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ANALYSIS OF CARRYOVER AND STEPPED-UP BASIS PROVISIONS ON THE TAXATION OF PROPERTY TRANSFERS

(Abstract)

The purpose of this research is three-fold: (1) to quantify the income and transfer tax savings from making a lifetime as compared to an at-death transfer under both the post - 1976 carryover basis and stepped-up basis provisions, (2) to determine whether the carryover basis or stepped-up basis provisions better accomplish Congress's objective -- that is, the elimination of substantial differences in the tax treatment of lifetime and at-death transfers, and (3) to analyze the optimal times property transfers should be made under both provisions.

Two models were developed to compute both income and transfer tax savings from making a lifetime as compared to an at-death transfer. Simulation of random samples of taxpayers was employed to gather evidence on the preceding three objectives with respect to transfers within the family unit.

Contrary to commonly held views, it was found that the stepped-up basis provisions when compared to the carryover basis provisions provide a system which better achieves Congress's objective for taxing property transfers. First, the stepped-up basis provisions substantially reduce the potential tax savings from lifetime as compared to at-death transfers within the family unit. Second, in comparison to the carryover basis provisions, the stepped-up basis law allows the transferors to retain their property longer while still optimizing tax savings.

Analysis of the Carryover and Stepped-Up Basis Provisions on the Taxation of Property Transfers

1. Introduction

In 1976, the inequality between the tax treatment of lifetime and at-death transfers was the target of major legislative reform in the tax law. The Committee on Ways and Means stated:

> As a matter of equity, your committee believes the tax burden imposed on transfers of the same amount of wealth should be substantially the same whether the transfers are made both during life and at death or made only upon death.[1]

Prior to 1976, the tax law provided a decided preference for lifetime transfers (gifts). The inequality resulted in tax savings primarily for the wealthy because only they could generally afford to give substantial portions of their property during their lifetimes.

The Tax Reform Act of 1976 made several major hanges. It created a unified tax on lifetime and at-death transfers whereby lifetime tranfers and at-death transfers are taxed cumulatively with a single progressive rate structure. Post-1976 taxable gifts made during the life of the decedent are added to his/her taxable estate to form the estate tax base. The estate receives a tax credit for post-1976 gift taxes the decedent paid.

Furthermore, the Tax Reform Act of 1976 eliminated a large portion of the disparity between the donee's basis in property received as a gift and the beneficiary's basis in inherited property. It provided that the basis of any asset acquired from a decedent dying after December 31, 1976, is the adjusted basis of the asset immediately before the death of the decedent, subject to certain exceptions, limitations

and adjustments. In other words, the decedent's basis is said to "carry over" to the beneficiary. Similarly, if the property had been transferred through a gift made during the decedent's lifetime, the donee would assume the donor's adjusted basis in the property.[2] Thus, after the phase-in period, the basis rules for gifted and inherited property were to be practically equivalent.

The Revenue Act of 1978 [P.L. 95-600] postponed the effective date of the carryover basis provisions so that they would apply only to property acquired from decedents dying after December 31, 1979. After what may be described as almost a public outcry, Congress retroactively repealed the carryover basis provisions in April 1980.[3] Thus, under current law, the basis of property transferred through the estate is its fair market value at the date of death (stepped-up basis)[4] but the carryover basis rules apply to gift properties.

The Treasury Department contended that the carryover basis provisions were a significant step toward a more equitable tax treatment of wealth transfers. It argued that the stepped-up basis law discriminated against different forms of wealth accumulation. Under the stepped-up basis valuation method, wealth accumulated from aftertax dollars is subject to both the estate and income tax whereas wealth accumulation in the form of unrealized appreciation is subject only to the estate tax. In other words, under the stepped-up basis provisions, when a sale of property is made before death, the appreciation is subject to Federal and state income taxes. However, if the sale could be postponed until after the owner's death, the basis would be stepped-up to its value at date of death and the pre-death appreciation would escape income taxes. On the

other hand, under the carryover basis provisions, the previously untaxed pre-death appreciation is subject to income tax upon ultimate sale of the property.

The carryover basis provisions stimulated much controversy within the House of Representatives. In response to the widespread criticism that the carryover basis provisions were extremely complex and administratively unworkable, the Treasury Department worked with the professional tax community and members of Congress to develop a package to simplify the rules. In spite of these efforts, the carryover basis rules were repealed.

