Tax Credits and Charitable Contributions in Michigan

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ABSTRACT

This paper analyzes the impact of tax credits on charitable giving in Michigan and around the United States. The evidence indicates that the availability of tax benefits, in the form of federal and state tax deductions and state credits, significantly encourages charitable giving. The state of Michigan permits taxpayers to claim tax credits for contributions to public institutions, community foundations, and homeless shelters and food banks. While only a small fraction of the Michigan population claims these credits, their aggregate value exceeds $40 million a year. Contributors claiming credits in Michigan are disproportionately drawn from the high-income part of the population, though the ratio of tax credit benefits to total tax obligations is approximately equal for all income groups. The estimates imply that the availability of tax credits in Michigan increases annual credit-eligible contributions by more than $40 million, possibly at the expense of contributions to other nonprofit recipients.

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1. Introduction.

The U.S. federal government, the state of Michigan, and a number of other U.S. states currently offer tax incentives for individual and corporate charitable contributions. Under U.S. law, individual taxpayers itemizing deductions on their federal income tax returns are entitled to reduce their taxable incomes by the amount of charitable contributions (subject to certain limits). In Michigan, individuals and businesses are entitled to separate tax credits (against Michigan income tax liabilities) for contributions to certain qualifying charitable organizations performing public functions, contributions to homeless shelters and food banks, and contributions to community foundations. These tax credits equal 50 percent of relevant contributions, but are capped at $100 per taxpayer per year. Eleven other states offer a variety of tax credits for contributions to various nonprofit recipients, most subject to contribution limits that are similar to Michigan's.

The favorable treatment of charitable contributions has a long history, but is subject to increasing scrutiny by reformers of all persuasions. Advocates of tax deductions and tax credits for charitable giving argue (in part) that these provisions stimulate charitable giving, while those who urge the repeal of these tax provisions typically disagree. Since the recipients of charitable contributions perform activities that might otherwise be responsibilities of governments, it is appropriate, the argument goes, for governments to encourage and reward contributions with favorable tax treatment. The need to raise taxes in order to offset revenue foregone with charitable deductions and tax credits does, however, suggest that the cost-effectiveness of these tax provisions in stimulating charitable giving is an important consideration in evaluating their desirability and design.

The purpose of this study is to analyze the effectiveness of tax credits in encouraging charitable giving, which is an important component in evaluating the design and even desirability of maintaining state tax credit programs. The results indicate that the Michigan tax credit program successfully stimulates a significant amount of charitable giving that would not take place in the absence of the credit. The magnitude of the aggregate effect on charitable contributions in Michigan is roughly comparable to the $40 million state budgetary cost of tax credit claims each year.

Research that analyzes the impact of the tax treatment of charitable contributions on the level of charitable giving is based on straightforward theories of individual behavior, simply that people are more inclined to contribute $100 when their contribution costs them only $50 than when it costs them $100. Of course, for this theory to be valid, it is necessary that individuals understand their eligibility for tax credits and tax deductions, and that they act on the basis of this knowledge.

This very simple behavioral story becomes more complicated when incorporating credit limits and caps on deductibility. The Michigan tax credit offers an instructive example. An individual contributing up to $200/year to a Michigan library is entitled to a credit against state income tax liability equal to half of his or her contribution. (The limit is $400 for a married couple.) The credit is capped, however, at $100/year for a single taxpayer, so the tax-based incentive to increase one's charitable contribution stops at a contribution level of $200. From the standpoint of a government offering tax credits, a cap on the credit has the appealing feature of limiting its budgetary costs. For most contributors, this cap is an unimportant design feature, since desired (and actual) contributions fall well below the $200 limit. As a result, the credit encourages these taxpayers both to become contributors (by offering a tax benefit in return), and

to increase the size of their contributions beyond what they would otherwise choose (since the tax benefit rises as contributions increase).

Large contributors (those contributing more than $200/year) receive tax benefits for the first $200 of their contributions, but are ineligible for tax credits on any additional contributions. The tax system therefore encourages these contributors if their alternative is not giving to charity at all, but does not stimulate them to increase the sizes of their contributions, since there is no marginal tax benefit associated with a larger contribution. A naïve statistical analysis of the giving patterns of very wealthy taxpayers might, then, produce a correlation indicating that contributors for whom the tax credit offers no marginal incentive nonetheless are major givers, while taxpayers who remain eligible for additional credits on marginal contributions – those contributing less than $200 – are not major givers. It would be a mistake to draw from this pattern the inference that marginal incentives reduce charitable contributions, since the correlation simply reflects the design of the tax credit. But this type of mistaken inference nonetheless appears frequently in the literature on the impact of tax incentives on charitable giving.

Accurate measurement of the determinants of individual charitable giving in Michigan affords an opportunity to answer several important questions relevant to the design of Michigan's tax policy, in particular the possible consequences of expanding Michigan's tax credit program. Section two of this paper reviews state tax programs designed to encourage charitable giving; section three considers the theory and estimation of their impact. Section four describes the data used in the statistical analysis, and section five presents the regression results. Section six discusses the implications of these statistical findings, and section seven is the conclusion.

2. History and Practice.

Passage of the 16th Amendment to the U.S. Constitution in 1913 gave the federal government the ability to impose an income tax, an early variant of which was indeed adopted that year. In response to concerns that tax obligations might erode support for charitable and other nonprofit organizations, Congress made charitable contributions tax-deductible in 1917.

The ability to deduct charitable contributions from gross income serves to encourage contributions by lowering the after-tax cost, or "price," of such contributions. Since taxpayers are typically eligible to claim standard deductions against federal and state taxable income, the deductibility of charitable contributions is helpful only to those taxpayers who itemize their deductions or can otherwise benefit from them. For such taxpayers, the cost of one dollar of charitable contributions is less than one dollar, specifically $(1-\tau)$, in which τ is the marginal federal tax rate.[1] For non-itemizers, the cost of one dollar of charitable contributions is one dollar. Some states allow a deduction at the state level for charitable contributions similar to that at the federal level, while others do not allow this deduction but instead provide tax credits for donations to qualified charities. A credit differs from a deduction in that it is a direct reduction in tax liability, the value of which does not depend on the tax rate facing the taxpayer. A state offering a 50 percent credit for certain types of contributions therefore reduces the after-tax cost of such contributions by 50 percent for any taxpayer eligible to claim the credit.

Table 1 summarizes state experiences with tax deductibility and charitable contributions. The first column indicates the fraction of taxpayers in each state who itemized deductions in 1996. The average itemization rate in 1996 was only 28 percent, implying that most taxpayers

[1] Individuals are not permitted to deduct charitable contributions exceeding 50 percent of their taxable incomes, and other limits apply to specific types of tax-favored contributions.

claimed the standard deduction for federal income tax purposes and therefore did not benefit from the ability to deduct charitable contributions from their taxable incomes. The rate of itemization varied from a low of 14 percent in South Dakota and West Virginia to highs of 37 and 38 percent in high-income New York and Connecticut. Table 1 provides information on mean and median contributions drawn from data described later in the paper,[2] indicates whether states permit deductions for charitable contributions, and, in the last column, flags that Delaware, Massachusetts, and Wisconsin permit non-itemizers to claim deductions against state income taxes for charitable contributions.

Michigan does not permit taxpayers to claim deductions for charitable contributions, but offers tax credits for charitable contributions of three types. The first is the Public Contribution Credit. Examples of eligible contributions are gifts to: Michigan colleges or universities, artwork created by the taxpayer if donated to a Michigan municipality or the State of Michigan for public display, Michigan municipality or nonprofit corporation affiliated with a Michigan municipality and an art institute, Michigan public broadcasting stations, Michigan public libraries, the Michigan Colleges Foundation, the preservation of state archives, and the State of Michigan Museum. This credit was implemented in 1967 and was the only one in place until 1989 when Michigan introduced a credit for donations to Community Foundations. Originally signed into law December 29, 1988, the Michigan Community Foundation Tax Credit was designed to encourage individuals and businesses to build the permanent endowments of community foundations across the state. Finally, in 1992, the state legislature introduced a third credit, applicable to donations to Homeless Shelters and Food Banks. All three of the Michigan credits are capped at the smaller of 50 percent of the contribution or $100 ($200 if joint return).

