THE USE OF GRAPHS AND TABLES
IN ESTATE PLANNING

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There are two kinds of transfer taxes, liability for which may be incurred in passing property from one generation to another: estate taxes and gift taxes. Although each operates in the same area, the impact of the gift taxes is very much less than that of estate taxes, a fact not fully appreciated by many people. The advantage gained by incurring gift taxes through gifts designed to obviate the imposition of estate taxes is so great that, as a practical matter, many or, in fact, most taxpayers of substantial means should rely as heavily as possible upon making gifts, if their object is to reduce the total impact of transfer taxes upon their estates. The questions to be resolved are just how far one should go and how one decides how much to give away in order to benefit from the disparity of the tax treatment of gifts as against transfers at death. This article deals with the application of tables and graphs in finding the solution to the problem of determining the advisable size of an inter vivos gift[1] for the purpose of taking advantage of the tax saving which is available.

As will soon be discovered, it can cost more, instead of less, overall, if the total gifts are increased beyond a certain point, but the determination of this point may be difficult with techniques ordinarily used.

If a gift is entirely exempt from taxation, making it is obviously an expedient thing to do taxwise, at least up to the point where prospective estate taxes are entirely wiped out. In such circumstances, the use of tables and graphs is not necessary, and this article will deal with such gifts only in passing.[2]

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1. Since gifts are cumulated for the purpose of determining the so-called "lifetime" exemption of $30,000 and for purposes of the graduated gift tax imposed by Int. Rev. Code of 1954, § 2502, it will be assumed in this article that a single gift is made in each instance, but several gifts amounting to the same sum, if applicable against the lifetime exemption or if taxable, would have the same result. It will also be assumed that the exclusion provided by Int. Rev. Code of 1954, § 2503(b) of $3,000 annually has either been availed of in some other manner, or is not applicable because the gift is one of a "future interest in property." It is assumed that the permissible trust for a minor under Int. Rev. Code of 1954, § 2503 (c) is not deemed available. See Neuhoff, Trusts for Minors Under the 1954 Revenue Code, St. Louis B.J., Oct. 1955, p. 5.

2. Gifts entirely exempt from gift tax are included for completeness in the tables presented herewith, see tables I and II, lines 1-5 infra and tables III and IV, lines 1-8 infra.

A. THE PROBLEM

Once it has been decided that the taxpayer[3] should contemplate the making of an inter vivos gift, possibly by way of a trust, it is necessary to come to grips with the problem of the size of the gift which is to be made. Here it is advisable to systematize one's consideration of the estate plan, and, by reliance on certain assumptions, to substitute disciplined thinking for the vague guesses and surmises that are only too often used. This is particularly important where the taxpayer's circumstances are such that the saving of taxes may be elevated to the status of a prime consideration and a relatively large gift is practicable. It is here that a reliable forecast, showing the limit beyond which an increase in the amount of the gift will not be advisable taxwise, becomes particularly important.

In the method which is described in this article, assumptions are made which cannot in the nature of things be entirely accurate. Here, effort will be made to indicate the order of magnitude of the probable error, and to see that the probable error is in the direction of conservatism, i.e., that the putative saving in taxes indicated by the techniques used will be a minimum saving, with any error in the calculation having the ultimate result of increasing the saving.

B. PREMISES ASSUMED IN ESTATE PLANNING

1. The family is treated as a unit. That is to say, one dollar of advantage to one member of the family is treated as if it were exactly offset if there is one dollar of disadvantage to another member of the same family. Obviously this assumption is seldom entirely correct, but it is believed to be acceptable to most clients.

2. If money is to be retained or if money is to be paid out and only replaced by a corresponding benefit at a later date, probable interest or earnings on the money should be considered, and if the hypothetical interest is a substitute for income which would have been subject to income tax when received, then allowance should be made in some manner for the income tax which would have been thereby incurred.

3. A present benefit should be preferred over a subsequent benefit which is equal to or even somewhat greater than the amount of the present benefit plus interest for the intervening period. This is the "bird in the hand" doctrine.

4. It will be assumed that assets on hand will remain *in statu quo* indefinitely and not be depleted by losses or increased by capital gains,

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3. The term "taxpayer" will be used to designate the owner of property who is considering making a gift of it in order to avoid or reduce the impact of estate taxes on that same property which will be levied in the event of his death owning the same. Obviously it is the estate and not the individual that is the "taxpayer" for purposes of the estate tax.

and will be augmented by income earned thereon. That is, the recipients of gifts will be no more or less likely to lose the funds by misadventure or to increase them by wise management than the donor would be.

Gloss

Where it is not reasonable to make this assumption, then one may be deterred from making a gift, or expect good results from a gift, as the case may be. The use of trust companies and other professional trustees is deemed to justify the assumption which we have made above. If there is a secular trend, this should not be ignored. For example, if the estate of the taxpayer is invested in common stocks and it is believed that these over-all will increase in value year by year, this trend should be taken into account.

5. Family discipline is not a consideration.

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Where this cannot be assumed, the gift should not be made, or should be reduced in size so as to preserve the family discipline if this is considered desirable.

6. The law applicable will remain unchanged.

7. As has been indicated[4] it is implicit in the procedure that the making of numerous small annual gifts, taking advantage of the $3,000 annual exclusion, is not deemed adequate or acceptable, either because the amounts disposed of are too small compared with the whole estate or because it is desired to make conveyances by utilizing a trust which will be a future interest and, therefore, not qualified for the annual exclusion.

It is believed that clients generally will go along with the foregoing assumptions. Nevertheless they should be brought out in the open and candidly discussed.

C. SOME BASIC PRINCIPLES OF ESTATE PLANNING

1. First Principle: A gift may save estate taxes.

Obviously in those instances where making a gift does not entail payment of a gift tax, if it decreases the taxable estate which will be held at the death of the donor, the net effect will ordinarily be to save estate taxes. But it may be that the making of a gift *will* incur a gift tax liability. In such event there will ordinarily be at least four consequences:

(a) A gift tax will be paid presently.

(b) The taxable estate will ultimately be reduced by the amount of the gift and also by the amount of the tax on the gift.

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4. See note 1 supra.

(c) The donor will thereafter suffer a reduction in income, not only because he has parted with the amount of the gift itself, but also because of the gift tax paid, but since a corresponding amount of income will probably be received by the donee of the gift, we shall regard only the reduction in income which is not thus offset, that is to say, the reduction in income on the amount of the *gift tax* paid.

(d) The reduction in income will be offset in part by the saving in income taxes on the donor, and there will be a reduction in estate taxes ultimately paid, because the taxable estate will be smaller due to the failure to receive such income.[5]

It is obvious that if the disadvantage consisting of the amount of gift tax paid plus the loss of income (net after income taxes) is less than the estate tax saved, there will have been a net financial *advantage* in making the gift and, *per contra*, if the total amount of the gift tax, plus the loss of income (net of income taxes) on the gift tax money, is greater than the decrease in the amount of estate tax, then there will have been a net financial *disadvantage* in making the gift.

There may be, and in most cases probably will be, a difference in the income tax burden on income received by the donor compared with the income tax burden on income received by the donee beneficiaries, either directly or in trust. This is referred to under the heading "Second Principle" immediately below. This possible difference is not, however, taken into account in the tables submitted herewith, first, because it is likely to be small in comparison with the other advantages of the gift, and, second, because it is on the side of conservatism; i.e., it will in the ordinary case *increase* the benefit. In particular instances this benefit should be calculated and the results presented to the client by techniques analogous to those recommended in this article.

2. Second Principle: Income tax impact may be decreased by increasing the number of recipients of income to obtain lower rates and more deductions.

It is familiar learning that with a graduated income tax, other things being equal, the lower the rate at which the income tax is imposed, the less the tax will be. This can be accomplished by dividing income into various parts, by increasing the number of recipients of income, and by utilizing a trust or trusts as a recipient of all or part

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5. The reduction in estate due to failure to receive income is introduced into the calculation in the tables by column (d). Observe that we reduce the estate in column (e) not only by the amount of the gift and the gift tax on the gift, but also by the amount of "increase" that would have been received (net of income taxes) up to the date of death, which is assumed in our examples to occur three years after the date of the gift.

of the income either permanently or for a limited period.[6] As before
stated, this expedient is not involved in the particular tables and
graphs presented in this article. It is mentioned for completeness only
and we bid it farewell at this point.

*3. Third Principle: A life estate with a remainder over will
ordinarily save a second estate tax.*

It is familiar estate planning to set up an estate with one bene-
ficiary, such as the widow, receiving the income for life and with the
remainder going over to others, such as the children. A transfer of
the economic benefit from the widow upon her death to the children is
not, under our federal estate tax law, a taxable event, although it
would be under the estate tax of the United Kingdom.[7] This principle
is not involved in the charts and tables presented in this article.

