Estate Taxes and Charitable Bequests:
Evidence from Two Tax Regimes

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David Joulfaian
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OTA Paper 92   **March 2005**

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Abstract

Much of the literature on the effects of estate taxation on charitable bequests has relied on

cross sectional data, reflecting the uniqueness of death. Few have explored longitudinal

data to exploit exogenous variations in tax regimes. The latter, however, continue to be

susceptible to omitted variable as well as measurement error biases attributable to changes

in the treatment of spousal bequests and frequent changes in tax regimes. This paper

explores the effects of the estate tax on charitable bequests using administrative data from

two tax regimes where earlier biases are minimized. The deductibility of charitable

bequests is found to have significant implications for giving. However, the effects of estate

tax repeal are much smaller. These findings are sensitive to expectations of the tax regime

in effect at time of death.

I. Introduction

Individuals save for a variety of reasons. For some, savings is bequest motivated, be it altruistic or strategic in nature. For others, it may reflect the simple desire to accumulate wealth. Regardless of the motivation, wealthy savers may have preset preferences as to how to divide their accumulated wealth among the various donees and heirs at death. Estate and inheritance taxes, by altering relative prices, may alter the division of these bequests. Even in the case of accidental bequests, savers may not be too indifferent as to how their terminal wealth is ultimately divided between the government and potential heirs.

Because bequests to charitable organizations are deductible in computing the estate tax liability, estate taxation lowers the price of such transfers relative to those to children. At the very same time, the estate tax lowers after-tax terminal wealth and the potential size of inheritances. These tendencies raise important policy considerations related to how changes in estate tax rates, including the elimination of the estate tax, may affect giving. Indeed, charitable bequests and the potential effects of estate taxation continue to attract attention, and feature prominently in the debate on taxing inheritances in the United States. With the wealthy leaving behind some $20 billion in charitable bequests annually, the implications of public policy for these sizeable transfers are worthy of study.

Much of the literature, reflecting the uniqueness of death, has relied on cross-sectional data in exploring the sensitivity of bequests to the estate tax. Individuals are assumed to choose between bequests to charity and bequests to children (and other heirs) by implicitly setting the marginal rate of substitution between the two to equal the relative price of charitable bequests. The price of spousal bequests is ignored and the estate tax is

assumed, implicitly or explicitly (Joulfaian, 2000a), not to affect the choice between spousal and charitable bequests.[1]

Many of the existing studies find large tax price elasticities suggesting that the deductibility is a significant stimulant to giving.[2] Many also find large wealth elasticities, which suggests that the estate tax, by lowering "bequeathable" or disposable wealth, has a dampening effect on giving. These estimates are not without their critics. Identifying the effects of progressive estate tax rates separately from wealth (Feenberg, 1987), for instance, may represent a serious challenge in evaluating the effects of estate taxation especially as only cross sectional data are available, again reflecting the uniqueness of death (Poterba, 1998). Joulfaian (2000a) employs variations in state tax rates to address this concern. Others, however, such as Barthold and Plotnick (1984), the only study to date to have employed longitudinal micro data, and more recently Kopczuk and Slemrod (2003) and Bakija, Gale, and Slemrod (2003), resort to pooling cross sectional or aggregated time series data over a long period where numerous changes in tax regimes have taken place.

Generally, it is difficult to draw inferences from the observed trend in aggregate bequests (Auten, Clotfelter, and Schmalbeck , 2000, Table 12-7). Kopczuk and Slemrod (2003), hereafter KS, resort to time series analysis of such aggregate data to discern how variations in tax regimes over time influenced the observed trend in giving. KS conclude that the effect of the estate tax can be larger than what has been reported earlier, an implicit reference to the predicted 12 percent reduction in bequests reported in Joulfaian (2000a), but do not report estimates of this effect. More recently, Bakija, Gale, and Slemrod (2003),

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[1] This assumption reflects the full deductibility of spousal and charitable bequests (tax price of one), an assumption that may not be appropriate when using pre-1982 data as the tax treatment diverged.

[2] See McNees (1973), Boskin (1976), Feldstein (1977), Clotfelter (1985), Joulfaian (1991, 2000a, 2001), Auten and Joulfaian (1996), Greene and McClelland (2001), and McClelland (2004).

hereafter BGS, refine the work of KS and employ "pooled" grouped data. BGS exclude the estates of married decedents, and report results that suggest charitable bequests would seize to take place in the aftermath of estate tax repeal.[3] Using parameters from BGS, Bakija and Gale (2003) report estate tax repeal would reduce charitable bequests by 37 percent. In contrast, Barthold and Plotnick (1984), who employ pooled Connecticut probate records for the 1930s and 1940s, a period characterized by frequent changes in tax regimes, find taxes to have virtually no effect on giving.[4]

Large donors are likely to be very wealthy who may also face high tax rates by virtue of the progressive tax rate schedule. Thus it is difficult to disentangle the effects of wealth separately from those of high tax rates on giving. Resorting to pooled cross sectional or time series aggregate data is one way to address this identification problem as they exploit variations in statutory tax rates, changes that are independent of wealth variations. But this may also introduce a number of other biases, or at the very least exacerbate them. As Clotfelter (1985, pp. 240) points out, the price term is likely to be measured with error during periods of frequent changes in tax rates because it is not clear whether reported charitable bequests are influenced by current or past tax rates. Furthermore, there is also the question of whether planned bequests reflect future taxes, as estate planning by its very nature is forward looking. Indeed, the swift adjustment in spousal bequests documented in Bernheim (1987) highlights the importance of expectations.

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[3] More specifically, BGS employ IRS data for select years grouped into five wealth categories expressed in 1996 dollars; $400,000 to $750,000; $750,000 to $1.25 million; $1.25 to $2 million; $2 to 5 million; and over $5 million. BGS report price and wealth elasticities of -2.1 and 1.55, respectively, and state that "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" in 1998.

[4] Using evidence from a recent survey, Schervish and Havens (2003) report charitable bequests to increase in the aftermath of estate tax repeal.

