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Tax Policy and Philanthropy: A Primer on the Empirical Evidence for the United States and Its Implications

FEDERAL AND STATE TAX POLICIES IN THE UNITED STATES OFFER substantial incentives to donate to charity. The federal income tax and most state income taxes give taxpayers the choice between an itemized deduction for expenditures such as charitable donations, mortgage interest, and state and local taxes, or a standard deduction, which at the federal level amounts to \$12,200 for married taxpayers filing joint returns and \$6,100 for single taxpayers in 2013. Among those who choose to itemize, each additional dollar that is donated reduces income tax liability by one dollar times the taxpayer's marginal tax rate (that is, the income tax rate applying to the last dollar of taxable income), which in the federal income tax in 2013 can be as high as 39.6 percent. In addition, when someone donates an asset that has appreciated in value, he or she avoids any federal and state personal income taxes that would otherwise have been due on the asset's capital gain (the increase in asset's value since it was originally purchased), had the owner eventually sold the asset before death. Numerous other federal and state tax provisions, such as the alternative minimum tax (AMT), phase-outs and limitations of various deductions and credits, and estate and inheritance taxation, can influence the tax savings from charitable donations as well.

Recently, proposals to curtail the charitable deduction in various ways have been made by the Obama administration (Office of Management and Budget 2013, 36), the Romney presidential campaign (Gale 2012), and the Simpson-Bowles budget plan (Perry 2010), among others. While more than two-thirds of respondents to an April 2011 Gallup poll opposed eliminating the charitable deduction (Jones 2011), predictions of large and growing government budget deficits in the decades to come are likely to intensify pressure to put many popular policy provisions, including the charitable deduction, on the chopping block.

An important consideration in evaluating tax policy toward philanthropy is whether the tax incentives actually succeed in causing donations to increase. Several types of empirical evidence I review here suggest that the donation behavior of high-income people in particular is probably responsive to tax incentives. Economic theory helps clarify what factors affect the optimal tax subsidy for charitable giving, and toward the end of the paper I summarize some key insights from the theoretical literature, including a discussion of how and why the responsiveness of donations to incentives matters, and why it is just one important piece of a larger puzzle.

INTRODUCTORY FACTS ABOUT CHARITABLE GIVING AND TAX SUBSIDIES FOR CHARITY IN THE UNITED STATES

In 2009, households in the United States donated \$201 billion, or 1.9 percent of their disposable personal incomes, to charity (Center on Philanthropy at Indiana University 2012, 271). Of that, \$158 billion in donations, or 79 percent, were made by people who itemized deductions on their federal tax returns, and thus were subject to tax incentives for giving (author's calculations based on data from Internal Revenue Service, 2013).

Tax subsidies for charitable donations in the United States are heavily skewed toward the top of the income distribution. In 2012, the charitable deduction reduced personal income tax revenues by \$38 billion, which represented about 4 percent of federal personal income

tax revenues, and about 57 percent of that went to subsidize donations made by households with incomes above \$200,000 (Joint Committee on Taxation 2013, 44). One reason for the concentration of tax subsidies at the top is that higher-income taxpayers are far more likely to itemize—in 2009, 96 percent of taxpayers with adjusted gross income (AGI) above \$200,000 itemized, while only 31 percent of those with AGI below \$200,000 did. Another reason is that a given dollar amount of deduction is worth more in terms of reduced tax liability to higher-income people because they face higher marginal tax rates. In addition, households at the top of the income distribution account for wildly disproportionate shares of both income and charitable donations. In 2009, only 2.6 percent of households had AGI above \$200,000 but they accounted for 25.1 percent of all income, and their charitable deductions accounted for 29.5 percent of the aggregate value of charitable donations made by all households (Internal Revenue Service 2013; Piketty and Saez 2003 [updated 2013, Table A0]; and Center on Philanthropy at Indiana University 2012, 271).

Since so much of the tax subsidy is going to influence the donations of high-income households, it is useful to consider what those donations are financing. According to data reported by the Center on Philanthropy at Indiana University (2007, tables 9 and 25), among donations made by people with incomes above \$200,000 in 2005, 29.5 percent went to education, 20.8 percent went to religion, 15 percent went to the arts, and 12.5 percent went to health. About 26.5 percent of the donations by this high-income group are classified as “focused on the needs of the poor,” including donations made through a variety of other categories (for example, donations to education that support financial aid for low-income students).

THE PRICE ELASTICITY OF CHARITABLE GIVING

Economists typically summarize evidence on the responsiveness of charitable donations to incentives by estimating a “price elasticity of charitable giving.” The price of an additional dollar of charitable donation is one minus the tax savings from donating the dollar. So

for a taxpayer who itemizes deductions, who is in the 39.6 percent tax bracket, who lives in a state without an income tax, and who faces no other tax complications influencing the incentive to donate, the price of giving one more dollar to charity is $1 - 0.396 = 0.604$ cents. It is analogous to the price of anything else, in the sense that it represents the value of other stuff (for example, nondeductible personal consumption) that one must give up in order to get one more unit of something desirable (in this case, an additional one dollar of resources received by the charity of one's choice).

Elasticity is an economic term meaning “the percentage change in one thing associated with a one percent increase in another thing.” Thus the “price elasticity of charitable giving” is the percentage change in charitable donations that is associated with a one percent increase in the price of donating to charity. If higher prices (that is, smaller tax incentives) cause reductions in donations, as one might expect, the price elasticity will be negative. A price elasticity more negative than -1 means that the tax incentives for charitable giving increase donations by more than they reduce government revenue; a price elasticity between 0 and -1 means that the tax incentives increase charitable donations, but by less than the amount that they reduce government revenue. The latter case does not necessarily mean that charitable tax incentives are necessarily a bad idea, for reasons we'll explore later. For now, I'll turn to the question of how differences in the price of charity across income classes, time, and states relate to differences in charitable donation behavior, and what that might imply about the price elasticity of charitable giving.