As expected, the Treasury Department strongly opposed the repeal. It argued that

> ...it was wrong to keep the liberalizing amendments and reductions in the Code while postponing the effective date (and ultimate repeal) of the carryover provisions meant to tighten the law and promote equity.[5]

2. Purpose of Research

The purpose of this research is threefold: (1) to quantify the income and transfer tax savings (increases) from making a lifetime as compared to an at-death transfer under both the post-1976 carryover basis and stepped-up basis provisions, (2) to determine whether the carryover basis or stepped-up basis provisions better accomplish Congress' objective--that is, the elimination of substantial differences in the tax treatment of lifetime and at-death transfers, and (3) to analyze the optimal times property transfers should be made under both provisions.

Two models are developed to compute both income and transfer tax savings (or increase in taxes payable) from making a lifetime transfer

as compared to an at-death transfer. The tax advantages and tax disadvantages of making property transfers are quantified in each model. The carryover basis method of valuation is assumed in the first model whereas the stepped-up basis provisions are incorporated into the second model. (The actual construction of the models is explained in Appendices A and B.) Simulation of random samples of taxpayers is employed to gather evidence on the preceding three objectives with respect to transfers within the family unit.

Tax Advantages and Disadvantages of Lifetime Transfers

Advantages of Lifetime Transfers

Both tax and non-tax advantages are considered by taxpayers and their advisors. The models, however, incorporate only the tax factors which may be measured in dollar amounts.

First, through a process known as "gift-splitting," the taxpayer and spouse may elect to treat gifts to other parties as if each spouse had given 50% of the property (section 2513). Gift-splitting permits the use of two unified tax credits of $47,000 each. One-half of the value of the property at the date of transfer is added to each spouse's taxable estate. Also, by gift-splitting, the lower unified estate and gift tax rates are used twice. It is assumed in both models that the transferors are married and elect to split all gifts to their children.

Second, the donor may make lifetime transfers of $3,000 annually to each donee totally tax-free (section 2503). These gifts of $3,000 or less are not included in the estate tax computation. If the taxpayer and spouse elect to split gifts, $6,000 per donee may be given annually tax-free.

In addition, the unified tax credit applies first to transfers made during life and then to transfers made through the estate. Due to the time value of money, the earlier the credit is utilized, the greater its present value is to the donor. The unified tax credit of $47,000 per donee allows $175,625 of property to be transferred tax-free.

As found in a previous study, estate holders should take immediate advantage of these two provisions.[6] Thus, it is assumed in the models that lifetime transfers totaling $351,250 for the two spouses combined have already been made and that the gift tax exclusion of $6000 is automatically used each year.

Third, for property transferred during life, the gift tax payable is based upon the fair market value of the property at the date of transfer. The value of the property at the date of gift would be subsequently added to the donor's estate. If the property had not been given during the taxpayer's life, it would be taxed through the estate at its fair market value on the date of death. Thus, by making a lifetime transfer, the appreciation in the value of the property from the date of transfer to the date of death is removed from the donor's estate and is not subject to the estate tax.

Fourth, if property is transferred during life, the dollars used to pay the gift tax are not added to the donor's estate and are not subject to the estate tax. However, the estate can credit gift taxes paid against the estate tax liability. It follows that transfer costs are reduced by an amount equal to the marginal estate tax rate times the amount of the gift tax.

Fifth, if property is transferred during life, the earnings received from the property are taxed at the donee's Federal and state income tax rates. Substantial income tax savings may be realized when the donor is in a high income tax bracket and the donees are in low income tax brackets.

Disadvantages of Lifetime Transfers

First, one major disadvantage of transferring property during lifetime is that the tax must be paid in the year of the gift (sections 6075 and 6151). If the property were held and transferred through the estate, the tax would not be paid until the year of the decedent's death. The present value of the transfer tax is greater when a gift is made because the interest which could be earned on the amount of the gift tax paid is foregone. If a gift were not made, this interest would be subject to Federal and state income taxes and eventually the estate tax.

Second, a disadvantage of making lifetime transfers is that the recipient of the property assumes the owner's basis. Under current law, if the property were transferred through the estate, the beneficiary would receive a stepped-up basis in the property equivalent to the fair market value of the property at the date of death or at the alternate valuation date. When property which has been appreciating is eventually sold, the higher basis results in a greater loss or smaller gain to be recognized by the beneficiary for income tax purposes.

3. Methodology and Data

Model #1 is used to compute the tax savings or tax increase from making a lifetime transfer as opposed to passing the property through

the estate assuming that the carryover basis rules apply. Model #2 is used to compute the tax savings or tax increase which results from making a lifetime transfer as opposed to an at-death transfer of property under current law allowing for fair market valuation at death. Both models are computerized.

