

COMMENT ON AUTEN AND SPLINTER (2023)

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TECHNICAL NOTE N°2023/09

DECEMBER 2023

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INEQUALITY
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Comment on Auten and Splinter (2023)

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December 13th, 2023

Auten and Splinter (2023), henceforth AS, provide estimates of income inequality in the United States, starting with income observed in tax returns and making adjustments to account for unobserved income. They conclude that after their adjustments, the top 1% income share has not changed much since 1960.

Because the concentration of observed income has increased dramatically (a non-controversial fact), AS must assume that unobserved income has become much more equally distributed to obtain their results.

In previous work we showed that AS's assumptions imply implausibly low levels of concentration of untaxed income (Piketty, Saez and Zucman, 2019). We detailed the specific problems in the AS approach that account for this issue (Saez and Zucman, 2020). However, AS's estimates are essentially unchanged relative to their earlier drafts and do not address these problems. This comment provides a simple, graphical illustration of the core issues in AS.

In a nutshell: AS erroneously allocate a large and growing amount of untaxed business and capital income to the bottom of the distribution due to several clear and long-understood mistakes in their methodology.

1. The gap between national income and fiscal income

All the measures we can directly observe show a massive increase in the concentration of income and wealth at the top: income from individual returns, wages and salaries from Social Security earnings, CEO pay, and rankings of the wealthiest individuals such as the *Forbes* 400.

In particular, there has been a large increase in the concentration of fiscal income (i.e., income observable in tax returns). The share of fiscal income (excluding capital gains) earned by the top 1% has increased from 8.4% in 1960 to 17.6% in 2019, the last year in AS (Piketty and Saez, 2003, updated).¹ Fiscal income adds up to 60-70% of total national income over the period.² To

¹ When including realized capital gains, the rise in the top 1% share is larger, from 10% in 1960 to 21.1% in 2019.

² Unless otherwise noted, in this comment by national income we mean factor-price national income, i.e., national income excluding sales taxes (net of subsidies). In 2019, total national income was \$18.3 trillion, factor-price

offset the rise in the top 1% income share, it must be that the remaining 30-40% of national income has become much more equally distributed.

The main sources of untaxed income are:

- (i) Untaxed business income (due to legal differences between economic and taxable business income and to tax evasion);
- (ii) Untaxed capital income (primarily undistributed profits of corporations, capital income earned on tax-exempt retirements accounts, and untaxed rents);
- (iii) Untaxed labor income (primarily employer-provided fringe benefits).

The key issue in AS involves the allocation of untaxed business income and capital income.

2. Distribution of untaxed business income

Business income is the income of S-corporations, partnerships, and sole proprietorships. This income is not subject to the corporate tax, but “passed through” to their owners and subject to the individual income tax. There is nevertheless a large gap between the amount of business income reported in tax returns and the true economic income of these businesses. About half of the amount of business income in the national accounts is not reported in individual income tax returns, with a rising trend (40% in the early 1960s, rising to 55% in the late 2010s).³

Business income is one of the most highly concentrated form of income, and its concentration has sharply increased since the 1960s. The top 1% adult individuals earn about 55% of it according to tax data today. But AS assume that untaxed business income is very equally distributed. According to them the top 1% earns only around 15% of it (Figure 1). In other words, the observable income of doctor’s and dentist’s practices, retail chains, real estate firms, oil and gas partnerships, law firms, etc., might be extremely concentrated, but their untaxed income, according to AS, is much more equally distributed.

Is this realistic? In recent years about 50%-60% of untaxed business income corresponds to tax evasion; the rest is due to provisions in the tax code that reduce taxable income below economic income.⁴ The key provisions are the full expensing of investment for certain investments and generous depreciation schedules for non-expensed assets. These provisions accrue overwhelmingly to the very top of the distribution – owners of capital-intensive closely-

