Response to "Comments on Smith, Zidar, Zwick (2019)"

April 24, 2020 Matt Smith, Owen Zidar, and Eric Zwick

We are grateful to Saez and Zucman for their constructive and thoughtful comments in Saez and Zucman (2020). We respond to each of the four main comments in this note. We list the comments in bold and our responses in plain text. The four topics are: (1) the appropriate rates of return for fixed income assets for the rich; (2) the wealth of the richest 400 people across data sources and approaches; (3) consistency with the SCF in terms of the rise of wealth concentration; and (4) projected revenue from a wealth tax.

We summarize our responses here and then discuss each point in more detail. On (1), we first reconcile our results and then show how conclusions change when ranking by flows rather than by stocks. We then show that our approach performs better in a goodness-of-fit sense than the proposed alternative and especially relative to the equal-returns approach. On (2), we investigate how the Forbes 400 compares to different capitalization approaches in Section 10.3.2, showing that Forbes-based estimates of the total wealth and number of billionaires fall in between the equal-returns estimates and our preferred estimates, and that the Forbes data are more consistent with our preferred top wealth shares using Pareto techniques. On (3), we discuss in Sections 10.2 and 10.3.1 plausible reconciliations for each apparent discrepancy between our data and the SCF and clarify the nature of remaining uncertainty. In terms of the level, trends, and composition, our preferred series is generally closer to the SCF than the equal-returns approach. On (4), the preliminary wealth estimates discussed in Saez and Zucman (2020) showed larger gaps than our updated version, which uses new data, includes all of our refinements, and estimates statistics at the tax-unit level in 2016. As discussed above, there remain large gaps due to differences in estimated wealth concentration.

1 Interest Rate of the Rich

First, SZZ assume that the interest rate earned by the rich is the Moodys Aaa rate (6% on average in the 2000s, 4% in the 2010s). This is inconsistent with the existing evidence (from the SCF and matched estates-income tax data data) which shows that the interest rate of the wealthy (around 3% in the 2000s, 2% in the 2010s) is about twice lower than assumed by SZZ. As a result, SZZ under-estimate the fixed-income claims owned by the wealthy by a factor of about 2.

We thank them for pushing us to clarify our discussion and approach for incorporating heterogeneous returns. There remains some disagreement about which capitalization factor to use and for whom. One important distinction is that we focus on the interest rates of those who have substantial taxable interest income (i.e., $E(r|rank(income)$ >P99.9) and SZ focus on the interest rates of those who have substantial wealth (i.e., $E(r|rank(wealth)$ >P99.9). People who receive large flows of interest income need not be the same people as those who have substantial wealth. Figure 1 replicates the SZ figure using wealth ranks and shows how results differ when ranking by interest income flows. It illustrates that when ranking by flows, the Aaa rate closely tracks both the top 0.1% group in the SCF as well as in the estate tax data.

We focus on interest rates of those with substantial income for two main reasons. First, the capitalization approach takes income flows as an input and produces wealth estimates as an output. Since the U.S. does not tax wealth, we only have administrative data on income and not on wealth. Thus, it is not feasible to rank by wealth within the tax data, so focusing on observable measures (i.e., interest rates conditional on flows) is more practically useful than focusing on unobservable measures (i.e., interest rates conditional on stocks). Second, fixed income wealth is a small share of top wealth in the SCF (14.7%), so the top 0.1% in wealth (i.e., $rank(wealth) >$ P99.9) are typically at the top for other reasons, such as the value of their private business or stock holdings, which are unrelated to their fixed income returns. The presence of business owners at the top of the wealth distribution attenuates the average interest rate among the wealthy, and is not directly informative about the appropriate capitalization rate for those with substantial interest income flows.

The true relationship between stocks and flows for fixed income appears concave, not linear. The primary difference between our fixed income estimates and SZ's fixed income estimates is that SZ use a linear stock-flow relationship and we use a step function that reflects the fact that those with high flows tend to enjoy higher rates of return (since those with high flows have fixed income portfolios with a smaller share of deposits and a higher share of higher yielding bonds and loans). For example, consider the two models for fixed income assets as a function of taxable interest income $y^{fix}_{i,2016}$ in 2016.

$$\hat{A}^{fix,SZ}_{i,2016} = 124 \times y^{fix}_{i,2016} \tag{1}$$

$$\hat{A}^{fix,SZZ}_{i,2016} = \begin{cases} 27 \times y^{fix}_{i,2016} & \text{if } P^{fix}_{i,2016} \geq 99.9 \\ 54 \times y^{fix}_{i,2016} & \text{if } 99.9 > P^{fix}_{i,2016} \geq 99 \\ 443 \times y^{fix}_{i,2016} & \text{if } 99 > P^{fix}_{i,2016} \end{cases} \tag{2}$$

where $\hat{A}^{fix,X}_{i,2016}$ are the model predictions for SZ and SZZ in 2016 as a function of taxable interest income $y^{fix}_{i,2016}$. For the SZ model in equation (1), 124 is the ratio of total taxable interest income to total fixed income assets in the Financial Accounts. Those with a dollar of taxable interest income are predicted to have \$124 dollars of fixed income assets. For the SZZ model in equation (2), 27 is $\frac{1}{r_{Aaa,2016}}$, 54 is $\frac{1}{r_{UST,2016}}$, and 443 is the capitalization factor for the bottom 99% in the taxable interest income distribution which ensures that total fixed income assets add up to the same Financial Accounts aggregate.[1] Thus, a dollar of taxable interest income maps to different predictions about fixed income assets depending on how large their income flows are. Figure 2B shows that using different rates for these three groups provides a reasonable approximation of actual interest rates in datasets that have both stock and flow information—the estate tax data and the SCF.

