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# Income Mobility of the Top One Percent

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# Income Mobility of the Top One Percent

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**Abstract**
Circulation into and out of the top one percent is pronounced in the U.S. One third exit after a year and two-thirds exit after a decade. This mobility lowers top income shares when shifting from annual to multi-year income measures. Intragenerational mobility over two decades lowers recent top one percent fiscal income shares by over 10 percent. Two-decade mobility reduces top 0.1% shares by over 20 percent, top 0.01% shares by 30 percent, and top 0.001% shares by 40 percent. Effects of variability on wealth inequality are similar in magnitude, although more modest as a share of top wealth inequality.

*JEL: D31, D63, H20*
*Keywords:* Top one percent, income inequality, income mobility, capitalization, income volatility, wealth inequality, wealth mobility.

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*Elites do not last, but continually change:*

*a phenomenon that can be called the circulation of elites.*

*—Vilfredo Pareto (1909)*

Top income shares in the United States have recently been the subject of substantial debate. The discussion around top income shares has largely focused on trends in income inequality using single-year measures and cross-sectional data (Piketty, Saez, and Zucman 2018; Larrimore et al. 2021; Auten and Splinter 2024). However, because people move into and out of the top one percent of the distribution over time, these cross-sectional estimates may not reflect top income shares when evaluated over a longer time horizon. This paper considers how intragenerational income mobility—which can be directly measured using tax panel data—affects observed top income shares. Using income reported on tax returns, or *fiscal income*, we find that top income shares are considerably lower when using multi-year income measures.

While we are not the first to consider the importance of income mobility on inequality estimates, this paper makes four contributions to the inequality and mobility literature. First, it extends previous analyses of top 1% exit rates in the U.S. by including both the 1970s and the more recent period following the Great Recession. Using these extended data, we estimate long-run multi-year top income shares over the last 50 years and observe how much of the increase in top annual shares results from income variability. We find that exit rates from the top 1% have been high and relatively stable since the 1970s. On average, one-third of those who are in the top 1% fall out of the top by the following year. Two-thirds are no longer in the top 1% a decade later. Exit rates are even higher at

the very top of the distribution: three-quarters of those in the top 0.1% are no longer in that top group after a decade. This mobility is higher than in other countries and affects income inequality levels. Relative to single-year measures of income, multi-year measures that account for long-run income variability over two decades decrease top 1% income shares by an average of 15 percent. Two-decade mobility decreases top 0.1% shares by over 20 percent, top 0.01% shares by 30 percent, and top 0.001% shares by 40 percent.

Second, because fiscal income misses over one-third of national income (Auten and Splinter 2024), we consider a broader income measure that is closer to national income. Switching to the broader income measure results in a smaller effect of variability on top income shares and little effect on the trend of top income shares, which is flatter over time for broad income than for fiscal income.

Third, we estimate novel measures of average wealth inequality over multi-year periods. Top wealth shares in single years have been estimated by capitalizing annual incomes (Saez and Zucman 2016; Smith, Zidar, and Zwick 2023). We extend this approach to estimate average wealth for individuals over a multi-year period using the gross capitalization approach. These top wealth estimates complement the distribution-wide wealth volatility estimates by Menta, Wolff, and D'Ambrosio (2021). We find that multi-year wealth inequality is lower than single-year measures, although to a lesser extent than the proportional reduction observed for income inequality.

Finally, Pareto (1916) divides the economic elite into two groups: entrepreneurs and rentiers. Following this distinction, we estimate how much of income variability is due to entrepreneurial income (from passthrough business and labor earnings) and capital income. We find that the long-run increase in income variability among the top 1% is

almost entirely attributable to entrepreneurial income. This reflects highly volatile passthrough business income (DeBacker, Panousi, and Ramnath 2023), which contributes to entrepreneurs circulating into and out of top annual income groups.

The next section reviews related literature and Section II describes the tax panel data. Section III presents various measures of short-term and long-term income mobility. Section IV compares annual and multi-year top income shares. Section V presents a decomposition of the sources of increasing top income fluctuations and discusses possible explanations. Section VI presents a sensitivity analysis using a broader measure of income, and Section VII describes implications for top wealth shares before concluding.

## I. Related Literature

Income mobility is pronounced at the top of the income distribution. Previous research using U.S. tax data has shown that about 40 percent of individuals starting in the top 1% fall out after one year (Auten, Gee, and Turner 2013b).[1] Long-run mobility is even higher, with about 60 percent of the top 1% falling out after ten years (Auten and Gee 2009). The combination of exits from the top and entry from below means different individuals circulate into top groups, even if only briefly. Hirschl and Rank (2015) estimate with survey data that 11 percent of working-age adults spend at least one year in the top 1% while over half spent at least one year in the top 10% of the distribution. This circulation is even more pronounced at the very top of the distribution. The IRS (2016) estimates that over a 13-year period, more than 4,500 distinct taxpayers reached the top 400 tax returns.

[1] Limiting to ages 25–60 decreases the one-year top 1% exit rate from 40 percent to 36 percent (Auten, Gee, and Turner 2013a). Using more stable earnings data (as opposed to a more volatile measure including capital income), since 1978 gives an average top 1% exit rate of 24 percent after one year and 36 percent after five years (Kopczuk, Saez, and Song (2010), while 55 percent exit after nine years (Splinter, Bryant, and Diamond 2009).

While a subset of taxpayers persists in the very top over this period, the median tenure in the top 400 was only one year.