Furthermore, studies typically assume that individuals face a tax price for charity measured relative to the price of bequests to children (and other heirs). But married individuals, for instance, may leave their estates to their children, charity, as well as to their spouses. If transfers to these three recipients face different tax regimes, then the price of spousal bequests also needs to be considered, as well as the implications for the measured after-tax wealth. This omitted variable problem, as well as the ensuing errors in measuring the budget constraint, may have motivated BGS to exclude married decedents from their study. However, excluding married individuals may not adequately solve these problems.

Bernheim (1987) document how spousal bequests increased in the aftermath of introducing the unlimited marital deduction in 1982. The change in tax regimes, by setting a tax rate of zero for spousal transfers, seems to have stimulated additional transfers to spouses very likely at the expense of transfers to charity. Cognizant of these effects, BGS exclude married decedents. But because spousal bequests increase the wealth of the surviving spouse, they may also influence giving in the future. Consequently, the omitted tax price of spousal bequests and errors in measuring the budget constraint and the tax price faced by widowed decedents don't go away. In a more recent paper, Bakija, Gale, and Slemrod (2005), expand their earlier work and attempt to control for the price of spousal bequests.

Data on the never married singles and those divorced or separated are immune from measurement errors and specification bias caused by changes in the treatment of spousal bequests over time. But findings from such longitudinal data, that is yet to be explored, may not be viewed as very meaningful in explaining the pattern of giving and the estate tax

effects as widowed (and married) decedents account for the bulk of giving. Indeed, the latter group accounts for much of the wealth held by the super rich as well. Thus, the challenge is to find periods or tax regimes where wealth is consistently measured over time and less susceptible to measurement errors.

In this paper I explore the effects of the estate tax on charitable bequests using estate tax data on widowed, as well as divorced and never married single decedents. However, and in order to minimize measurement related problems, I examine data on decedents in 1976 and 1982, two regimes that embody substantially different tax rate schedules but where the measurement of wealth and charitable bequests is virtually identical.[5] Descriptive statistics on the pattern of giving in 1976 and 1982 show that giving to charity did not decline in the aftermath of tax rate reductions in 1982, and suggest that estate taxation may have little effect on bequests. This is a finding that is further confirmed by multivariate analysis.

The paper is organized as follows. Section II explores issues related to modeling the effects of estate taxation on charitable bequests for married couples. Section III describes the data and presents some basic results, while section IV provides some econometric findings. Section V concludes.

II. Modeling Charitable Bequests

A married individual faces at least three options in disposing of terminal wealth accumulated over a lifetime. He may bequeath his wealth to his surviving spouse, transfer

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[5] In 1976, spousal bequests were deductible to the extent they did not exceed one half the estate. These bequests became fully deductible in 1982. As such, post 1982 data on widowed decedents grow less compatible over time depending on the size of spousal bequest and the remaining life expectancy of the surviving spouse (see Joulfaian, 1998, Table 19). Available pre-1970 data is also not compatible given the dramatic changes in the tax treatment of charities introduced by the Tax Reform Act of 1969.

it to his children (and other relatives and friends), or donate it to charity. If the estate tax

treats these transfers differentially, then this may influence the allocation of bequests

amongst the survivors. As such, an individual's objective is then to determine how to

allocate this terminal wealth among the three potential donees.

More formally, and in a very simple model, an individual's utility is determined by

charitable bequests (C), bequests to heirs (B), and spousal bequests (S) at death in period 1,

or:

(1) $\quad U_1 = C_1^{\alpha} B_1^{\beta} S^{\gamma}$

The individual maximizes his utility subject to a budget constraint which requires that

expenditures on charitable and non-charitable bequests not exceed the individual's terminal

wealth W, or:

(2) $\quad P_C C_1 + P_B B_1 + P_S S \leq W_1$

where P_C denotes the tax price of charitable bequests, P_S for spousal bequests, P_B for

bequests to children and others defined as $P_B = 1/(1-T')$. At a marginal tax rate T' of 0.55, it

will cost the donor $2.22 for every $1 in bequests (B). In contrast, bequests to charity are

exempt from taxation as they are deductible in computing the estate tax. Similarly, spousal

bequests are fully deductible. Thus, $P_C = P_S = 1$, or the more familiar 1-T' when stated

relative to the price of bequests to heirs. Before 1982, however, spousal bequests were

deductible only to the extent that they did not exceed 50 percent of the estate. Thus, the

price of spousal bequests was one when these bequests were less than one half the gross

estate (P_S =1), and P_S =1/(1-T') when they exceeded this threshold.

Solving for the first-order conditions, not surprisingly spousal bequests decline

with its tax price, or:

$$(3) \quad S = \frac{\gamma W_1}{P_S(\alpha + \beta + \gamma)}$$

such that $\quad \dfrac{\partial S}{\partial P_S} < 0$

This is consistent with the experience in the aftermath of the introduction of the unlimited

marital deduction, i.e., T'=0, in 1982 (Bernheim, 1987). Spousal bequests reported in 1982,

when measured relative to the wealth of the estates, were 60 percent larger than the amount

that is likely to have been reported under the law in effect in 1976 (Joulfaian, 2000b).

The surviving spouse is also faced with a similar, albeit limited, set of choices at

death in period 2. More specifically, her choice is how to allocate her own accumulated

wealth (W_S) plus wealth inherited from her spouse (S) between bequests to her children

(B) and charity (C). More specifically, she maximizes her utility:[6]

$$(4) \quad U_2 = C_2^a B_2^b$$

subject to the budget constraint that her transfers do not exceed her terminal wealth W_2:

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[6] I ignore discounting to simplify the exposition.

(5) $\quad P_C C_2 + P_B B_2 \le W_2$

where her terminal wealth consists of her own accumulated wealth plus bequests from her

spouse, or $W_2 = W_S + S$ such that $\dfrac{\partial W_2}{\partial P_S} < 0$ from (3), for a given W_S; the terminal wealth

of the spouse in period 2 is influenced by the tax regime in period 1. Equally important is

the influence of spousal bequests on the observed tax price of giving to charity in period 2;

$T_2 = T(W_S + S)$.

