

**The Influence of Religiosity on Charitable Behavior: A COPPS Investigation**

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Sara wishes to thank the UAB ADVANCE grant, funded by the National Science Foundation (SBE-0245090).

## **1. Introduction**

A recent federal budget proposal to limit the deductibility of charitable gifts by high wage earners has re-ignited interest in the influence of marginal tax rates on charitable giving. While all charitable gifts to qualified entities receive a significant subsidy through the US tax code, the influence of that subsidy on charitable behavior has been shown to vary widely for different types of gifts (A. Brooks 2007). Previous research into charitable giving has typically treated all types of philanthropy as alike, therefore little is known about variation in tax sensitivity across types of giving.

This study explores charitable giving behavior by examining the influence of exogenous changes in tax policy on different types of charitable giving. While there are a variety of dimensions on which to separate charitable giving, we disaggregate a nationally representative sample of households based on the religious characteristics of both the donor and the gift. During 2006, religious giving represented nearly one-third of the \$295 billion in private contributions made to US charities (Center on Philanthropy 2007). We propose that religious giving is more analogous to private consumption, where the benefits primarily accrue to the donor. Secular giving, in contrast, may display the characteristics of either private consumption or contributions to pure public goods. This differentiation has important implications when predicting the likely influence of changes in marginal tax rates.

It is generally known that religious donors give more to both religious and secular causes, yet less is known about whether religious donors give differently. Our approach extends previous research by using a recently available, nationally representative survey to estimate price and income elasticities using religious characteristics of both the giver and the object of the gift as a

moderator. The panel structure of the data helps to mitigate omitted variable problems common in studies of this type.

We exploit exogenous changes in marginal tax rates in 2001 and 2003 to identify differences in behavior between religious and secular donors making gifts to religious and secular causes. We find that religious charity (both by nature of the giver or the object of the gifts) tend to be less reactive to changes in marginal tax rates. In contrast, secular donors giving to secular causes are the most sensitive to variation in economic incentives. Previous empirical analysis likely conflates these distinct types of charitable behavior.

Interest in the influence of marginal tax rates on charitable giving has re-emerged with recent proposals by the Obama administration to significantly reduce the rate at which high income families can deduct charitable gifts (Perry 2009). Practitioners are also interested in the degree to which donors might reduce their own giving with the prospect of significant increases in public spending in the near-term (A. Brooks 2000). It is not the purpose of this paper to contribute additional estimates within this already extensive debate. Instead, our aim is to use variation in religious preference to help better explain the variation in existing estimates of charitable giving to changes in marginal tax rates.

Donors vary widely in their charitable preferences and their expectations on the returns for their gifts. We test the specific conjecture that religious donors giving to religious causes are more likely to treat their contributions as private consumption, making their gifts less substitutable with the contributions of others. These donors should be relatively insensitive to changes in public expenditures or marginal tax rates. By treating all charitable gifts as

homogenous, previous researchers have likely masked important differences in donor behavior, confounding the role of taxes and private preferences.

In section two, we connect the existing literature on the determinants of charitable giving to more recent work on religious preferences in economic decisions. Section three briefly reviews our study design and data. Section four presents our empirical findings. The final section discusses the policy implications of our analysis.

## **2. Previous Work**

Early models of charitable behavior proposed by Warr (1982), Roberts (1984) as well as Bergstrom, Blume, and Varian (1986) treat charitable donations as contributions to a pure public good. These investigations into charitable giving propose neutrality, or complete crowd-out. Neutrality implies that donors only care about the overall quantity of the public good produced, not the source. Government provision of public goods serves as a substitute to private giving. Attempts to increase provision of public goods through taxes will merely offset private donations. Similar reductions in publicly-provided services will be substituted with private donations. The responsiveness of donors to changes in public expenditures remains important because of the significant tax privileges allotted for charitable behavior and the government's role in the provision of public goods.

More recent research included the possibility that donors receive a private, utility-enhancing, benefit from their donation. Private consumption models (a.k.a. warm-glow or impure altruism) imply that the act of giving may enter the utility function directly (J. Andreoni 1989, 1990). Valuing the act of giving as well as the results of the gift will reduce donor sensitivity to variation in tax rates because the gifts of others are not perfectly substitutable for their own. The

distinguishing characteristic between these models is how the donor receives the benefits of the gift.

## 2.1. Taxes & Charitable Giving

Because of the policy importance of substitution between publicly and privately provided public goods, economists have generated dozens of studies examining the impact of marginal tax rates on charitable giving. Estimates range widely, depending upon the sample and empirical technique used. Pelozo & Steel (2005) examine sixty-nine separate studies in a meta-analysis of the tax-price literature. They note tax price elasticity ranging from +0.06 to -6.15.<sup>1</sup> Despite the historical variation in estimates, most recent studies (with expanded datasets and more sophisticated econometric techniques) have generally confirmed the historical consensus that price elasticity is mildly elastic while sensitivity to changes in income is inelastic.

Two recent examinations of donor behavior illustrate the persistent debate among those estimating the influence of marginal tax rates on charitable giving. Randolph (1995) examines a ten-year panel of federal tax returns, which included several significant tax reforms. The study found that donors tend to smooth donations relative to changes in transitory income, substituting between current and future giving. Transitory tax-price changes maintain elasticity greater than one, indicating a significant degree of substitution between public and private provision. However, when isolating the impact of permanent tax-price changes, elasticity estimates were closer to zero, indicating a significant break with previous estimates.

