THE EFFECT OF THE CAPITAL GAINS TAX ON DONATIONS OF CASH AND APPRECIATED ASSETS

A Thesis
submitted to the Faculty of the
Graduate School of Arts & Sciences
of Georgetown University
in partial fulfillment of the requirements for the
degree of
Master of Public Policy

By

Sandy Lin, B.A.

Washington, DC
April 12, 2006
THE EFFECT OF THE CAPITAL GAINS TAX ON DONATIONS OF CASH AND APPRECIATED ASSETS

Sandy Lin, B.A.
Thesis Advisor: Janet McCubbin, Ph.D.

ABSTRACT

Elements of the tax code can affect an individual’s decision to contribute to charity by altering the price of donating. The capital gains tax reduces the price of giving appreciated assets relative to giving cash, suggesting that reductions in the capital gains rate should lead to decreases in the donations of appreciated assets relative to cash, while increases in the capital gains rate should lead to increases in the donations of appreciated assets relative to cash. In this study, OLS models are applied to pooled aggregate individual income tax data from the IRS for tax years 1981-2003 to estimate the relationship between the ratio of noncash donations to cash donations and the ratio of the price of donating appreciated assets to the price of donating cash. The results indicate that only high income donors respond to changes in the capital gains tax rate by changing the composition of their charitable contributions. Since high income donors contribute more than any other income group to charities, and some charities may prefer cash donations to donations of appreciated assets, changes to the
capital gains tax rate should not be made without considering the potential impact on charities.
I wish to thank my advisor, Dr. Janet McCubbin, and all the professors who taught me so much during my time at GPPI - without your help and support, this thesis would not have been possible.

To Matt, for everything.
**TABLE OF CONTENTS**

Introduction .......................................................................................................................... 1
Literature Review ................................................................................................................. 7
Theoretical Model and Hypothesis ...................................................................................... 14
Data Source and Statistical Models ..................................................................................... 16
Regression Results ............................................................................................................. 26
Policy Implications and Conclusion .................................................................................. 36
References .......................................................................................................................... 40

**LIST OF TABLES**

Table 1: Summary Statistics ................................................................................................. 23
Table 2: Average Contributions by Income (2003 dollars) .................................................. 25
Table 3: Full Sample Regression Results ............................................................................ 28
Table 4: Regression Results by Quartile ........................................................................... 30
Table 5: Sensitivity Analysis for Values of B/A ................................................................. 34
Introduction

Nonprofit organizations play an important role in both the American economy and society. Ranging from universities, not-for-profit hospitals and research facilities to churches and museums and cultural institutions, the nonprofit sector in America often performs functions which in other countries are considered the responsibility of the government. The nonprofit sector also makes up a significant portion of the American economy. In 2002, spending by tax-exempt organizations comprised roughly 11%-12% of GDP, and tax-exempt organizations employed about 9% of the civilian workforce (Walker 2005, 9-10).

Charities are generally considered desirable and deserving of government support because they provide public goods. They provide services, such as food to the hungry and medical care for the indigent, for which society cannot or does not wish to charge the beneficiaries. However, without government subsidies, society would underfund these services because of freeriding and undervaluation by supporters due to positive externalities. Although federal, state and local governments also provide public goods, simply replacing charities with government organizations might not be possible, as charities may be more effective, more flexible, or more responsive to constituent needs than the government in providing certain services.
In order to support the nonprofit sector, the federal government provides grants and other payments directly to nonprofit organizations, and also encourages private donations to these organizations through the use of tax incentives. Through income and estate taxes, the federal government actively encourages citizens to donate by allowing them to deduct charitable contributions on their income tax forms and to reduce the size of their taxable estates through charitable contributions. Gifts by individuals account for the majority of charitable contributions in this country. According to one estimate, in 2002 individuals donated $183 billion, or about 76% of all charitable giving, while corporations donated $12 billion (5%), foundations contributed $27 billion (11%), and gifts made through bequests totaled $18 billion (8%) (Center on Philanthropy at Indiana University 2003, 8).

The deduction for charitable contributions in the federal income tax creates an incentive to contribute in two ways. First, the deduction lowers the price of giving an additional dollar. For example, suppose an individual faces a marginal tax rate of 25%. Because any income he donates is not subject to the federal income tax, the taxpayer only gives up 75 cents in personal consumption for every dollar donated, as 25 cents would have gone to the federal government, had he not made the gift. Thus the actual price of donating a dollar is only 75 cents. A decrease in the price of giving relative to the price of all other goods would be expected to induce people to substitute charitable
donations for other forms of consumption, and thus increase the level of charitable giving. The higher the marginal tax rate, the stronger this effect is expected to be.

Secondly, the charitable deduction also encourages charitable giving by increasing the amount of after-tax income available to the individual, relative to a donation of the same amount in the absence of a deduction. Assuming that charitable donations are a normal good (that is, the level of giving increases with the level of income), then the charitable deduction should increase the level of donations.

Currently, charitable deductions are limited to 50% of adjusted gross income (AGI) for cash contributions to certain organizations such as religious institutions and hospitals (so-called “50% limit organizations”), and 30% of AGI for cash contributions to all other qualified organizations. Deductions for donations of appreciated assets to 50% limit organizations are limited to 30% of AGI, while the limit for gifts of capital gains assets to all other qualified organizations is 20% of AGI. Any contributions in excess of the deduction limit can be carried over and deducted over the next five years, although the standard deduction limits will still apply over each year.

Many factors influence a donor’s decision to contribute. For example, individuals may donate out of altruism, because they value others’ wellbeing. Individuals may donate for reasons of reciprocity, that is, donating as a form of social insurance. Individuals may also donate in order to reap direct benefits such as job skills
or favorable publicity for a business. No one would claim that taxes are the most significant determinant of charity, or even a major determinant, but it is generally acknowledged that tax incentives exert an important influence on the decision to donate. The link between tax deductions and charitable contributions has long been acknowledged -- in fact, Congress first adopted a charitable contributions deduction in 1917, in order to ensure that the income tax, enacted just four years earlier, would not suppress the level of charitable giving (Gergen 1988, 1396).