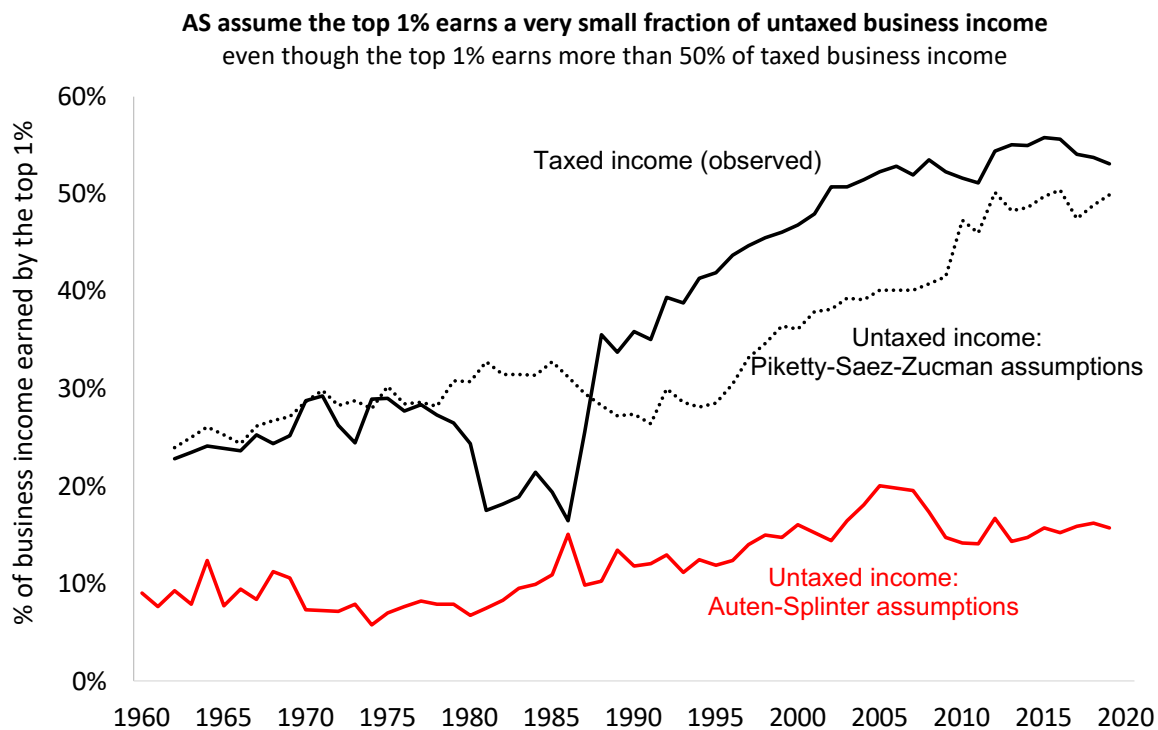
national income was \$17.5 trillion, and fiscal income (excluding capital gains) \$11.1 trillion, or 64% of factor-price national income.

³ Business income in the national accounts is the sum of proprietors’ income (NIPA Table 1.12 line 9, \$1.5 trillion in 2018) with very small adjustments, and S-corporation income (BEA 2022, Table 4 line 11, \$0.7 trillion in 2018). Business income taxed in individual income tax returns is the sum of schedule C net income, and partnership and S-corporation net income in schedule E of form 1040 individual income tax returns (\$1.0 trillion in 2018).

⁴ In 2018, tax evasion is \$620 billion for sole proprietorships and partnerships (NIPA Table 7.14, line 2) and \$80 billion for S-corporations (BEA 2022, Table 2 line 2), hence \$0.7 trillion out of the \$1.2 trillion in untaxed business income corresponds to tax evasion and \$0.5 trillion to legally exempt income.

held businesses. As for tax evasion, there is no evidence to support the assumption made by AS that it is concentrated at the bottom of the distribution.⁵

Figure 1: Share of business income earned by the top 1%: taxed income vs. untaxed income



Notes: The red line shows the implicit assumption made by Auten and Splinter (2023) about the fraction of untaxed pass-through business income (S-corporations, partnerships, sole proprietorships) earned by the top 1%. The dark plain (resp. dashed) line shows the fraction of taxed (resp. untaxed) net business income earned by the top 1% adult individuals (with income equally split among spouses) of the pre-tax income distribution in Piketty, Saez and Zucman (2018, updated). Sources: see appendix.

