Tax Prices and Charitable Giving: Projected Changes in Donations Under the 2017 TCJA

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Abstract

We estimate the tax price elasticity of charitable giving using newly-available data from the Panel Study of Income Dynamics. We find that households that always itemize are less sensitive to tax preferences than households that switch itemizing status. We apply these results to the provisions of the Tax Cut and Jobs Act of 2017, taking into account the marginal propensity to donate from the increase in disposable income expected for most households, and predict significant reductions in charitable giving.

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1. Introduction

The Tax Cut and Jobs Act of 2017 (TCJA) made significant changes to the rate structure of the Internal Revenue Code of the United States.[1] One of the many activities potentially affected by this change in marginal tax rates – and, in particular, the near-doubling of the standard deduction – is charitable giving. At the time of its debate and passage, many commentators asserted that charitable giving would be reduced (see, e.g. McQueeney, 2017). Indeed, recently-released aggregate data does indicate a decline of 3.4 percent in giving by individuals in 2018 (GivingUSA, 2019), though drawing a direct causal relationship is difficult because of other changes in economic conditions and incentives to shift giving into the 2017 tax year. Charitable giving is sensitive to macroeconomic conditions (List and Peysakhovich, 2011; Meer, Miller, Wulfsberg, 2017), and this likely impacted giving (Osili and Zarins, 2019).

By reducing marginal tax rates by 1 to 4 percentage points, the TCJA increases the tax price of giving for those who itemize their deductions. For those households, each dollar donated to a qualifying charity reduces their taxable income by one dollar, thus lowering their tax liability by their marginal tax rate. More importantly, though, the increase in the standard deduction means that far fewer households are expected to itemize, thus eliminating the direct tax incentive to make a charitable donation; projections suggest that the proportion of itemizing tax filing units will fall from about 25 percent to about 11 or 12 percent (Gale et al., 2018; Joint Committee on Taxation, 2018).

[1] For procedural reasons, the formal title of the bill is "Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for fiscal year 2018." We will refer to it by its colloquial name throughout for brevity. Other major provisions in the individual income tax code include the elimination of the personal exemption (and therefore its phase-out), the elimination of the Pease phase-out for itemized deductions, a cap on the deduction for state and local taxes, an increase in the child tax credit, and the use of chained CPI to index provisions of the tax code. The maximum amount of the charitable giving deduction was increased from 50% of Adjusted Gross Income to 60%, which Duquette (2019) suggests will increase charitable giving by high-income donors substantially. Changes were also made to the estate tax, which may affect charitable bequests (see Bakija, Gale, and Slemrod, 2003; Joulfaian, 1991; and Meer and Rosen, 2013).

The deduction for charitable giving has existed since the War Revenue Act of 1917, with the justification that charitable organizations may provide valuable societal services while being more responsive than the government. Prior to the TCJA, this provision reduced federal income tax revenue by approximately $57 billion, with about 70 percent of that benefit accruing to households earning over $200,000 per year. Estimates of the reduction in itemized giving suggest that the effects of this provision fell to about $40 billion in 2018 (JCT 2017, 2018). For a discussion of tax policy and charitable giving, see Bakija (2013), Clotfelter (2016), and Duquette (forthcoming); for a broader look at motivations for philanthropy, see Bekkers and Wiepking (2012) and Gee and Meer (2019).

We provide new estimates of the tax price elasticity of charitable giving using nine waves of the Panel Study of Income Dynamics (PSID) and apply these estimates to the provisions of the TCJA; we discuss the advantages and disadvantages of these data below. Because of the large number of households that make no donations, we separately estimate the likelihood of giving and the amount given conditional on making a donation using fixed effects models and combine these estimates for an overall effect on donations. Further, since the tax price of giving is endogenous - that is, those who donate large amounts may lower their marginal tax rates, leading to a spurious correlation – we follow much of the existing literature and instrument with the "first-dollar price." That is, we estimate what the household's price of giving would have been without any donations and use that as a proxy for the actual price of giving.

We also examine for the marginal propensity to donate from income (see Meer and Priday, 2019, for more details). The TCJA lowered tax liability for about 80 percent of households, with an average reduction of about $1600 for all tax units (Gale *et al.*, 2018). The increase in disposable income should increase giving to some degree, offsetting some of the reduction due to an increase in the tax price. Previous academic research on this topic

has focused on the direct impact of a change in the tax price of giving, holding all else constant. But a full accounting of the impact of the TCJA on giving should include this change in income.[2]

In line with the previous literature, we find that charitable giving is responsive to tax incentives. A 10 percent increase in the price of giving (equivalent to a reduction in marginal tax rates from, for example, 30 percent to 23 percent) is expected to reduce giving by 10.4 percent, though effects are smaller for those who continue to itemize. We find that the marginal propensity to donate is small and, for most households, the size of the increase in disposable income from the TCJA is sufficiently low that this term does not affect the overall estimates very much.[3] Given that the TCJA is expected to significantly alter itemizing behavior, we estimate our results separately for households that always itemize and those that switch; we find that switchers tend to be more sensitive to the tax price. We also find that there are some lagged effects, suggesting that taxpayers take some time to adjust their giving to changes in the tax code.

Of course, our work is subject to limitations. In particular, the PSID does not include many very high earners, who make a large proportion of charitable donations. For example, tax units with earnings over $2 million made $63 billion in deductible contributions in 2016, or about 30 percent of the total, despite making up about 0.1 percent of the population (IRS, 2018). But there are only two such observations in the PSID in that year. We apply our estimates to data from the Internal Revenue Service Statistics of Income to provide some indication of expected effects on these households.

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[2] There are several thorough and in-depth projections of the TCJA's effect on charitable giving, including Brill and Choe (2018), Gleckman (2018), and IUPUI (2017, 2019). These estimates suggest a reduction of about 4-5% in individual giving. However, these studies draw on an older literature for estimates of the tax price elasticity of giving and do not account for potentially countervailing income effects.