While the second and third principles above mentioned are not to
be overlooked in estate planning, and may yield gratifying results
in particular cases, it seems clear enough that an inter vivos gift in an
appropriate situation either with or without reliance on the first
principle and the second principle, is the main expedient for tax re-
duction with many taxpayers.[8]

D.   CAUTIONS TO BE OBSERVED IN PLANNING GIFTS

1. The death of the taxpayer may occur "too soon."

While an inter vivos gift may result in a tax saving even though it
is deemed to be in contemplation of death under the Federal Internal
Revenue Code,[9] the principal beneficial effect of such a gift is obtained

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6. Multiple trusts, that is trusts which are similar but are legally separate,
although they are for the benefit of the same beneficiaries and created by the
same donor, have been the subject of much criticism and it is quite possible that
ultimately legislation will be enacted limiting the possibilities in this direction.
See, e.g., Mills, Possible Tax Legislation in the 86th Congress, XXXIX P-H Fed.
Tax Rep. Bull. 36, § 1 (Sept. 4, 1958). However, it is believed that with reasonable
care a considerable number of trusts may be created which are sufficiently differ-
ent as to beneficiaries, donors, dates of creation and purposes, to effectually
prevent aggregation of the income of such trusts and taxing it under one schedule
of taxation.

7. Brudno and Bower, Taxation in the United Kingdom 75 (World Tax Series,
Harvard Law School International Program in Taxation) (1957).

8. The marital deduction in connection with the estate tax and the gift tax is
considered for purposes of this article as a mode of application of the tax rather
than an instrumentality of estate planning. This is for convenience of presenta-
tion only and not because of lack of appreciation of the effectiveness of these
deductions in lessening the impact of the respective taxes.

9. This saving results from depletion of the taxable estate due to incurring
gift tax liability, which depletion occurs even if the amount given is included in
the gross estate, plus the effect of credit for gift tax paid allowed by Int. Rev.

when the donor does not die within a period of three years from the date of the gift.[10] It is necessary, however, to ascertain what would be the result in the event that the donor does not live the requisite three year period, since in most instances the surrounding circumstances, e.g., its large size relative to the total estate, will be such that the gift will otherwise be deemed to be in contemplation of death and, therefore, the value of the property given will be included in the gross estate under section 2035(a).[11]

2. Deaths may occur in the "wrong order."

An estate plan may be set up on the hypothesis that the husband will die before the wife.[12] However, even where there is a considerable disparity in ages, it is by no means a foregone conclusion that such will be the case. It is necessary, therefore, to test out the plan after it is formulated to find out what would happen if the wife should either die simultaneously with or prior to the death of the husband, particularly with reference to the liquidity of both estates under such circumstances. The liquidity problem is discussed immediately below.

3. Liquidity must be preserved.

This is an individual problem, but it is necessary after the initial projection of a plan which involves any gifts which are large in proportion to the value of the total estate (and it must be remembered that in order to get the maximum benefit the gift will be large when compared to the total estate) to forecast accurately the source of funds which would be available to pay not only the contemplated gift tax but also estate taxes of both spouses, assuming that the wife predeceases the husband, and, moreover, that the husband fails to survive the requisite period of three years from the date of the gift. Such a combination of circumstances may greatly increase the total tax requirements.

Accordingly, a "liquidity study" should be made showing the source of funds and requirements for cash if the death of the taxpayer should occur at various hypothetical dates, such as (a) immediately after the

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Code of 1954, § 2012. It fails to occur when the advantage gained by depletion of the estate for estax tax is wiped out by failure to be allowed the full amount of gift tax paid due to the complicated proration provided in § 2012.

10. Int. Rev. Code of 1954, § 2035(b).

11. See text, § D3 infra, for a discussion of liquidity in such event.

12. In the discussion it will usually be assumed that the husband dies before the wife and that she is the "surviving spouse." It should be understood that this is for convenience only and that the same example could be restated identically by interchanging the positions of husband and wife, if she should be the first to die.

gift is made, (b) immediately prior to the expiration of the statutory three year period, and, possibly, (c) at other dates.

It may well be that considerations of liquidity will prevent a prospective donor from going the whole way, i.e., making a gift as large as he otherwise would be tempted to do if he were assured that he would die before his wife and would live at least a minimum period of three years after the date of the gift.[13]

4. *Tax saving should be balanced against economic advantage.*

It is obvious that in many instances the full theoretical tax saving cannot be obtained because it will entail economic consequences which are not desired by the taxpayer. Here the planner should not be in a position of urging unduly a course of action merely on the ground that it is calculated to save taxes.

E.   GRAPHS AND TABLES TO DETERMINE SIZE OF GIFT

For our purpose, a graph may be defined as a presentation on a chart with values assigned to linear distances. As we shall apply it, an equal distance in a given direction will represent an equal dollar amount or an equal elapse of time and not a percentage change. Accordingly, we shall not use logarithmic charts, although there may be instances in which the use of logarithmic charts (in which an equal distance shows an equal percentage change) would be indicated if we could assume familiarity with charts of this type on the part of clients and their advisors.

Also, in the interest of simplicity, in all of our charts we shall use right angle coordinates in the same plane and shall not endeavor to present graphically minus quantities.

The merits of a graphic presentation are that, first, it tends to detect errors in calculation,[14] and, second, it presents in clearer form the data assembled in the tables. A third advantage is that a properly constructed chart may eliminate the need for numerous intermediate calculations, thereby saving labor and time.

For our purpose, a table will be defined as an array of numerical amounts in columnar form intended to show the relationship of quantities. Some, but not all, of the quantities exhibited by the table will be shown on the graphs in the figures which accompany this article.

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13. Sometimes it is necessary to cut the gift into two or more parts arbitrarily. For example, one might give as much as is "safe" from a liquidity standpoint at one time and then wait three years to give the remainder.

14. Since the relationship of the gift and estate tax structures is relatively regular, an error in calculation of any considerable magnitude will usually show up when plotted because the point representing the result will not lie "in the curve." The author has experienced a number of instances where even a small arithmetical error came to light in this manner.

The outstanding advantage of graphs over tables is that a graph will probably indicate to most people a relationship of quantities which is more easily comprehended than the same relationship which appears merely from a table of figures. It will be found, however, that clients vary in this respect; it may well be that some persons are wholly unable to grasp the relationship intended to be exhibited by a curve or graph on a chart, whereas they would be quite able to interpret the same information from a table of figures. In such a case, the presentation to the client would be in the shape of a table of figures, even though for his own convenience in considering the plan the advisor may think it desirable to use a graph.

The graphs which are presented herewith have been reduced to approximately one-half of their original size. They were originally made on engineering type of ruled paper which is readily obtainable at stationers. For the benefit of those who desire to pursue the subject, further details are given in a footnote.[15]

The preparation of the table precedes the preparation of the chart. The table should be prepared with the use of a calculating machine capable of doing direct multiplication.[16] In order to project the amount to which a fund will grow if it is invested at a given rate of interest, compounded periodically, it is highly desirable to have access to a ready-made or published series of calculations[17] showing the amount after a term of years on unit original principal at a given rate of interest; and in order to project the growth of a donor's estate where he anticipates receipt of uniform sums of money such as salary or income from investments, it is desirable to have access to a published

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15. The paper used was Keuffel & Esser Co., No. 358-11L, 10 x 10 to the ½ inch. It has been found that the chart which contains 20 squares vertically and 30 squares horizontally, each of which is in turn subdivided into 10 parts, will conveniently accommodate the graphic presentation of an estate of any size, whether it be $100,000 or $10,000,000. All that is necessary is to assign an appropriate value to each square. In table I, each square represents $500, and in table II, each square represents $250. It was not practicable to reproduce both large and small squares in the accompanying figures, but in actual practice the presence of the squares makes it possible to obtain intermediate readings from the graph through the very simple process of counting the number of squares at the point where any line is intercepted by the curve on the graph.

16. Such as the Monroe, Marchant, or Friden; but a printing calculator such as the Remington-Rand can be used. A ten-inch slide rule can also be used.

17. The ready-made or published tables should be distinguished from the tables which are produced for the special service of a particular taxpayer. By ready-made or published tables we refer to series of calculations of the amount at compound interest or the value of an annuity or like items, such as are used by actuaries, investment counselors and others, and which may be purchased in book form for a small sum. In this article a reference to a table without a qualifying adjective will mean a table produced by the tax planner, except where the context clearly indicates otherwise.

table which gives the amount of an annuity of unit value per period after a period at an assumed rate of interest. Other published tables may be found useful in particular cases.[18]

Since the underlying principle of the technique suggested by this article is that the change due to elapse of time should be predicted as accurately as possible, it is necessary that some means be at hand to carry out the steps necessary to make this prediction. In the interest of completeness, there is set out below in a footnote[19] the formulae for the derivation of the two sets of figures which will be needed in our calculation so that the estate planner may carry out the technique here suggested even though published tables such as those referred to are not at hand. Of course, this will involve some additional calculation, and every effort should be made to use ready-made tables.

Construction of Table I.