The following four hypotheses are tested:

Ho_1: There are no significant tax savings from lifetime transfers under prior law which applies carryover basis to property passed through the estate.

Ho_2: There are no significant tax savings from lifetime transfers under the current stepped-up basis law which applies the fair market valuation method to property passed through the estate.

Ho_3: There is no significant difference between the tax savings from making lifetime as compared to at-death transfers under the carryover basis and stepped-up basis provisions.

Ho_4: There is no significant difference between the optimal times to make lifetime transfers using fair market basis valuation at death as compared to carryover basis.

For purposes of testing these hypotheses, it is assumed that the taxpayer is rational and seeks to maximize his/her potential tax savings by selecting the optimal time to make the gift. Using the standard procedure for optimizing a specified function with respect to the variable of interest, Model #1 and Model #2 are each partially differentiated with respect to n_1 and n_2, the time the gift is made. To solve these nonlinear transcendental equations for n_1 and n_2, Newton's Method of Tangents is used.[7]

The hypotheses are tested by simulating over a randomly-selected set of values. A uniform random number generator[8] is used to select values for those variables having specified probability distributions as shown in Table 1.

[Insert Table 1]

TABLE 1

VALUES AND PROBABILITY DISTRIBUTIONS
FOR VARIABLES IN MODELS

E = decedent's marginal estate tax rate

E	PROBABILITY	E	PROBABILITY
34%	70.77%	53%	0.38%
37%	15.43%	57%	0.31%
39%	5.54%	61%	0.25%
41%	2.66%	65%	0.13%
43%	1.72%	69%	0.04%
45%	1.52%	70%	0.38%[a]
49%	0.87%		

H = surviving spouse's marginal estate tax rate

= values and probability distribution are the same as for Variable E

j = marginal income tax rate on joint return

j	PROBABILITY
49%	80.72%
59%	15.64%
68%	3.22%
70%	0.42%[b]

k = surviving spouse's marginal income tax rate

k	PROBABILITY	k	PROBABILITY
34%	46%	68%	4%
44%	23%	70%	1%[c]
55%	26%		

TABLE 1 FOOTNOTES

[a]Source: Statistics of Income--1976 Estate Tax Returns, p. 37, Table 14.

[1]Note: Since a gross estate of $425,625 generally is not taxable, the lower limit for the gross estate of the first spouse to die is set at $500,000 taxable at a marginal rate of 34%. The data have been adjusted to express the number of taxable estate returns which fall within the marginal estate tax range of 34% to 70%.

[2]Note: In many cases, since the decedents planned their estates under pre-1977 rules, the data show lower proportions of estates in the higher tax brackets as compared to what the tax base would have been under the current integrated formula. Prior to 1976, lifetime transfers were not included in the tax based for determining the estate tax. Higher marginal estate tax rates increase the tax savings from making lifetime as compared to at-death transfers.

[b]Source: Statistics of Income--1978 Individual Tax Returns, p. 16, Table 2. The data have been adjusted to express the percent of joint returns filed in 1978 by marginal Federal income tax rate.

[c]Source: Statistics of Income--1978 Individual Tax Returns, p. 19, Table 2. The data have been adjusted to express the percent of returns filed by surviving spouses in 1978 to correspond to a given marginal Federal income tax rate.

To provide a feasible combination of values for the marginal estate tax rate of the decedent and his/her surviving spouse, the following relationships are maintained in the simulation. Wealth per dollar of income ratios were gathered to establish a relationship between the taxpayer's wealth (marginal estate tax rate) and income tax rates. Similarly, by using wealth/income ratios, relationships between the surviving spouse's marginal estate tax rates and marginal income tax rates were developed in the simulations.

In addition, since the maximum marital deduction is 50% of the adjusted gross estate (section 2056), the surviving spouse generally receives at least one-half of the decedent's estate. Therefore, the surviving spouse's marginal estate tax rate is generally at least equal to and may be greater than the marginal estate tax rate of the first spouse to die, depending upon the percentage of assets owned solely by the surviving spouse.

The probability distributions for the variables listed in Table 2 could not be determined due to insufficient data. For these four variables, the subroutine Beta is used to generate random numbers according to a three-parameter beta distribution.[9] By specifying the most optimistic value, the most pessimistic value and the most likely value for a given variable, the program randomly selects a value from the specified continuous three-parameter beta distribution to be used in the simulation.