[3] Our fixed effects specification controls for permanent income, and we include controls for wealth, so this might best be viewed as the marginal propensity to donate from transitory income. Further details are in Meer and Priday (2019).

In Section 2, we briefly review the literature on tax incentives for charitable giving. In Section 3, we discuss the PSID and its advantages and disadvantages for this type of analysis, as well as our econometric specification. Section 4 lays out the results, and Section 5 concludes.

2. Previous Literature

The rich literature on the impact of tax policy on charitable giving stretches back over a half-century.[4] Even limiting the focus to papers that use data from the United States, there is huge variety: the use of administrative tax data vs. surveys, panel data vs. cross-sections, approaches to dealing with those who do not make a donation, the inclusion of bequest giving, breakdowns by income level, and the examination of permanent vs. transitory changes in tax prices and income. Peloza and Steel (2005) provide a meta-analysis of sixty-nine papers from this earlier literature and find a weighted average of elasticities of about -1.1 when excluding outliers. More recently, Bakija and Heim (2011) use variation in federal and state tax rates on a panel of high-income taxpayers between 1979 and 2006, where nearly all of the observations in the sample have a positive amount of charitable giving. They find that giving is responsive to its tax price, as well as evidence that households adjust to tax changes over time.

Duquette (2016) takes a different approach, examining charities' revenues rather than individuals' donations. He finds significantly larger estimates of the tax price of giving, with an elasticity of about -4 and meaningful differences across types of charities.[5] Backus and

[4] See, for example, Taussig (1967), Feldstein (1975), Feldstein and Clotfelter (1976), Clotfelter (1980), Reece and Zieschang (1985), Feenberg (1987), Randolph (1995), Auten, Sieg, and Clotfelter (2002), among many others.

[5] Meer (2014) discusses the effects of the price of giving in different contexts, including the impact of fundraising or administrative costs and matches, and compares these estimates to the tax price elasticity of

Grant (2019), using earlier waves of the PSID, argue that the inclusion of a control for itemizing status is important to account for endogeneity arising from idiosyncratic shocks to giving that change itemization. They concede, though, that if the act of itemizing has its own direct effect on giving, then this term will also reflect a price effect.[6] This potential "itemization effect" is not novel (Boskin and Feldstein, 1977), but has received little attention in the literature, likely because of the difficulty in providing causal estimates. Ottoni-Wilhelm and Hungerman (2007) address it by separately estimating price elasticities for households that always itemize and those that switch between itemizing and not itemizing. We follow their approach, which is particularly valuable in analyzing the TCJA and its large impact on the likelihood of itemizing. They find that "switchers" are much more price-elastic than always-itemizers.[7] In later work, Hungerman and Ottoni-Wilhelm (2016) use a state-level tax credit for donations to educational institutions and find a lower elasticity than the rest of the literature, with estimates around -0.2.

Recent evidence from other countries also suggests that charitable contributions are sensitive to their tax treatment. Adena (2014) and Bönke and Werdt (2015) find that higher-income households in Germany have relatively high tax-price elasticities. Almunia, Lockwood, and Scharf (2018) find elasticities of about -0.35 in the United Kingdom, while Fack and Landais (2010) find elasticities of -0.2 to -0.6 from France's generous tax subsidies.

A frequently-discussed issue in the literature is that short-run responses to tax incentives may be larger than long-run responses because individuals may change the timing of their giving to take advantage of changes in the law (Randolph, 1995; Auten, Sieg,

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giving. Hungerman and Ottoni-Wilhelm (2016) directly compare tax- and match-elasticities for a state-level tax incentive for giving to higher education.

[6] The inclusion of this term changes our estimated elasticity from -1.04 to -0.61, but interpretation of this estimate is unclear given the potential "itemization effect."

[7] They also disaggregate giving into religious and secular causes, though the differences in price elasticities are not necessarily significant. Brooks (2007) finds that the price elasticity of giving differs across causes.

Clotfelter, 2002; Bakija and Heim, 2011). Ottoni-Wilhelm and Hungerman (2007) argue that policymaking in recent years, with tax bills going into effect on short notice and sometimes retroactively, make it difficult for households to anticipate future tax rates. But as discussed in Section 3.3, this issue may be a particular concern with the response to the TCJA.

3. Data and Specification

3.1 Data

The Panel Study of Income Dynamics (PSID) is a biennial household survey that collects information from the previous year on wealth, income sources, and a rich set of household characteristics. The Center on Philanthropy Panel Study (COPPS) data is a PSID module that includes charitable activity to religious and ten types of secular charities. We aggregate household giving to all charities for our primary analysis.

The PSID is especially advantageous for analyzing charitable activity. Wilhelm (2006) shows that the data are superior to other surveys, and compare well to tax return data below relatively high levels of income. While tax return data have the advantage of being more precise and covering high earners, donations only appear in tax data if the household itemizes. This excludes over two-thirds of tax filing units and results in a sample selected for higher income levels. This selection precludes estimating tax price elasticities of giving for households who itemize in some years but not in others. Unlike the PSID, tax return data do not disaggregate giving by charity type. Further, data on wealth are not available on tax returns, which is an important determinant of donative behavior (Bakija and Heim, 2011; James and Sharpe, 2007).[8]

[8] Duquette (2018) and Splinter (2019) discuss the impact of inequality on donations by high-income donors.