We evaluate these alternative assumptions empirically using a cross-validation approach in the SCF. The two models make predictions about fixed income assets and we find that allowing those with large flows to have lower capitalization factors—and Aaa rates at the very top—does a substantially better job fitting the data in datasets in which we can observe both stocks and flows.

The left panel of Figure 3 compares actual fixed income wealth in the SCF to predicted fixed income wealth using the equal-returns approach of Saez and Zucman (2016) of equation (1) versus our approach of equation (2). Predicted fixed income wealth under equal returns vastly exceeds SCF wealth with a prediction error that increases with actual wealth. In 2016, the average top 1% household in the SCF has \$1.8M of actual fixed income wealth, whereas the equal returns estimate is \$5.3M or 194% too high. For the top 0.1% and top 0.01%, actual wealth is \$6.5M and \$29.6M, respectively, whereas the equal-returns estimate is \$28.2M and \$136.3M, respectively. The corresponding prediction errors are 334% and 360%, respectively, because the linear model does not fit the concave relationship between stocks and flows.

Table 1 expands this analysis to additional moments; for five different interest income flow groups, we compare average fixed income levels, fixed income portfolio shares, the change in fixed income levels from 2001 to 2016, and the change in fixed income portfolio shares. Using a mean-squared-error metric, our model provides a better fit than both the Saez and Zucman (2016) equal-returns approach and the Saez and Zucman (2020) proposal of applying a lower rate like the UST10 to the top 1%. This result holds across all four moments on average and for most subgroups, with the most pronounced gains at the top. The UST10 approach considerably improves model fit relative to the equal-returns approach, however it underperforms our estimates by overstating estimated wealth for the top 0.1% and 0.01%.

2 Wealth of the Richest

Second, the SZZ methodology delivers an estimate of wealth for the top 400 richest Americans which is only 40% of the Forbes 400 total.

We thank them for highlighting the importance of comparisons to the Forbes 400 statistics. We agree and have tried to more accurately convey the difficulty and uncertainty involved with estimating the collective wealth of the top 400 and billionaires in the revised draft, and how our numbers compare to Forbes 400 estimates. We thank them for pushing us on this point—it helped improve the paper.

Ultimately, it is unclear how accurate the Forbes 400 list really is. First, when Raub, Johnson and Newcomb (2010) link the Forbes 400 data to the estate tax data, they only find about half of that wealth in the administrative data. It's hard to determine how much of this gap is due to bias in the Forbes data versus tax avoidance and evasion, which are also likely quite substantial. Second, as mentioned in Saez and Zucman (2020), there are cases in which individuals have substantially overstated their wealth on the Forbes 400. Third, many of the Forbes 400, those in the Bloomberg billionaires list, or top 400 units in the SCF have substantial shares of wealth in private firms,

[1] The rate for the bottom group is also consistent with a larger fixed-income-portfolio share in very low yield deposits. See Figure 2A.

which are difficult to value.[2] Because our private business estimates use administrative data, our private business estimates are likely more accurate than publicly available estimates. That said, we now explicitly acknowledge that the capitalization approach is likely less accurate for those whose wealth is primarily in public equities, especially if the stock-flow relationship becomes convex at the very top (e.g., if there are more Warren Buffett types who have large stocks and low flows than the Bill Gates types who have large stocks but got a lot of dividends and/or capital gains).

We have added Section 10.3.2 that highlights these considerations and shows how our estimates compare to the Forbes 400.

We show that in terms of the number of billionaires and their collective wealth, statistics from the Forbes 400 fall in between our estimates and those from the equal-return approach of Saez and Zucman (2016). The Forbes 400 numbers, when combined with a standard distributional assumption, imply that there were about 911 billionaires with $3.1T in collective wealth (Saez and Zucman, 2019*b*).[3]

The equal-returns approach gives 1,250 billionaires with $3.7T, and our preferred series gives 640 billionaires with $1.7T overall. In terms of counts and dollars in 2016, the equal-returns approach is 149% and 123% of the Forbes-based estimates, and our preferred approach is 76% and 57% of the Forbes 400 counts and dollars, respectively.

In terms of top shares, we also point out in Section 10.3.2 that the Forbes-400-based Pareto parameter of 1.4 in 2016 implies top 0.1%, top 1%, and top 10% wealth shares of 13.9%, 26.8%, and 51.8%, respectively.[4] Comparing these shares to those in Table 2 reveals that top shares from our preferred series (14.3%, 29.6%, 65.6%) line up more closely with these Forbes-400-implied top shares than do those from the equal-returns approach of Saez and Zucman (2016) (20.2%, 38.1%, 72.3%).

In terms of composition, our results are consistent with the Forbes 400 in that equity plays a central role and fixed income does not. Moreover, in terms of private business valuations, our approach may be better than Forbes, which relies on a combination of self-reported values and limited public data on private firms.

We conclude Section 10.3.2 as follows "while it is possible that the Forbes estimates are overstated for the reasons above, estimates from our preferred specification may need to be scaled up to match the true unobserved wealth of the wealthiest 400." We hope our direct quantitative comparison, qualitative discussion of uncertainty regarding the accuracy of the Forbes 400 estimates, and description of the sensitivity of Pareto extrapolations help address this concern.

3 Consistency with SCF

Third, the SZZ methodology is not consistent with the rise in wealth concentration seen in the other key data source on wealth in the US, the Survey of Consumer Finances.

We provide a thorough reconciliation of approaches and datasets in Sections 10.2 and 10.3. In Section 10.3.1, we discuss plausible reconciliations for each apparent discrepancy between our data and the SCF and clarify the nature of remaining uncertainty.