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<sup>1</sup> Pelozo & Steel (2005) conclude that, on average, charitable contributions appear “treasury efficient”, meaning a tax-price elasticity of at least one. They find only a few donor characteristics, such as whether the donor offers audited financial statements or whether the donation is a bequest, have a statistically significant influence on estimated elasticity. More interesting, they find that recent efforts to measure changes in permanent income or an emphasis on panel data structures do not appear to have a material impact on elasticity estimates. The authors mention the possibility of variation in the object of the donation (the focus of our study) but are not able to test this hypothesis.

Auten, Sieg, & Clotfelter (2002) responded by using data similar to Randolph, but alter their econometric approach to explicitly model dynamic changes in permanent income and tax price. In contrast to Randolph, they find that donors are relatively insensitive to transitory changes in price and income. They estimate a permanent tax-price elasticity of -1.26, within the range of early estimates and much larger than Randolph. Based on these estimates, they argue that changes in the tax code have a dramatic effect on the donations available to nonprofit organizations in both the short and long run. More recently, Brooks (2007) noted that elasticity estimates vary significantly among nonprofits types, indicating that tax incentives vary in their ability to stimulate charitable donations. However, he does not offer an explanation for the cause of this variation.

This paper extends Brooks' (2007) approach as an avenue for addressing variation in elasticity estimates. Instead of describing elasticity differences across sectors, we explicitly test for differences in donor behavior based on religiosity. We sidestep the debate on whether to estimate permanent or transitory changes in elasticity because we are only interested in the difference in behaviors across religious types. Unlike Brooks (2007), the panel nature of the data allows us to draw causal inference regarding the influence of observed donor characteristics on subsequent elasticity estimates.

## 2.2. Philanthropy and the Role of Religion

It is generally known that religious people are both more likely to give and to give more, even after controlling for a variety of demographic variables (A. Brooks 2003). Indeed, existing models of religious behavior demonstrate that religious giving should exhibit distinct behaviors relative to secular gifts. In their pioneering work, Azzi and Ehrenberg (1975) develop a multi-period life-cycle model for religious participation which extends the benefits of religious

investments into the “after-life”. The model characterizes household tradeoffs between investments in current and posthumous consumption. The model further demonstrates conditions where religious investments should increase with age.

Subsequent empirical investigations have offered evidence that donors indeed treat religious contributions as if they have after-life consumption value. Hrung (2004) finds that religious contributions increase with age, which would not be expected in a pure public goods context. He found no relationship between age and secular giving. Chang (2005) generates similar estimates using data from Taiwan. Gruber (2004) explores the substitution between religious giving and attendance at religious services. He advocates that religious giving should be perceived as private consumption because supernatural monitoring of gifts removes the ability to free ride on others’ donations. Over an extended panel, Gruber finds that religious donors are relatively insensitive to changes in marginal tax rates. Thornton and Helms (2011) find that religious doctrine influences the giving behavior of households, and that stricter teachings regarding giving lead to less sensitivity to economic incentives for giving.

This paper fills an important slot within this literature by empirically examining the role of religiosity in donor behavior. We use recently available, high quality, survey data collected by the *Center on Philanthropy Panel Study (COPPS)* embedded within the *Panel Study of Income Dynamics (PSID)*. This allows us to employ panel models of charitable behavior. We estimate the impact of exogenous changes in marginal tax rates on the charitable behavior of religious and nonreligious donors giving to religious and secular causes. Religious gifts may offer higher current consumption value, an extended (perhaps infinite) time horizon for returns, or fewer substitutes from the expenditures of others. Consequently, we expect that gift to be relatively

insensitive to changes in economic incentives relative to its secular counterpart. In contrast, secular gifts may also maintain either private or public components.

### 3. Study Design

#### 3.1. The Data

We use the Center on Philanthropy Panel Study (COPPS) add-on to the Panel Study of Income Dynamics (PSID) waves 2001, 2003, and 2005 (M. O. Wilhelm 2003).<sup>2</sup> The COPPS data provide information on volunteering and charitable giving, in addition to the breadth of questions included in the PSID. The survey segment includes household and individual demographics, income and wealth, religious beliefs, and labor force participation. The data are considered among the more reliable for surveys on charitable behavior (M. O. Wilhelm 2007, M. O. Wilhelm 2006). We merged together the COPPS and PSID data for each wave. This process required a re-coding of some variables, in order to compare variables across the three waves. In a few instances, we are unable to make meaningful comparisons across all three waves.<sup>3</sup>

We use the household as the unit of observation and identify the model using both within-household and across-household variation in income and marginal tax rates over time. TAXSIM (available from the National Bureau of Economic Research) was used to obtain estimated marginal tax rates for the household in each year.<sup>4</sup> We code households as religious using the

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<sup>2</sup> The PSID is part of the University of Michigan's Institute for Social Research data collection. COPPS is conducted by the Indiana University – Purdue University Indianapolis (M. O. Wilhelm 2003).

<sup>3</sup> For example, the religious attendance variables are available only in the 2003 and 2005 waves. Also, the survey methodology in questions on secular giving changed between the 2001 and 2003 administrations of the survey. As such, we use the recommended coding found in the COPPS user manual for 2003 and 2005 (M. O. Wilhelm, Volunteering Data in the 2003 Center on Philanthropy Panel Study: A Supplement to the User's Guide 2006).

<sup>4</sup> For more information about TAXSIM, see <http://www.nber.org/~taxsim>.



COPPS measure of attendance of religious activities. In the reported results, we identified religious households through a two-step process. To construct our variable for religiosity, we first identified the ‘most religious’ year for the household, that is, the year in which the household reported attending religious services most frequently. Then, using this measure, we identified households as religious when the household reported attending religious services at least twice per month.<sup>5</sup> In all, the data covers three biannual waves, resulting in 13,898 household-year observations.

