

Charitable Giving and the Taxation of Estates

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Committee on Finance
Subcommittee on Social Security and Family Policy

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William G. Gale¹
Brookings Institution
Tax Policy Center

Mr. Chairman and Members of the Committee:

Thank you for inviting me to testify today. My testimony focuses on the ways in which estate tax reform or repeal would affect charitable giving. This written testimony briefly summarizes two articles I have co-authored on the topic. These articles are attached as appendices to the testimony.

The main point of my testimony is simple: Repealing the estate tax or cutting the top rate in the estate tax would have a significantly negative effect on charitable giving. This conclusion is the product of several important facts.

First, the estate tax encourages charitable giving at death by providing a deduction for charitable bequests. Less obviously, it also encourages giving during life. Charitable contributions made during life gain a double tax advantage: They reduce income taxes and they remove the assets from the estate and so avoid estate taxes as well. Aggregate giving from living individuals far exceeds aggregate charitable bequests. As a result, even if the estate tax is only a relatively minor determinant of charitable giving while alive, the impact of repeal on giving while alive could be a large component of the overall impact.

Second, a variety of different kinds of research implies that estate tax repeal would reduce charitable bequests by between 22 and 37 percent, or between \$3.6 billion and \$6 billion per year. Previous studies are consistent with this finding, and also imply that repeal would

¹ Arjay and Frances Fearing Miller Chair, Economic Studies Program, and Co-Director, Tax Policy Center. The views presented are my own and should not be taken to represent the views of the Brookings Institution or the Tax Policy Center.

reduce giving during life by a similar magnitude in dollar terms. To put this in perspective, a reduction in annual charitable donations in life and at death of \$10 billion due to estate tax repeal represents a 5 percent decline in overall charitable giving and implies that, each year, the nonprofit sector would lose resources equivalent to the total grants currently made by the largest 110 foundations in the United States.

Third, none of these estimates take into account any possible change in the “culture” of giving that might accompany outright repeal of the estate tax. Repeal would convey an explicit message that charitable giving at death is no longer encouraged. The elimination of the charitable deduction would eliminate a major selling point for charities. As a result, the aggregate effects could be larger than previous estimates suggest.

Fourth, the estate tax could in principle reduce charitable gifts by reducing the amount of wealth decedents can allocate to various uses. However, the net tax rate on charitable bequests is already zero, so the estate tax does not reduce wealth accumulations intended for charity. Moreover, the qualitative conclusion that estate tax repeal would significantly reduce giving holds even if repeal raises aggregate pre-tax wealth and income by plausible amounts.

Fifth, both the likelihood of giving and the share of estate given rise significantly with wealth. These patterns are consistent with the incentives created by tax rates that rise with wealth. Of course, people may be willing to give larger shares of wealth to charity as their wealth rises for reasons other than taxes. In any event, charitable bequests are heavily concentrated among the wealthiest estates. In 2001, 301 decedents with gross estates in excess of \$20 million gave \$6.8 billion to charity. These decedents represented fewer than 1 out of every 8,000 deaths in that year, but accounted for 42 percent of all charitable bequests and made average bequests of \$23 million. Likewise, 64 percent of all charitable bequests came from roughly 1,900 gross estates above \$5 million.

These patterns suggest strongly that raising the estate tax exemption within the ranges currently under discussion would have only a minor effect on charitable giving, but reducing the top estate tax rate would have a significantly negative effect.



tax break

by Jon M. Bakija and William G. Gale

Effects of Estate Tax Reform On Charitable Giving

Jon M. Bakija is an assistant professor of economics at Williams College and the Okun-Model Fellow at the Brookings Institution. William G. Gale is the Arjay and Frances Fearing Miller Chair at Brookings, and codirector of the Tax Policy Center. The authors thank Annie Davis, John Irons, and Peter Orszag for helpful comments; Barry Johnson and Jeff Krehely for providing data; and Brennan Kelly, Chris Lyddy, and Robert Moore for outstanding research assistance. The opinions expressed are those of the authors and should not be attributed to any of the organizations with which they are affiliated.

I. Introduction and Summary

Since 1916, the United States has imposed a tax on the estates of the wealthiest individuals. The 2001 tax cut reduces the estate tax over time, and then repeals it as of 2010, only to reinstate it in 2011. Because politicians are unlikely to allow this pattern of changes to occur, estate tax reform will return to the policy agenda in the near future.

One of the most important issues in assessing reform options is the effect on charitable giving. The estate tax encourages charitable giving at death by providing a deduction for charitable bequests. It also encourages giving during life, as explained below. But the tax reduces charitable gifts by reducing the amount of wealth decedents can allocate to various uses. The net impact of these effects is ambiguous in theory.

Our previous research implies that estate tax repeal would reduce charitable bequests by between 22 percent and 37 percent, or between \$3.6 billion and \$6 billion per year. Previous studies are consistent with this finding, and also imply that repeal would reduce giving during life by a similar magnitude in dollar terms. To put this in perspective, a reduction in annual charitable donations in life and at death of \$10 billion due to estate tax repeal represents a 5 percent decline in overall charitable giving and implies that, each year, the nonprofit sector would lose resources equivalent to the total grants currently made by the largest 110

foundations in the United States.¹ The qualitative conclusion that repeal would significantly reduce giving holds even if repeal raises aggregate pretax wealth and income by plausible amounts.

