Income Tax Policy and Charitable Giving

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Abstract

Many studies over the past 20 years have looked at the response of charitable donations to tax incentives—the tax price elasticity of giving. Generally, authors have assumed this elasticity is constant across all types of giving. Using the 2001 Panel Study of Income Dynamics data on charitable giving, this paper estimates the tax price elasticity across six nonprofit subsectors, finding substantial variation. These results suggest that the fiscal effectiveness of tax deductibility depends on the type of donation involved. This has implications for both public policy and nonprofit management. © 2007 by the Association for Public Policy Analysis and Management

> "Over and over again, the courts have said there is nothing sinister in so arranging one's affairs as to keep taxes as low as possible. Everybody does so, rich and poor, and all do right, for nobody owes any duty to pay more tax than the law demands. Taxes are enforced exactions, not voluntary contributions."
>
> Judge Learned Hand

INTRODUCTION

In most developed countries, governments give some sort of favorable tax treatment to charitable giving. In the United States, for example, contributions are deductible from taxable income as long as they are given to "corporations, and any community chest, fund, or foundation, organized and operated exclusively for religious, charitable, scientific, testing for public safety, literary, or educational purposes, or to foster national or international amateur sports competition . . . or for the prevention of cruelty to children or animals."[1] Practically speaking, this refers to contributions to nonprofit organizations legally designated as having an educational or charitable purpose, or to legitimate houses of worship.[2]

Favorable income tax treatment of charitable contributions comes from the policy assumption that this will create an incentive to support what is arguably a public good or service, or at least curtail the disincentive to give created by the income tax's impact on disposable income. This idea is clearly evident in the early debates surrounding the provisions of the personal income tax. For example, the debate

[1] See U.S. Internal Revenue Code TITLE 26, Subtitle A, CHAPTER 1, Subchapter F, PART I, Sec. 501(c)3.
[2] This legal designation is 501(c)(3).

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from the U.S. House of Representatives on the Revenue Act of 1913 (which created the first income tax of the 20th century) contains this argument from an unidentified congressman (Desmond, 1967):

> It seems to me that it is desirable that there should be no curtailment imposed by this act upon the benevolent members of the community. If a man wants to make a gift to charity, he ought to be encouraged to do so and not [be] discouraged. He ought to be encouraged to make such a gift rather than be penalized for doing so. This amendment that I have offered takes care of that situation and provides that in determining the deductions from net income there shall be included a deduction [for] gifts honestly made to these various benevolent corporations.

This argument made its way into tax law four years later, when the Revenue Act of 1917 created the charitable deduction we have today.

What the charitable deduction achieved, in simple terms, was to lower the effective price of giving. If I face a tax rate t on my income y net of donations D, my tax bill is $t(y - D)$, so the effective price I face for my donation is $(1 - t)$. If charitable giving affords me positive utility, all else constant, a higher tax rate—and hence a higher portion of my donations covered by the government—will mean a lower tax price, and more giving.

Tax deductibility for donations provides an indirect government mechanism to pay for charitable goods and services. This policy has two special features. First, it divides the cost of support for these goods and services between citizens and government. Second, it allows citizens direct control over what is funded, by creating what amounts to a "matching grant" through tax discounts for private gifts (Brooks, 2004a).

A common assumption in most of the literature on taxes and philanthropy is that tax effects are uniform across all types of giving. That is, a change in the tax discount should have the same incentive effect on giving to churches as it does for giving to hospitals. But is this true? This paper demonstrates that, in fact, it is not. Some types of giving are not strongly affected by changes in marginal tax rates, whereas other types are. This has important implications for the ways and reasons we support different parts of the nonprofit sector in our public policies, as well as for how the sector solicits donations.

Background

Why do people give charitably? Scholars have come to many answers to this question. To begin, Andreoni (1989) digs into the nature of altruism as a motive for giving, defining what he calls "warm glow giving" as charitable donations to others—often complete strangers—for reasons of personal satisfaction. He and others recognize that giving can have both selfish and unselfish motives, which a number of researchers have categorized. These include protecting family relationships (Barro, 1974), social pressure and prestige (Rose-Ackerman, 1996), and sense of duty (Barrett, 1999; Asheim, 1991).