Solving for the first order conditions yields,

(6) $\quad C_2 = (W_S + S) \dfrac{P_B}{P_C(P_B - 1)} \dfrac{a}{b}$

or, after some substitutions,

(7) $\quad C_2 = \left[W_S + \dfrac{\gamma W_1}{P_S(\alpha + \beta + \gamma)} \right] \dfrac{aP_B}{bP_C(P_B - 1)}$

such that $\dfrac{\partial C_2}{\partial P_S} < 0$

which suggests that charitable bequests by the surviving spouse in period 2 are influenced

by the terminal wealth of the first to die, W_1, and the price of spousal bequests P_S in period

1.[7] In other words, we cannot ignore the effects of the tax regime in period 1 on giving and

wealth in period 2 for widowed individuals.

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[7] In an alternative treatment, husband and wife may maximize joint utility subject to a common budget
constraint in deciding how to allocate charitable bequests between the two.

III. Preliminary Look at Estate Tax Data

In moving away from the reliance on cross sectional estate tax data, the challenge in using longitudinal data is to control for the tax treatment of transfers to various donees as well as the frequently changing tax regimes. In particular, and as demonstrated above, the treatment of spousal transfers is the most problematic and commonly ignored in the literature. One approach to addressing this problem is to simply exclude married decedents. As eluded to earlier, however, this continues to overlook the influence of spousal bequests on the observed wealth of the surviving spouse (the second to die), which itself can be determined by past tax regimes.

In this paper, I resort to estate tax data for decedents in 1976 and 1982, years when the data on widowed decedents is the least tainted by tax induced changes in spousal bequests.[8] The tax Code in effect in 1976 had been in place virtually unaltered since 1954, except for the restrictions on gifts to certain charities, private foundations in particular, introduced by the 1969 Tax Reform Act. The intent of this act was to effectively reduce transfers to beneficiaries disguised as charitable gifts. The tax rate schedules in effect in 1982 were ushered by the Economic Recovery Tax Act of 1981 (ERTA81), enacted on August 13, 1981, and are markedly lower than those in effect in 1976. These rate reductions had been in part anticipated as early as November 1980, following the outcome of the Presidential elections. Equally important, the wealth reported by widowed decedents in the two periods reflects the 1976 tax treatment of spousal bequests, as the full marital deduction took effect for married decedents in 1982. Thus, we observe the pattern of giving to charity in the presence of exogenous variations in tax rates, as well as wealth

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[8] Comprehensive data for the years 1977 through 1981 do not exist.

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measures for widowed decedents that are not influenced by changes in the marital deduction.

The maximum tax rate in effect in 1976 was 77 percent. ERTA81 reduced the maximum tax rate in steps to 50 percent by 1985. The enabling legislation also introduced a "unified" tax credit which effectively exempted the first $225,000 in taxable estate in 1982, set to gradually increase to $600,000 by 1987. The tax rate schedule in effect in the intervening years is illustrated in Table 1.

Data on estate tax decedents in 1976 is available only for returns filed in 1977; returns filed in 1976 and after 1977 are not available. Returns with gross estates in excess of $500,000 are sampled at 100 percent; at 20 percent for those under $500,000. In contrast, population data for 1982 decedents is available for returns filed in 1982 through 1984, but only for those with estates in excess of $1 million; the less wealthy are sampled at an average rate of 30 percent. While estate tax returns are required to be filed within 9 months of the date of death, some are filed much later. [9] Anecdotal evidence suggests that late filers are likely to be distinctly different in terms of wealth and sophisticated estate planning.[10] Thus, to enhance the comparability of the two data sets, I limit the data on decedents in 1982 to estate tax returns filed in 1983, and discard those filed in 1982 and 1984. In addition, only estates in excess of $300,000 in 1982 dollars, the SOI sampling threshold for returns filed in 1983, are considered.[11]

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[9] Typically, some 15 percent of estate tax returns of decedents in a given year are filed in the year of death; 80 percent during the following year, and the remainder in later years.

[10] Indeed, regressing the log of wealth of decedents in 1982 on the year an estate tax return is filed yields a coefficient of 0.13 (se=0.01), implying that reported wealth is on average 13 percent higher for each year returns are filed late.

[11] The filing requirement was $225,000 for decedents in 1982.

To motivate the analysis, I first restrict the sample to widowed and married decedents. Their pattern of charitable bequests over the two periods is summarized in Figure 1A-B. Figure 1A shows the probability of giving to rise with wealth. Similarly, Figure 1B shows the share of wealth transferred to also rise with wealth. But given the progressive tax rate schedules in Table 1, this may also suggest that giving rises with tax rates as well. The fraction of estates giving as well as the share of wealth transferred is generally lower for estates in 1982 than their counterparts in 1976 when tax rates were higher, particularly for the wealthiest of estates. This may lead us to conclude that lower tax rates depressed giving in 1982.

However, and as demonstrated in Figure 2, much of the trend observed in Figure 1 is reversed when married decedents are excluded and the focus is restricted to widowed decedents. Indeed, in the case of the wealthiest of estates, those in excess of $20 million, the share of wealth transferred almost doubles.[12] Despite the tax rate reductions, the "generosity" of the very wealthy seems to have increased.

Figure 3 sheds some light on the diverging trends observed above. Married decedents, virtually across all wealth cohorts, seem to leave smaller bequests to charity in 1982 compared to the trend observed for 1976. In contrast, and more interestingly, Figure 4 exhibits a surge in spousal bequests for all wealth categories, which is very likely to have taken place at the expense of charitable bequests. Figures 3 and 4, combined, make the case that potential findings from longitudinal data on the effects of estate taxation can be biased if spousal bequests and their consequences for the evolution of wealth are not properly controlled for.

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[12] Note that this group accounts from one half the bequests reported in the sample, weighted or otherwise.