Figure 4 illustrates how adjustments to the SCF affect the evolution of top shares. The SCF series in Saez and Zucman (2020) series makes one set of adjustments to make the series more comparable to tax-unit based series, but similar steps can be taken to produce an equal-split series that is more directly comparable to our preferred series (and that of Piketty, Saez and Zucman (2018)). Figure 4A and 4B show how these adjustments, as well as other adjustments such as including the Forbes 400, affect the top 1% and top 0.1% shares, respectively. Figure 4C highlights the main adjustments in 2016 and shows that for the top 1% series, the tax unit adjustment adds 4.82 pp whereas Figure 4D shows that the equal-split adjustment only raises the top 1% share by 0.95 pp. Overall, our preferred series more closely resembles the SCF series when using the equal-split adjustment instead of the tax-unit adjustment.

[2]Indeed the Bloomberg list has an accuracy rating system that reflects these difficulties: `https://www.bloomberg.com/billionaires/methodology/`

[3]Applying the same steps using 2016 data from Forbes 400 gives an estimate of 669 ($= 400 \times (1.45/1)^{1.4}$) billionaires and $2.4T($= 400\times5.1+0.16\times(400\times5.1)$) of collective wealth (since mean wealth of $5.1B($= 6.0\times.85$) and a minimum threshold of $1.45B ($= 1.7\times.85$) imply a Pareto parameter of $1.4 = \frac{5.1}{1.45}/(\frac{5.1}{1.45}-1)$). Without the 15% behavioral adjustment to mean wealth and the threshold, the raw estimates for 2016 are 839 ($= 400 \times (1.7/1)^{1.4}$) with collective wealth of $3T ($= 400 \times 6.0 + 0.24 \times (400 \times 6.1)$.

[4]Given the 2016 estimate of the Pareto parameter of $a = 1.4$ and the assumption that top wealth is Pareto distributed, the top p percentile's share of wealth in 2016 is $\left(\frac{p}{100}\right)^{\frac{1.4-1}{1.4}}$. See equation 1 in `https://economics.mit.edu/files/10517` for details.

In terms of the specific point regarding the percentage point change in top wealth shares in the Saez and Zucman (2020) SCF series versus our preferred series, we now present Figure 5, which decomposes the change in top shares by component for our preferred series and the equal-returns series from 1989-2016. It shows that nearly half of the growth of the top share in the equal-returns series is driven by fixed income, whereas, in the raw SCF, less than one fifth of the change in top 1 and 0.1% shares from 1989 to 2016 comes from fixed income.[5]

Finally, in terms of consistency with the SCF, we now provide comparisons and goodness of fit measures that show that our measures are more consistent with the SCF than equal-returns measures in terms of a wide range of other moments. Figure 6 shows that our preferred estimates, especially of top fixed income wealth, are much closer to the SCF as well as the DFA. In terms of goodness of fit, Figure 3, Table 1, and Table 3 all generally show a much better fit relative to the equal-return series.

4 Revenue from wealth tax on the richest

Fourth, SZZ under-estimate wealth tax revenue by a factor of about 2, partly because of too low wealth levels at the top, partly because they simulate a tax on wealth at the adult level (with equal split of assets between spouses) rather than at the tax unit level.

The preliminary wealth estimates discussed in Saez and Zucman (2020) showed larger gaps than our updated version, which uses new data, includes all of our refinements, and estimates statistics at the tax-unit level in 2016. The remaining gaps discussed in Section 9.2 represent differences in estimated wealth concentration.

[5]For the top 1%, public equity's contribution to top share growth from 1989 to 2016 is three times as large as fixed income's contribution. For the top 0.1%, public and private equity both account for a larger contribution to growth for the top 0.1% than fixed income does in the raw SCF data.