Another set of assumptions is made in Piketty, Saez and Zucman (2018), henceforth PSZ. In the PSZ methodology, the distribution of untaxed business income is assumed to be the same as that of taxed business income, component by component. For each type of business income (S-corporation, partnership, sole proprietorship) the ratio of untaxed income to true income is assumed to be the same across income groups.⁶ This implies that the top 1% share of untaxed business income is lower than the top 1% share of taxed business income since the late 1980s

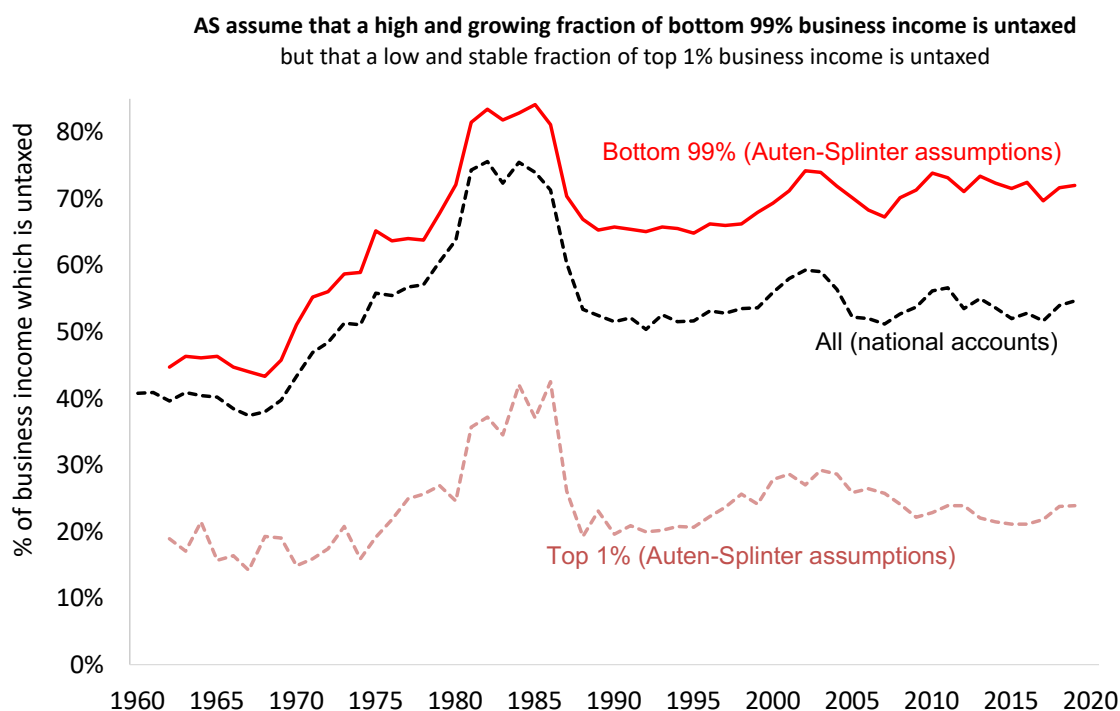
⁵ The canonical study of the distribution of tax evasion in the United States shows that accounting for it does not affect the top 1% income share (Johns and Slemrod, 2010, Table 5). According to AS by contrast, accounting for tax evasion *and* the large (and highly concentrated) amount of legally exempt business income *reduces* the top 1% income share (AS Figure B6), implying that tax evasion alone has a major equalizing effect.

⁶ Johns and Slemrod (2010, Table 4, col. 4 and 5) show that the ratio of unreported to true business income is constant across the income distribution, component by component. This is precisely the assumption made by PSZ for both tax evasion and legally exempt business income.

but evolves in parallel to it.⁷ This assumption can be seen as conservative, given that the wealthy have more incentives and more resources to avoid taxes (Guyton et al., 2023).