[Insert Table 2]

TABLE 2

VARIABLES IN MODELS FOR WHICH BETA DISTRIBUTION IS HYPOTHESIZED

MOST PESSIMISTIC VALUE	MOST LIKELY VALUE	MOST OPTIMISTIC VALUE
a = expected annual rate of appreciation on gift property		
0%	10%[a]	20%
c = recipient's marginal income tax rate		
16%	24%[b]	70%
n = estimated number of years after decedent's death until surviving spouse's death		
1	5[c]	15
r = annual rate of taxable earnings on gift property		
0%	5.3%[d]	20%

[a]For retesting hypotheses, this value is changed to 5% and 15%.
[b]For retesting hypotheses, this value is changed to 49%.
[c]For retesting hypotheses, this value is changed to 10.
[d]For retesting hypotheses, this value is changed to 10% and 15%.

Since the beta distribution is assumed to exist for each of the four variables, estimates of the parameters are varied, new samples obtained, and the four hypotheses retested. In this way, the sensitivity of the tests with respect to these variables can be analyzed.

The remaining variables included in the models are presented in Table 3. The first seven variables are functions of other variables as explained in the table. [A discussion of the variables representing the aftertax rates of return for recipient, spouses and surviving spouse may be found in Appendix A.]

[Insert Table 3]

The marginal gift tax rate is set at 34% for purposes of testing all hypotheses under consideration. A marginal gift tax rate of 34% encompasses a range of gifts totaling up to $1,000,000 which can be made by the transferors. Because gifts made during life must be added to the taxable estate to determine the estate tax base, the marginal estate rate of the decedent and the surviving spouse must be greater than or equal to the marginal gift tax rate for each spouse. Since the lowest marginal estate rates for the decedent and surviving spouse are 34% (Table 1), the necessary relationships among the three variables are presumed.

Each hypothesis established in this paper is tested first in the case where the property subject to the transfer decision is owned one-half by each spouse or fully owned by either the decedent or the surviving spouse. In general, the law requires the inclusion of the full value of a joint interest to be included in the gross estate of the

TABLE 3

VARIABLES IN MODELS WHICH ARE A FUNCTION OF OTHER VARIABLES OR HELD CONSTANT THROUGHOUT THE TESTING OF HYPOTHESES

n_1 = number of years gift should be made before decedent's death under the carryover basis provisions to optimize tax savings (computed by solving the equation of the partial differential for Model #1 with respect to n_1 equated to zero)

n_2 = number of years gift should be made before decedent's death under the stepped-up basis provisions to optimize tax savings (computed by solving the equation of the partial differential for Model #2 with respect to n_2 equated to zero)

s = difference between marginal income tax rates of surviving spouse and recipient
= k - c

t = difference between marginal income tax rates on spouses' joint return and recipient's return
= j - c

w_c = aftertax rate of return for recipient
= (1 - c)r + a

w_j = aftertax joint rate of return for spouses
= (1 - j)r + a

w_k = aftertax rate of return for surviving spouse
= (1 - k)r + a

F = marginal gift tax rate for each spouse
= 34%

X = percent of gift property owned by surviving spouse
50% (initial value)
= 0%
100%

first spouse to die unless it can be established that the surviving spouse contributed all or a part of the consideration for the property (section 2040). If the surviving spouse originally bought the property, 0% of its value is included in the estate of the first spouse to die and vice-versa. A common situation is where each spouse is required to include only 50% of the fair market value of the property in his/her estate. Such is the case in which a qualified joint interest (section 2040) exists or both spouses supplied one-half of the original cost of the property under consideration.

The variable representing the value of the gift property at date of gift factors out of each model; therefore, the value of the gift property does not need to be specified for testing the proposed hypotheses. Instead, the models are developed to calculate the percentage of the gift property valued at the date of gift which results in tax savings or an increase in taxes payable. In other words, the percentage figures (subsequently referred to as tax savings factors) are compared to determine in which cases the greatest tax savings occur.

A total of nine samples consisting of 100 simulations in each sample was obtained. One simulation produces the tax saving factor and optimal time of transfer computed under the carryover basis provisions and also under the stepped-up basis provisions.

The first sample is obtained from data based on the initial values as established for each variable in Tables 1, 2 and 3. Sensitivity analysis is performed by changing the most likely value for the expected rate of appreciation on the gift property, the recipient's marginal

income tax rate, the estimated number of years between the deaths of the transferors and the annual rate of taxable earnings on the gift property according to the scheme as presented in Table 2. Each of the six changes is made independently and constitutes a new sample. Initial data are used for all variables except the one for which the change is made.