EVIDENCE OF RESPONSES TO CHANGES OVER TIME IN TAX INCENTIVES FOR CHARITY

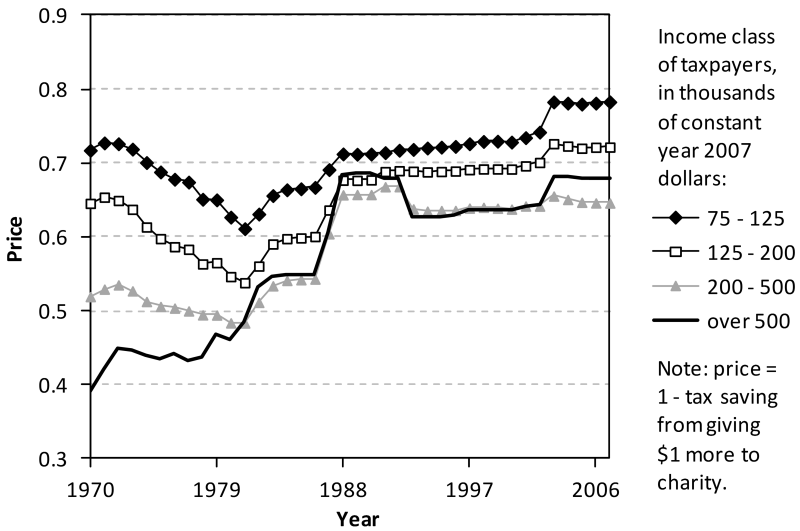
Figures 1, 2, and 3 illustrate how the price of charitable donations, charitable donations as a percentage of disposable income, and disposable income changed over time between 1970 and 2007 in each of four income classes (with incomes and all other dollar-valued variables converted to constant year 2007 dollars). These are based on my compu-

tations using the tax calculator program described in Bakjia (2009), and individual income tax return data from the IRS Public Use Tax Files (for descriptions see National Bureau of Economic Research 2013). Further details on the methodology and data used to construct all figures in this paper are available in a web appendix (Bakjia 2013).

One important detail to note here is that all statistics in figures 1 through 3 are computed for “exogenous itemizers,” which I define as taxpayers for whom itemized deductions for interest payments and state and local property taxes and income taxes, when converted to constant year 2007 dollars, exceed the 2007 value of the standard deduction for that type of taxpayer (which was the largest standard deduction in real terms during the sample period). This is standard practice among careful researchers studying charity using tax return micro data. Tax returns provide the best available data for our purposes, but only report charitable donations for itemizers. Among taxpayers who have interest payments and state and local taxes *less* than the standard deduction, the subset who itemize will tend to have unusually large charitable donations, as those are typically the only members of that group who find it worthwhile to itemize. If the itemizers among that group were included in the sample, it would distort estimates of average charitable donations in each income group, probably making them unrepresentatively large. The distortion would be more severe in the lower-income classes, and for people in states without an income tax, since they both tend to have interest and state and local taxes that are further below the standard deduction. The degree of distortion would also change over time as the value of the standard deduction and tax incentives for charity changed. Limiting the sample to exogenous itemizers as defined above, who are all people who would have itemized anyway with no charitable donation when the standard deduction was at its highest, avoids the distortion described above and keeps the sample composition in each group as consistent as possible over time.

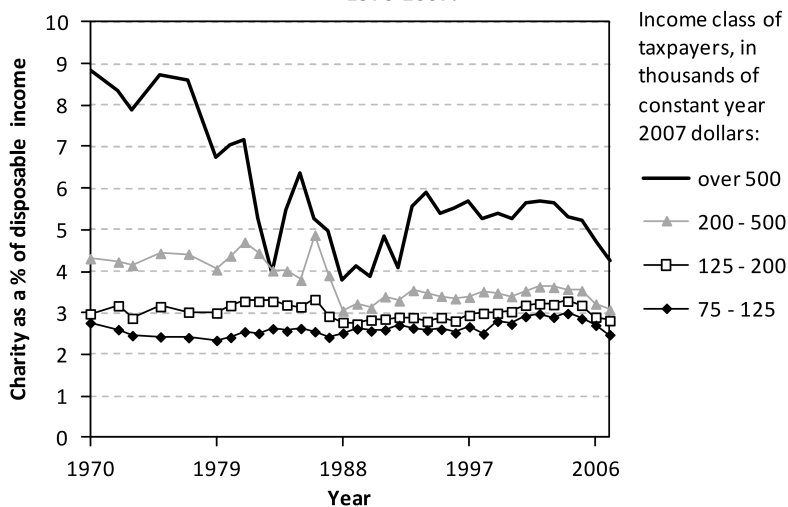
Figure 1 defines price as one minus the reduction in federal and state income taxes caused by an additional dollar of charitable donation, and reports my estimates of the average price in each year and

Figure 1 : The price of charitable donations increased for high-income people relative to others, 1970-2007.



income class. These prices are calculated for a sample of exogenous itemizer tax returns, using the same returns in each year, holding the demographic characteristics of the taxpayers constant across years, and holding dollar-valued income components and deductions of the taxpayers constant over time in real terms as well. Most of the time, the price of giving tended to be significantly lower for higher-income people, largely reflecting the fact that marginal tax rates are an increasing function of income in the federal income tax. In addition, since the 1970s, the price of charitable giving has increased substantially for upper-income people, and has changed more modestly for middle-income people. This largely reflects significant reductions in federal marginal income tax rates on ordinary income at the top of the income distribution, which mainly happened during the 1980s, coupled with relatively little change over time in federal marginal tax rates for the middle class. The top federal marginal income tax rate dropped from 70 percent throughout the 1970s to 50 percent in 1982, and then was further reduced from 50 percent to 28 percent between 1986 and 1988. We can see particularly sharp increases in price around those times for

Figure 2: Charitable donations as a percentage of disposable income declined more for high-income people relative to others, 1970-2007.