The deductibility of charitable contributions affects the tax price of giving, and economists have asked how changes in this price affect the propensity to give. They usually measure this effect through the price elasticity of giving, $\frac{\partial D}{\partial(1-t)}\frac{(1-t)}{D}$. Generally, empirical studies of the tax price elasticity using American data have found a wide variety of values (Clotfelter & Steuerle, 1981; Steinberg, 1994), varying from as low as -0.43 (Kingma, 1989) to as high as -4.97 (Schiff, 1985).

There are several notable exceptions to the common implicit assumption that tax prices have a uniform, negative effect on charitable giving across the entire nonprofit

sector. For example, Feldstein (1975) derived elastic estimates for education, health, and social welfare, but an inelastic estimate for religion. Reece (1979) estimated an elasticity above unity for religion, but below unity for education. Bradley, Holden, and McClelland (1999) found price elasticity above unity for social welfare, but below unity for religion, education, and social welfare giving together. Some of the giving motivations mentioned above reinforce the idea that price elasticities should depend on the type of organization or charitable cause to which one gives. For example, if duty is a more salient motivator for some kinds of giving (such as that to religion) than others, this could make these types of giving relatively insensitive to tax price changes.

DATA

An excellent dataset to test the hypothesis that tax effects are not symmetric across the sector is the Panel Study of Income Dynamics (PSID), a national panel survey that has been conducted almost annually since 1968.[3] In 2001, the Center on Philanthropy at Indiana University sponsored a module of questions on charitable behavior. The survey asked about 7,400 families different combinations of questions on a broad range of issues, including inquiries about various types of charitable donations (COPPS, 2001). Respondents were asked how much they contributed in the year 2000 to all charities, as well as to specifically religious organizations, "combination" organizations such as the United Way that bundle gifts for secular nonprofits, organizations that aid the poor, health organizations, educational organizations, and "other" charitable organizations.[4]

The tax price of giving depends on each person's marginal tax rate, data that are not available in the PSID/COPPS data. To calculate these rates, I used the National Bureau of Economic Research's TAXSIM tax calculator.[5] This calculator utilizes the PSID/COPPS data for each respondent's relevant demographic characteristics (for example, state of residence, marital status, number of dependents, senior citizens in the home), income amounts and types (for example, labor income, dividend income, property income, unemployment compensation), and expenses (for example, itemized deductions and child care expenses). TAXSIM determines whether a taxpayer would have itemized his or her deductions and estimates a marginal tax rate for each person. The model has been used very extensively over the past 25 years, and has the advantage of being updated each year to reflect changes in the tax code. Researchers have found TAXSIM to provide an accurate measure of the true marginal tax rate (for example, Butrica & Burkhauser, 1997).

Since 1968, the PSID has included an oversample of low-income households, taken from the Survey of Economic Opportunity (SEO), conducted by the Bureau of the Census for the Office of Economic Opportunity (Brown, 1996). The SEO households in the 2001 data made up approximately 27 percent of the total sample. Similar to the SEO, the PSID added immigrant households to the sample in 1997 and 1999—called the Immigrant Refresher Sample—to reflect better the American

[3] The data and documentation are publicly available at http://psidonline.isr.umich.edu/.

[4] These categories generally cover activities by public charities, which are 501(c)(3) organizations in the U.S., and thus accept tax-deductible donations. However, it is not possible in the PSID/COPPS data—or any other survey of giving—to measure *only* contributions made to 501(c)(3)s. It is probably the case that some of the donations reported went to other kinds of nonprofits and hence were not tax deductible. This reduces the measured sensitivity of donations to taxes.

[5] See http://www.nber.org/~taxsim/taxsim-calc/index.html. For more details on the use of TAXSIM with COPPS-PSID data, see Steinberg, Wilhelm, and Bandy (2004). One weakness of TAXSIM is the way it treats nontraditional charitable gifts, such as appreciated assets. Most likely, this would be more of a problem in studies of the wealthy than it is here.

population makeup since 1968, when PSID was launched. In 2001, these immigrant households represented about 7 percent of the total sample. The SEO and immigrant subsamples arguably are identifiably different in many ways from the rest of the sample, which is designed to be representative of the overall population. In particular, low-income and immigrant households are disproportionately unlikely to have sufficient deductible expenses (for example, home mortgage interest, state and local taxes, and charitable contributions) to make itemization worthwhile, meaning that the price of their giving is unity, and thus rendering useless a calculation of their tax price elasticity of giving. To avoid the bias these subsamples introduce, they have been dropped from the analysis, lowering the sample size by about 2,400 observations.