II. Background

In 2001, charitable contributions totaled \$212 billion, of which living individuals gave 76 percent, bequests accounted for 8 percent, and foundations accounted for 12 percent (AAFRC Trust for Philanthropy 2002). Estate tax changes can plausibly affect giving through all of these channels. The remaining 4 percent was donated by corporations. Charitable bequests figure most prominently as a source of gifts for educational institutions, medical research institutions, museums, and the creation and maintenance of private foundations.

The federal estate tax currently applies to net estates in excess of \$1 million. The net estate equals gross assets at death less deductions for debts, spousal bequests, charitable bequests, expenses of administering the estate, and a few other miscellaneous items. The marginal estate tax rate varies between 41 percent and 49 percent, with the rate rising as wealth does. The exemption is scheduled to increase in steps, reaching \$3.5 million by 2009, while the top marginal tax rate is scheduled to fall to 45 percent, before the tax is temporarily eliminated in 2010.

In recent years, about 2 percent of decedents have had to pay federal estate taxes. Table 1 provides information on charitable bequests and wealth reported on federal estate tax returns filed in 2001. Most of these returns represent people who died in 2000, for whom the effective exemption was \$675,000. Charitable bequests appeared on one-sixth of estate tax returns, and amounted to \$16.1 billion, or 7.5 percent of the value of gross assets.

Both the likelihood of giving and the share of estate given rise significantly with wealth. These patterns are consistent with the incentives created by tax rates that rise with wealth. Of course, people may be willing to give larger shares of wealth to charity as their wealth rises for reasons other than taxes. In any event, charitable bequests are heavily concentrated among the wealthiest estates. In 2001, 301 decedents with

¹Private communication from Jeff Krehely, National Committee for Responsive Philanthropy, based on analysis of data from the National Center for Charitable Statistics 2001 Private Foundation file.

Size of Gross Estate (\$ millions)	Charitable Bequests				Avg. Tax Rate (Estate Tax as Percent of Net Worth)	Marginal Tax Rate at Mean Net Worth in Category	Share of			
	Percent With	As Share of Estate	Per Decedent (\$ thousands)	Per Giver (\$ thousands)			All Returns	Returns With Charity	Gross Estates	Charitable Bequests
All	17.3	7.5	149.4	863.1	11.3	45	100.0	100.0	100.0	100.0
0.6-1.0	14.2	2.4	19.2	135.1	2.0	39	42.0	34.5	17.1	5.4
1.0-2.5	16.6	4.1	61.2	369.1	8.1	43	43.8	41.9	32.6	17.9
2.5-5.0	25.1	6.1	209.9	836.0	15.3	50	9.2	13.3	15.8	12.9
5.0-10.0	32.4	7.6	516.8	1,594.1	18.6	50	3.3	6.2	11.2	11.4
10.0-20.0	36.5	9.7	1,301	3,563.5	18.9	55	1.2	2.5	8.0	10.3
20.0+	47.9	20.6	10,831	22,598.4	15.4	50	0.6	1.6	15.3	42.1

Source: IRS Statistics of Income division, April 2003 (<http://www.irs.gov/pub/irs-soi/01es01gr.xls>).
Note: Data represent returns filed in 2001, most of which are 2000 decedents. Marginal tax rate is calculated based on law in effect in 2000.

gross estates in excess of \$20 million gave \$6.8 billion to charity. These decedents represented fewer than one out of every 8,000 deaths in that year, but accounted for 42 percent of all charitable bequests and made average bequests of \$23 million. Likewise, 64 percent of all charitable bequests came from roughly 1,900 gross estates exceeding \$5 million.

III. Some Illustrative Examples

Some simple examples show the channels through which estate tax repeal would affect giving and why it is plausible to believe that repeal would reduce giving. Holding pretax wealth constant (an assumption we relax below), the estate tax directly reduces the price of charitable bequests and the level of after-tax wealth that decedents can allocate to various uses. The effect of estate tax repeal depends on (a) the relative magnitude of the changes in price and after-tax wealth; and (b) the relative responsiveness of charitable bequests to changes in each. Because the estate tax is highly progressive, the marginal tax rate (that is, the tax rate applying to the next dollar of wealth or deductions) is higher than the average tax rate (total estate tax liability divided by net worth) for most decedents. This difference implies that repeal would reduce the marginal tax rate — which determines the price of giving — by more than the average tax rate — which influences the after-tax level of wealth. As a result, repeal would generate a relatively large increase in the price of giving and a relatively small increase in the after-tax wealth of decedents. Therefore, repeal will reduce charitable bequests as long as the responsiveness of bequests to changes in after-tax wealth is not substantially larger than the responsiveness to changes in price.

Consider an individual with a marginal estate tax rate of 40 percent and an average tax rate of 10 percent. (These figures represent the averages for people who died in 1998 and filed an estate tax return, weighted by their charitable bequests.) For this representative estate tax filer, a \$1 charitable bequest reduces contributions to heirs by 60 cents. If the estate tax were

repealed, a \$1 contribution to charity would reduce contributions to heirs by \$1, so the price of charitable bequests (measured in terms of bequests to taxable heirs) would rise by 67 percent (from 0.6 to 1). If the individual's average estate tax rate were 10 percent, repeal would raise after-tax wealth by 11 percent (from 0.9 to 1).