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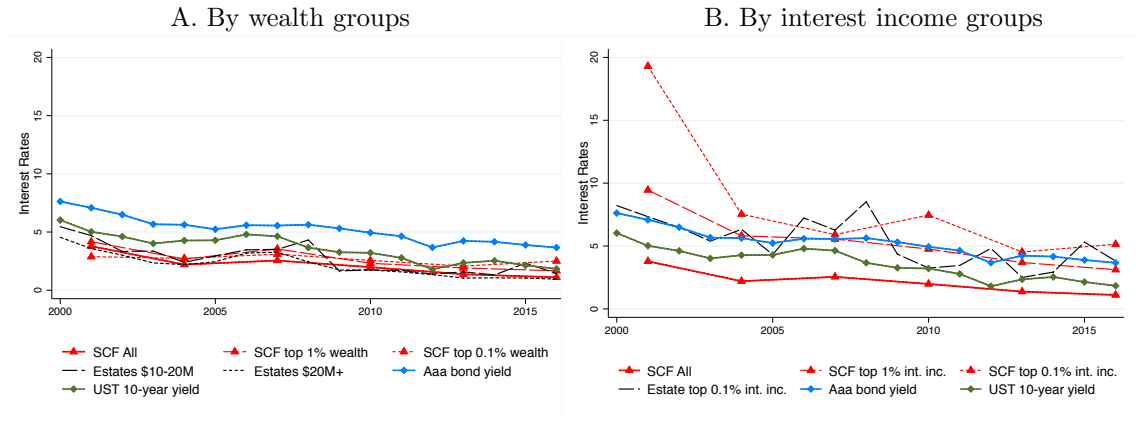
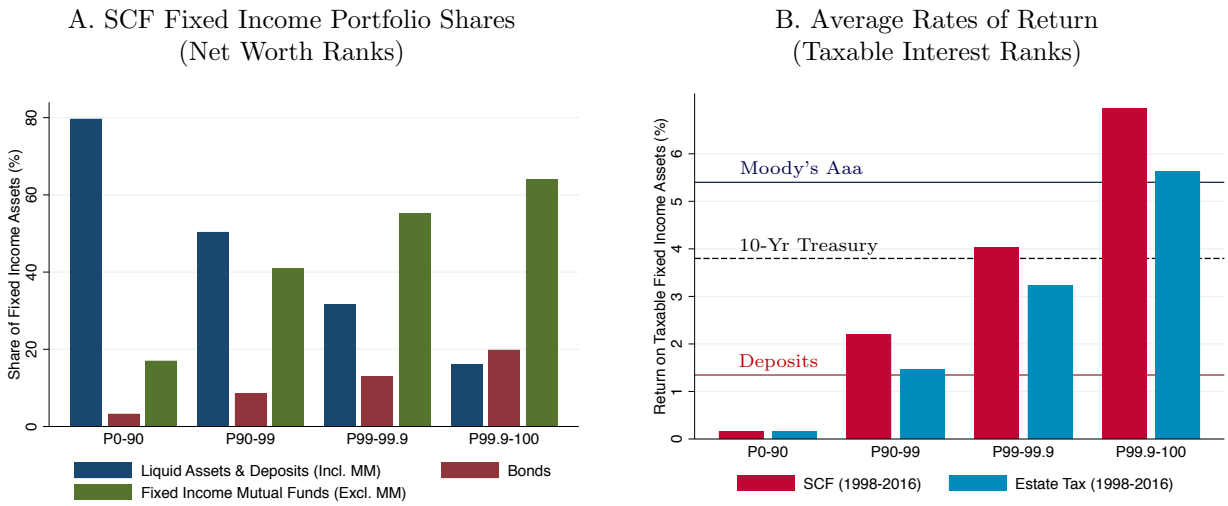
5 Figures

Figure 1: Rates of Return on Fixed Income Claims



Notes: This figure shows rates of return on taxable fixed income assets across data sources. Panel A reproduces Figure 1 of Saez and Zucman's (2020) note "Comments on Smith, Zidar, and Zwick (2019)." We are able to exactly match their SCF rates of return and closely match their estate tax rates of return. Panel B shows the same series where groups are defined with taxable interest income rankings rather than wealth ranks. To match their graph, we depart from our preferred definition of taxable fixed income assets (described in Appendix E) and instead follow Saez and Zucman's fixed income wealth definition for the SCF, which takes a slightly different approach from us and Bricker, Henriques, Krimmel and Sabelhaus (2016) for splitting mutual funds whose underlying assets are a mix of equity and fixed income.

Figure 2: Fixed Income Rates of Return Vary across Wealth and Interest Income Groups