Circulation into and out of the top 1% is more pronounced in the U.S. than other countries. About 40 percent of those in the top fall out after one year in the U.S. Comparable exit rates are lower in other countries: about 23 percent in Germany (Jenderny 2015), about 26 percent in the United Kingdom (Joyce et al. 2019), 27 percent in Australia for recent years (Hérault et al. 2024), about 25 to 30 percent in Finland and Sweden (Ravaska 2018; Boschini et al. 2020), 30 percent in Canada (Veall 2012), about 30 percent for non-recessionary years in Ecuador (Cano 2015), and 35 percent in Israel (Federman, Sarid, and Yaish 2020). For earnings measures, top 1% exit rates are about 20 percent in Switzerland (Martinez 2018) and Thailand (Muthitacharoen 2023). Hérault et al. (2024) provide a detailed review of cross-national differences.

High levels of top income mobility may also contribute to the comparatively higher U.S. income inequality. Previous estimates using tax data suggest these effects can be substantial. Similar to the estimates in this paper, Splinter (2012) estimated that income variability can explain about one-fifth of the increase in top 1% income shares. Splinter (2022) estimated that income mobility can explain up to three-quarters of the increase in distribution-wide inequality since the 1980s. However, the magnitude is sensitive to the inequality measure, the income definition, and sample restrictions, in part because income volatility is most pronounced at the bottom and top of the income distribution (Hardy and Ziliak 2014). Other researchers find that multi-year inequality has increased over time by less than it has in single-year cross sections (Gottschalk and Moffitt 2009; Carr and Wiemers 2017; Fisher, Johnson, and Smeeding 2013; Meyer and Sullivan 2022).

Meanwhile, some observe little effect of distribution-wide mobility (Kopczuk, Saez, and Song 2010; DeBacker et al. 2013), but these findings appear to result from sample restrictions that remove a significant share of high-mobility observations due to temporarily low earnings or income (Splinter 2022).

Despite the directional consistency between findings from surveys and tax data, previous estimates using U.S. tax data suffer from sampling biases. In particular, the datasets used by Splinter (2012) and Thompson, Parisi, and Bricker (2021) have substantial and systematic sample attrition, as returns with income losses often had large decreases in sampling probabilities. This caused disproportionate attrition among those starting with high incomes. We address these biases by using tax panel data with random sampling. Compared with most prior variability estimates that followed individuals over only a few years, these data allow individuals to be followed for many decades.

Far fewer studies have considered trends in business income volatility or how changes to business income reporting affect observed rates of individual-level income inequality. Aaberge, Atkinson, and Modalsli (2013) consider how a change in dividend taxation in Norway resulted in a temporary increase in top income mobility. Most related to this paper, Hines (2020) suggests that top fiscal income mobility increased after the Tax Reform Act of 1986 because of the increase in volatile and relatively unequal passthrough business reported on individual tax returns. While we find passthrough business income did contribute to increased annual top income shares, its effect was partially offset by decreased capital income volatility.

We are also unaware of previous research that has considered the effects of using annual cross-sectional data versus multiple years of panel data on capitalized wealth

estimates. While some papers estimate wealth from tax records based on gross capitalization models (Bricker et al. 2016; Saez and Zucman 2016; Smith, Zidar, and Zwick 2023), this research has only used single-year estimates of capital income when capitalizing income to wealth. Also, these prior empirical studies only considered single years of wealth for inequality, rather than multi-year wealth measures. Hence, a major contribution of our work is to estimate how single-year gross capitalization estimates of wealth compare to multi-year measures.

## II. Income Tax Panel Data

To cover as many years as possible, our income data come from three panels of U.S. individual income tax returns: a special 1971 to 1975 panel, the *1973-centered panel*, a continuous panel since 1979, the *Continuous Work History Sample* (CWHS), and a larger panel since 1999, the *large panel*. The 1973-centered panel is based on a stratified sample of tax returns in 1973, with significant oversampling of high-income tax returns.[2] Tax returns with matching primary filer Taxpayer Identification Numbers (TINs), usually Social Security numbers, are selected from nearby years to form the panel.

The CWHS is a random sample of tax returns since 1979 based on the last four digits of primary filer TINs. The CWHS is the only available panel of tax data for 1979 to 1986. Therefore, it helps provide a more complete historical picture, although it is limited in that a relatively small number of the top 1% are included in any given year.[3]

[2] In 1973, the panel has over 11,000 observations, including about 10 percent of tax units in the top 0.01%, 3.5 percent in the top 0.1%, and 0.7 percent in the top 1%. A tax unit includes all individuals filing a tax return together, or those who would file together for non-filers.

[3] The CWHS sampling rate was 1 in 9,999 before 1987, 2 in 9,999 through 1997, 5 in 9,999 through 2004, and then 10 in 9,999. Due to these sampling rate changes, we adjust a few high-income weights (see the online appendix).

The most recent data, the large panel, starts with a five-percent sample of TINs of filers and non-filers for tax years 1999 to 2022. The sampling uses the last digits of randomly constructed masked TINs to preserve confidentiality. It includes primary and secondary filers, plus anyone else receiving an information return, which are third-party reports such as employer reports of wages paid. Since those who are married filing jointly have twice the likelihood of appearing in the data, they are given half the statistical weight as other individuals.[4] Income data from returns are then merged to each individual. This panel addresses the mild attrition from marriage and divorces resulting from the primary-only sampling for the CWHS, but results are similar, and the higher sampling rate allows for an analysis of the top 0.01% and top 0.001%.

A distinct multi-year panel is created for each period. Only tax filers who file at least once in each five-year period, three times in each 11-year period, and seven times in each 21-year period are included. This retains some periodic non-filers to better reflect the entire population rather than just those who file every year (Splinter 2019). Following a standard definition of tax units from Piketty and Saez (2003), observations in our sample—i.e., primary filers in the first two panels and all individuals in the large panel—must be at least 20 years old throughout each multi-year period.[5] In addition to using the same age cutoff, we also match the Piketty and Saez (2003) income definition and observe similar single-year top income shares (see Figure B4 in the online appendix).