Suppose a 1 percent increase in after-tax wealth always raises charitable bequests by 1 percent, and a 1 percent increase in the price always reduces such bequests by 1 percent. If so, repeal would reduce charitable bequests in this example by about one-third. These calculations hold pretax wealth constant. But even if estate tax repeal raised pretax wealth by as much as 10 percent, charitable bequests would still decline by 27 percent.²

Estate taxes also encourage giving during life. Charitable contributions made during life gain a double tax advantage: They reduce income taxes and they remove the assets from the estate and so avoid estate taxes as well. For example, assume the marginal income tax rate is 30 percent and the marginal estate tax rate is 40 percent. A donor giving \$100 to charity while alive could instead have kept the \$100, paid \$30 in income tax and bequeathed the remaining \$70 to heirs, who would receive a net inheritance of \$42, once estate tax was paid. With no estate tax, foregoing a \$100 charitable contribution during life would leave \$70 for heirs. That is, estate tax repeal would raise the cost of making charitable contributions while alive (relative to the cost of giving gifts to heirs).

²If a 1 percent increase in price (P) or after-tax wealth (W) causes charitable giving (G) to change by -1 percent or 1 percent, respectively, then $G = aW/P$, where a is a constant. In the example in the text, $W/P = 0.9/0.6 (= 1.5)$ under the estate tax. If pretax wealth is held constant, $W/P = 1/1 (=1)$ under repeal. So the percent change in G is $[(1 - 1.5)/1.5] \times 100 = -33$ percent. If pretax wealth rises by 10 percent, $W/P = 1.1$ under repeal and a similar calculation shows a 27 percent decline in giving.

Aggregate giving from living individuals far exceeds aggregate charitable bequests. As a result, even if the estate tax is only a relatively minor determinant of charitable giving while alive, the impact of repeal on giving while alive could be a large component of the overall impact.

IV. Evidence

Several kinds of evidence exist on how estate taxes affect charitable giving. Each type indicates that repeal would significantly reduce charitable giving. In particular, each type suggests that charitable giving is as sensitive or more sensitive to its price than to after-tax wealth. This result, combined with the fact that repeal would raise the price of giving more than after-tax wealth, implies that repeal would reduce giving.

Figure 1 illustrates, by decade, the share of gross estates given to charity and the marginal tax rate on the average estate for all estate tax filers.³ As tax rates rose, so too did the share of wealth given to charity. This evidence is consistent with the notion that the estate tax's stimulative effect on charitable bequests (due to improved incentives) outweighed its depressing effect (due to reduced after-tax wealth).⁴ Econometric analysis that relies on time-series variation like that depicted in figure 1, undertaken by economists Wojciech Kopczuk and Joel Slemrod (2003), also finds charitable bequests are sensitive to price. By itself, the time-series evidence is not decisive, though, because it is difficult to separate the impact of tax rates from other factors that vary over time.

A second type of study uses cross-sectional information — data on decedents from a single year. These studies almost universally find that estate taxes raise charitable bequests. Recent work by Treasury Department economist David Joulfaian (2000), based on a sample of 1992 decedents, exemplifies this line of research. His preferred estimates suggest that a 1 percent increase in the price of a charitable bequest reduces such bequests by 1.7 percent, and a 1 percent increase in after-tax wealth raises charitable bequests by 1.2 percent — that is, he finds that charitable bequests are more sensitive to price than to wealth. Cross-sectional studies are sometimes difficult to interpret, though. Table 1 shows that wealthier people give more of their estate to charity — perhaps because they face higher marginal tax rates or perhaps because they are wealthier. But in a cross-section sample, the main reason tax rates vary across decedents is that wealth varies,

³For additional discussion of the historical evidence, with special attention to changes in reported charitable bequests in the early years of the estate tax, see Doti (2003). Charitable bequests were first made deductible from the estate tax by the Revenue Act of 1918, effective for decedents dying after December 31, 1917. A place to report these bequests first appeared in the August 1918 revision of the estate tax form.

⁴Average pretax wealth reported on estate tax returns also changed over time, in a u-shaped pattern, which would have affected charitable bequests as well. The share of wealth given to charity by people at fixed real wealth levels produces a rising pattern over time similar to that shown in Figure 1.

too, so it is difficult to disentangle the separate effects of each.

A third kind of evidence exploits the fact that estate and inheritance tax rates have changed in different ways over time for people in different states and at different real wealth levels, and examines whether differences in the time-pattern of charitable bequests across groups matches up with the differences in time-pattern of incentives across these groups. Unlike time-series analysis, this approach makes it possible to control for any factors, whether observed or unobserved, that changed in the same way for everyone over time. Unlike cross-sectional analysis, this approach makes it easier to disentangle the effects of incentives from the effects of wealth, because the variation in tax rates comes from differences in tax law across time and states, rather than from the fact that at a point in time wealthier people are in higher tax brackets.