Controlling for spousal bequests and their ultimate disposition is rather a difficult task, particularly as it requires the tracking of married couples across time and tax regime. As such, I focus only on widowed, never married singles, and divorced/separated decedents. The resulting sample consists of 14,051 estates, with about 55 percent representing decedents in 1976. Table 2 provides summary statistics for select variables, with all amounts stated in $1982. The mean charitable bequest CB is $287,300, with about one third giving to charity. Net of the tax savings from its deductibility, the mean after-tax bequest is $114,900, measured as $CB-(T_0-T)$, where T is actual tax paid and T_0 is the tax liability computed by setting charitable bequests to zero; $T=T(W-CB)$ and $T_0=T(W)$. These estates are large with mean wealth W of about $1.6 million, and standard error of $17 million. Net of taxes paid, as well as the tax savings from deducting charitable bequests, i.e. $W-T_0$, disposable wealth is $886,500. This represents the maximum amount that can be transferred to the heirs. The average tax price $P=(1-T')$ is 0.65. When evaluated using fully phased-in tax law, the after-tax wealth and charitable bequests, as well as the tax price, are higher.

Comparing those who give to those who don't give, and as illustrated in columns 2 and 3 of Table 2, we find that the sample of donors are wealthier with mean wealth of $2.6 million compared to $1 million for non-donors. They are also older with mean age of 81 years compared to 76 years for non-donors, and more likely to have never married. However, there seems to be very little difference in observed tax prices particularly when the fully phased-in tax law is used.

IV. Multivariate Analysis

I employ multivariate analysis to further gauge the effects of estate taxation, and control for the other determinants of charitable bequests. The latter include demographic variables such as age, gender, and marital status, as well as bequeathable or disposable wealth. Of particular interest is how these variables, the tax price and wealth in particular, influence the observed budget share (ω) allocated to charity. More specifically, I estimate the following equation for estate i in period t, where w is disposable wealth, $W-T_0$, or the maximum amount that can be transferred to the heirs, and Z is a vector of demographic attributes, or:

$$(8) \qquad \omega_{i,t} = \alpha \ln p_{i,t} + \theta \ln w_{i,t} + \gamma Z_{i,t} + \varepsilon_{i,t}$$

Two measures of the budget share are considered. One measure defines the budget share as $[CB-(T_0-T)]/(W-T_0)$ consistent with Joulfaian (2000).[13] Another is the linear variant $CB(1-T')/(W-T_0)$ explored in Randolph (1995). Under a proportional tax system, the two would be identical except when the entire estate is left to charity; $T'=0$ but $T_0-T>0$.[14] Beginning with the latter, a critical variable in explaining charitable giving is the tax price. This price, however, is likely to be endogenous to the size of bequests, as they reduce the size of the taxable estate; $T=T(W-CB)$. Consequently, the tax price is instrumented using the first dollar tax price on charity. This marginal tax rate is derived by setting charitable bequests to zero and assuming $1,000 in gifts for all estates. As with all previous longitudinal studies on charitable bequests, the tax price is measured using the tax

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[13] The numerator may be restated as $\sum_{j=1}^{n} CB_j P_j$ which reflects the convexity of the tax rate schedule and captures the various j kinks in the budget constraint.

[14] This is less of a concern under the income tax, as in Randolph (1995), where the deduction is limited to 50 percent or less of AGI.

law in effect in the year of death even though changes in tax regimes are known in advance. This restriction is relaxed later on, where the future tax price is employed.

Reflecting the censored nature of the data, FIML Tobit is employed in estimating (8) with results reported in Table 3. Beginning with demographic variables, the never married singles, as well as those divorced or separated bequeath more than their widowed counterparts. Gender seems to have some effect on giving, with male decedents leaving behind smaller bequests. Bequests rise with age, but at a declining rate. Those from the west or the south seem to be less generous.

Turning to the key variables of interest, and beginning with wealth, the estimated coefficient is 0.094 with a standard error of 0.009. In contrast, the coefficient on the tax price is negative with an estimated value of -0.124 and standard error of 0.057. Using these estimated parameters, the predicted change in bequests is approximated for each estate i in period t by first deriving the expected or fitted value for bequests from (8), or:

$$CB = (W - T_0)\{\Phi[\alpha \ln P + \theta \ln(W - T_0) + \gamma Z] + \phi \sigma\}P^{-1}$$

and comparing it to the value predicted after setting all the tax values to zero, i.e. T=T'=0, or:

$$CB = W[\Phi(\theta \ln W + \gamma Z) + \phi \sigma]$$

where $\Phi = \Phi(\beta'x/\sigma)$ and $\phi = \phi(\beta'x/\sigma)$ are the distribution and density functions of the standard normal which vary with the tax regime embodied in the regressors x.

Other things equal, these estimates suggest that in the absence of the estate tax, charitable bequests would decline by 3 percent, from a predicted weighted mean bequest of

$87,600 down to $84,300 (see bottom of Table 3).[15] At the same time, the probability Φ of making such bequests declines from a predicted 33 percent to 28 percent. Charitable bequests are predicted to decline by about 65 percent to $30,600 (sd=861,500) if only their deductibility were to be repealed.

The above measures of wealth and price reflect the year of death consistent with the convention employed in earlier longitudinal studies. However, given the phased in reductions in tax rates from 65 to 50 percent over the period 1982 and 1985, as well as the gradual expansion in the effective exemption from $225,000 in 1982 to $600,000 by 1987, the calculated tax rates in effect in the year of death may not reflect the true margin at which decisions are made. Indeed, and unless death in 1982 was perfectly anticipated, wills drawn or amended in 1981 and 1982, may very well reflect the fully phased-in law. The phased-in tax regime has implications for the measured budget share, after tax wealth, as well as the tax price.

To gauge the sensitivity of the above estimates to this possibility, the parameters in column one of Table 3 are re-estimated using the fully phased-in law. In other words, the maximum tax rate in effect is now 50 percent, and not the 65 percent in effect in 1982. Similarly, the size of the exempted estate is $600,000 instead of $225,000. The results are reported in column 2. Most of the coefficients estimated for the fully phased-in regime are somewhat different from those reported earlier. More specifically, the wealth coefficient is estimated with a value of 0.133 (se=0.007), significantly larger than the earlier estimate. The tax price coefficient is now positive, with a value of 0.06 (se=0.03). Combined, the estimates point to a much higher wealth effect. Repealing the estate tax increases predicted

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[15] This represents a decline of 32 percent when compared to the initial amount of $124,000 in reported charitable bequests (column 2, Table 2). Such comparison, however, would be inappropriate. See McClelland (2004, p. 8).

bequests by about 62 percent, from a mean of $85,100 to $139,100, while repealing only the deductibility of charitable bequests would reduce it by a third down to $59,300 (sd=1,332,400).