Changes in the tax code, even if not explicitly directed towards charitable giving, can also affect the individual’s decision to contribute. Since these elements of the tax code were not designed to directly encourage charitable giving, politicians may alter them without taking into account the potential effect on non-profits in this country.

One example of a tax indirectly affecting charitable contributions is the capital gains tax. This tax creates an incentive to donate appreciated assets in two ways. First, a taxpayer can avoid paying a capital gains tax on appreciated assets by donating them to a charity. Charities are tax-exempt, and therefore will not owe any capital gains tax when they sell the donated assets. Secondly, contributions of assets that if sold at market would have resulted in long-term capital gain can generally be deducted at full market value. This then reduces the donor’s tax liability even further. For example,
consider an individual with a marginal tax rate of 40% and a capital gains tax of 20%, who donates an asset with market value of $100, which he originally purchased for $30. If he donates the asset, he reduces his taxable income by $100, therefore reducing his tax liability by $40 and increasing his after-tax income by $40. If he instead sells this asset, he pays $14 in capital gains tax and increases his after-tax income by $86. The “cost” of the $100 contribution is $46 in foregone consumption (the difference between $86 and $40). Without a capital gains tax, the individual’s price of giving one dollar’s worth of appreciated assets would have been 0.60, whereas with a capital gains tax, the individual’s price of giving drops to 0.46. The capital gains tax thus decreases the price of giving even further.

In addition to encouraging higher levels of giving, taxes can also affect the timing and form of donations. Income can be thought of as having two components -- a permanent element (anticipated) and a transitory element (unplanned). As transitory income fluctuates, it provides opportunities for a taxpayer to time his donations. For example, all else equal, a taxpayer should be more likely to reduce his level of giving and realize capital gains in years when his tax rate is low, while he should be more likely to increase donations when his tax rate is high. In addition, because the capital gains tax decreases the price of giving an appreciated asset relative to the price of
giving cash, not only does it promote giving, but it also affects the form of giving, by encouraging donors to contribute appreciated property rather than cash.

Charities are not shy about educating donors about the benefits of donating assets instead of other forms of contributions. Yet not much empirical research has been done on the relationship between capital gains taxation and charitable donations. Although charities may encourage their donors to contribute appreciated property, have donors in fact used their charitable contributions to bypass the capital gains tax? Does a change in capital gains tax rates affect the level of charitable giving in this country? Do donors alter their donations in response to changes in the capital gains tax?

“Reforming” the capital gains tax is a popular theme with certain politicians. The answers to the questions stated above can provide an important contribution to the debate on capital gains taxation by showing how changes to capital gains taxes can have unintentional effects on an important American institution -- the non-profit sector. If charities are in fact affected by changes in the capital gains tax rates, then politicians should consider this additional factor as they work to abolish, lower or preserve the current system of capital gains taxes.
Literature Review

Studies on the impact of tax incentives on charitable giving have typically focused on estimating the price elasticity of giving. The value of the price elasticity estimate indicates the expected percentage change in contributions for a given percentage change in the price of giving. The elasticity or inelasticity of giving with respect to price has important policy implications. For example, if giving is elastic with respect to price, then every dollar foregone in Treasury revenue due to the charitable deduction would yield more than a dollar in increased charitable giving. On the other hand, if giving was inelastic with respect to price, then one could conclude that the tax deduction was not an effective tool for encouraging charitable donations, as it did not significantly affect people’s decision to donate, and cost more in foregone tax revenue than it raised in increased donations.

Although the main reason for enacting the charitable contribution deduction in 1917 was to encourage private donations, until the 1970s, the prevailing view among scholars was that the tax code did not have a significant effect on the individual’s decision to donate. The first empirical study of the issue, conducted by Taussig (1967) supported this view. Using a large cross section of individual tax returns from in 1962, Taussig estimated that the impact of marginal tax rates on the level of giving was statistically insignificant for those with income below $100,000. For income classes
above $100,000, marginal tax rates had a small, but significant effect, implying price elasticities ranging from -0.04 to -0.10 for those high income classes.

Subsequent empirical studies, however, reached far different conclusions from Taussig, even though they adopted much of his methodology. In general, studies conducted between the mid 1970s to the mid 1980s estimated large and significant price elasticities, and were usually consistent across different data sources and time periods. For example, using data from the 1962 and 1963 Survey of Consumer Finances, Feldstein and Clotfelter (1976) estimated a price elasticity of -1.55. Feldstein (1975) and Abrams and Schitz (1978) both used a pooled time series of cross-sectional tax return data spanning the 1950s and 1970s, and estimated a price elasticity of -1.24 and -1.10, respectively. Feldstein and Taylor (1976) examined a sample of individual tax returns for 1970 and estimated the price elasticity to be -1.29. Clotfelter (1980), using panel data for a group of taxpayers from 1968-1973, estimated that the price elasticity for long-run giving during 1972-1973 was -1.33. Clotfelter (1985) surveyed 17 studies from the 1970s to early 1980s, and found that charitable donations were in general price elastic and income inelastic.

These studies all concluded that charitable donations behaved in a normal manner with respect to price and income – that is, the level of giving increased as the level of income increased, and decreased when the price of giving increased. In
addition, higher income taxpayers faced a stronger incentive effect than lower income taxpayers (Feldstein and Taylor 1976, Taussig 1967), although in the only study to focus on low and middle income donors, the authors estimated a substantial price elasticity of -2.54 (Boskin and Feldstein 1978).

More recent studies, however, have challenged these earlier estimates of the responsiveness of giving to tax incentives. Steinberg (1990) surveyed 20 papers published between 1985 and 1990 and found that unlike the studies surveyed by Clotfelter (1985), there was no clear consensus amongst the newer studies about the price elasticity of giving. Steinberg did conclude, however, that studies using panel data, which he believed to be more appropriate for use in estimating price elasticities than cross-sectional and aggregate time series data, strongly challenged the traditional consensus that giving was very responsive to tax rates.