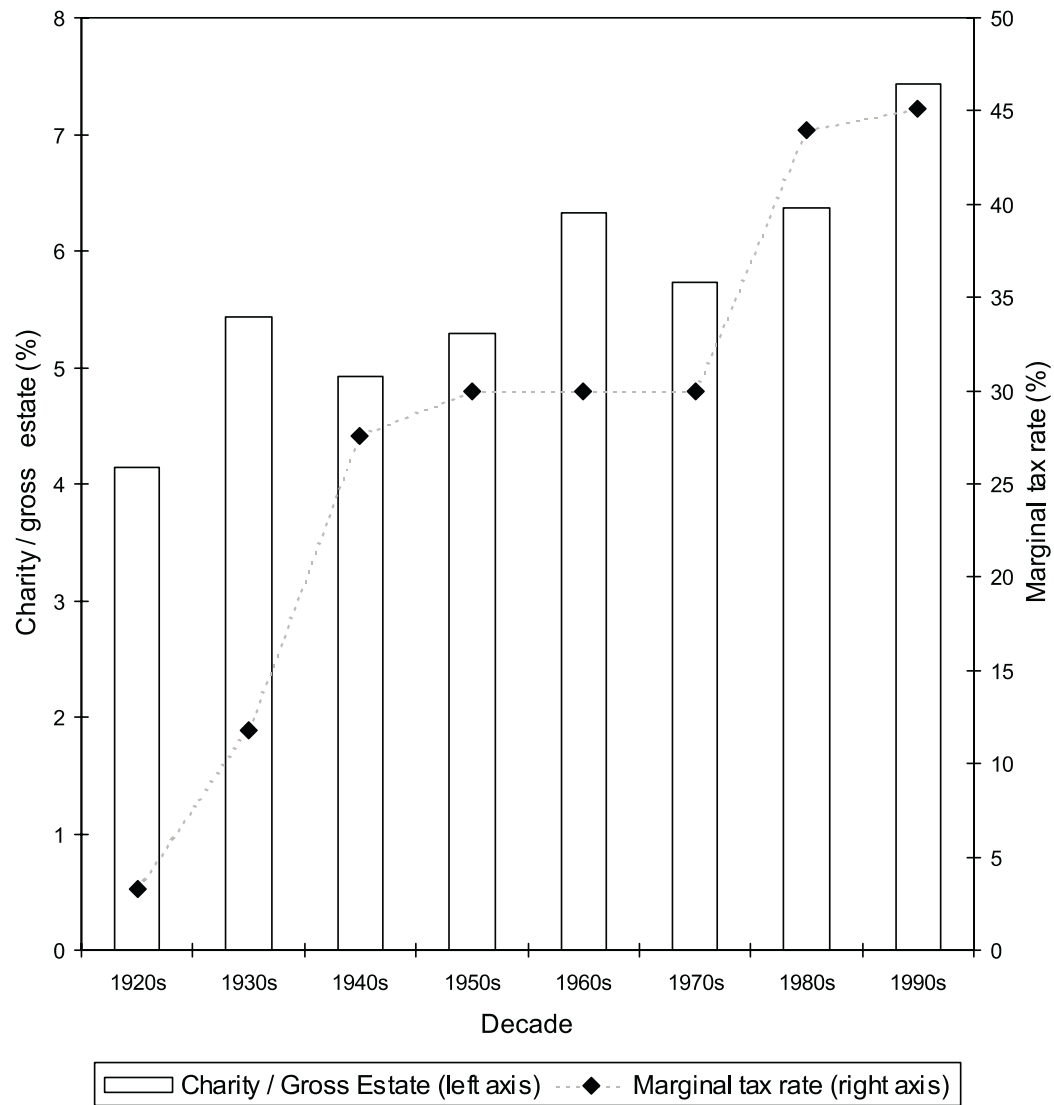
In collaborative work with Slemrod, we have undertaken a research project relying on this approach (Bakija, Gale, and Slemrod 2003). We employ a tax calculator that computes combined federal and state inheritance and estate taxes for any year, state, or wealth level, using a unique data set of federal estate tax returns from 1924 through 1998. Early estimates from this project focus on estate tax return data aggregated by real wealth range, marital status, state, and year and examine the behavior of widowed decedents, who provide about 61 percent of all charitable bequests. We estimate that among this population, a 1 percent increase in the price of giving reduces charitable bequests by 2.1 percent, and a 1 percent increase in after-tax wealth increases charitable bequests by 1.6 percent.

Thus, each of the three types of evidence finds that the sensitivity of charitable bequests to price is close to, and usually greater than, the sensitivity to after-tax wealth. This result, combined with the progressivity of the tax, implies that charitable bequests can be expected to decline significantly if the estate tax were repealed, since repeal would create relatively large increases in the price of giving and relatively smaller increases in after-tax wealth.

Putting an exact number on the size of the decline is a useful exercise, but should be interpreted with caution. Joulfaian calculates that for an individual whose price and before- and after-tax net worth are equal to the average for all filers in his sample, estate tax repeal would reduce charitable bequests by 12 percent. For a variety of technical reasons, however, this calculation probably underestimates the change in aggregate charitable bequests.⁵

⁵The bias arises because Joulfaian calculates the average estate tax rate by (effectively) weighting observations by wealth, but calculates the marginal tax rate as a simple unweighted average. A more consistent approach would calculate a wealth-weighted marginal tax rate. This measure would be significantly higher than the unweighted marginal rate, because high-wealth households face higher marginal tax rates. Using the weighted marginal estate tax rate would imply that repeal would generate a bigger increase in the price of giving than Joulfaian calculates, and therefore a bigger decline in charitable bequests.

Figure 1
Charitable Bequests as a Percentage of Gross Estates vs. Marginal Estate Tax Rate on Average Gross Estate, All Filers, by Decade



Source: Authors' calculations based on data from IRS Statistics of Income.
Notes: Marginal estate tax rate is a decade average of annual rates calculated at mean gross estate among all filers. Decade averages from 1950s through 1980s are based on a subset of years for which data were available.