To clarify the assumptions made by AS, Figure 2 plots the ratio of untaxed to true business income assumed by AS. Strikingly, AS assume that business income earned by the bottom 99% was mostly *taxed* in the 1960s, but mostly *untaxed* today. What could explain this change is never explained; indeed, there is no logical or empirical basis for this assumption. Conversely, AS assume that the bulk of the true business income of the top 1% is taxed both today and in the 1960s, even though the top 1% benefits from far more generous exemptions today.⁸

Figure 2: Share of true business income which is untaxed: Auten-Splinter’s assumptions



Notes: The red line (resp. dashed pink line) shows the implicit assumption made by Auten and Splinter (2023) about the fraction of bottom 99% (resp. top 1%) business income (S-corporation, partnership, sole proprietorship) which is untaxed. The dashed dark line shows the economy-wide ratio. Sources: see appendix.

⁷ Untaxed income is less concentrated than taxed income in the PSZ methodology because due to high tax evasion, the ratio of untaxed income to true income is particularly large for sole proprietorship income, a form of income which is less concentrated than other business income. Untaxed income is more concentrated than taxed income from 1979 to 1986 because of the widespread use of tax shelters by the wealthy in those years.

⁸ The excess of tax depreciation over economic depreciation for partnerships has increased from \$0 in 1960 to \$376 billion in 2019 (NIPA Table 7.14 line 24), i.e., from 0% of NIPA proprietors’ income to 25% of NIPA proprietors’ income (Saez and Zucman, 2020, Figure 17). About 90% of taxable partnership income goes to the top 1%.

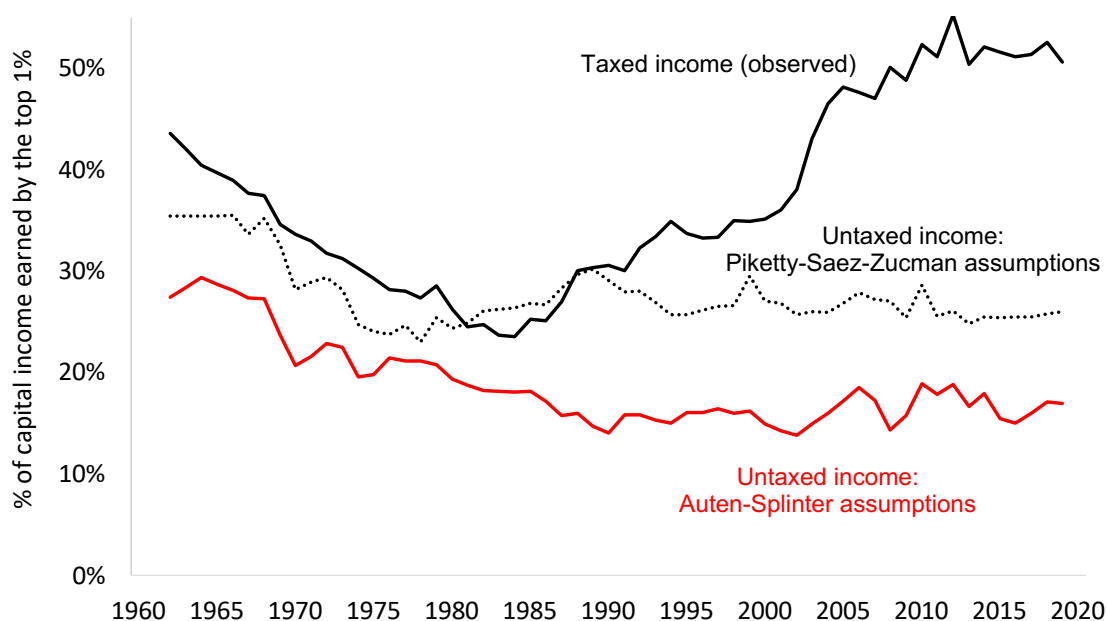
These assumptions are never discussed explicitly in AS, making it nearly impossible for readers to understand the core of their methodology, i.e., the specific factors that could explain why true income inequality has increased much less than inequality of observed income.

Because business income is large, has been growing fast, and is highly concentrated, the AS assumptions about unobserved business income have large effects. Untaxed business income adds up to more than 7% of national income in 2019. Untaxed business income earned by the top 1% amounts to a mere 1.0% of national income according to AS, but to 3.5% of national income in the neutral PSZ treatment. The difference explains half of the gap in both the level and the trend in the top 1% pre-tax income share between AS and PSZ.

3. Distribution of untaxed capital income

As shown by Figure 3, there is a similar problem in AS's treatment of capital income (defined to exclude the business income discussed above).