Since Steinberg’s survey, other studies using panel data and more sophisticated models have also found smaller price elasticities than the earlier studies using cross-sectional and time-series data, although there is still no clear consensus on the effectiveness of tax incentives on charitable giving. Randolph (1995) claimed that estimates from earlier studies were biased because they did not fully distinguish between permanent and transitory price and income effects. Using panel data covering 1979-1988, he estimated a permanent price elasticity of -0.51 and transitory price
elasticity of -1.55. Barrett, McGuirk and Steinberg (1997), using panel data from 1979-1986, estimated a long run price elasticity of giving of -0.471, and concluded that the charitable deduction was not efficient. On the other hand, Auten, Sieg and Clotfelter (2002) estimated that the persistent price elasticity ranged from -0.79 to -1.26, which while smaller in absolute terms than most of the earlier conventional studies based on cross-sectional data, was nevertheless larger than comparable estimates by Barrett, McGuirk and Steinberg (1997) and Randolph (1995). In addition, Auten, Sieg and Clotfelter (2002) also estimated that the transitory price elasticity was smaller than the persistent price elasticity, and ranged from -0.40 to -0.61, which was in sharp contrast to the estimates reached by Randolph (1995). Finally, Joulaian and Rider (2003) noted that most of the data used by researchers was self reported. Individuals might have engaged in tax evasion and purposely misrepresented their income information, leading to measurement error and biased estimates of price and income elasticities. Using a sample of audited returns, they found that the estimated price elasticity was much larger in absolute value and the income elasticity slightly smaller in absolute value than conventional estimates using self reported cross-sectional data.

In contrast to the large body of work on the price elasticity of giving, not many researchers have separately examined the influence of the various components of the
tax system that affect the price of giving, especially tax policies that indirectly affect charitable donations, such as the capital gains tax.

Although there is a rich body of theory on the determinants of capital gains realizations, there has been little integration between theory and empirical research (Auerbach and Siegel 2000). For example, studies on the interaction between capital gains realizations and tax rates have not reached a consensus on the elasticity of capital gains realizations with respect to the marginal tax rate on capital gains. Time series studies based on aggregate data either found capital gains to be relatively unresponsive to tax rates or had too many econometric and modeling flaws to provide useful results, but micro data studies using cross section data for single years as well as panel data found realizations to be highly elastic (Auerbach and Poterba 1988, Auerbach 1989, Burman and Randolph 1994). None of these studies were very robust, and were sensitive to changes in the sample period and seemingly small changes in the model specification (Burman and Randolph 1994).

Given the lack of consensus on the responsiveness of capital gains realizations to capital gains tax rates, one might wonder if individuals take the capital gains tax rate into account when choosing between donating cash or appreciated assets, or donating an appreciated asset versus selling it.
Some of the earlier studies on the price elasticity of giving included the capital gains tax rate in calculating the price of giving (for example, Feldstein and Clotfelter 1976, Feldstein and Taylor 1976, Auten, Sieg and Clotfelter 2002). Some of these studies also simulated the effects of a change in the capital gains rate on charitable contributions. For example, Feldstein and Clotfelter (1976) simulated a switch in the tax code to constructive realization of asset gifts (i.e. taxing the donor on the capital gains component of a donated asset) and predicted that such a change would decrease charitable donations by the wealthiest taxpayers by 64%. Feldstein and Taylor (1976) estimated that constructive realization of asset donations would decrease total contributions by 3%. All of these studies assumed, however, that taxpayers did in fact respond to the decrease in the price of giving caused by the capital gains tax. Because they did not separately estimate the price elasticity with respect to the marginal income tax rate and the price elasticity with respect to the capital gains tax rate, however, it is not possible to conclude from these studies how donors respond to changes in capital gains tax rates.

Some studies have noted that the ratio of cash to property contributions has changed in response to changes in the tax law. For example, prior to 1986, 60% of long-term capital gains was excluded from an individual’s taxable income. The Tax Reform Act of 1986 (TRA86) eliminated this exclusion for long-term capital gains, but
included the capital gains portion of property donations as a preference item under the AMT. TRA86 thus increased the incentive to contribute appreciated assets of moderate size by decreasing the price of giving those assets, but also significantly reduced the incentive to make large donations of appreciated property, as the donor could then be subject to higher taxes under the AMT. Auten, Cilke and Randolph (1992) noted that taxpayers in the highest income brackets increased their cash contributions relative to noncash contributions after TRA86, and donations of property to nonprofit hospitals and medical centers dropped sharply after TRA86 (Greene 1990).

Only one study (O’Neil, Steinberg and Thompson 1996) has estimated separate price elasticities for cash, property, and total contributions. Using a sample of individual income tax returns for 1985, the authors found that price elasticities for cash and total donations were largest in the lowest and highest income groups, while price elasticities for property contributions rose monotonically with income. They also found that asset gifts were more responsive to the price of giving than cash gifts only for the two highest income groups. They concluded that there was strong statistical support for separating cash and noncash contributions when estimating the determinants of charitable giving.
Theoretical Model and Hypothesis

This paper examines the ratio of noncash to cash contributions as a function of their relative prices. If individuals could not deduct their charitable contributions, then the price of one dollar of charitable donation would be the dollar of foregone consumption. A tax deduction reduces the price of donating by reducing tax liability. The price of donating a dollar in cash is thus

\[ P = 1 - m \]

where \( m \) is the marginal income tax rate. As marginal income tax rates increase, the tax deduction reduces the cost of contributing.

In the case of a donation of an appreciated asset, because the donor can deduct the market value of the donation but does not have to pay tax on the capital gain, the capital gains tax rate further reduces the price of giving. The net price of contributing a dollar of appreciated asset is thus

\[ P = 1 - m - m_c (1 - B/A) \]

where \( m_c \) is the capital gains tax rate, \( B \) is the original cost of the asset, and \( A \) is the current market value of the asset. An increase in the capital gains tax decreases the price of giving, and the larger the appreciation, the greater the effect of the capital gains tax on the price of giving.
Many factors likely affect a donor’s decision on the proportion of cash to appreciated assets he donates in any given year, including the ease of donating one type versus the other and whether or not the donor owns any appreciated assets. Since the capital gains tax reduces the cost of giving appreciated assets relative to cash, we would expect increases in the capital gains tax rate to increase the attractiveness of donating appreciated assets versus cash. All else equal, increases in the price of giving appreciated assets relative to cash should decrease the amount of appreciated assets donated relative to contributions of cash, and decreases in the price of giving appreciated assets relative to cash should increase the amount of appreciated assets donated relative to cash. Given the conclusions reached by O’Neil, et al.(1996), we would also expect high income donors to be more responsive to changes in the capital gains tax rate than low and middle income donors.
Data Source and Statistical Models

Every year, the IRS publishes the Individual Complete Report, which contains statistics on individual income tax returns filed in a given year. These reports are based on a stratified random sample of approximately 150,000 individual tax returns, drawn so that the sampling fraction increases with income, until it reaches 100% for taxpayers with very high incomes. This study pools data from the Individual Complete Report on aggregate contributions by taxpayers, for the tax years 1981-2003. These statistics on contributions are broken down by income group and contain data on the total number of donors and total value of cash and noncash contributions per income class.