[2] The contribution figures reported in Table 1 are based on responses to the 1996 Independent Sector Giving and

Other states provide tax credits as well, but not quite to the extent of Michigan. Seven states (Alaska, Florida, Nevada, South Dakota, Texas, Washington, and Wyoming) have no state income taxes, and therefore no credits. A number of states provide credits for educational purposes, primarily for donations to institutions of higher learning; these states include Arizona, Idaho, Indiana, Missouri, Montana, Nebraska, and North Dakota. Arizona, Colorado, Missouri and Utah provide credits for contributions to human service organizations. Idaho and Missouri provide a credits for youth development. Wisconsin provides a credit for contributions to endangered resources. North Carolina provides a credit for contributions to any qualified charity, but only for non-itemizers. Arizona requires that taxpayers exceed contributions in a certain base line year in order to receive its credit. Table 2 summarizes the tax credit policies of states offering such credits.

Evidence of the popularity of Michigan's tax credits is presented in Table 3. In 1997, 265,400 Michigan tax returns, representing 5.5 percent of the total, claimed credits for contributions to public institutions including Michigan colleges and universities. Among returns claiming the credit, the average credit amount was $81.20. The total value of the public institution credit in Michigan that year was $21.6 million. The Michigan Community Foundation Credit was considerably smaller, claimed by only 0.4 percent of all tax returns, and had a total value of $1.8 million. The Homeless Shelter and Food Bank Credit was claimed by 3.1 percent of all returns and was worth $10.2 million in Michigan that year. All of these credits grew in popularity between 1997 and 2001, as indicated by the data reported in Table 3.

Table 4 examines the distribution of benefits for the credit for contributions to colleges and other public institutions in Michigan. Taxpayer are sorted in this table by adjusted gross

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Volunteering survey; the data are somewhat noisy for states in which there were smaller numbers of respondents (numbers of respondents are indicated in column 6). Survey responses are corrected for sampling weights.

income classes, and the evidence indicates that higher-income taxpayers are significantly more likely than others to claim the credit: 22.7 percent of taxpayers with incomes exceeding $100,000 claim the credit, whereas only 1.9 percent of taxpayers with incomes between $12,000 and $14,000 claim the credit. As a consequence, more than 40 percent of the benefit of the credit accrues to taxpayers with incomes over $100,000. It is interesting to note, however, that the ratio of tax credit benefits to total tax obligations is roughly constant or if anything declining as incomes rise. While high income taxpayers are the most likely to contribute to eligible recipients and therefore benefit from the tax credit in disproportionate numbers, they also shoulder a disproportionate share of Michigan's tax burden. Since the potential tax credit benefit is the same for all taxpayers, these effects roughly cancel each other and the tax credit provides a roughly a proportionate tax reduction across income classes.

3. Analysis.

The effectiveness of tax credits in stimulating charitable giving is critical to evaluating the desirability of maintaining or expanding existing tax credits. The most straightforward method of evaluating the impact of tax credits is to estimate the extent to which donations are affected by demographic variables, incomes, and prices.[3] Since the availability of a tax credit affects the after-tax price of contributing, and the after-tax income of a contributor, it is possible to break the effects of tax credits into their price and income components, expressing them as elasticities. Typical demographic factors that affect charitable donations are numbers of

[3] Charitable contributions are importantly affected by attributes of recipient organizations, but these are taken as fixed at any point in time in studying the determinants of who contributes. It is noteworthy that government policies may affect contributions indirectly through their impact on organizational finances (Brooks, 2000) or activities (Weisbrod, 1998).

dependents, age, marital status, and race. Prices and after-tax incomes are observable, and are affected by tax provisions that are also observable.

With sufficient demographic and financial information it is possible to estimate the after-tax price of charitable contributions for each potential contributor based on the tax reduction that such a contribution would trigger. Feldstein and Taylor (1976), applying 1970 Treasury Tax File data, use this method to construct the after-tax price of contributing, from which they obtain an estimate of the elasticity of charitable donations with respect to price equal to -1.419. Feldstein and Clotfelter (1976) use survey data collected by the Board of Governors of the Federal Reserve System in 1963-4 to perform a similar calculation, from which they estimate a price elasticity of -1.55. Brown and Lankford (1992), using survey data in an extended version of the basic model, obtain a price estimate of -1.89. Most studies, including those surveyed by Clotfelter (1985) and Steinberg (1990), as well as more recent efforts, find that the price elasticity of donations of money to be greater than one in absolute value. The larger estimates of the price elasticity come from a single data set created by Survey Research Center at the University of Michigan and the Census Department in 1973 called the National Study of Philanthropy (see, for example, Boskin and Feldstein (1978), who estimate a price elasticity of -2.54, or Long and Settle (1979), who estimate a price elasticity of -2.10).

More recent studies use panel data sets to introduce contributor fixed effects, thereby estimating price elasticities based on changes in contributions triggered by tax changes. These studies generally find price elasticities to be smaller than one in absolute value, implying that the magnitudes of price effects drop when controlling for individual effects. Tiehen (2001) pools information from multiple years of the Giving and Volunteering surveys to estimate price elasticities ranging from –0.94 to –1.15.

Estimated income elasticities of charitable giving lie generally below one typically taking values in the neighborhood of 0.70. Clotfelter (1985) and Steinberg (1990) survey this literature, reporting that panel studies tend to produce smaller income elasticities than do cross-sectional studies. Randolph (1995) offers a dynamic analysis, reporting an estimated permanent income elasticity of 1.14 and a transitory income elasticity of 0.58, and rejecting their equality. Tiehen (2001) estimates a cohort fixed effects model with income elasticities between 0.24 and 0.35.

Two types of data are typically used in calculating price elasticities of charitable giving: tax return data and household survey data. Each has its benefits and disadvantages. Tax return data accurately measure charitable donations, but do so only for taxpayers who itemize their deductions (since nonitemizers do not report charitable contributions on tax forms). Thus, a significant fraction of the population is excluded from these studies. Studies using household data avoid this limitation, and since most itemizers are high-income individuals, the use of household survey data supports empirical findings that apply to a cross-section of the population. Unfortunately, household survey data is inherently less reliable than tax data, since there are no sanctions for inaccurate answers and the data rely on the ability of respondents to recall specific details of their charitable donations.

The estimation of income and price elasticities of charitable donations confronts numerous econometric problems, among which are the endogeneity and identification of the regression parameters.[4] Endogeneity problems arise because the marginal tax rates faced by taxpayers depend upon their behavior. For example, an individual who works longer hours and earns additional income becomes subject to increasing marginal tax rates. In some settings the endogeneity of the tax rate to labor supply decisions leads to biased OLS regressors due to

nonzero correlation of the error term and independent variables. Choice of functional form is another significant issue. Linear and logarithmic specification are often used, but may represent ad hoc decisions on the part of researchers. White (1980) showed that if the function used for estimation does not encompass the true functional form, then OLS estimation is biased and inconsistent. As a result, using an econometric functional form in which the correct relationship of charitable donations, income, and marginal tax rates cannot be nested will result in misleading estimates of the income and price elasticities.

An individual's marginal tax rate is a function of taxable income, so if all individuals face the same tax function then the identification of tax effects rests on the chosen functional form of income in specifying the contribution equation. Feenberg (1987) notes that, since theory does not impose restrictions on the income terms of the contribution equation, identification merely through functional form cannot be persuasive. Feenberg uses variation in tax rates across the states as a source of variation in the after-tax cost of charitable contributions faced by different individuals. The soundness of this procedure is based on two assumptions: first, that state tax laws are independent of the personal characteristics of taxpayers, and second, that taxpayers react similarly to state and federal taxes. A second method to deal with the identification problem is to use data spanning time periods over which tax laws changed. As Triest (1998) notes, this provides the needed variation in tax prices, but comes at the cost of possibly introducing bias if there are contemporaneous changes in the economic environment that influence the behavior being modeled and are correlated with the tax changes. Wu (2002) offers a third source of arguably independent variation in tax rates: the inclusion of taxpayers subject to the alternative

[4] Government policies to encourage charitable giving, including those used by most U.S. states, commonly introduce nonconvexities in the budget constraints of potential contributors. This issue can greatly complicate the analysis of individual contributions, and is discussed in section 5.

minimum tax (AMT). Because U.S. tax law gives special treatment to AMT taxpayers, they face tax incentives that differ from those facing taxpayers not subject to the AMT.