We use nine waves of the PSID spanning 2001-2017. These represent every other calendar year from 2000-2016. The raw sample has 16,148 households with 76,834 household-year observations. We remove 188 observations with negative net-of-tax income. We also remove the low income Survey of Economic Opportunity (SEO) oversample and the 2017 Immigrant Refresher.[9] Consistent with prior literature on tax price elasticities, we omit households that are "endogenous itemizers" – those who would not itemize if they had zero charitable contributions (Clotfelter, 1980; Backus and Grant, 2019; Ottoni-Wilhelm and Hungerman, 2007). These households are more likely to be making the decisions of whether to itemize and how much to donate simultaneously; their inclusion in the estimation makes elasticities appear larger in magnitude than they are in reality. There are 2,106 endogenous itemizer observations. To avoid introducing more measurement error from selectively eliminating observations, we remove all observations for a household that ever endogenously itemized (7,026 observations or 951 households). This leaves us with a final sample of 45,940 observations for 9,709 households. Across all household-years, 56% of households make a donation. Conditional on making a donation, the average (median) gift is $4,582 ($750). The mean (median) income of our sample is $85,697 ($61,163).

High-income households constitute a large portion of annual donations but are not sampled in large numbers in the PSID. To make predictions about changes in giving for these households, we use summary information on tax returns from the IRS Statistics of Income (SOI).[10] These tables provide estimates of the number of filers, totals from various income sources, and itemized deductions stated in individual income tax returns. Donations

[9] The 2017 Immigrant Refresher was intended to update the PSID sample to be more representative of the US demographic composition, but only appears for one year in our data. The SEO oversamples low income households which disproportionately lowers the average income of our sample. Combined, omitting them from our sample removes 23,651 observations. Including the oversample and refresher do not change the total elasticity estimate by any significant amount (approximately 0.02).

[10] Specifically, we use the Individual Statistical Tables by Size of Adjusted Gross Income, Table 1.4 and 2.1.

are only observed in tax data if the filer itemizes deductions, which most high earners do. We use these tables to generate a "representative tax filing unit" within four bins of adjusted gross income: $500k - $1M, $1M - $5M, $5M - $10M, and $10M+.

We use the National Bureau of Economic Research's TAXSIM program to calculate tax liability for each tax filing year in our sample (Feenberg and Coutts, 1993). TAXSIM uses tax-relevant household characteristics, sources of income, and deductions to calculate state and federal tax rates and liabilities. We use these tax liabilities to construct the tax price of giving for household i in year t. In the literature, this is typically addressed by calculating the price as $1 - I_{it}\tau_{it}$, where I_{it} is a binary variable equal to one if household i itemizes in year t and τ_{it} is the marginal tax rate. Calculating τ_{it} is not always straightforward, however, because of phase-ins and phase-outs of various credits and deductions, state treatments of charitable contributions, interactions with state taxes, and other vagaries of the tax code. TAXSIM accounts for all these components simultaneously when estimating tax liability.[11] We therefore estimate the tax price of giving as:

$$P_{it} = 1 + \frac{L'_{it} - L_{it}}{100}$$

where L_{it} is the tax liability for household i in year t and L'_{it} is the tax liability plus $100 of charitable donations. This will decrease the estimated tax burden by exactly the marginal tax benefit of donating. [12] Donating more will never increase tax liability, so L'_{it} is always less than L_{it}, which bounds $P_{it} \in [0,1]$.[13]

[11] There are 42 states that allow charitable deductions on state tax returns and 6 states that allow federal taxes to be deducted. See Duquette *et al.* (2019) for a discussion of the efficacy of state tax incentives for charitable giving.

[12] We also estimated the models with the more-traditional approach of calculating marginal tax rates to find the tax price of giving. Results were similar, though there were a number of unusual marginal tax rates due to notches, kinks, and phase-outs.

[13] The small number of households who are predicted to begin itemizing when $100 is added to their charitable contributions are are given a price of 1.

However, L_{it} is endogenous because households can increase donations enough to move into a lower tax bracket. This, in turn, makes P_{it} endogenous, as noted by Auten, Sieg, and Clotfelter (2002). We address this issue by modifying a standard approach in this literature: by constructing a "zero-dollar" rate where L_{it} is calculated with giving set to zero and L'_{it} with giving set to \$100 for i in t.[14] The corresponding zero-dollar price is used to instrument for the tax price P_{it}.[15]

The PSID asks respondents whether or not they itemized deductions on their taxes. Ottoni-Wilhelm and Hungerman (2007) note that this itemization status is measured with error, especially for low-income respondents who over-report itemizing. We instead use itemization status calculated by TAXSIM.[16] Though the calculated itemization status likely also introduces some measurement error, we avoid the endogeneity of self-reporting.

We use a similar approach in TAXSIM with high-income bins from the SOI data as with PSID. We observe the percentage of each AGI bin that itemizes its deductions. We use TAXSIM to estimate a single L_{it} and L'_{it} for the itemizers within each bin to find the tax prices because only itemizers have a charitable contributions average listed. For simplicity, we assume that non-itemizers have \$0 of itemizable expenses and a tax price of 1. Section 4.3 discusses in more detail how these estimates are applied.

We use the 2017 wave (2016 tax year) of the PSID to predict changes in giving from the Tax Cuts and Jobs Act (TCJA). The TCJA affected giving primarily through two channels: the standard deduction nearly doubled for all filers, removing the incentive to

[14] See Ottoni-Wilhelm and Hungerman (2007), Auten, Sieg, Clotfelter (2002), Backus and Grant (2019), among many others.

[15] About 5 percent of the sample has a zero-dollar tax price that differs from its actual tax price. This is not an uncommon issue in this literature, as discussed by Backus and Grant (2019).

[16] Reported and calculated itemization status agree for 82% of observations in our sample. 14% report itemizing when we calculate that they shouldn't have and 4% report not itemizing when they should have. Benzarti (2019) finds that some taxpayers do not itemize even when it is advantageous to do so due to high compliance costs.

itemize for large portions of itemizers, and changing marginal tax rates. Consistent with other projections, we see the proportion of itemizers go from 24.6% in 2016 to an estimated 7.0% under our TCJA counterfactual; the overall rates are lower that those found by others because many itemizers have incomes at levels that are not well-represented in the PSID.

