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## Estate and gift taxes and incentives for inter vivos giving in the US

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### Abstract

This paper describes the current estate and gift tax rules that apply to intergenerational transfers in the US. It summarizes the incentives for inter vivos giving, gifts from a donor to a recipient while the donor is alive, as a strategy for reducing estate tax liability. It shows that the current level of intergenerational transfers is much lower than the level that would be implied by simple models of dynastic utility maximization. Moreover, even among elderly households with net worth in excess of \$2.5 million, roughly four times the net worth at which US households became liable for estate tax in 1995, only about 45% take advantage of the opportunity for tax-free inter vivos giving. Cross-sectional regressions using the 1995 Survey of Consumer Finances suggest that transfers rise with household net worth, possibly reflecting the impact of progressive estate taxes. Households with a preponderance of their net worth in illiquid forms, such as a private business, are less likely to make transfers than their equally wealthy counterparts with more liquid wealth. Those with substantial unrealized capital gains, for whom the benefits of ‘basis step-up at death’ under the income tax are greatest, are less likely to make large inter vivos transfers than similarly wealthy households with higher basis assets. © 2001 Elsevier Science B.V. All rights reserved.

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### 1. Introduction

Estate and gift taxes levied by state and federal governments in the US collected an estimated \$23.1 billion in 1996 from just over 30 000 ‘taxpayers.’ The top marginal federal estate tax rate was 60%. In spite of the high marginal rate of estate taxation, economists have devoted relatively little attention to quantifying

the incentive effects of the estate tax, or to measuring the effect of this tax on household behavior.

One problem in studying the estate tax arises from the difficulty of obtaining survey data on the high-income, high-net-worth households that are affected by the tax. Another arises from the lack of consensus on why individuals leave bequests. This is reflected in the multiplicity of models of bequests — altruistic, egoistic, exchange, and accidental — that are discussed in recent surveys such as Laitner (1997) and Masson and Pestieau (1997). Gale and Perozek (2000) note that how estate taxes affect the level of bequests depends on whether bequests are accidental, or whether they are the outcome of one of the voluntary models of bequest behavior, so that choosing amongst alternative models is a central step in analyzing the estate tax.

A recent debate on estate tax reform in the US has drawn attention to existing research on the estate tax and its effects. Joulfaian (1998a) provides a summary of both the current estate tax rules and the potential economic effects of the US estate and gift tax. There have been several proposals for eliminating the estate tax or for substantially reducing marginal estate tax rates.

Any investigation of the economic effects of the estate and gift tax must begin by describing the incentive effects of the current tax system. Because wealthy individuals can transfer wealth either by making gifts while they are alive (inter vivos gifts) or by leaving bequests, it is necessary to consider how the estate and gift tax system affects incentives for transfers on two different margins. This paper summarizes these incentive effects, particularly the relative attractiveness of bequests and inter vivos gifts. It provides descriptive information on the estate tax savings available to high-net worth households that use simple gift-giving strategies. It also provides data on the importance of charitable bequests in reducing estate tax liability, and explores how the individual income tax and the estate tax interact to influence incentives for households to realize capital gains.

The paper is divided into five sections. Section 2 describes the current structure of the US estate and gift tax, including the changes that were enacted in the Taxpayer Relief Act of 1997. It also summarizes the characteristics of recent estate tax return filings, particularly the concentration of estate tax payments among a small set of taxpayers.

Section 3 develops a framework for summarizing the incentive effects associated with estate and gift taxation, particularly those concerning inter vivos giving. Although the estate and gift tax are ‘unified’ in the US, so that both are taxed according to the same tax rate schedule, in practice gifts are taxed less heavily than bequests.

Section 4 presents empirical evidence on the patterns of inter vivos giving among households that are likely to face estate taxation. Even among elderly households with net worth of several million dollars, the probability of making inter vivos gifts is less than 50%. This finding raises the question of why households do not take advantage of readily available estate tax avoidance strategies.

Section 5 focuses on inter vivos giving by households with substantial holdings of appreciated assets. The traditional analysis of how a realization-based tax on capital gains, such as that in the US, affects asset sales holds that investors should defer sales of appreciated assets. This incentive is compounded by a feature of the US income tax known as ‘basis step-up at death,’ which forgives capital gains tax liability on any appreciated assets that are held when an investor dies. Transferring wealth via inter vivos gifts, either by selling assets or by transferring the assets in kind, eliminates the potential benefits of basis step-up, so it imposes a cost on estate tax avoidance. Empirical evidence suggests that some high-net-worth households with unrealized capital gains reduce their inter vivos giving to take advantage of favorable income tax treatment of capital gains at death. A brief conclusion suggests several directions for additional research.

## **2. The estate tax in the US: current rules and summary statistics**

The federal estate tax in the US has been integrated with the federal gift tax since 1977. The tax base for the federal estate and gift tax is the value of assets transferred at the taxpayer’s death, plus the value of taxable gifts that were made during the decedent’s lifetime. These gifts are cumulated in nominal terms. The estate of an individual who made substantial taxable gifts while alive, and who dies with an estate valued at \$1 million, will pay more tax than the estate of someone else who dies with equal net worth but who never made taxable gifts.

There are two significant exemptions from the estate and gift tax base. First, inter-spousal gifts and bequests are not taxed. In practice, this means that many transfers that occur when the first spouse in a married couple dies are untaxed, while estate taxes are due when the surviving spouse dies. This leads to a large group of ‘non-taxable’ estate tax returns. These are tax returns with net estates that are large enough to be taxable, but which avoid taxation because the heir is the decedent’s spouse.

Second, each individual may make an unlimited number of tax-free gifts of \$10 000 per year per recipient. A married couple can therefore transfer \$20 000 per year to each child, grandchild, or other beneficiary without incurring any gift tax. Beginning in 1999, the \$10 000 annual exemption was indexed for inflation. For families with substantial numbers of children and grandchildren, inter vivos gifts can provide an opportunity to transfer substantial amounts of wealth each year. For example, consider a married couple, aged 45 (husband) and 42 (wife), with two children aged 14 and 11. Assume that the children marry at 25, that each has one child at age 28 and another at age 30, and that the parents live to the age of 82 (husband) and 87 (wife). A giving program in which each spouse gives \$10 000 each to all children, grandchildren, and children’s spouses can reduce the present discounted value of estate tax liability by between \$1 and \$2 million, depending on the rate of return that assets are assumed to earn. This example assumes that the marginal estate tax rate will be 55%.

A key feature of the US estate and gift tax is the ‘unified credit.’ This is a credit, received by the estate of each decedent, against lifetime estate and gift taxes. Under the estate and gift tax law in effect between 1987 and 1997, each taxpayer received a tax credit of \$192 800. This was precisely the amount of estate tax liability on a taxable estate of \$600 000. The unified credit effectively eliminated estate tax liability on estates valued at less than \$600 000. The Taxpayer Relief Act of 1997 (TRA97) raised the threshold on the size of estates to which estate tax liability applies by increasing the unified credit. The taxable estate threshold was \$625 000 in 1998 and 1999, and \$700 000 in 2000. It is scheduled to rise, in various steps, to \$1 000 000 in 2006. TRA97 also included a special provision for estates that include family-owned businesses and farms. Family-owned businesses valued at up to \$1.3 million have been exempt from estate taxation since January 1, 1998.

Table 1 reports the schedule of tax rates that applied to taxable estates and gifts for tax year 1997. The schedule shows tax rates for estates valued at less than \$600 000, even though the estate tax effectively begins at 37% on the first dollar of taxable estate above \$600 000. The highest statutory marginal estate tax rate is 55%. As a result of a surcharge that phases out infra-marginal estate tax rates of

Table 1  
Federal unified estate and gift tax rates, 1997<sup>a</sup>

Taxable estate and gift value (\$000s)	Marginal tax rate	Estate tax liability at lower bracket breakpoint
0–10	18	0
10–20	20	1800
20–40	22	3800
40–60	24	8200
60–80	26	13000
80–100	28	18200
100–150	30	23800
150–250	32	38300
250–500	34	70800
500–750	37	155800
750–1000	39	248300
1000–1250	41	345800
1250–1500	43	448300
1500–2000	45	555800
2000–2500	49	780800
2500–3000	53	1025800
3000–10000	55	1290800
10000–21040	60	5140800
>21040	55	11764800

<sup>a</sup> Source: Phillips and Wolfkiel (1998). Effective January 1, 1998, the 60% marginal tax rate applied only to estates valued at between \$10 million and \$17.184 million.

less than 55%, however, the highest effective marginal estate tax rate is 60%. Until January 1, 1998, this rate applied on estates valued at between \$10 million and \$21.04 million. As a result of legislative changes in TRA97, however, the upper limit on the 60% tax bracket declined to \$17.184 million effective January 1, 1998.