### 3.3 Changes in Marginal Tax Rates

The ability to deduct charitable contributions from ordinary income serves as an implicit subsidy from the government for charitable activities. If a donor faces a marginal tax rate of  $t$ , then each dollar of deductible contributions only will cost that donor  $(1 - t)$  dollars.

Consequently, the price of a charitable gift moves inversely to the donor’s marginal tax rate. Recall that the dataset includes survey responses spanning from 2001–2005. Two significant changes in the federal tax code occurred within the data; the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) and the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA). Chart 1 depicts average marginal tax rates by income deciles for each wave.

The EGTRAA, set to begin in 2002, reduced the marginal tax rates for most brackets by roughly three percentage points. The highest tax bracket (39.6%) was reduced by nearly five percentage points. The act also created a new ten percent bracket and increased the standard deduction available to married-joint filers. JGTRRA accelerated the declines in marginal tax rates and substantively reduced capital gains and dividend tax rates (Gale and Orszag 2004).

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<sup>5</sup> We also considered identifying religious households as those attending religious services up to (but not including) two times per month. The results are similar.

Cumulatively, these policy changes significantly reduced the marginal tax rates paid by most filers, thereby increasing the price charitable gifts.<sup>6</sup>

### 3.2. The Model

We follow previous literature by regressing the log of contributions against the log of tax price, log income, and a set of demographic variables. Specifically

$$\ln(\text{contributions}_{it}) = \beta_1 + \beta_2 \ln(\text{price}_{it}) + \beta_3 \ln(\text{income}_{it}) + X_{it} + D_t + \varepsilon_{it}$$

Where, for household  $i$  in year  $t$ , *contributions* is the household's dollar value of its donation to charity; *price* is the “first-dollar” tax price of giving<sup>7</sup>; and *income* is household taxable income.  $X$  is a vector of household characteristics including health status, education level, and marital status that might change within the household over time. Identifying the influence of religious preferences on charitable giving is particularly difficult because it is likely correlated with other unobserved factors that influence charitable giving. Our identification strategy is to exploit the panel structure of the data to remove unique, unobserved, but time insensitive, variation in donor preferences.  $D$  represents the household fixed effect, and  $\varepsilon$  is the robust standard error term.

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<sup>6</sup> It should also be emphasized that it would be difficult for donors to foresee (with much certainty) the enactment of these tax changes ahead of time. The EGTRRA closely followed the 2000 presidential election, a highly contested race whose outcome was eventually decided by the Supreme Court in late December. Similarly, the JGTRRA move to accelerate tax cuts came quickly on the heels of significant declines in the equity markets and the terrorist attacks of 2001. In summary, this time period remains particularly useful for examining changes in donation behavior because of the significant changes in marginal tax rates that alter the economic incentives for individual families to give.

<sup>7</sup> For those who itemize their donations, the price of giving is constructed as  $[1 - \text{marginal tax rate}]$  for household  $i$  in time period  $t$ . Price is set to 1 for money donations of non-itemizers. Note that COPPS surveys include a field indicating whether the family itemized their tax deductions. Because marginal tax rates are mathematically endogenous to charitable contributions, researchers commonly use the marginal tax rate for the “first-dollar” donated to charity, which is uncorrelated with the amount given to charity (J. Andreoni 2007).

We first segment the entire sample into religious and nonreligious givers, and then segment the contributions of each of these groups into religious and secular giving.<sup>8</sup> Tables 1 and 2 describe the important distinctions in giving behavior between these two groups. First, given our choice of the definition for “religious,” the two groups are evenly represented in the data. As shown in Table 1, while the mean income in nonreligious households (column 1) is less than one thousand dollars more than that for religious households (column 2), while the difference between the median incomes of the two groups is about eight thousand dollars. As will be further explained in Table 2, the proportion of households that itemize their taxes is much higher for religious households (0.528) than for nonreligious households (0.395). The price differences across the two households further demonstrate this variation. Among religious households, the price of giving money is about 1.5 percentage points lower than that of nonreligious households. Given the much higher giving by religious households, this is not surprising. Our identification of both households and organizations as religious and nonreligious allows us to examine the differences in reaction to changes in marginal tax rates across both donor and donation types. We expect that religious givers giving to religious causes will be the least sensitive to changes in price. Among religious households, we expect religious giving to be less sensitive to price changes than secular giving. We expect that nonreligious givers donating to secular causes would be the most sensitive to variation in price, and that within nonreligious households secular giving is more responsive to price changes than religious giving.

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<sup>8</sup> We explained above the method for determining whether or not a household is religious. We use the default designation of religious versus secular gifts determined by the survey methodology. In the administration of the survey, respondents were asked “Did you make any donations specifically for religious purposes or spiritual development, for example to a church, synagogue, mosque, TV or radio ministry? Please do not include donations to schools, hospitals, and other charities run by religious organizations.” (emphasis in original, (M. O. Wilhelm, The 2001 Center on Philanthropy Panel Study User’s Guide 2006)). Thus, the religious giving does not include donations to food pantries run by local churches or Baptist hospitals. As a result, we argue that the estimates presented here are at the lower bound for religious giving, as the definition used by the survey administrators is the most restrictive for identifying religious giving.

#### 4. Empirical Results:

This section describes our empirical analysis for givers facing changes in marginal tax rates during the years 2001 – 2005. Previous descriptive data indicate that religious donors give more to both religious and secular charitable causes. Yet, it is less clear whether religious donors behave differently in response to changes in income or economic incentives. We test donor reaction for monetary gifts by segmenting the sample into religious and nonreligious households based on the criteria described in section 3.2. When possible monetary gifts are segmented by their religious intent.