3.2 Specification

We estimate the impact of income and the tax price of giving on the extensive and intensive margins of giving separately, then combine the estimates, using two-stage least squares with household and year fixed effects for each specification. Other controls include bins for the level of household wealth, marital status, household head's age and its quadratic, number of children, whether the head of the household is retired or disabled, his or her self-reported health status, religious affiliation, as well as state and year effects and a housing price index and its quadratic.

Previous work using samples of high-income taxpayers had few non-givers (e.g. Bakija and Heim, 2011) and did not have to address the well-known problems with observations censored at zero. Including non-donors in the analysis directly may bias findings towards less elastic estimates. Other work uses the Tobit (e.g. Brooks, 2007), though this model suffers from tractability problems with fixed effects, is likely not appropriate when zeroes arise from corner solutions rather than true data censoring, and constrains the marginal effects on the extensive and intensive margins to be related by a constant. This last issue is particularly problematic when considering the impact of, say, income, which may have very different impacts on the likelihood of making a donation and the amount given. The two-part hurdle model separates the decision of whether to give from how much

to give conditional on making a donation.[17] Standard errors are clustered at the household level.

The inclusion of household fixed effects controls for time-invariant factors that are correlated with giving and the tax price. The most important of these may be unobserved altruism. For example, more generous individuals may be more likely to succeed in the workplace, leading to a spurious correlation between donations, income, and tax rates. Changes in altruistic behavior that are correlated with changes in income may still lead to spurious correlation, though, such as if a pay raise coincides with a need to signal generosity to others. Additionally, these fixed effects control, in part, for permanent income. We also include controls for household wealth to further account for these issues.

Since the amount of charitable giving can affect a household's marginal tax rate, the price of giving is endogenous. As discussed above, we construct an instrument calculating the tax price of giving with donations set equal to zero. This will be correlated with the household's actual price, but variation therein is driven by changes in the tax code, rather than any decision of the household itself.

3.3 Limitations

Like all of the literature on this empirically-challenging question, our work is subject to a number of limitations.

As mentioned previously, the PSID has very few observations on high-income households, who make the majority of donations. Further, the data are arranged at the household level rather than by tax filing unit. This not only makes direct comparisons to previous work using tax returns difficult, but also introduces measurement error into the

[17] See Huck and Rasul (2011) and Meer (2011) for more discussion on the use of this specification for estimates of charitable giving responses. Recent work by Almunia, Lockwood, and Scharf (2018) emphasizes the importance of estimating tax price effects on the extensive margin of giving.

calculation of the tax price of giving (Butrica and Burkhauser, 1997). For example, a household in the PSID may include two tax filing units (such as a dependent who earns income); the household may be assigned a higher marginal tax rate based on its total income than the tax filing units have on their own.

The TCJA's effects may also take some time to be felt fully. Short-run impacts may be larger or smaller than those in the longer run. Donors may have moved giving into 2017 to take advantage of higher tax prices, leading to overestimates of the law's impact on aggregate giving. On the other hand, it may take some time for taxpayers to change their behavior in response to the new law, as the results detailed below suggest. Further, the TCJA incentivizes households to give less frequently but in larger amounts to reach the itemization threshold; the pattern of giving among donors around these cutoffs may change. The increasing popularity of donor-advised funds may play a role in this kind of timing behavior (Andreoni, 2018).

Finally, we are applying estimates from a time period with less radical changes in the tax code than the TCJA, at least in regard to the size of the standard deduction. It is unclear whether our results are fully applicable to the specific parameters of the law. Our findings are best viewed as an approximation rather than a firm prediction.

4. Results

4.1 Tax Price of Giving

We begin by estimating the effect of the tax price of giving on the extensive and intensive margins separately. Table 2 shows these results, which also include the controls described in Section 3.2. Column 1 estimates the effect on the extensive margin, and indicates that a 10 percent increase in the tax price of giving reduces the likelihood of making any donation by 1.3 percentage points, a statistically significant change and about

a 3 percent change of the mean giving rate. Column 3 estimates the effect on the intensive margin of giving; a 10 percent increase in the tax price reduces the amount given conditional on giving by 2.9 percent. As discussed above, this estimate should not be interpreted as a reflection of the treatment of a higher tax price, since it also reflects a change in the composition of givers. Combining these effects to find the overall tax price elasticity of giving in Column 5, we find that a 10 percent increase in the tax price reduces giving by 10.4 percent. This elasticity is in line with the vast majority of previous work, and suggests that giving is responsive to its tax treatment.

We also examine how charitable giving responds to increases in income in Table 2, noting that we also control for wealth and individual fixed effects; as such, these results should be interpreted as the impact of additional income for a particular household, holding all else equal. The marginal propensity to donate out of income is fairly low: our estimates suggest that, on average, households will donate about 45 cents from an additional $100 of income.

Table 3 reports the impact of the tax price of giving on donations including lead and lag terms. As discussed above, there is concern in the literature about anticipatory effects, as well as the possibility that taxpayers take time to fully adjust to a new tax regime. Column 1 includes a term for the lead of the log of tax price (instrumented with the lead of the log of the zero-dollar tax price). We find little evidence of anticipatory or timing effects; the coefficient is fairly small and imprecisely estimated. This is perhaps unsurprising, given that the PSID's waves are two years apart. Few of the tax changes over the past two decades have had sufficient time between passage and enactment for households to adjust their giving behavior in such a manner (Ottoni-Wilhelm and Hungerman, 2007). Column 2 includes a lag for the log of the tax price (also instrumented). The lag term – again, for two years prior – is statistically significant and about two-thirds the size of the contemporaneous

term. This suggests that even two years after a tax change, households are still responsive to the tax price they faced previously; that is, they adjust slowly. Column 3 includes both a lead and a lag term. The leading term remains small and statistically indistinguishable from zero, while the lagged term does not change much in magnitude or precision. Taken together, this suggests that the effects on charitable giving of changes to the tax code like the TCJA will grow over the first few years after implementation.