Duke University professors Charles Clotfelter and Richard Schmalbeck (1996) simulate the effect of repeal by applying a set of estimates from the previous cross-sectional studies to a set of individuals representative of the different types of people filing estate tax returns. They calculate that estate tax repeal would reduce aggregate charitable bequests by between 24 percent and 45 percent. Using a similar but more detailed simula-

tion approach, the estimates from our paper with Slemrod imply that estate tax repeal would cause widowed filers to reduce charitable bequests by 37 percent. This reduction would amount to \$3.6 billion in 2001, or 22 percent of charitable bequests made by all filers. If other types of filers were equally responsive, the decline would be \$6 billion. Both our simulation and Clotfelter and Schmalbeck conservatively assume that

nontaxable filers would be unaffected by repeal. To the extent that filers are nontaxable because they make large charitable bequests, repeal could reduce their giving as well.

As noted above, the estate tax also affects incentives to give to charity while alive. Research on this question has relied exclusively on cross-sectional variation in tax rates, and finds that lifetime giving would decline under estate tax repeal. Treasury economists Gerald Auten and Joulfaian (1996) use data on 1982 estate tax returns matched to the 1981 income tax returns for the decedents and their children. They find that higher estate tax rates are associated with higher lifetime contributions while alive, even after controlling for wealth. Repeal would reduce charitable giving in the last year of life by about 12 percent among people who would otherwise have to file estate tax returns. If annual charitable donations while alive by people likely to face the estate tax is well-approximated by the \$42 billion given by people with incomes above \$200,000 (who represent roughly the top 2 percent of the household income distribution), and giving throughout life is similarly sensitive to giving in the last year of life, this would imply a \$5 billion decline in annual charitable donations through this channel.

Since this estimate is based on giving in the last years of life, one might suspect that it overstates the sensitivity of giving to estate tax rules. However, in a different paper, Joulfaian (2001) finds that charitable giving in the last 10 years of life is even more responsive to the estate tax. He uses data from income tax returns for 1987-96 and estate tax returns for decedents who died between 1996 and 1998. His estimates of the determinants of charitable bequests are similar to previous cross-sectional estimates. Based on averages in the data, he estimates that repeal would reduce combined charitable bequests and charitable donations in the last 10 years of life by between 13 percent and 31 percent. As noted above, a simulation approach would likely suggest a larger impact.⁶

V. Caveats

Although almost all research implies that estate tax repeal would significantly reduce charitable bequests and charitable giving while alive, the findings should be viewed with caution. As noted, there are difficult statistical issues associated with the estimates. In addition, none of the estimates are based on time periods when no estate tax existed. As a result, the parameter estimates may not be valid over a large change in tax rates, even holding related behavior constant. Outright repeal could also change related behavior. It would convey an explicit message that charitable giving at death is no longer encouraged. It would remove some

⁶Congressional Budget Office economists Pamela Greene and Rob McClelland (2001) use data from the Health and Retirement Study and estimate expected estate tax rates based on information on current wealth, age, subjective life expectancy, and different assumptions about asset growth rates. They provide further evidence that the charitable donations of elderly people are sensitive to expected estate tax rates.

of the need to do tax planning prior to death. The elimination of the charitable deduction would eliminate a major selling point for charities. As a result, the aggregate effects could be larger than previous estimates suggest.

Another issue is that the estimates hold pretax wealth constant, but to the extent that repeal raised aggregate wealth and income, charitable giving during life and at death would rise. Some perspective on this issue is appropriate, though. First, it would require enormous increases in wealth to offset the basic results found above. Even increases bordering on 10 percent would not overturn the conclusion that repeal would reduce charitable giving. Second, the impact of estate tax repeal on wealth accumulation is by no means certain. Although we do not review the literature here, both theory and evidence indicate that the effect is ambiguous (Gale, Hines, and Slemrod 2001). Third, even if there were an increase in wealth, it is not obvious that charitable bequests would rise. Currently, the effective estate tax rate is zero on wealth accumulated for the purposes of giving to charity. That rate would not change under repeal, which would simply make other uses of estates tax-free as well.

Boston College researchers Paul Schervish and John Havens (2003) advocate a new model of charitable giving. In their model, people have a hierarchy of preferences: As resources rise, people first take care of themselves and their family, then their friends, and only after those needs are met do they turn to the needs of broader, nonprofit organizations. Schervish and Havens draw two conclusions. First, increases in wealth should generate more than proportional increases in charitable giving. This conclusion is consistent with the data shown in table 1 and elsewhere, but it does not distinguish their approach from conventional approaches. Second, because preferences are hierarchical in their model, households do not address charitable concerns until they have fully addressed their preferences relating to family and friends. Once their wealth is sufficient to focus on charity, the other preferences are no longer a matter of concern. As a result, they say, charitable contributions depend on values, not on tax policy.

This supposed second implication is flawed. Empirically, households do not have purely hierarchical preferences. Many low-income households make charitable contributions. Many wealthy people continue to seek out new personal or family consumption even as they make large donations. Even if the hierarchy of preferences were exact, tax subsidies for charity would affect the wealth level at which people switched from addressing other preferences to charitable concerns. Most importantly, as a purely logical matter, to say that values matter for choices does not imply taxes are irrelevant. People always make choices (that is, express their values) subject to constraints and incentives (which depend on taxes). Observed behavior — like charitable giving — depends on the interaction among values, constraints, and incentives, not on one in isolation of the others.