In addition to federal estate taxes, many states levy taxes on estates, gifts, or inheritances. These taxes raise roughly one third as much revenue as federal taxes. There are two types of state estate taxes. The more common form, known as a 'gap tax,' is a state tax that is fully creditable against federal estate tax liability. These taxes do not raise the total marginal tax burden on taxable estates. The second type of state estate tax is an 'add on tax.' These state taxes often differentiate estates on the basis of the kinship relationship between the decedent and the recipient of the estate. State death tax credits against federal estate tax liability are roughly half of the value of state estate tax revenues; this is a crude measure of the relative importance of 'gap taxes' and 'add on' taxes.

Some states also levy taxes on inter vivos gifts. In many cases, there are different rates of tax that depend on the relationship between the donor and the recipient, with closer relations usually taxed at lower rates. In some states the gift tax rate is higher than the estate tax rate. The incentives for inter vivos giving rather than leaving taxable bequests would be correspondingly reduced in such states.

Pechman (1987) summarizes the long history of changes in the real value of the threshold below which estates are not subject to federal tax. These movements have been associated with time series fluctuations in the fraction of estates that are subject to estate taxation. In 1995, roughly 1.4% of deaths in the US generated taxable estate tax returns. This percentage is forecast to rise to 1.6% in 2005, and it would have been forecast to rise much more quickly if TRA97 had not been enacted. There has been some fluctuation in the postwar period in the fraction of deaths resulting in estate tax liability. This fraction was 1.3% in 1950, 5.2% in 1970, and 7.7% in 1977, prior to an estate and gift tax reform that raised the threshold for tax liability.

The distribution of estates by value reflects the skewed US wealth distribution. Many taxable decedents leave taxable estates that are valued at slightly more than the estate tax threshold. The estates of decedents with gross estates well above the threshold, however, pay most of the estate tax. Table 2 illustrates this with data drawn from estate tax returns filed in 1995. Of the 31 564 taxable estate tax returns filed, 43.8% (13 830) had gross estates valued at between \$600 000 and \$1 million. If TRA97 had been fully phased-in in 1995, these decedents would not have been liable for estate tax. Some decedents have very high net worth, and this leads to substantial concentration in estate tax payments. The 231 estate tax returns filed for estates valued at more than \$20 million, which represented only 0.7% of estate tax returns (and roughly one ten-thousandth of all deaths) accounted for 17% of all estate tax payments. By comparison, the 44% of estate tax returns with gross estates valued at between \$600 000 and \$1 million accounted for only 5.5% of

Table 2  
Distribution of 1995 taxable estate tax returns by size of gross estate<sup>a</sup>

Size of gross estate (\$ million)	Number of taxable returns	Net estate tax (\$ billion)
0.6–1.0	13830	0.65
1.0–2.5	12710	3.00
2.5–5.0	3298	2.75
5.0–10.0	1105	2.05
10.0–20.0	390	1.38
>20	231	2.00
Total	31564	11.84

<sup>a</sup> Source: Eller (1996, Table 1d).

total estate tax revenue. This pattern results from the underlying wealth distribution and the progressive estate tax schedule.

The estate tax exemption for inter-spousal transfers implies that estate tax is often deferred until the death of the longest-surviving partner in a married couple. Eller (1996) reports that 62% of the taxable estate tax returns for 1992 decedents were for decedents who were over 80 years of age. These tax returns accounted for 66% of the estate taxes paid. In contrast, decedents who were less than 70 years of age accounted for only 13% of estate tax liability.

The inter-spousal exemption and current longevity patterns imply that for many households of retirement age, the expected date of estate tax liability is more than two decades in the future. Data on age-specific mortality rates in 1995 are compiled by the Social Security Administration. Mitchell et al. (1999) describe these data as well as other sources of information on mortality rates. Using these data and assuming that the mortality experience of husbands and wives is independent, one can calculate the joint life expectancy of married couples with members of different ages. Joint life expectancy is the expected number of years in which at least one member of the couple will be alive.

For a couple in which the husband is 65 and the wife is 62, joint life expectancy is 24.3 years. Even for couples in which the husband is 75 and the wife is 72, it is 16.1 years. For women, single life expectancy does not fall below 5 years until age 89 – thus most potential decedents have substantial periods of time over which to plan for wealth transmission and thereby to reduce their estate tax burden. The remainder of this paper explores the extent to which households take advantage of simple estate tax reduction opportunities.

### **3. A framework for analyzing the estate and gift tax**

Current estate and gift tax rules in the US create a complex set of incentives for wealthy individuals to make taxable gifts, charitable gifts during life, bequests to

their heirs, and bequests to charities. There are also important interactions between the estate and gift tax and the income tax, particularly the capital gains tax.

### 3.1. Incentives for taxable gifts

To fix notation regarding the estate and gift tax, consider a setting in which consumers live for two periods. They work in the first period and retire in the second. Denote consumption in the two periods by  $c_1$  and  $c_2$ . Let  $l_1$  denote labor supply in the first period. Each consumer may leave a bequest ( $b$ ) in the second period, and he may also make an inter vivos gift ( $g$ ) in the first period. The consumer's utility function is given by:

$$U = U(c_1, c_2, l_1, g, b) \quad (1)$$

The consumer's budget constraint is:

$$(1 - \tau_y)wl_1 = c_1 + g/[1 - \tau_g] + c_2/[1 + r(1 - \tau_k)] + b/\{[1 + r(1 - \tau_k)](1 - \tau_e)\} \quad (2)$$

In this expression  $\tau_y$  denotes the income tax rate on labor earnings,  $\tau_g$  the gift tax rate,  $\tau_k$  the tax rate on capital income, and  $\tau_e$  the estate tax rate. This budget constraint ignores the possibility of transfers, such as Social Security, in the second period of life, but nothing of substance would be changed by introducing them.

The donor's utility of gift-giving is assumed to depend on the net-of-tax gift received by the recipient, rather than the gross-of-tax gift that the donor makes. This is an important assumption; if the donor's utility depends on the gross gift, changes in the estate tax will not affect the gross estate. In order to provide  $g$  to a recipient, the donor must expend resources of  $g/(1 - \tau_g)$ , where  $\tau_g$  denotes the gift tax rate. A similar calculation applies with respect to bequests, but the tax rate on bequests ( $\tau_e$ ) may differ from that on gifts.

When the donor cares only about the total value of resources transferred to the next generation, but not about the division of these transfers between inter vivos gifts and bequests, (1) becomes

$$U = U(c_1, c_2, l_1, g + b/(1 + r(1 - \tau_k))) \quad (3)$$

A potential donor with these preferences and with non-negativity constraints on both  $b$  and  $g$  would be driven to a corner solution with respect to the choice of bequests and gifts whenever the tax rates on estates and gifts are different. If the estate and gift tax rates satisfy  $(1 - \tau_e)/(1 - \tau_g) > 1$ , the donor would choose only bequests, and vice versa. If the tax rates on a gift or a bequest change as a function of the size of the gift or bequest, then the potential donor might be driven to transfer levels that correspond to 'kinks' on the gift and bequest budget set.

The empirical work presented below is joint test of the prediction that high net

worth households optimally exploit inter vivos giving as a strategy for estate and gift tax avoidance, and the assumption that such households care only about the present discounted value of net-of-tax transfers to recipients. If the utility function defined over gifts and bequests takes the more general form in (1), as in Bernheim et al. (1985) or Jousten (1998), then strong predictions about the relative use of gifts and bequests are no longer possible. Similarly, if utility derives from gross rather than net (after-tax) bequests, or if the timing of transfers matters because holding wealth conveys status or power that does not persist after transfers have been made, then the stark predictions above will not obtain. While it is difficult to marshal empirical evidence to select among these alternative models of interpersonal linkages, most ‘practitioner advice’ with respect to estate tax planning maintains that the donor’s objective is to maximize the resources that heirs will receive net of taxes.