An accurate measure of tax price elasticity has to control for income variation. The best measure of income for estimating the effects on giving is one insulated from temporary shocks by forces such as changes in wealth; that is, *permanent income* (Friedman, 1957), which can be estimated as an average of income across time. To estimate this, I sum all sources of income for each family in the panel in 2001, 1999, and 1997, correct for price inflation, and average the sums across the three years. The sources of income in each year include wages, dividends, interest, welfare support, pensions and annuities, unemployment and worker's compensation, child support, alimony, gifts from relatives or other people, and other income sources. The total household income includes that of the household head as well as of the spouse. In these data, approximately 25 percent of households made gifts that exceeded 2 percent of their gross household income; 20 percent gave more than 4 percent; and 10 percent gave more than 10 percent.

To capture the independent effect of wealth on giving, I construct a variable that sums several stocks of resources. These include the value of pensions, money in savings and investments, and the value of homes. Religious affiliation and education levels are mildly problematic in the PSID data, because they are only recorded in the year that a family enters the sample or when there is a change. This necessitates finding the entry for the household head whenever it was last entered (back to 1968) and carrying these values forward to the 2001 panel.

The PSID/COPPS data, supplemented with the TAXSIM results, are summarized in Table 1.[6]

In 2001, 64 percent of households made charitable contributions, averaging $1,221 (among giving households, the average amount was $1,908). The population percentage that gives is somewhat lower than what is found in some other surveys, such as the 2002 General Social Survey (78 percent) and the 2000 Social Capital Community Benchmark Survey (81 percent).[7] Forty-five percent of the population gave an average of $767 to religious organizations. Smaller percentages of the giving households gave to combination organizations (31 percent), causes for the poor (27 percent), health charities (20 percent), education organizations (14 percent), and other organizations (19 percent).[8]

[6] In the COPPS/PSID, I classified "Protestants" as Baptists, Lutherans, Methodists, Presbyterians, Episcopalians, Unitarians, Christian Scientists, 7th-Day Adventists, Pentecostals, Amish, Church of God, Disciples of Christ, Church of Christ, and other Protestants. The "Other Christian" category encompasses Mormons, Jehovah's Witnesses, Orthodox, and generic "Christians."

[7] One reason the COPPS/PSID percentage is lower is that, unlike most surveys of giving, the survey features a screen on gifts of $25 or more.

[8] One problem with separating out types of charity such as this is the natural ambiguity among religion, combination, health, and social welfare, where many charities do more than one of these things. The wording of the questions in COPPS/PSID is intended to reduce this ambiguity. Also, with a large sample such as COPPS/PSID, there will be sufficient distinction among the types to allow us to estimate differing elasticities, if in fact differences do exist. The results in the next section show that this is generally the case.

Table 1. Summary of PSID/COPPS data.

Variable	Definition	Mean (Standard Deviation)
Last-dollar price	Tax price based on marginal tax rate	0.827 (0.116)
Real income	Household income, 2001	64,015 (83,405)
Permanent income	Household income, real average of 1997, 1999, and 2001	60,148 (58,393)
Age	Age of household head	46.13 (16.76)
No high school*	Household head did not graduate high school.	0.15
High school*	Household head graduated high school.	0.38
Some college*	Household head attended some college but did not graduate.	0.25
College*	Household head graduated college.	0.13
Graduate school*	Household head has education beyond the undergraduate level.	0.09
Wealth	Household wealth	53,380 (215,775)
Male*	Household head is a man.	0.77
Married*	Household head is married.	0.59
White*	Household head is white.	0.84
Black*	Household head is black.	0.08
Protestant*	Household head is Protestant.	0.50
Catholic*	Household head is Catholic.	0.25
Other Christian*	Household head is other type of Christian.	0.03
Jewish*	Household head is Jewish.	0.03
Muslim*	Household head is Muslim.	0.01
Other religion*	Household head is other religion.	0.08
All donations	Total charitable donations	1,221 (3,182)
Religion	Donations to religious organizations	767 (2,218)
Combination	Donations to combination organizations	152 (901)
Poor	Donations to poverty-relief organizations	120 (669)
Health	Donations to health organizations	49 (426)
Education	Donations to education organizations	68 (832)
Other	Donations to other charitable organizations	81 (649)
Percentage making all donations*		0.64
Percentage making religion donations*		0.45
Percentage making combination donations*		0.31
Percentage making poor donations*		0.27
Percentage making health donations*		0.20
Percentage making education donations*		0.14
Percentage making other donations*		0.19

