

Comment: Inequality and Philanthropy: High-Income Giving in the United States 1917–2012

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Abstract

Using tax data over nearly a century, Duquette (2018) estimated that high-income charitable contributions as a share of income moved inversely with income inequality. These estimates relied on fiscal income, an inconsistent measure of income, and public use tax data, which is non-representative of high-income charitable contributions in recent decades. Using measures of national income, a more consistent and comprehensive measure of income, and representative confidential data, I estimate that since 1960, high-income contribution rates moved positively with income inequality. Rather than implying that high-income contributions respond to inequality, this correlation appears related to contemporaneous fluctuations in stock market values and top income shares. These estimates suggest researchers should be cautious when using tax data—especially public use tax data—to study high-income contribution behavior.

Keywords: Income inequality, Charitable giving, Taxation, Tax data
JEL: D31, D64, E01, H24, N32

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Charitable contributions by those with high incomes represent a large fraction of total contributions in the United States. These donors also receive a disproportionate share of tax benefits from deducting contributions. For example, the Joint Committee on Taxation (2018) estimates that \$57 billion of federal income tax revenue was forgone by this deduction in 2017, and almost half of this tax benefit went to the top one percent of tax units.¹ The large loss of revenue from charitable deductions and its distributional impacts highlight the importance of Duquette (2018, hereafter Duquette), which analyzed long-run trends in charitable contributions among high-income tax units.

Duquette provided estimates of high-income contributions from both hand-collected data going back an entire century and more recent microdata. He estimated that contributions as a share of income (contribution rates) moved inversely with income inequality, as measured by top income shares. But this result relied on estimates of fiscal income, which is limited to income reported on individual tax returns. Thus, fiscal income misses a substantial share of high incomes, especially from corporate retained earnings, which are not reported on individual tax returns and were important in the 1960s and 1970s.² This causes an underestimation of top incomes before the Tax Reform Act of 1986. Following this reform, changed tax incentives caused a larger share of top incomes to be included in fiscal income (Auten and Splinter, 2018). Fiscal income therefore results in inconsistent measures of top incomes and high-income contribution rates.

Distributional national income measures seek to address these concerns and provide more consistent measures of top incomes. These estimates have become available with Piketty, Saez, and Zucman (2018, hereafter PSZ) and Auten and Splinter (2018, hereafter AS), but it appears that Duquette began his study before these were available. Using fiscal income, Duquette estimated a long-run inverse U-shaped pattern of high-income charitable contributions rates. When instead using national income measures, I find that high-income contribution rates were relatively constant over the last hundred years. This difference mostly results from using a broader definition of income that is more appropriate for determining the resources from which

¹ A tax unit includes all individuals filing a tax return together or who would file together for non-filers. The top one percent estimate is based on estimates from the individual tax model of the Joint Committee on Taxation (2015).

² Duquette refers to fiscal income as “broad income,” despite its narrow scope. For example, in recent years, fiscal income only captures about 60 percent of national income. The definition of fiscal income in Duquette and here excludes capital gains realizations.

contributions can be made. Including top income sources missing from individual tax returns will therefore tend to lower estimated contribution rates, especially in decades of more income sheltering into corporate retained earnings. For example, in 1970, top 0.1 fiscal income contribution rates were 8 percent, while for PSZ and AS national income they were only 3 percent. Using these more consistent measures of national income, a regression analysis shows that high-income contribution rates moved independently from inequality, and since 1960 moved positively with inequality.

Also, Duquette relied on public use tax data. These data have incomplete sampling of high-income tax returns in recent decades. Given that public use data are sampled to be representative of income, and contributions are not perfectly correlated with income (in particular, at the very top of the distribution), this incomplete sampling means these data are not representative of high-income contributions. I address this limitation by using confidential files that include all tax returns with very high incomes. These internal use files are available since 1979 and often referred to as INSOLE files.