Figure 3: Share of capital income earned by the top 1%: taxed vs. untaxed income
 AS assume the top 1% earns a very small fraction of untaxed capital income



Notes: The red line shows the implicit assumption made by Auten and Splinter (2023) about the fraction of untaxed capital income (undistributed profits, income earned in retirement accounts, untaxed rents, income in trusts and fiduciaries, etc.) earned by the top 1%. The dark plain (resp. dashed) line shows the fraction of taxed (resp. untaxed) capital income earned by the top 1% adult individuals (with income equally split among spouses) of the pre-tax income distribution in Piketty, Saez and Zucman (2018, updated). Sources: see appendix.

Taxed capital income (dividends, taxable interest, rents, trust and estates income) is highly concentrated, and its concentration has increased dramatically since the 1980s. According to

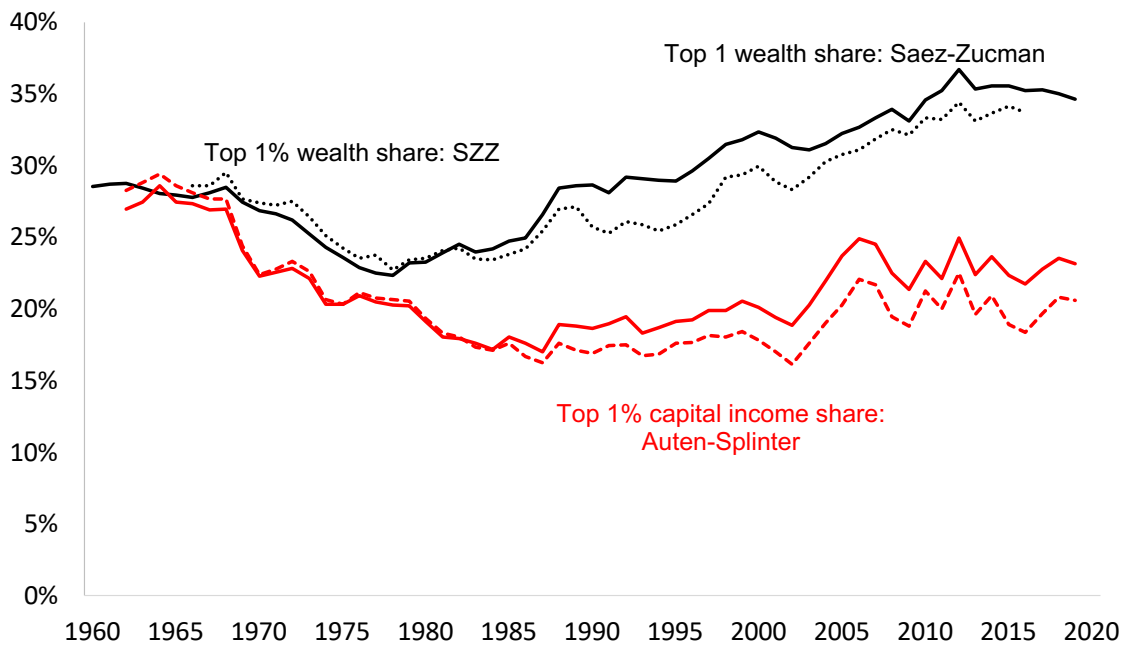
AS, untaxed capital income (corporate retained earnings, investment income earned on tax-exempt pension accounts, untaxed rents, tax-exempt interest, income in trusts, etc.) is much more equally distributed than taxed income – and increasingly so. The top 1% earns only about 15% of untaxed capital income in the 2010s according to AS.

It is certainly true that untaxed capital income is more equally distributed than taxed capital income today, and indeed the PSZ methodology also has this feature. This is due to the large amounts of capital income in tax-exempt pension funds and individual retirement accounts.

However, the AS methodology implies implausibly low levels of concentration of untaxed capital income. The simplest way to see this is to compute what the AS assumptions imply for the distribution of *total* capital income, taxed and untaxed (dashed red line in Figure 4). Because the bulk of capital income is untaxed (about 75%-80% in the 1960s-1970s, rising to nearly 90% in the 2010s), and AS assume that untaxed capital income is increasingly equally distributed, there has been, according to AS, a massive equalization of capital in the United States since the 1960s. This is also true when counting 1/3 of business income as capital income (plain red line).