### *A. Income definitions*

[4] The standard large panel sampling weight is 20 for single individuals and others not filing jointly (since they have a 5% probability of selection) and 10 for those married filing jointly (since they have a 10% probability of selection).

[5] Because we capture periodic tax filers, filers who die within a specific multi-year period may have zero reported income in some years. Excluding these filers results in nearly identical estimates (see online appendix).

Our main measure is tax-return-based market income, or *fiscal income*. This is defined as adjusted gross income (AGI), plus adjustments, minus taxable unemployment and Social Security benefits.[6] Those not filing a tax return in a given year are allocated incomes equal to 20 percent of average filer income for that year. Using information returns of the population of non-filers, Auten and Splinter (2024) validate this 20-percent assumption for non-filer incomes. Incomes are indexed with the PCE to calculate multi-year averages.

Despite the known limitations of using taxable realized capital gains for inequality measures (Larrimore et al. 2021), we retain these gains in the fiscal income measure for comparability with previous research, including Piketty and Saez (2003). Excluded realized capital gains are added for years prior to 1987 to ensure consistency with subsequent years. In all years, most capital gains on owner-occupied housing are excluded, since the substantial tax exclusion for these gains means that they generally do not appear on tax returns. While we focus on fiscal income including realized capital gains, we also consider the effects of switching income definitions to *broad market income*. This follows the approaches in Auten and Splinter (2024) to add certain missing income sources, as described in section VI.

## III. Income Mobility

This section presents three measures of income mobility: (1) exit rates from top income groups, (2) shares of top groups with large income changes, and (3) mobility patterns

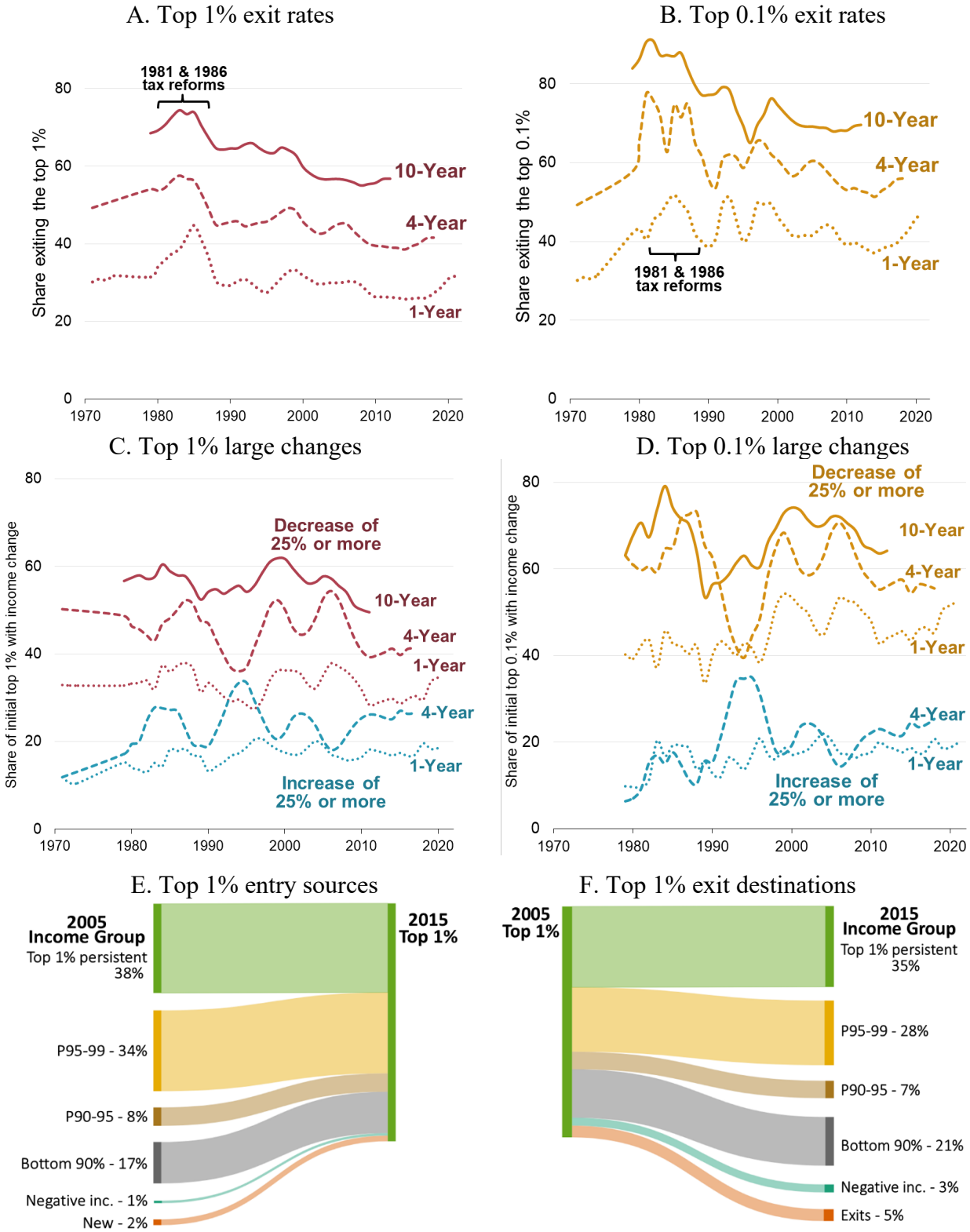
[6] For the large panel, income is total income (AGI plus adjustments already combined, due to available variables) less taxable unemployment and Social Security benefits; but, unlike the other panels, these data are not pre-cleaned by the IRS. We correct for outlier total income values (those exceeding AGI by 25 percent and over $100,000) by replacing them with the more reliable AGI amount.

showing from where in the distribution people flow into the top 1% and where they go when exiting. All measures are consistent with substantial mobility into and out of the top 1%.