Federal gift tax liability depends on the size of the gift, and potentially also on the past gifts by the donor. Gifts of less than \$10 000 per year, from anyone to anyone, are tax-free. In the foregoing framework,  $\tau_g = 0$  for these gifts. Gifts in excess of \$10 000 to any recipient in a year are included in the donor’s gift tax base. Since there is a cumulative lifetime estate and gift tax credit (pre-1997) of \$192 800, the first \$600 000 of taxable gifts that an individual makes over the course of his lifetime is exempt from gift tax. Gifts that total more than \$600 000, on a cumulative nominal basis, are taxed according to the estate and gift tax schedule in Table 1.

A crucial feature of the estate and gift tax in the US, from the standpoint of incentives for gift-giving, is that the gift tax is levied on the *net of tax* gift, while the estate tax is levied on the gross of tax estate. Thus, as Sims (1984), Rivers and Crumbley (1979), and others have noted, even though the estate and gift taxes are ‘integrated’ and taxed according to the same tax schedule, gifts face a lower effective tax burden than bequests. If the statutory marginal estate and gift tax rate is  $\theta$ , and  $g$  is the amount of the gift *received* by the recipient, then the gift tax liability is  $\theta \times g$ . The total cost of such a gift, from the standpoint of the donor, is therefore  $(1 + \theta) \times g$ . In the notation above, the gift tax rate is  $\tau_g = \theta / (1 + \theta)$ . This expression follows from equating the total cost of the gift in Eq. (2), the budget constraint,  $g / (1 - \tau_g)$ , with  $(1 + \theta) \times g$ .

To illustrate how the gift tax operates, consider an individual who makes a gift of \$20 000 to one recipient. Because this exceeds the tax-exempt gift threshold by \$10 000, the donor is deemed to have made a \$10 000 taxable gift. The donor’s gift tax liability in this case depends upon his previous history of taxable gifts. If the sum of previous taxable gifts by this donor is less than the amount required to exhaust the lifetime credit against the estate and gift tax, then the donor does not pay gift tax. In 1998, any donor who had not made cumulative lifetime gifts of at least \$625 000 would pay no tax on an incremental taxable gift.

In this example, however, if the donor’s previous taxable gifts exceed the estate and gift tax threshold, then the donor owes gift tax. If the donor had previously



made taxable gifts of \$800 000, for example, he would pay gift tax of \$3900 on the incremental taxable gift of \$10 000, since his marginal estate and gift tax rate (see Table 1) is 39%. Thus the total cost of the \$10 000 taxable gift is \$13 900, and the marginal gift tax rate is  $0.39/1.39$  or 28.1%.

This gift tax example can be contrasted with the situation if the same donor were to die. In this case he would bequeath the \$13 900 that paid for the taxable gift (and the associated gift tax) to the same individual who received the foregoing taxable gift. The tax liability on an estate of \$13 900 would be  $0.39 \times (13\ 900)$  or \$5421, so the recipient would net \$8479 after estate taxes. This is less than 85% of the \$10000 the recipient would receive after gift taxes. In the framework sketched above, the estate tax rate  $\tau_e$  as defined in the budget constraint is  $\tau_e = \theta$ , where  $\theta$  is the statutory marginal estate and gift tax rate. Since  $\theta > \theta/(1 + \theta)$ , the effective estate tax rate exceeds the effective gift tax rate. For an estate and gift taxpayer facing the highest statutory marginal tax rate, 60%, the effective gift tax rate is  $0.60/1.60$ , or 37.5%. This 22.5% differential in effective tax rates represents an important incentive for making gifts rather than leaving bequests. The differential is 60% if the gifts fall below the \$10 000 floor on taxable gifts.

Given the relative estate and gift tax rates, if a donor cares only about the present discounted value of the resources left to his heirs, and he expects to pay estate tax, he should embark on a systematic program of tax-exempt gift-giving in amounts of less than \$10 000. If he has a spouse who can also make gifts, the gift-giving program can be twice as large. The donor should also make taxable gifts, gifts larger than \$10 000, because they will reduce the amount of his estate, and because such gifts face a lower effective marginal tax rate than bequests.

Two additional factors, beyond the difference in effective tax rates, motivate the use of taxable gifts. The first is the opportunity to use the estate and gift tax credit, which is specified in nominal terms, at an earlier point in time, and thereby to claim a credit with a larger real value. To illustrate this point, consider an individual with a net worth of \$1 million who is certain to die in 20 years. Under the pre-1997 tax rules, if the individual made an immediate taxable gift of \$600 000, he would receive a unified estate and gift tax credit worth \$192 800 in current dollars. If he waited to transfer assets until he dies, however, the real value of the estate and gift tax credit, which was not indexed, would be much lower. At a 3% inflation rate, \$192 800 in 20 years is worth \$105 811 today. Making transfers early in life therefore maximizes the value of the estate and gift credit.

The second factor encouraging immediate, taxable transfers is the progressive structure of the estate and gift tax. If the assets in an individual's portfolio are expected to appreciate in nominal terms over time, then the future value of the estate will be larger than the value of the assets that could be transferred as a gift today. Marginal estate tax rates are increasing over the range from \$625 000 to \$10 000 000 of taxable estate. This provides an incentive to make transfers early and thereby avoid nominal asset price inflation raising the marginal tax rate.

To provide some indication of the importance of these various effects, Table 3

Table 3  
After-tax wealth of beneficiaries, bequests versus taxable lifetime gifts<sup>a</sup>

Rate of return (per year)	Initial wealth of benefactor (\$ million)	After-tax value after 25 years, taxable gift (\$ million)	After-tax value after 25 years, bequest (\$ million)	Ratio, taxable gift/bequest
0.04	2.000	3.981	2.806	1.419
0.06	2.000	6.563	4.392	1.494
0.08	2.000	10.822	6.950	1.557
0.04	5.000	9.408	6.295	1.495
0.06	5.000	15.511	9.891	1.568
0.08	5.000	25.574	16.433	1.557

<sup>a</sup> Source: Author's tabulations as described in the text, using 1997 estate and gift tax rate schedule for the US.

presents illustrative calculations on the amount of wealth that an heir will have after 25 years if his aging benefactor makes an immediate gift, or holds his wealth until he dies. The calculations in the table assume that the benefactor will live for 25 years, and that his current net worth is either \$2 million or \$5 million. To explain the calculations, first consider what happens if the benefactor with \$2 million uses this money to make a taxable gift today. This requires finding the gift amount ( $g$ ) such that

$$2\,000\,000 = g + f(g - 10\,000)$$

where  $f(\cdot)$  denotes the estate and gift tax schedule in Table 1. Note that the tax schedule applies to the gift in excess of the \$10 000 annual gift exclusion. In this example the taxable gift that can be financed with a sum of \$2 million is \$1 464 621. If this amount is invested at a real (after-tax) return of 4% per year, it will rise to \$3 981 252 after 25 years.

The alternative scenario is one in which the benefactor does not make taxable (or tax-exempt) gifts but instead retains the assets until he dies. If the assets grow at a rate of 4% per year after tax, the value of the taxable estate in 25 years will be \$5 436 564. The associated estate tax liability, computed from Table 1, will be \$2 630 910, so the after-tax bequest received by the beneficiaries will be \$2 805 654. This is substantially less than they would have received if the assets had been transferred as a gift.

Table 3 presents several additional cases illustrating the increase in the value of resources received by heirs that can be generated with the use of taxable gifts rather than bequests. The gain to the recipients is larger when the nominal rate of return on the underlying assets is greater. Both the 'progressivity effect' and the 'time value of money effect' are increasing functions of the nominal return.