An eighth sample is produced in which the percent of property owned by the surviving spouse is set at 100% instead of 50%. In the ninth sample, data for the case in which the surviving spouse owns 0% of the gift property is generated. Likewise, the initial data for all other variables in these two samples are used.

4. Statistical Analysis

Hypotheses #1 and #2

Based upon preliminary test runs, the distribution of tax savings factors under Model #1 (TSF_1) and the distribution of the savings factors under Model #2 (TSF_2) were found to be extremely skewed to the left. Both distributions are continuous and each simulation is independent of the other. From preliminary tests, it is expected that significant tax savings from making a lifetime transfer are produced under both the carryover and stepped-up basis laws. Thus, a one-sided nonparametric Fisher sign test is applied to the data (TSF_1 and TSF_2).[10] The median (M) is the estimator associated with the sign statistic.

Hypothesis #1 is stated as follows:

Ho_1: There are no tax savings from making a lifetime transfer under prior law which applies carryover basis to property passed through the estate.

Ho_1: $M_{TSF_1} = 0$

Ha_1: There are tax savings from making a lifetime transfer under prior law which applies carryover basis to property passed through the estate.

Ha_1: $M_{TSF_1} > 0$

Hypothesis #2 is thus stated:

Ho_2: Under the current stepped-up basis provisions, there are no tax savings from making lifetime transfers.

Ho_2: $M_{TSF_2} = 0$

Ha_2: Under the current stepped-up basis provisions, there are tax savings from making lifetime transfers.

Ha_2: $M_{TSF_2} > 0$

The results of the tests are presented in Table 4. In each of the nine samples, both Hypotheses #1 and #2 are strongly rejected.

[Insert Table 4]

Hypothesis #3

Each simulation performed in this research produces tax savings factors under Model #1 (TSF_1) and under Model #2 (TSF_2). These tax savings are paired because one set of randomly chosen input values is used in each simulation to produce both TSF_1 and TSF_2. The distribution of paired differences between these two output values was found in a preliminary test run to be highly skewed to the left. The Fisher Sign Test was applied to the paired differences (TSF_1-TSF_2) in each of the nine samples to test whether there is a difference between the tax savings under Model #1 and Model #2.

Hypothesis #3 is stated as follows:

Ho_3: Under the carryover basis as compared to the stepped-up basis provisions, there is no difference between the tax savings from making lifetime as compared to at-death transfers.

SUMMARY OF TEST RESULTS FOR HYPOTHESES #1 and #2

Sample[a]	Median % of Tax Savings Carryover Basis Method	Median % of Tax Savings Stepped-Up Basis Method	Level of Significance at which null Hypothesis #1 is Rejected	Level of Significance at which null Hypothesis #2 is Rejected
Initial Sample	16.18%	11.40%	<.0002	<.0002
Variable a (5%)	19.52%	15.74%	<.0002	<.0002
Variable a (15%)	14.42%	9.59%	<.0002	<.0002
Variable c (49%)	11.87%	3.97%	<.0002	<.0002
Variable m (10)	15.97%	11.97%	<.0002	<.0002
Variable r (10%)	18.62%	15.29%	<.0002	<.0002
Variable r (15%)	22.18%	20.33%	<.0002	<.0002
Variable X (100%)	31.50%	25.47%	<.0002	<.0002
Variable X (0%)	4.34%	3.13%	<.0002	<.0013

[a]Note: The samples are designated by the most likely value (shown in parentheses) of the beta distribution for the variable under consideration. Variable a is the annual rate of appreciation on the gift property; c, recipient's marginal income tax rate; m, estimated number of years spouse dies after decedent; r, annual rate of taxable earnings on gift property; and X, percent of gift property owned by the surviving spouse. See footnotes to Table 2.

Ho_3: $M_{TSF_1 - TSF_2} = 0$

Ha_3: The tax savings from making lifetime transfers are greater under the carryover basis provisions than under the stepped-up basis provisions.

Ha_3: $M_{TSF_1 - TSF_2} > 0$

In two of the samples, all 100 of the paired differences were positive. The greatest number of negative values for TSF_1-TSF_2 in any sample was eight. Thus, the null hypothesis that there is no difference between the tax savings under Model #1 and Model #2 is rejected at α-level < .0002 in each of the nine tests. Significantly lower tax savings from making gifts are realizable within the current stepped-up basis system (Model #2) than under the carryover system (Model #1).