Figure 1 provides a first indication of the high mobility of top incomes, showing exit rates from the top 1% (Panel A) and the top 0.1% (Panel B). Of those starting in the top 1%, an average of 31 percent fall out after one year and 63 percent are no longer in the top 1% after a decade. Exit rates are even higher for those starting at the very top of the distribution. For the top 0.1%, an average of 76 percent fall out a decade later. The top 0.001% has a ten-year exit rate of 82 percent.[7]

[7] Top 0.01% and 0.001% estimates are in online appendix Figures B2 and B3. These results are final-year exit rates, so an individual who leaves and then re-enters a top group prior to the final year is included with those who remain in the group. Final-year exit rates are lower than continuous-status exit rates, which consider whether one exits in any year, not just the final year. Auten, Gee, and Turner (2013b) compare final-year and continuous-status exit rates, e.g., the difference implies 13 percent exited and then re-entered the top 1% between 2005 and 2009.

**Figure 1. Top 1% and 0.1% exit rates and share with large real income changes**




*Notes*: Fiscal income including capital gains, indexed with the PCE. Results are by initial year (e.g., 4-year changes are from year t to t+4) and smoothed over three years for exit rates and five years for changes (no initial years are available for 1975–1978). Those under age 20 in the initial year are excluded. Persistent shares in the top 1% in panels E and F differ slightly due to population growth between the base years. *Source*: Authors' calculations using tax return panels.

There has not been a clear trend in these exit rates over time. There was, however, a temporary increase around the tax reforms of the 1980s, which changed the income reported on individual tax returns (Auten, Splinter, and Nelson 2016). One-year exit rate trends have been relatively stable in recent decades for the top 1%, while ten-year exit rates have modestly declined. For the top 0.1%, in contrast, the one-year exit rates have modestly increased, while the ten-year exit rates have modestly declined. Additionally, life events that contribute to exits were stable over time: an average of 7 percent of top 1% one-decade exits had "divorces" (married to unmarried filing status changes) and one-fifth had labor force exits (e.g., retirement).

The share of each group with large income decreases are similar to top-group exit rates. We estimate the share of the top 1% (Panel C) and top 0.1% (Panel D) in an initial year with "large" real percentage fiscal income decreases or increases of 25 percent or more after one, four, or ten years. Since 1979, an average of 33 percent of tax units in the top 1% had a large income decline in the following year—very similar to the 31 percent who exit the top 1% after a year.[8] Ten years after being in the top 1%, 56 percent had large income declines. The top 0.1% of the distribution shows even greater rates of downward mobility, with 67 percent having a large income decrease after ten years. For the top 0.001%, an average of 81 percent had large ten-year decreases. Reflecting well-known mean reversion patterns, the share of individuals experiencing large *decreases* in income far exceeds the share experiencing large *increases*.[9]

[8] Larrimore, Mortenson, and Splinter (2016) used the same definition of large income changes. For *all* tax units, they found 17 percent had large two-year decreases in income—far lower than the 40 percent of those in the top 1% with large two-year decreases observed here.

[9] Figure 1 omits ten-year increases because they resemble 4-year increases, see the online spreadsheet.

Where do individuals entering the top 1% originate from, and where do those leaving it fall within the income distribution? Panels E and F show that only about one-third of the top 1% either originated from this group ten years earlier or remained there ten years later, which is consistent with the long-run average exit rates from Panel A. Among those who exited the top income group, most remained in the top decile of the income distribution. However, 30 percent of those starting in the top 1% fell below the top decile ten years later. These patterns of top-one-percent circulation are similar in other years and for shorter time periods (see the online spreadsheet).

So far, we have primarily considered those in top groups and followed them in later years. Following individuals both backward and forward in time shows that income spikes temporarily push people into top groups. For those in the top 0.1%, their income doubled on average relative to three years earlier, indicating substantial upward mobility. Similarly, expected mean reversion shows their average income decreased by one-half in the three years afterward. Taken together, these two patterns form an inverted V-shaped rise and fall for top incomes (see online appendix Figure B1). This pattern, as well as the high exit rates and flows shown in Figure 1, are consistent with the observation by Schumpeter (1951, p. 126) that "each class resembles a hotel or omnibus, always full, but always of different people."

## IV. Mobility and Inequality

Recognizing the substantial rates of top income mobility, we now turn to evaluating its effect on measured income inequality. The potential for mobility to affect inequality calculations can be traced back to Pareto (1897), who illustrated this with the example of low-income and high-income individuals swapping incomes. In his example, annual

inequality is unchanged, but the equalizing rank reversal reduces multi-year inequality. Similarly, if these types of rank reversals or income oscillations become more pronounced, then annual inequality can increase more than multi-year inequality.

### *A. Measuring Income Variability*

The share of annual inequality growth that is caused by mobility can be estimated from the relationship between annual and multi-year income inequalities. Whereas the earlier "snapshot" measures only considered top-group status in initial and final years, variability can capture any move into or out of top groups (including those who exit the top 1% and then return in the snapshot years) and the size of income changes. Following Kopczuk, Saez, and Song (2010), and similar to Shorrocks (1978), Equation 1 defines variability as the difference between annual and multi-year top income shares:

$$Variability = TopShare_{Annual} - TopShare_{Multi\text{-}year}. \quad (1)$$

$TopShare_{Annual}$ averages annual top shares of income $y$ for observations $i$ over a multi-year period of length $T$ centered on year $t$: $\sum_{s=t-(T-1)/2}^{t+(T-1)/2} TopShare(y_{i,s})/T$, where $TopShare(\bullet)$ is the sum of incomes in the top group divided by total incomes over all observations $i$. This measure is the same as that obtained by averaging annual top shares over a $T$-year period.[10] $TopShare_{Multi\text{-}year}$ represents the top income share if using longer time-horizons than a single year. It measures the top share of observation-level incomes averaged over the multi-year period: $TopShare\left(\sum_{s=t-(T-1)/2}^{t+(T-1)/2} y_{i,s}/T\right)$.