Although substantial tax savings can be realized through taxable gift-giving, actual patterns of bequests and gifts suggest very limited use of taxable gifts. Table

Table 4  
Adjusted taxable gifts as a share of taxable estate, by size of gross estate, estate tax returns filed in 1995<sup>a</sup>

Gross estate	Number of taxable returns	Taxable estate	Number of returns with taxable gifts	Percentage of taxable returns with taxable gifts	Total taxable gifts	Taxable gifts/ taxable estate
\$600k–1M	13830	10434.7	1495	10.8%	337.2	3.2%
\$1M–2.5M	12710	16203.4	2145	16.9	610.6	3.8
\$2.5M–5M	3298	8635.2	1276	38.7	625.6	7.2
\$5M–10M	1105	5373.1	604	54.7	413.8	7.7
\$10M–20M	390	3384.8	265	67.9	293.0	8.7
>\$20M	231	5004.4	168	72.7	428.7	8.6
Total	31564	49035.6	5955	18.9	2708.8	5.5

<sup>a</sup> Source: Eller (1996, Table 1d). ‘Taxable gifts’ refers to gifts made beginning in 1977, the year when the estate and gift taxes were unified. It is possible that some decedents whose estate tax returns were filed in 1995 made taxable gifts before that date, but not afterwards; they would be excluded from the set of returns with taxable gifts.

4 presents summary information from estate tax returns on the pattern of taxable gift giving. Only 18.9% of the decedents on whose behalf taxable estate tax returns were filed in 1995 had made taxable gifts during their lifetimes. This probability rose as the size of the estate increased, reaching 73% for those with estates of more than \$20 million. For estates in the highest wealth category, the progressivity effect no longer applies, although the donors might not have known that their estate value would fall in this range at the time when they made their gifts.

Table 4 also shows that taxable gifts comprise a small fraction of the total wealth transferred through estates and gifts. The table shows the number of estate tax returns for decedents who had made lifetime gifts large enough to make some gifts taxable. This number of returns, 5955, is substantially greater than the number of ‘gift tax returns’ in Table 2 (1252). The latter indicates the number of estate and gift tax returns that were filed in 1995 for the payment of gift tax. The data in Table 4 show that even for the highest valued estates, those worth \$20 million and above, taxable gifts were only 8.6% of the value of taxable estates. For all taxable estates, gifts represented 5.5% of the value of estates. These results on the relatively infrequent use of taxable gifts will be reinforced below by evidence on the lack of tax-exempt gifts.

### 3.2. Incentives for charitable bequests

One incentive effect of the estate tax that was not reflected in the earlier modeling concerns charitable gifts. Just as donations to charity generate deductions against taxable income for income tax filers, charitable bequests are deducted from the taxable value of an estate. Charitable bequests totaled \$8.7 billion in 1995, thereby reducing estate tax revenues by approximately \$4 billion. Table 5

Table 5  
Value of charitable bequest, by net worth, 1992 decedents<sup>a</sup>

Net worth category	Amount of charitable bequests (\$ million)	Percentage of net worth (%)
<\$600k	14.5	15.7
\$600k–1M	814.9	20.5
\$1M–5M	2031.6	21.0
\$5M–10M	730.5	21.0
>\$10M	4390.6	35.9
Total	7982.1	27.1

<sup>a</sup> Source: Eller (1996, Fig. M).

shows the importance of charitable bequests for estates of different sizes. The share of gross estate value donated to charitable organizations rises with the value of the estate, and therefore with the marginal estate tax rate, although it is not clear whether this reflects a wealth elasticity of demand for donations or a price effect of the estate and gift tax. Less than one fifth of the gross estate value is donated to charity from estates worth less than \$1 million, while more than one third of the value of estates of \$10 million and more is allocated to charitable bequests.

Numerous empirical studies have explored the sensitivity of charitable donations to the income tax rates of potential donors, while relatively less research has considered the impact of the estate tax on charitable bequests. The ‘tax price’ of charitable giving at the time of death is  $(1 - \tau_e)$ , since estate beneficiaries give up  $(1 - \tau_e)$  dollars for each dollar received by a charity. Joulfaian (1991, 2000), using estate tax returns, estimates a substantial price elasticity of charitable giving with respect to estate tax rates. Some studies, such as Barthold and Plotnick (1984), find a weaker link between the after-tax price of charitable giving and a decedent’s charitable bequest. As in many studies of income tax incentives for charitable giving, it is difficult to identify tax price effects separately from effects of income (or in the estate tax case, net worth). The same problem arises in trying to identify the impact of prospective estate taxation on the probability of inter vivos giving by current wealthy households.

For some assets held by some decedents, the tax price of charitable bequests can be even lower than the foregoing calculations suggest. This is especially true for assets that are held in retirement saving accounts such as Individual Retirement Accounts or 401(k) plans at the time of death. Because the contributions to and accruals within these accounts have not been subject to income tax, a beneficiary receiving these assets as a bequest must pay income tax on this bequest. Shoven and Wise (1998) note that such taxes are due after the estate tax liability has been paid, and that the combined estate and income tax burden can exceed 80 or in some cases 90%. For an heir whose marginal income tax rate is  $\tau$ , the after-tax proceeds of a one dollar pre-tax bequest equal  $(1 - \tau_e)(1 - \tau)$ . For a bequest recipient in the 39.6 marginal tax bracket for the federal income tax, and for an

estate facing the 55 marginal estate tax rate, the tax price of charitable giving,  $(1 - \tau_e)(1 - \tau)$ , is 0.272. From the standpoint of the decedent considering making a charitable bequest, the choice is between a one dollar gift to a charity, and a 27 cent gift to a taxable beneficiary.

Given the apparent sensitivity of lifetime charitable giving to the after-tax price of such giving, one would expect that the combined income and estate tax burdens on retirement assets would have an important effect on the flow of charitable bequests. Unfortunately, there is no public use data set that provides information on both household asset holdings in retirement accounts and other accounts, and the value of charitable bequests. The importance of charitable bequests from these accounts is likely to rise over time, as the share of household wealth accumulated in these accounts becomes larger (see Poterba et al., 1998).

### *3.3. Capital gains taxes, estate taxes, and incentives to hold appreciated assets until death*

The incentives to make inter vivos gifts, if necessary in taxable form, are partly muted by an important interaction between the estate and gift tax and the individual income tax in the US. The federal income tax taxes capital gains upon realization. The statutory tax rate on realized gains has varied significantly over time, and it depends on the length of time that an asset has been held. In 1998, a tax rate of up to 39.6% applied to realized gains on assets held for less than 12 months. A lower statutory rate, no more than 20%, applied to gains on assets held for at least 18 months. Under current law, a lower marginal tax rate (18%) will apply starting in 2006 to gains on assets held for at least 60 months. Between 1988 and 1997, the top statutory marginal tax rate on realized long-term gains was 28%, so the incentive for households to avoid capital gains tax liability was greater than in the years since the passage of the Taxpayer Relief Act of 1997.

When an asset is transferred as part of an estate, the asset's basis, its purchase price for the calculation of the taxable capital gain, is 'stepped up' to its market value at the time of the decedent's death. This extinguishes the income tax liability on capital gains that accrued during the decedent's lifetime. In contrast, if the asset is given away during the decedent's lifetime, the decedent's purchase price is 'carried over' as the asset basis. When the recipient of such an inter vivos gift of an appreciated asset ultimately sells the asset, the capital gains that accrued before the decedent gave the asset away will still be taxed. This case is known as 'carry-over basis.' If an individual owns an asset with substantial unrealized gains, the opportunity to avoid capital gains tax liability can reduce the incentive for inter vivos transfers. Basis step-up has long been recognized as an important factor that reduces the effective capital gains tax rate. Bailey (1969) is an early discussion of this effect.

The interaction between estate taxes and income taxes was the basis for Adams' (1978) suggestion that households could equalize their effective estate and gift tax

rates. If assets that are bequeathed have substantial unrealized capital gains, then the combined estate and income tax rate on assets transferred at death could equal the combined gift and income tax rate on taxable gifts, even if the effective gift tax rate is below the statutory estate tax rate. Adams (1978) presents illustrative calculations, based on aggregate data, suggesting that such equalization is in principle possible. Kuehlwein (1994) re-visits this calculation, again using aggregate data, and concludes that the combined estate and income tax rates on transfers at death are likely to exceed the combined tax burden on taxable gifts. Neither of these studies exploits household level information on gift-giving and asset basis, which can provide more direct tests of estate and gift tax equalization. Joulfaian (1998b) uses data from tax returns to present further evidence on this issue.