In addition to using a more consistent definition of income and more representative data, I improve Duquette's regression approach by removing average real top incomes as an independent variable. This variable causes both endogeneity and multicollinearity problems. Duquette wrote that including real income makes his regressions comparable with the preceding literature. But the preceding literature used contribution *levels* (as opposed to contribution *rates*) as the dependent variable and did not include inequality as an independent variable. Duquette has also argued that a real income control is needed because contribution rates tend to increase with real income. However, this conflicts with the evidence that high-income contribution rates, as well as distribution-wide contribution rates, have been relatively constant over the long run despite significant real income increases.³

The federal income tax allows a deduction of charitable giving from taxable income for itemizing tax filers. This provides an implicit subsidy for these donations. High-income charitable deductions as share of income are expected to increase with increasing marginal tax rates because this implies a decrease in the tax price of giving, which is one minus the marginal

³ While contributions as a share of income are likely higher for those with counterfactually higher incomes in a given year (i.e., a luxury good), this comparative static concept does not imply that contribution rates should increase with economy-wide economic growth across many decades. Indeed, Duquette (pg. A-2) says that since 1956, total “[c]haritable giving has remained quite close to 2 percent of national income...”

tax rate. Duquette, however, generally estimated the opposite effect. Previous estimates of the price elasticity of charitable giving generally show the expected sign—giving moves inversely with the tax price of giving. For the 1980s and early 1990s, Auten, Sieg, and Clotfelter (2002) estimated a permanent elasticity of -1.3 . Over nearly three decades since 1979, Bakija and Bradley (2011) estimated permanent elasticities of about -1 . In a meta-analysis considering dozens of studies, Pelozo and Steel (2005) found a mean elasticity of -1.4 . For recent decades, I estimate top one percent elasticities of -0.8 and -1.4 (see online data), which show the expected sign and have similar magnitudes as the previous literature.⁴

In this comment, I first present evidence that high-income contribution rates were stable over the last century and likely increased in recent decades. Next, I show that real contributions from those with high incomes have increased dramatically in recent decades, have a strong correlation with stock prices, and diverge from public use data estimates. Finally, I present results of regressions estimating the relationship between high-income contribution rates, income inequality, and the tax price of giving.

I. Trends in high-income charitable giving

Figure 1 shows charitable contributions as a share of income for two income definitions for the top 0.01 percent (left panel) and top 0.1 percent of tax units (right panel). The fiscal income series estimated by Duquette shows an inverse U-shaped pattern between 1930 and 1990. This pattern disappears when using Piketty, Saez, and Zucman (2018) national income estimates, which show that high-income contribution rates were relatively constant.⁵ This difference largely results from including corporate retained earnings, which increase top incomes (and hence lowers contribution shares), especially in the 1960s and 1970s when business owners used corporations to shelter income from high individual tax rates (Auten and Splinter, 2018). The spike in 1931–1933 is because the PSZ top incomes are less than fiscal income in only these

⁴ The price elasticity of giving is usually defined as the percentage change in contributions resulting from a one percent change in the tax price of giving (Pelozo and Steel, 2005). Because the regressions estimated here use contribution rates, rather than contribution levels, these price elasticities are actually based on the percentage change in contribution rates.

⁵ Fiscal income groups are by tax units, meaning the top one percent includes one percent of all tax units. PSZ income groups are by the number of adults, meaning the top one percent includes one percent of all adults. I estimate charitable contributions for PSZ top income groups since 1960 using tax return microdata (confidential data since 1979), using fiscal income and grouping by the number of adults, and in earlier years start with the values for tax units from Duquette, which are similar to estimated 1960 values for adults. Grouping by tax units or adults has a relatively small impact.

years. The spike in 1986 is related to the realization of capital gains to avoid tax rate increases the following year (Auten, Splinter, and Nelson, 2016). Thus, capital gains realizations appear to be associated with an increase in high-income charitable giving.⁶

Figure 2 considers alternative measures of national income shares from Auten and Splinter (2018). These estimates start in 1960, the first year tax return microdata are available.⁷ As with the PSZ income comparison, the downward half of the Duquette inverse U-shape contrasts with the flat trend for AS national income. Also, AS income shows that high-income giving rates increased in recent decades. Comparing two-decade periods, 1960–1980 and 1995–2015, we see that the share of AS income given by the top 0.1 percent increased from 3 to 5 percent. For the top 0.01 percent it increased from 4 to 6 percent.⁸ This suggests that those with high incomes have recently become more generous. As shown next, this may be related to stock prices.

Figure 3 (left panel) shows the real average contributions of the top 0.01 percent. Real contributions increased dramatically since 1995. This corresponds with a dramatic increase in real stock market valuations.⁹ In fact, since 1960 there is a 0.92 correlation between real top 0.01 percent charitable contributions and real S&P 500 index values. The correlation of log annual changes (and biannual changes when missing data) is 0.44. This is the same value estimated by List and Peysakhovich (2011) for overall contributions, although they note that contributions are more responsive to stock prices increases than decreases. Duquette also finds suggestive evidence that contributions and non-labor income—which includes capital gains—are positively correlated. Rather than responding to inequality, high-income contributions perhaps respond more to income sources that can be perceived as having resulted from luck, such as stock price changes, as opposed to individual effort.