* Dummy variable.

The average marginal tax rate was 17 percent. The average respondent had some college education (about 13 years), moderate wealth ($53,000), and was most likely to be white (84 percent). The religion variables suggest that 90 percent of the sample identified with some religion, whereas 10 percent did not.

Models

To test the hypothesis that the tax price elasticities vary among nonprofit subsectors, a conceptual model of charitable giving by individual i to cause j is

$$D_{ij} = \begin{cases} f(y_i, p_i, Z_i) & \text{if} \quad u[D_{ij}, y_i - p_i D_{ij}, Z_i] > u[0, y_i, Z_i] \\ 0 & \text{otherwise} \end{cases}, \tag{1}$$

where D_{ij} refers to donations, y_i is income, p_i is the price of giving, Z_i is a vector of demographic variables, and $u[\bullet]$ is i's utility function. In words, if the decision is made in the first place to give to this cause, the amount of giving will be a function of income, price, and demographics.

A general form of the equation to estimate Equation 1 is

$$D_{ij} = \beta_0 + \beta_1 p_i + \beta_2 y_i + \beta_3' Z_i + u_{ij}, \tag{2}$$

where u_{ij} is a random disturbance. The non-dummy variables are measured in natural logarithms to ascertain elasticities. The specific variables in Z are those in Table 1, which follow a large body of literature on demographic patterns in charitable giving.[9]

Estimation of equation 2 features several major econometric complications. The first comes from the fact that p is itself a function of donations, because marginal tax rates are determined by income net of donations. Because p and D are simultaneously determined, an estimation that simply defines p as the last-dollar price of contributing (one minus the tax rate at the stated level of donations) will produce an inconsistent estimate. Economists have solved this in several novel ways (Auten, Holger, & Clotfelter, 2002; Randolph, 1995). The simplest method, which I use here, relies on a two-stage approach, in which the first-dollar price of giving (one minus the marginal tax rate on gross income) is used as an instrument for the last-dollar price.

A second econometric issue regards model specification. The large number of zero donations (36 percent of the sample in the PSID data) should lead to inconsistent estimates using least-squares methods. This suggests the use of limited dependent variable models in which a large number of zeros on the left-hand side can be accommodated (McClelland & Kokoski, 1994).[10]

I address the endogeneity of the price variable and the censoring in the dependent variable by simultaneously estimating the last-dollar price and the level of contributions in a full-information maximum likelihood (FIML) tobit system.[11] For this specification, D is re-coded as the natural log of each type of donation, plus 1. Following McDonald and Moffitt (1980), I estimate the value akin to a marginal effect of each coefficient by multiplying each raw tobit coefficient by the proportion of the population making each type of gifts.

RESULTS

Table 2 presents the results of FIML tobit for all donations together. The first model uses the permanent income measure; the second uses current income; the third uses both measures simultaneously. To estimate a marginal effect from each coefficient, I adjust the raw coefficients by the proportion of positive givers (0.64).

[9] For a survey of past studies of the effects of demographics on giving and the theoretical arguments for their inclusion, see Van Slyke and Brooks (2005).

[10] These techniques make strong parametric assumptions, of course. If these are not legitimate, semiparametric methods are appropriate. Bradley et al. (1999) gives an example of such techniques. However, Wilhelm (2005) provides evidence that, even when distributional assumptions underlying the tobit model are violated, this specification can still produce accurate coefficients.

[11] For information on estimation of the FIML tobit system using LIMDEP econometric software, see Greene (1998, p. 683).