Figure 4: Share of capital income vs. share of wealth owned by the top 1%

AS's assumptions about capital are inconsistent with existing evidence on wealth



Notes: The red line shows the share of capital income earned by the top 1% by pre-tax income according to the AS methodology (in plain: when counting 1/3 of business income as capital income; in dashed: when disregarding business income and including only pure capital income: C-corporation profits, interest, rents). The dark lines show the share of wealth owned by the top 1% individual adults ranked by wealth (with wealth equally split among spouses), in dark in the Saez and Zucman (2016, updated) methodology, in dotted in the Smith, Zidar and Zwick (2023) (“SZZ”) methodology.

This is at odds with a large body of evidence showing that the concentration of wealth has increased sharply in the United States (Figure 4). All currently available series – coming from tax data (Saez and Zucman, 2016; Smith, Zidar and Zwick, 2023), survey data (the Survey of Consumer Finances), surveys anchored to national accounts aggregates (the Distributional Financial Accounts of the Federal Reserve), and properly weighted estates tax returns (Saez and Zucman, 2019) – show that the share of wealth owned by the top 1% has increased significantly since the 1980s. AS never explain how their findings on capital (which are essentially assumptions) can be reconciled with these trends. Indeed, they cannot.⁹

4. Conclusion

Most labor income in the economy is taxed, but most capital and business income is untaxed. Thus, by carefully choosing assumptions about the distribution of untaxed business and capital income one can obtain many different possible distributions of these forms of income, which play a key role at the top of the distribution. AS make implicit assumptions, clarified in this comment, which lead to erasing the rise of capital inequality.

These assumptions, when made explicit, are difficult if not impossible to justify logically or empirically. They also deliver results that are widely inconsistent with existing evidence on the concentration of wealth.

References

Auten, Gerald, and David Splinter (2023), "[Income Inequality in the United States: Using Tax Data to Measure Long-term Trends](#)," *Journal of Political Economy*, forthcoming

Bureau of Economic Analysis (2022), "[Prototype NIPA Estimates of Profits for S Corporations—Table Updates](#)".

Guyton, John, Patrick Langetieg, Daniel Reck, Max Risch, and Gabriel Zucman (2023), "[Tax Evasion at the Top of the Income Distribution: Theory and Evidence](#)", NBER working paper #28542.

Johns, Andrew and Joel Slemrod (2010), "The Distribution of Income Tax Noncompliance", *National Tax Journal*, 63 (3), 397–418.

⁹ One could argue that the wealthy have increasingly low rates of returns on their wealth relative to other groups of the population, but Smith et al. (2023) find the opposite. One could also argue that the rise of wealth inequality is lower when ranking by income than when ranking by wealth, but existing studies show the opposite. According to the [Federal Reserve](#), the share of wealth owned by the top 1% has increased by 7.9 points between 1989 and 2019 when ranking by wealth, and by 8.4 points when ranking by income; by contrast, in AS the share of capital income earned by the top 1% by income has increased by 3 to 4 points only over this period (Figure 4).

Piketty, Thomas and Emmanuel Saez (2003), "[Income Inequality in the United States, 1913–1998](#)", *Quarterly Journal of Economics*, 118(1), 1-39 ([Tables and Figures Updated to 2021 in Excel format, February 2023](#))

Piketty, Thomas, Emmanuel Saez and Gabriel Zucman (2018), "[Distributional National Accounts: Methods and Estimates for the United States](#)", *Quarterly Journal of Economics*, 133(2), 553–609. Updated series available at: <https://gabriel-zucman.eu/usdina/>

Piketty, Thomas, Emmanuel Saez and Gabriel Zucman (2019), "[Simplified Distributional National Accounts](#)", *AEA Papers and Proceedings*, 109, 289–295.

Saez, Emmanuel and Gabriel Zucman (2016), "[Wealth Inequality in the United States Since 1913: Evidence from Capitalized Income Tax Data](#)", *Quarterly Journal of Economics*, 131(2): 519-578.