⁶ Capital gains realizations are excluded from both fiscal income and national income. Instead, national income measures include corporate retained earnings, which proxy for capital gains over longer-run periods.

⁷ I estimate charitable contributions for AS top income groups using tax return microdata (confidential since 1979) and the AS computer code.

⁸ Pre-tax income, however, does not provide the best measure of income available for charitable contributions. When including cash transfers (such as Social Security) and removing taxes that do not allow for charitable deductions (all taxes other than federal, state, and local income taxes), the share of giving for the top 0.01 percent increased from 5 to 7 percent (see online data).

⁹ An expansion of stock options following the 1993 limitation of the deductibility of executive compensation at \$1 million may also be related to this timing.

For very high-income returns, the public use file can result in non-representative estimates for non-income variables, such as charitable contributions. Bryant et al. (2014) explain that in recent years the sampling rate of returns with total positive income over \$5 million (in 1991 dollars and indexed) was only 1 in 10.¹⁰ High-income strata were previously sampled at higher rates, with a rate of 1 in 3 in the early 2000s (Winglee et al., 2002) and nearly 100 percent before 1984, as noted by Duquette. In contrast, these high-income returns are always sampled at a 100 percent rate in the confidential data.

Figure 3 (right panel) presents a comparison of high-income contributions using public use and confidential data. A log scale allows for a better comparisons between the series. For the top 0.01 percent, the public use and confidential data series correlate strongly until the 1990s and then increasingly diverge. For example, in 2012, the last year estimated by Duquette, average top 0.01 percent contributions were only \$1.2 million in the public use data but \$2.0 million in the confidential data. Top 0.1 percent (excluding the top 0.01 percent) contributions are similar in the public use and confidential data, suggesting that data differences are mostly due to the very top of the distribution. These diverging estimates can contribute to different estimates of the relationship between high-income giving and inequality.

II. Regression analysis

To evaluate the relationship between high-income contributions and inequality, as well as the price elasticity of charitable giving, I reconsider Duquette's simple time series by estimating regressions for various top income groups of the form

$$(1) \quad \text{ContributionRate}_t = \alpha + \beta \cdot \text{TopIncomeShare}_t + \delta \cdot \text{TaxPrice}_t + \varepsilon.$$

$\text{ContributionRate}_t$ is charitable contributions as a share of income in year t . TopIncomeShare_t is the top income share in year t . These two measures vary with the definition of income. TaxPrice_t is the federal tax price of giving, which is one minus the marginal tax rate on ordinary income in year t , and through 2012 are the values used by Duquette. All variables are log-transformed and specific to each top income group. This replicates Duquette's approach,

¹⁰ In addition, a number of returns with very high incomes are removed before this subsample is drawn. This effectively creates a top-code that further distorts estimates of high-income contributions.

with one exception. The original regression estimated by Duquette included average top incomes as an independent variable. I remove average top income because it creates endogeneity and multicollinearity problems due to its relationship with *ContributionRate* and *TopIncomeShare*.¹¹

First, I estimate regressions using PSZ income. Whereas, Duquette estimated coefficients for top fiscal income shares of about -1.0 significant at the one percent level, Table 1 (columns 1 and 2) shows that PSZ national income results in coefficients that are still negative but have smaller magnitudes and are not significant at the five percent level.¹² When dropping either 1929 or 1930, the coefficients on top income share are not significant at the ten percent level.

Second, I restrict the analysis to years since 1960 when microdata was used, which provides more precise estimates of both top income shares and charitable giving (columns 3 and 4).¹³ There is now a significant *positive* relationship between giving and inequality. Moreover, the sign of the tax price of giving is now the expected sign and significant.

Third, I restrict the analysis to years since the Tax Reform Act of 1986 significantly changed high-income tax incentives and income reporting behavior (columns 5 and 6). Moreover, this also removes possible contaminating effects of changes in the share-of-AGI limitation on the deductibility of charitable contributions.¹⁴ These estimates may therefore be more consistent across years and more representative of recent correlations with inequality. The relationship between high-income contribution rates and inequality is now even stronger. The price elasticities for both the top 0.1 and 0.01 percent are significant and equal -1.4 .