The tax price of giving here is about −2.7, which is significant and elastic. This is somewhat higher than most estimates in the literature, although not dramatically so. Most of the other coefficients in Table 3 are fairly typical. Permanent income elasticity is significant at 0.21, whereas current income has a much lower elasticity of .09. When combined in model 3, current income is no longer significant. Education pushes giving up. Age drives giving up, but at a diminishing rate. The wealth elasticity of giving is about 0.27, and married people give more than single people. Both whites and blacks give more than people of other races. Almost all of the religion dummies are positive and significant, which probably is capturing the positive impact of religious participation more than anything else (Brooks, 2004b). Men give less than women.

This is the point at which most studies conclude that tax policy is fairly effective at changing giving incentives. The difficulty with this conclusion, as we have seen, is that it assumes all types of giving are affected the same. Table 3 shows the results of the tests of the validity of this assumption. As in Table 2, the marginal effects are estimated by multiplying the raw FIML tobit coefficients by the sample proportion making a positive contribution to each type of cause.

Table 3 shows that there is tremendous variation in the price elasticity of giving, ranging from .58 (health organizations) to 2.68 (combination charities).[12] This result tells us that an "overall" giving elasticity (such as that estimated in Table 2) effectively blends giving types together that individually have radically different sensitivities to tax incentives.

The income effects in Table 3 are similarly low among subsectors. In general, these coefficients are substantially lower than the income elasticities found in most studies (for example, see McClelland & Brooks, 2004). The subsectoral wealth elasticities are significant, but somewhat lower than in the regression on all types of giving (Table 2).

Age is concavely related to giving for religion, combination gifts, education, and other charities, but is insignificantly related to giving to health organizations or to the poor. Marriage drives all types of giving up. Men give less to the poor and health organizations (as well as "other" organizations), but gender is not related to the other three types. African Americans and whites give more to all five specific types of charities than do non-black minorities. Members of nearly all religious groups give more to religion than people with no religious affiliation, as expected; they also generally give more to combination organizations. Catholics and Jews give more than others to health causes, and Jews also give more to poverty-related causes.

Table 4 presents the results of Wald tests that the overall and subsector elasticities are unity, as well as equal to each other. Although in some cases we cannot reject the equivalence of the elasticities across subsectors, in most cases they diverge significantly. Four subsectors (religion, poverty, health, and education) have elasticities that are indistinguishable from unity.

The subsectoral price elasticity estimates in Table 3 provide some contrast with past studies that have looked at specific giving types. Table 5 summarizes these differences.

The area of greatest agreement across the literature to date is in the area of social welfare, where all three of the extant estimates are between −1 and −2. In religion

[12] One possible explanation for the high elasticity on combination charity giving, such as to the United Way, is that it often takes place through the workplace, and that consequently people with high salaries (and high tax rates) may be pressured to give. If true, this would not be an authentic tax price effect, but rather a residual from this pressure. To test this, I reran the Combination model using dummies for income quartiles, to see whether this soaked up the variance attributed to price elasticity. However, doing so changed the raw price elasticity coefficient to −9.08, a statistically insignificant change.

Table 2. FIML Tobit and two-stage least squares results for all charitable giving.