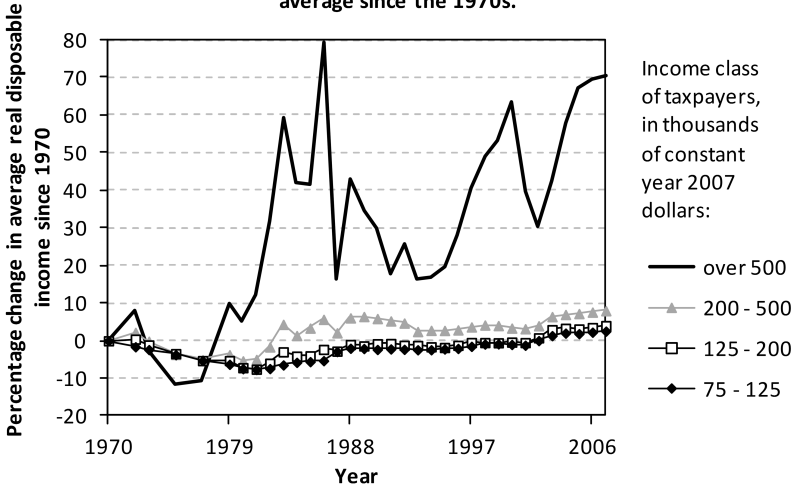


the top two income groups. The 1990s and 2000s involved some smaller ups and downs in the price, but they leave the dominant long-term pattern of substantial increases in prices for upper-income people relative to middle-income people intact.

Figure 2 illustrates that since the 1970s, charitable donations declined significantly as percentage of disposable income among those with real incomes above \$500,000, declined moderately among those with real incomes between \$200,000 and \$500,000, and changed relatively little for the \$125,000 to \$200,000 and \$75,000 to \$125,000 groups. Thus, the income groups that had the largest increases in price over the long-term also had the largest declines in charitable donations relative to disposable income, which is consistent with the hypothesis that charitable giving decisions are responsive to incentives.

What kind of price elasticity do figures 1 and 2 imply? We can get a rough idea based on back-of-the-envelope calculations comparing the 1988–2007 period (when prices were persistently high) with the 1970s (when prices were persistently low), excluding the transitional period in the middle when prices were changing frequently and by

Figure 3: The decline in charitable donations as a share of disposable income among high-income people occurred despite the fact that their real disposable incomes increased dramatically on average since the 1970s.



large amounts (so people may still have been adjusting, or may have been retiming their giving when they anticipated near-future changes in the tax savings from giving). Among those with real incomes above \$500,000, charitable donations averaged 8.2 percent of disposable income during the 1970s, and 5.06 percent of disposable income during 1988 through 2007, a 38.3 percent decrease. In the same group, the price of charitable giving averaged 0.437 in the 1970s and 0.658 during 1988 through 2007, a 50.5 percent increase. The ratio of those two percentage changes, $-38.3 / 50.5 = -0.76$, is an estimate of the price elasticity of giving for the top income group. That is, figures 1 and 2 together imply that for those with incomes above \$500,000 in constant year 2007 dollars, a 1 percent increase in price is associated with a 0.76 percent decline in charitable donations. For the \$200,000 to \$500,000 group, charitable giving averaged 4.27 percent of disposable income in the 1970s and 3.40 percent of disposable income during 1988 to 2007, a 20.4 percent decrease, and price of charitable giving went from 0.514 to 0.647 on average between the same two periods for that group, a 25.9 percent increase. So for the second-highest-income group, figures 1 and

2 imply a price elasticity of charitable giving in the ballpark of $-20.4 / 25.9 = -0.79$.

If we could be confident that there was nothing else changing over time that had an important impact on the charitable donations of upper-income people, then these price elasticity estimates might be reasonably convincing. One way to check this would be to look at what is happening to charitable giving in the bottom two income groups shown in figure 2, for whom prices changed much less over time. For both of these other groups, charitable giving as a percentage of disposable income was largely unchanged. If those middle-income groups provide an accurate counterfactual for what would have happened to the charitable giving of the upper-income groups in the absence of the substantial price changes that the upper-income groups experienced, this should increase our confidence that the price elasticity for the high-income groups is in the neighborhood of -0.8 . Or, to put it another way, that price elasticity estimate is reliable unless there is some other confounding factor besides tax incentives that is causing charitable donations to change over time for the upper-income groups, but not for others.