Accounting for differences in behavior by switchers and always-itemizers is a matter of some contention (Backus and Grant, 2019). We follow Ottoni-Wilhelm and Hungerman (2007) and divide the sample into households who always itemize and households that switch itemizing status over the sample period in Table 4. As discussed in Section 3.3, it is difficult to know how applicable these results are to changes wrought by the TCJA. In our sample, less than 10 percent of households change itemizing status in each year; 21 percent of households ever change itemizing status and 5.1 percent always itemize.

But the TCJA is projected to significantly reduce the prevalence of itemizing, especially for the income groups with representation in the PSID. Among units earning between $100,000 and $200,000, the Joint Committee on Taxation estimates that itemizing will fall from 63 percent to 22 percent. Put another way, the composition of switchers and always-itemizers will change. Itemizing is less likely to change for very high income households; average itemized deductions for units earning over $1 million were $465,000 in 2016, far above the new level of the standard deduction (IRS, 2018).[18]

We find that always-itemizers are much less sensitive to the tax price of giving. The estimated tax price elasticity is -0.7 and is not statistically significantly different than zero, as the estimate is quite noisy. The elasticity for switchers, though, is -1.2 and statistically

[18] The elimination of the Pease phase-out for itemized giving also increases the overall value of itemized deductions for households with incomes at the top of the distribution, though this does not affect the tax price of giving.

significant. There are a number of possible reasons for this difference. Switchers may be more aware of the impact of itemizing - and therefore the tax price - on their giving. They may be more strategic in the timing of their giving. Further, the changes in their tax prices from year to year are much larger than for always-itemizers.[19] As such, the data cover a broader range of price changes and may reflect a different relationship than that for the always-itemizers.

4.2 Projections for the Tax Cut and Jobs Act

The TCJA changed both the price of giving (by altering the standard deduction and marginal tax rates) and the amount of money available to donate by changing tax liabilities. To estimate the net predicted changes under the TCJA, we separately estimate the price and income effects on giving for 10 bins of income from the PSID. Projections for higher-income households are discussed in Section 4.3.

We use the 2016 PSID data from the 2017 wave to project tax prices and post-tax income for 2018 by using TAXSIM under TCJA policies rather than those in place in 2016. We follow TAXSIM's predictions of who would itemize in 2016 and 2018 based on relevant deductions; itemizing behavior changes dramatically for households in the PSID sample. For example, Table 5A shows that 46.1 percent of households with AGI between $100,000 and $125,000 are should itemize in 2016, but only 13.4 percent of those same households would itemize under the TCJA. Reductions in itemizing are even more dramatic for slightly higher income bins, with the prevalence of itemizing dropping from 81 percent to 26 percent among those earning between $125,000 and $200,000.

[19] For example, the TCJA's change in the top tax bracket increases the tax price of giving by 4.3 percent (a marginal tax rate reduction from 39.6 percent to 37 percent), but an individual in that bracket who stops itemizing because of the increase in the standard deduction sees a price increase of 65 percent.

As discussed above, we estimate separate price elasticities for always-itemizers and switchers, which we apply to the estimates here. We calculate the number of continuing non-itemizers, continuing itemizers, and switchers from 2016 to 2018 and apply a weighted average of the number, mean giving, and mean price change for each type to the appropriate elasticities to generate the average price change for each bin (Table 5B).

Tables 5A and 5B apply these estimates to the changes from the TCJA for selected income bins. In Panel A, Column 1 reports the number of observations per bin (in the 2017 wave of the PSID, corresponding to 2016). Columns 2 and 3 report the mean tax price of giving and the percent of households itemizing, as calculated by TAXSIM, for that year. Columns 4 and 5 are the estimated tax prices and percent of households itemizing based on the provisions of the TCJA, as applied to the PSID data from 2016. Note that the prevalence of itemizing falls dramatically and, as expected, the tax price of giving increases.

Panel B displays the mean change in the tax price of giving in Column 1, and applies our elasticity result to calculate the estimated change in giving induced by the change in the tax price in Column 2.[20] As expected, the changes for lower-income bins are small, since few households itemize in that range. Column 3 shows the average change in income expected from the TCJA, and Column 4 applies the marginal propensity to donate out of income (calculated from Table 4) to those figures. Column 5 combines the estimates. As described above, these income-induced increases in giving are fairly small. For example, for households with AGI between $75,000 and $100,000, the income-induced increase is about 15 percent of the change due to the tax price, and only about 4 percent for households between $100,000 and $300,000. For or the highest-income bin in the PSID, though, the income-induced increase in giving offsets about 20 percent of the increase.

[20] We winsorize giving at the 95th percentile for this calculation; a small number of outliers increases mean giving by an unrealistic and unrepresentative amount.

Figure 1 plots actual giving in 2016 by income group against the projection under the TCJA.

4.3 Projections for High-Income Tax Filing Units

Unsurprisingly, high-income donors make a large share of total donations. Even a small percentage of a ten million dollar income is significantly more than the combined donations of tens of thousands of lower-income households. As such, the behavior of these households in the face of changes to the tax code is of significant interest. Unfortunately, as detailed above, the PSID simply does not sample a sufficient number of these high earners. Nevertheless, we estimate some simple complications to provide some insight on expected changes in giving and the degree to which additional disposable income from the TCJA might offset these changes.

We use the Internal Revenue Service Statistics of Income (2018) to create representative tax filing units using the means of the various components of income and itemized deductions for the 2016 tax year. We group them together into bins above $500,000 ($500K-$1M; $1M-$5M; $5M-$10M; $10M+). We assume that households earning above $1 million continue to itemize at the same rate as they did prior to the TCJA, as the means of itemizing exceeds the new standard deduction by a significant amount. Of course, there will be some marginal tax filing units that switch to the standard deduction. That would tend to increase our estimate of the reduction in giving, though we expect the number of switchers to be small, even with the cap on state and local tax deductions. For the $500,000-$1M group, we apply estimates from the Tax Policy Center (2018) for the expected number of units that stop itemizing.