	FIML Tobit Coefficient (Standard Error) [Marginal Value]	FIML Tobit Coefficient (Standard Error) [Marginal Value]	FIML Tobit Coefficient (Standard Error) [Marginal Value]
Intercept	−51.24*** (6.43) [−32.64]	−50*** (6.42) [−31.85]	−51.23*** (6.43) [−32.64]
Tax price (last-dollar price)	−4.18*** (0.56) [−2.67]	−4.29*** (0.57) [−2.73]	−4.18*** (0.57) [−2.66]
Permanent income	0.326*** (0.091) [0.208]		0.31** (0.11) [0.2]
Current income		0.135** (0.051) [0.086]	0.01 (0.07) [0.01]
Age	21.05*** (3.43) [13.41]	21.36*** (3.43) [13.61]	21.05*** (3.43) [13.41]
Age squared	−2.5*** (0.46) [−1.59]	−2.54*** (0.46) [−1.62]	−2.5*** (0.46) [−1.59]
Wealth	0.429*** (0.021) [0.273]	0.433*** (0.021) [0.276]	0.429*** (0.021) [0.273]
High school†	0.265 (0.186) [0.169]	0.333* (0.184) [0.212]	0.265 (0.186) [0.169]
Some college†	0.636** (0.206) [0.405]	0.748*** (0.202) [0.476]	0.635** (0.206) [0.405]
College†	0.521** (0.253) [0.332]	0.676** (0.248) [0.431]	0.52** (0.253) [0.331]
Graduate school†	0.721** (0.295) [0.46]	0.91*** (0.286) [0.58]	0.721** (0.295) [0.459]
Male†	−0.392** (0.187) [−0.25]	−0.35* (0.187) [−0.223]	−0.391** (0.188) [−0.249]
Married†	1.709*** (0.169) [1.089]	1.724*** (0.17) [1.098]	1.707*** (0.17) [1.088]
White†	1.373*** (0.231) [0.874]	1.396*** (0.232) [0.889]	1.373*** (0.231) [0.875]
Black†	1.269*** (0.302) [0.809]	1.272*** (0.302) [0.81]	1.27*** (0.302) [0.809]
Protestant†	1.251*** (0.217) [0.797]	1.25*** (0.217) [0.797]	1.251*** (0.217) [0.797]
Catholic†	0.9*** (0.238) [0.574]	0.908*** (0.238) [0.578]	0.9*** (0.238) [0.573]
Other Christian†	1.654*** (0.396) [1.054]	1.64*** (0.395) [1.045]	1.654*** (0.396) [1.054]
Jewish†	1.918*** (0.595) [1.222]	1.939*** (0.598) [1.236]	1.921*** (0.596) [1.224]
Muslim†	−0.497 (0.781) [−0.317]	−0.523 (0.784) [−0.333]	−0.498 (0.781) [−0.317]
Other religion†	1.749*** (0.28) [1.114]	1.765*** (0.281) [1.125]	1.75*** (0.28) [1.115]
N	4,406		

* Significant at the .10 level. ** Significant at the .05 level. *** Significant at the .01 level.
† Dummy variable.

Table 3. FIML Tobit results for various types of giving.

	Religion	Combination	Poor	Health	Education	Other
Intercept	−55.04*** (11.27) [−24.31]	−47.09*** (12.55) [−14.29]	−39.79** (14.03) [−10.62]	−29.28* (15.34) [−5.8]	−88.92*** (23.07) [−12.2]	−53.43** (18.23) [−9.96]
Tax price (last-dollar price)	2.62** (0.91) − [−1.16]	−8.84*** (1.2) [−2.68]	−4.97*** (1.15) [−1.33]	−2.93** (1.16) [−0.58]	−7.59*** (1.74) [−1.04]	−6.5*** (1.5) [−1.21]
Permanent income	0.135 (0.149) [0.06]	0.464** (0.165) [0.141]	0.357** (0.178) [0.095]	0.19 (0.179) [0.038]	0.079 (0.243) [0.011]	0.158 (0.22) [0.03]
Age	20.16*** (5.93) [8.9]	14.15** (6.73) [4.29]	11 (7.46) [2.94]	3.3 (8.22) [0.65]	35.63** (12.02) [4.89]	18.82** (9.6) [3.51]
Age squared	−2.22** (0.79) [−0.98]	−1.56* (0.9) [−0.47]	−1.15 (0.99) [−0.31]	0.04 (1.09) [0.01]	−4.56** (1.59) [−0.63]	−2.13* (1.27) [−0.4]
Wealth	0.407*** (0.038) [0.18]	0.432*** (0.046) [0.131]	0.491*** (0.058) [0.131]	0.48*** (0.062) [0.095]	0.586*** (0.09) [0.08]	0.466*** (0.065) [0.087]
High school†	0.18 (0.315) [0.08]	0.463 (0.363) [0.14]	0.451 (0.414) [0.12]	0.327 (0.438) [0.065]	−0.377 (0.619) [−0.052]	0.102 (0.522) [0.019]
Some college†	0.484 (0.345) [0.214]	0.929** (0.396) [0.282]	0.896** (0.451) [0.239]	0.941** (0.48) [0.186]	0.252 (0.657) [0.035]	0.73 (0.573) [0.136]
College†	0.575 (0.409) [0.254]	0.781* (0.454) [0.237]	0.386 (0.518) [0.103]	0.658 (0.556) [0.13]	2.045** (0.774) [0.281]	1.255* (0.66) [0.234]
Graduate school†	0.643 (0.451) [0.284]	0.889* (0.51) [0.27]	0.57 (0.562) [0.152]	1.094* (0.606) [0.216]	3.131*** (0.837) [0.43]	2.353*** (0.734) [0.439]
Male†	−0.67** (0.328) [−0.296]	−0.222 (0.361) [−0.067]	−1.733*** (0.455) [−0.463]	−0.973** (0.452) [−0.193]	−1.06* (0.621) [−0.145]	−1.459** (0.541) [−0.272]
Married†	2.836*** (0.318) [1.253]	0.989** (0.314) [0.3]	2.295*** (0.421) [0.613]	1.814*** (0.426) [0.359]	2.235*** (0.598) [0.307]	1.954*** (0.476) [0.364]
White†	0.872** (0.397) [0.385]	1.624*** (0.457) [0.493]	2.43*** (0.577) [0.649]	3.801*** (0.776) [0.753]	4.281*** (1.037) [0.587]	1.883** (0.666) [0.351]
Black†	1.554** (0.527) [0.686]	1.374** (0.608) [0.417]	1.752** (0.722) [0.468]	2.824*** (0.886) [0.559]	3.623** (1.227) [0.497]	−0.424 (0.922) [−0.079]