For presentational purposes, wealth and price elasticity coefficients are calculated for each observation. The wealth elasticity is estimated as:

$$\eta_w = \beta \frac{1}{\omega} \Phi(z) + 1$$

and price elasticity as:

$$\eta_P = \alpha \frac{1}{\omega} \Phi(z) - 1$$

Using the actual budget share for each observation, the overall charitable bequest weighted wealth elasticity is 1.16, with a price elasticity of -1.21. In contrast, the wealth and price elasticity coefficients become 1.2 and -0.9, respectively, when future law is considered.

Now, had the budget share measure been defined as in Joulfaian (2000), the estimated effects would have changed significantly. As shown in Table 4, the wealth and price estimated coefficients are consistent with those reported earlier in Table 3. In the absence of the estate tax, bequests decline by 13 percent, from a predicted weighted mean of $104,200 to $90,800. On the other hand, and using the future tax regime, the predicted bequests rise by three percent, from a mean of $105,300 to $108,500. The predicted or expected bequest for each observation is derived from:

$$CB = (W - T_0)\{\Phi[\alpha \ln P + \theta \ln(W - T_0) + \gamma Z] + \phi\sigma\} + (T_0 - T)$$

and contrasted with that predicted in the absence of an estate tax, or:

$$CB = W[\Phi(\theta \ln W + \gamma Z) + \phi\sigma]$$

The divergent, though qualitatively similar, results highlight the importance of the specification employed in gauging the effects of estate taxation. The predicted change in bequests in case of repeal of the estate tax ranges from -13 to +3 percent when the latter specification is employed as in Table 4, compared to -3 to +62 percent in case of the earlier specification which employs a linear measure of the budget share. The specification in Table 4, however, has a greater predictive power. It predicts an average bequest of $104,200 compared to $87,600 in the alternative specification; the actual is $124,000. In addition, it predicts a maximum bequest well over $1 billion, pretty close to the actual, compared to a maximum under $300 million using the specification in Table 3.

The above estimated effects change considerably, but not qualitatively, when estates with wealth in excess of $20 million are excluded.[16] In case of estate tax repeal, and using the specification in Table 3, bequests decline by 20 percent using the year of death law and increase by 18 percent using future law. In contrast, bequests increase by 13 and 15 percent, respectively, using the specification in Table 4. The gap in the estimated effects highlights the importance of the presence of the wealthiest group, and points to the potential aggregation bias common to grouped and aggregated time series data.

It is interesting to note that there is little change in the qualitative results when the data is limited to the never-married singles. Using the specification in Table 3, charitable bequests by this group would decline by 12 percent if the estate tax were repealed. However, they would increase by 18 percent using future law measure of the tax price.

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[16] This reduces the sample size to 14,010 observation with mean bequests of 65,900 and sd=399,600. The excluded observations number 41, with mean 54,046,100 and sd=215,371,400, and account for about half the bequests.

Using the specification in Table 4, bequests would increase by 31 percent, or by 18 percent using future law.[17]

V. Conclusion

This paper explores the effects of the estate tax on charitable bequests using two tax regimes where wealth is less susceptible to measurement errors. More specifically, I employ estate tax data for decedents in 1976 and 1982 and exclusively focus on widowed and unmarried decedents.

Tax rates were significantly reduced in 1982 and later years, yet descriptive statistics show that higher charitable bequests, relative to wealth, were observed in 1982 compared to the trend in 1976 when tax rates were higher. This trend suggests that estate taxation has little effect on bequests. Except for the stimulating effect of the deductibility of bequests, a similar conclusion is arrived at using multivariate analysis.

Notwithstanding the above findings, some may arrive at different conclusions using the very same estimated parameters. This paper assumes that estate tax repeal increases disposable wealth from $W-T_0$ to W. In contrast, McClelland (2004, p. 4) advocates that wealth should increase only by the tax liability below an estate's marginal tax rate. As an illustration, consider a taxable estate of $100 million which pays $55 million in estate taxes, facing a maximum tax rate of 55 percent under current (fully phased-in) law. Estate tax repeal in this paper is assumed to increase wealth by $55 million, from $45 to $100 million, which can be used to increase bequests to heirs as well gifts to charity. On the other hand, and using the assumptions in McClelland (2004), wealth will increase by less than $2 million.

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[17] Note that no observation in 1976 reported wealth in excess of $20 million.

This paper also highlights the sensitivity of estimates to the expected tax regime in effect at death. The estimated effects of estate taxation vary considerably depending on whether behavior and estate planning reflect the current or expected tax regimes. If donors are assumed to respond to the tax regime in place at the date of death, then estate tax repeal would lead to a small reduction in bequests. On the other hand, if donors plan with the future tax regime in mind, then estate tax repeal may lead to a small increase in gifts. However, given the lack of data on when wills are drafted or amended, it is difficult to determine which tax regime is binding. This suggests that we should be cautious in employing longitudinal data, as well as interpreting results obtained from studies using such data.