Hypothesis #4

The optimal time to make a lifetime transfer is stated in terms of the number of years prior to the death of the first spouse to die. For both the carryover basis and stepped-up basis provisions, the range of optimal years extends from 3.00 o 70.00. The latest time to make a gift is limited to three years prior to the death of the first spouse because the tax treatment for gifts made within this period is essentially the same as if the property were transferred at death (section 2035). In some cases, the optimal time to transfer is infinity. Thus a limit of 70.00 is set which means, in effect, that the property should be transferred at the earliest possible time.

The Fisher Sign test is used to test whether there is a difference between the optimal time (n_1 and n_2) to make lifetime transfers under the carryover basis and stepped-up basis provisions, respectively. Based upon preliminary test runs, the distribution of paired differences ($n_1 - n_2$) was found to be highly skewed to the left; therefore $n_1 - n_2$ is expected to be positive and a one-sided test is applied.

Hypothesis #4 is restated as follows:

Ho_4: There is no difference between the optimal times to make lifetime transfers under the stepped-up basis provisions as compared to carryover basis.

Ho_4: $M_{n_1-n_2} = 0$

Ha_4: The optimal time to make the lifetime trasfer is closer to the decedent's death under the stepped-up basis provisions than under the carryover basis provisions.

Ha_4: $M_{n_1-n_2} > 0$

The sign test is applied to the optimal times produced in each of the previous nine samples. A summary of the statistics is presented in Table 5. Except for the sample in which the surviving spouse owns 0% of the property, the null hypothesis is rejected in each sample at α-level < .002; in other words, the transferors are allowed to retain their property longer under the stepped-up basis method while optimizing their tax savings.

[Insert Table 5]

In the sample in which the property under consideration is owned solely by the first spouse to die, 59% of the cases result in a negative difference for the value of $n_1 - n_2$ and 29% of the cases produce a tie. In this situation, the carryover basis system allows the transferors to retain their property longer to optimize their tax savings. Recall from the preceding analysis that in general it is more beneficial to give property away which is owned one-half by each spouse or totally owned by the surviving spouse. Although tax savings result from transferring property owned solely by the first spouse to die, other forms of ownership of gift property maximize tax savings.

TABLE 5

SUMMARY OF TEST RESULTS FOR HYPOTHESIS #4

Sample[a]	Median No. of Years Carryover Basis (Range)	Median No. of Years Stepped-Up Basis (Range)	Level of Significance at which null Hypothesis #4 is Rejected
nitial Sample	11.5 (3.0 - 35.0)	7.5 (3.0 - 34.8)	< .0002
ariable a (5%)	17.8 (3.3 - 42.5)	14.1 (3.0 - 40.1)	< .0002
ariable a (15%)	9.1 (3.0 - 34.5)	5.4 (3.0 - 32.3)	< .0002
ariable c (49%)	7.3 (3.0 - 70.0)	3.0 (3.0 - 70.0)	< .0002
ariable m (10%)	11.8 (3.0 - 35.3)	7.6 (3.0 - 33.9)	< .0002
ariable r (10%)	12.4 (3.0 - 35.7)	10.2 (3.0 - 70.0)	< .0002
ariable r (15%)	14.1 (3.0 - 37.4)	13.9 (3.0 - 70.0)	< .0002
ariable X (100%)	5.9 (3.0 - 15.6)	4.0 (3.0 - 12.1)	< .0002
ariable X (0%)	24.5 (6.1 - 70.0)	70.0 (3.0 - 70.0)	> .9998

[a]Note: The samples are designated by the most likely value (shown in parentheses) f the beta distribution for the variable under consideration. Variable a is the nnual rate of appreciation on the gift property; c, recipient's marginal income tax ate; m, estimated number of years spouse dies after decedent; r, annual rate of tax- ble earnings on gift property; and X, percent of gift property owned by the surviving pouse. See footnotes to Table 2.

5. Summary and Conclusions

One major Congressional objective for the enactment of the Tax Reform Act of 1976 was "...to tax transfers of the same amount of wealth as substantially the same whether the transfers are made both during life and at death or made only upon death."[11] Significant tax savings are realizable from making lifetime transfers regardless of whether the carryover basis method of valuation (originally part of the Tax Reform Act of 1976) or the stepped-up basis method is employed. Sensitivity analysis was performed with respect to five variables. The conclusion that tax savings result from making lifetime transfers was not affected by changes made in the hypothesized distributions for the expected rate of appreciation on the gift property, recipient's average marginal income tax rate, number of years between deaths of the transferors, taxable rate of earnings on the gift property and percent of property owned by the surviving spouse.