[10] For example, top 1% shares increasing linearly from 10 to 20 percent, $TopShare_{Annual}$=(10+…+20)÷11 years =15%.

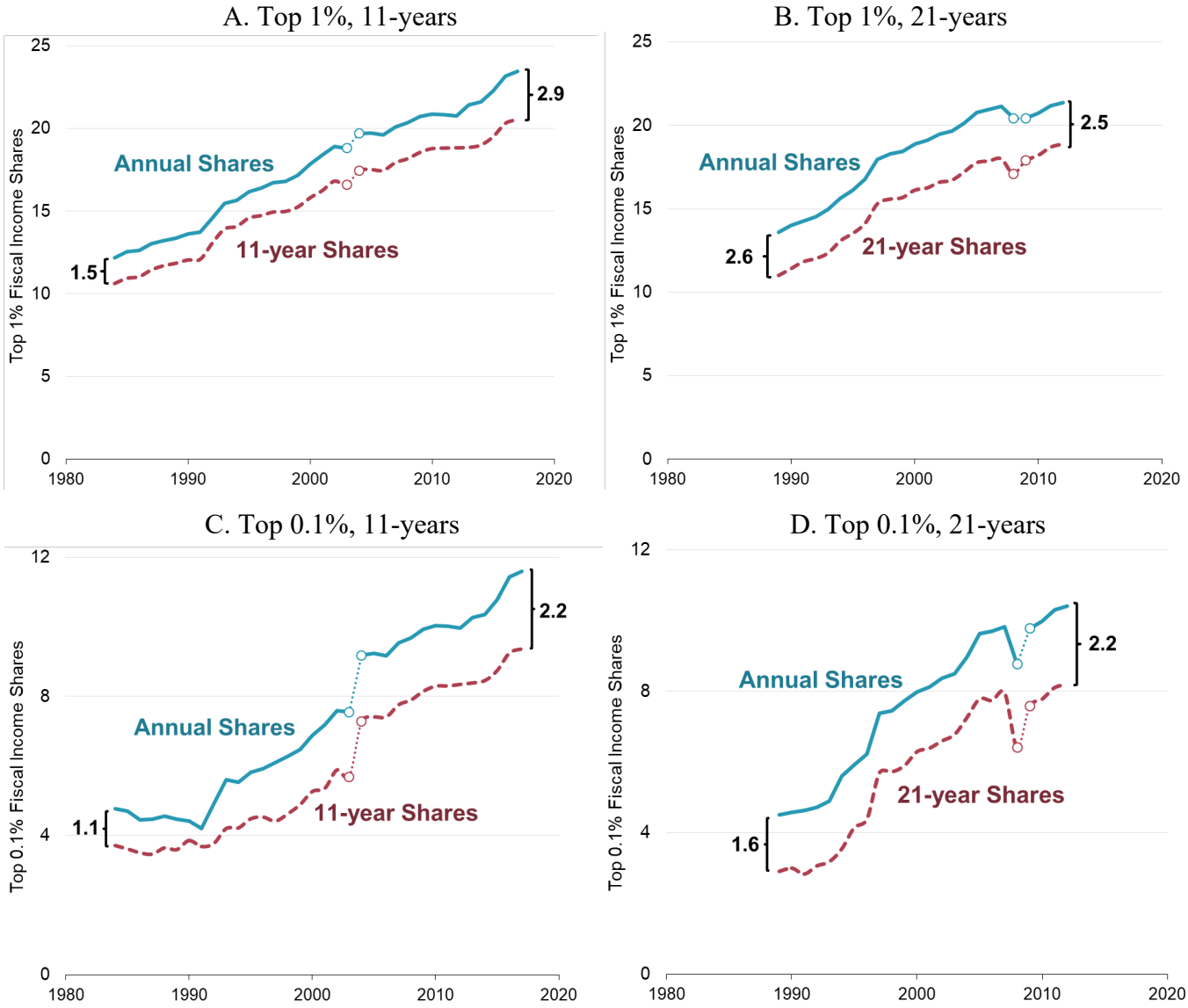
The observations in the top group differ when ranking by annual versus multi-year incomes. This re-ranking causes the variability measured here. Also, the effect of income mobility on inequality depends on the length of time considered (Poterba 1989). Despite the focus on annual cross sections in inequality research, longer periods should more accurately reflect long-run consumption ability.[11]

### *B. Annual vs. Multi-year Top Income Shares*

Figure 2 compares the increase in top 1% shares and top 0.1% shares when looking at single-year cross sections of data compared to multi-year panels. It also shows the initial-year and final-year income variability, as measured in Equation (1). In all panels, the annual income shares are averaged over the same multi-year period as used for the multi-year income shares and centered on the multi-year window. This ensures that results for each year compare the same observations in the annual and multi-year measures.[12]

[11] Carroll and Summers (1991), Parker and Vissing-Jorgensen (2010), and Frank (2011) provide evidence of increasing top income consumption cyclicality, which suggests some high-income households do not smooth all income shocks.
[12] The 1970s panel is only a five-year panel and so not shown in Figure 1 (see online spreadsheet).

**Figure 2. Annual and multi-year top fiscal income shares**




*Notes*: Results are centered (e.g., 11-year changes are from year t-5 to t+5). Incomes are fiscal income including capital gains, indexed with the PCE. Those under age 20 in the initial year are excluded. The trend breaks denote the shift from the CWHS data to the large panel. *Source*: Authors' calculations using tax return panels.