4. Data

The data used in the empirical analysis of the impact of tax credits is drawn from the 1996 survey that forms the basis of the Independent Sector's survey, Giving and Volunteering. The 1996 survey assessed giving by Americans between May 1995 and May 1996; it covers 2,719 households in which respondents were 18 years or older. Respondents report income and demographic variables well as contributions, though incomes are reported only in ranges.[5] The 100 households that refused to report income or did not know it were dropped from the analysis, while others were assigned incomes equal to the median in each reporting category. Since the top income reporting category ($125,000 and higher) is terribly nonspecific from a tax and economic standpoint, the 68 households reporting that income level were excluded from the analysis.

The dependent variables used in the regressions are total monetary contributions to each of 12 separately-identified categories.[6] Religious organizations are by far the largest recipients of charitable contributions, since 42 percent of respondents indicate that they contributed to religious organizations, with mean contributions of $708. Human service organizations represent the next largest recipient category,[7] with 20 percent of respondents giving an average

[5] Survey respondents were given 20 choices in describing "income in 1995, before taxes, of immediate family in household": under $5,000; $5,000-$9,999; $10,000-14,999; and so on in $5,000 increments to $55,000-$59,999; then $60,000-$69,999; $70,000-$74,999; $75,000-$84,999; $85,000-$99,999; $100,000-$124,999; $125,000 or more; don't know; or refused to answer.

[6] Recipient categories include: health organizations, education, religion, human services, environment, public/society benefit, adult recreation, arts culture and humanities, youth development, private and community foundations, international/foreign, and other.

[7] Human service organizations include quite a collection: day care centers, consumer protection organizations, organizations devoted to legal aid, helping the homeless, providing housing and shelter, those focusing on recreation

of $205 each. Fifteen percent of respondents report giving to educational institutions, and all other recipient categories received fewer contributions from smaller fractions of the population. Means and standard deviations of the main regression variables are reported in Table 5.

5. Estimates.

Some care is necessary in estimating the responsiveness of charitable donations to the availability of tax credits. In theory, tax credits reduce the after-tax cost of charitable contributions, and thereby encourage taxpayers to contribute. The statistical difficulty raised by the design of tax credits in practice is that Michigan's tax credits (and those of other states) are capped. The Michigan caps reduce the cost of charitable contributions only for the first $200 of such contributions (in the case of a single taxpayer), and not for any amount above $200.

Table 6 presents estimates of Logit equations that explain the likelihood of contributing to educational institutions, human service organizations, and arts, culture and humanities – as well as any nonprofit recipient – as a function of observable variables and the availability of tax credits. The dependent variables in these regressions equal one if respondents contribute to the listed categories of nonprofit recipients, and equal zero otherwise. The object of these regressions is to control for observable variables that are likely to influence contributions, in order to focus on the impact of tax parameters. The first three coefficients are income, income squared, and income cubed; these variables are intended to control for the affluence of potential donors. The positive estimated sign of the coefficient on income implies that the likelihood of giving increases with income, which is unsurprising (and even reassuring). The negative estimated coefficient on income squared implies that the effect of additional income becomes

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and sports, the Red Cross, YMCA, United Way, United Jewish Appeal, Catholic Charities, and other combined multi-purpose charity drives.

more moderate over some ranges, though the positive estimated coefficient on income cubed indicates that this moderating effect dissipates as income rises. Estimated standard errors are in parentheses.

Other control variables have predicted effects on proclivities to contribute. The positive estimated coefficient on age indicates that the likelihood of contributing increases as a respondent ages, all other considerations held constant, while the negative coefficient on age squared indicates that this effect becomes smaller over time. Since wealth is not included as an explanatory variable (the survey does not measure respondent wealth), and age is correlated with wealth, it is possible that this pattern reflects the (positive) impact of wealth on charitable contributions over the life cycle. White respondents are more likely that those of other races to report contributing, while male respondents are less likely to contribute than are female respondents. Married respondents are more likely than unmarried respondents to contribute to educational institutions, human services, or any nonprofit recipient at all, while married respondents are less likely than unmarried respondents to contribute to arts, culture, and humanities organizations. Conditional on income and other observable factors, respondents with no more education than high school degrees are less likely than others to contribute to organizations in any of these categories.

The estimated coefficient on the *credprice* variable in column 1 of Table 6 is -0.444, which indicates that lower after-tax costs of contributing to educational institutions are associated with increased likelihood of contributing. The *credprice* variable is defined as the difference between one and the average tax benefit associated with contributing an additional dollar for a someone who gives $200 a year.[8] For a taxpayer who does not itemize deductions

[8] The value of *credprice* is calculated by running respondent information through the NBER TAXSIM program described by Feenberg and Coutts (1993).

on the federal tax return, and lives in a state that does not offer a tax deduction or credit for charitable deductions, the variable *credprice* takes the value one. For a taxpayer who itemizes deductions on the federal return, or who can obtain a tax benefit from his state of residence, *credprice* is less than one. The negative value of the estimated coefficient on *credprice* is negative, which is sensible, since reduced costs of contributing should be associated with greater likelihood of contributing. The standard error is sufficiently large that the estimated *credprice* coefficient is not statistically significant.

Column 2 of Table 6 reports estimated coefficients from a Logit equation explaining the likelihood of contributing to human service organizations. The sign pattern of the coefficients is identical to that reported in column 1, though the estimated coefficient on the *credprice* variable (-1.023) is larger in magnitude and statistically significant. Column 3 reports estimated coefficients for a Logit equation for contributions to organizations promoting arts, culture, and the humanities; in this case, the coefficient on the *credprice* variable is again large and statistically significant. Column 4 reports estimated coefficients from a Logit equation in which the dependent variable takes the value one if a household reports contributing to any nonprofit organization, and zero otherwise.[9] Once again the estimated effect of *credprice* is negative and significant, indicating that households respond to lower tax costs by increasing their contributions.

Since Table 6 reports estimated coefficients from Logit specifications, which are nonlinear behavioral models, it can be difficult to interpret the magnitude of the estimated coefficients. One convenient way to summarize the impact of the variable of interest (*credprice*) is to evaluate the impact of a small change at mean values of all the variables. In the case of the

[9] It is noteworthy that only 56 percent of all households report contributing to any nonprofit organization, as reported in Table 5.

education equation, reported in column one, the estimated derivative is –0.048, meaning that, for a respondent with mean income and other attributes,[10] a ten percent tax credit that reduces *credprice* by 0.10 would increase the likelihood of giving to educational institutions by 0.48 percent. Since only 15 percent of the sample reports giving to educational institutions, it follows that the elasticity of educational giving with respect to the after-tax cost of giving, evaluated at sample means, is 0.29.[11] This elasticity indicates that a 10 percent reduction in the after-tax cost of giving is associated with 2.9 percent greater likelihood of contributing.

A similar calculation using the results of the regression reported in column 2 of Table 6 indicates that a 0.10 reduction in *credprice* is associated with a 1.43 percent greater likelihood of contributing to a human services organization. Since only 20 percent of the sample contributes at all to human service organizations, and the mean value of *credprice* is 0.9, it follows that the estimated elasticity of human service giving is 0.64. In the case of giving to organizations specializing in arts, culture, and humanities, the estimates imply that 0.10 smaller *credprice* values are associated with 0.52 percent greater likelihood of giving. Since the mean giving rate is 6 percent, the estimated elasticity of giving to arts and culture organizations is 0.78. The estimates in column 4 of Table 6 imply that a 0.10 smaller value of credprice is associated with a 3.03 percent greater likelihood of giving to any organization, which in turn implies that the elasticity of contributing with respect to its after-tax cost is 0.49.