The median tax savings under the fair market valuation method, however, were found to be less than under the carryover basis provisions. In other words, although the current law (stepped-up basis) does not eliminate the bias favoring lifetime transfers, in comparison with carryover basis it reduces the potential tax savings from making a lifetime as compared to an at-death transfer. Contrary to the arguments of the Treasury Department, the stepped-up basis law provides a system which better achieves Congress' objective by lessening the advantages to the family unit of those factors favoring lifetime transfers.

A second Congressional concern during the time of the enactment of the Tax Reform Act of 1976 was that "...preferences for lifetime transfers are not generally available for those of small or moderate wealth since they generally want to retain their property until death to assure financial security during lifetime."[12] In general, to optimize tax savings, the stepped-up basis provisions allow the transferors to retain their property longer than under the carryover basis law.

In summary, based upon the two Congressional criteria explored in this research, evidence supports the conclusion that the stepped-up basis provisions produce a more equitable system for taxing property transfers.

APPENDIX A

MODEL #1
CARRYOVER BASIS PROVISIONS

G is factored out of the equation

PART A

$$G\left[(1-X)\left[\frac{(1+a)^n-1}{2}\right]E\left(\frac{1}{(1+w_c)^n}\right)+X\left[(1+a)^{n+m}-1\right]H\left(\frac{1}{(1+w_c)^{n+m}}\right)\right.$$

PART B

$$+\left[\frac{\frac{F}{2}(1+w_j)^n}{2}\right]E\left(\frac{1}{(1+w_c)^n}\right)+\left[\frac{F}{2}(1+w_j)^n\left(\frac{1}{(1+w_c)^n}\right)\right.$$

$$\left.\left.+\left[\frac{F}{2}(1+w_k)^{n+m}\left(\frac{1}{(1+w_c)^{n+m}}\right)-\frac{F}{2}(1+w_k)^n\left(\frac{1}{(1+w_c)^n}\right)\right]\right]H$$

PART C

$$+(1-X)\left[rt\left(\frac{1-\frac{1}{(1+w_c)^n}}{w^c}\right)\right]+X\left[rt\left(\frac{1-\frac{1}{(1+w_c)^n}}{w_c}\right)\right.$$

$$\left.+\left[rs\left(1-\frac{1}{\frac{(1+w_c)^{n+m}}{w_c}}\right)-rs\left(\frac{1-\frac{1}{(1+w_c)^n}}{w_c}\right)\right]\right]$$

PART D

$$+ \quad (1-X) \left[\frac{r\left(\frac{(1+w_j)^n-1}{w_j}\right) \; E \left(\frac{1}{(1+w_c)^n}\right)}{2} \right] + \quad X \left[r\left(\frac{(1+w_j)^n-1}{w_j}\right) \; H \left(\frac{1}{(1+w_c)^n}\right) \right.$$

$$\left. + \quad \left[r\left(\frac{(1+w_k)^{n+m}-1}{w_k}\right) \; H \left(\frac{1}{(1+w_c)^{n+m}}\right) - r\left(\frac{(1+w_k)^n-1}{w_k}\right) \; H \left(\frac{1}{(1+w_c)^n}\right) \right] \right]$$

PART E

$$+ \left[\frac{(1-X)-0.5}{2} \right] \; E \left(\frac{1}{(1+w_c)^n}\right) + \quad (X-0.5) \; H \left(\frac{1}{(1+w_c)^{n+m}}\right)$$

PART F

$$- \left[\frac{F}{2}(1+w_j)^n \left(\frac{1}{(1+w_c)^n}\right) + \left[\frac{F}{2}(1+w_j)^n \left(\frac{1}{(1+w_c)^n}\right) + \left[\frac{F}{2}(1+w_k)^{n+m} \left(\frac{1}{(1+w_c)^{n+}}\right) \right.\right.\right.$$

$$\left.\left.\left. - \frac{F}{2}(1+w_k)^n \left(\frac{1}{(1+w_c)^n}\right) \right] \right] - \frac{F}{2}\left(\frac{1}{(1+w_c)^n}\right) - \frac{F}{2}\left(\frac{1}{(1+w_c)^{n+m}}\right) \right] \right]$$

$$= G[TSF_1]$$

= VALUE OF PROPERTY [TAX SAVINGS FACTOR UNDER CARRYOVER BASIS RULES]

Construction of Model #1

Part A represents the present value of tax savings from making a lifetime transfer due to the removal of appreciation on the property from the transferors' estates. Since the tax savings eventually pass to the recipient, the discount rate incorporates the tax rate of the recipient, w_c. He/she realizes the tax savings at the time the estate is distributed and the equation is used to calculate the value of that amount to him/her at the date the gift is made. The Gordon growth model is used to compute the rate of return on the property which is the average expected aftertax rate over time.[13]

Part B represents the present value of the tax savings which result from making a gift due to the removal of the amount of gift taxes paid from the estate.