To formalize a household's incentives in the presence of basis step-up, consider an individual who holds an asset with a basis of  $B$ . Assume that the asset generates annual returns at rate  $r$ , and that these returns accrue only in the form of capital gains. The asset has a current market value of  $V$ . Further assume that this person will die in  $T$  periods, and that he is contemplating three strategies for transferring this asset to a beneficiary.

(i) *Sell The Asset Today and Make An Inter Vivos Gift*: Some assets may be impossible to transfer without selling. In this case the income tax liability due when the asset is sold will be  $\tau_{cg} \times (V - B)$ , and the after-tax proceeds available for a taxable gift, and to pay gift tax, will be  $(1 - \tau_{cg})V + \tau_{cg} \times B$ . In these expressions  $\tau_{cg}$  denotes the statutory capital gains tax rate. Assume that once assets are transferred to the recipient, they appreciate at rate  $\delta$  per period. This return may differ from the return earned while the donor held the assets.

If the gift at the time of asset sale could be made on a tax-free basis, then after  $T$  periods, the recipient will hold an asset position worth  $e^{\delta T} \times [(1 - \tau_{cg})V + \tau_{cg} \times B]$ . If the transfer was a taxable gift, then the recipient will have  $(1 - \theta/(1 + \theta)) \times e^{\delta T} \times [(1 - \tau_{cg})V + \tau_{cg} \times B]$  after  $T$  periods, where  $\theta$  denotes the statutory estate and gift tax at which the gift is taxed. These values can be compared with the wealth of the beneficiary under two alternative transfer schemes.

(ii) *Transfer the Assets as a Gift*: In this case the asset basis 'carries over' to the recipient, so that when he sells the asset, the taxable capital gain is the sale price less  $B$ . To compare this case with the case of gain realization at the time of transfer, assume that the recipient sells the asset after  $T$  periods. This provides a lower bound for the after-tax value of the asset after  $T$  periods, because the recipient could choose to defer the capital gains tax liability beyond period  $T$  by choosing not to realize the gain.

If the recipient does realize the gain in period  $T$ , the after-tax value of the transfer, net of income taxes due, is  $(1 - \tau_{cg}) \times Ve^{rT} + \tau_{cg} \times B$  in the case when the initial asset transfer was made as a tax-free gift. If the initial asset transfer was a taxable gift, the value of the position in  $T$  periods would be reduced by the effective gift tax due at the time of transfer (i.e. by a factor of  $\{1 - \theta/(1 + \theta)\}$ ).

The calculation becomes more complex if one assumes that a fraction of the asset must be sold at the time of the transfer, with associated capital gains tax liability, to cover the cost of gift taxes. Note that this calculation presumes that the transferred asset will appreciate at a rate of  $r$  for as long as the current owner or the gift recipient holds it.

Transferring an asset as a gift strictly dominates selling the asset and transferring the proceeds under the assumptions presented here. For this reason, the analysis below will focus on transferring the asset or holding it until the death of its owner. However, if the rate of return that an asset will earn if it is transferred today is lower than the expected return if the prospective decedent holds it, then transferring may not be optimal.

(iii) *Hold Assets Until Death*: The third transfer strategy involves the donor holding the asset until his death in  $T$  periods, then making a bequest. The value of the asset will appreciate to  $Ve^{rT}$  at the time of the current owner’s death. The estate tax due will then be  $\theta Ve^{rT}$ , so that the after-tax value of the position will be  $(1 - \theta)Ve^{rT}$ . There is no capital gains tax liability in this case, since the gains would be realized by the recipient after the asset has been transferred; basis step-up would apply.

The relative value of recipient wealth when an asset is held until the death of the donor, and when it is sold by the donor before his death and the proceeds are transferred as a gift, is given by the ratio

$$R = (1 - \theta)Ve^{rT} / \{ [1 - \theta / (1 + \theta)] \times e^{\delta T} \times [(1 - \tau_{cg})V + \tau_{cg} \times B] \} \tag{4}$$

Notice that in the special case of  $r = \delta$  and  $B = 0$ , this expression simplifies to:

$$R = (1 - \theta) / \{ [1 - \theta / (1 + \theta)] (1 - \tau_{cg}) \} = (1 - \theta^2) / (1 - \tau_{cg}) \tag{5}$$

In this case, for a taxpayer facing the top marginal tax rate on estates and gifts, 60%, and facing the 20% marginal tax rate on capital gains, the value of  $R$  is 0.80. This implies that bequests are dominated by taxable transfers, even when all of the value of the asset in question will be taxed upon realization. This is because the differential between the effective estate and gift tax rates in this case, 22.5% (60–37.5%), is larger than the statutory capital gains tax rate.

Table 6 presents information on the value of  $R$  from Eq. (4) for a range of different parameter values. The table shows that except when the asset is assumed to appreciate faster when it is held by the current owner than by the potential recipient, donors have an incentive to transfer assets with taxable gains in the form of taxable gifts. The table assumes that the effective ‘accrual equivalent’ capital gains tax rate facing the recipient of a taxable gift is less than the statutory tax rate because the recipient may defer selling the asset beyond the  $T$  period horizon that is imposed by the death of the donor. The calculations in Table 6 show that the relative after-tax income from bequeathing assets, rather than using inter vivos transfers, is declining in  $B/V$ , the basis value as a share of current market value.

Table 6  
Relative net worth of heirs based on bequests and taxable gifts, underlying assets with embedded capital gains<sup>a</sup>

Basis to value ratio ( $B/V$ )	Statutory estate and gift tax rate ( $\tau$ )	Capital gains tax rate (effective accrual)	Return with existing owner, return with new owner ( $r - \delta$ )	Time horizon ( $T$ )	Value ratio, bequest/taxable gift
0.20	0.37	0	0	25	0.863
0.20	0.37	0.10	0	25	0.938
0.20	0.55	0	0	25	0.698
0.20	0.55	0.10	0	25	0.759
0.50	0.55	0.10	0	25	0.735
0.20	0.55	0.10	0.02	25	1.649
0.20	0.55	0.10	0.02	40	1.689

<sup>a</sup> Source: Author's calculations as described in the text. The value ratio in the last column indicates the relative value, after  $T$  years, of an asset that is held by the older generation and then transferred as a bequest, compared with the value of a taxable gift. Eq. (4) in the text defines this ratio.

#### 4. Observed patterns of inter vivos giving

The foregoing tabulations from estate tax returns suggest that potential decedents make relatively limited use of taxable gifts. This section exploits data on intergenerational transfers from the 1995 Survey of Consumer Finances to investigate the links between wealth, the estate tax threshold, and the use of both taxable and tax-exempt inter vivos gifts. The results confirm the findings above: many high net worth households are not exploiting the opportunity to reduce their estate tax liability by making taxable gifts, and many are also failing to exploit the chance to make tax-free gifts.

The Survey of Consumer Finances is the single best source of information on high-income, high-net worth households in the US. The survey is administered by the University of Michigan Survey Research Center on behalf of the Federal Reserve Board. The survey is administered to two sets of households, the first comprising a randomly chosen subsample of all US households, and the second comprising a stratified random sample that oversamples those with high income and high net worth. The stratified sample is drawn from a sub-population that is identified on the basis of tax returns and residential zip codes. Further information on the Survey of Consumer Finances (SCF) may be found in Kennickell et al. (1997).

The survey question that provides information on inter-household transfers asks whether the responding household made contributions in the previous year to support anyone living outside the household. Gale and Scholz (1994) show that in the 1986 SCF, and Poterba (2000) confirms that in the 1995 SCF, the value of reported transfers in support of individuals in other households is substantially greater than the support that individuals report receiving from outside their



household. The present study focuses on the ‘gifts given’ question, which yields the higher estimate of inter vivos giving.