Schervish and Havens also claim that repeal would actually raise charitable bequests, based in part on a

survey of individuals with net worth exceeding \$5 million who indicated that they expect to allocate 16 percent of their estate to charity, 47 percent to heirs, and 37 percent to taxes. Given their druthers, however, the respondents would prefer to devote just 9 percent to taxes, 64 percent to heirs, and 26 percent to charity. Taken at face value, the results suggest that reducing the estate tax by more than three-quarters (from 37 percent of estate to 9 percent) would induce an increase of more than 60 percent in charitable bequests (from 16 percent of the estate to 26 percent).

One should not take the results at face value, though. First, the results refer to intentions rather than actions. The econometric literature, based on actual behavior, is replete with studies showing that actual contributions among living people and among decedents are sensitive to tax rates. Second, it seems implausible that these individuals would have to devote 37 percent of their estate to taxes. For estate tax returns filed in the year 2000, for example, the average tax rate even among taxable returns with gross estate in excess of \$20 million was just 20 percent. These concerns raise serious questions about the reliability of the recorded answers.

VI. Conclusion

Estate tax repeal would have significant deleterious effects on charitable bequests and charitable giving during life. Although estate tax reform will raise many issues, the impact on the nonprofit sector should be a central part of the debate.

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Charitable Bequests
and Taxes on Inheritances
and Estates:
Aggregate Evidence from
across States and Time
Jon Bakija
William Gale
Joel Slemrod

Discussion Paper No. 7

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Jon Bakija is the Model-Okun Fellow in the Economic Studies Program at the Brookings Institution. William G. Gale is the Arjay and Frances Fearing Miller Chair and Deputy Director of the Economic Studies Program at the Brookings Institution and codirector of the Tax Policy Center. Joel Slemrod is the Paul W. McCracken Collegiate Professor of Business Economics and Public Policy and Director of the Office of Tax Policy Research at the University of Michigan Business School.

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After years of neglect, the estate and gift tax recently became the center of a heated policy debate, culminating with provisions in the tax cut enacted in June 2001 that will reduce the estate tax gradually, repeal it in 2010, and then reinstate it in its pre-2001 form at the beginning of 2011. This patchwork treatment virtually guarantees that estate tax rules will be revisited soon.

One recurring issue in the estate tax debate is the impact of reform on the nonprofit sector. The federal estate tax has allowed a deduction for charitable bequests since 1918 (Johnson 2001). With the top marginal rate of federal estate tax currently at 49 percent, abolishing the tax would approximately double the price of a charitable bequest relative to an ordinary bequest for the wealthiest estates. It would also, however, presumably raise the after-tax wealth of decedents, so the ultimate impact of any particular policy change depends in part on the relative sizes of the price and wealth elasticities.

Cross-sectional studies typically find that decedents with larger estates and therefore higher marginal federal estate tax rates make larger charitable bequests (see Joulfaian [2001], for an up-to-date example and literature review). The interpretation of this result is unclear, though, because the federal tax rate is an increasing, nonlinear function of estate size, and the true functional form of the relationship between wealth and charity is uncertain. If wealth has a nonlinear effect on charitable bequests that is not accurately captured in the estimated functional form, the price elasticity estimate may suffer from omitted variable bias (Feenberg 1987).

Wojciech Kopczuk and Joel Slemrod (2003) use aggregate annual time-series analysis to show that several different summary measures of the marginal federal estate tax rate have a small but positive influence on aggregate reported charitable bequests. But it is difficult to adequately

distinguish the impact of changing tax rates from other, possibly unobserved time-varying influences and trends in aggregate time-series analysis.

This paper contains early results from a research program designed to estimate the impact of taxes on charitable bequests using an econometric framework that addresses several problems that plague prior research. We exploit the fact that federal and state tax rates on estates and inheritances have changed over time in different ways across states and real wealth levels. The effect of federal and state inheritance and estate taxes on charitable bequests is estimated using pooled cross-sectional data spanning several decades, based on aggregated information from federal estate tax returns. Under several different specifications, we find evidence of a strong incentive effect of estate and inheritance taxes on charitable bequests.

I. Data and Federal-State Tax Calculator

We use a data set provided by the Statistics of Income Division of the Internal Revenue Service (IRS) and drawn from a confidential IRS data set of federal estate tax returns. The underlying data set contains a nearly 100 percent sample of federal estate tax returns for deaths through 1945, and a stratified sample of returns for selected postwar years, with sampling weights (i.e., weights based on the inverse of the sampling probability) available. The tables provided to us aggregate returns into cells based on year/state/wealth level/marital status combinations, and include the sample-weighted average charitable bequests and wealth measures for each cell.

For this study, we focus on returns filed by a second-to-die spouse.¹ In 1998, these widows and widowers accounted for 44 percent of federal estate returns filed, and 63 percent of the aggregate value of charitable bequest deductions (Kopczuk and Slemrod 2003, Table 7).

Our analysis includes all years for which the IRS conducted a study that drew a substantial sample of decedents, and for which information on state of residence and marital status is available. This leaves us with 39 years: 1924 through 1945, 1969, 1976, 1982, and 1985 through 1998. Data are arranged into cells based on five wealth categories, expressed in 1996 dollars: \$400,000 to \$750,000; \$750,000 to \$1.25 million; \$1.25 million to \$2 million; \$2 million to \$5 million; and \$5 million and above. To maintain comparable compositions of decedents in each cell over time, we omitted cells for which the real federal estate tax filing threshold was above the minimum bound for the cell. After removing cells with no decedents in the sample (or in many cases, in the population) we have 6,615 cells.