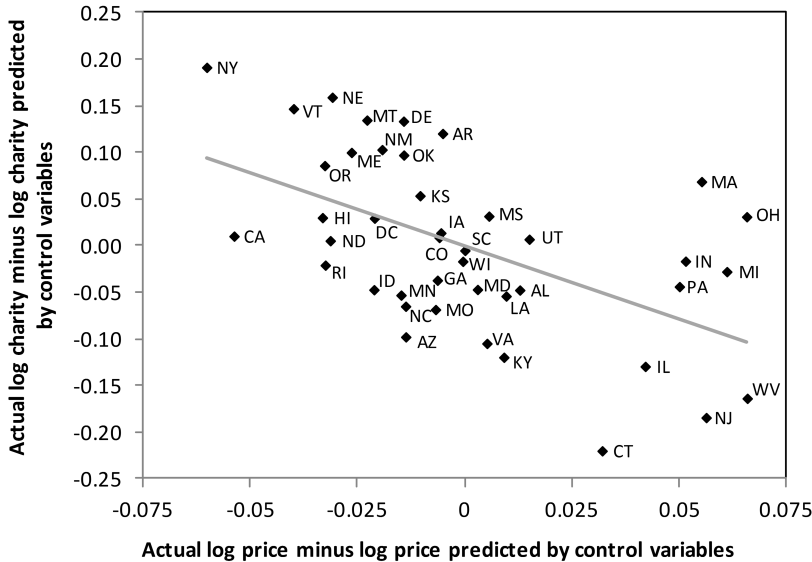
Figure 3 points out one such a factor, at least for the highest-income group. For those with incomes above \$500,000 in constant 2007 dollars, average disposable income per tax return increased by 70 percent between 1970 and 2007, while cumulative disposable income growth for the other three groups from highest to lowest were 8 percent, 4 percent, and 3 percent, respectively. This is consistent with well-known evidence produced by Piketty and Saez (2002, updated 2013, table A2) that the share of national pre-tax market incomes going to the top 1 percent of the income distribution increased from just below 10 percent during the 1970s to more than 21 percent by 2007. Other things being equal, people with higher disposable incomes may tend to give systematically larger shares of their incomes to charity. Figure 2 provides some suggestive evidence that this is indeed the case—during the period 1992 through 2003, the price of charitable giving was virtually identical in the top two income groups, yet charitable donations

averaged 5.52 percent of disposable income for the highest-income group and 3.47 percent of income for the second-highest income group, a 60 percent difference. This seems to suggest that when prices are held constant, there is indeed a tendency for charitable donations to increase as a share of disposable income when income is higher. Thus, our estimated price elasticity of -0.76 actually reflects some combination of the negative effects of rising prices and the positive effects of rising income that coincidentally went along with the rising prices. Adjusting for the influence of rising disposable income in the top income group could easily suggest a price elasticity of, say, -0.9 or -1, but could be sensitive to arbitrary assumptions about how to make the adjustment. A strategy that gets around this difficulty is to exploit differences in the incentive to give to charity across people with similar levels of disposable income, arising because of the state they happen to live in.

HIGH-INCOME TAXPAYERS DONATE MORE IN STATES WHERE TAX INCENTIVES FOR CHARITY ARE LARGER

The price of charitable giving differs significantly for similar people living in different states, both because of differences in state tax policies and because of interactions between state and federal taxes—for example, people with large state income tax bills are far more likely to be subject to the federal AMT, which has a different set of marginal tax rates than the ordinary income tax. To illustrate how prices differ across high-income people who live in different states, I calculate the average price of charitable giving in each state from 1991 through 2007, using the same nationally representative sample of exogenous itemizer tax returns with nominal AGI above \$200,000 for the calculations in each state, which isolates the variation in price across states arising from tax law, and removes differences in price arising from differing characteristics of people living in different states. On average from 1991 through 2007, the District of Columbia had the lowest price of charitable donations applying to high-income taxpayers, at 0.597. Among states with an income tax, Pennsylvania, which does not allow a charitable deduction, had the highest price, at 0.669, which is 12 percent higher than

Figure 4 -- Among those with incomes above \$200,000 living in states with an income tax during 1991-2007, the cross-state relationship between log charitable donation per itemizer and log price, controlling for log disposable income per return, log share itemizing, and shares of state population that are adherents to various religions, suggests a price elasticity of -1.6



DC's price. Among states without an income tax, Nevada had the highest price, at 0.726, which is 22.6 percent higher than DC's price.

The only publicly available data on how the charitable donations of high-income people differ across states come from tables published by the IRS for 1991 and later years, which report aggregate amounts of income, charitable deductions, and other tax return items for taxpayers who have nominal AGI above \$200,000 in each state (Internal Revenue Service 2013 and various years). I use data from these tables to illustrate the cross-state relationship between price and donations among high-income taxpayers. These aggregated data make it impossible to limit our analysis to exogenous itemizers (as we did in figure 2), so in figure 4 I instead limit the sample to states (and DC) that have an income tax, because on average 96.3 percent of returns with AGI above \$200,000 in those states itemized. In the 9 states without an income tax, only

76.4 percent of returns with AGI above \$200,000 itemized, and average donations by those itemizers are probably unrepresentatively large for reasons noted earlier.

Figure 4 shows the relationship between the natural logarithm (log) of charitable donations per high-income itemizer in each state, and the log of the price of donations for high-income itemizers in each state, controlling for the log of average disposable income per high-income return in each state, the log of the share of high-income returns that itemize each state, and the shares of state population that were adherents of religions in each of six categories (Mormon, evangelical Protestant, mainline Protestant, Catholic, Jewish, and other religion, with no religious affiliation being the omitted category). The religion variables are from the *Religious Congregations and Membership Study* for the year 2000 (Association of Religion Data Archives 2013). All other variable represent averages from 1991 through 2007, with dollar-valued variables converted to constant year 2007 dollars before averaging. A one-unit increase in the natural logarithm of a variable represents a 100 percent increase in the value of that variable, so that the change in the log of charitable donations associated with a one unit increase in the log of the price of donations is precisely the price elasticity of donations that we are looking for (that is, it tells us the percentage change in donations associated with a one percent increase in price).

