the long-run rise in top 1% incomes is driven heavily by business-owner income, not simply by large salaries. In the AS series, wages account for about 40 percent of top 1% income on average from 1988 through 2008, then fall to roughly 30 percent in more recent years. Over the same period, passthrough business income rises from about 20 percent to about 40 percent. That pattern does not fit well with the claim that rising top inequality is “largely driven” by executive and professional salaries.

Evidence for more recent years also weakens the claim that rising wage inequality has remained the dominant story. Aeppli and Wilmers (2022) find that overall U.S. earnings inequality stopped increasing in 2010, over fifteen years ago. Larrimore et al. (2022, 2023) were first to show that wage inequality decreased in the pandemic recovery, documenting that bottom-quintile wages rose while top-quintile wages fell. Autor, Dube, and McGrew (2023) also showed recent wage inequality declines, with post-pandemic wage compression at the bottom of the labor market.

Figure 2: Narrow range of top 1% income shares with alternative assumptions



Notes: These figures show ranges resulting from up to five alternative assumptions that either increase or lower top shares in 2022 and are not confidence intervals. Sources: Auten and Splinter (2025b).

7. Government consumption (non-transfer spending)

After-tax national income requires allocating all government spending. AS follows the standard recommendation to allocate non-transfer government spending partly by income and partly per capita (Reynolds and Smolensky 1977; CBO 2012). Gethin (2026) similarly argues that allocating government consumption entirely by income, as in PSZ, “dramatically overestimates inequality in public services received,” while a per-capita allocation underestimates it. The distribution of government consumption should therefore lie between income-proportional and per-capita allocations, as in AS.

Dube claims that the post-tax debate centers on allocations of government consumption and federal deficits. But that overstates their role. Figure 2 presents an AS sensitivity analysis. In an upper-bound estimate, AS exclude deficits and reduce the per-capita allocation of government consumption to 40 percent, roughly limiting it to the equally distributed schooling share of non-transfer spending (Riedel and Stichnoth 2022). In 2022, these alternative assumptions move the top share by only about half a percentage point—small relative to the roughly 7-percentage-point AS–PSZ gap. There is uncertainty in allocating public goods and deficits, but they do not drive the difference.

8. Prior PSZ comments and AS responses

AS and PSZ both initially released their papers in December 2016. PSZ have six prior comments on AS and we have six replies: Auten and Splinter (2019, 2020, 2021, 2025a), Splinter (2020, 2023b). Note that the published version of AS incorporated many of PSZ’s prior suggestions, which are listed in our [supplementary appendix](#), and that only some of the remaining points of disagreement are discussed in this reply. The AS paper discusses the AS–PSZ differences more comprehensively and explains why the AS approach better aligns with the existing literature and empirical evidence. As seen in Figure 1, the AS estimates are also closer to other prominent estimates, while the PSZ series is an outlier.

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