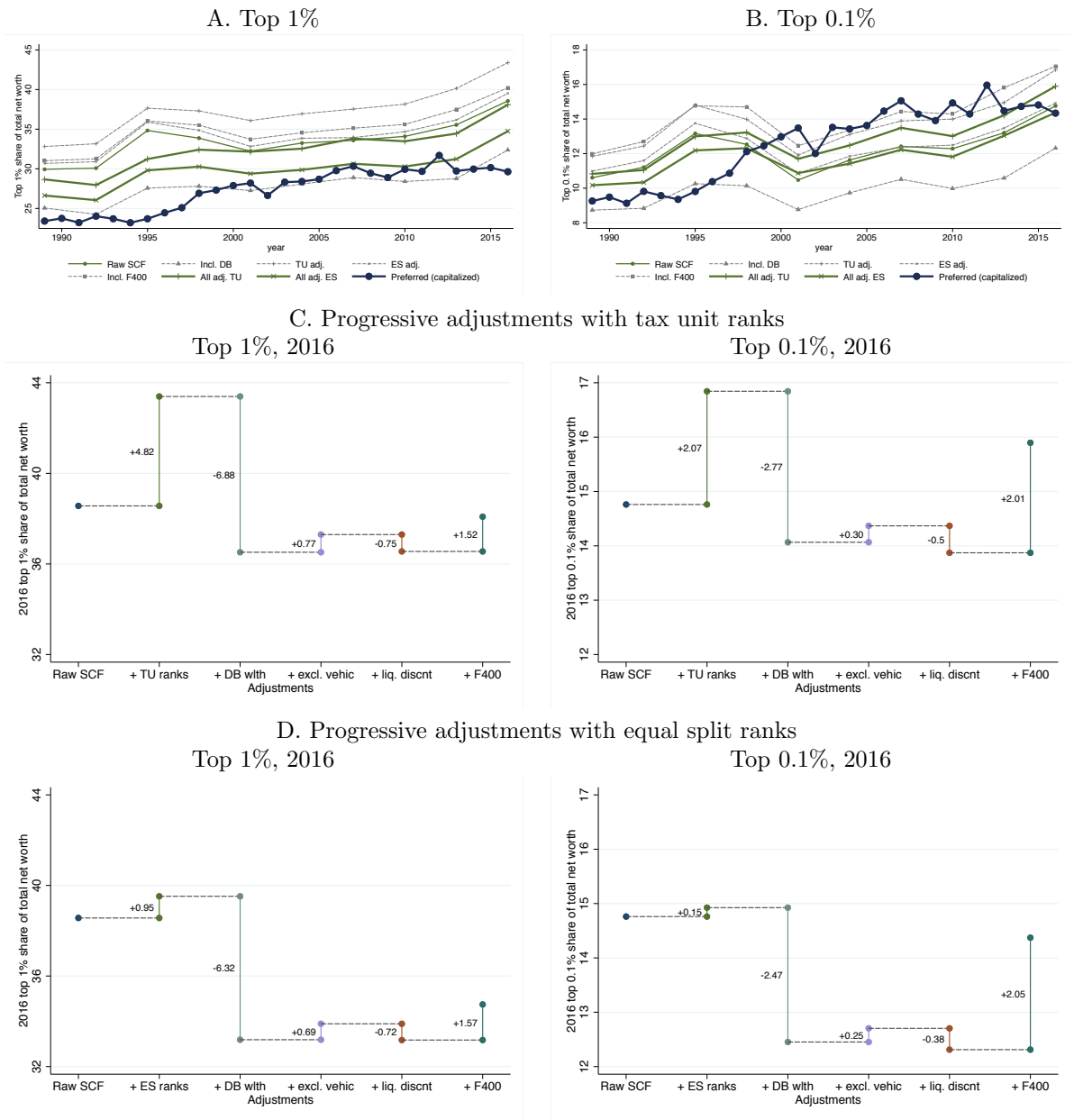


Notes: This figure provides evidence of heterogeneous fixed income portfolios and returns and then compares interest rates and capitalization factors under alternative assumptions of average returns to fixed income wealth. Panel A decomposes fixed income wealth into asset subclasses to show portfolio shares by wealth group in 2016. Panel B plots the returns to fixed income assets by percentile of taxable interest income.

Figure 3: Model Performance: Actual vs. Predicted Assets in SCF

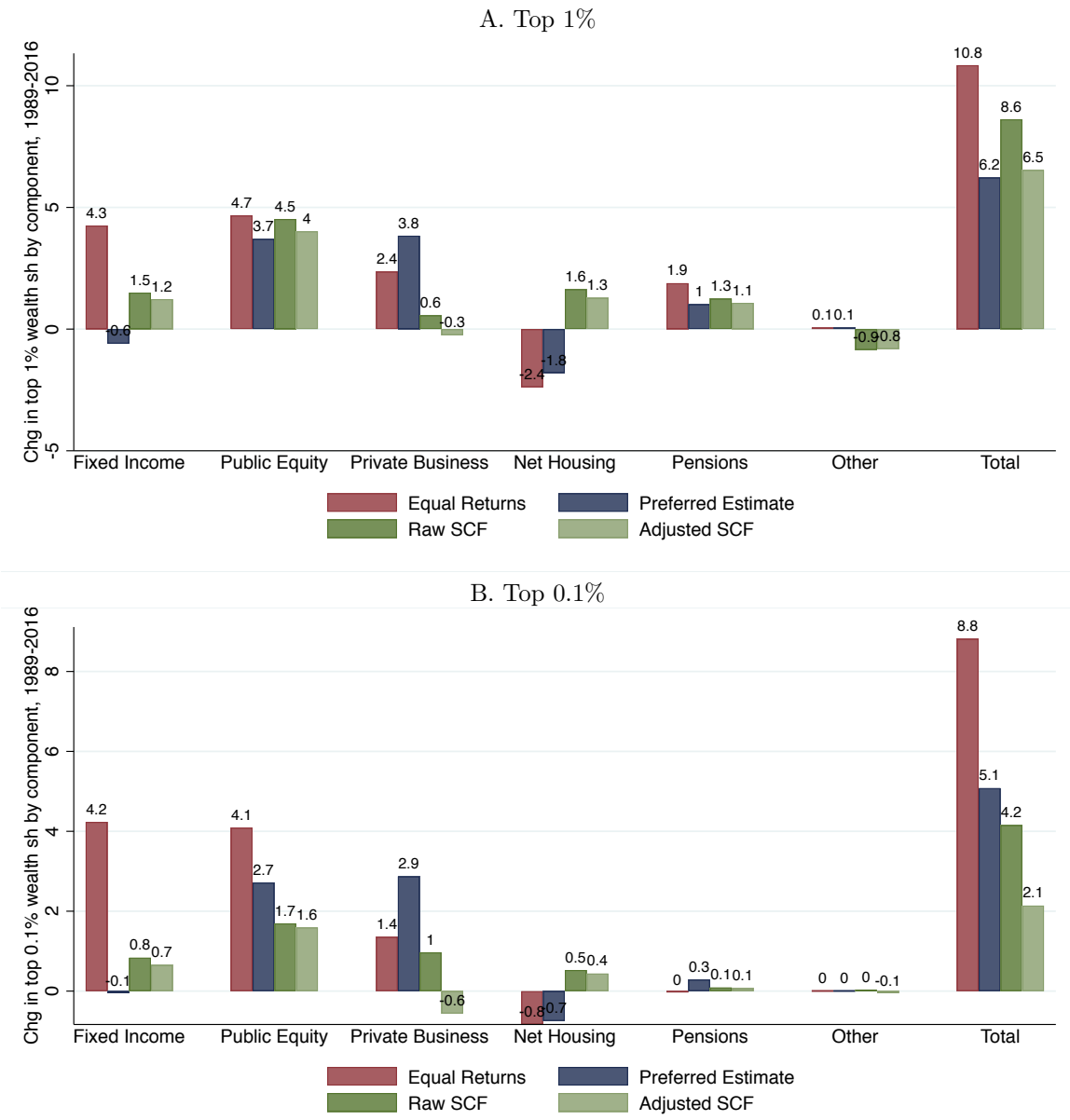
Notes : This figure calculates top wealth by asset type under alternative capitalization assumptions. It plots predicted versus actual SCF wealth using data on flows and stocks from the SCF. Predictions take flows as an input and produce estimates of fixed income wealth in the left graph and of equity wealth in the right graph. The dashed line plots the 45-degree line. Points on the graphs show predicted wealth for different income groups for a given year. The predictions are based on our preferred approach and the equal-returns approach for fixed income and the equal-weight approach for equity wealth, respectively.