For most of 1981-2003, only taxpayers who itemized their deductions were eligible to deduct their donations to qualified organizations. As a result, only donors who itemized are included in the dataset used in this study.

The traditional specification for estimating the effect of taxes on charitable giving, employed by such authors as Taussig (1967), Feldstein (1975) and Clotfelter (1980), uses a log-linear equation to estimate levels of donations with respect to taxes and income. Based on this work, the model used to estimate the relationship between the ratio of noncash to cash donations and the ratio of the price of giving appreciated assets to the price of giving cash assets is given below.
Model 1:

\[ \ln R_{it} = \beta_0 + \beta_1 \ln Y_{it} + \beta_2 \ln P_{it} + \varepsilon_{it} \]

Where

- subscript i denotes income class
- subscript t denotes year
- \( R_{it} \) = ratio of average noncash to average cash contributions
- \( Y_{it} \) = average AGI for income class i, in 2003 dollars
- \( P_{it} \) = ratio of the price of donating noncash assets to the price of donating cash assets
  - Price of donating noncash assets = \( 1 - m - m_c(1 - B/A) \)
  - Price of donating cash assets = \( 1 - m \)

Where

- \( m \) = marginal income tax rate
- \( m_c \) = marginal capital gains tax rate
- \( B \) = basis
- \( A \) = current market price
- \( \varepsilon_{it} \) = error term

Although the issue of interest is the relationship between donations of appreciated assets and cash to the prices of donating appreciated assets and cash, data...
on donations of appreciated assets is not available. Instead, this study uses the ratio of noncash contributions to cash contributions as the dependent variable. Noncash donations includes both appreciated capital assets, such as stocks, and assets such as used clothing that are not appreciated.

Noncash contributions may be an imprecise proxy for contributions of appreciated assets because the ratio of noncash to cash donations may change in response to forces that do not effect donations of appreciated assets. For instance, if a large scale disaster such as a hurricane were to occur early in the year, people across the country might respond by increasing their donations of canned goods and clothing in the immediate aftermath of the disaster, but then reduce their donations of cash and appreciated assets later in the year. In this case, the level of noncash contributions would increase relative to the level of cash contributions, yet the level of donations of appreciated assets relative to cash might not have changed at all. Moreover, appreciated assets subject to capital gains taxes comprise a larger portion of noncash contributions for high income taxpayers than low income tax payers (Auten 2006, 9).

The annual IRS reports aggregate the data on donations by AGI. The number of AGI classes varies by year, from 12 in 1981 to 22 in 2003. For most of the years under consideration, classes are defined in units of $5,000 for income between $0 to $60,000, and in larger units for income above $60,000. From 1981 to 1999, the top income class
was classified as “$1,000,000 or more.” For 2000 and after, the top income class was classified as “$10,000,000 or more.” The value of $Y_{it}$ is the average income per return in each AGI class during a given year, calculated from statistics on the number of returns and total AGI for each income class, measured in constant 2003 dollars.

Each observation in the dataset was assigned marginal income tax and capital gains tax rates based on its average income. Since married taxpayers filing jointly constituted the majority of itemizing donors in each year in this study, both in terms of number of donors as well as quantity donated, this was the filing status attributed to each observation and tax rates were assigned using the corresponding tax rate schedules.

Considerable variation in marginal income tax rates occurred over the twenty-three years in this study. In the early 1980s, the tax structure consisted of 15 different income tax rates, ranging from 0% at the bottom to 70% for the top tax bracket. Major changes in income tax rates occurred with the enactment of the Tax Reform Act of 1986, which simplified the tax structure into just two tax brackets, 15% and 28%. Later years saw a gradual increase in the number of tax brackets, until by 2003 there were 6 rates, ranging from 10% to 35%.

Historically, gains from the sale of capital assets held for more than a year have been taxed at lower rates than ordinary income. Until the mid 1980s, 60% of net long-
term capital gains were excluded from an individual’s taxable income. Thus a top income tax rate of 50% in 1982 meant a de facto capital gains tax rate of 20%. This 60% exclusion ended with the Tax Reform Act of 1986, which not only reduced marginal income tax rates to 28%, but also eliminated the special treatment of capital gains by taxing them as ordinary income, thus increasing the top capital gains rate to 28% (15% for the lower income bracket), although the capital gains rate was capped at 28%. The late 1990s and early 2000s were characterized by decreasing capital gains tax rates. The Taxpayer Relief Act of 1997 reduced the top capital gains rate to 20% (10% for taxpayers in the 15% income tax bracket) and the Jobs and Growth Tax Relief Reconciliation Act of 2003 reduced the 20% and 10% capital gains tax rates to 15% and 5%, respectively.

The price of donating appreciated assets depends on the basis and current market value of the donated asset. Unfortunately, this information is not available in the IRS annual reports. The IRS occasionally publishes data on sales of capital assets, and information on basis and current market value is available for 1985 and 1997-1999. Over these four years, the ratio of basis to current market value for long-term assets, B/A in the models, remained relatively constant, ranging from just 0.49 to 0.53, with a weighted average of 0.51, which is the value used in this study. Although the IRS data is for sales, rather than donations, of capital assets, it seems reasonable that
donors would donate their most appreciated assets in order to reap the most benefit under the capital gains tax. Thus the B/A ratio of 0.51 is likely to constitute a lower bound for the value of B/A for donated assets.