Unfortunately, the SCF does not include detailed questions about the financial status of the *children* of the respondent household. The data do not even include crude proxies for economic status of children, such as their education. This makes it impossible to test many rich models of intergenerational transfer behavior that involve parental altruism and compensatory transfers from parents to their economically least successful children. The empirical results presented here may nevertheless provide some guidance for future estimation of models using richer data sets that include this information. The Health and Retirement Survey and the AHEAD survey, which have been studied in McGarry (1999), do provide data on the children’s characteristics, and they permit a richer analysis of bequests and inter vivos transfers.

In studying the probability of making a gift, it seems natural to stratify households by their net worth. There are several potential definitions of net worth, however, that might be used for this purpose. The ‘standard’ definition is simply the reported value of household assets, less debt and other liabilities. A second definition considers the face value of life insurance held by the household. An individual with ‘standard’ net worth below the \$600 000 threshold for estate tax liability, but with a substantial term life insurance policy that would be payable to his heirs if he died, could leave a taxable estate. This possibility can be addressed by including the face value of term life insurance policies in net worth. (In some cases, the life insurance policy may be held in a trust or otherwise outside the estate. The SCF does not include sufficiently detailed information to address this issue.) I also consider a third definition of net worth that corresponds to ‘standard’ net worth exclusive of housing equity. The reason for this exclusion is that households may be less willing to make inter vivos transfers when most of their wealth is in their home, since this might involve borrowing against housing equity.

#### *4.1. Summary statistics on giving rates*

Table 7 presents basic tabulations from the SCF. The cells are stratified by the age of the household head as well as by household net worth. Each entry reports the probability of making an inter vivos gift of at least \$10 000, as well as the standard error (in parentheses) of this probability. The table shows that this probability is strongly related to net worth. In some but not all net worth categories, this probability increases with the age of the household head. The probability of making such gifts is higher for households with net worth above \$600 000, the federal estate tax threshold, than for those with net worth below this level. This could be interpreted as evidence that the estate tax induces households that may face it to make greater inter vivos gifts. It could also, however, simply reflect a positive wealth elasticity of gift giving.

The most important conclusion to emerge from the table is that most house-

Table 7  
Probability of making inter vivos gifts of more than \$10 000: 1995 SCF, all households<sup>a</sup>

Age of Household Head	<\$600k	\$600k–1.2M	\$1.2M–2.4M	>\$2.4M
Net worth defined including face value of life insurance				
<55	0.9% (0.3)	7.3% (1.0)	3.8% (1.7)	15.2% (2.4)
55–64	1.7 (0.6)	3.2 (1.9)	10.1 (3.1)	20.6 (3.6)
65–74	1.1 (0.6)	8.8 (2.4)	13.0 (3.4)	32.9 (3.8)
>74	1.4 (0.7)	9.0 (2.9)	1.2 (6.9)	41.4 (5.7)
Net worth defined excluding home equity				
<55	1.3 (0.2)	1.5 (1.9)	10.8 (2.9)	24.2 (3.4)
55–64	1.7 (0.6)	5.9 (2.7)	15.5 (3.8)	21.4 (4.3)
65–74	1.4 (0.6)	5.6 (2.8)	20.8 (4.2)	41.3 (4.5)
>74	1.7 (0.6)	3.5 (3.6)	19.3 (7.5)	35.3 (6.1)
'Standard' net worth				
<55	1.3 (0.3)	1.6 (1.6)	7.0 (2.6)	22.3 (3.1)
55–64	1.7 (0.6)	5.4 (2.3)	8.9 (3.4)	24.2 (4.0)
65–74	1.2 (0.6)	9.9 (2.5)	15.1 (3.8)	36.6 (4.1)
>74	1.4 (0.7)	9.6 (3.0)	8.7 (6.6)	38.3 (5.9)
Net worth including face value of life insurance, only households with children				
<55	1.1 (0.3)	8.1 (1.2)	3.1 (2.0)	14.9 (2.8)
55–64	1.8 (0.7)	3.5 (2.1)	12.8 (3.8)	22.3 (4.0)
65–74	1.2 (0.7)	9.6 (2.7)	10.6 (3.8)	31.5 (4.2)
>74	1.7 (0.8)	9.6 (3.2)	1.2 (7.7)	42.5 (6.3)
Standard net worth, probability of making any gift				
<55	13.5 (0.8)	19.8 (4.4)	18.7 (7.9)	35.6 (8.5)
55–64	13.1 (1.6)	18.7 (6.4)	27.6 (10.1)	39.0 (10.9)
65–74	11.5 (1.6)	29.5 (6.9)	22.2 (10.4)	44.6 (10.7)
>74	9.4 (1.9)	11.9 (8.1)	9.2 (17.6)	48.8 (15.7)

<sup>a</sup> Source: Author's tabulations based on 1995 Survey of Consumer Finances.

holds, even those with net worth high enough to virtually insure that their estate will be taxable, do not make large inter vivos transfers. The first sub-panel of the table defines net worth inclusive of the face value of life insurance. In this sub-panel, the cell that exhibits the highest probability of making an inter vivos transfer of more than \$10 000 is that for households headed by someone over the age of 74, with a net worth of more than \$2.4 million. This net worth threshold is twice the wealth level at which a couple could imagine avoiding estate tax liability through the use of the unified estate and gift tax credit. For this group, only 41.4% of the households made inter vivos gifts totaling at least \$10 000. These transfer rates are consistent with those in other surveys. In particular, McGarry (1999) reports that in the Health and Retirement Survey, 30% of respondent households report making inter vivos transfers to their children. The probability of inter vivos transfers is 26% in the AHEAD database, which includes older households.

The next subpanel in Table 7 excludes home equity from the definition of net worth. The results are similar to those for the first definition of net worth, although in the higher net worth categories, the probabilities of giving tend to be higher than in the first sub-panel. This may reflect the greater liquidity of non-housing wealth, and the greater ease with which households with substantial non-housing wealth can make inter vivos transfers.

When household net worth is defined exclusive of life insurance, as shown in the third panel of Table 7, the probability of making an inter vivos transfer rises slightly in comparison to the first panel, which defined net worth as inclusive of life-insurance. For households with at least \$2.4 million in net worth, and with a household head aged 65–74, the probability of making at least \$10 000 in inter vivos gifts is 36.6%. The point estimate of the probability of such gifts is lower for other age groups in the same net worth category. The standard errors for the estimated probabilities make it impossible to reject the hypothesis that the probability of making a transfer of at least \$10 000 is equal for those households headed by someone under the age of 65, and those households with an older household head.

For most definitions of net worth, the probability of making a gift when the household head is over the age of 65 is greater than that for younger households. For example, consider households with net worth of between \$600 000 and \$1.2M, defined inclusive of home equity but exclusive of the face value of life insurance proceeds. These results are shown in the third panel of Table 7. The probability of making at least \$10 000 in gifts rises from 1.6% for households headed by someone under the age of 55, to 5.4% at ages between 55 and 64. The probability rises again for those in the 65–74 age group, to 9.9%, and it declines slightly (to 9.6%) for those over 75. The probability of making gifts of \$10 000 or more is much lower for those households with net worth of less than \$600 000 than for those with net worth above this level. Regardless of the definition of net worth, this probability never rises above 1.8%.

The low giving probabilities observed among the highest net worth categories

can not be explained by the absence of potential recipients for gifts from these households. The fourth sub-panel of Table 7 shows that when the sample of households is restricted to those with children, the probabilities of gifts in excess of \$10 000 actually *decline* for the highest age categories in the upper net worth strata. Only one of the giving probabilities exceeds one third when we restrict the sample in this way.

The last panel in Table 7 investigates whether there are many households making gifts that are smaller than \$10 000 per year. The previous focus on gifts of more than \$10 000 in aggregate includes some taxable gifts as well as many non-taxable gifts. A married couple with two children, for example, could make \$40 000 in tax-exempt gifts. Lowering the threshold on gift size raises the probability that a household is included as a gift-giver, but it also introduces many households that are making only tax-exempt gifts.

The results in the last panel of Table 7 show that the probability of making any gift is modestly greater than the probability of making a gift of at least \$10 000. However, the probability of making a gift is still below 50% for all age-net worth cells, and it is below 30% for all cells that involve net worth of less than \$2.4 million. The probability ranges from 35% to 49% for those with net worth above \$2.4 million. The results in Table 7 thus suggest that a significant fraction of households with substantial net worth are not taking advantage of opportunities to use inter vivos gifts as a method of estate tax reduction.