Figure 4: Top Shares of Wealth in the SCF Before and After Adjustments



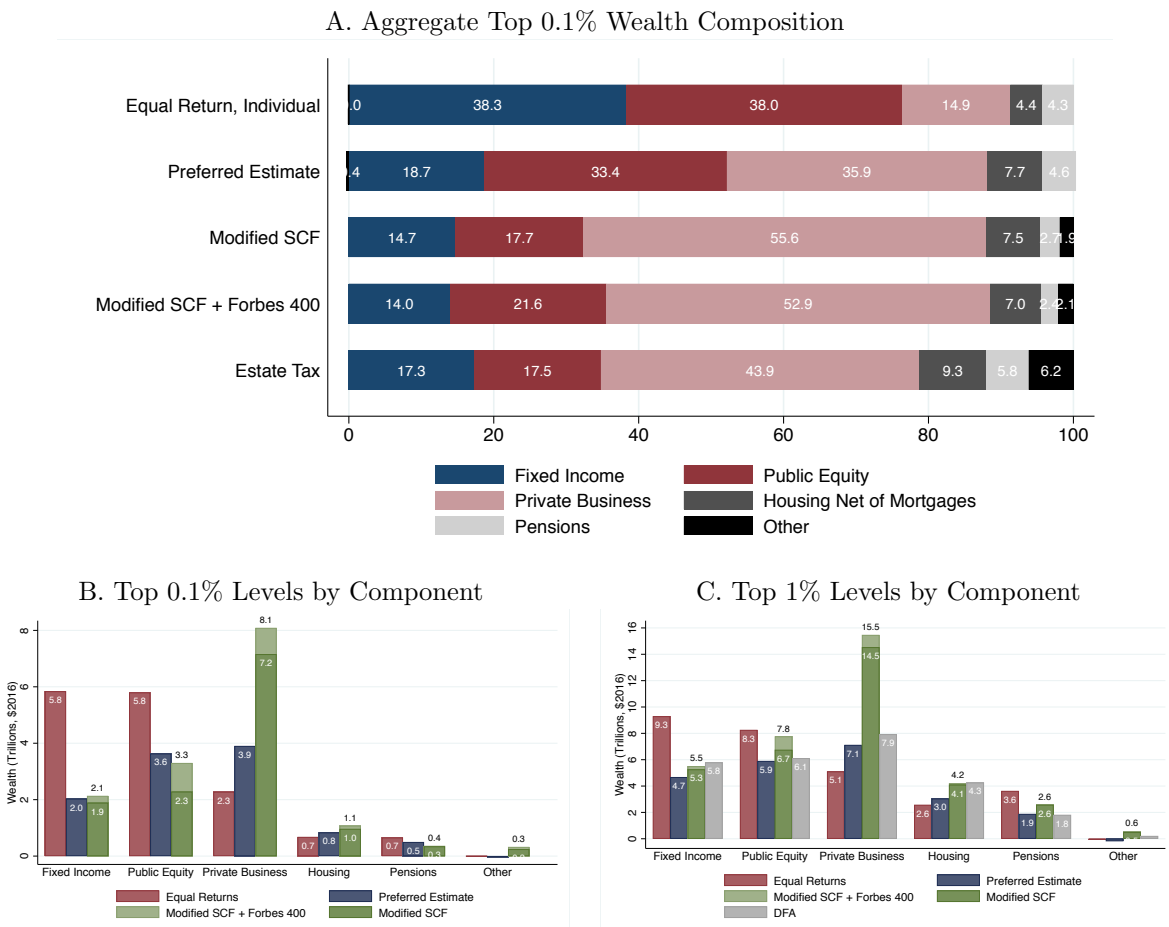
Notes: The Raw SCF specification ranks by and uses the net worth bulletin concept directly from the SCF. To obtain tax unit ranks in the SCF, we follow Saez and Zucman (2016) in computing the number of households with wealth greater than each SCF observation, dividing this quantity by the number of US tax units in that year, and subtracting this quantity from one. To obtain equal split ranks in the SCF, we clone observations for which the respondent is married and halve net worth, then compute the number of "individuals" with wealth greater than each observation, divide this quantity by the number of US equal split individuals, and subtract this quantity from one. This procedure first converts household wealth into equal split wealth as we do in the tax data, and then adjusts the threshold to match the number of observations in the tax data. Defined benefit wealth adjustments rank by and use defined benefit wealth from Sabelhaus and Henriques Volz (2019). Liquidity discount entails subtracting off 10% of private business wealth from net worth. Panels A and B show baseline and final adjusted series, as well as series adjusted exclusively for DB wealth, tax unit rankings, and Forbes 400 wealth. Adjustments in panels C and D are successive. All Adjustments series in panels A and B are top shares after applying all adjustments from panels C and D.

Figure 5: Change in Top Wealth Shares by Component: 1989-2016



Notes: This figure decomposes the growth of the top 1% and 0.1% share of aggregate wealth by portfolio category under alternative scenarios. See the notes for Figure 6 for component definitions.