More precisely, figure 4 is a scatter plot showing the relationship between actual log charitable donation minus log charitable donation predicted by an ordinary least squares regression of log charity on all the nonprice control variables (also known as “residual log donation” and measured on the vertical axis); and actual log price minus log price predicted by an ordinary least squares regression of log price on all the nonprice control variables (also known as “residual log price” and measured on the horizontal axis). In other words, the vertical axis measures the percentage difference (divided by 100) between the actual charitable donation and what one would predict the charitable donation to be based on log disposable income, log share itemizing, and religious composition of the state. It ranges from a minimum of

22 percent below the predicted value (in Connecticut) to 19 percent above the predicted value (in New York). The horizontal axis measures the percentage difference (divided by 100) between price and what one would predict the price to be based on log disposable income, log share itemizing, and religious composition of the state. It ranges from a minimum of 6.0 percent below the predicted value (New York again) to 6.6 percent above the predicted value (in West Virginia). The cluster of states near the right edge of the graph, separated by a gap from the others, is the set of states that have income taxes but which do not allow charitable deductions.

The straight gray line drawn through the cloud of dots in figure 4 is the estimated ordinary least squares regression line, which minimizes the sum of squared vertical distances between the dots (which represent the combinations of residual log donation and residual log price for each state) and the line, and this is the straight line that best summarizes the mean relationship between log charity and log price after adjusting for the influence of the control variables. The slope of this line is -1.6, and that is our estimate of the price elasticity of charitable donations—that is, the percentage change in donations associated with a 1 percent increase in price, holding the control variables constant. Angrist and Pischke (2009, section 3.1.2) demonstrate why the slope of the regression line shown in figure 4 is mathematically equivalent to the coefficient on log price in a multiple regression of log charity on log price and the control variables—this graph is just a useful way to illustrate what that means. The 95 percent confidence interval around the -1.6 price elasticity estimate ranges from -0.6 to -2.6.

Evidence of strong responsiveness to tax incentives when we compare donations of high-income people across states is robust to changes in the specification and the sample. The simple relationship between log donations and log price across states, again focusing on returns with AGI above \$200,000 living in states with an income tax during 1991–2007 but *without* adjusting for the influence of any control variables, suggests a price elasticity of -1.5. The fact that the price elasticity estimate is virtually identical whether or not we adjust for the

influence of the control variables suggests that, given the way I have constructed my estimates of price, differences in price across state are not systematically correlated with the control variables, and thus our estimates will not be especially sensitive to different methods of disentangling the causal effect of price from the effects of the control variables. Repeating the exercise in figure 4 but including all 50 states and DC suggests a price elasticity of -2, with a 95 percent confidence interval ranging from -1 to -3.

EVIDENCE FROM ECONOMETRIC ANALYSIS OF PANEL DATA

In Bakija and Heim (2011), we estimated the price elasticity of charitable donations using confidential government panel data on individual income tax returns (which Heim was allowed to access because he was an employee of the US Treasury at the time). “Panel data” are data that follow the same people over time. Our data set followed each of about 60,000 mostly high-income taxpayers over spans of at least six consecutive years during which they were exogenous itemizers in the period from 1979 to 2006. This data enabled us to exploit the fact that price of charitable donations changed in very different ways over time for people at similar income levels, depending on which state they lived in. When calculated using a sample of identical taxpayers with incomes above \$200,000 in constant year 2007 dollars, the percentage increase in the price of donations between 1979 and 2003 ranged from a minimum of 33 percent (in Massachusetts) to a maximum of 53 percent (in West Virginia). Among the 6 most populous states, the corresponding price increases were 37 percent in California, 41 percent in Illinois, 42 percent in New York, 47 percent in Texas, and 48 percent in Florida. Almost all of the large differential changes in price across states occurred before or during 1991, so the publicly available data used to construct figure 4 (which are unavailable for years before 1991) are not useful for illustrating the effects of these relative price changes across states over time. So summarizing our econometric estimates is the best I can do here.

Analysis of panel data has other advantages as well. By focusing on comparisons of *relative changes over time* in prices and donations across the same individuals followed over time, we effectively control for any unobservable factors that influence charity and which differ across taxpayers but which are constant over time, and for any unobservable influences on charity that are changing in the same way over time for all members of the sample. Such factors cannot explain why donations changed relatively more over time for some people compared to others when they experienced larger relative changes in prices. Panel data also enable us to estimate the long-run responsiveness of donations to persistent changes in price, purged of the influence of any short-term fluctuations arising for example because people re-time their giving when they expect next year's price to be different, by controlling for past and expected future changes in price for each individual.

The estimate in which we have the most confidence relies exclusively on relative changes in price across states to identify the price elasticity, allows disposable income to have a highly flexible relationship with donations, and does the most to control for factors which are changing in different ways over time for people in different income classes. It suggests a price elasticity of donations of -1.4, with a 95 percent confidence interval ranging from -1 to -1.8 (Bakija and Heim 2011, table 3, column 4). We find that estimates of the price elasticity of donations that rely on relative changes in price across states are not especially sensitive to reasonable changes in the specification, and are always more negative than -1 when averaged across taxpayers of all income levels. When we allow the responsiveness to relative changes in price across states to differ by income class, we find suggestive evidence that the price elasticity is larger in absolute value for higher-income taxpayers, with estimated elasticities ranging from -0.9 for those with incomes below \$100,000 to -1.6 for those with incomes above \$1 million (table 4, column 4).