The technique which is now proposed by this article is that the estate planner should construct an appropriate table of figures prior to presenting the conclusions in graphic form. The table should be based upon the facts of the particular case.

In order to demonstrate the technique, we shall first assume a client who has a sufficient estate so that if he dies immediately after the end of three years from the date of the proposed gift, his estate for federal estate tax purposes will be valued at $500,000. It is also assumed that he is a single man and that the value to him of the use of the money will be equal, after income taxes, to $3\frac{1}{2}$ per cent compounded semi-annually.[20] Since he is not married, he will not have the advantage of

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18. Such published tables are found in Chemical Rubber Publishing Co., Standard Mathematical Tables (10th ed. 1956) (hereinafter cited as Standard Tables), which also contains, incidentally, five-place logarithms which may be useful in calculations involving multiplication of large figures if one does not have access to a calculating machine.

19. The formula for the amount after a term of n periods on unit original principal at rate of interest i is $(1 + i)^n$, where 1 is original principal, e.g., $1.00, and i is the rate of interest, e.g., $1\frac{3}{4}\%$, and n is the number of periods, e.g., six. Substituting, we have $(1 + .0175)^6 = (1.0175)^6 = 1.0970235$. See Standard Tables 336. It would be necessary to use logarithms to find the nth power of the amount in parentheses, unless one was willing to actually perform the multiplication as many times as the exponent indicates. The formula for the amount of an annuity of unit value per period after a term of n periods at rate of interest i per period is: $[(1 + i)^n - 1] \div i$, where 1 represents unit value, e.g., $1.00, and i is the rate of interest per period, e.g., $1\frac{3}{4}\%$ and n is the number of periods, e.g., six. This is usually indicated as ($s_{\overline{n}|}$ at i). See Standard Tables 352. Substituting in the formula we have $[(1 + .0175)^6 - 1] \div 0.175 = [(1.0175)^6 - 1] \div .0175 = (1.10970235 - 1) \div .0175 = .10970235 \div .0175 = 6.26870596$.

20. This figure was used because it corresponds in some instances to what might be obtained by investment in municipal bonds free of income tax. In other words, it may be quite realistic if the client is a municipal bond buyer.

TABLE I (SINGLE—$500,000)

No.	(a) Amount of gift	(b) Gift tax paid	(c) Tax plus gift (a) + (b)	(d) With increase to Jan. 2/62 (c) × 1.10970235	(e) Reduced estate $500,000 less (d)	(f) Estate tax on (e)	(g) Estate tax saving $126,500 less (f)	(h) Gift tax plus increase (b) × 1.15893449	(i) Net tax saving (g) − (h)
1.	—	—	—	—	$500,000.00	$126,500.00	—	—	—
2.	$5,000.00	—	$5,000.00	$5,548.51	494,451.49	124,724.48	$1,775.52	—	$1,775.52
3.	10,000.00	—	10,000.00	11,097.02	488,902.98	123,189.54	3,310.46	—	3,310.46
4.	20,000.00	—	20,000.00	22,194.05	477,805.95	119,397.90	7,102.10	—	7,102.10
5.	30,000.00	—	30,000.00	33,291.07	466,708.93	115,846.80	10,653.14	—	10,653.14
6.	40,000.00	375.00	40,375.00	44,804.23	455,195.77	112,100.00	14,400.00	434.60	13,905.40
7.	50,000.00	1,200.00	51,200.00	56,816.76	443,183.24	108,318.64	18,181.36	1,390.72	16,790.64
8.	60,000.00	2,250.00	62,250.00	69,078.08	430,921.02	104,394.73	22,105.27	2,607.60	19,497.67
9.	70,000.00	3,600.00	73,600.00	81,674.10	418,325.90	100,364.29	26,135.71	4,172.16	21,963.55
10.	80,000.00	5,250.00	85,250.00	94,602.13	405,397.87	96,227.32	30,272.68	6,084.41	24,188.27
11.	90,000.00	7,125.00	97,125.00	107,779.85	392,220.15	92,010.45	34,489.55	8,257.41	26,232.14
12.	100,000.00	9,225.00	109,225.00	121,207.25	378,792.75	87,713.68	38,786.32	10,691.17	28,095.15
13.	120,000.00	13,425.00	133,425.00	148,062.04	351,937.96	79,120.15	47,379.85	15,558.70	31,821.15
14.	140,000.00	17,775.00	157,775.00	175,083.30	324,916.70	70,473.34	56,026.66	20,600.00	35,426.60
15.	160,000.00	22,275.00	182,275.00	202,271.00	297,729.00	62,018.70	64,481.30	25,815.27	38,666.03
16.	180,000.00	26,775.00	206,775.00	229,458.71	270,541.29	53,862.39	72,637.61	31,030.47	41,607.14
17.	200,000.00	31,275.00	231,275.00	256,646.42	243,353.58	45,706.07	80,793.93	36,245.68	44,548.25
18.	220,000.00	35,775.00	255,775.00	283,834.13	216,165.87	37,549.76	88,950.24	41,460.88	47,489.36
19.	240,000.00	40,275.00	280,275.00	311,021.84	188,978.16	29,393.45	97,106.55	46,670.87	50,435.68
20.	260,000.00	44,775.00	304,775.00	338,209.55	161,790.45	21,237.14	105,262.86	51,891.30	53,371.56
21.	280,000.00	49,275.00	329,275.00	365,397.26	134,602.74	13,588.77	112,911.23	57,106.50	55,804.73
22.	300,000.00	54,075.00	354,075.00	392,917.88	107,082.12	6,074.78	120,425.22	62,669.38	57,755.84
23.	320,000.00	58,875.00	378,875.00	420,384.97	79,615.03	1,557.65	124,942.35	68,232.27	56,710.08
24.	340,000.00	63,675.00	403,675.00	447,950.12	52,040.88	—	126,500.00	73,795.15	52,704.85
25.	377,819.50	72,751.69	450,571.25	500,000.00	—	—	126,500.00	84,314.44	42,185.56

Net saving of estate taxes of single taxpayer after allowance for gift tax cost, assuming estate valuation at death to be $500,000 and death occurs three years and one day after date of gift. Interest increment 3½ per cent per annum net after income taxes, compounded semi-annually. See figure 1 for curve.

splitting gifts with a wife, nor will he have the advantage of a marital deduction for purposes of federal estate tax. It is assumed that the gift to be made is a future interest, and, therefore, not entitled to the $3,000 annual exclusion and that the lifetime exemption of $30,000[21] has not been used.

In the interest of simplicity, we shall make one further assumption which will not be entirely accurate, namely, that the gift tax is payable at the same time as the gift is made. Actually, of course, the gift tax will be payable within a period of three and one-half months after the close of the calendar year in which the gift happens to be made. In the event that the gift is made at the end of the year, this interval might be as short as three and one-half months plus one day. And on the other hand, if the gift is made toward the beginning of the year, which is considered good planning, this interval might be as long as 364 days, plus three and one-half months.

The purpose of table I is to show, for the various assumed amounts of inter vivos gifts set forth in the first column, the net effect, taxwise, of making each such gift. For purposes of example, we shall assume that in each instance the gift is made on January 1, 1959, and that the donor lives until January 2, 1962, which will prevent the gift from being considered as being made in contemplation of death for purposes of federal estate tax. We take into account the provisions of the Internal Revenue Code[22] requiring payments of the federal estate tax fifteen months after the date of the decedent's death, in our hypothetical example, that is April 2, 1963.

It is not to be expected that in actual practice calculation will be made for all of the amounts shown in table I. However, because it was thought that some readers might desire to use the accompanying tables as a rough guide for the cases of taxpayers who have approximately the same amount of taxable estate, a rather detailed breakdown of hypothetical amounts of gift has been made.[23] Referring to table I, line 6, $40,000 is the smallest amount shown which will entail the payment of a gift tax. The amount of this tax is shown in column (b) as $375. The amount of reduction of the taxpayer's estate caused by the gift, however, will.be the sum of the tax plus the amount of the gift, or $40,375, which is shown in column (c). Allowing for the in-

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21. Int. Rev. Code of 1954, § 2521.

22. Int. Rev. Code of 1954, §§ 6151(a), 6075(a). P-H 1958 Fed. Tax Serv. ¶ 120,013 states, "The estate tax accrues at instant of decedent's death. The fact that the representatives of the estate are allowed fifteen months is nothing more or less than a matter of grace, and the voluntary establishment of a time limit within which the Government agrees to refrain from pressing for payment."

23. In actual practice, it would not be necessary to go through all of these steps. A few calculations would suffice to indicate the area which was of interest to the particular taxpayer, and only these calculations need be made.

crease which would have taken place by our hypothesis between the date of the gift and the date of payment of the federal estate tax if the taxpayer had died immediately after the expiration of three years after the gift was made and the tax was paid immediately before the expiration of fifteen months from the date of death, the amount of the estate which would have been represented by the $40,375 shown in column (c) would have been $44,804.23 shown in column (d). Thus, if the estate at the date of death, had no gift been made, would have been $500,000, it now will be a lesser amount, the difference being the paid amount of $44,804.23. This is shown in column (e). The estate tax on this reduced amount is shown in column (f) and the difference between the estate tax which would have been paid on a $500,000 estate, and that which would be paid on the reduced amount is shown in column (g).