Figure 6: Top Wealth Composition in 2016 under Alternative Specifications



Notes: This figure presents top wealth levels and portfolio shares in 2016 under alternative scenarios, and for the SCF, the Distributional Financial Accounts, and using estate tax returns. The Equal Return series allocates wealth following the capitalization approach in Saez and Zucman (2016). The Preferred Estimate series allocates fixed income asset wealth assuming a three-tiered correspondence of fixed income flows to rates of return (Aaa for top 0.1%, UST10 for P99-99.9, residual for P0-99), C-corporation equity wealth using 90% dividends plus 10% of realized capital gains, housing values using state-specific capitalization factors, pass-through equity using industry-specific market-based valuation models with liquidity and human-capital adjustments, and an age-specific pension model. See Appendix D for detailed definitions. For the preferred and DFA series, 20% of C-corporation wealth is reallocated to the private business category to account for private C-corporations. As described in Appendix G.1.1 , the Modified SCF series plots the wealth allocation in the SCF after including the Sabelhaus and Henriques Volz (2019) defined benefit pension wealth and removing consumer durables, and Modified SCF + Forbes 400 adds Forbes 400 wealth to the modified SCF series. Estate Tax Returns uses data from the SOI Estate Tax Statistics (IRS, 2001-2017). The threshold for the top 0.1% in 2016 is $14.1M, so the estate tax cross-section only includes tax returns whose size of gross estate is at least $10M.

6 Tables

Table 1: Prediction Error in SCF for Taxable Fixed Income Assets by Approach

Group	Actual	Predicted			Fit		
	SCF	SZ	UST 10	SZZ	SE_{SZ}	$SE_{UST\ 10}$	SE_{SZZ}
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A. 2016 fixed income totals ($ M)							
Bot 90% Interest Income	0.04	0.00	0.00	0.00	0.98	0.93	0.92
Top 10% Interest Income	0.59	1.10	1.10	1.11	0.75	0.76	0.80
Top 1% Interest Income	1.83	5.29	3.24	2.81	3.58	0.59	0.29
Top 0.1% Interest Income	6.47	28.22	12.43	7.10	11.29	0.85	0.01
Top 0.01% Interest Income	29.63	136.34	60.05	30.10	12.97	1.05	0.00
		Panel mean squared error:			5.91	0.84	0.40
Panel B. 2016 fixed income portfolio shares (%)							
Bot 90% Interest Income	7.64	0.09	0.28	0.33	0.98	0.93	0.92
Top 10% Interest Income	24.28	37.44	37.47	37.79	0.29	0.30	0.31
Top 1% Interest Income	22.33	45.41	33.74	30.64	1.07	0.26	0.14
Top 0.1% Interest Income	19.48	51.33	31.72	20.97	2.67	0.39	0.01
Top 0.01% Interest Income	18.54	51.15	31.57	18.78	3.09	0.49	0.00
		Panel mean squared error:			1.62	0.47	0.27
Panel C. 2001-2016 change in fixed income totals ($ T)							
Bot 90% Interest Income	1.87	-0.23	-0.18	-0.19	1.27	1.20	1.21
Top 10% Interest Income	3.65	8.02	8.16	8.34	1.43	1.53	1.65
Top 1% Interest Income	2.13	7.45	4.13	3.54	6.24	0.89	0.44
Top 0.1% Interest Income	0.95	4.76	1.73	0.83	16.31	0.70	0.02
Top 0.01% Interest Income	0.37	1.91	0.81	0.39	16.81	1.34	0.00
		Panel mean squared error:			8.41	1.13	0.67
Panel D. 2001-2016 change in fixed income portfolio shares (%)							
Bot 90% Interest Income	0.32	-0.88	-0.83	-0.89	14.24	13.20	14.61
Top 10% Interest Income	3.51	11.48	12.33	12.87	5.14	6.29	7.08
Top 1% Interest Income	-0.54	11.75	3.85	3.02	516.89	66.03	43.26
Top 0.1% Interest Income	-1.32	11.14	-4.37	-9.74	88.98	5.32	40.60
Top 0.01% Interest Income	2.28	29.36	12.59	4.54	140.51	20.35	0.97
		Panel mean squared error:			153.15	22.24	21.30

Notes: This table evaluates alternative capitalization assumptions using a cross-validation approach in the SCF. Column (1) shows actual SCF wealth moments for different taxable interest income groups. Columns (2)-(4) show predicted wealth moments using different capitalization approaches. Columns (5)-(7) present a goodness-of-fit measure for each capitalization approach, defined as squared prediction error or $(\frac{\text{Capitalized estimate}}{\text{Estimand in SCF}} - 1)^2$. Portfolio shares under each capitalization specification are computed as (Capitalized fixed income)/(`networth` + `tot_pen_db` − `vehic` − `taxbond_scf` + Capitalized fixed income), where `networth` and `vehic` are SCF bulletin concepts, `tot_pen_db` is Sabelhaus-Henriques Volz defined benefit pension wealth, and `taxbond_scf` is our definition of taxable fixed income assets in the SCF (see Appendix E for the exact definition). Interest income thresholds are taken according to the distribution of interest income in tax data.

Table 2: Thresholds and Average Wealth in Top Wealth Groups (2016)