We then estimate the tax price of giving as described above, using TAXSIM, as well as calculating the expected change in tax liability. Our estimates for the latter are similar to those by the Joint Committee on Taxation (2019) and Gale *et al.* (2018).

We can apply our estimates of the tax price elasticity of giving to these calculations, though we must make the assumption that our estimated elasticity are valid for these higher-income bins. Our estimates for the marginal propensity to donate out of income yield implausible predictions that are orders of magnitude larger than a reasonable amount; it is clearly not reasonable to apply estimates from households earning less than $300,000 to households at the upper reaches of the income distribution. We therefore show estimates for a range of plausible values for the marginal propensity to donate in Table 6.

Even with our assumption that they continue itemizing, households earning above $1 million see substantial reductions in charitable giving due to changes in tax price. However, particularly for the highest levels of the income distribution, the reduction in tax liability is sufficiently large that reasonable values for the marginal propensity of giving offset a meaningful portion of the tax-price-induced reduction. For example, a marginal propensity to donate of 0.02 for households with AGI between $1 and $5 million offsets about 20 percent of the reduction.

While lacking many of the important determinants of charitable giving, including wealth, new research on the marginal propensity to donate and tax price elasticity of giving of very high-income households using administrative tax data would be valuable.

5. Conclusions

This paper provides updated estimates of the tax price elasticity of charitable giving using the Panel Study of Income Dynamics. We apply these results to the provisions of the Tax Cut and Jobs Act of 2017 and predict significant reductions in charitable giving, primarily arising from the reduction in the number of households that itemize their deductions.

We note a number of limitations to this study, particularly in regards to the relative dearth of very high income households in the data. Additionally, the TCJA's changes to

the standard deduction are outside the scope of changes to the tax code covered in our data. It is difficult to know how accurate our extrapolations are, particularly for very high income households. But we do show that plausible values for the marginal propensity to donate out of income offset some portion of the tax-price-induced reduction in giving. Projections that do not account for this countervailing effect are likely to overestimate the impact of reductions in marginal tax rates on giving.

We also find evidence that taxpayers take at least several years to fully respond to changes in the tax price of giving. To the extent that charitable giving is habit-forming (Rosen and Sims, 2011; Meer, 2013), and that changes to incentives to give through one form of philanthropy alter giving to others (Gee and Meer, 2019; Scharf, Smith, and Wilhelm, 2017; Brown, Meer, and Williams, 2019), the ripple effects of the law may take years to be felt.

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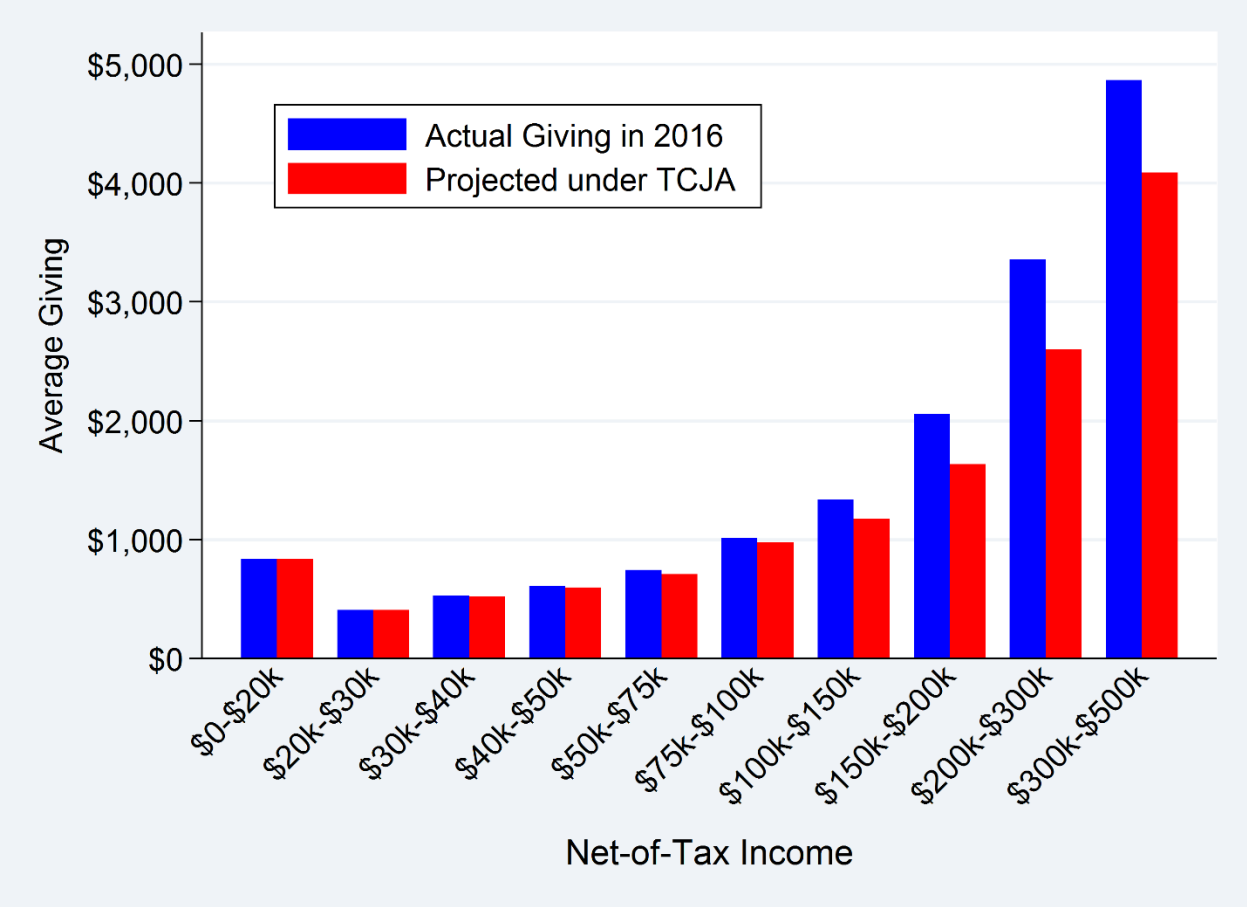
Figure 1: Differences Between 2016 Giving and Counterfactual Predicted Under Tax Cut and Jobs Act



This figure displays mean donations in each bin of net-of-tax income in the 2017 wave of the PSID (corresponding to 2016). It also displays the estimated mean giving for that bin based on the TCJA's impact on the tax price of charitable giving and the increase in net-of-tax income. The difference between these two bars corresponds to the results in Column (5) of Table 5B.