One qualification to this conclusion is that the data in Table 7 pertain only to gifts in a single year. It is possible that most high net worth households make gifts, but that not all households make gifts in every year. This could lead to results like those in Table 7. In the extreme case, if each household made a substantial gift every third year, the results would look roughly like those in Table 7 even though all high net worth households would be engaged in gifting programs. There is no way to resolve this issue with ‘snapshot’ data like that in the Survey of Consumer Finances.

Even if households are making gifts in some years but not others, however, the results constitute an important challenge to models in which households optimize their transfers to reduce their estate tax liabilities. For many high net worth households, especially those with net worth in excess of \$2.4 million and with household heads over the age of 65, the likelihood of making tax-free gifts that eliminate the household’s estate tax liability is low, even if gifts are made in every year. Thus, a tax-minimizing gifting program by such households would involve giving in every year, and it cannot be reconciled with patterns like those in Table 7.

The results in Table 7 cast doubt on Adams (1978) hypothesis that individuals who would face the estate tax if they died use gifts to effectively equalize the marginal tax burdens from the estate tax and the gift tax. They are more supportive of Kuehlwein’s (1994) conclusion that potential decedents are giving up potential tax savings by not taking greater advantage of opportunities for inter vivos giving through both taxable and tax-free gifts.

#### 4.2. *Giving models with further control variables*

To provide further insight on the factors that are associated with inter vivos giving, I estimated probit equations for two indicator variables for gift-giving behavior. The first is an indicator for whether the household made any inter vivos gifts; this corresponds to the variable used to define the probabilities in the last panel of Table 7. The second indicator variable corresponds to inter vivos giving in excess of \$10 000 times the household's number of children. Since the SCF does not collect information on who received gifts made by the responding household, an indicator variable for gifts of at least \$10 000 times the number of children does not necessarily capture large gifts to children. It merely indicates that Gifts/Children was at least \$10 000.

The probit equations permit controls for factors that may affect the probability of giving but are not included in Table 7. The probits that I estimate include three indicator variables for different levels of household net worth, corresponding to the levels in Table 7, as well as an indicator variable for whether the household is married. The equation also includes the age of the younger spouse for married households, or the age of the household head for single households. Some specifications also include three variables designed to capture the effect of portfolio composition, and liquidity effects, on the probability of inter vivos giving. These variables correspond to the amount of financial assets, the share of housing equity, and the share of business equity in household net worth.

Table 8 reports the results of estimating weighted probit models, where the weights are the sampling weights for the SCF respondents. 'Standard' net worth is used in all of these models. The sample is limited to those households with children, even though it would be possible to estimate the models in the first two columns, with an indicator for any giving as the variable to be explained, on a larger sample. The results of estimating this model on the broader data set are very similar to those for the sample with children.

The results in Table 8 broadly confirm the findings in the earlier table. There is a clear link between household net worth and giving behavior, and the probability of giving is higher for those households whose net worth exceeds the level at which their estates would become taxable. There is also some evidence that household asset composition matters for the probability of inter vivos giving. Households with more financial assets are more likely to make inter vivos gifts.

The coefficients reported in Table 8 are the parameters of the probit model, and they must be translated to obtain estimates of the derivative of the probability of making a transfer as a function of the explanatory variables. The results in the fourth column of Table 8, for example, imply that a shift from net worth between \$600 000 and \$1.2 million, to net worth of more than \$2.4 million, raises the probability of making transfers of at least \$10 000 per child by 9.2 percentage points. The effects of most of the other explanatory variables are substantively small. An increase of 10 years in the age of the younger spouse, for example, raises the analogous gift-giving probability by only 0.15 percentage points. A

Table 8  
 Probit models for probability of inter vivos transfers, 1995 survey of consumer finances<sup>a</sup>

Explanatory variable	Any reported gifts?		Per child gifts >\$10 000	
Constant	-1.228 (0.115)	-1.181 (0.118)	-2.919 (0.374)	-2.905 (0.364)
Net worth 600k–1.2M	0.284 (0.134)	0.274 (0.137)	0.164 (0.227)	0.135 (0.233)
Net worth 1.2M–2.4M	0.299 (0.144)	0.281 (0.147)	0.604 (0.273)	0.556 (0.278)
Net worth >2.4M	0.868 (0.100)	0.810 (0.128)	1.371 (0.173)	1.240 (0.227)
Married?	0.032 (0.070)	0.013 (0.071)	-0.092 (0.205)	-0.112 (0.207)
Age of younger spouse	0.0015 (0.0020)	0.0011 (0.0020)	0.008 (0.006)	0.008 (0.006)
Wealth share in financial assets		$2.4 \times 10^{-8}$ $(1.2 \times 10^{-8})$		$2.0 \times 10^{-8}$ $(0.8 \times 10^{-8})$
Wealth share in home equity		-0.016 (0.018)		-0.009 (0.028)
Wealth share in business		-0.071 (0.174)		0.192 (0.397)
Log <i>L</i>	-1363.52	-1354.2	-137.61	-138.01

<sup>a</sup> Source: Author's estimates based on 1995 Survey of Consumer Finances. See text for further discussion. Net worth variable is the 'standard' variable as discussed in the text. Sample size is 3484 households. Robust standard errors are shown in parentheses.

\$100 000 increase in household financial assets raises the probability of giving by less than one one-hundredth of 1%.

The cross-sectional data presented above provide some support for the hypothesis that households that are more likely to face estate taxes are more likely to engage in inter vivos giving. These findings are consistent with McGarry's (1999, 2001) findings on the use of \$10 000 per year gifts by households in the AHEAD data file who have net worth greater than the threshold at which they would face estate taxation. The AHEAD and SCF samples are different; AHEAD does not attempt to over-sample high net worth households. This confirmation is therefore contains some information. Whether the higher probability of transfers at net worth levels above the estate tax threshold can be attributed to the incentive effects of the estate tax, or whether it is simply the result of a positive net worth elasticity of transfer-making, is unclear. Since the estate tax is a non-linear function of household net worth at the time of death, it is difficult, if not impossible, to separately identify the effects of net worth and estate tax rates on giving behavior.

These findings can be compared with much older results from special Treasury tabulations of estate tax returns in 1945, 1951, 1957 and 1959, as reported in Pechman (1987). These data show that among millionaire decedents in these years, the fraction of wealth transferred with lifetime gifts ranged from 9% (1957) to

24% (1945). Although these special tabulations suggest a decline in the importance of gifts between 1945 decedents and 1959 decedents, subsequent tabulations have not revisited this question. Shoup (1966) reports similar evidence suggesting the very limited use of gifts by high net worth households. His results were also based on special Treasury files compiled in the late 1950s and early 1960s. In combination with the results presented here, these studies suggest that limited use of inter vivos gifts has been a persistent feature of transfer behavior by high net worth households.

## 5. Inter vivos giving and the value of basis step-up at death

The foregoing discussion described the tradeoff between capital gains tax liability and estate tax liability for individuals who own appreciated assets. The illustrative calculations suggest that taxable gifts typically dominate bequests as a means for transferring resources, even when transfer at death provides step-up of basis for capital assets. The net tax incentive for taxable gifts depends on the ratio of the asset basis to its current market value. Since different households hold portfolios with different amounts of unrealized capital gains, there should be variation within the population in the incentive to make taxable gifts by selling appreciated assets or transferring these assets to beneficiaries.

While no publicly available data set contains detailed information on the purchase price of assets for a wide range of portfolio assets, the Survey of Consumer Finances does contain some information on the total amount of unrealized gains held by responding households. SCF respondents are asked about the purchase price of their owner-occupied home, the cost basis of their investment real estate, the tax basis in any closely held businesses, and the current market value and approximate appreciation since time of purchase on corporate stock and mutual funds. These questions can be used to construct an estimate of a household's unrealized capital gains, and therefore of the variables  $B$  and  $V$  in Eq. (4) above. Poterba and Weisbenner (2000) use these data to develop estimates of the relative revenue yields of the current estate tax and an income tax on unrealized capital gains at death.