(*Continued*)

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Table 3. (*Continued*)

	Religion	Combination	Poor	Health	Education	Other
Protestant†	4.229*** (0.448) [1.868]	0.987** (0.399) [0.299]	−0.604 (0.452) [−0.161]	−0.016 (0.467) [−0.003]	−0.372 (0.612) [−0.051]	−2.362*** (0.573) [−0.44]
Catholic†	3.737*** (0.477) [1.65]	1.558*** (0.438) [0.473]	−0.058 (0.483) [−0.015]	1.232** (0.525) [0.244]	0.174 (0.659) [0.024]	−1.607** (0.57) [−0.3]
Other Christian†	5.148*** (0.708) [2.274]	0.13 (0.691) [0.04]	−0.198 (0.773) [−0.053]	0.674 (0.829) [0.133]	−1.078 (1.153) [−0.148]	−3.232*** (0.963) [−0.603]
Jewish†	2.371*** (0.687) [1.047]	2.869*** (0.869) [0.871]	1.691** (0.809) [0.451]	3.564*** (0.924) [0.706]	1.218 (1.114) [0.167]	−0.368 (0.975) [−0.069]
Muslim†	2.248 (1.407) [0.993]	−0.419 (1.331) [−0.127]	0.162 (1.544) [0.043]	−0.695 (2.157) [−0.138]	−0.086 (2.229) [−0.012]	−3.64* (1.912) [−0.679]
Other religion†	4.743*** (0.55) [2.095]	1.376** (0.521) [0.418]	0.375 (0.595) [0.1]	0.733 (0.635) [0.145]	−0.462 (0.842) [−0.063]	−2.631*** (0.771) [−0.491]
N	4,358	4,386	4,353	4,391	4,397	4,386

* Significant at the .10 level. ** Significant at the .05 level. *** Significant at the .01 level.
† Dummy variable.

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Table 4. Hypothesis tests of the equivalence of tax elasticities.

Hypothesis: Equivalent elasticity among subsectors	All Organizations	Religion	Combination	Poor	Health	Education	Other
Unity	***	X	***	X	X	X	*
Elasticity for all organizations		***	X	***	***	***	***
Elasticity for religious organizations			***	X	***	X	X
Elasticity for combination organizations				***	***	***	***
Elasticity for organizations helping the poor					***	X	X
Elasticity for health organizations						*	***
Elasticity for education organizations							X

Note: All test statistics are the chi-square results of Wald tests.
X = Statistically indistinguishable. * = Significantly distinguishable at the .10 level. ** = Significantly distinguishable at the .05 level. *** = Significantly distinguishable at the .01 level.

Table 5. Estimates of subsectoral price elasticities.