¹¹ Specifically, *ContributionRate* equals average top contributions divided by average top income and *TopIncomeShare* equals average top income times the number of top observations divided by average income and the total number of observations. Duquette's appendix Table A10 showed fiscal income time series regressions without average income controls, which still resulted in negative coefficients for inequality and positive coefficients for the tax price of giving.

¹² This analysis is similar to Duquette's appendix Table A6, which showed a top 0.01 percent coefficient for PSZ income shares of -0.711 significant at a one percent level, but still used fiscal income for contribution rates. Duquette acknowledged the bias from using mismatched income groups for top income shares and contribution rates. This mismatch is addressed in this comment by using similarly defined income groups for both income shares and contribution rates. My analysis replaces *ContributionRate* with values estimated from confidential data since 1979 and with income groups by adults since 1960, drops average income from the regression, and extends the analysis two years.

¹³ This also avoids estimation issues related to the change from net income to adjusted gross income in 1944, which appear to cause pre-WWII overestimations of top income shares for both fiscal income and PSZ measures (Geloso et al., 2018).

¹⁴ Duquette (2019) discusses the increase in the share-of-AGI-limit from 15 to 50 percent between 1917 and 1969. His elasticities suggest that this 35 percentage point increase would be associated with an increase in charitable giving of between about 10 and 20 percent. The deduction limit can result in some shifting of contribution deductions to later years from the actual years of contributions with carryovers. My results are similar when only considering current-year contributions.

Fourth, I replace PSZ estimates with AS estimates (columns 7 and 8). The relationship between high-income contribution rates and inequality and the tax price of giving are now even stronger and significant at the one percent level.¹⁵

III. Conclusion

This comment reconsiders the findings of Duquette (2018), which used fiscal income and public use data to study high-income charitable contributions. Instead, I use new estimates of national income distributions, which are more consistent measures than fiscal income, and confidential data, which corrects for non-representative high-income contributions in public use data. Opposite the findings of Duquette, I estimate that high-income Americans had higher charitable contribution rates in years of higher income inequality.

For top income groups, contribution rates were relatively constant over the last hundred years and appear to have increased since 1995. This suggests increasing high-income generosity in recent decades. While my cross-sectional regressions suggest a positive correlation between high-income giving rates and top income shares, this does not necessarily mean that changes in high-income contributions resulted from perceptions of inequality.¹⁶ Instead, high-income contribution rates correlate with contemporaneous fluctuations in inequality and stock values. Cross-sectional and synthetic panel data cannot disentangle these two effects, suggesting that true panel-based approaches are needed to study the causes of high-income charitable contributions.

¹⁵ The price elasticity of the top one percent is -0.8 for PSZ income and -1.4 for AS income (see online data). One may expect higher elasticities for the very top of the income distribution.

¹⁶ Given that estimates of top income shares take a few years to be released, high-income households cannot know current year inequality when making contribution decisions.

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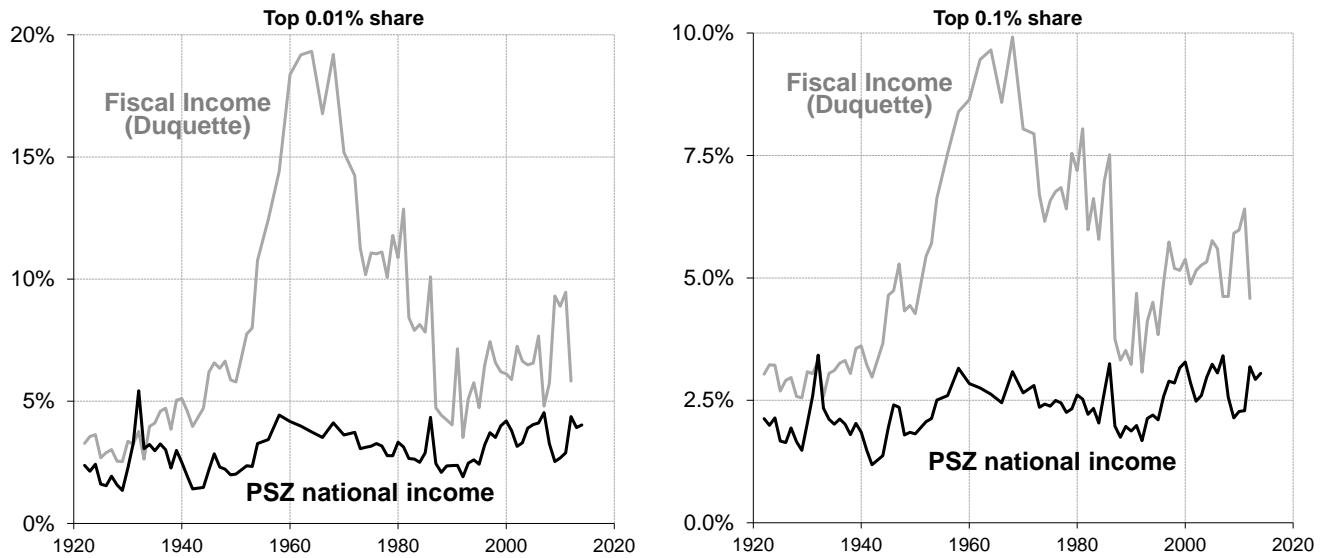
Table 1: Regressions of Contribution Rates/Income for various income definitions and years