However, the taxpayer has lost the use of the gift tax money for the period which we have assumed to be the time elapsing from the date of the gift until the time for the payment of the federal estate tax. We designate the amount of the gift tax plus an amount representing this loss of use of the gift tax money, as "gift tax plus increase" and show it in column (h). As has been explained before, the time for the payment of the gift tax does not bear a fixed relationship to the date of the gift because the gift may be made at any time during a calendar year and accordingly, we have assumed for simplicity's sake that the gift tax was incurred as soon as the gift was made. The difference in the estate tax saving and the gift tax cost is shown in column (i) as the net tax saving.

To summarize this portion of the discussion, if the taxpayer would make a gift of $40,000 presently, he would, of course, no longer have this amount in his assets, but three years will have to elapse before he can be sure that it will not be considered a gift in contemplation of death and, therefore, includible in his gross estate for federal estate tax purposes.[24] On the other hand, if he does live the requisite period of three years, this danger no longer exists.

He will, however, have suffered another disadvantage; that is to say, he will have paid out at the proper time the sum of $375 as a gift tax by reason of the gift. As before stated, we are assuming that this taxpayer is a single person and that he has not used any of his lifetime exemption of $30,000, but that the gift is made in the form of a future interest. It is also assumed in our example that the portion of the estate of the taxpayer represented by the $40,000 gift was invested. in such a way that if it had not been transferred by way of a gift, it would have resulted in the receipt of income to the taxpayer. It is our problem to reflect the probable change in his estate due to the diver-

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24. Int. Rev. Code of 1954, § 2035(b).

sion from the taxpayer to some other beneficiary of the income on the $40,000. We arbitrarily assume for purposes of table I that the taxpayer would have received sufficient income from the $40,000 investment so that, after paying personal income taxes at the top bracket, he receives 3½ per cent and that this is compounded semi-annually.

Since three years is a relatively short period of time, even with compounding semi-annually we would have been required to make only six calculations, one for each half year, to show the result of the retention of this income and its reinvestment. However, occasion may arise to calculate the result of compounding interest for a much longer period and, at all events, even the calculation for six semi-annual periods is somewhat laborious. To avoid making two separate series of calculations, one for the amount of the gift and the other for the amount of the gift tax paid, we assume that the gift tax is paid at the same time that this gift is made. This enables us to aggregate the amount of the gift, which is shown in column (a) and the amount of the gift tax, which is shown in column (b), the arithmetical sum being shown in column (c). The problem, as thus simplified, is to find how much the sum in column (c) will increase in three years if invested at 3½ per cent per annum, compounded semi-annually, no deduction being made for income taxes. The published table needed for this purpose is "amount at compound interest," which is more fully described as "the amount after a term of n years on unit original principal at rate of interest i." Since 3½ per cent per annum amounts to 1¾ per cent for each half year and we are compounding semi-annually, we use the column in the published table for 1¾ per cent at the end of six periods, which shows that the sum of one dollar would have grown to $1.10970235 at the end of the six periods. This, therefore, furnishes the constant which we multiply by $40,000 to arrive at the figure shown in column (d) on line 6, namely $44,804.23.[25] We are assuming that the $40,000 original investment will continue to bear income, but this will be in the hands of the new holder and, therefore, will not augment the estate of our hypothetical taxpayer. We have assumed that his estate was such that by the end of the third year from the date of the gift it would have just reached $500,000. This means, of course, that it is less than $500,000 at the time the gift is made. If one should desire to know how much less, the answer is easily arrived at by dividing $500,000 by this same constant, which appears at the head of column (d), namely 1.10970235. The result of this division is $450,571.25.

Put in another way, every dollar that was invested in our hypothetical taxpayer's assets would have increased to approximately $1.11 at

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25. Standard Tables 338 (right hand column, sixth entry shows this constant).

the end of the third year from the date of the gift.[26] Therefore, $40,000 amount of gift and $375 amount of gift tax would have increased, according to our hypothesis, to $44,804.23, which, therefore, is the amount which must be subtracted from $500,000 in order to show the net impact of the gift plus the gift tax plus the increase which would have taken place if the gift had not been made.[27] Subtracting the amount of the increase of $44,804.23 from $500,000, we have a result of $455,195.77, which is the entry on line six in column (e).

By the same token, the estate tax on this reduced amount is less than the estate tax would have been on $500,000. Since we have ascertained and entered on line 1 in column (f) the estate tax on the taxpayer if he had an estate valued at $500,000 at the date of his death, it is only necessary to enter on line 6 in column (f) the amount of estate tax which would be payable on the smaller sum of $455,195.77. This was found by calculation to be $112,100. It is obvious that the difference between this latter sum and $126,500 is the estate tax "saving" taking place not on the date of taxpayer's death, but on the date when the estate tax is payable, which will be fifteen months after the taxpayer's death.

This difference in time must be noted because it is reflected in table I. The process of reasoning is that the gift tax was assumed to be paid at the date of the gift,[28] but that the saving in estate taxes is only reflected as a benefit to the taxpayer's estate at the date that the estate tax would have been payable, which we are assuming for purposes of table I, would be one year and three months after the date of death. We had a definite date for the making of the gift, since the three year period with respect to contemplation of death runs from the exact date of the gift. Accordingly the gift, for purposes of our example, was assumed to have been made on January 1, 1959, and accordingly the elapse of time between the date for payment of the gift tax and the date for payment of the estate tax in our particular

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26. Even though not all of a taxpayer's assets may be invested in such a way as to increase with any regularity which may be counted upon, the effect of the gift upon his estate will be accurately reflected if the assets selected to be donated are income bearing at the rate assumed. If the facts indicate a different rate of growth, that rate should be substituted.

27. We are assuming that the executor or administrator of the taxpayer's estate will not elect an optional valuation date. Within the framework of our basic assumptions, however, this makes no difference, because the valuation one year from date of death would be no less than the valuation at date of death, since we assume a uniform increase in value due to the income increment with no set-backs due to market decline.

28. This assumption is made for convenience only; as indicated at page 356 supra, the time interval between the gift and payment of the gift tax is uncertain.

example is four years and three months or four and one-fourth years.[29]

We have arbitrarily assumed that our taxpayer's estate grows uniformly at the rate of 3½ per cent per annum after income taxes compounded semi-annually. The problem, therefore, is to ascertain the amount of growth which would take place in four and one-fourth years. Again consulting the published tables for compound interest at 1¾ per cent per period, it is found that there is a figure given for eight periods, which would be four years, and a figure for nine periods, or four and one-half years. We have recourse to arithmetic interpolation and arbitrarily assume that the constant for eight and one-half periods, which would be four and one-fourth years, would be the arithmetical average between the constant for the eighth period and for the ninth period. This calculation is shown in the footnote.[30] This gives us the constant of 1.15893449, which is entered at the heading of the column (h). The meaning of this figure is that one dollar held by the taxpayer on the date of the gift would have grown by investment after payment of federal taxes, to approximately $1.16. We are saying, therefore, that when a taxpayer chooses to part with one dollar on the date of the gift, he is "damaging" the value of his estate at date of death to the extent of approximately $1.16 if he will die at the end of three years from the date of the gift. It is obvious, of course, that he may live considerably longer, and therefore, depending upon the circumstances of the case, one may construct tables covering the situation analogous to that in our table I, but with different factors for the elapse of time, taking into account various possibilities, such as that the taxpayer may live seven years after the date of the gift, ten years after the date of the gift, etc. It should be noted, however, that especially with

29. Throughout this article we are tacitly making assumptions in the interest of simplicity. Here we are ignoring the privilege of deferring payment of estate taxes authorized by Int. Rev. Code of 1954, § 6161(a)(2). See Mim. 4303 C.B. June, 1935, p. 133, P-H Est. & Gift Tax Serv. ¶ 123,153.1 (1958), which indicates that interest at the rate of six per cent per annum will be charged on the deferred balance. The fact that such interest must be paid will approximately balance out the effect of delay so far as our calculation is concerned.