Model 1 assumes that both income and the ratio of prices are not affected by any other variable which may also affect the ratio of donations. However, it is possible that a certain event which occurred in a given year, a change in the tax code for example, could affect both the price of donating and the ratio of donations, and not accounting for this would lead to omitted variable bias. Thus Model 2 includes year dummies ($D_t$) to account for such relationships:

Model 2:

$$\ln R_{it} = \beta_0 + \beta_1 \ln Y_{it} + \beta_2 \ln P_{it} + \gamma D_t + \varepsilon_{it}$$

Although a constant relationship between income and the ratio of donations and between the ratio of prices and the ratio of donations is a convenient simplification, it is possible that the relationships are not log-linear. Thus Model 3 tests a more general functional form:

Model 3:

$$\ln R_{it} = \beta_0 + \beta_1 \ln Y_{it} + \beta_2 (\ln Y_{it})^2 + \beta_3 \ln P_{it} + \beta_4 (\ln P_{it})^2 + \gamma D_t + \varepsilon_{it}$$

People in different income levels own and donate different levels of appreciated assets as a percentage of their total income. Families with higher incomes are more
likely to own appreciated assets than families with lower incomes. For example, it has been estimated that about 30% of families with incomes less than $20,000 owned assets subject to the capital gains tax, while 70% of families with incomes between $50,000 to $100,000 owned such assets, and almost all families with income above $200,000 owned assets subject to the capital gains tax (Congressional Budget Office 1992, 5). A recent study of 2003 taxpayer data showed that donations of stocks and mutual funds accounted for only 5% of noncash contributions while donations of clothing, household items and used vehicles accounted for 82% of noncash contributions for taxpayers with incomes between $20,000 to $50,000. In contrast, donations of stocks and mutual funds accounted for 75% of noncash donations and donations of clothing, household items and vehicles accounted for only 1.6% of noncash donations for taxpayers with income above $1,000,000 (Auten 2006, 9).

In order to test the sensitivity of the model to changes in income, the observations were broken up and examined by quartile to determine if the effects estimated using all the observations held true for different income groups, or if different income groups behaved differently from each other. The IRS data, however, was aggregated by income classes, and the universe of donors was not evenly distributed across the income classes, with more donors located in the middle income classes than at the top and bottom. As a result, the number of observations in each
quartile differs considerably, with the bottom and top quartiles both containing more observations than the middle two quartiles.

Descriptive statistics are presented in Table 1. Although there is a large gap between the minimum and maximum values of the ratio of noncash to cash contributions (0.22 and 6.39, respectively), the standard deviation is only 0.67, meaning that about 68% of all the observations had a ratio of noncash to cash contributions between 0.22 and 1.29, and about 95% of the observations had ratios between 0.22 and 1.96. Although the price of donating appreciated assets changed relative to the price of donating cash between 1981 to 2003, the minimum value of 0.67 for this ratio indicates that the price of donating appreciated assets was at its smallest only about 2/3 the price of donating cash, while the maximum value of 0.97 shows that the prices almost reached equality for some donors.

Table 1: Summary Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio of noncash to cash contributions</td>
<td>410</td>
<td>0.62</td>
<td>0.67</td>
<td>0.22</td>
<td>6.39</td>
</tr>
<tr>
<td>Average income</td>
<td>410</td>
<td>684,721</td>
<td>2,808,247</td>
<td>2,729</td>
<td>28,867,505</td>
</tr>
<tr>
<td>Ratio of the price of donating noncash assets to the price of donating cash</td>
<td>410</td>
<td>0.87</td>
<td>0.06</td>
<td>0.67</td>
<td>0.97</td>
</tr>
</tbody>
</table>
Table 2 describes the average cash and noncash contribution by income class, contributions as a percentage of AGI, and the noncash-to-cash donations ratio. The levels of cash and noncash contributions are relatively constant or slightly increasing with income for donors in income classes below $100,000. Cash contributions as a percentage of AGI decline with income, with cash contributions equal to around 11% of AGI for those with incomes less than $15,000, and then quickly dropping to 2% of AGI for donors with incomes above $75,000.

The average amount of noncash contributions as a percentage of AGI, on the other hand, follows a slight U-shaped pattern across the income classes, with those in the lowest and highest income classes contributing more noncash assets as a percentage of their AGI than donors in the middle income classes. Likewise, the ratio of noncash to cash contributions displays a U-shaped pattern, with donors in the highest and lowest income classes contributing more in noncash assets relative to cash than donors in the middle income groups.
Table 2: Average Contributions by Income (2003 dollars)

<table>
<thead>
<tr>
<th>Size of Adjusted Gross Income</th>
<th>Average Income</th>
<th>Average Cash Contributions</th>
<th>Average Noncash Contributions</th>
<th>Ratio of Noncash to Cash Contributions</th>
<th>Average Cash Contributions as % of AGI</th>
<th>Average Noncash Contributions as % of AGI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $15,000</td>
<td>11,210</td>
<td>1,273</td>
<td>518</td>
<td>0.41</td>
<td>0.11</td>
<td>0.05</td>
</tr>
<tr>
<td>$15,000 under $30,000</td>
<td>23,507</td>
<td>1,451</td>
<td>607</td>
<td>0.42</td>
<td>0.06</td>
<td>0.03</td>
</tr>
<tr>
<td>$30,000 under $45,000</td>
<td>37,662</td>
<td>1,472</td>
<td>577</td>
<td>0.39</td>
<td>0.04</td>
<td>0.02</td>
</tr>
<tr>
<td>$45,000 under $60,000</td>
<td>52,365</td>
<td>1,575</td>
<td>601</td>
<td>0.38</td>
<td>0.03</td>
<td>0.01</td>
</tr>
<tr>
<td>$60,000 under $75,000</td>
<td>67,219</td>
<td>1,778</td>
<td>643</td>
<td>0.36</td>
<td>0.03</td>
<td>0.01</td>
</tr>
<tr>
<td>$75,000 under $100,000</td>
<td>85,748</td>
<td>2,093</td>
<td>743</td>
<td>0.36</td>
<td>0.02</td>
<td>0.01</td>
</tr>
<tr>
<td>$100,000 under $200,000</td>
<td>133,892</td>
<td>3,053</td>
<td>1,160</td>
<td>0.38</td>
<td>0.02</td>
<td>0.01</td>
</tr>
<tr>
<td>$200,000 under $500,000</td>
<td>308,597</td>
<td>6,978</td>
<td>3,877</td>
<td>0.56</td>
<td>0.02</td>
<td>0.01</td>
</tr>
<tr>
<td>$500,000 under $1,000,000</td>
<td>725,919</td>
<td>16,035</td>
<td>15,932</td>
<td>0.99</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>$1,000,000 under $1,500,000</td>
<td>1,158,392</td>
<td>26,282</td>
<td>34,587</td>
<td>1.32</td>
<td>0.02</td>
<td>0.03</td>
</tr>
<tr>
<td>$1,500,000 under $2,000,000</td>
<td>1,780,404</td>
<td>38,571</td>
<td>51,802</td>
<td>1.34</td>
<td>0.02</td>
<td>0.03</td>
</tr>
<tr>
<td>$2,000,000 under $5,000,000</td>
<td>3,515,760</td>
<td>72,792</td>
<td>170,019</td>
<td>2.34</td>
<td>0.02</td>
<td>0.05</td>
</tr>
<tr>
<td>$5,000,000 under $10,000,000</td>
<td>7,091,409</td>
<td>148,531</td>
<td>313,004</td>
<td>2.11</td>
<td>0.02</td>
<td>0.04</td>
</tr>
<tr>
<td>$10,000,000 or more</td>
<td>27,148,786</td>
<td>583,493</td>
<td>2,580,759</td>
<td>4.42</td>
<td>0.02</td>
<td>0.10</td>
</tr>
</tbody>
</table>
Regression Results