Wealth group	Count	Threshold	Average wealth		Wealth share	
			Preferred	Equal Return	Preferred	Equal Return
Panel A. Top wealth groups (Preferred ranks)						
Full population	238,657,000		$317,000	$317,000	100.0%	100.0%
Top 10%	23,865,700	$658,000	$2,081,000	$2,158,000	65.6%	68.1%
Top 1%	2,386,600	$3,130,000	$9,403,000	$10,910,000	29.6%	34.5%
Top 0.1%	238,700	$14,100,000	$45,501,000	$58,688,000	14.3%	18.5%
Top 0.01%	23,800	$72,200,000	$215,743,000	$304,015,000	6.8%	9.6%
Panel B. Intermediate wealth groups (Preferred ranks)						
Bottom 90%	214,791,300		$121,000	$112,000	34.4%	31.9%
Top 10-1%	21,479,100	$658,000	$1,268,000	$1,185,000	36.0%	33.7%
Top 1-0.1%	2,147,900	$3,130,000	$5,392,000	$5,600,000	15.3%	15.9%
Top 0.1-0.01%	214,900	$14,100,000	$26,646,000	$31,518,000	7.6%	9.0%
Top 0.01%	23,800	$72,200,000	$215,743,000	$304,015,000	6.8%	9.6%
Panel C. Top wealth groups (Equal returns ranks)						
Full population	238,657,000		$317,000	$317,000	100.0%	100.0%
Top 10%	23,865,800	$600,000	$1,976,000	$2,289,000	62.3%	72.3%
Top 1%	2,386,600	$3,430,000	$8,496,000	$12,067,000	26.8%	38.1%
Top 0.1%	238,700	$17,300,000	$40,768,000	$63,860,000	12.8%	20.2%
Top 0.01%	23,800	$97,900,000	$192,686,000	$336,634,000	6.1%	10.6%
Panel D. Intermediate wealth groups (Equal returns ranks)						
Bottom 90%	214,791,200		$133,000	$97,000	37.7%	27.7%
Top 10-1%	21,479,200	$600,000	$1,251,000	$1,203,000	35.5%	34.2%
Top 1-0.1%	2,147,900	$3,430,000	$4,910,000	$6,312,000	13.9%	17.9%
Top 0.1-0.01%	214,900	$17,300,000	$23,943,000	$33,651,000	6.8%	9.6%
Top 0.01%	23,800	$97,900,000	$192,686,000	$336,634,000	6.1%	10.6%

Notes: This table provides summary statistics on the distribution of wealth across individuals in 2016. Average wealth and wealth shares are calculated under our preferred specification and the equal-returns specification, which follows the capitalization approach in Saez and Zucman (2016). Our preferred capitalization allocates fixed income asset wealth assuming a three-tiered correspondence of fixed income flows to rates of return (Aaa for top 0.1%, UST10 for P99-99.9, residual for P0-99), C-corporation equity wealth using 90% dividends plus 10% of realized capital gains, housing values using state-specific capitalization factors, pass-through equity using industry-specific market-based valuation models with liquidity and human-capital adjustments, and an age-specific pension model. See Appendix D for detailed definitions.

Table 3: Prediction Error in SCF for Equity Assets by Approach

Group	Actual	Predicted		Fit	
	SCF	SZ	SZZ	SE_{SZ}	SE_{SZZ}
	(1)	(2)	(3)	(4)	(5)
Panel A. 2016 equity totals ($ M)					
Bot 90% Equity Income	0.02	-0.00	0.00	1.18	0.91
Top 10% Equity Income	0.80	0.83	0.74	0.00	0.01
Top 1% Equity Income	2.24	2.77	2.32	0.06	0.00
Top 0.1% Equity Income	5.32	9.58	6.60	0.64	0.06
Top 0.01% Equity Income	20.21	56.34	32.65	3.19	0.38
	Panel mean squared error:			1.02	0.27
Panel B. 2016 equity portfolio shares (%)					
Bot 90% Equity Income	4.49	-0.42	0.22	1.19	0.90
Top 10% Equity Income	52.75	53.61	50.84	0.00	0.00
Top 1% Equity Income	46.87	52.19	47.71	0.01	0.00
Top 0.1% Equity Income	37.66	52.12	42.84	0.15	0.02
Top 0.01% Equity Income	29.24	53.53	40.03	0.69	0.14
	Panel mean squared error:			0.41	0.21
Panel C. 2001-2016 change in equity totals ($ T)					
Bot 90% Equity Income	0.15	0.13	0.10	0.02	0.13
Top 10% Equity Income	5.74	3.20	5.23	0.20	0.01
Top 1% Equity Income	5.17	3.23	5.00	0.14	0.00
Top 0.1% Equity Income	2.72	2.19	3.23	0.04	0.04
Top 0.01% Equity Income	0.86	-0.01	0.95	1.03	0.01
	Panel mean squared error:			0.28	0.04
Panel D. 2001-2016 change in equity portfolio shares (%)					
Bot 90% Equity Income	-2.95	0.95	0.24	1.75	1.17
Top 10% Equity Income	4.52	-5.00	4.08	4.44	0.01
Top 1% Equity Income	-7.05	-18.80	-9.18	2.78	0.09
Top 0.1% Equity Income	-10.42	-22.28	-12.01	1.29	0.02
Top 0.01% Equity Income	-12.65	-27.51	-21.09	1.38	0.45
	Panel mean squared error:			2.33	0.35

Notes: This table evaluates alternative capitalization assumptions using a cross-validation approach in the SCF. Column (1) shows actual SCF wealth moments for different equity income groups, where equity income is defined as the sum of dividends and realized capital gains. Columns (2) and (3) show predicted wealth moments using different capitalization approaches. Columns (4) and (5) present a goodness-of-fit measure for each capitalization approach, defined as squared prediction error or $(\frac{\text{Capitalized estimate}}{\text{Estimand in SCF}} - 1)^2$. Portfolio shares under each capitalization specification are computed as (Capitalized equity)/(`networth`+`tot_pen_db`−`vehic`−`equity_scf`+Capitalized equity), where `networth` and `vehic` are SCF bulletin concepts, `tot_pen_db` is Sabelhaus-Henriques Volz defined benefit pension wealth, and `equity_scf` is our definition of public equity in the SCF (see Appendix E for the exact definition). Equity income thresholds are taken according to the distribution of equity income in tax data.