30. The Standard Tables 338, amount at compound interest at 1¾ per cent per period. This is the sum of the constant for 8 periods (1.14888178) plus the constant for 9 periods (1.16898721), namely 2.31786899; when divided by two, this gives the approximate constant for 8½ periods, namely 1.15893449. For the benefit of the meticulous, we point out here that the answer arrived at by arithmetic interpolation necessarily is not exactly correct, but that the error must be a small part of the total difference between the constant for eight periods and the constant for nine periods, which total difference is only .02010543. Taking this as .02 out of 1.14, it is 1.754% of the amount of the constant or less than 1 part in 57.

relatively small gifts such as we are describing, the saving is so huge on the estate tax that the loss of compound interest on the gift tax money is a relatively insignificant item. It will be seen by inspection of table I that it is only when the gift gets quite large with respect to the size of the estate that the gift tax plus the increase gets to be a considerable amount. It should be borne in mind that the net saving shown in column (i) is *after* recoupment for the amount of the gift tax plus the amount of interest lost on the gift tax money. It should also be observed that if the taxpayer assumes that he will live for a longer period, such as ten years, this will have a double effect because the constant used at the heading of column (d) will also be increased. In other words, the income which would have been received by our taxpayer and would have been on hand, according to our assumptions, at the date of his death ten years hence, would be diverted from him to the beneficiary or beneficiaries with a resultant *saving* in estate tax which would be reflected in column (g) and the only real cost involved in the situation would be the amount of income, net of income taxes, lost by reason of the payment of the gift tax itself. Depending . upon the size of the gift, the saving in estate taxes due to diversion of income to the beneficiaries for a longer period than the three years assumed in the table may more than offset the additional interest or other income lost on the gift tax money. An inspection of the table shows that for an interest rate of 1¾ per cent compounded semi-annually, one dollar would amount to $1.41477820 at the end of the twentieth period, which means, roughly speaking, that one dollar in gift taxes paid on the date of the gift would have grown to $1.41 ten years from the date of the gift.

The estate planner should recognize that if a gift is to be made by a relatively young person, then all of the considerations involved should be carefully weighed, because the factor of elapse of time with respect to the gift tax money might become serious if the gift is large and the gift tax is, therefore, large relative to the size of the gift. However, in practice, most large gifts are made by people who are somewhat along in years, to say the least, and frequently they are made by persons with whom it is open to serious doubt whether they can reasonably count on living for the requisite three year period, so the constant shown in the heading of column (h) is realistic in a large number of cases.

As said before, it is not recommended that this factor be ignored, but simply that a different table be constructed using the proper constant for such number of years as is deemed to adequately represent the probable life expectancy, with some margin for safety. Frequently the anticipated growth of the estate, due to wise investments, will be

much more than 3½ per cent compounded semi-annually, net after income taxes, which would increase the putative saving in most instances.

Construction of Table II.

Table II is also for a single man, but one of considerably smaller means, since his estate at the present time is such that with the anticipated rate of increase over the next three years, he will be possessed at the date of his death of a taxable estate of $250,000. Without going into detail as to the construction of table II, which is quite similar to that of table I since the assumptions are the same excepting as to the amount of the estate, it may be seen by inspecting column (i) that on the assumptions made, a gift of $130,000 is the largest gift which would reflect a theoretical saving such that it would not be increased by making the gift any larger. That is to say, even if the hypothetical taxpayer gave away his entire estate so that by the time he paid his gift tax he would have nothing left, as is demonstrated by line 18 of table II, he would still have a theoretical saving of $12,729.26 after allowing for the gift tax paid plus compound interest on the gift tax money. The purpose in carrying out the table to this length was not on the supposition that any client is likely to desire to emulate our hypothetical taxpayer, but rather to show that the savings inherent in making gifts, even those calling for substantial gift taxes, are so great, that with respect to the hypothetical taxpayer under the conditions assumed, it would not be possible for him to lose money net by making a gift, no matter how large it was, since he cannot do more than give away all that he has, and a gift of his entire assets would still save him money net. However, it is to be observed that his best saving would be obtained by a gift of approximately $130,000 as shown on line 15, which would give him a saving in estate taxes of $44,908.53 with a gift tax cost, including compound interest on the gift tax, of $17,992.46, leaving a net saving for himself and his family, considered in the aggregate, of $26,916.07.

Although table II was constructed for a single man, it is usable in planning for a married man whose estate is exactly twice $250,000, or $500,000. This relationship, which is explained below,[31] applies to estates of all sizes and gifts of all sizes, and realization of this fact will save considerable labor in estate planning.

The gift tax incurred by a gift of a definite size shown in column (b), the amount of tax plus gift shown in column (c), and the increase to the hypothetical date of death shown in column (d), of each table, are the identical figures in all four tables and should be copied rather than recomputed.

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31. See text section Construction of Table III infra.

TABLE II   (Single—$250,000)

	(a) Amount of gift	(b) Gift tax paid	(c) Tax plus gift (a) + (b)	(d) With increase to Jan. 2/62 (c) x 1.10970235	(e) Reduced estate $250,000 less (d)	(f) Estate tax on (e)	(g) Estate tax saving $47,700 less (f)	(h) Gift tax plus Increase (b) x 1.15893449	(i) Net tax saving (g) − (h)
	$	$	$	$	$	$	$	$	$
1.	—	—	—	—	250,000.00	47,700.00	—	—	—
2.	5,000.00	—	5,000.00	5,548.51	244,451.49	46,035.45	1,664.55	—	1,664.55
3.	10,000.00	—	10,000.00	11,097.02	238,902.98	44,370.89	3,329.11	—	3,329.11
4.	20,000.00	—	20,000.00	22,194.07	227,805.95	41,041.79	6,658.21	—	6,658.21
5.	30,000.00	—	30,000.00	33,291.07	216,708.93	37,712.68	9,987.32	—	9,987.32
6.	40,000.00	375.00	40,375.00	44,804.23	205,195.77	34,258.73	13,441.27	434.60	13,006.67
7.	50,000.00	1,200.00	51,200.00	56,816.76	193,183.24	30,654.97	17,045.03	1,390.72	15,654.31
8.	60,000.00	2,250.00	62,250.00	69,078.98	180,921.02	26,976.31	20,723.69	2,607.60	18,116.09
9.	70,000.00	3,600.00	73,600.00	81,674.10	168,325.90	23,197.77	24,502.23	4,172.16	20,330.07
10.	80,000.00	5,250.00	85,250.00	94,602.13	155,397.87	19,411.40	28,288.60	6,084.41	22,204.19
11.	90,000.00	7,125.00	97,125.00	107,779.85	142,220.15	15,721.16	31,978.84	8,257.41	23,721.43
12.	100,000.00	9,225.00	109,225.00	121,207.25	128,792.75	11,961.97	35,738.03	10,691.17	25,046.86
13.	110,000.00	11,325.00	121,325.00	134,634.64	115,365.36	8,341.34	39,358.66	13,124.93	26,233.73
14.	120,000.00	13,425.00	133,425.00	148,062.04	101,937.96	5,226.35	42,473.65	15,558.70	26,914.95
15.	130,000.00	15,525.00	145,525.00	161,489.44	88,510.56	2,791.47	44,908.53	17,992.46	26,916.07
16.	140,000.00	17,775.00	157,775.00	175,083.30	74,916.70	1,040.84	46,659.16	20,600.06	26,059.10
17.	160,000.00	22,275.00	182,275.00	202,271.00	47,729.00	—	47,700.00	25,815.27	21,884.73
18.	195,110.71	30,174.91	225,285.62	250,000.00		—	47,700.00	34,970.74	12,729.26

Net saving of estate taxes of single taxpayer after allowance for gift tax cost, assuming estate valuation at death to be $250,000 and death occurs three years and one day after date of gift. Interest increment 3½ per cent per annum net after income taxes, compounded semi-annually. See figure 2 for curve.

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In like manner, the gift tax plus increase shown in column (h) of tables I and II is the identical amount for a gift of the same size shown in column (j) of tables III and IV.

Construction of Table III.

Table III should be compared with table I because the assumptions are the same, excepting that the taxpayer is married. Therefore, we are reverting back to a total estate on the date of death of $500,000. It will be observed that, because of the permissible marital deduction, the estate tax is computed as if one-half were taxable to each spouse at the date of death of the taxpayer. This is necessary in order to simplify the consideration of the problem, because, as is known, where the taxpayer makes a will providing for the maximum marital deduction, he is by the same token providing that his spouse will have an estate tax just as large as he does.[32]

It is, of course, more realistic to introduce a disparity in time between the deaths of the taxpayer and his spouse. However, for purposes of table III, we have not done this, but have arbitrarily assumed that the spouse will die so soon after the death of the taxpayer that the calculations may be made on the basis that they died on the same day, excepting that in order to insure the marital deduction we will say that the wife died on the day following the death of her husband. We are not unmindful of the likelihood that in many families the wife, even if approximately the same age as her husband, will outlive him because of the longer life expectancy of females. This, however, does not make too much difference in the result because if the wife lives a longer time, the increase which is reflected in our table III in column (d) would be greater and, therefore, the estate tax saving on the estate of the wife would be increased, the longer she lived. Of course, we have the same situation with respect to the loss of interest on the gift tax money with respect to her, since the saving in her estate tax does not take place until one year and three months after she dies, and therefore, the factor represented in the column, which in this table is headed (j), would be increased in the event that the wife lived a longer period than three years from the date of the gift.