By contrast, Heim and I find that price elasticity estimates that rely entirely on federal tax variation for identification are sensitive to how flexible we allow the relationship between disposable income and

donations to be, and to different methods of controlling for factors that are changing in different ways over time in different income classes. The most flexible specification (table 3, column 3) suggests an elasticity of donations with respect to federal price of -0.9, while the least flexible specification suggests an elasticity with respect to federal price of -0.4. We do not think this means that people are less responsive to federal tax incentives than they are to state tax incentives. Rather, we argue that it is very difficult to disentangle the effects of changes in federal tax incentives from the effects of changes in disposable income, and from the effects of other factors that are changing differently over time in different income classes (for example, unmeasured wealth and unrealized capital gains), since they are so closely related, as discussed in connection with figures 2 and 3 above. Differential changes over time in prices for similar people living in different states provide a better quasi-experiment, because those changes are much more independent of changes in income and wealth. Thus, we argue that the estimates based on variation in prices across states provides the most convincing evidence of the responsiveness to both federal and state tax incentives for charity.

Earlier analyses of individual income tax return panel data similar to ours focused mainly on the 1980s, relied exclusively on federal tax variation to identify price elasticities, used very different methods for disentangling the effects of income from the effects of price, and also used very different methods for distinguishing long-term responses of donations to prices from short-term re-timing behavior in response to predictable differences in price over time. Auten, Sieg, and Clotfelter (2002), using data from 1980–1992, estimate long-run elasticities of donations in response to persistent changes in price that range from -0.79 to -1.26, depending on the exact method used to disentangle the effects of price from the effects of disposable income. Randolph (1995), using data from 1979–1988 and a very different methodology, estimates a long-run price elasticity of donations with respect to a persistent differences in price of -0.5. It is not clear just from reading the papers why the estimates are so different, but the evidence presented in Bakija

and Heim (2011) suggests that the differences might be explained by the fact that federal tax rate variation is so closely related to differences in income and wealth, making the estimates very sensitive to arbitrary assumptions about how to disentangle the effects of each. This general point was first noted by Feenberg (1987), who argued for relying on cross-state variation in prices to identify the price elasticity instead. Feenberg estimated a price elasticity of donations of -1.6 using a 1982 cross-section of individual income tax returns with nominal AGI below \$200,000, where the estimate was based on the response to the portion of price variation that was due exclusively to variation in price across identical people living in different states, which is consistent with what we found in figure 4 above.

Figure 2 also makes clear that when focusing just on the 1980s, it is not obvious whether income groups that experienced the largest price increases also experienced the largest declines in donations relative to disposable income, and that is basically the comparison that both Auten, Sieg, and Clotfelter and Randolph are making. The response to changed tax incentives for giving during the 1980s may be obscured by the apparent retiming of donations in response to frequent, predictable, and large legislated changes in marginal tax rates, and the especially large jumps in disposable income for people at the top of the distribution that occurred during this time. Figure 2 suggests that a longer-term historical perspective is more supportive of the notion that price changes affect donations.

WHAT ARE THE PRACTICAL IMPLICATIONS OF THE PRICE ELASTICITY FOR THE IMPACT OF PROPOSED POLICY CHANGES?

Cordes (2013) reports results of a microsimulation analysis investigating how specific policy proposals would affect charitable donations and tax revenues relative to a baseline of 2013 tax law when the top federal marginal income tax rate is 39.6 percent, and assuming that the price elasticity of donations is -1. The Obama administration has proposed capping the federal tax savings from itemized deductions at 28 percent

of the value of the deductions (Office of Management and Budget 2013). The simulation suggests charitable donations would drop by about \$8 to \$9 billion, with all of the reduction coming from people the top 5 percent of the income distribution, who are the only ones whose incentives to donate are affected by the plan. This reduction represents 4.1 percent of the total value of household donations for the nation as a whole. The estimated reduction in the tax revenue cost of the charitable deduction is \$10.1 billion.

Economist Martin Feldstein (2011) has proposed capping all itemized deductions at 2 percent of AGI. Cordes estimates that with a price elasticity of -1, this policy would reduce charitable donations by an amount equal to 19.8 percent of aggregate household donations, or more than \$40 billion, while reducing the tax revenue cost of the charitable deduction by only \$4.6 billion. If our goal were to induce the most donations possible for a given cost in terms of tax revenues foregone, then proposals like this one that cap deductions for charity go about it all wrong. For anyone with deductions above the cap, the policy would convert the tax incentive for donations into a windfall for donations that would have been made anyway, while eliminating the incentive to donate more at the margin. Cordes also simulates a policy where only donations in excess of one percent of AGI can be taken as itemized deductions. This reduces aggregate household donations by only 1.5 percent (a bit more than \$3 billion of lost donations in a year), largely because it preserves the incentive to donate more at the margin for most itemizers. That proposal increases annual tax revenue by about \$10 billion, or about one-fourth of the revenue cost of the charitable deduction at the baseline.

OPTIMAL TAX THEORY, AND HOW THE PRICE ELASTICITY OF DONATIONS FITS INTO IT

What would an optimal tax policy toward charitable giving be? To think clearly about this question, we need to consider what the goals of government policy should be. A plausible answer is that good government policy should maximize social welfare, which is some function of the well-being of all members of society.

One concept of social welfare is economic surplus, also known as money-metric utility, which represents the dollar-valued net benefits from economic activity. In the absence of market failures, free markets are economically efficient, in the sense of maximizing economic surplus. Market failures are specific well-defined situations where the market by itself is not efficient. A classic example is an externality, where the actions of some individuals produce benefits or costs for others that are not transmitted through the market. In that setting, the market won't achieve the efficient solution because consumers and producers will only maximize their own net benefits without taking into account the net benefits and costs they are producing for or imposing on others. That creates scope for government policy to improve efficiency.