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Table 1

Estate Tax Rate Schedule, by Year and Size of Taxable Estate (amounts in $000s)

Taxable Estate Range		1976	1982	1983	1984	1985	1986	1987
-	5	3	18	18	18	18	18	18
5	10	7	18	18	18	18	18	18
10	20	11	20	20	20	20	20	20
20	30	14	22	22	22	22	22	22
30	40	18	22	22	22	22	22	22
40	50	22	24	24	24	24	24	24
50	60	25	24	24	24	24	24	24
60	80	28	26	26	26	26	26	26
80	100	28	28	28	28	28	28	28
100	150	30	30	30	30	30	30	30
150	200	30	32	32	32	32	32	32
200	225	30	32	32	32	32	32	32
225	250	30	32	32	32	32	32	32
250	275	32	34	34	34	34	34	34
275	325	32	34	34	34	34	34	34
325	400	32	34	34	34	34	34	34
400	500	32	34	34	34	34	34	34
500	600	35	37	37	37	37	37	37
600	750	35	37	37	37	37	37	37
750	800	37	39	39	39	39	39	39
800	1,000	37	39	39	39	39	39	39
1,000	1,250	39	41	41	41	41	41	41
1,250	1,500	42	43	43	43	43	43	43
1,500	2,000	45	45	45	45	45	45	45
2,000	2,500	49	49	49	49	49	49	49
2,500	3,000	53	53	53	53	50	50	50
3,000	3,500	56	57	57	55	50	50	50
3,500	4,000	59	61	60	55	50	50	50
4,000	4,500	63	65	60	55	50	50	50
4,500	5,000	63	65	60	55	50	50	50
5,000	6,000	67	65	60	55	50	50	50
6,000	7,000	70	65	60	55	50	50	50
7,000	8,000	73	65	60	55	50	50	50
8,000	10,000	76	65	60	55	50	50	50
10,000	and over	77	65	60	55	50	50	50
Exemption		60	0	0	0	0	0	0
Exempted Estate*		0	225	275	325	400	500	600

* Size of estate ($000s) exempt from federal estate tax by virtue of the unified credit which reduces the infra marginal tax rates in the shaded area to zero. The taxable estate is not reduced by any exemption. Note that the sample excludes observations with wealth under $300,000.

Figure 1A. Fraction of Estates Reporting Charitable Bequests

Wealth ($000s)

☐ 1976 ■ 1982

Figure 1B. Charitable Bequests as Percent of Wealth

Wealth ($000s)

☐ 1976 ■ 1982

Amounts in $1982

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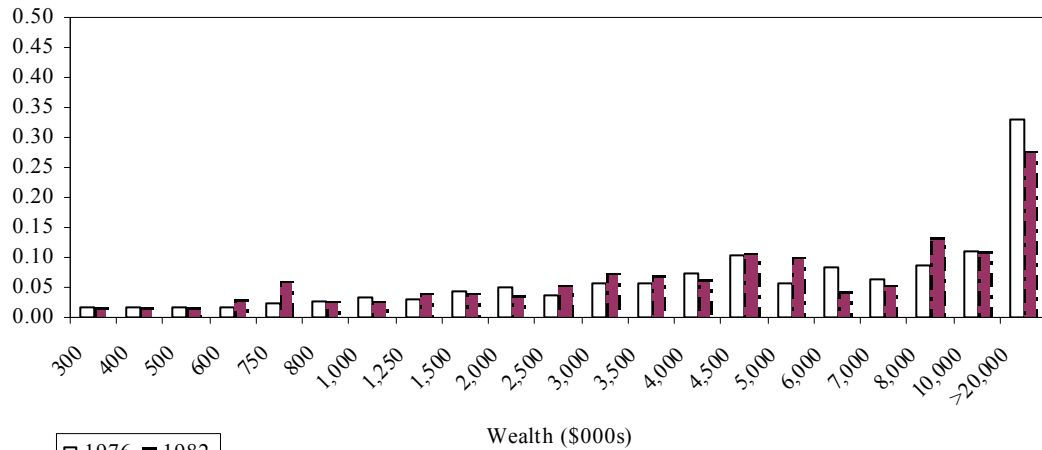
Figure 2A. Fraction of Estates Reporting Charitable Bequests
(Widowed Decedents)

Wealth ($000s)

□ 1976 ■ 1982
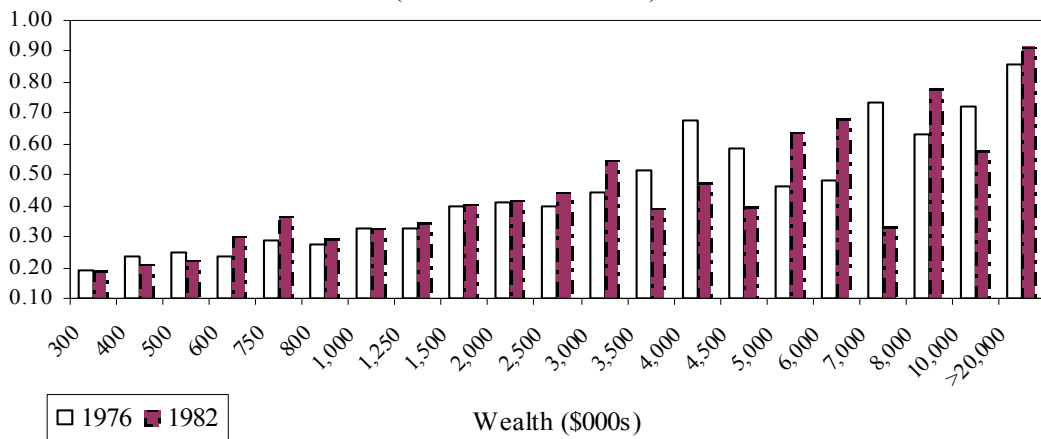
Figure 2B. Charitable Bequests as Percent of Wealth
(Widowed Decedents)

Wealth ($000s)