In order to exemplify what is involved, let us consider table III upon the assumptions which were used in its construction. We here

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32. Here we are assuming for planning purposes that the spouse will not, after the death of her husband, make gifts to avoid the estate taxes on her estate. This is a realistic assumption if tax saving is the sole consideration, because the spouse, unless she remarries, will be a single person for gift tax purposes and unable to split any gifts which she may make. Therefore, in general the gift tax "cost" of gifts made by the spouse after death of the taxpayer will be greater than the gift tax "cost" of gifts of the same amount made prior to the taxpayer's death.

TABLE III (MARRIED—$500,000)

	(a) Amount of gift	(b) Gift tax paid	(c) Tax plus gift (a)+(b)	(d) With increase to June 2/63 (c) x 1.10970235	(e) Reduced estate $500,000 less (d)	(f) Taxable to each spouse ½ of (e)	(g) Estate tax on (f)	(h) Total estate tax 2 x (g)	(i) Estate tax saving $95,400 less (h)	(j) Gift tax plus increase (b) x 1.15893449	(k) Net tax saving (i) − (j)
	$	$	$	$	$	$	$	$	$	$	$
1.	—	—	—	—	500,000.00	250,000.00	47,700.00	95,400.00	—	—	—
2.	5,000.00	—	5,000.00	5,548.51	494,451.49	247,225.75	46,867.73	93,735.46	1,664.54	—	1,664.54
3.	10,000.00	—	10,000.00	11,097.02	488,902.98	244,451.49	46,035.45	92,070.90	3,329.10	—	3,329.10
4.	20,000.00	—	20,000.00	22,194.07	477,805.93	238,902.97	44,370.89	88,741.78	6,658.22	—	6,658.22
5.	30,000.00	—	30,000.00	33,291.07	466,708.93	233,354.47	42,706.34	85,412.68	9,987.32	—	9,987.32
6.	40,000.00	—	40,000.00	44,388.10	455,611.90	227,805.95	41,041.79	82,083.58	13,316.42	—	13,316.42
7.	50,000.00	—	50,000.00	55,485.12	444,514.88	222,257.44	39,377.23	78,754.46	16,645.54	—	16,645.54
8.	60,000.00	—	60,000.00	66,582.14	433,417.86	216,708.93	37,712.68	75,425.36	19,974.64	—	19,974.64
9.	70,000.00	225.00	70,225.00	77,928.85	422,071.15	211,035.58	36,010.67	72,021.34	23,378.66	260.76	23,117.90
10.	80,000.00	750.00	80,750.00	89,608.47	410,391.53	205,195.77	34,258.73	68,517.46	26,882.54	869.20	26,013.34
11.	90,000.00	1,575.00	91,575.00	101,621.00	398,379.00	199,189.50	32,456.85	64,913.70	30,486.30	1,825.22	28,661.08
12.	100,000.00	2,400.00	102,400.00	113,633.53	386,366.47	193,183.24	30,654.97	61,309.94	34,090.06	2,781.44	31,308.62
13.	120,000.00	4,500.00	124,500.00	138,157.95	361,842.05	180,921.03	26,976.31	53,952.62	41,447.38	5,215.21	36,232.17
14.	140,000.00	7,200.00	147,200.00	163,348.19	336,651.81	168,325.91	23,197.77	46,395.54	49,004.46	8,344.33	40,660.13
15.	160,000.00	10,500.00	170,500.00	189,204.26	310,795.74	155,397.87	19,411.40	38,822.80	56,577.20	12,168.81	44,408.39
16.	180,000.00	14,250.00	194,250.00	215,559.69	284,440.31	142,220.16	15,721.64	31,443.28	63,056.72	16,514.82	47,441.90
17.	200,000.00	18,450.00	218,450.00	242,414.45	257,585.55	128,792.78	11,961.98	23,923.96	71,476.04	21,382.42	50,093.62
18.	220,000.00	22,650.00	242,650.00	269,269.29	230,730.71	115,365.36	8,341.34	16,682.68	78,717.32	26,249.87	52,467.45
19.	240,000.00	26,850.00	266,850.00	296,124.09	203,875.91	101,937.96	5,226.35	10,452.70	84,947.30	31,117.39	53,829.91
20.	260,000.00	31,050.00	291,050.00	322,978.88	177,021.12	88,510.56	2,791.48	5,582.96	89,817.04	35,984.92	53,832.12
21.	280,000.00	35,550.00	315,550.00	350,166.60	149,833.40	74,916.70	1,040.84	2,081.68	93,318.32	41,200.12	52,118.20
22.	300,000.00	40,050.00	340,050.00	377,354.30	122,645.70	61,322.85	39.69	79.38	95,320.00	46,415.33	48,905.29
23.	320,000.00	44,550.00	364,550.00	404,542.01	95,457.99	47,729.00	—	—	95,400.00	51,630.53	43,769.47
24.	340,000.00	49,050.00	389,050.00	431,729.72	68,270.28	34,135.14	—	—	95,400.00	56,845.74	38,554.26
25.	390,221.43	60,349.82	450,571.25	500,000.00	—	—	—	—	95,400.00	69,941.49	25,458.51

Net saving in estate taxes of both spouses in the aggregate after allowance for gift tax cost, assuming aggregate valuation of estate of both spouses is $500,000 at date of death, that both deaths occur three years and one day after date of gift, husband dying first. Interest increment 3½ per cent per annum net after income taxes, compounded semi-annually. Optimum marital deduction is claimed and gifts are split. See figure 1 for curve.

see that line 20 represents the circumstances of the gift which produces the highest theoretical saving on the assumptions made, i.e., a net saving of $53,832.12 by making a gift of $260,000 out of a total estate of $500,000. Referring back to table I, showing the same taxpayer if he were single, a gift of the same amount of money would not reflect quite as much of a saving, but would reflect a saving of $53,-371.50. The optimum situation with respect to table I, however, was a gift of $300,000, reflecting a saving of $57,755.84; whereas under table III it is not possible, no matter how much is given away, to obtain that large a saving. The reason for this is that the estate tax and the gift tax both bear less heavily upon a married taxpayer than upon a single taxpayer with the same assets.

Because of the marital deduction privilege for gift tax and estate tax purposes, a married man contemplating a gift may, for planning purposes, consider that he will make the same saving as if he were two single men making two identical gifts, each equal to one-half of the amount of the actual gift. This results in a very considerable tax -benefit to married persons as compared with single persons of identical wealth.

Construction of Table IV.

Table IV is intended to be contrasted with table II, both applying to a person having $250,000 of taxable estate at the date of his death, but table IV is constructed for a married man. It will be seen that in the case of relatively small estates such as $250,000, the maximum saving is reached much sooner in the case of a married man; on line 11 a gift of $90,000 is shown to reflect a saving of $18,353.08, which according to the table is the maximum saving. It must be remembered that this saving is calculated after charging the situation with the gift tax "cost," which is the amount of the gift tax plus an amount representing the loss of interest on the gift tax money.

It is also seen that the estate tax is wiped out completely by the time one has reached a gift of $120,000, as appears from column (g), line 14, and from that point on the putative saving diminishes quite rapidly, so that if this hypothetical taxpayer would give away all that he had, first reserving enough to pay the gift tax, he would actually by this act have made a net loss as compared with doing nothing at all, namely the loss shown on line 18, column (k), of $957.23. It is to be observed also that this table reflects the lifetime exemption of $30,000, which is available not only for the taxpayer, but also for his spouse, so that, as is shown on line 8, a gift of $60,000 will not incur any gift tax and yet will reflect the saving, shown in column (k), of $15,184.78, and as is also observable from column (j), since there is no gift tax money paid, there is no loss due to the elapse of

TABLE IV (MARRIED—$250,000)