Table 7 presents estimated coefficients from Logit equations explaining contributions to each of the nine other categories of recipient organization. The estimated coefficients exhibit patterns that are similar to those that are apparent in the regressions reported in Table 6. In

[10] Some personal attributes, such as white, male, and married, take discrete values for any individual but have means that lie between zero and one, so the "mean respondent" that serves as the basis for the derivative calculations should be understood purely in a statistical sense.

particular, the estimated effect of *credprice* is uniformly negative in these nine regressions, and is statistically significant in four, those explaining contributions to health organizations, environmental organizations, religious organizations, and youth development organizations. Hence the results reported in Table 6 are not anomalous, but instead characteristic of respondent behavior.

The federal and state tax treatment of charitable contributions reduces the after-tax cost of giving in two ways: first by permitting itemizers to reduce taxable incomes by amounts contributed, and second by providing credits for certain contributions. In theory, both operate by reducing the cost of contributions, so they should have similar effects on contributions. In practice, it is possible to break *credprice* into these two components, in order to measure their impacts separately. Tables 8 and 9 report the results of regressions in which *totprice* is the after-tax cost of giving as it is affected only by federal and state deductibility, while *pc* is the change in the after-tax cost in giving due to state contribution credits. The *totprice* and *pc* variables are measured so that their values correspond to equal-sized changes in the after-tax cost of giving, so that, if households respond only to after-tax costs, the coefficients on *totprice* and *pc* should be equal (and both negative).[12]

Column 1 of Table 8 reports estimated coefficients from a Logit regression explaining contributions to educational institutions as function of non-tax variables, *totprice*, and *pc*. The estimated effect of pc (-0.447) is very close to that of *totprice* (-0.439), though neither is statistically significant, in part reflecting the impact of multicollinearity. The negative estimated

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[11] This calculation is: 0.048(0.9/0.15) = 0.29; the sample mean value of credprice is 0.9, while the sample mean value of the dummy variable for educational giving is 0.15.

[12] The variable *credprice* equals $(1-\tau_f)(1-c)$, in which τ_f is the federal marginal tax rate if a taxpayer itemizes deductions, and zero otherwise; *c* is the applicable state credit rate. *Credprice* can be decomposed into the sum of *totprice* $(1-\tau_f)$ and *pc* $-(1-\tau_f)c$.

coefficient on *pc* implies that larger state credits are associated with increased likelihood of contributing to educational institutions. The chi-squared test statistic of 0.989 reported at the bottom of the column is a test of the equality of the coefficients on *pc* and *totprice*; since the critical value of this test statistic is 0.05, the data do not reject the equality of these coefficients. Columns 2 and 3 report coefficient estimates from similar regressions explaining contributions to human service organizations and those devoted to arts and culture. In both of those cases the estimated coefficients on *pc* are negative, implying that tax credits encourage charitable giving, though the coefficients are statistically insignificant and considerably smaller in magnitude than estimated coefficients on *totprice*. The chi-squared tests reported at the bottom of columns 2 and 3 indicate that it is possible to reject the equality of the effects of tax credits and tax deductions.

Table 9 reports estimated coefficients from six additional regressions explaining contributions to organizations that trigger tax credits in at least some states. In three of these regressions, those concerning environmental organizations, organizations promoting public and social benefits, and international-focused organizations, the estimated impact of *pc* is negative (though insignificant) and sufficiently close to that of *totprice* that it is impossible to reject their equality. Hence in these cases greater tax credits appear to influence contributions in a manner similar to that of more generous tax deductibility. In the three other regressions, those for contributions to health organizations, private and community foundations, and religious organizations, the estimated impact of tax credits paradoxically takes the wrong sign (though it is statistically indistinguishable from zero or negative effects), and it is possible to reject equality with the effect of tax deductibility.

Tax credits for contributions to one type of nonprofit organization have the potential to impact negatively contributions to other types, if donors substitute one category of giving for another. The regressions reported in Tables 10 and 11 examine the extent of such substitution.

The regressions reported in Table 10 are the same as those reported in the first three columns of Table 6, except that those in Table 10 add the variable *ocred*. *Ocred* is a dummy variable that takes the value one if a state offers a tax credit for giving to recipient organizations other than the type considered in the regression, and is zero otherwise. A negative estimated coefficient on *ocred* would imply that donors are less likely to contribute if tax credits are available for contributions to other organizational types. There is little evidence of this kind of substitution. The estimated coefficients on *ocred* in the regressions reported in columns 1 and 3 are positive, while the negative (-0.136) coefficient on *ocred* in the human services regression reported in column 2 is statistically insignificant. The estimated effects of *credprice* in these regressions are little affected by the introduction of *ocred*, since they are similar to the values reported in Table 6.

Table 11 repeats the exercise of introducing *ocred*, in this case rerunning the regressions reported in Table 7. In four of the eight regressions reported in Table 11, the estimated effect of *ocred* is positive (though insignificant), while in three of the regressions the effect is negative and insignificant. Only in the case of private and community foundations does it appear that the availability of credits for other types of donations significantly reduces the likelihood of contributing. The estimated effect of *credprice* remains negative in all of these regressions, and similar to the effects reported in Table 7.

Tables 6-11 present regressions that explain the likelihood of contributing to different categories of nonprofit organizations. Tax benefits have the potential to influence contribution

levels as well as the likelihood of giving, but given the modest levels of average contributions to these organizations, and the caps on available credits, the data are less likely to be able to reveal the impact on contribution levels. The Tobit regressions presented in Tables 12 and 13 nonetheless analyze the impact of tax benefits on desired levels of contributions. The –402.27 estimated coefficient reported in column 1 indicates that a tax credit that reduces the cost of contributing to educational institutions by 0.10 triggers 40.20 additional dollars of desired contributions; this effect is not, however, statistically significant. It is worth noting that this estimate does not imply that contributions actually increase by this amount, since most households do not contribute to educational institutions, but among those that do, contributions can be expected to rise in situations in which they are subsidized by the tax system. The estimated effects are considerably larger, and statistically significant, in the cases of human service organizations and those devoted to arts and culture. The regression reported in column 4 of Table 12 indicates that total desired contributions to any recipient rise by 143.70 dollars as the cost falls by 0.10, and this effect is statistically significant.

Table 13 repeats the Tobit specifications of Table 12, but distinguishes the impact of tax deductibility and tax credits by using the variables *pc* and *totprice* in place of *credprice*. In all four of these regressions the effect of *pc* on desired contribution levels is negative, indicating that larger tax credits are associated with greater desired contributions, though the estimated coefficients are statistically insignificant. The estimated effects of *pc* are smaller in magnitude than those of *totprice*; in two of the regressions, those explaining contributions to human service organizations and contributions to any organization, it is possible to reject the equality of the effects of tax credits and tax deductions. In the other two regressions this equality cannot be rejected. As a general matter, these Tobit results, and those of the other specification checks

reported in Tables 8-11, are quite consistent with the basic Logit results reported in Tables 6 and 7.

6. Implications.

The statistical analysis indicates that taxpayers respond to tax credits, and other tax incentives due to deductibility, by increasing their eligible contributions to nonprofit organizations. The contribution elasticities derived from the estimates reported in Table 6 indicate that tax credits that halve the after-tax cost of contributing increase numbers of contributors by between 29 percent (in the case of educational institutions) and 78 percent (in the case of arts and culture organizations). These effects persist when specifications are changed to incorporate potentially differing effects of deductibility and credits, and when explicit account is taken of the availability of credits for contributions to other recipients.

If tax credits that reduce the cost of giving by 50 percent more than double aggregate contributions, then the credits are cost-effective in the sense of costing the government less in foregone revenue than they generate in additional contributions to nonprofits. It is tempting to conclude from the evidence of the impact of tax credits on numbers of contributors that tax credits are cost-ineffective, but such an inference fails to incorporate the effect of tax benefits on contribution levels. While the nature of credit programs together with the available data make it difficult to estimate precisely the impact of credit programs on giving levels, the available evidence, reported in Tables 12 and 13, indicate that desired giving levels in fact respond positively to the availability of tax credits. Together with the results on the likelihood of contributing, it appears that state tax benefits generate more contributions than they cost states in the form of rebated tax revenue. Since Michigan taxpayers currently claim $25 milllion a year in

credits for contributions to public institutions, $2.5 million for contributions to community foundations, and $15 million for contributions to homeless shelters and food banks, it follows that these tax credits are responsible for this much or more in additional contributions to these recipients. One nuance is the finding that contributions to community foundations may be negatively affected by the availability of credits for other types of contributions.