□ 1976 ■ 1982
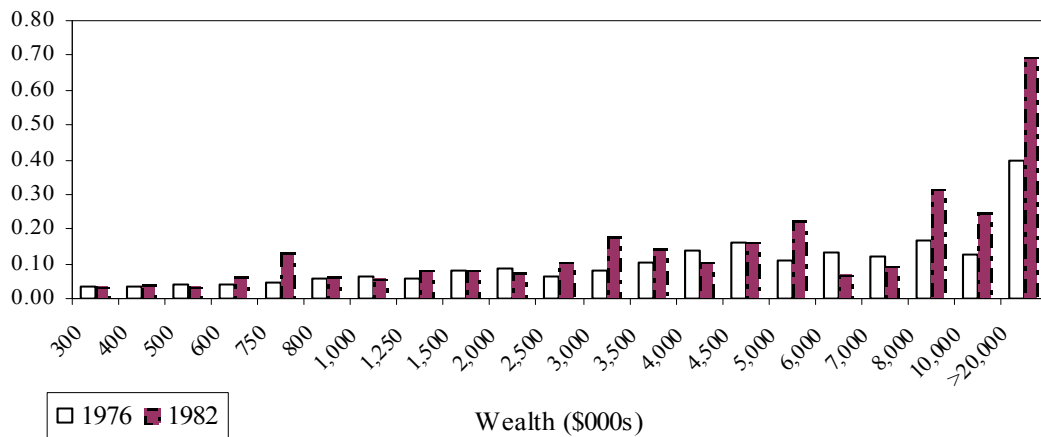
Amounts in $1982

Figure 3A. Fraction of Estates Reporting Charitable Bequests
(Married Decedents)

1976   1982   Wealth ($000s)
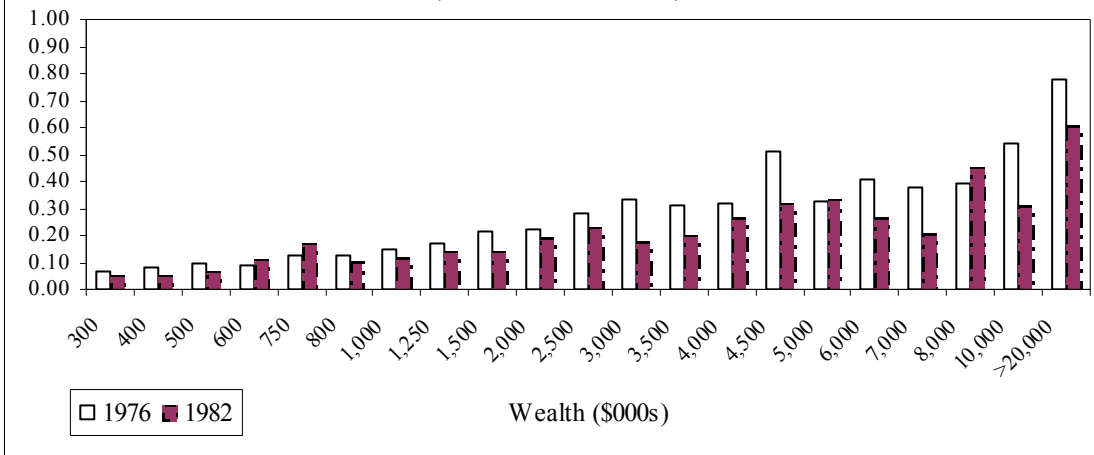
Figure 3B. Charitable Bequests as Percent of Wealth
(Married Decedents)

1976   1982   Wealth ($000s)
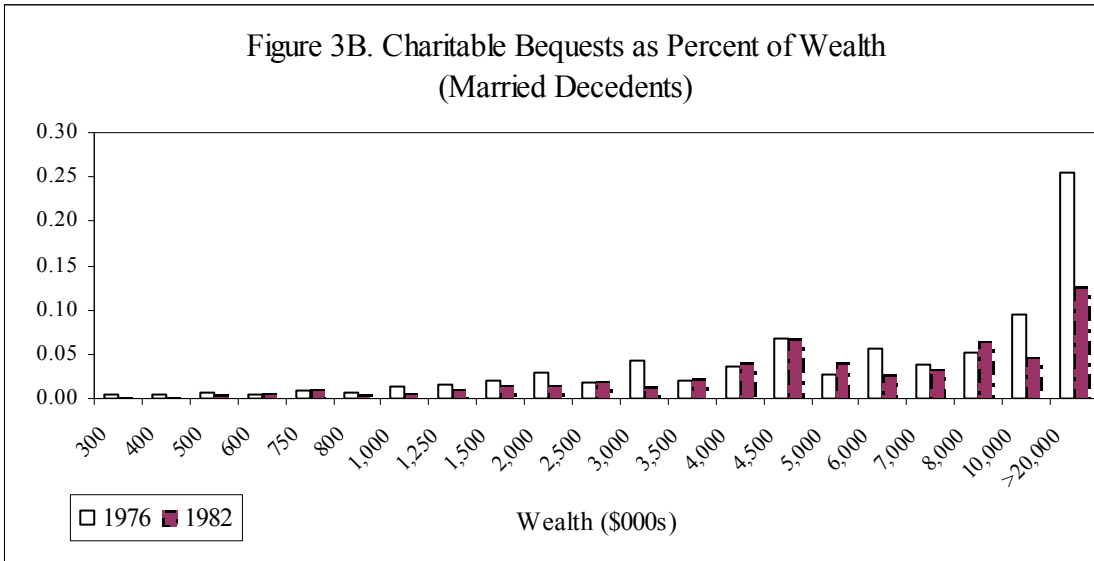
Amounts in $1982

Figure 4A. Fraction of Estates Reporting Spousal Bequests
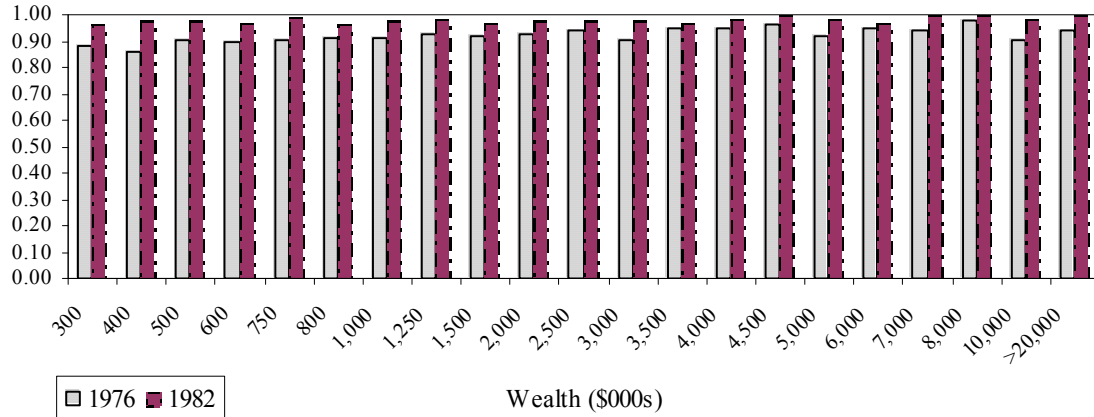(Married Decedents)