Saez and Zucman (2019), "[Progressive Wealth Taxation](#)", *Brookings Papers on Economic Activity*, Fall 2019, pp. 437–511.

Saez, Emmanuel and Gabriel Zucman (2020), "[Trends in US Income and Wealth Inequality: Revising After the Revisionists](#)", NBER working paper #27921.

Smith, Matthew, Owen Zidar and Eric Zwick (2023), "[Top Wealth in America: New Estimates Under Heterogenous Returns](#)", *Quarterly Journal of Economics*, 138(1): 515-573.

Appendix

Sources for Figure 1 and additional discussion:

The Auten-Splinter (AS) implicit assumptions for untaxed business income are computed as follows.

Total untaxed business income is: AS's "total misreporting + proprietors' adjustments" (computed using AS's online [Excel file](#) sheet "C1-Incomes" as col. EL minus col. EB, or equivalently sheet T-T1 cols. E+M+Q+R+S+V+AJ), *minus* AS's NIPA-tax wage adjustment (taken from AS's online [Excel file](#) sheet T-T1 col. E), *plus* the legally exempt income of S-corporations ignored by AS (computed as "total S-corporation profits before tax with IVA and CCADj" from [BEA 2022](#) Table 4 line 11, *minus* net S-corporation income reported in 1040s from SOI totals, *minus* AS's "misreported S-corporation income" from their [Excel file](#) sheet T-T1 col. AJ).

AS ignore most of the legally exempt income of S-corporations (i.e., untaxed income above and beyond misreported income), a clear mistake in their methodology pointed out in the past (e.g., Saez and Zucman 2020, section 3.1.1.). Concretely, in their sheet T-T1 col AJ they have \$53 billion in "NIPA S corp income/estimate less amount on tax returns" in 2018, when the true

number according to [BEA \(2022\)](#) is \$232 billion (i.e., “total S-corporation profits before tax with IVA and CCADj” from [BEA 2022](#) Table 4 line 11, *minus* net S-corporation income reported in 1040s from SOI totals). AS treat this legally exempt S-corporation income (highly concentrated at the top of the distribution) as C-corporation undistributed profits (much less concentrated due to pension funds). This creates a level bias in their top income share. When private corporations were organized as C-corporations until the mid-1980s, their legally exempt income was allocated primarily to the top of the distribution; as they became increasingly organized as S-corporations since the mid-1980s, their legally exempt income is allocated primarily to the bottom, creating a bias in AS’s top income share trends.

Next, the legally-exempt S-corporation income ignored by AS is allocated to the top 1% (as implicitly done by AS) using AS’s share of C-corporation retained earnings allocated to the top 1% (taken from AS’s online [Excel file](#) sheet C1-Incomes cols. DC minus CS). Other untaxed business income is allocated to the top 1% using AS’s share of “total misreporting + proprietors’ adjustments” allocated to the top 1% (taken from AS’s online [Excel file](#) sheet C1-Incomes cols. EQ minus EG).

These computations are imperfect because AS do not publish the share of untaxed business income earned by the top 1% ranked by their final pre-tax income measure. We neglect these re-rankings effects which are negligible for our purposes. The key point is that AS assume that about 15%–20% of S-corporations, partnerships, and sole proprietors’ untaxed income is earned by the top 1%, when the top 1% adult individuals earn about 55% of observable S-corporations, partnerships, and sole proprietors’ income. There is no empirical or logical support for AS’s assumption. In the canonical Johns and Slemrod (2020) study of the distribution of tax evasion, the top 1% (ranked by true income) earns 27% of all underreported income (Johns and Slemrod, 2010, Table 3 col. 1), and the large amount of legally exempt business income is much more concentrated than that.

As already pointed out in Saez and Zucman (2020), the core mistake in AS is the following: (i) AS amalgamate misreported income (due to tax evasion) with legally exempt income (due to differences between economic and taxable income), (ii) they then allocate this total “underreported income” primarily to the bottom of the distribution based on a misunderstanding of the results of random audit studies. Specifically, AS base their allocation of “underreported income” on the distribution of misreported income *by reported income*, instead of looking at the distribution *by true income*; see [Saez and Zucman, 2020](#), section 3.1 for a detailed discussion (the AS methodology is essentially unchanged since then).