We include a vector of demographic characteristics including education, marital status and health status in our estimates. Our primary variables of interest are log of family income and the log of the tax price. We calculate the tax price of giving as  $[1 - \text{marginal tax rate}]$  for any given household. We obtain the marginal tax rate for each household from the TAXSIM program. Due to the panel nature of our data, our estimates are identified by both within and across-household changes in family income and price. Thus, we rely on households having incomes and tax rates that vary over the sample period.

Table 2 offers means for giving measures for households of each type. The means illustrate differences between religious and non-religious households. In the full sample, 81.6% of religious households make a donation, while only 53.2% of non-religious households give at all. As expected, a much larger proportion of religious households give to religious causes (74.3%) than do nonreligious households (18.4%). The gap between household types narrows when considering secular giving, though religious households are still more likely to give than non-religious households (60.6% and 48.7%, respectively).

Households differ not just in the likelihood of giving, but also in the amount given.

Comparing the two household types, there are some differences in secular giving—religious households give \$466 on average per year, non-religious households give \$386. Unsurprisingly, religious households give on average ten times more than nonreligious households to religious causes (\$1,581 versus \$112). The median overall charitable donation also displays the marked differences between the two household types—the median religious household gives \$800, while for nonreligious households, the median is \$50 per year.

#### 4.1. Charitable Giving

One additional interest throughout the study is how changes in tax-price and income influence participation in philanthropy. We consider the binary (extensive) decision to give any amount to charity in the first column of Table 3. Both income and price elasticities are inelastic and statistically significant. Together, these results indicate that tax price is both influential on changing giving behavior as well as altering the potential donor's choice of whether to give.

To test the comparability of the data with that of prior studies, we first estimate a two-part fixed effects model. Given that 30% of households contribute \$0 in a typical year, standard OLS is not appropriate. The 2-part model separates the estimation of the effect of the covariates on the extensive margin (decision to give) and the intensive margin (dollars given by givers). Previous research on charitable giving questions the appropriateness of the Tobit model (Tobin 1958) given its constraint that the extensive and intensive margin are similarly impacted by covariates (A. C. Brooks 2003) (Schokkaert 2006). The results for all giving by all households are presented in Table 3.<sup>9</sup> We find that monetary giving with respect to income is positive and

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<sup>9</sup> With many households contributing zero (dollars or hours), a Tobit model was considered. However, a Tobit model assumes that the effects of covariates on the dependent variable are identical on both the extensive and

inelastic while the response to changes in price is negative and inelastic. Both of these findings are within the range of the previous literature. A ten percentage point decrease in tax price (increase in marginal tax rates) results in a 2.66 percentage point increase in average giving. A ten percentage point increase in income results in a 0.764 percentage point increase in giving.

The remaining covariates follow conventional wisdom about donor behavior. Giving generally increases with education, but the results are not typically statistically significant. In the regression, high-school graduates are the reference case. Married adults (the reference case) tend to give more than other types of non-married adults. Other population groups, including singles, have lower levels of philanthropic behavior. Finally, giving tends to increase with age and good health. All of these results affirm that the PSID/COPPS sample is comparable with other studies. This allows us to begin the process of disaggregating the data.

We also use another method for estimating the model—the Honore fixed effect panel Tobit model (Honoré 1992). The Honore model allows us to simultaneously control for the time-invariant endogeneity within households over time, by exploiting the panel setup. Moreover, the Honore model allows us to handle those households giving now money to charity and those decision to give positive amounts in one set of results. Because the two estimation methods correct different problems in the data and estimation, we present both sets of estimates as a means of sensitivity analysis. The Honore results are shown in column (3) of Table 3.

Table 4 separates the sample by the object of the gift. The relative differences between the secular and religious categories are most interesting. Consistent with predictions, giving to

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intensive margins (Tobin 1958). That is, a change in income is constrained have a similar impact on both the probability that an individual gives, and on how much the individual giver chooses to give. Previous research on charitable giving and volunteering questions this assumption (A. Brooks 2003, Schokkaert 2006). Furthermore, a latent value of giving is a difficult construct to interpret in this context.

religious causes is uniformly less elastic relative to its secular counterpart. The extensive regression results (shown in columns 1 and 2) depict gifts to religious causes as having an elasticity roughly half the magnitude of secular gifts. Similarly, increases in income raise the probability of secular charitable giving at roughly twice the rate as religious giving. The same pattern emerges when the intensive margin is examined, as shown in columns 3 and 4. Changes in taxes and income have a substantially larger impact on secular giving relative to religious gifts. Columns (5) and (6) show the results for the Honore panel fixed effect Tobit. Similar to the 2-part results, religious giving is much more inelastic than secular giving. Beginning with Table 4 and continuing forward, we report the coefficients on the variables of interest only (log price and log income), though the model includes all the covariates mentioned above and shown in Table 3.

Table 5 reports regression results when the sample is separated by the religious preferences of the household. Recall that religious households are those that attend religious services at least twice a month in their most religious year. These households, on average, appear less sensitive to changes in tax price. The price elasticity estimates are similar in magnitude on the intensive margin, though religious households appear to be less sensitive to changes in the tax rate on the extensive margin. A ten percent increase in tax-price results in a 1.33 percent decline in the probability of a secular household making a donation, but only a 0.932 percent decrease in religious households. Religious households appear to have slightly higher income elasticities but well within ranges expressed in previous studies. Focusing on the Honore panel fixed effects Tobit estimates, the elasticity for secular households is approximated 50% greater than the elasticity for religious households, consistent with the theory that charitable giving by religious households is less responsive to economic incentives than that of secular households.