7. Conclusion.

In an era of scarce governmental resources it is natural to reevaluate the desirability of tax provisions that encourage worthwhile activity but come at the cost of tax revenue that might be beneficially deployed elsewhere. The Michigan tax credit program encourages contributions to public institutions, community foundations, and homeless shelters and food banks by reducing the after-tax cost of such contributions. Only a modest fraction of Michigan taxpayers claim these credits, and there is a correspondingly modest (somewhat more than $40 million a year) impact on the state budget. The available evidence indicates that state tax credits encourage greater giving, and do so in a cost-effective manner, meaning that they stimulate greater additional contributions than they cost the state in the form of lost revenue.

The success of the Michigan contribution credits in encouraging greater contributions leaves open the possibility that there could be beneficial modifications to the program. The program might be expanded by raising the credit limit from $100 for a single taxpayer to $200 or perhaps even higher; alternatively, additional categories of giving might be included. There is an inevitable tradeoff in expanding credit categories, in that donors may substitute gifts to one class of recipients for gifts to another, and a well-designed tax credit system is one in which credits are targeted to categories of activity that are the most worthwhile. Ultimately the choice of program

design is one for the political system, as expressed in the actions of the state legislature, to determine. What is evident from reactions to credit and deduction programs around the country is that credit programs are effective, so that the choices that legislatures make have the potential to influence giving and thereby levels of nonprofit activity in their states.

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Table 1

State Descriptive Statistics with Mean and Median Charitable Contributions in 1996

State	Percent Itemizers by State	Per capita personal income	Weighted Mean Contribution	Weighted Median Contribution	Weighted Percentage of households that donate	Weighted No. of Obs	Deduction?	Deduction for non-itemizers?
AL	0.24	20,138	587.84	115	0.61	30	yes	no
AR	0.19	25,901	230.18	0	0.20	11	yes	no
AZ	0.31	20,883	251.45	200	0.54	21	yes	no*
AK	0.19	18,934	na	na	na	na	no state tax	
CA	0.34	25,373	682.39	40	0.55	312	yes	no
CO	0.34	25,514	885.51	150	0.61	65	yes	no
CT	0.38	32,773	563.15	150	0.66	11	yes	no
DE	0.35	26,140	1,332.62	1275	1.00	10	yes	yes
DC	0.33	32,352	12,019.00	0	0.34	7	yes	no
FL	0.24	23,909	637.51	0	0.35	107	no state tax	
GA	0.30	23,055	241.46	0	0.18	101	yes	no
HI	0.33	25,249	1,017.99	200	0.55	19	yes	no
ID	0.29	20,093	na	na	na	na	yes	no
IL	0.29	26,672	496.55	100	0.64	150	no	no
IN	0.24	22,501	2,183.89	70	0.77	39	no	no
IA	0.25	22,464	456.70	220	0.75	43	yes	no
KS	0.26	22,977	172.31	0	0.35	14	yes	no
KY	0.25	19,957	199.85	0	0.44	62	yes	no
LA	0.16	19,978	507.48	110	0.65	65	no	no
ME	0.27	21,163	241.75	150	0.52	13	no	no
MD	0.42	27,545	577.77	0	0.48	59	yes	no
MA	0.35	29,166	354.99	4	0.51	84	yes	yes
MI	0.30	24,398	427.58	28	0.56	110	no	no
MN	0.36	25,904	921.04	510	0.88	52	yes	no
MS	0.17	17,793	431.58	200	0.62	47	yes	no
MO	0.25	22,828	526.61	0	0.47	49	yes	no
MT	0.26	19,173	na	na	na	na	yes	no
NE	0.24	23,670	1,330.49	500	0.85	20	yes	no
NV	0.28	26,004	81.29	0	0.14	12	no	no
NH	0.32	25,733	744.04	704	0.91	10	no	no
NJ	0.39	30,266	289.99	81	0.55	96	no	no
NM	0.21	18,964	na	na	na	na	yes	no
NY	0.37	28,566	380.44	100	0.68	211	yes	no
NC	0.28	22,350	496.12	0	0.44	68	yes	no**
ND	0.16	20,921	na	na	na	na	yes	no
OH	0.28	23,496	461.85	14	0.55	98	no	no
OK	0.25	19,846	900.92	325	0.78	18	yes	no
OR	0.35	23,270	629.81	175	0.69	16	yes	no
PA	0.28	24,467	518.56	120	0.59	104	no	no
RI	0.33	24,310	95.50	0	0.35	18	yes	no
SC	0.26	20,096	480.00	135	0.54	55	yes	no
SD	0.14	21,399	832.59	650	0.55	8	no state tax	
TN	0.17	22,022	804.09	30	0.53	92	no state tax***	
TX	0.18	22,167	2,430.00	100	0.67	149	no state tax	
UT	0.34	19,514	1,455.48	115	0.77	30	yes	no
VT	0.29	22,019	936.64	200	1.00	17	no	no
VA	0.34	25,173	665.15	275	0.65	55	yes	no
WA	0.30	25,015	639.83	100	0.70	65	no state tax	
WV	0.14	18,527	338.79	75	0.56	24	no	no
WI	0.33	23,301	793.59	300	0.64	71	yes	yes
WY	0.16	21,732	na	na	na	na	no state tax	
Average	**0.28**	**23,444**	**708.87**	**55**	**0.57**	**37**		

* Starting in 2000 can claim some credits even if not itemizer

**Able to claim credit instead

*** Tax only dividend and interest income

Sources:

Percent itemizers by state: SOI Bulletin, 1997

Per-capita personal income: BEA, http://www.bea.doc.gov/bea/regional/reis/drill.cfm

Contribution amounts: Giving and Volunteering 1996, Independent Sector

Table 2

Type of Credit by State

STATE	EDUCATION	HUMAN SERVICES	ENVIRONMENT	ARTS, CULTURE, & HUMANITIES	YOUTH DEVELOPMENT	PRIVATE AND COMMUNITY FOUNDATIONS
Arizona	X	X				
Colorado	`	X				
Idaho	X				X	
Indiana	X					
Louisiana	X					
Michigan	X	X		X		X
Missouri	X	X			X	
Nebraska	X					
North Carolina	X	X	X	X	X	X
North Dakota	X					
Utah		X				
Wisconsin			X			

Arizona: Maximum of $200 for contributions to charities that provide assistance to the working poor (over a baseline amount). Maximum of $500 ($625 if married) for contributions to school tuition organizations (credit is equal to amount contributed)

Colorado: Child Care Contribution Credit: monetary contributions to promote child care in Colorado. Credit is for 50% of contribution.

Idaho: Credit for charitable contributions to educational institutions. Smallest of: 50% of donation, 20% of tax on line 40 or $50 ($100 for joint). Explicitly states that both deduction and credit are allowed.

Indiana: Credit for charitable contributions to institutions of higher learning in Indiana, or to coporations organized and operated solely for the benefit of such institutions. 50% of the aggregate contribution, max credit of $100, $200 for joint

Louisiana: Credit for contributions to educational institutions. 40% of value of property donated

Michigan: Community Foundations Credit, Homeless Shelter/Food Bank Credit (does not include secondhand stores or religious organizations which provide food/shelter as a secondary purpose). Must be made to an organization whose primary purpose is to provide food and/or shelter to indigent persons, Public Contribution Credit. This includes donations to Michigan colleges or universities and their fund raising activities, The Michigan Colleges Foundation, The State Art in Public Places Fund, The State of Michigan Museum, The State of Michigan for the preservation of state archives, Artwork created by the taxpaper if given to:State of Michigan for display in public place, Michigan public libraries, Artwork created by the taxpaper if given to: Michigan municipality for public display, Michigan municipality or nonprofit corporation affiliated with a Michigan municipality and an art institute, Michigan public broadcasting stations 50% of aggregate charitable contributions made by the taxpayer,max credit of $100, $200 for joint

Missouri: Higher Education Scholarship Fund Credit, Credit for Youth Opportunities, Shelter for Victims of Domestic Violence Credit, Sponsorship and Mentoring Program Credit.