	(a) Amount of gift	(b) Gift tax paid	(c) Tax plus gift (a) + (b)	(d) With increase to June 2/63 (c) x 1.10970235	(e) Reduced estate $250,000 less (d)	(f) Taxable to each spouse ½ of (e)	(g) Estate tax on (f)	(h) Total estate tax 2 x (g)	(i) Estate tax saving $21,800 less (f)	(j) Gift tax plus increase (b) x 1.15893440	(k) Net tax saving (i) — (j)
1.	$	$ ——	$	$	$250,000.00	$125,000.00	$10,900.00	$21,800.00	$ ——	$	$ ——
2.	5,000.00	——	5,000.00	5,548.51	244,451.49	122,225.75	10,123.21	20,246.42	753.58	——	753.58
3.	10,000.00	——	10,000.00	11,097.02	238,902.98	119,451.49	9,362.87	18,725.74	3,074.26	——	3,074.26
4.	20,000.00	——	20,000.00	22,194.07	227,805.95	113,902.98	7,975.75	15,951.50	5,848.50	——	5,848.50
5.	30,000.00	——	30,000.00	33,291.07	216,708.93	108,354.47	6,637.98	13,275.96	8,524.04	——	8,524.04
6.	40,000.00	——	40,000.00	44,388.10	205,611.90	102,805.95	5,417.31	10,834.62	10,965.38	——	10,965.38
7.	50,000.00	——	50,000.00	55,485.12	194,514.88	97,257.44	4,306.34	8,612.68	13,187.32	——	13,187.32
8.	60,000.00	——	60,000.00	66,582.14	183,417.86	91,708.93	3,307.61	6,615.22	15,184.78	——	15,184.78
9.	70,000.00	225.00	70,225.00	77,928.85	172,071.15	86,035.58	2,444.98	4,889.96	16,910.04	260.76	16,649.28
10.	80,000.00	750.00	80,750.00	89,608.47	160,391.53	80,195.77	1,627.41	3,254.82	18,545.18	869.20	17,675.98
11.	90,000.00	1,575.00	91,575.00	101,621.00	148,379.00	74,189.50	960.85	1,921.70	20,178.30	1,825.22	18,353.08
12.	100,000.00	2,400.00	102,400.00	113,633.53	136,366.47	68,183.24	372.83	745.66	20,754.34	2,781.44	17,972.90
13.	110,000.00	3,450.00	113,450.00	125,895.74	124,104.26	62,052.13	61.56	123.12	21,676.88	3,998.32	17,678.56
14.	120,000.00	4,500.00	124,500.00	138,157.95	111,842.05	55,921.03	——	——	21,800.00	5,215.21	16,584.79
15.	130,000.00	5,850.00	135,850.00	150,753.07	99,246.93	49,623.47	——	——	21,800.00	6,779.77	15,020.23
16.	140,000.00	7,200.00	147,200.00	163,348.19	86,651.81	43,325.91	——	——	21,800.00	8,344.33	13,455.67
17.	160,000.00	10,500.00	170,500.00	189,204.26	60,795.74	30,397.87	——	——	21,800.00	12,168.81	9,631.19
18.	205,649.25	19,636.34	225,285.62	250,000.00			——	——	21,800.00	22,757.23	-(957.23)

Net saving in estate taxes of both spouses in the aggregate after allowance for gift tax cost, assuming aggregate valuation of estates of both spouses is $250,000 at date of death that both deaths occur three years and one day after date of gift, husband dying first. Interest increment 3½ per cent per annum net after income taxes, compounded semi-annually. Optimum marital deduction is claimed and gifts are split. See figure 2 for curve.

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time between the date of the gift and the date of death. Here we see by column (d) that the constant representing the increase from the date of gift to the date of death would be a larger amount if the date of death occurred more than three years and one day from the date of the gift and that this is not offset in any manner; but the increase is reflected in a reduced estate shown in column (e) and ultimately in a reduced estate tax shown in column (h) with an increased estate tax saving which would be shown in column (i) as a larger figure if the amount in column (d) were increased due to the fact that the death occurred later than three years from the date of the gift. Therefore, the saving would necessarily be increased by a later date of death over the amount shown in column (k) for all cases where no gift tax whatever was paid, and this would be true to a certain extent even when some gift tax is paid, since the gift tax at first is a very small amount; whereas the amount of the gift for a married man is largely exempt from taxation, assuming that the husband and the wife split the gift between them as is permitted by the Internal Revenue Code.[33]

Construction of Figures 1 and 2.

In order to exemplify in graphic form the results of tables I, II, III and IV, we have constructed figures 1 and 2. Figure 1 reflects the circumstances of a taxpayer having $500,000 of assets at his death as computed in tables I and III, and figure 2 shows the results with respect to a taxpayer having $250,000 of assets at his death, computed in tables II and IV. The difference between the tables respectively as to each taxpayer is that he is, in one case, assumed to be single and, in the other case, assumed to be married.

Reverting to figure 1, the reproduction accompanying this article portrays the curves representing column (i) of table I and column (k) of table III, respectively, but it does not show the background ruling of the engineering graph paper upon which these tables were actually prepared. For reproduction purposes they have been reduced to approximately one-half size in each dimension.

The curve in each instance is shown as a function of the gift tax *paid* and not a function of the total gift made. This is because under our assumptions, the amount of the gift made for the benefit of another member of the family is not deemed to be "lost" money, but the amount of the gift tax paid to the federal government is deemed to be "lost" so far as the family is concerned. Referring first to the single man having $500,000 as shown by table I, he does not incur any gift tax until he has made a gift of $30,000, and the first figure shown in table I which incurs a gift tax is a gift of $40,000, which

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33. Int. Rev. Code of 1954, § 2513.

FIGURE 1
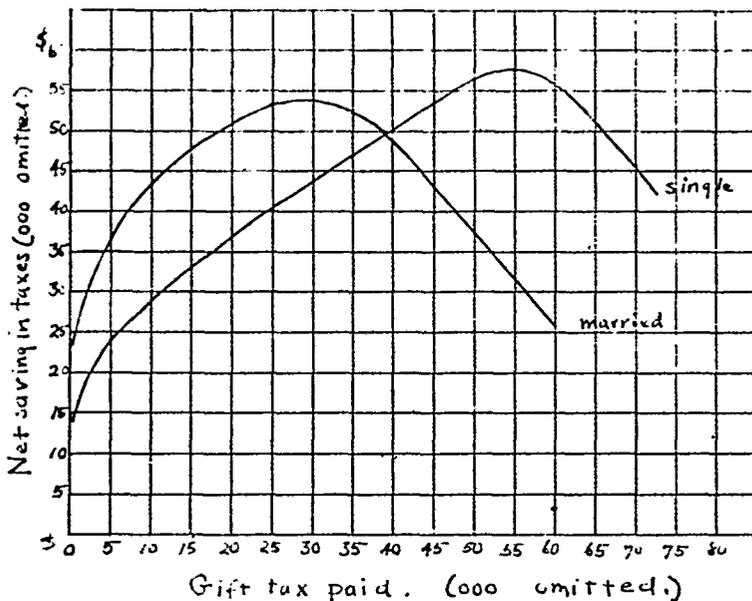
Net saving in taxes as a function of gift tax paid, assuming death of taxpayer (and spouse if married) occurs three years and one day after date of gift and estate valuation is $500,000 at date of death. Interest increment 3½ per cent per annum net after income taxes, compounded semi-annually. Data from tables I and III.

FIGURE 2
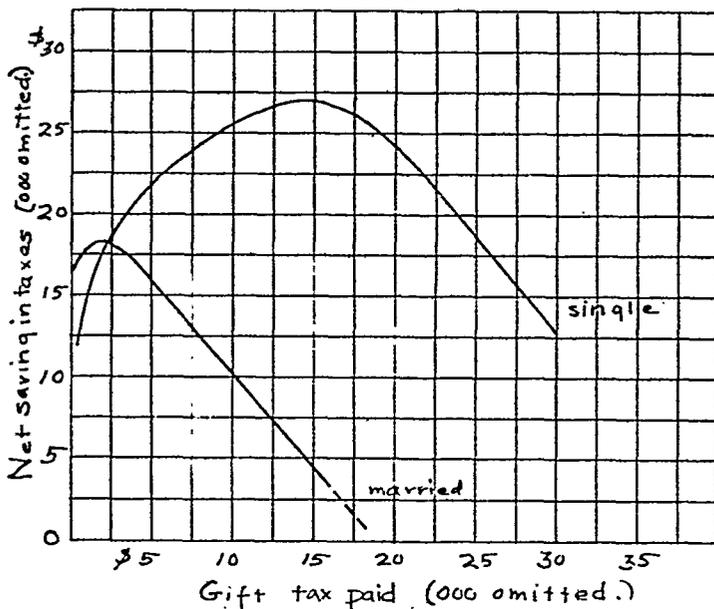
Net saving in taxes as a function of gift tax paid, assuming death of taxpayer (and spouse if married) occurs three years and one day after date of gift and estate valuation is $250,000 at date of death. Interest increment 3½ per cent per annum net after income taxes, compounded semi-annually. Data from tables II and IV.

incurs a gift tax of $375.[34] Therefore, the beginning point of the single man's curve in figure 1 is intended to represent horizontally a distance equivalent to $375 and vertically a distance equivalent to $13,965.40, being the net saving shown in column (i) of table I. It will be seen that gift tax money paid is very effective in "buying" savings until approximately $54,000 of gift tax has been incurred. It will also be observed that the curve becomes a straight line when the amount of the gift is increased to $90,000 and that it continues as a straight line almost until it reaches the peak. As has been stated before, this peak is reached upon a gift of $300,000 shown on line 22 of table I, for a gift tax paid of $54,075, shown in column (b) on line 22. At this point, however, the saving falls off rapidly due to the fact that the estate tax is first reduced to small rates and then wiped out.[35]

The other curve on figure 1 is intended to exemplify the situation computed in table III. Here the married man can, by reason of the splitting of gifts, make a much larger gift without incurring any gift tax, as we have already mentioned, and then incur it at lower rates per dollar of gift made. But it should be noted that his situation is such that his curve in figure 1 reaches its peak and turns downward sooner than it does with respect to the single man with the same amount of assets. The peak saving here is reached with a gift of only $260,000.[36]

Figure 2 gives the same treatment to tables II and IV. It will be remembered that these tables represent a taxpayer with $250,000 on the date of his death, table II representing a single taxpayer and table IV representing a married taxpayer. With respect to table IV, bearing in mind our promises at the beginning of this article not to attempt to display minus quantities, the curve for the married man stops after exemplifying the data on line 17 of table IV, namely a net saving of $9,631.19; the dotted portion of the line represents the line's direction if it had been carried below the base line to represent the negative quantity of $957.23 shown on line 18 of table IV in column (k).[37]

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34. Obviously any gift over $30,000 by a single person would incur some gift tax, so it would not be true to say that $40,000 is the smallest gift which would incur a gift tax.