Top income inequality is lower when using multi-year panels of data. Panel A shows the top 1% income shares using 11-year average incomes and Panel B uses 21-year average incomes. In the most recent year of data, the top 1% income share using 11-year averages is 2.9 percentage points (13 percent) below that found using annual incomes. Similarly, using 21-year average incomes, the top 1% income share in the early 2010s was 2.5 percentage points (12 percent) below that using single years of data.

Besides affecting overall inequality levels, income variability can also explain part of the growth in top income shares. To limit the influence of business cycles, we focus the discussion here on multi-year periods centered on 1989 (after the Tax Reform Act of 1986), 1997, and 2017; each of which occur during the end of economic expansions. As seen in Panel A, between the 11-year period centered around 1989 and that centered around 2017, the gap between top 1% annual and multi-year income shares, or variability, increased from 1.5 percentage points (pp) to 2.9 pp. The modest increase in 11-year variability (as a percent of the top share) since 1989 implies 16 percent of the total growth in top 1% shares was caused by variability.[13] Since 1997, this variability represents 21 percent of the growth in annual top 1% shares. Results are similar for 21-year variability.

The effects of income variability are more pronounced for the top 0.1%. Panel C shows that in the most recent year of data, the top 0.1% income share using 11-year is 2.2 pp (19 percent) below that found using single years of data and explains about one-quarter of the increase in top 0.1% income shares between 1989 and 2017. Panel D considers two-

[13] The 1.4 pp variability increase divided by the 9 pp share increase means 16 percent was from variability. Only 0.05 pp of the increase in variability occurred in the year that our data transitions to the large panel, suggesting that this does not materially affect our results. See online appendix Table B1 for details.

decade mobility—variability over this period represents 2.2 pp (21 percent) of top 0.1% income shares in recent years.

Higher income groups have even more pronounced effects from income variability (see online appendix). Two-decade income variability explains about 30 percent of top 0.01% income shares and about 40 percent of top 0.001% top income shares.

## V. Sources of income variability

Following Pareto's (1916) division of the economic elite into rentiers and entrepreneurs, we divide income sources between capital income (capital gains, dividends, and interest) and entrepreneurial income (passthrough business income and wages).[14] We find that essentially all the increase in top 1% income variability originates from entrepreneurial income. This appears to result from volatile passthrough business income causing entrepreneurs to circulate into and out of top U.S. income groups.

Table 1 shows the share of top 1% income variability due to major income sources. To decompose the contribution of each source, we replace each income source's annual amount with the multi-year average amount and calculate the change in absolute income variability. In the 1979–1989 period, had passthrough income for each individual matched their 11-year average, top 1% incomes would have been 0.1 pp higher than was observed in the single-year cross-sectional data. In the 2011–2021 period, however, replacing single-year passthrough incomes with the multi-year averages would have resulted in a decrease in the top 1% income share of 0.4 pp. Consequently, the growth in income variability of

[14] Much of wages among the top 1% are among passthrough business owners who must pay themselves a "reasonable" wage, while the remaining profits take the form of business distributions. (Smith et al. 2019).

passthrough income contributed 0.5 pp to the larger effect from income variability in recent years.

**Table 1. Decomposition of top 1% fiscal income share 11-year variability by income source**

| Income source | 1984 | 2016 | Change | Share of change (%) |
|---|---|---|---|---|
| Passthroughs | –0.1 | 0.4 | 0.5 | 65 |
| Wages | 0.5 | 0.7 | 0.2 | 29 |
| Capital Gains | 0.8 | 0.9 | 0.1 | 12 |
| Dividends/Interest | 0.2 | 0.1 | –0.2 | –21 |
| Other | 0.0 | 0.1 | 0.1 | 15 |
| **Total** | **1.5** | **2.3** | **0.7** | **100** |

*Notes*: Contributions to variability by source are estimated as absolute change from replacing specific annual income source with the 11-year real average and then a small scaling to total variability. Years are centered, e.g., 1984 is for years between 1979 and 1989. *Source*: Authors' calculations using CWHS tax return panel.

Following this approach for each income source, passthrough business income variability (from sole proprietorships, partnerships, and S corporations) explains about two-thirds of the increase in top 1% income variability. Wage variability explains about three-tenths of the increase. Increases in capital gains variability had a smaller effect while dividend and interest variability declined, modestly offsetting other increases in variability.

Part of the increase in variability, including the increase in passthrough variability, resulted from the Tax Reform Act of 1986 (TRA86). The shift to passthrough business income resulted from a move away from C corporations (whose income largely shows up as dividends and capital gains), as TRA86 lowered the top individual tax rate, which applies to top passthrough business income and wages, below the corporate tax rate (Goolsbee 2004; Auten, Splinter, and Nelson 2016). This compositional shift also caused top wages to be more variable because they were increasingly dependent on passthrough business profits (Auten and Splinter 2024). Finally, passthrough net profits likely appeared more variable after TRA86 because of deduction limitations on passive investment and

rental losses, which could previously be used as tax shelters that offset active passthrough income and mostly benefitted those with high incomes (Samwick 1996).