Figure 4B. Spousal Bequests as Percent of Wealth
(Married Decedents)

Amounts in $1982

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Table 2. Sample Means for Select Variables (standard errors in parentheses)

Variable	All	Donors	Others
Charitable Bequests (CB)	287,326	892,202	-
	(11,872,300)	(20,909,468)	-
After-tax Bequests – Year of death law			
$CB(1-T')$	222,947	692,294	-
	(10,397,453)	(18,314,436)	-
$CB-T_0$	114,874	356,700	-
	(2,776,766)	(4,884,600)	-
After-tax Bequests – Phased-in law			
$CB(1-T')$	228,732	710,257	-
	(10,403,083)	(18,323,895)	-
$CB-T_0$	126,124	391,638	-
	(2,835,278)	(4,986,157)	-
Wealth (W)	1,456,628	2,226,355	1,090,996
	(12,253,134)	(21,424,701)	(1,742,053)
After-tax Wealth – Year of death law	886,467	1,189,111	742,707
$W-T_0$	(2,960,171)	(5,101,403)	(707,620)
After-tax Wealth – Phased-in law	950,900	1,277,112	795,983
$W-T_0$	(3,041,600)	(5,222,643)	(785,268)
Share of Wealth – Year of death law			
$CB(1-T')/(W-T_0)$	0.0889	0.2761	-
	(0.2902)	(0.4581)	-
$[CB-(T_0-T)]/(W-T_0)$	0.0687	0.2134	-
	(0.2066)	(0.3188)	-
Share of Wealth – Phased-in law			
$CB(1-T')/(W-T_0)$	0.0858	0.2666	-
	(0.2758)	(0.4337)	-
$[CB-(T_0-T)]/(W-T_0)$	0.0694	0.2155	-
	(0.2083)	(0.3213)	-
Tax Price – Year of death law	0.6503	0.6758	0.6382
$1-T'$	(0.1029)	(0.1522)	(0.0646)
Tax Price – Phased-in law	0.7184	0.7218	0.7168
$1-T'$	(0.1656)	(0.1781)	(0.1593)
Age	78.66	81.63	77.24
Male	0.37	0.33	0.39
Widowed	0.76	0.71	0.78
Single	0.16	0.22	0.13
Divorced/Separated	0.08	0.07	0.09
Dummy 1976	0.55	0.56	0.54
Observations	14,051	4,525	9,526

Table 3

FIML Tobit Estimates of Charitable Bequests in 1976 and 1982
Dependent Variable: $CB(1-T')/(W-T_0)$

Variable	Year of Death Law		Fully Phased-in Law	
	Coefficient	s.e.	Coefficient	s.e
Constant	-1.8535	0.1423	-2.4979	0.1426
Male	-0.0370	0.0068	-0.0428	0.0072
Single	0.1875	0.0085	0.2013	0.0089
Divorced/separated	0.0695	0.0123	0.0780	0.0131
Age	0.0083	0.0028	0.0109	0.0029
$Age^2/100$	-0.0025	0.0018	-0.0039	0.0019
Midwest	-0.0084	0.0051	-0.0095	0.0074
South	-0.0205	0.0052	-0.0203	0.0074
West	-0.0265	0.0055	-0.0360	0.0079
Dummy 1976	-0.0062	0.0083	0.0094	0.0085
ln After-tax wealth	0.0940	0.0093	0.1334	0.0075
ln Tax Price	-0.1237	0.0573	0.0645	0.0373
ψ*	2.7974	0.0622	2.5219	0.0488
σ	0.1632	0.0015	0.2270	0.0018

Observations	14,051		14,051	
Log Likelihood	33,149		32,045	
$\Phi(z)$	0.395		0.337	
Charitable Bequests	Wtd. Mean	s.d	Wtd. Mean	s.d
Actual	124,000	7,210,600	124,000	7,210,600
Predicted	87,600	1,190,400	85,100	1,563,700
Predicted w/out tax	84,300	4,686,700	139,100	7,052,000

* Tax price is endogenous to bequests.

Table 4

FIML Tobit Estimates of Charitable Bequests in 1976 and 1982
Dependent Variable: $[CB-(T_0-T)]/(W-T_0)$

	Year of Death Law		Fully Phased-in Law	
Variable	Coefficient	s.e.	Coefficient	s.e
Constant	-1.6690	0.1259	-2.0444	0.1271
Male	-0.0336	0.0056	-0.0403	0.0063
Single	0.1571	0.0071	0.1767	0.0078
Divorced/separated	0.0508	0.0105	0.0603	0.0118
Age	0.0080	0.0022	0.0102	0.0024
$Age^2/100$	-0.0027	0.0014	-0.0037	0.0016
Midwest	-0.0092	0.0056	-0.0084	0.0072
South	-0.0200	0.0058	-0.0194	0.0074
West	-0.0288	0.0060	-0.0367	0.0078
Dummy 1976	-0.0081	0.0072	0.0033	0.0073
ln After-tax wealth	0.0849	0.0088	0.1028	0.0072
ln Tax Price	0.0068	0.0506	0.0635	0.0328
ψ*	1.8863	0.0530	1.8393	0.0421
σ	0.1800	0.0015	0.2263	0.0018
Observations	14,051		14,051	
Log Likelihood	32,609		31,974	
$\Phi(z)$	0.340		0.316	
Charitable Bequests	Wtd. Mean	s.d	Wtd. Mean	s.d
Actual	124,000	7,210,600	124,000	7,210,600
Predicted	104,200	6,314,000	105,300	6,448,800
Predicted w/out tax	90,800	4,268,700	108,500	5,134,200

* Tax price is endogenous to bequests.