Nebraska: Neighborhood Assistance Credit

North Carolina: For taxable years beginning after 1998, a taxpayer who elects the standard deduction for federal income tax purposes is entitled to a North Carolina personal income tax credit equal to 7% of the taxpayer's excess charitable contributions. Prior to 1999, the credit was for 2.75% of excess charitable contributions. Note that this is ONLY for non-itemizers

North Dakota: ND allows a credit for charitable contributions to certain nonprofit private educational institutions, but does not require an adjustment of the tax base if the same contribution was claimed as an itemized deduction in the federal return.

Utah: Qualified Sheltered Workshop Cash Contribution Credit. 50% of donation or $200

Wisconsin: Endangered Resources Donation, gifts up to $500,000 will be matched by general purpose revenue. The contributions are not directly deducted but are claimed as itemized deduction credits.

Table 3

Michigan Individual Income Tax Credits, 1997-2001

	Public Institution Credit	Community Foundation Credit	Homeless Shelter/Food Bank Credit
1997			
No. of returns claiming credit	265,400	18,900	147,600
Percent of returns claiming credit	5.5%	0.4%	3.1%
Amount	$21,560,900.0	$1,772,300.0	$10,232,200.0
Average	$81.2	$93.8	$69.3
1998			
No. of returns claiming credit	264,800	21,200	157,800
Percent of returns claiming credit	6.1%	0.5%	3.6%
Amount	$22,047,500.0	$2,025,400.0	$11,245,200.0
Average	$83.3	$95.4	$71.2
1999			
No. of returns claiming credit	274,700	23,700	167,700
Percent of returns claiming credit	6.2%	0.5%	3.8%
Amount	$23,305,600.0	$2,214,100.0	$12,380,400.0
Average	$84.9	$93.5	$73.8
2000			
No. of returns claiming credit	284,300	27000.0	180,400
Percent of returns claiming credit	6.3%	0.6%	4.0%
Amount	$24,559,200.0	$2,542,100.0	$13,746,900.0
Average	$86.4	$94.2	$76.2
2001			
No. of returns claiming credit	285,700	26,900	192,800
Percent of returns claiming credit	6.4%	0.6%	4.3%
Amount	$24,721,300.0	$2,546,800.0	$14,815,100.0
Average	$86.5	$94.6	$76.8

Source: Office of Revenue and Tax Analysis, Michigan Department of Treasury, 2002 and 2003; authors' calculations

Table 4

Michigan Public Institution Credit, by AGI Class, 2001

Adjusted Gross Income	Percent of Total Tax Filers	Percent of Tax Filers Claiming Credit	Percent of Total Credit	Credit/Income Tax
less than $1	0.9%	1.69%	0.24%	*
$ 1 - 2,000	3.6%	0.34%	0.11%	*
2,001 - 4,000	4.4%	0.64%	0.23%	*
4,001 - 6,000	4.1%	0.91%	0.34%	*
6,001 - 8,000	3.8%	1.19%	0.46%	*
8,001 - 10,000	3.6%	1.42%	0.53%	*
10,001 - 12,000	3.5%	1.70%	0.62%	*
12,001 - 14,000	3.3%	1.87%	0.67%	4.84%
14,001 - 16,000	3.2%	2.19%	0.78%	1.54%
16,001 - 18,000	3.1%	2.50%	0.87%	0.94%
18,001 - 20,000	3.0%	2.67%	0.92%	0.69%
20,001 - 22,000	2.8%	2.87%	0.95%	0.55%
22,001 - 24,000	2.7%	3.09%	0.99%	0.48%
24,001 - 26,000	2.6%	3.41%	1.05%	0.44%
26,001 - 28,000	2.4%	3.62%	1.09%	0.43%
28,001 - 30,000	2.4%	3.91%	1.11%	0.41%
30,001 - 35,000	5.4%	4.42%	2.90%	0.39%
35,001 - 40,000	4.7%	5.16%	3.06%	0.38%
40,001 - 45,000	4.2%	6.04%	3.30%	0.38%
45,001 - 50,000	3.9%	6.91%	3.55%	0.39%
50,001 - 55,000	3.6%	7.42%	3.62%	0.37%
55,001 - 60,000	3.3%	8.12%	3.70%	0.37%
60,001 - 65,000	3.0%	8.86%	3.80%	0.37%
65,001 - 70,000	2.7%	9.60%	3.79%	0.38%
70,001 - 75,000	2.4%	10.61%	3.82%	0.40%
75,001 - 80,000	2.1%	11.48%	3.73%	0.40%
80,001 - 85,000	1.8%	12.41%	3.55%	0.40%
85,001 - 90,000	1.6%	13.41%	3.39%	0.41%
90,001 - 95,000	1.4%	14.18%	3.17%	0.42%
95,001 - 100,000	1.2%	15.51%	3.09%	0.44%
Over 100,000	9.0%	22.67%	40.57%	0.39%

Notes:
* No income tax was paid.
Source: Office of Revenue and Tax Analysis, Michigan Department of Treasury, 2003; authors' calculations

Table 5		
Means and Standard Deviations		
Variable	**Mean**	**Std. Dev.**
credprice = $(1-t_{fed})*(1-t_{state}-.5)$	0.90	0.14
totprice = $(1-t_{fed})*(1-t_{state})$	0.90	0.13
pc = credprice - totprice	-0.01	0.05
ocred : dummy = 1 if there is a credit for giving in any other category	0.16	0.36
income	38,640.16	24,925.60
age	46.38	17.73
white : dummy = 1 if respondent is white, non-hispanic	0.66	0.48
marpart : dummy = 1 if respondent is married or lives with a partner	0.65	0.48
chs : dummy = 1 if respondent has at most a high school degree	0.53	0.50
male : dummy = 1 if respondent is a male	0.49	0.50
Total Charitable Contribution	490.81	1,191.25
Contribution to Education	36.27	273.39
Contribution to Human Services	44.75	276.74
Contribution to Arts, Culture, and Humanities	8.08	61.16
give2 : dummy =1 if contribution to any category >0	0.56	0.50
g2_ed : dummy = 1 if contribution to Education >0	0.15	0.36
g2_hs : dummy = 1 if contribution to Human Services >0	0.20	0.40
g2_arts : dummy = 1 if contribution to Arts, Culture, and Humanities >0	0.06	0.25
No. Obs: 2,515		

Source: *Giving and Volunteering* , Independent Sector, 1996

Table 6

Logit Regressions by Charitable Category

	Dependent Variable			
	Education	Human Services	Arts, Culture & Humanities	Give to Anything
income ($100,000)	7.38	9.85	13.79	6.87
	(2.370)	(2.150)	(3.980)	(1.460)
income^2	-8.477	-14.340	-17.800	-9.138
	(4.494)	(4.110)	(7.037)	(3.089)
income^3	3.249	6.687	7.935	3.703
	(2.516)	(2.312)	(3.726)	(1.861)
age (10)	0.58	0.34	0.36	0.33
	(0.230)	(0.190)	(0.310)	(0.140)
age^2	-0.06024	-0.029	-0.01135	-0.02544
	(0.023)	(0.019)	(0.029)	(0.014)
white	0.533	0.58	0.436	0.324
	(0.148)	(0.134)	(0.236)	(0.096)
male	-0.323	-0.369	-0.466	-0.264
	(0.117)	(0.106)	(0.171)	(0.085)
married	0.043	0.107	-0.516	0.280
	(0.143)	(0.128)	(0.199)	(0.097)
completed HS	-0.44	-0.197	-0.811	-0.169
	(0.133)	(0.115)	(0.215)	(0.090)
credprice	-0.444	-1.023	-1.428	-1.233
	(0.319)	(0.289)	(0.493)	(0.341)
constant	-4.378	-3.5	-5.525	-1.006
	(0.690)	(0.610)	(1.108)	(0.512)
No. observations	2515	2515	2515	2515
Log Likelihood	-972.9	-1146.61	-525.1	-1603.12

Notes: The table presents estimated coefficients from logit regressions in which the dependent variables take the value one if an individual contributes a nonzero amount of money in the indicated category and takes the value zero otherwise. Standard errors are in parentheses.