## VI. Broad Income

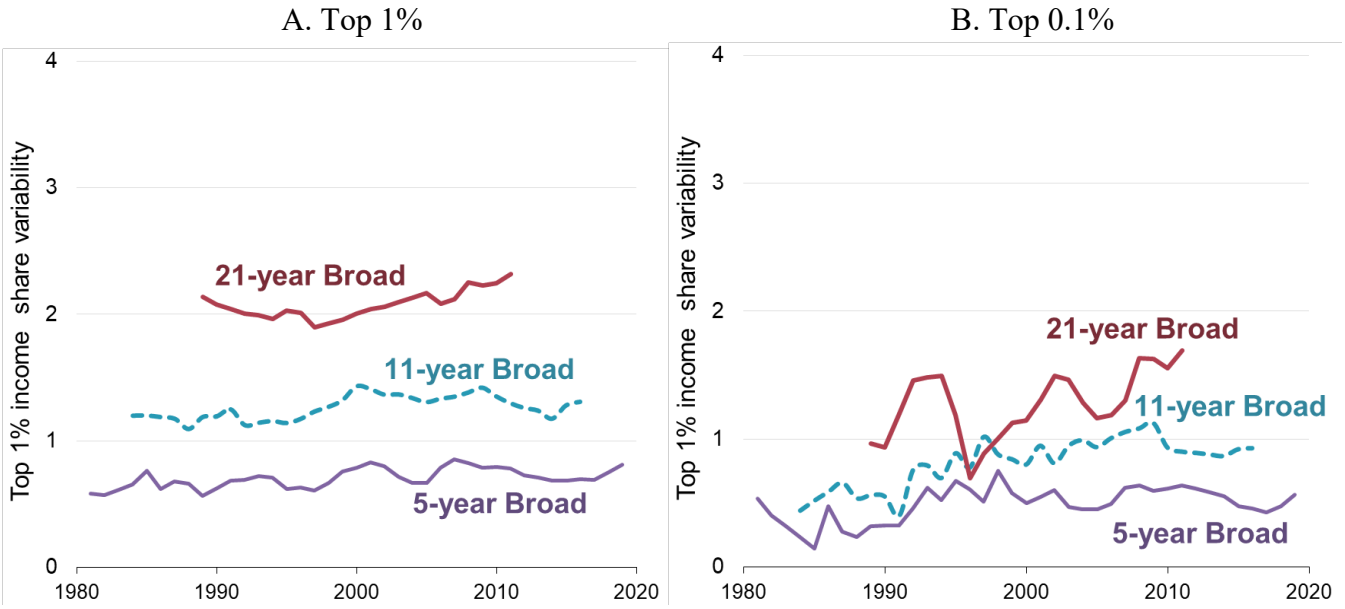
This paper's main analysis is limited to measures of fiscal income, but fiscal income misses over a third of national income that is excluded from individual tax returns. Auten and Splinter (2024) and Piketty, Saez, and Zucman (2018) find important changes to top income shares when including these missing components of national income.[15] In a sensitivity test, we analyze the effect of adding important sources missing from fiscal income that account for most of the gap with national income: corporate retained earnings (which replaces realized capital gains), tax-exempt interest, business property taxes, and employer-paid insurance and payroll taxes. These are allocated as in Auten and Splinter (2024), e.g., corporate retained earnings go to individual owners, retirement account owners, and government/nonprofits. This gives a measure of *broad income*.

Switching to this broad income definition reduces the effect of variability—in percentage point terms—on top income shares. Figure 3, Panel A shows that variability lowers top 1% broad income shares: an average of 0.7 pp over five years, 1.3 pp over one decade, and 2.1 pp over two decades. This is about two-thirds the variability of fiscal income, which has average variabilities of 1.0, 2.0, and 2.7 pp. In Panel B, we see that top 0.1% variabilities for broad income are also about two-thirds those of fiscal income. These lower levels of variability result in large part from replacing volatile capital gains realizations with more stable corporate retained earnings, much of which goes to retirement

[15] Similarly, Larrimore et al. (2021) find substantial changes in top income shares when shifting to a Haig-Simons income measure rather than using a fiscal income definition.

savings that is more equally distributed, thus shifting corporate income volatility out of the top 1%. Overall, these estimates suggest top 1% shares of national income over the last four decades would be about one percentage point lower when controlling for income fluctuations over one decade. They would be about two percentage points lower when controlling for income fluctuations over two decades.

**Figure 3. Broad income variability (decreases in top income shares)**




*Notes*: Results are centered (e.g., 11-year changes are from t-5 to t+5). Variability is the percentage point difference between average annual and multi-year incomes (see Eqn. 1). *Source*: Authors' calculations using CWHS tax return panel.

## VII. Wealth Shares: Capitalizing Incomes Over Multiple Years

Income mobility raises questions about the robustness of top wealth estimates based on capitalizing annual incomes (Saez and Zucman 2016; Smith, Zidar, and Zwick 2023). In particular, to the extent that capital income varies from year to year due to idiosyncratic individual differences in the rate of return rather than fluctuations in underlying wealth, top wealth shares using gross capitalization methods may misstate the true distribution of

wealth. This can occur both because of volatile capital income used for the gross capitalization model and because of year-to-year variability in wealth itself.

To estimate the effect of variability in top wealth shares, we apply our approach for income, estimating capitalized wealth using single-year and multi-year measures of income, which helps to control for fluctuations in the rate of return. We also estimate single-year and multi-year measures of capitalized wealth, which controls for year-to-year variability in wealth among the top 1%—i.e., the degree to which top annual wealth shares exceed multi-year wealth shares. Specifically, for each multi-year period, we sum real wealth amounts across years for each of ten asset or debt categories as estimated by the Federal Reserve Distributional Financial Accounts.[16] Next, we sum real capital incomes in the tax data across the multi-year period and capitalize this income into wealth or debt for each category. For example, corporate equities and mutual funds are allocated by dividends (90 percent) and capital gains (10 percent). Note that we do not directly account for higher rates of return for bonds for those with high wealth, which Smith, Zidar, and Zwick (2023) show lowers capitalized top wealth shares. Still, our annual top wealth shares are similar to their estimates (see online appendix Figure B7).