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	PSZ: 1917–2014		PSZ: 1960–2014		PSZ: 1988–2014		AS: 1988–2015	
	Top 0.1%	Top 0.01%	Top 0.1%	Top 0.01%	Top 0.1%	Top 0.01%	Top 0.1%	Top 0.01%
Top Income Share	-0.299 ⁺ (0.158)	-0.367 ⁺ (0.184)	0.300* (0.117)	0.278* (0.119)	0.663** (0.188)	0.545* (0.207)	1.034** (0.128)	0.862** (0.142)
Tax Price of Giving	0.013 (0.074)	-0.0001 (0.106)	-0.190* (0.073)	-0.274** (0.076)	-1.396** (0.398)	-1.381* (0.502)	-2.306** (0.363)	-2.983** (0.512)
Constant	-3.208** (0.318)	-3.235** (0.250)	-4.346** (0.245)	-3.876** (0.152)	-5.628** (0.392)	-4.694** (0.275)	-1.220** (0.397)	-0.978 ⁺ (0.571)
Observ.	83	83	49	49	27	27	28	28

Notes: + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$. The dependent variable is charitable contributions as a share of income for each pre-tax income definition and top group. These estimates are an extension of Duquette (2018) Table 1 and also use the Prais-Winsten correction to adjust coefficients for serial correlation and show robust standard errors in parentheses. Years of missing data are 1943, 1951, 1955, 1957, 1959, 1961, 1963, 1965, 1967, 1969, and 1971.

Sources: Duquette (2018) online data, which includes newly assembled data and estimates from Piketty and Saez (2003 and updates), Piketty, Saez, and Zucman (2018), Auten and Splinter (2018), and author's calculations using tax return data.

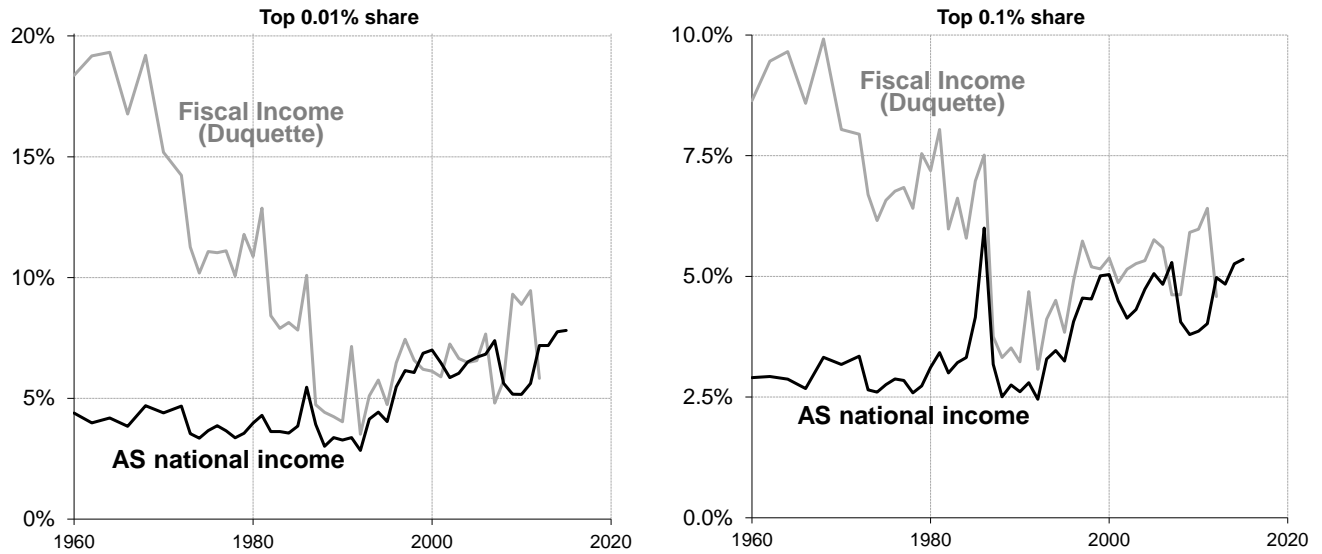
Figure 1: Charitable contributions as a share of income: fiscal income vs. PSZ income