Table 1: Summary Statistics

	Mean	Median	Min	Max
Likelihood of giving	0.556		0	1
Amount given	$2,547	$119	$0	$2,834,981
Amount given, conditional	$4,583	$750	$1	$2,834,981
Amount given, conditional (Winsorized at 99th percentile)	$1,935	$750	$1	$22,197
Calculated itemization status	0.246		0	1
Tax price	0.9373	1	0.4763	1
Zero-dollar tax price	0.9371	1	0.4763	1
Family Income	$85,697	$61,158	$0	$7,391,005
Net-of-Tax Income	$74,349	$56,744	$0	$4,819,667
Wealth	$287,986	$53,364	-$2,436,000	$117,649,300
Age	45.82	43	16	104
Retired	0.1432		0	1
Disabled	0.0396		0	1
Married	0.5166		0	1
Health of HOH				
Excellent	0.1958		0	1
Very good	0.3458		0	1
Good	0.2933		0	1
Fair	0.1175		0	1
Poor	0.0476		0	1
Number of children	0.759	0	0	11
Catholic	0.2417		0	1
Protestant	0.5031		0	1
Jewish	0.0243		0	1
Non-Christian	0.0162		0	1
Other religion	0.0104		0	1
Housing price index	$340,683	$301,900	$148,460	$807,040

Note: PSID samples in every odd year between 2001 and 2017 are included, corresponding to the previous calendar year. The Survey of Economic Opportunity (SEO) oversample and 2016 Immigrant Supplement are removed from the sample, leaving 45,940 total observations across 9,709 households.

Table 2: Effects of the Tax Price of Giving

	(1)	(2)	(3)	(4)	(5)
	Extensive Margin		Intensive Margin		
	Pr (Give > 0)	1st Stage	Log Giving	1st Stage	Combined
Log Tax Price	-0.129***		-0.293***		-1.044***
	(0.025)		(0.0792)		(0.1727)
Net of Tax Income, in thousands	4.19×10^{-07} ***	-1.72×10^{-08} ***	2.43×10^{-06} ***	-2.41×10^{-08} ***	4.07×10^{-06} ***
	(7.49×10^{-08})	(4.70×10^{-09})	(2.64×10^{-07})	(6.94×10^{-09})	(5.21×10^{-07})
(Net of Tax Income, in thousands)^2	-3.50×10^{-13} ***	1.03×10^{-14} ***	-1.56×10^{-12} ***	1.54×10^{-14} ***	-3.12×10^{-12} ***
	(7.17×10^{-14})	(2.65×10^{-15})	(2.61×10^{-13})	(4.09×10^{-15})	(5.18×10^{-13})
(Net of Tax Income, in thousands)^3	5.50×10^{-20} ***	-1.44×10^{-21} ***	2.45×10^{-19} ***	-2.28×10^{-21} ***	4.90×10^{-19} ***
	(1.27×10^{-20})	(4.32×10^{-22})	(4.85×10^{-20})	(6.87×10^{-22})	(9.24×10^{-20})
Log Zero-Dollar Tax Price		0.994***		0.991***	
		(0.00096)		(0.0013)	
Observations	45,583	45,583	25,360	25,360	45,474
Number of Households		0.989		0.985	

*** p<0.01, ** p<0.05, * p<0.1

In addition to the variables listed, each specification also includes household fixed effects, bins for the level of wealth, marital status, household head's age and its quadratic, number of children, whether the head is retired or disabled, the head's health status, religious affiliation, as well as state and year effects and a housing price index and its quadratic. Standard errors are clustered at the household level and in parentheses. Column 1 reports the results of a linear probability model for the probability of making a gift, instrumenting for the log of the tax price using the log of the zero-dollar tax price. The first stage is shown in Column 2. Column 3 reports the results for the conditional log amount given, instrumenting for the log of the tax price using the log of the zero-dollar tax price. The first stage is shown in Column 4. Column 5 combines the estimates in Columns 1 and 3 and reports the marginal effects on the unconditional log amount given.

Table 3: Anticipatory and Lagged Effects

	(1) Lead	(2) Lag	(3) Lead and Lag
Log Tax Price	-0.9897***	-0.788***	-0.7957***
	(0.1843)	(0.1862)	(0.2094)
Log Tax Price (year + 2)	-0.0601		0.172
	(0.1855)		(0.2049)
Log Tax Price (year – 2)		-0.5585***	-0.5593**
		(0.1823)	(0.1994)
Net of Tax Income, in thousands	3.27×10^{-06} ***	-3.86×10^{-06} ***	2.85×10^{-06} ***
	(5.46×10^{-07})	(5.49×10^{-07})	(6.09×10^{-07})
(Net of Tax Income, in thousands)^2	-2.60×10^{-12} ***	-2.67×10^{-12} ***	-1.95×10^{-12} ***
	(5.09×10^{-13})	(4.69×10^{-13})	(4.54×10^{-13})
(Net of Tax Income, in thousands)^3	4.09×10^{-19} ***	4.00×10^{-19} ***	2.88×10^{-19} ***
	(8.97×10^{-20})	(8.02×10^{-20})	(7.47×10^{-20})
Observations	34,712	34,776	26,636
Number of Households	7,774	7,792	6,333

*** p<0.01, ** p<0.05, * p<0.1

Each column reports the marginal effects on the unconditional log amount given, calculated by estimating the extensive and intensive margins separately. Lead and lag values are instrumented using the lead and lag values of the log of the zero-dollar tax price. Each specification also includes household fixed effects, bins for the level of wealth, marital status, household head's age and its quadratic, number of children, whether the head is retired or disabled, the head's health status, religious affiliation, as well as state and year effects and a housing price index and its quadratic. Standard errors are clustered at the household level.