Table 7

Logit Regressions by Charitable Category

	Dependent Variable							
	Health	**Environment**	**Private & Community Foundations**	**Religion**	**Public/Societ y Benefit**	**Recreation**	**International**	**Youth Devlopment**
income ($100,000)	4.86	9.5	8.27	5.94	7.82	8.48	7.81	10.41
	(1.940)	(3.290)	(4.280)	(1.540)	(3.040)	(4.580)	(5.700)	(2.580)
income^2	-5.078	-15.230	-8.023	-7.576	-11.250	-10.510	-10.950	-14.240
	(3.802)	(6.041)	(7.939)	(3.153)	(5.773)	(8.306)	(10.930)	(4.851)
income^3	1.660	7.684	2.571	2.662	5.260	4.323	5.026	6.081
	(2.183)	(3.288)	(4.366)	(1.866)	(3.219)	(4.496)	(6.140)	(2.700)
age (10)	0.52	0.55	-0.04	0.37	0.98	-0.12	-0.3	0.72
	(0.190)	(0.300)	(0.350)	(0.150)	(0.300)	(0.390)	(0.460)	(0.240)
age^2	-0.03247	-0.06097	0.0262	-0.01926	-0.08181	-0.00261	0.04871	-0.07349
	(0.018)	(0.030)	(0.033)	(0.014)	(0.029)	(0.040)	(0.043)	(0.024)
white	0.724	1.481	-0.604	-0.005	0.322	0.761	0.163	0.336
	(0.132)	(0.262)	(0.228)	(0.100)	(0.192)	(0.283)	(0.371)	(0.147)
male	-0.422	-0.3	0.085	-0.382	-0.007	0.399	0.16	-0.26
	(0.103)	(0.155)	(0.200)	(0.086)	(0.151)	(0.206)	(0.295)	(0.119)
married	0.097	-0.302	0.114	0.289	-0.094	0.237	-0.511	0.157
	(0.123)	(0.183)	(0.252)	(0.101)	(0.181)	(0.262)	(0.331)	(0.148)
completed HS	-0.132	-0.595	0.284	-0.095	-0.057	-0.303	-0.219	-0.084
	(0.110)	(0.184)	(0.211)	(0.091)	(0.163)	(0.234)	(0.327)	(0.129)
credprice	-1.265	-1.994	-0.979	-1.782	-0.98	-0.897	-1.43	-1.11
	(0.407)	(0.472)	(0.647)	(0.344)	(0.596)	(0.792)	(1.119)	(0.467)
constant	-3.278	-4.159	-4.631	-1.159	-5.798	-4.463	-3.832	-4.614
	(0.683)	(0.990)	(1.242)	(0.532)	(1.072)	(1.413)	(1.816)	(0.831)
No. observations	2515	2515	2515	2515	2515	2515	2515	2515
Log Likelihood	-1202.42	-615.9	-421.41	-1579.72	-664.68	-410.32	-231.35	-945.87

Notes: The table presents estimated coefficients from logit regressions in which the dependent variables take the value one if an individual contributes a nonzero amount of money in the indicated category and takes the value zero otherwise. Standard errors are in parentheses.

Table 8

Logit Regressions by Charitable Category

	Dependent Variable		
	Education	**Human Services**	**Arts, Culture & Humanities**
income ($100,000)	7.380	9.850	13.590
	(2.370)	(2.160)	(3.980)
income^2	-8.474	-15.120	-18.270
	(4.501)	(4.132)	(7.052)
income^3	3.247	7.217	8.322
	(2.522)	(2.326)	(3.737)
age (10)	0.58	0.26	0.27
	(0.230)	(0.190)	(0.320)
age^2	-0.06028	-0.02268	-0.0036
	(0.023)	(0.019)	(0.030)
white	0.534	0.586	0.443
	(0.148)	(0.134)	(0.236)
male	-0.323	-0.37	-0.472
	(0.117)	(0.106)	(0.172)
married	0.043	0.09	-0.542
	(0.143)	(0.128)	(0.200)
completed HS	-0.44	-0.194	-0.802
	(0.133)	(0.115)	(0.215)
pc	-0.447	-0.329	-0.449
	(0.384)	(0.388)	(0.745)
totprice	-0.439	-2.042	-2.453
	(0.499)	(0.450)	(0.712)
constant	-4.384	-2.259	-4.182
	(0.841)	(0.739)	(1.294)
No. observations	2515	2515	2515
Log Likelihood	-972.900	-1142.180	-522.960
Prob>chi2	0.989	0.003	0.045

Notes: 1. The table presents estimated coefficients from logit regressions in which the dependent variables take the value one if an individual contributes a nonzero amount of money in the indicated category and takes the value zero otherwise. Standard errors are in parentheses.

2. The p-value of the Chi-square test statistic is a test of the equality of the coefficients on *pc* and *totprice*

Table 9

Logit Regressions by Charitable Category

	Dependent Variables					
	Health	Environment	Private and Community Foundations	Religion	Public/Society Benefit	International
income ($100,000)	4.760	9.510	8.330	5.820	7.760	7.820
	(1.940)	(3.290)	(4.320)	(1.540)	(3.040)	(5.700)
income^2	-5.233	-15.450	-9.326	-7.683	-11.270	-10.950
	(3.800)	(6.058)	(8.002)	(3.153)	(5.769)	(10.940)
income^3	1.795	7.834	3.457	2.764	5.293	5.026
	(2.183)	(3.300)	(4.394)	(1.867)	(3.217)	(6.142)
age (10)	0.49	0.52	-0.14	0.34	0.97	-0.3
	(0.190)	(0.300)	(0.360)	(0.150)	(0.300)	(0.460)
age^2	-0.030	-0.058	0.033	-0.017	-0.081	0.049
	(0.018)	(0.030)	(0.034)	(0.014)	(0.029)	(0.043)
white	0.713	1.479	-0.614	-0.018	0.318	0.163
	(0.132)	(0.262)	(0.229)	(0.100)	(0.192)	(0.371)
male	-0.419	-0.302	0.087	-0.379	-0.006	0.16
	(0.103)	(0.155)	(0.201)	(0.086)	(0.151)	(0.295)
married	0.072	-0.309	0.077	0.265	-0.101	-0.511
	(0.124)	(0.183)	(0.253)	(0.101)	(0.182)	(0.332)
completed HS	-0.129	-0.588	0.293	-0.096	-0.055	-0.219
	(0.110)	(0.184)	(0.212)	(0.092)	(0.163)	(0.327)
pc	2.432	-1.673	2.096	0.288	-0.068	-1.434
	(1.715)	(0.719)	(1.674)	(0.872)	(1.711)	(2.375)
totprice	-1.703	-2.271	-2.469	-2.248	-1.124	-1.429
	(0.441)	(0.657)	(0.852)	(0.385)	(0.645)	(1.252)
constant	-2.705	-3.805	-2.853	-0.567	-5.602	-3.833
	(0.720)	(1.148)	(1.406)	(0.576)	(1.124)	(1.963)
No. observations	2515	2515	2515	2515	2515	2515
Log Likelihood	-1198.26	-615.71	-416.96	-1575.83	-664.5	-231.35
Prob>chi2	0.019	0.543	0.014	0.008	0.560	0.916

Notes: 1. The table presents estimated coefficients from logit regressions in which the dependent variables take the value one if an individual contributes a nonzero amount of money in the indicated category and takes the value zero otherwise. Standard errors are in parentheses.