Table 6 presents the full set of regressions where all possible combinations of giver and gift types are examined. It is here where we observe the sharpest distinctions for religiously motivated donors. Focusing on the Honore results, within household type, religious giving is less sensitive to the tax price than secular giving. The greatest elasticity is found in nonreligious households giving to secular causes. Interestingly, nonreligious households giving to religious causes showed no statistically discernible reaction to tax price changes, though a small sample may contribute to the inability to find an effect.<sup>10</sup>

The pattern in the previous results are generally consistent with our hypotheses that religious households have lower tax-price elasticities compared to secular households and the gifts to religious causes are relatively insensitive to tax-price, relative to secular gifts. While this characterization is accurate for overall giving, there is a large variation in the amounts given by households. Recall from Table 2 that the average household gives \$1,312 in a typical year. And yet, the median household annual donation is only \$300. Particularly in philanthropy, averages are skewed by very large gifts. It is reasonable to ask if the previously defined pattern holds when looking at different magnitudes of giving.

Table 7 presents a series of regressions where the dependent variable was constructed as a binomial representing annual giving at various levels. For presentation purposes only the tax-price coefficient is reported, though the other covariates remained the same as in previous regressions. For example, within the sample range, there were 5,322 instances where a religious household gave *at least* \$50 to a religious cause in a given year. For this level of giving, a ten

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<sup>10</sup> While nonreligious households giving to religious causes may appear to be an odd group, our definition of “religious” households allows for households that regularly attend religious services (albeit fewer than twice per month) to be categorized as “nonreligious” in our analyses. As seen in Table 2, 18.4% of nonreligious households in our sample give to religious causes.



percent increase in tax-price would reduce the odds of a religious household making a religious gift (of at least \$50 annually) by roughly one percent. This magnitude is less than secular giving to secular causes.<sup>11</sup> While the difference is statistically meaningful, the economic difference is modest.

The pattern changes sharply as the total giving amounts move away from “casual givers” into non-trivial annual gifts. In the \$100 to \$500 ranges, secular givers to secular causes demonstrate a significant increase in price elasticity relative to the gift of any religious giver. It is in this range that giving patterns most closely follow our hypotheses. Yet, curiously, the pattern vanishes with very large gifts. Even with reduced sample sizes, overall tax-price elasticity declines dramatically for all categories and the difference in elasticities between categories diminishes. This finding is counterintuitive. One would expect that, because large givers face more significant tax consequences, they would be the most sensitive group to changes in marginal tax rates. This does not appear to be the case. We show the estimates of price elasticity of monetary donations at each giving step in Chart 2.

## **5. Conclusions**

In this paper, we enhance the literature on the determinants of charitable giving by explicitly examining the role of religion. We find that both the religious preference of the donor and the object of the donation matter a great deal in the decision to give. By exploiting a recently-completed panel survey of charitable giving, we demonstrate that traditional empirical analysis on charitable giving masked important differences among donor groups.

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<sup>11</sup> Nonreligious households making gifts to religious causes consistently maintained the lowest levels of tax-price sensitivity. Interpreting these results is more difficult. These are households who did not meet our (admittedly arbitrary) threshold to be religious, yet still donate to religiously oriented causes. In this sense, we should expect them to behave similarly to religious households who give to religious causes.

On average, secular donors giving to secular causes behaved as public goods theory would predict. Secular donors increase their giving when the price of giving falls. Given an increase in income, the increase in propensity to give is larger for secular than religious giving, as is the increase in the size of the gift. In this sense, secular donors (particularly those giving to secular causes) are presenting behaviors consistent with the public goods model of charitable giving. When another giver (in this case the government) expands its contribution to the public good, donors move to restrict their own giving. The opposite is also true, if others decrease their contribution to the public good, then an individual should increase their own contribution.

By contrast, religious giving appears less sensitive to changes in price relative to secular gifts. In particular, religious giving by religious individuals demonstrates the lowest elasticity while secular giving by secular individuals demonstrates the greatest sensitivity to changes in tax price. In total these findings support our more general proposal that donors regard religious giving as having greater consumption value (either in this life or the next) relative to secular giving. In contrast, secular giving demonstrates characteristics more associated with standard model of public good provision.

In our secondary approach, in which we map out a series of binomial predictors for the effect of price and income changes on giving at various levels, we uncover another interesting pattern. We find that secular giving is most responsive to changes in price, with an inverted u-shape pattern. That is, at low and very high levels of giving, price is not very influential, but for the middle range (where median giving lies), the responsiveness is largest. Religious giving appears to have two levels of responsiveness—a relatively higher level, at low levels of giving, then around the median giving level it switches to a lower level of responsiveness.

These findings introduce an important distinction into the debate regarding the influence of marginal tax rates on charitable gifts. Typically, all charitable giving is regarded as homogenous. This does not appear to be the case. Religious giving appears to be far less sensitive to changes in marginal tax rates relative to secular gifts. Because religious giving accounts for a substantial fraction of charitable giving, aggregate estimates of the influence of changes in marginal tax rates may be misleading. Changes in charitable giving will likely be more concentrated among secular gifts. Since secular gifts are closer to publicly-provided goods, the greater responsiveness of secular givers and secular giving is reproachful evidence against policies that cut the income tax deduction for charitable gifts. A move toward less deductibility will reduce giving, disproportionately affecting nonreligious giving and givers.