Analysis of the data, using both White’s test and the Breusch-Pagan test, reveals evidence of heteroskedasticity. This means that the variances of the unobservable errors changes across different levels of an explanatory variable, in this case, income. The existence of heteroskedasticity is not unexpected, however, for several reasons.

First, the IRS defined income classes differently over the twenty years of available data, especially for the higher income classes. For example, in 1981 taxpayers were divided into twelve income classes, with the highest income class “$1,000,000 or more.” By 1990, there were 18 income classes, and what had been classified as “$50,000 under $100,000” in 1981 had been divided into four smaller income classes, $50,000 to $55,000, $55,000 to $60,000, $60,000 to $75,000, and $75,000 to $100,000. By 2003, there were 22 income classes, and the highest income class covered taxpayers with AGIs of $10,000,000 or more. As income classes grew smaller, the measurements became more precise, and consequently the variances of the unobservables for the income classes would also be expected to change over time.

Secondly, in this model, it is likely that the residuals vary much more for higher levels of income than lower levels of income because the ratio of noncash to cash donations may also vary much more for higher levels of income. Again, this means
that predictions of the ratio of noncash to cash donations could be less precise for higher income donors than for lower income ones.

Huber-White robust standard errors were calculated to correct for heteroskedasticity. However, these robust standard errors were developed using asymptotic properties, and so are not appropriate for small samples. Robust standard errors were therefore used only for samples with more than 150 observations. For analysis using datasets with fewer observations, the usual standard errors were employed. In order to test the sensitivity of the results to the type of standard errors used, models were estimated using both robust and usual standard errors, and the statistical significance of the estimated coefficients did not change under both types of standard errors.

Table 3 shows the estimated relationship between donations of noncash assets relative to cash and the price of donating appreciated assets relative to the price of donating cash. The estimated coefficient for income using all the observations is both statistically significant and positive in all three models. In Models 1 and 2, a 1% increase in a taxpayer’s AGI is predicted to increase the ratio of donations by 0.32%, all else equal. This might be because as income increases, the opportunities for acquiring, as well as subsequently donating, larger amounts of noncash assets also increase, thus broadening the donor’s ability to take advantage of the lower price of
donating appreciated assets relative to cash. Unlike the first 2 models, Model 3 predicts that a 1% increase in AGI actually leads to a 1.31% decline in the ratio of donations, although this effect becomes more positive as income increases. This seems to indicate that taxpayers at different ends of the income continuum base their decision of what to donate on different factors.

Table 3: Full Sample Regression Results

<table>
<thead>
<tr>
<th>Dependent Variable: ln(R)</th>
<th>All Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent Variables</strong></td>
<td>Model 1</td>
</tr>
<tr>
<td>ln(Y)</td>
<td>0.32***</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
</tr>
<tr>
<td>ln(Y)^2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>ln(P)</td>
<td>2.22***</td>
</tr>
<tr>
<td></td>
<td>(0.38)</td>
</tr>
<tr>
<td>ln(P)^2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-4.05***</td>
</tr>
<tr>
<td></td>
<td>(0.19)</td>
</tr>
<tr>
<td>Year Dummies</td>
<td>N</td>
</tr>
<tr>
<td>N</td>
<td>410</td>
</tr>
<tr>
<td>Adj. R^2</td>
<td>0.62</td>
</tr>
</tbody>
</table>

(robust standard errors are shown in parentheses)
Note: statistical significance of results are not sensitive to the type of standard error used.
*** significant at 1% level
The estimated coefficient for the ratio of prices in all three models is unexpected. As stated above, one expects donations of noncash assets relative to cash to increase as the price of donating appreciated assets decreases relative to the price of donating cash. However, the regression results show a statistically significant and positive relationship between the two. All three models predict that a 1% increase in the ratio of prices will lead to slightly more than 2% increase in the ratio of donations.

As stated previously, the dependent variable is based on noncash contributions, including both appreciated assets subject to the capital gains tax as well as assets not subject to the capital gains tax. High income taxpayers are more likely to own, and therefore to donate, appreciated assets such as corporate stock and real estate. Lower income taxpayers may, on the other hand, be more likely to donate clothing, used vehicles, and other assets not subject to the capital gains tax. As a result, the dependent variable may be misspecified for lower income taxpayers. The observations were therefore broken up and examined by quartiles to determine if the effects estimated using all the observations held true for different income groups, or if different income groups behaved differently from each other. The results are shown in Table 4.