Table 4: Effects by Itemization Status

	(1) Always-Itemizers	(2) Sometimes-Itemizers
Log Tax Price	-0.7475	-1.214***
	(0.6683)	(0.1911)
Net of Tax Income, in thousands	1.25×10^{-06}	4.79×10^{-06} ***
	(8.28×10^{-07})	(8.68×10^{-07})
(Net of Tax Income, in thousands)^2	-1.34×10^{-12} **	-4.08×10^{-12} ***
	(6.15×10^{-13})	(1.04×10^{-12})
(Net of Tax Income, in thousands)^3	2.55×10^{-19} **	6.51×10^{-19} ***
	(1.10×10^{-19})	(1.83×10^{-19})
Observations	3,891	16,076
Number of Households	696	2,614

*** p<0.01, ** p<0.05, * p<0.1

Each column reports the marginal effects on the unconditional log amount given, calculated by estimating the extensive and intensive margins separately. The sample in Column 1 is limited to households that itemize in each year, as calculated by TAXSIM. The sample in Column 2 is limited to households that itemize at least once during the sample period, but not in every year, as calculated by TAXSIM. Each specification also includes household fixed effects, bins for the level of wealth, marital status, household head's age and its quadratic, number of children, whether the head is retired or disabled, the head's health status, religious affiliation, as well as state and year effects and a housing price index and its quadratic. Standard errors are clustered at the household level.

Table 5A: Estimated Effects of the Tax Cut and Jobs Act

		2016 PSID Data		TCJA Counterfactual Applied to 2016 PSID Data	
	(1)	(2)	(3)	(4)	(5)
Federal AGI	N	Mean Tax Price	Percent Itemizing	Mean Tax Price	Percent Itemizing
$0 - $20,000	1,663	0.99	0.48%	0.99	0.12%
$20,000 - $30,000	417	0.99	3.84%	0.99	1.20%
$30,000 - $40,000	458	0.99	7.21%	0.99	2.62%
$40,000 - $50,000	418	0.98	11.24 %	0.99	3.11%
$50,000 - $75,000	765	0.96	16.08%	0.99	5.49%
$75,000 - $100,000	514	0.94	25.49%	0.97	9.73%
$100,000 - $125,000	596	0.87	46.1%	0.96	13.4%
$125,000 - $200,000	241	0.77	80.9%	0.93	26.1%
$200,000 - $300,000	178	0.70	91.0%	0.90	33.1%
$300,000 - $500,000	55	0.67	87.3%	0.84	49.1%

This table reports projections of the impact of the Tax Cut and Jobs Act on itemizing status and tax price using the TAXSIM program. Column (1) reports the number of observations in the PSID sample in that income bin.

Table 5B: Projected Effects of the Tax Cut and Jobs Act

Federal AGI	(1) Mean Δ in Tax Price	(2) Mean Δ in Giving Due to Tax Price	(3) Mean Δ in Post-Tax Income	(4) Mean Δ in Income-Induced Giving	(5) Mean Net Δ in Giving (2) + (4)
$0 - $20,000	0.0002	-$0.17	$9	$0.03	-$0.14
$20,000 - $30,000	0.0037	-$1.69	$196	$0.32	-$1.37
$30,000 - $40,000	0.0060	-$11	$375	$0.80	-$10
$40,000 - $50,000	0.0125	-$17	$568	$1	-$16
$50,000 - $75,000	0.0224	-$38	$838	$3	-$36
$75,000 - $100,000	0.0334	-$42	$1,338	$6	-$37
$100,000 - $125,000	0.0831	-$167	$1,503	$8	-$159
$125,000 - $200,000	0.1506	-$436	$1,807	$15	-$421
$200,000 - $300,000	0.2009	-$788	$2,759	$37	-$751
$300,000 - $500,000	0.1706	-$969	$9,841	$192	-$777

This table reports projections of the impact of the Tax Cut and Jobs Act, estimating mean changes in the tax price of giving and tax liability using the TAXSIM program. Estimates from Table 4 are applied to calculate the changes in giving due to changes in the tax price, as well as those due to changes in post-tax income.

Table 6: Projected Effects of the Tax Cut and Jobs Act for High Earners

				Mean Net Δ in Giving				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Federal AGI	Mean Δ in Tax Price	Mean Δ in Giving Due to Tax Price	Mean Δ in Post-Tax Income	MPD = 0.01	MPD = 0.02	MPD = 0.03	MPD = 0.04	MPD = 0.05
$500K - $1M	-0.029	$196	$14,091	$337	$478	$619	$760	$901
$1M - $5M	0.024	-$1,949	$19,965	-$1,749	-$1,549	-$1,350	-$1,150	-$950
$5M - $10M	0.024	-$9,522	$44,779	-$9,074	-$8,626	-$8,179	-$7,731	-$7,283
$10M+	0.029	-$99,462	$140,663	-$98,056	-$96,649	-$95,242	-$93,836	-$92,429

This table reports projected effects of the Tax Cut and Jobs Act for higher-income bins. Changes in tax price and post-tax income are calculating using TAXSIM on representative tax filing units from the IRS Statistics of Income. Columns (4)-(8) report the overall net change in giving under different assumptions of the marginal propensity to donate (MPD) out of the change in income.