The two main explanatory variables of interest are disposable wealth at death and the tax price of charitable bequests. Both require accurate measures of combined federal and state tax rates, which are not directly available in the data set. To address this, we have developed a tax calculator that computes combined federal-state inheritance and estate taxes for an individual in any state and any year. The calculator appropriately accounts for factors such as the deductibility of federal taxes from many state taxes, the limited nonrefundable federal credit for death taxes paid to a state, and whether charity was exempt from the state tax.

Pre-tax wealth is defined as the gross estate reported on the federal estate tax return, minus debts and mortgages, plus certain components of wealth that were excluded from the gross estate.² This is close to a comprehensive measure of net worth at death that is largely consistent across time for our sample of widows and widowers. Returns are sorted into cells based on pre-tax wealth. “Disposable wealth” is wealth minus the combined federal and state inheritance and estate tax liability.

We define the tax price of charitable bequests (P^e) as the opportunity cost of an increase in charitable bequests in terms of ordinary bequests foregone. This is equal to one minus the marginal estate and inheritance tax rate. We compute this marginal rate as (negative) the change in combined federal and state tax liability caused by a \$10,000 increase in the amount of charitable bequest, divided by \$10,000. State inheritance taxes typically imposed different rates and exemptions depending on how the estate was divided up among different types of heirs. The data do not provide information on the recipients of bequests, so we assume that the net estate (after bequests to charity) is divided equally between two adult children.

The time-series path of state tax rates differed substantially across states during our sample period, and also typically differed across wealth classes within a state. Marginal federal rates at all wealth levels considered in our study increased dramatically over time, starting at or below 10 percent in 1924, and rising to the 40-60 percent range by the late 1990s. Importantly for our purposes, the time-series path of the federal marginal tax rate differs across wealth levels. For instance, the marginal rate faced by the typical return in our top wealth class has come down after hitting a peak of 70 percent during the 1970s, at the same time that rates at lower real wealth levels continued to climb slowly.

II. Econometric Specification

Following William Randolph (1995), Joulfaian (2001), and others, we model the demand for charitable giving using a Deaton-Muellbauer (1980) expenditure share equation. We estimate:

$$(1) P^e_{it} G_{it} / W_{it} = \alpha + \mathbf{X}_{it} \mathbf{b}_0 + \beta_1 \ln(P^e_{it}) + \beta_2 (\ln W_{it}) + \varepsilon_{it}$$

where i indexes state-wealth class cells, and t indexes years. P_{it}^e is the price of charitable bequest relative to a bequest to heirs, based on current law applying at the date of death, calculated at the sample-weighted mean taxable estate in the cell.³ G_{it} is the sample-weighted cell-mean charitable bequest. W_{it} is disposable wealth at death, calculated as sample-weighted mean pre-tax wealth for the cell minus the tax liability that applies at the cell-mean taxable estate. Both G and W are measured in 1996 dollars. \mathbf{X}_{it} is a vector of control variables, consisting of sets of dummy variables for wealth class, year, and state, depending on the specification.

We use instrumental variables to address the familiar problem that P^e and W are endogenously related to charitable bequests, since a larger donation to charity reduces tax liability and can push a decedent into a lower marginal tax bracket. Our approach to constructing the instrumental variables will also be an important part of our strategy for addressing certain forms of omitted variable bias, which will be discussed further in the next section. As an instrument for $\ln(P^e)$, we construct a measure of $\ln(P^e)$ based on the marginal tax rate at the midpoint of the wealth category of which each cell is a member. This midpoint is constant in real terms over time. Similarly, to construct an instrument for $\ln(W)$, we calculate ATR_M , the average tax rate (defined as tax liability divided by pre-tax wealth) calculated at the midpoint wealth in the cell. The instrument is \log of $[\text{pre-tax wealth} \times (1-ATR_M)]$. In both cases, for the top wealth category, in place of a midpoint, we use the median level of wealth among the pooled observations from that category, which is \$12.7 million in 1996 dollars.

Our model is estimated by weighted linear two-stage least squares, where the weights are based on the number of returns sampled by the IRS that underlie each cell.⁴ The proportion of cells with zero charitable bequests, weighted in this fashion, is 3.3 percent, so censoring is present but is unlikely to be a large problem.⁵ We compute standard errors that are robust to

arbitrary autocorrelation within each state/wealth category combination, and robust to arbitrary heteroskedasticity across such combinations.

Elasticities are of particular interest in this application. In the Deaton-Muellbauer functional form, elasticities vary across individuals, depending on the expenditure share of charity. The elasticity of charitable bequest with respect to price for an individual (cell) is $\eta_{P_{it}} = \beta_1(W_{it}/P_{it}^e G_{it}) - 1$; the wealth elasticity of charity is $\eta_{W_{it}} = \beta_2(W_{it}/P_{it}^e G_{it}) + 1$. When β_1 or β_2 equal zero, the elasticity is -1 or 1, respectively. Thus, a significance test of the coefficient value is really a significance test for whether the elasticity is one in absolute value. For ease of interpretation, we present the elasticity of aggregate charitable bequests with respect to a uniform percentage change in price or disposable wealth for all observations. For price, this is $[\sum_{it}(G_{it}\eta_{P_{it}})]/(\sum_{it}G_{it})$; for wealth, it is $[\sum_{it}(G_{it}\eta_{W_{it}})]/(\sum_{it}G_{it})$.