Top wealth shares are lower when using multi-year wealth and capital incomes. Figure 4 shows the extent to which variability lowers top wealth shares relative to the single-year approach when using multi-year estimates. Considering short-term variability of capital income and total wealth over five years lowers annual top 1% wealth shares by

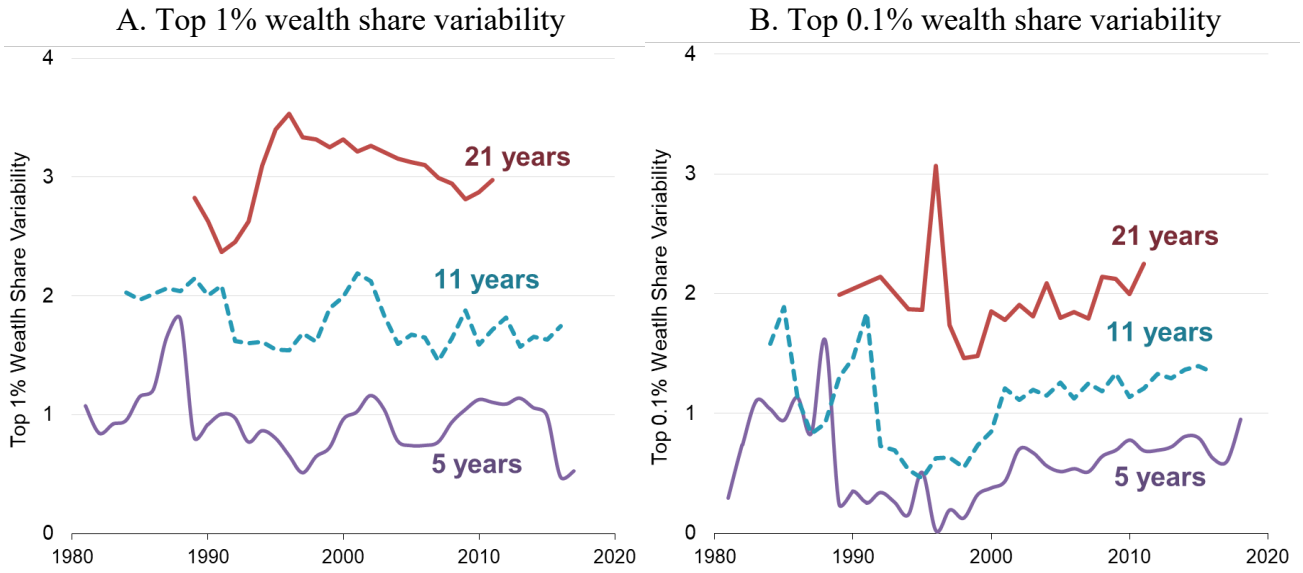
[16] We use the term wealth here to refer to net market assets (net worth) as estimated by the Distributional Financial Accounts, which is assets (real estate, consumer durables, corporate equities and mutual funds, pension entitlements, private business, tax-exempt bonds, and other financial assets) less debt (home mortgages, consumer credit, and other liabilities). Note that top wealth share levels are lower and trends over time are flatter when including estimated wealth from Social Security (Sabelhaus and Volz 2022; Catherine, Miller, and Sarin 2025) or other promised benefits like Medicare.

1 pp. Variability over 11 years lowers top 1% wealth shares by about 2 pp, and over 21 years implies top 1% wealth shares are about 3 pp lower than annual shares (Panel A). Most of this variability is in the very top of the distribution. Panel B shows that averaging over 21 years lowers top 0.1% wealth shares by 2 pp. Note that the Tax Reform Act of 1986 caused a temporary spike in wealth variability due to a one-time shift of capital gains realizations and passthrough income (Auten, Nelson, and Splinter 2016). There was also an increase in wealth variability that aligns with the timing of the dot-com boom and bust.[17]

Although the effects for top wealth shares appear broadly similar to that seen for fiscal incomes, it is smaller relative to the amount of wealth inequality. In recent years, the top 1% earns about 20 percent of fiscal income on tax returns, so the long-run income variability of 3 pp represents about 15 percent of income inequality. In comparison, the top 1% owns about 35 percent of wealth, meaning that the long-run wealth variability of 3 pp represents only about 9 percent of wealth inequality (about half that of fiscal income). For the top 0.1%, which owns about 17 percent of wealth, the long-run variability of 2 pp represents about 12 percent of wealth inequality (again, about half that of fiscal income).

[17] Variability changes occur at different times across the three centered-year series in the figures because the different time windows mean law changes and business-cycle events enter the analysis windows at different points in time.

**Figure 4. Top wealth variability (decreases in top wealth shares)**




*Notes*: Results are centered (e.g., 11-year changes are from t-5 to t+5). Variability is the percentage point difference between average annual and multi-year incomes (see Eqn. 1). Outlier estimates excluded: Panel A after 2018 and Panel B in 1990, 1991, and 1993. *Source*: Authors' calculations using CWHS tax return panel.

## VIII. Conclusion

The top one percent is an ever-changing group, with people cycling in and out each year. Roughly one-third of those in the top one percent of the income distribution fall out a year later, and two-thirds are no longer there a decade later. Using U.S. tax return data, we estimate that long-run top one percent fiscal income shares are 3.4 percentage points lower than standard measures using annual income. This matters for interpreting income inequality levels and trends. Accounting for income variability over 11 years reduces the level of top one percent fiscal income shares in recent years by 13 percent and reduces its growth over the past quarter-century by nearly one-fifth. 21-year variability reduces top one percent income shares by 12 percent. The effect is even larger at the very top of the income distribution, with long-run variability decreasing the level of top 0.001% income shares in recent years by 40 percent.

We also extend the literature to consider multi-year estimates of wealth inequality. When doing so, we find that top wealth inequality is modestly lower than that found using single-year measures. Although the proportional effect from wealth variability is smaller than that found for income, we still find that long-run top one percent wealth shares are three percentage points lower than standard annual measures.

In summary, this paper documents high rates of circulation into and out of top income groups and provides evidence that mobility meaningfully affects top income shares. These findings fit the century-old description of the top of the distribution by Pareto (1906, pg. 386): "The annual picture changes little, but the internal structure is in perpetual motion: at the same time that some individuals reach the top, others fall out."

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