Different philosophies of distributive justice suggest other, more general, conceptions of social welfare. For example, utilitarianism advocates designing policy so as to maximize the sum of individual utilities in the society, taking into account the concept of diminishing marginal utility—that an additional dollar may have more value in terms of added happiness for a lower-income person than for a higher-income person, which creates the possibility that redistribution from rich to poor can increase social welfare. A utilitarian analysis would also take into account any efficiency costs of taxation and any efficiency gains from using government to fix market failures, weighting those gains and losses by the marginal utilities of the people affected. Taxation can impose efficiency costs when it hurts incentives. So, for example, if someone is considering whether to do some extra work that would produce \$1,000 of income, and the cost of doing the work is to forgo leisure that would be worth \$800 to the person, there is a net benefit of \$200 to be had. But if the person faces a 30 percent marginal tax rate on income, the \$300 tax makes it no longer worthwhile to do the extra work. As a result, the \$200 net benefit is lost, and we call that \$200 “deadweight loss.” Because of deadweight loss, the dollar-valued cost of taxation in terms of reduced well-being is larger than the dollar value of revenue raised. But this extra cost could be worth it if the tax

enables us to do something that raises social welfare by more than the tax reduces it.

A utilitarian would evaluate whether a policy change is an improvement by multiplying the dollar-valued gains and losses to each person by the marginal value of a dollar in terms of utility (happiness) to each person. Suppose we raise an additional \$100 in tax revenue from a rich person and it makes the rich person worse off by \$150 (\$100 of revenue taken out of her pocket plus \$50 of deadweight loss). If we transfer the resulting \$100 of revenue to a poor person as a cash transfer, and an additional dollar is worth at least 1.5 times as much in utility to the poor person as it is to the rich person, then the tax and transfer policy increases utilitarian social welfare. Saez and Stantcheva (2013) show that different philosophies of distributive justice can be conceptualized as applying different marginal social welfare weights to the dollar valued gains and losses to different individuals in examples like this. In utilitarianism the marginal social welfare weight is the marginal utility of a dollar to each person. To illustrate just one other example among many, a luck egalitarian ethic would put greater weight on dollar gains in well-being going to people who are badly off through no fault of their own.

In this framework, a tax subsidy for charitable donations might be justified because it solves a market failure or because the tax subsidy helps transfer resources to from those with lower to those with higher marginal social welfare weights (for example, lower-income people) at a low cost in terms of efficiency. Observed levels of voluntary charitable donations and results from laboratory experiments suggest that people must get some positive utility or “warm glow” from voluntarily making charitable donations—that is, the act of donating makes the donor happier (Andreoni 1990, 2006). In a model with warm glow, an individual will donate up to the point where the marginal benefit in terms of warm glow to the individual just equals the marginal cost. When donations are unsubsidized, the donor will make all donations that provide more than \$1 of happiness to the donor, and stop at the point where the last \$1 of donation is

worth just \$1 of warm glow. But that is inefficient, because some \$1 donations where the total benefit, including benefit not only to the donor but to others, exceeds the \$1 cost, will not occur. For example, a donation that costs the donor \$1, makes the donor happier by \$0.75, and makes the recipient better off by \$1 as well, is efficient, because the benefits to society are \$1.75 and the cost is \$1. That's the positive externality problem. The donation won't happen unless the donor receives a subsidy of at least \$0.25 for the donation. Such a subsidy would be economically efficient. This logic has led Kaplow (1995) to argue that economic efficiency requires subsidizing gifts and bequests of all sorts, not just charitable donations.

A donation may also provide positive external benefits to others besides the direct recipient. For example, a donation that helps reduce poverty may produce external benefits for other people besides the direct beneficiaries, as these other people are now happier to see less poverty around them. A donation to higher education or health care might fund basic research, producing new scientific knowledge or technological innovations that spill over to benefit others who did not pay for it, as ideas can spread freely and can sometimes be copied and put to productive use without compensating the original innovator. Donations to education might help make people better and more engaged citizens, leading to better voting decisions or better monitoring of politicians, redounding to everyone's benefit. Some donations can be thought of as contributing to the financing of public goods, another category of market failure which in a sense is a more extreme form of a positive externality problem. A pure public good is defined a good with benefits that are nonexcludable (people cannot be prevented from benefiting if they don't pay) and nonrival (one person's enjoyment of a unit of the good does not diminish anyone else's ability to enjoy exactly the same unit of the same good). The market will tend to undersupply these because nonexcludability makes it difficult to make a profit supplying it. Many of the positive externality examples above can be thought of as being like public goods. To evaluate the total effect on social welfare, the dollar-valued benefits from a donation to the

donors, the direct recipients, and others would all be weighted by the marginal social welfare weights of each involved person.

The theoretical literature on optimal taxation considers what kinds of tax policies would maximize social welfare and how this might depend on parameters that can be empirically estimated. Saez (2004) builds an optimal tax model that incorporates all of the considerations mentioned above. In his model, individuals receive utility from consumption, from their own donations (the warm glow effect), and from the average level of donations in the society as a whole (the externality effect), and disutility from expending the time and effort required to earn income. The government sets a flat tax rate on labor earnings and can use the resulting tax revenues to finance provision of the contribution good or to provide a uniform cash transfer to all households (which achieves redistribution), and also sets a flat tax or subsidy rate on charitable donations. The labor tax rate, charity subsidy rate, cash transfer level, and government provision of the contribution good are set to maximize a social welfare function that is a weighted sum of individual money-metric utilities, where the weights reflect one's philosophy of distributive justice (for example, weights are marginal utilities if you are a utilitarian).