	Religion	Education	Health	Social welfare (including gifts to the poor)
Estimates from Table 3	−1.30	−1.18	−0.64	−1.43
Feldstein (1975)	−0.49	−2.23	−2.44	−1.19
Reece (1979)	−1.60	−0.08		
Bradley et al. (1999)				−1.34

and education, my estimates, which are slightly above unity, fall between those previously found to be either above 2 or below 1. In health, my estimate is significantly lower than Feldstein's, which places it above 2. It is not terribly surprising that there is some variance in these estimates; several of the papers cited here are from the 1970s, when income and taxes (and hence, probably elasticities) were distributed very differently than at present.

Implications for Policy and Management

The U.S. government relies on tax deductibility to provide the "matching grants" that make up nearly $40 billion annually, which is about 15 percent of total government funding and about 5 percent of all funding, to American nonprofit organizations (Rushton & Brooks, 2006). This mechanism relies on the assumption, however, that deductibility is actually eliciting aid from private givers. This paper

provides evidence that this effect is variable across the sectors and that some nonprofits are not receiving much implicit aid from this policy.

Should policymakers pay attention to this and consider direct government support to augment indirect subsidies in sectors in which the tax effects are weak? Policymakers and citizens may or may not buy this argument. And in some parts of the nonprofit sector, it would be a moot legal point. For example, direct subsidization of sacramental activity—even if it were price inelastic—would be unconstitutional. In other cases, political difficulties can arise from subsidizing certain activities; such has often been the case with arts and culture funding over the past two decades (Brooks, 2001).

Another policy question is whether tax deductibility of charitable contributions is a cost-effective use of public resources. William S. Vickrey introduced this idea in 1962 (Vickrey, 1962). Roberts (1987) formalized this idea by noting that tax deductions for charitable gifts are efficient (from a governmental standpoint) as long as the increase in donations they elicit, $\partial D/\partial t$, is greater than the increase in foregone tax revenues that results, $t(\partial D/\partial t) + D$. Because the price of giving p is $1 - t$, the criterion $\partial D/\partial t > t(\partial D/\partial t) + D$ can be restated as $\partial D/\partial(1 - p) > (1 - p)[\partial D/\partial(1 - p)] + D$, or $(\partial D/\partial p)(p/D) < -1$. In other words, the price elasticity of giving must be greater than unity (in absolute terms) for the deduction to be fiscally efficient.[13] Otherwise, lost revenues to government are not compensated fully by donations to charity. The dramatic differences in giving elasticities among subsectors suggest that deductibility for most types of giving (for example, religion, poverty, combination charities, and education) are probably efficient, whereas health charity, by itself, is probably not. However, because most people donate to more than one type of charity in a given year, the net tax price elasticity—for all types of gifts together—is greater than unity (−2.7). Whether tax deductibility is, on balance, a fiscally efficient or inefficient policy, therefore, depends on the "granularity" of one's analysis.

CONCLUSION

This paper has shown that it is not appropriate to assume a uniform effect of tax deductibility over different types of charitable giving. Some types of donations (for example, to combination charities like the United Way) react strongly to tax incentives, whereas others (for example, to health charities) are affected only weakly by deductibility. The implication of this finding is that, as a matter of public policy, deductibility is variable in its effectiveness, and indeed for some types of giving, it appears to stimulate less giving than even the tax revenues lost from the deduction. For the nonprofit sector, this means that the importance of the policy depends on the type of organization. For example, houses of worship have a somewhat higher stake in maintaining (or increasing) tax deductibility than do universities.

This paper leaves a number of research questions for future work. Most notably, researchers could profitably dig more deeply into the revenue neutrality issue in the case of individual subsectors. This would be useful, for example, if state policymakers seek to choose types of donations that should be eligible for tax credits. Future work might also develop a theoretical basis for predicting which subsectors are likely to react more strongly than others to tax incentives—due to itemization, giving motives, or something else entirely. Finally, an expanded list of giving

[13] Roberts' approach also considers "crowding out" of donations by government grants. For the formula above to apply in Roberts' framework, crowding out has to be zero.

types—from future rounds of PSID/COPPS data, or other surveys—would allow a more detailed look into the asymmetric policy effects uncovered here.

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