For the bottom quartile, the coefficient for the ratio of prices was not statistically significant in any of the models. Donors in this group responded to an increase in income by decreasing their donations of noncash assets relative to cash. In


Table 4: Regression Results by Quartile

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>1st Quartile</th>
<th>2nd Quartile</th>
<th>3rd Quartile</th>
<th>4th Quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
<td>Model 1</td>
</tr>
<tr>
<td>ln(Y)</td>
<td>-0.09***</td>
<td>-0.10***</td>
<td>-1.19**</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.59)</td>
<td>(0.25)</td>
</tr>
<tr>
<td>ln(Y)^2</td>
<td>0.06*</td>
<td>-0.14</td>
<td>2.62</td>
<td>-0.02</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.77)</td>
<td>(2.91)</td>
<td>(0.13)</td>
</tr>
<tr>
<td>ln(P)</td>
<td>0.41</td>
<td>-2.18</td>
<td>-31.30</td>
<td>1.13***</td>
</tr>
<tr>
<td></td>
<td>(0.81)</td>
<td>(5.97)</td>
<td>(38.26)</td>
<td>(0.27)</td>
</tr>
<tr>
<td>ln(P)^2</td>
<td>-370.71</td>
<td>-4.04</td>
<td>-28.51</td>
<td>-2.84</td>
</tr>
<tr>
<td></td>
<td>(436.76)</td>
<td>(6.77)</td>
<td>(55.32)</td>
<td>(2.92)</td>
</tr>
<tr>
<td>Intercept</td>
<td>-0.01</td>
<td>-0.16</td>
<td>4.37</td>
<td>-0.69</td>
</tr>
<tr>
<td></td>
<td>(0.24)</td>
<td>(0.33)</td>
<td>(2.92)</td>
<td>(1.35)</td>
</tr>
<tr>
<td>Year Dummies</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>N</td>
<td>139</td>
<td>139</td>
<td>139</td>
<td>75</td>
</tr>
<tr>
<td>Adj. R^2</td>
<td>0.09</td>
<td>0.10</td>
<td>0.12</td>
<td>0.07</td>
</tr>
</tbody>
</table>

* significant at 10% level
** significant at 5% level
*** significant at 1% level
Models 1 and 2, this effect, while statistically significant, was also small, with donors responding to a 1% in income by reducing the ratio of donations by about 0.1%. In Model 3, donors were estimated to respond to a 1% increase in income with a 1.19% decrease in the ratio of donations. One possible explanation for this relationship may be that lower income taxpayers tend to donate noncash contributions in the form of clothing and other nonappreciating assets. If the giving of these nonappreciated assets is not very responsive to the level of income, but the amount of cash donations increases with income, then the ratio of noncash to cash contributions would decline with respect to income.

Donors with very low income who itemize are an unusual group. They tend to have a disproportionately high fraction of elderly people and those with significant negative transitory income (Feldstein 1975, 86). They are more likely to have current income that is very different from their permanent income (Feldstein and Clotfelter 1975, 3). In addition, they are less likely to donate appreciated assets and more likely to donate noncash assets such as used clothing and vehicles. As a result, their decision to donate may be driven by factors other than the price of donating, factors that cannot be analyzed using the current dataset. This is indicated by the low value of adjusted $R^2$ of around 0.10, which shows that the models do not provide a very good explanation of
the overall variation in levels of the ratio of noncash to cash donations for donors in the bottom quartile.

For both the second and third quartiles, the estimated coefficients for income were not statistically significant. The ratio of prices was estimated to have a statistically significant and positive relationship with the ratio of donations, although the coefficient was no longer statistically significant once year dummies were included in the model and the income and ratio of prices variables were no longer constrained to vary linearly with the ratio of donations. The relatively large standard errors reflects the difficulty of estimation when the variation in income, and consequently the price of donating, is substantially limited. The highest values of adjusted $R^2$ were obtained using Model 2, and even then, the model provides only low levels of explanation of the overall variation in the ratio of donations, with $R^2 = 0.37$ for the second quartile and $R^2 = 0.08$ for the third quartile. From the regression results for these two income groups, it appears as if income levels and the price of donating appreciated assets and cash do not play an important role in the donor’s decision to donate noncash assets versus cash.

For donors in the top quartile, an increase in income of 1% is estimated to lead to a positive and statistically significant increase in the ratio of donations by around 0.50%. An increase in the relative price of giving appreciated assets results, as expected, in a decrease in the ratio of noncash to cash donations. The estimated
coefficient for the ratio of prices is not statistically significant in model 1, becomes highly significant once year dummies are added in models 2 and is marginally significant in model 3.

Of all the income class groupings, only donors in the top quartile respond in the expected manner to changes in the prices of donating appreciated assets relative to cash. That is, as the price of donating appreciated assets increases relative to the price of donating cash, these donors reduce their contributions of noncash assets relative to cash. For example, under model 2, an increase in the ratio of prices by 1% leads to a decrease in the ratio of donations by 2.64%. The models also provides a high level of explanation for the variation in the ratio of donations, with adjusted $R^2 = 0.95$ for Models 2 and 3.

As stated above, the calculations in Table 1 used the weighted average of B/A (the ratio of an asset’s basis to current market price) for 1985 and 1997-1999 in determining the price of donating appreciated assets. Table 5 examines the sensitivity of the results for Model 2 to various values of B/A.

For a given marginal income tax rate and capital gains tax rate, as the value of B/A increases, the cost of donating $1 worth of appreciated asset increases relative to the price of donating $1 in cash. A higher value of B/A narrows the gap between the price of donating appreciated assets and cash. As a result, a higher value of B/A would
be expected to magnify the estimated effect of a change in the ratio of prices on the ratio of donations, and this is indeed the result shown in Table 5. For the two income groupings where the coefficient on the ratio of prices is statistically significant, as B/A increases, the estimated effect of the ratio of prices on the ratio of donations also increases. Estimated coefficients in the first, second and third quartiles, however, are not sensitive to changes in the value of B/A.