2. The p-value of the Chi-square test statistic is a test of the equality of the coefficients on*pc* and *totprice*

Table 10

Logit Regressions by Charitable Category

	Dependent Variable		
	Education	**Human Services**	**Arts, Culture & Humanities**
income ($100,000)	7.340	9.870	13.800
	(2.370)	(2.150)	(3.980)
income^2	-8.346	-14.451	-17.610
	(4.500)	(4.113)	(7.044)
income^3	3.163	6.763	7.788
	(2.520)	(2.314)	(3.731)
age (10)	0.580	0.330	0.380
	(0.230)	(0.190)	(0.310)
age^2	-0.061	-0.029	-0.012
	(0.023)	(0.019)	(0.029)
white	0.530	0.581	0.433
	(0.149)	(0.134)	(0.235)
male	-0.322	-0.371	-0.462
	(0.117)	(0.106)	(0.171)
married	0.045	0.100	-0.510
	(0.143)	(0.128)	(0.199)
completed HS	-0.438	-0.197	-0.809
	(0.133)	(0.115)	(0.215)
credprice	-0.373	-1.114	-1.238
	(0.346)	(0.310)	(0.528)
ocred	0.101	-0.136	0.222
	(0.189)	(0.162)	(0.232)
constant	-4.465	-3.382	-5.806
	(0.709)	(0.626)	(1.146)
No. observations	2515.000	2515.000	2515.000
Log Likelihood	-972.760	-1146.250	-524.660

Notes: The table presents estimated coefficients from logit regressions in which the dependent variables take the value one if an individual contributes a nonzero amount of money in the indicated category and takes the value zero otherwise. Standard errors are in parentheses.

Table 11

Logit Regressions by Charitable Category

	Dependent Variable							
	Health	**Environment**	**Private & Community Foundations**	**Religion**	**Public/Society Benefit**	**Recreation**	**International**	**Youth Devlopment**
income ($100,000)	4.890	9.470	8.370	5.950	7.770	8.470	7.800	10.360
	(1.940)	(3.280)	(4.300)	(1.540)	(3.040)	(4.590)	(5.700)	(2.580)
income^2	-5.184	-15.240	-8.768	-7.593	-11.010	-10.280	-10.790	-14.030
	(3.804)	(6.034)	(7.980)	(3.155)	(5.778)	(8.332)	(10.940)	(4.857)
income^3	1.731	7.709	3.066	2.673	5.102	4.146	4.907	5.944
	(2.185)	(3.286)	(4.388)	(1.868)	(3.222)	(4.511)	(6.145)	(2.704)
age (10)	0.520	0.550	-0.070	0.370	0.980	-0.110	-0.300	0.720
	(0.190)	(0.300)	(0.350)	(0.150)	(0.300)	(0.390)	(0.460)	(0.240)
age^2	-0.0327	-0.0611	0.0282	-0.0193	-0.0814	-0.0033	0.0489	-0.0733
	(0.018)	(0.030)	(0.034)	(0.014)	(0.029)	(0.040)	(0.043)	(0.024)
white	0.727	1.483	-0.61	-0.005	0.318	0.752	0.159	0.331
	(0.132)	(0.262)	(0.229)	(0.100)	(0.191)	(0.283)	(0.371)	(0.147)
male	-0.424	-0.302	0.09	-0.382	-0.005	0.404	0.161	-0.259
	(0.103)	(0.155)	(0.201)	(0.086)	(0.151)	(0.206)	(0.295)	(0.119)
married	0.093	-0.306	0.095	0.288	-0.087	0.248	-0.504	0.164
	(0.124)	(0.183)	(0.252)	(0.101)	(0.182)	(0.263)	(0.332)	(0.148)
completed HS	-0.134	-0.599	0.292	-0.095	-0.053	-0.299	-0.217	-0.081
	(0.110)	(0.184)	(0.211)	(0.091)	(0.163)	(0.234)	(0.327)	(0.130)
credprice	-1.305	-2.007	-1.635	-1.79	-0.888	-0.776	-1.338	-1.038
	(0.412)	(0.474)	(0.753)	(0.348)	(0.595)	(0.784)	(1.124)	(0.467)
ocred	-0.111	-0.123	-0.714	-0.017	0.248	0.386	0.189	0.214
	(0.143)	(0.231)	(0.357)	(0.118)	(0.194)	(0.248)	(0.383)	(0.156)
constant	-3.216	-4.111	-3.812	-1.149	-5.946	-4.715	-3.975	-4.734
	(0.689)	(0.995)	(1.325)	(0.537)	(1.073)	(1.414)	(1.829)	(0.833)
No. observations	2515	2515	2515	2515	2515	2515	2515	2515
Log Likelihood	-1202.12	-615.75	-419.12	-1579.71	-663.9	-409.19	-231.23	-944.96

Notes: The table presents estimated coefficients from logit regressions in which the dependent variables take the value one if an individual contributes a nonzero amount of money in the indicated category and takes the value zero otherwise. Standard errors are in parentheses.

Table 12

Tobit Regressions by Charitable Category

	Dependent Variable			
	Education	**Human Services**	**Arts, Culture & Humanities**	**Give to Anything**
inc	0.0633267	0.0327689	0.0831157	0.0100746
	(0.014)	(0.008)	(0.022)	(0.002)
income^2	-9.389e-07	-4.66e-07	-1.11e-06	-1.16e-06
	(2.519e-07)	(1.416e-07)	(3.676e-07)	(3.897e-08)
income^3	4.92e-12	2.27e-12	5.21e-12	5.08e-13
	(1.272e-12)	(7.210e-13)	(1.780e-12)	(2.017e-13)
age	38.646	16.795	28.239	4.711
	(15.972)	(8.250)	(20.692)	(2.253)
age^2	-0.3835316	-0.1415736	-0.1124537	-0.0390778
	(0.159)	(0.080)	(0.197)	(0.022)
white	284.995	241.727	249.917	69.711
	(104.189)	(58.357)	(148.316)	(15.798)
male	-125.448	-126.093	-176.314	-23.711
	(84.734)	(46.875)	(114.038)	(13.014)
marpart	8.792	40.003	-310.854	15.711
	(102.930)	(56.714)	(136.192)	(15.574)
chs	-252.884	-88.813	-479.71	-49.567
	(95.485)	(51.352)	(141.113)	(14.268)
credprice	-402.272	-562.508	-928.06	-143.619
	(233.827)	(132.317)	(342.980)	(40.490)
Constant	-3,412.65	-1,503.46	-4,029.64	-403.559
	(497.067)	(262.816)	(739.695)	(74.533)
Observations	2580	2580	2580	2580
Log Likelihood	-4005.06	-4825.76	-1901.55	-4293.75

Notes: The table presents estimated coefficients from tobit regressions in which the dependent variable is the amount of money given to the indicated category. Standard errors are in parentheses.

Table 13

Tobit Regressions by Charitable Category

	Dependent Variable			
	Education	**Human Services**	**Arts, Culture & Humanities**	**Give to Anything**
income	0.063	0.032	0.081	0.070
	(0.01)	(0.01)	(0.02)	(0.01)
income^2	-9.48e-07	-4.86e-07	1.11e-06	1.16e-06
	(2.52e-07)	(1.42e-07)	(3.67e-07)	(2.26e-07)
income^3	4.98e-12	2.40e-12	5.28e-12	6.37e-12
	(1.27e-12)	(7.22e-12)	(1.78e-12)	(1.16e-12)
age	37.292	13.858	23.893	26.956
	(16.06)	(8.29)	(20.85)	(13.30)
age^2	-0.373	-0.118	-0.080	-0.233
	(0.16)	(0.08)	(0.20)	(0.13)
white	282.637	244.740	260.300	364.075
	(104.17)	(58.37)	(148.80)	(91.94)
male	-125.594	-127.009	-173.263	-94.627
	(84.68)	(46.82)	(114.02)	(75.54)
married	3.465	30.484	-320.857	51.905
	(103.09)	(56.73)	(136.41)	(91.29)
completed HS	-249.933	-83.907	-472.141	-211.555
	(95.48)	(51.28)	(141.07)	(83.11)
pc	-284.403	-228.154	-304.327	-286.302
	(283.12)	(173.11)	(506.98)	(319.06)
totprice	-609.991	-1034.837	-1505.288	-1519.383
	(362.32)	(202.39)	(475.98)	(327.35)
constant	-3,158.26	-933.183	-3,278.43	-1,848.31
	(599.12)	(316.82)	(840.34)	(509.56)
Observations	2580	2580	2580	2580
Log Likelihood	-4004.77	-4820.87	-1899.92	-7284.51
Prob >chi2	0.453	0.0019	0.077	0.005

Note: 1. The table presents estimated coefficients from tobit regressions in which the dependent variable is the amount of money given to the indicated category. Standard errors are in parentheses.

2. The p-value of the Chi-square test statistic is a test of the equality of the coefficients on *pc* and *totprice*