In light of recent discussions by the current administration and Congress, our results imply a cautionary tale. To reduce the deductibility of charitable giving will certainly impact the receipts of charitable organizations, in ways that will importantly impact their ability to provide services to society. That said, the lower levels of responsiveness at high levels of giving imply that reducing the deductibility of charitable donations by the most generous givers (and thus, likely, those with the highest income) would not be as counterproductive as a general reduction.

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Table 1: Descriptive Statistics: Household Demographics

Variable	Nonreligious households		Religious households		All households	
	Mean	Median	Mean	Median	Mean	Median
	SE(mean)		SE(mean)		SE(mean)	
	(1)	(2)	(3)	(4)	(5)	(6)
Income	\$70,604	\$48,200	\$71,059	\$56,160	\$70,842	\$52,500
	\$1,525		\$979		\$890	
Taxable income	\$60,661	\$39,905	\$59,677	\$47,000	\$60,146	\$43,200
	\$1,508		\$970		\$880	
Attends relig. services at least twice per month	0	0	1	1	0.523	1.00
					0.004	
Tax itemizer	0.395	0.00	0.528	1.00	0.465	0.00
	0.006		0.006		0.004	
Price of giving money*	0.921	1.00	0.905	1.00	0.913	1.00
	0.002		0.002		0.001	
N	6616		7253		13870	

\* This is set to 1 for nonitemizers, and [1 minus the marginal tax rate] for itemizers

Source: COPPS and PSID data from the 2001, 2003, and 2005 COPPS sample.

The sample has been adjusted for the oversampling of low-income households in the COPPS study.

Table 2: Descriptive Statistics: Household Giving and Volunteering

Variable	Nonreligious households		Religious households		All households	
	Mean	Median	Mean	Median	Mean	Median
	SE(mean)	(2)	SE(mean)	(4)	SE(mean)	(6)
	(1)		(3)		(5)	
Gives to any org.	0.532	1.000	0.816	1	0.680	1
	0.006		0.005		0.004	
Gives to religious org.	0.184	0	0.743	1	0.477	0
	0.005		0.005		0.004	
Gives to secular org.	0.487	0	0.606	1	0.550	1
	0.006		0.006		0.004	
US\$ given to relig. org	\$112	\$0	\$1,581	\$500	\$880	\$0
	\$7		\$37		\$20	
US\$ given to secular org.	\$386	\$0	\$466	\$91	\$428	\$50
	\$17		\$19		\$13	
US\$ given to any org.	\$498	\$50	\$2,055	\$800	\$1,312	\$300
	\$19		\$47		\$27	
N	6617		7253		13870	

Source: COPPS and PSID data from the 2001, 2003, and 2005 COPPS sample.

The sample has been adjusted for the oversampling of low-income households in the COPPS study.

Table 3: All Households, Total Giving

Dependent Variable	Two-Part Model with Fixed Effects		Panel Fixed Effects Model
	Binomial: Y = 1 if Total Giving > 0	Continuous: Total Giving (\$)	
Log household income	0.0179*** [0.00520]	0.0764*** [0.0190]	0.283*** [0.0590]
Log price	-0.106*** [0.0318]	-0.266*** [0.0916]	-1.166*** [0.256]
Educational attainment			
N/A	0.0274 [0.0314]	0.191* [0.106]	
< HS diploma	-0.0167 [0.0254]	-0.0307 [0.0956]	
> HS, < 4-yr degree	-0.0371 [0.0238]	-0.00355 [0.0799]	
4-yr degree	-0.00302 [0.0344]	0.0931 [0.109]	
> 4-yr degree	0.0211 [0.0415]	-0.0615 [0.122]	
Marital status			
Never married	-0.103*** [0.0319]	-0.177 [0.129]	
Widowed	-0.0342 [0.0612]	-0.14 [0.185]	
Divorced/ annulled/ separated	-0.0481* [0.0261]	-0.0534 [0.0908]	
Age	0.00331 [0.00326]	0.0793*** [0.0102]	
Head health fair/poor	-0.0283* [0.0155]	-0.0825 [0.0530]	-0.340** [0.153]
Wife health fair/poor	0.00588 [0.0197]	-0.0155 [0.0619]	0.0352 [0.165]
Constant	0.219 [0.170]	2.189*** [0.570]	
Observations	13865	9434	13868
# of households	5070	4058	

Coefficient [Std. Err.] \* significant at 5% level, \*\* at 1%

Source: COPPS and PSID data from the 2001, 2003, and 2005 COPPS sample.

The sample has been adjusted for the oversampling of low-income households in the COPPS study.

Column 1 is estimated with a linear probability model, with fixed effects.

Column 2 is estimated using OLS with household fixed-effects

Column 3 is estimated using the Honore panel fixed effect Tobit model

This model contained the full set of control variables, though not all are reported here.

All regressions were estimated with robust standard errors and clustered by household

Table 4: Giving by All Households, Disaggregated by Giving Type

Dependent Variable	Binomial: $Y = 1$ if Giving $> 0$		Continuous: Giving by Type (\$)		Honore Panel Tobit with FE	
	Pr(Rel. Give)	Pr(Sec. Give)	Religious Giving	Secular Giving	Religious Giving	Secular Giving
	(1)	(2)	(3)	(4)	(5)	(6)
Log household income	0.0104** [0.00494]	0.0187*** [0.00584]	0.0494** [0.0215]	0.123*** [0.0283]	0.237*** [0.0770]	0.350*** [0.0726]
Log price	-0.0454 [0.0302]	0.0187*** [0.00584]	-0.236** [0.103]	-0.0851 [0.125]	-0.790** [0.348]	-1.217*** [0.316]
Obs.	13865	13865	6611	7622	13868	13868
Number of Households	5070	5070	2978	3599		

Coefficient [Std. Err.]