Part C represents the present value of the income tax savings which results from making a lifetime transfer of property to a taxpayer in a lower tax bracket. To compare the tax consequences of making a lifetime and at-death transfer, the annual rate of taxable earnings on the property is held the same for both the transferors and recipient.

Part D represents the present value of the tax savings which results from making a gift due to the removal of the annual earnings on the property from the estate.

Part E represents the present value of the tax consequences of gift-splitting.

Part F represents the cost of making a lifetime transfer. It includes the interest foregone on the gift taxes paid until the time of death. Implicit in the models is the assumption that gift taxes

are paid at the date of gift and estate taxes are paid at date of death.

Model #1 incorporates the carryover basis rules. The recipient of the property will acquire the original owner's adjusted basis in the property regardless of the transfer method. Upon the subsequent sale of the property, the recipient will be taxed on essentially the same amount of gain whether the property had been transferred during the lifetime of the owner or through the estate. Therefore, no adjustment is made for this factor in the model.

APPENDIX B

MODEL #2
STEPPED-UP BASIS PROVISIONS

G is factored out of the equation

MODEL #1

MINUS

$$G\left[(1-X)\left[(1+a)^{n}-1\right]\frac{4}{10}\,c\left(\frac{1}{(1+w_c)^{n}}\right)+X\left[(1+a)^{n+m}-1\right]\frac{4}{10}\,c\left(\frac{1}{(1+w_c)^{n+m}}\right)\right]$$

$= G[TSF_2]$

= VALUE OF PROPERTY [TAX SAVINGS FACTOR UNDER STEPPED-UP BASIS RULES]

Construction of Model #2

Model #2 is the same as Model #1 except that it incorporates the tax impact of applying the stepped-up basis provisions for determining the basis of property acquired from a decedent. If property were transferred at death, the entire appreciation to the date of death escapes the income tax upon subsequent sale; whereas, if property were transferred during life, the donee's basis is the same as the donor's. When property appreciates, this factor reduces the tax savings (or increases the tax liability) from making a lifetime transfer.

Since, in the past, the majority of gifts have been capital assets,[14] it is assumed that the taxpayer is taxed at 40% of his/her estimated marginal income tax bracket on the sale of the property. To determine the maximum potential tax savings from making a lifetime transfer, the donor's basis is set equal to the value of the property of the date of gift.

Finally, to compute the maximum tax effects resulting from the use of stepped-up, as compared to carryover basis, the property, whether transferred during life or through the estate, is assumed to be sold shortly after the death of the decedent. If the property were sold at a later date, during times of inflation, the selling price is expected to rise and the transferee would have to pay a greater income tax on the sale. The increase in income taxes, due to the property's appreciation from the date of death to the date of sale, would be the same regardless of whether the property was transferred during life or at death, or whether the stepped-up basis or carryover basis rules apply.

Since the models are designed to compute the difference between the tax savings of a lifetime and at-death transfer, the time of sale after the decedent's death is not crucial.

Footnotes

[1]Report on H.R. 14844.

[2]An adjustment to the donor's basis is permitted. It is limited to that portion of the gift tax attributable to the appreciation above the donor's adjusted basis immediately prior to the gift.

[3]P.L. 96-223.

[4]In the case of property not distributed, sold, exchanged, or otherwise disposed of, within six months after the decedent's death, an election may be made to value the property as of the date six months after the decedent's death.

[5]Gutman (1977).

[6]Rivers and Crumbley (1979), pp. 125-138.

[7]Ketter, Prawel, 1969, p. 170.

[8]The function form of the basic uniform pseudo-random number generator (Routine GGUBFS from the International Mathematics and Statistics Library) is used in the simulation.

[9]The subroutine Beta is a Q-GERT program written by Pritsker Associates, Inc., Consultants and Systems Engineering, W. Lafayette, Indiana. The process generator was derived mathematically from the beta distribution. For this derivation, see Fishman (1978), pp. 204-205.

[10]Hollander and Wolfe (L973), pp. 39-48.

[11]Report on H.R. 14844.

[12]Ibid.

[13]Gordon (1962), pp. 131-134. The Gordon growth model is adjusted for tax effects and, hence, is related to the wealth of the taxpayer.

[14]Statistics of Income--1965, p. 49.

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