Notes: Fiscal income is pre-tax market income reported on individual tax returns excluding capital gains. Piketty, Saez, and Zucman (2018, PSZ) national income is also a pre-tax measure of income. Years of missing data are interpolated for 1943, 1951, 1955, 1957, 1959, 1961, 1963, 1965, 1967, 1969, and 1971.

Sources: Duquette (2018) online data, which includes newly assembled data and estimates from Piketty and Saez (2003 and updates), Piketty, Saez, and Zucman (2018), and author's calculations using tax return data.

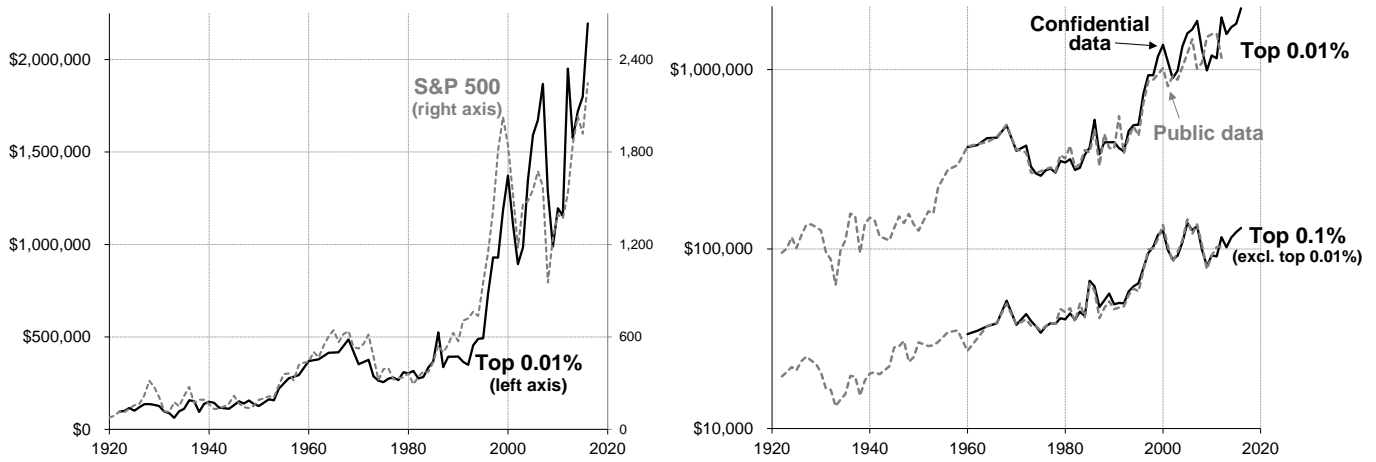
Figure 2: Charitable contributions as a share of income: fiscal income vs. AS income



Notes: Fiscal income is pre-tax market income reported on individual tax returns excluding capital gains. Auten and Splinter (2018, AS) national income is also a pre-tax measure of income. Years of missing data are interpolated for 1961, 1963, 1965, 1967, 1969, and 1971.

Sources: Duquette (2018) online data, which includes newly assembled data and estimates from Piketty and Saez (2003 and updates), Auten and Splinter (2018), and author's calculations using tax return data.

Figure 3: Charitable contributions per tax unit and S&P 500 values (2015 dollars)



Notes: Income groups are set by fiscal income and tax units. Right figure is on a log scale. Public data series is based on Duquette (2018). S&P 500 values are for Jan. 1 of the following year. Years of missing data are interpolated for 1943, 1951, 1955, 1957, 1959, 1961, 1963, 1965, 1967, 1969, and 1971.

Sources: Duquette (2018) online data, which includes newly assembled data and estimates from Piketty and Saez (2003 and updates), www.multpl.com, and author's calculations using tax return data.