Source: COPPS and PSID data from the 2001, 2003, and 2005 COPPS sample.

\* significant at 5% level, \*\* at 1%

The sample has been adjusted for the oversampling of low-income households in the COPPS study.

Columns (1) - (2) are estimated with a linear probability model, with fixed effects.

Columns (3) - (4) are estimated using OLS with household fixed-effects

Columns (5) - (6) is estimated using the Honore Panel Tobit with fixed effects

This model contained the full set of control variables, though not all are reported here.

All regressions were estimated with robust standard errors and clustered by household

All regressions include the full set of covariates as stated in the paper.

Table 5: Giving to All Causes, Disaggregated by Household Type

Dependent Variable	Binomial: $Y = 1$ if Giving $> 0$		Continuous: Total Giving (\$)		Honore Panel Tobit with FE	
	Religious HH (1)	Nonrelig. HH (2)	Religious HH (3)	Nonrelig. HH (4)	Religious HH (5)	Nonrelig. HH (6)
Log household income	0.0209*** [0.00671]	0.0154* [0.00810]	0.0672*** [0.0220]	0.0832** [0.0386]	0.261*** [0.0725]	0.320*** [0.0971]
Log price	-0.0932** [0.0378]	-0.133** [0.0539]	-0.252** [0.105]	-0.241 [0.180]	-1.014*** [0.285]	-1.408*** [0.490]
Constant	0.437** [0.219]	0.0393 [0.263]	2.324*** [0.669]	1.825* [1.083]		
Obs.	7250	6615	5917	3517	7252	6616
Number of Households	2590	2480	2371	1687		

Coefficient [Std. Err.]

Source: COPPS and PSID data from the 2001, 2003, and 2005 COPPS sample.

\* significant at 5% level, \*\* at 1%

The sample has been adjusted for the oversampling of low-income households in the COPPS study.

Columns (1) - (2) are estimated with a linear probability model, with fixed effects.

Columns (3) - (4) are estimated using OLS with household fixed-effects

Columns (5) - (6) is estimated using the Honore Panel Tobit with fixed effects

This model contained the full set of control variables, though not all are reported here.

All regressions were estimated with robust standard errors and clustered by household

Table 6: Pooled Model: Giving Disaggregated by Household Type and Organization Type

Dependent Variable	Binomial: $Y = 1$ if Giving $> 0$				Continuous: Giving to Organization Types (\$)			
	Religious Households		Nonreligious Households		Religious Households		Nonreligious Households	
	Pr(Rel. $> 0$ )	Pr(Sec. $> 0$ )	Pr(Rel. $> 0$ )	Pr(Sec. $> 0$ )	Religious \$	Secular \$	Religious \$	Secular \$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log household income	0.0223*** [0.00748]	0.0193** [0.00851]	-0.001 [0.00650]	0.0193** [0.00809]	0.0447** [0.0215]	0.148*** [0.0413]	0.0913 [0.0931]	0.0821** [0.0415]
Log price	-0.0758* [0.0422]	-0.0955** [0.0480]	0.00108 [0.0433]	-0.124** [0.0538]	-0.233** [0.108]	0.0745 [0.165]	-0.175 [0.339]	-0.282 [0.197]
Constant	0.215 [0.244]	0.0879 [0.278]	0.0521 [0.211]	-0.0976 [0.263]	2.541*** [0.681]	1.328 [1.114]	5.254** [2.163]	1.327 [1.180]
Obs.	7250	7250	6615	6615	5391	4397	1220	3225
Number of Households	2590	2590	2480	2480	2251	2018	727	1581

Coefficient [Std. Err.]

Source: COPPS and PSID data from the 2001, 2003, and 2005 COPPS sample.

\* significant at 5% level, \*\* at 1%

The sample has been adjusted for the oversampling of low-income households in the COPPS study.

Columns (1) - (4) are estimated with a linear probability model, with fixed effects.

Columns (5) - (8) are estimated using OLS with household fixed-effects

Columns (9) - (12) is estimated using the Honore Panel Tobit with fixed effects

This model contained the full set of control variables, though not all are reported here.

All regressions were estimated with robust standard errors and clustered by household

Table 6: Pooled Model: (

Dependent Variable	Honore Panel Tobit with FE			
	Religious HH		Nonrelig. HH	
	Religious \$ (9)	Secular \$ (10)	Religious \$ (11)	Secular \$ (12)
Log household income	0.253*** [0.0786]	0.347*** [0.108]	0.0448 [0.256]	0.351*** [0.0978]
Log price	-0.907*** [0.337]	-0.988** [0.402]	-0.222 [1.045]	-1.528*** [0.511]
Constant				
Obs.	7252	7252	6616	6616
Number of Households				

Coefficient [Std. Err.]

Source: COPPS and PSID (

\* significant at 5% level, \*

The sample has been adjus

Columns (1) - (4) are estim

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Table 7: Influence of Tax-Price by Size of Gift, Disaggregated by Household Type and Organization Type