III. Results

Table 1 presents results from estimating four different versions of equation (1). Each successive specification adds a set of dummy variables that removes certain forms of identification from the independent variation left in W and especially P^e , thereby removing potential biases caused by omitted influences that may be correlated with those sources of identification.

Specification (a) includes no control variables in \mathbf{X} , thus allowing all forms of variation - aggregate time-series, cross-sectional differences across wealth levels, etc. - to identify price and wealth effects. This results in a price elasticity of -1.62 and a wealth elasticity of 1.32, both very precisely estimated. The most comparable estimate in the recent literature comes from Joulfaian (2001, p. 755), who finds a price elasticity of -0.74 and wealth elasticity of 1.54 using a roughly similar specification, but on a cross-section of 1992 unmarried decedents.

In specification (b) we add a set of wealth class dummy variables to (a). This not only allows for a more flexible and arbitrary nonlinear relationship between wealth and charity, but in conjunction with the cell midpoint-based instrument set, it purges the independent variation in price of all variation caused by its nonlinear relationship with wealth. The remaining independent variation in price comes from state tax rates, and from changes over time in federal tax rates at fixed real wealth levels caused by statutory changes and bracket creep. This eliminates any bias to the price coefficient that might otherwise be caused by omitted nonlinear functions of real wealth. The elasticity estimates remain robust to addressing this potential bias, as they are similar to those in (a).

In specification (c), we add year dummies to (b), which removes aggregate time-series variation from the independent variation in price and wealth, eliminating the potential for omitted variable bias caused by time-varying aggregate influences that affected everyone's expenditure share of charity in a similar way. This causes the most notable change across our specifications, as the price elasticity increases from -1.69 to -1.91 and its standard error triples from 0.10 to 0.33. The increased standard error is not surprising, since aggregate time-series variation in federal marginal tax rates, which is removed as a source of identification by specification (c), is large relative to the other available sources of variation in price.

In specification (d), which is the most robust to omitted variable bias, we add state dummies to (c) to control for any time-invariant omitted characteristics of states. The identification of the price effect in this last specification arises entirely from differences in the time path of tax rates across wealth classes, across states, and across wealth classes within states. The price elasticity estimate is -2.14 with a standard error of 0.33, and the wealth elasticity estimate is 1.55 with a standard error of 0.10. After addressing many potential sources of bias,

the main result is preserved: The incentive effect of estate and inheritance taxes on charitable bequests is large and significant. If anything, it appears that the potential sources of omitted variable bias addressed here had been biasing the price elasticity downward in absolute value.

Among the widows and widowers present in our 1998 sample, eliminating estate and inheritance taxes would have raised the price of charitable bequests by 77 percent, on average, while raising disposable wealth by an average of only 24 percent. The difference arises because of the progressivity of these taxes, which means that marginal tax rates are much higher than average tax rates. As a result, to a rough approximation, total repeal will cause charitable bequests to decline among this population unless the wealth elasticity is more than three times as large as the price elasticity (in absolute value), which is far from what we estimate. Our estimates therefore point towards a decline in charitable bequests in response to the abolishing estate and inheritance taxes.

IV. Conclusions

Using pooled cross sections of aggregated estate tax return data spanning much of the 20th century, we find evidence that the incentives for charitable giving present in state and federal estate and inheritance taxes have a strong effect on charitable bequests. Our estimates that rely on differences in the time path of state and federal tax rates across groups provide a more credible source of identification than the previous literature of a large and significant price elasticity of charitable bequests.

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TABLE 1 -- EFFECTS OF PRICE AND DISPOSABLE WEALTH
ON CHARITABLE BEQUESTS

Dependent variable: P ^c G/W	Coefficient		Elasticity*	
	ln(P ^c)	ln(W)	Price	Disposable wealth
(a) No controls	-0.050 (0.006)	0.026 (0.001)	-1.617 (0.072)	1.316 (0.018)
(b) Add wealth class dummies to (a)	-0.056 (0.008)	0.040 (0.008)	-1.690 (0.102)	1.490 (0.095)
(c) Add year dummies to (b)	-0.074 (0.026)	0.043 (0.008)	-1.913 (0.325)	1.527 (0.093)
(d) Add state dummies to (c)	-0.093 (0.027)	0.045 (0.008)	-2.142 (0.335)	1.551 (0.099)

Notes: Robust standard errors are in parentheses. Estimated by weighted 2SLS.

* Elasticity of aggregate charitable bequests with respect to a uniform percentage change in price or disposable wealth for all individuals in sample.

Endnotes

1. Joulfaian (2001) and Kopczuk and Slemrod (2003) discuss some of the difficulties involved in specifying the incentives to give to charity for the first-to-die spouse, and in using the spousal deduction as a source of price variation.
2. Until 1942, up to \$40,000 of life insurance owned by the decedent could be excluded from the gross estate. Starting in 1977, the difference between the market value of certain farm and small business property and its “special use” value in that capacity could be excluded. Each of these exclusions is added back in to our measure of wealth.
3. The “taxable estate” we use to calculate the “actual” tax liabilities and marginal rates is the gross estate for federal tax purposes, less debts, mortgages, and charitable bequests, where each of these variables represents the sample-weighted mean value for the cell.
4. Weighted regression is necessary for consistent estimation of standard errors and efficiency when the data represent means of the values for multiple individual observations. The variance of these means will be inversely proportional to the number of individuals contributing to the calculation of the mean for each cell, causing heteroskedasticity.
5. We also tried estimating each equation with a Tobit model (results not shown), and found that the elasticity estimates were very similar.