With a few reasonable simplifying assumptions, Saez's model produces tractable expressions for the optimal subsidy rate for charitable donations. In a setting where the government and private donations provide different goods that are not substitutable for each other, the optimal subsidy rate on charitable donations depends on the following. First, the optimal subsidy rate is larger when the marginal social-welfare-weighted sum of dollar-valued external benefits from an additional dollar of donation (the "external effect") is larger. This takes into account both the efficiency gains from solving the positive externality problem, and the relative values of the dollar-valued gains from these external benefits in terms of social welfare (for example, in a utilitarian framework, another dollar of external benefits to the poor would be worth more than another dollar of external benefits to the rich). Second, the optimal subsidy rate is smaller when charitable donations are less responsive to price. The intuition is as follows: subsi-

dizing donations costs tax revenue, which necessarily requires either raising the tax rate on labor income or reducing government expenditure (on the cash transfer). Raising the tax rate on labor income is costly in terms of social welfare because it causes deadweight loss. If charitable donations are not responsive to price then it is efficient to tax charitable donations at a high rate instead of subsidizing them, because doing so would not reduce charitable donations but would raise revenue that enables us to reduce the tax rate on labor income, saving us some deadweight loss. If, on the other hand, charitable donations are very responsive to price, then subsidizing donations will succeed in producing some extra external benefits and perhaps some redistribution to those with higher marginal welfare weights, in which case it might save us the need to do some costly redistribution through the tax and transfer system. The optimal subsidy rate is also larger when the marginal social-welfare-weight weighted average of warm glow benefits from an additional dollar of donations is higher. So, for example, in a utilitarian framework with diminishing marginal utility of income, other things being equal, the optimal subsidy rate would be smaller when donations are contributed more disproportionately by high-income people because we would value their warm glow less.

In a setting where the government and private donors are providing exactly the same good, the formula for the optimal subsidy is quite different. In Saez's model, the price elasticity of donations is assumed to get smaller as the subsidy rate gets larger. When the goods supplied by government spending and private charitable donations are perfect substitutes, maximizing social welfare requires adjusting the subsidy rate until the absolute value of the price elasticity of donations equals $(1 + \Delta D/\Delta G)[1 - \beta(G)]$. In that expression, $\Delta D/\Delta G$ is the "crowding out effect"—that is, the change in private donations caused by a \$1 increase in government expenditures, and is negative if government provision crowds out private donations. $\beta(G)$ is the aforementioned marginal social-welfare-weight weighted average of warm glow benefits from an additional dollar of donations. The external effect no longer enters into the formula because Saez's model assumes that in this case the govern-

ment is always adjusting its own spending on the contribution good to ensure that exactly the right amount of external benefits are produced to maximize social welfare. The formula suggests that when the absolute value of the price elasticity is larger than this term, the subsidy rate should be increased so that the absolute value of the elasticity gets smaller. Conversely, when the absolute value of the price elasticity is smaller than this term, the subsidy rate should be reduced so that the elasticity gets bigger. This formula still suggests that the optimal subsidy rate is higher when donations are more responsive to incentives, but also points out reasons why, even when the goods financed by charitable donations and government spending are perfect substitutes, a tax subsidy for charitable donations could be optimal even if the price elasticity is well below one in absolute value.

The first term $(1 + \Delta D/\Delta G)$ is generally between zero and one, and will be closer to zero when there is more crowding out. The intuition for why this matters is that when there is crowding out, increasing the supply of the contribution good by \$1 requires more than \$1 of government spending, and thus more than \$1 of taxes (and associated deadweight loss) to finance it. As crowding out gets larger, it becomes relatively more expensive in terms of social welfare to supply the good through government and relatively cheaper in terms of social welfare to supply through private donations, making a large subsidy for donations optimal even when donations are not so responsive to the incentive. The second term $[1 - \beta(G)]$ is generally between zero and one as well, and will be smaller when the warm glow of donors is worth more in terms of social welfare. This points out that a subsidy for donations could be social-welfare-maximizing even when the price elasticity is less than one in absolute value, simply because people are happier contributing to solutions to externality and public good problems and redistribution when they do it through private voluntary donations than when they do it through taxes. In this model, only if there were no crowding out, and if we did not count warm glow as part of social welfare, and if government really was providing the same good as the charitable donations finance, and was constantly readjusting spending to always keep us at the social welfare maximum,

would we have a rule where a price elasticity that is less than one in absolute value necessarily implies that the subsidy for donations is suboptimal.

Saez's model is meant to be a normative model of what the government *should* do, not a positive model of what the government *will* do. A realistic modeling of politics would be a useful avenue for future research and might change some conclusions of the model under certain circumstances. When government is behaving suboptimally in terms of maximizing social welfare, then the optimal policy toward charitable donations, taking that as given, may differ from that suggested by Saez's model. For example, in an environment where a politically influential bloc believes that it is morally illegitimate for government to collect more taxes to help the poor or to do more to solve externality problems but also believes it is fine for government to create tax incentives for voluntary private donations to address those problems, a tax incentive for donations that would be suboptimal in Saez's model might instead be a second-best compromise that on balance increases social welfare when politics are taken into account. Government also has other potential policy levers than the tax subsidy rate alone which it might exploit to improve the degree to which the nonprofit sector enhances social welfare, including for example policies about which sorts of organizations are eligible for deductible donations, and what those organizations are required to do in exchange for that privilege.

CONCLUSION

I have argued that tax incentives for charitable donations in the United States succeed in causing donations to increase, probably by about as much or more than they cost in terms of reduced tax revenue. This strengthens the case for the tax subsidies for donations, but it is still just one important piece of a larger puzzle about what the optimal tax policy toward charity should be, which depends on many factors. A thorough analysis of these other factors is beyond the scope of this short paper, but hopefully I've clarified some of what economists can contribute to the discussion.

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