Dependent Variable	Binomial Dependent Variable			
	Religious Households		Nonreligious Households	
	Religious giving (1)	Secular giving (2)	Religious giving (3)	Secular giving (4)
Y=1 if Y >\$50	-0.091 [2.11]*	-0.158 [3.21]**	0.014 [0.27]	-0.12 [2.01]*
<i>n</i> *	5,322	4,040	1,133	2,974
Y=1 if Y >\$100	-0.106 [2.40]*	-0.066 [1.27]	-0.019 [0.39]	-0.179 [3.01]**
<i>n</i> *	5,173	3,618	990	2,612
Y=1 if Y >\$250	-0.053 [1.17]	-0.151 [2.84]**	-0.007 [0.17]	-0.25 [4.44]**
<i>n</i> *	4,546	2,486	618	1,855
Y=1 if Y >\$500	-0.055 [1.27]	-0.041 [0.86]	0.003 [0.08]	-0.132 [2.49]*
<i>n</i> *	3,833	1,614	413	1,210
Y=1 if Y >\$1,000	-0.05 [1.22]	-0.039 [1.04]	-0.006 [0.21]	-0.05 [1.09]
<i>n</i> *	2,846	794	232	646
Y=1 if Y >\$5,000	-0.064 [2.25]*	0.015 [0.98]	-0.007 [1.23]	-0.009 [0.63]
<i>n</i> *	682	97	19	80
Y=1 if Y >\$10,000	-0.034 [2.18]*	-0.005 [0.61]	0.001 [0.33]	0.003 [0.60]
<i>n</i> *	154	37	6	26

Coefficient [Std. Err.]

*n*\* represents the count of observations in the sample where a household gave *at least* the noted amount

Source: COPPS and PSID data from the 2001, 2003, and 2005 COPPS sample.

\* significant at 5% level, \*\* at 1%

The sample has been adjusted for the oversampling of low-income households in the COPPS study.

Columns (1) - (4) are estimated with a linear probability model, with fixed effects.

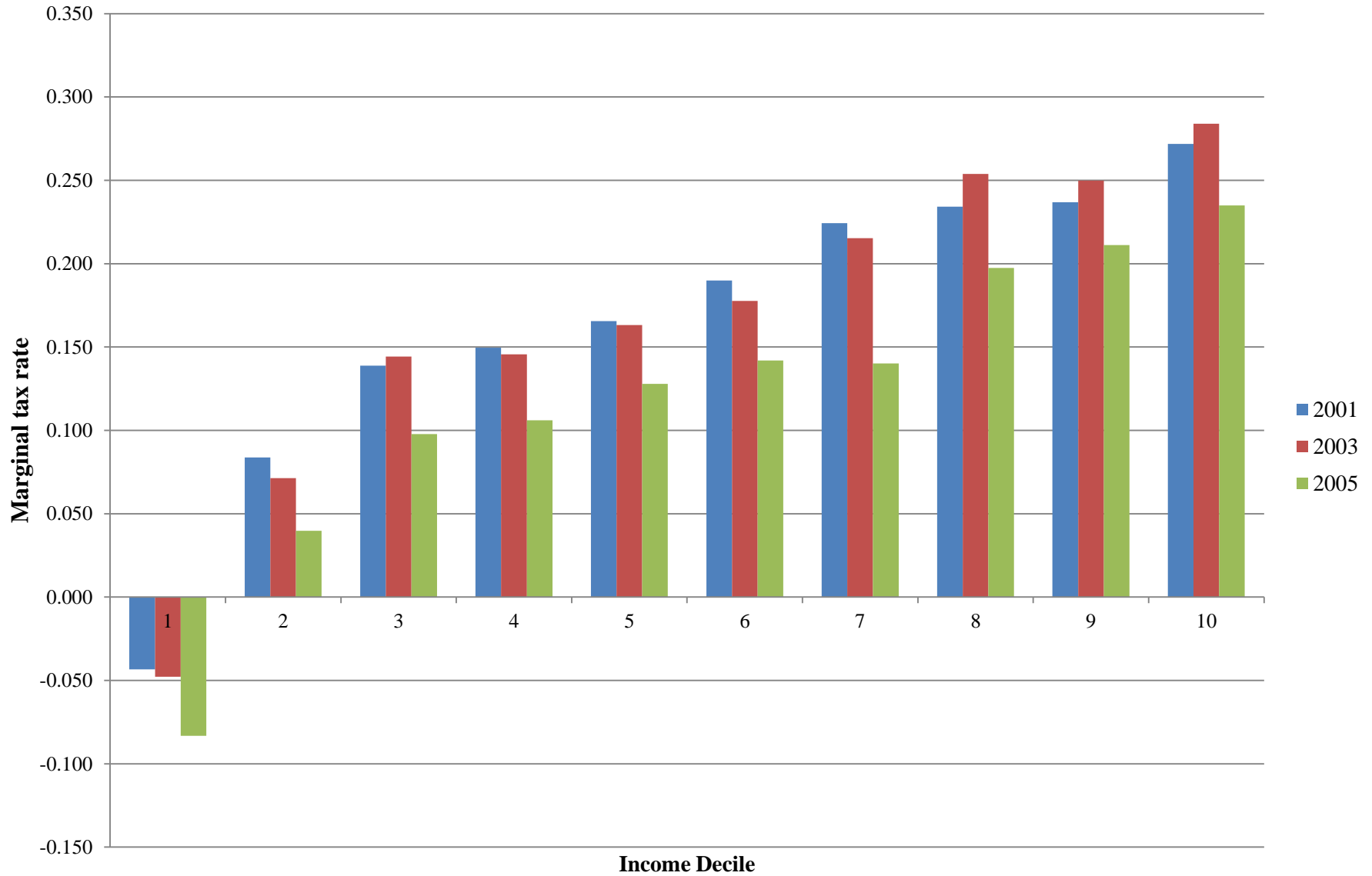
This model contained the full set of control variables, though not all are reported here.

All regressions were estimated with robust standard errors and clustered by household

Each column represents a separate estimation.



**Chart 1**  
**Marginal Tax Rate by Income Decile, 2001-2005**



**Chart 2: Price Elasticity of Charitable Giving  
Probability of Giving At Least \$X to Organization Type**