The ratio of a household's total current asset value to its total basis value is a noisy measure of its incentive to take advantage of basis step-up. This incentive depends on the basis of a *particular* asset relative to its current value. Some households with substantial unrealized gains may have some assets that could be used for gift giving without triggering capital gains tax liability, and this weakens the power of the empirical test. For households with closely held businesses or other assets that represent a significant share of their net worth, however, the total ratio of basis to asset value may have substantial predictive value for gift-giving incentives.

To explore the effect of asset basis on gift-giving behavior, I add the variable

( $B/V$ ) to the probit models for inter vivos giving. Table 9 presents the results from estimating equations like those in Table 8, but including this additional variable. The results provide mixed support for a link between unrealized capital gains and gift-giving behavior. While there is a statistically significant effect in the predicted direction on the probability of making gifts of at least \$10 000 per child, the coefficient on ( $B/V$ ) in the equation for the probability of making any gift is opposite signed, and nearly statistically significant. Households with a higher basis, *conditional on their net worth*, are more likely to make large inter vivos gifts, even though such households appear less likely to make small gifts.

The interpretation of these findings hinges critically on the distinction between households that are making large inter vivos gifts and households that are not making such gifts. The dependent variable ‘per child gifts >\$10 000 per year’ is simply one way of identifying the subset of households that are engaged in substantial gifting programs. Why are some households making substantial gifts while others are not, conditional on net worth? One explanation is that some households have access to better estate planning advice than others, and that those

Table 9  
Probit models for probability of inter vivos transfers, including basis ratio variable, 1995 survey of consumer finances<sup>a</sup>

Explanatory variable	Any reported gifts?		Per child gifts >\$10 000	
Constant	-0.952 (0.164)	-0.906 (0.169)	-3.073 (0.417)	-3.101 (0.405)
Net worth	0.271	0.270	0.164	0.138
600k–1.2M	(0.134)	(0.137)	(0.228)	(0.233)
Net worth	0.295	0.287	0.609	0.561
1.2M–2.4M	(0.144)	(0.147)	(0.273)	(0.277)
Net worth	0.848	0.804	1.392	1.257
>2.4M	(0.101)	(0.129)	(0.170)	(0.219)
Married?	-0.018 (0.072)	-0.019 (0.073)	-0.104 (0.211)	-0.108 (0.210)
Age of younger spouse	-0.0001 (0.0021)	-0.0003 (0.0021)	0.009 (0.006)	0.009 (0.006)
Wealth share in financial assets		$2.7 \times 10^{-8}$ ( $1.2 \times 10^{-8}$ )		$1.9 \times 10^{-8}$ ( $0.8 \times 10^{-8}$ )
Wealth share in home equity		-0.022 (0.021)		-0.007 (0.030)
Wealth share in business		-0.141 (0.176)		0.232 (0.393)
Ratio of basis to market value of assets	-0.191 (0.101)	-0.219 (0.105)	0.188 (0.072)	0.192 (0.075)
Log $L$	-1349.46	-1348.21	-137.61	-137.56

<sup>a</sup> Source: Author’s estimates based on 1995 Survey of Consumer Finances. See text for further discussion. Net worth variable is the ‘standard’ variable as discussed in the text. Sample size is 3394 households. Robust standard errors are shown in parentheses.



who receive such advice engage in gifting programs. In this scenario, finding that the better-advised households are more sensitive to income tax and estate tax incentives is not surprising. The results can be viewed as suggesting that a subset of high net worth households search, as the foregoing analysis suggests, for the type of corner solutions that maximize intergenerational wealth transfer net of taxes.

Alternatively, it may be that large inter vivos gifts are not related to financial and tax planning, but rather are the result of family circumstances or other factors that make some high net worth households more generous than others. In this case the finding that asset basis relative to market value is correlated with giving patterns is difficult to explain, and it could be the result of an unexplained third factor that is correlated both with asset appreciation and with inter vivos giving. This is an issue that warrants further exploration. It may be possible to use data linking estate tax returns to the income tax returns of the decedent, such as that studied by Auten and Joulfaian (1998), to explore this issue.

## 6. Conclusion

Nearly two thirds of the elderly households for whom the estate tax may loom as a potential burden are *not* making transfers that would substantially reduce their estate taxes, and increase the net-of-tax bequest received by their heirs. While Cooper (1979) and others have argued that the estate tax is a ‘voluntary tax,’ it appears that for some reason, a substantial group of potential estate tax payers is not taking action to avoid the tax.

This paper focuses on documenting this finding and the relationship between household portfolio structure and the level of inter vivos giving. It does not explore new theoretical models. The results call for further attention to why households are reluctant to make inter vivos transfers rather than transfers-at-death. The results call into question simple models of altruistic behavior in which household utility depends on the net-of-tax wealth that can be transferred to the next generation. Richer specifications of preferences are clearly needed to explain the behavior of at least some part of the high net worth population. Several theoretical approaches might warrant future attention.

One possibility is that older households are concerned that they may need their resources to finance their own consumption. Potential medical costs appear to figure particularly prominently in such discussions. Kemper and Murtaugh (1991) show that 43% of those reaching age 65 in 1990 will spend some time in a nursing home before they die, and that more than half of this group will be in a nursing home for at least 1 year. Roughly 8% of those turning 65 should expect a nursing home stay of at least 5 years before they die.

The link between long-term care costs and inter vivos giving requires further study. For many lower income households, Medicaid pays for the costs of

long-term care, but for households with wealth above the estate tax threshold, this is not a relevant factor. It would seem that for some higher net worth households, however, there is little danger of being unable to afford medical care even if the household pursues an active program of intergenerational transfers. McGarry (2000) presents some data from the AHEAD survey showing that high net worth households who make substantial lifetime gifts are more likely to have long-term care insurance than households who do not make such gifts

A second potential explanation is that the wealthy older households are not convinced that their children will make appropriate use of funds that they might receive as a gift. This is a stronger argument against making transfers to children in their teens or 20s than against transfers to households in their 40s. Since most of the children of elderly households in which the head is at least 75 years old will be at least 40, this does not seem like a satisfactory explanation. A particular case of this explanation is that some elderly households may not be particularly altruistic with respect to their children. Laitner and Juster's (1996) survey suggests that altruism is not universal among older households that participate in TIAA-CREF, and McGarry (2000) presents similar evidence from the HRS and AHEAD surveys. These findings are consistent with the limited use of inter vivos transfers in the data analyzed here.

A third possibility, which may apply to some share of the very high net worth households, is that older households have better investment return opportunities available to them than their children do. If the parents are more astute financial managers than their children, they may rationally defer transferring assets to maximize the amount that children receive. There is little evidence on this question. It would be useful to attempt to measure the intergenerational transmission of investment behavior.

A final possibility is that high net worth households are not convinced that the current estate and gift tax rules, and income tax rules, will remain stable in the future. A taxpayer who believes that the estate tax may be eliminated in the future might choose not to make inter vivos gifts in the hope that the tax laws would change before he died. Unfortunately, I am not aware of any survey that collects information on respondents' expectations about future tax policy. There are some recent papers in the tax practitioner literature, however, such as VanDenburgh et al. (2000), that explicitly raise the issue of whether giving is appropriate in light of future tax policy uncertainty. However, when the 1995 Survey of Consumer Finances data that are used in this study were collected, the likelihood of estate tax repeal was significantly lower than it seems to be today.

Understanding what determines inter vivos gifts is important for testing models of intergenerational linkages, and it also has implications for the revenue impact of the estate tax. Bernheim (1987) suggested that inter vivos giving motivated by the estate tax could transfer income-producing assets from households with high marginal tax rates to those with low marginal rates, and result in a net reduction of federal income tax revenues. Page (1996) provides intriguing evidence on how tax

rates affect giving behavior, using cross-state differences in gift tax rates for the US states. Joulfaian (1998a,b) reports that when the federal estate and gift tax were unified in 1976, raising the effective tax rate on gifts, there was a sharp increase in gifts before the new higher tax rates took effect. Searching for additional sources of plausibly exogenous variation in the tax rates on gifts and bequests, and using such variation to study the elasticity of gift-giving, is a natural direction for further work.

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