Table 5: Sensitivity Analysis for Values of B/A

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>All Observations</th>
<th>B/A = 0</th>
<th>B/A = 0.51</th>
<th>B/A = 0.75</th>
</tr>
</thead>
<tbody>
<tr>
<td>ln(Y)</td>
<td>0.31***</td>
<td>0.32***</td>
<td>0.33***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td></td>
</tr>
<tr>
<td>ln(P)</td>
<td>0.81***</td>
<td>2.36***</td>
<td>5.19***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.19)</td>
<td>(0.44)</td>
<td>(0.90)</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-4.11***</td>
<td>-4.17***</td>
<td>-4.18***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.23)</td>
<td>(0.22)</td>
<td>(0.22)</td>
<td></td>
</tr>
<tr>
<td>Year Dummies</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>410</td>
<td>410</td>
<td>410</td>
<td></td>
</tr>
<tr>
<td>Adj. R²</td>
<td>0.64</td>
<td>0.63</td>
<td>0.65</td>
<td></td>
</tr>
</tbody>
</table>
Table 5: Sensitivity Analysis for Values of B/A (Continued)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>1st Quartile</th>
<th>2nd Quartile</th>
<th>3rd Quartile</th>
<th>4th Quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B/A = 0</td>
<td>B/A = 0.51</td>
<td>B/A = 0.75</td>
<td>B/A = 0</td>
</tr>
<tr>
<td>ln(Y)</td>
<td>-0.10***</td>
<td>-0.10***</td>
<td>-0.10***</td>
<td>-0.17</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.14)</td>
</tr>
<tr>
<td>ln(P)</td>
<td>-1.00</td>
<td>-2.18</td>
<td>-4.40</td>
<td>-0.07</td>
</tr>
<tr>
<td></td>
<td>(2.79)</td>
<td>(5.97)</td>
<td>(11.96)</td>
<td>(0.20)</td>
</tr>
<tr>
<td>Intercept</td>
<td>-0.16</td>
<td>-0.16</td>
<td>-0.17</td>
<td>0.73</td>
</tr>
<tr>
<td></td>
<td>(0.33)</td>
<td>(0.33)</td>
<td>(0.34)</td>
<td>(1.46)</td>
</tr>
<tr>
<td>Year Dummies</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>N</td>
<td>139</td>
<td>139</td>
<td>139</td>
<td>75</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
<td>0.37</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>3rd Quartile</th>
<th>4th Quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B/A = 0</td>
<td>B/A = 0.51</td>
</tr>
<tr>
<td>ln(Y)</td>
<td>0.13</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>(0.31)</td>
<td>(0.31)</td>
</tr>
<tr>
<td>ln(P)</td>
<td>0.47</td>
<td>1.03</td>
</tr>
<tr>
<td></td>
<td>(2.80)</td>
<td>(6.98)</td>
</tr>
<tr>
<td>Intercept</td>
<td>-2.30</td>
<td>-2.28</td>
</tr>
<tr>
<td></td>
<td>(3.36)</td>
<td>(3.36)</td>
</tr>
<tr>
<td>Year Dummies</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>N</td>
<td>52</td>
<td>52</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>0.08</td>
<td>0.08</td>
</tr>
</tbody>
</table>

Note: Statistical significance of results are not sensitive to the type of standard error used.

1 robust standard errors

* significant at 10% level
** significant at 5% level
*** significant at 1% level
Policy Implications and Conclusion

Based on the regression results, donors at different income levels behave in different ways with respect to their reasons for contributing, and any discussion of the relationship between donations and the price of donating needs to differentiate between various income groups. In this study, only wealthy donors in the top quartile respond in the expected manner to changes in the capital gains tax rate. There are several reasons why this may be the case. First, people with higher incomes are probably more likely to employ the services of financial advisors to assist them in taking advantage of tax incentives. In addition, not only do higher income donors own more appreciated assets, they also donate more appreciated assets than donors in other income groups, who own less appreciated assets and donate more noncash items such as clothing and used vehicles than appreciated assets such as stocks and mutual funds. As a result, wealthy contributors are more likely to take the capital gains tax rate into account when making their donation decision. This may also explain why the regression results do not indicate a statistically significant relationship between the relative price of donating and the relative quantity donated for donors in other income groups.

Although the capital gains tax only affects the decision to donate for taxpayers in the top income levels, the fact that these taxpayers also contribute the most money to charities means that any changes to the capital gains tax will likely have an affect on
the financial health of charities. For example, since cash is the most liquid of all assets, charities may prefer cash donations to donations of appreciated assets. Although stocks and mutual funds may be relatively easy to convert into cash, charities need employees with financial expertise to be able to decide how long to hold their donations and when to sell them in order to reap the most benefit from them. Donations of real estate may be much more difficult to use in an effective manner than cash because of the extra effort and resources involved in finding buyers and writing sales contracts. As a result, some charities may not have the resources or expertise to handle donations of appreciated assets and would be hurt if wealthy donors increased their donations of appreciated assets and decreased their donations of cash in response to an increase in the capital gains tax rate.

While the regression results indicate a negative relationship between the ratio of prices and the ratio of donations for wealthy taxpayers, further research is needed to test if an increase in the capital gains tax rate leads these donors to replace their donations of cash with donations of appreciated assets, leaving the overall level of donations constant, or if they continue donating cash at the same level and increase both their donations of appreciated assets and overall contributions, or some combination in between these two extremes. The degree to which total cash contributions change would affect charities that have difficulty utilizing donations of
appreciated assets. For example, these charities would not be negatively affected by an increase in the capital gains tax rate if donors responded to the increase by holding their level of cash contributions constant but increasing donations of appreciated assets. But if cash contributions fell in response to an increase in the capital gains tax rate, then these charities might suffer financial hardship as a result.

Although this study did not estimate the degree of substitution between cash and appreciated assets, past studies on charitable donations have consistently found a negative relationship between the price of donating and quantity donated. Although these studies do not differentiate between gifts of cash and gifts of appreciated assets, they imply that as capital gains tax rates increase, for example, donors will respond by increasing their total contributions. This in turn implies that wealthy donors do not respond to increases in the capital gains tax rate by simply replacing their cash contributions with contributions of appreciated assets.

More research needs to be done concerning the effect of changes in the capital gains tax rate on donations of appreciated assets in order to obtain a fuller understanding of their relationship to each other. The results of this study show, however, that wealthy taxpayers do respond to changes in the capital gains rate, and that if politicians believe that charities have an important role to play in this country,
they should take the affect on charities into account if they decide to change capital gains tax rates.
References