The PSZ series on taxed and untaxed business income are computed using the PSZ’s micro-files, ranking adult individuals (with income equally split between spouses) by PSZ’s pre-tax national income measure. The dip in the share of taxed business income earned by the top 1% in 1979–1986 is due to the widespread use of tax shelters and bonus depreciation rules by the rich at that time (leading to a collapse in taxable income in the top 1% by pre-tax national income, which is offset in the PSZ methodology by a rise in their untaxed income). One limitation is that the equal-split adult unit used in PSZ is not the same as the household-size adjusted measured

used by AS; in practice, however, both choices have similar distributional effects (i.e., similarly reduce inequality relative to ranking by tax units).

Sources for Figure 2:

The macroeconomic amount of untaxed business income is computed as total NIPA business income *minus* net business income (S-corporations, partnerships, sole proprietorships) in individual income tax returns. Total NIPA business income is the sum of proprietors' income with IVA and CCAAdj (NIPA Table 1.12 line 9) with minor adjustments,¹⁰ and S-corporation profits with IVA and CCAAdj ([BEA 2022](#), Table 4 line 11). Untaxed business income can be decomposed into misreported income (NIPA Table 7.14, line 2 *plus* [BEA 2022](#), Table 2 line 2) and legally-exempt income (the rest). In 2019, about 55% of NIPA business income is untaxed (and about 55% of that untaxed income is due to tax evasion).

The fraction of the business income earned by the top 1% which is untaxed according to AS is computed as follows. The untaxed business income of the top 1% is computed for Figure 1 (see above). The taxed business income of the top 1% in AS is computed (approximately) as the taxed business income earned by the top 1% equal-split adults (thus approximating AS's size-adjustment ranking) ranked by fiscal income. The fraction of the business income earned by the bottom 99% which is untaxed according to AS is computed similarly.

Sources for Figure 3:

The share of taxed capital income (dividends, taxable interest, rents, estates and trust income) earned by the top 1% is computed in the PSZ microfiles as taxed capital income earned by the top 1% equal-split adults of the pre-tax income distribution, divided by total taxed capital income. Taxed capital income always excludes realized capital gains. The share of untaxed capital income earned by the top 1% in PSZ is computed similarly. Untaxed capital income is NIPA capital income minus taxed capital income. NIPA capital income is the sum of corporate profits (excluding S-corporation profits) gross of property taxes, rental income gross of property taxes, business transfers, and net interest, with minor adjustments offsetting the adjustments made for proprietors' income above.

The share of untaxed capital income earned by the top 1% in AS is computed using AS's online [Excel file](#) sheet FB-16 cols. C, D, E, F, G, divided by the corresponding totals computed in Table C1-Incomes. We checked that adding business property taxes, business transfers, and untaxed rental income makes virtually no difference.

¹⁰ The adjustments are the following: housing rents received by non-corporate businesses are deducted (as they are taxable as rental income, not business income), noncorporate business transfers and royalties (which are classified as rental income in the NIPAs but as business income in PSZ) are added; see PSZ Tables S.A3 and S.A3b for complete details.

Sources for Figure 4:

Smith-Zidar-Zwick top 1% wealth share, equal-split adults: downloaded from [Zwick's website](#).
Saez-Zucman top 1% wealth share, equal-split adults: downloaded from <https://gabriel-zucman.eu/usdina/> (February 2022 vintage).

Share of capital income excluding business income earned by the top 1% (ranking by total pre-tax income) in AS: computed as the share of untaxed capital income going to top 1% in AS (see Figure 3) x share of untaxed capital income in total capital income (see Figure 3) + share of taxed capital income going to the top 1% (approximated as the share of taxed capital income earned by the top 1% equal-split adults ranked by fiscal income) x share of taxed capital income in total capital income.

Share of capital income including 1/3 of business income earned by the top 1% (ranking by total pre-tax income) in AS: average of the top 1% share of capital income excluding business income and of the top 1% share of business income, weighted by the share of capital income in total capital income + 1/3 of business income, and the share of 1/3 of business income in total capital income + 1/3 of business income, respectively.