35. The amount of $6,074.78 estate tax shown on line 22 in column (f) was computed at a top bracket of only 18 per cent, and the estate tax has disappeared entirely by the time the amount of the gift reaches $340,000 on line 21.

36. See table III, line 20.

37. It is suggested that no attempt be made to read the amounts from the curves showns on figures 1 and 2, since these amounts are definitely set forth in tables I, II, III, and IV, respectively. The purpose of figures 1 and 2 is to show the relationship of the quantities. If the taxpayer or his advisor does construct

The curve for the single man in figure 2 is identical in shape with the curve for a married man in figure 1, so much so that the curves could be superimposed one upon the other, but the quantities for gift tax paid and net saving in taxes on figure 2 represent only one-half as much in dollars as in figure 1. Accordingly, if the curve of figure 2 had been drawn on the same scale as that of figure 1, it would have had the same shape, but not the same size as the curve for figure 1.[38]

Construction of Figures 3 and 4.

There is no objection, of course, to plotting a curve showing the relationship of the net saving in taxes to the amount of the gift made rather than to the amount of the gift tax incurred. Figure 3 was prepared in order to show this relationship as exemplified by table I. Here the net saving is plotted vertically in the same manner as before with respect to figure 1 for the single person, but the horizontal scale has been changed so as to plot the much larger quantities represented by column (a), namely the amount of the gift. Therefore, we start with a gift of zero amount and a saving of zero amount in the lower left hand corner of the figure, which moves on to a saving of $1,775.52 on the vertical scale for a gift of $5,000 on the horizontal scale. It should be observed that the amount of dollars represented by one square vertically in the figure is not the same as the amount represented by one square horizontally. On the contrary, the same distance which represents $5,000 vertically represents $20,000 horizontally. This should be borne in mind and no inference should be drawn from the slant of the curve on figure 3; on figures 1 and 2, of course, the

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these curves as recommended by this article, they will be on engineering paper which does have the small squares, so that results can be interpolated and directly read from the curve on the engineering paper. The mechanical problems involved in reproducing the engraved lines present on the engineering graph paper were such that it was deemed best not to attempt it, especially since the engineering paper has the background lines in green, whereas the curves made by the estate planner will be in ink or pencil and, therefore, will stand out prominently.

38. This comes about because of the manner of taxation of married men— namely, the amount of the gift is split and the amount of the estate is split with the spouse. Therefore, the gift by the married man is considered for taxation as if it were two gifts each of one-half of the amount given. Since we purposely made the hypothetical estate of the taxpayer in figure 2 equal to exactly one-half of the estate of the taxpayer in figure 1, the relationship of one dollar paid in gift taxes to one dollar net saving for each of the identical "halves" of the estate in figure 1 was identical with the same items on all of figure 2. Therefore, the curve representing one-half of the married man's estate in figure 1 would have been identical with the curve of all of the single man's estate in figure 2 if the scale had been the same. Also the curve representing the arithmetic sum of the quantities for both halves of the married man's estate in figure 1 would have the same shape as the curve for the single man in figure 2, but the distances subtended by it would be doubled both vertically and horizontally.

FIGURE 3
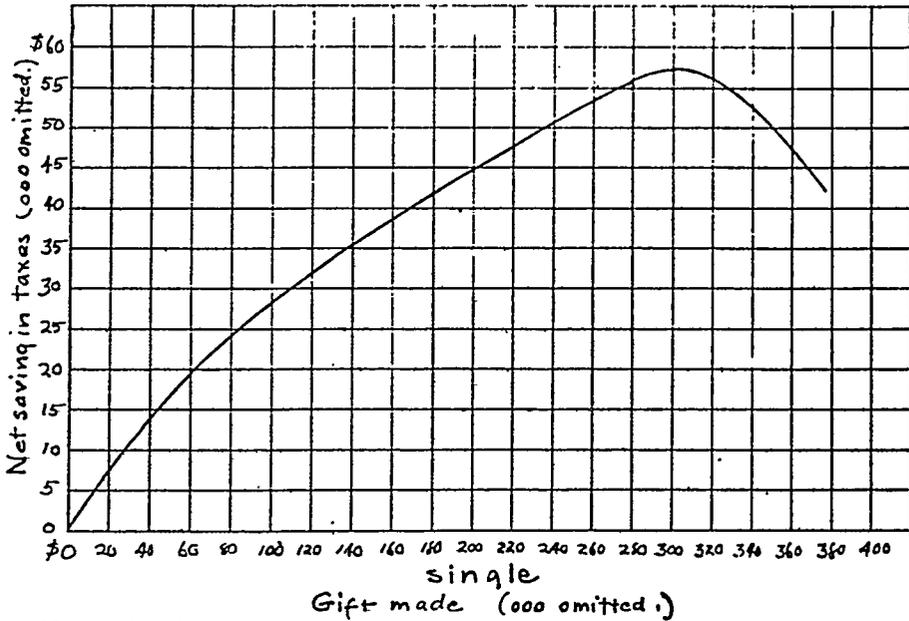
Net saving in taxes as a function of amount of gift, for a single taxpayer, assuming death occurs three years and one day after date of gift and estate valuation is $500,000 at date of death. Interest increment 3½ per cent per annum net after income taxes, compounded semi-annually. Data from table I.

FIGURE 4
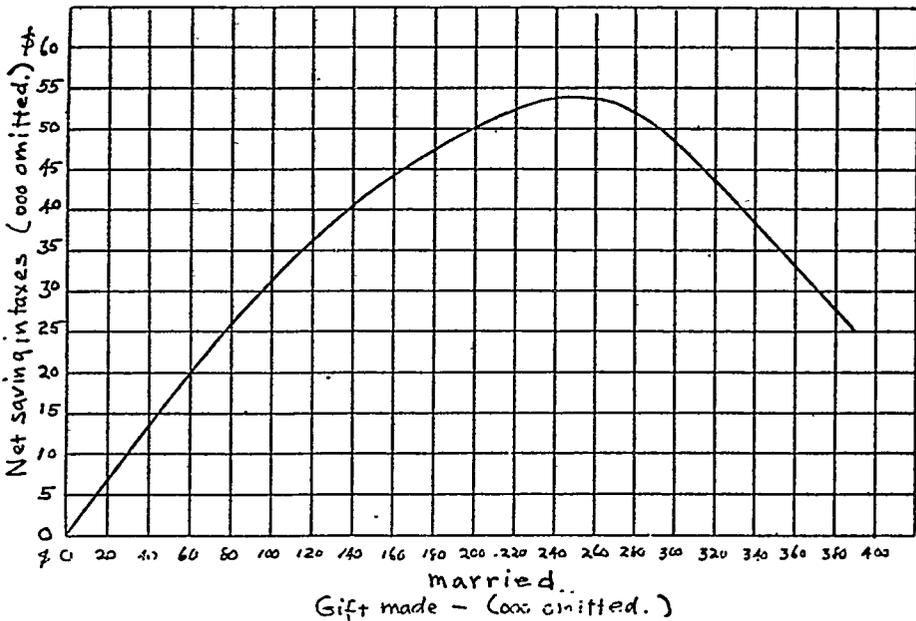
Net saving in taxes as a function of amount of gift, for a married taxpayer, assuming death occurs three years and one day after date of gift and estate valuation is $500,000 at date of death. Interest increment 3½ per cent per annum net after income taxes, compounded semi-annually. Data from table III.

slant of the curve *is* significant since the horizontal and vertical scales are of equal value. It should also be noted that until the curve gets very near the top in all of these instances in figures 1 and 2, the slant is better than 45 degrees, which means that a dollar spent by way of gift tax comes back more than three hundred per cent, i.e., there is a recovery of the spent dollar plus two dollars in savings. For example, on table I, line 13 shows that $15,558.70 gift tax plus interest results in a gross saving of $47,379.85 in estate taxes, more than three times the amount of the gift tax paid plus the compound interest on the gift tax money.

Figure 4 is similar to figure 3, but was prepared to show the relationship between net saving in taxes and amount of gift where the donor is a married man. This relationship is exemplified by table III.

Construction of Table V.

It is possible, of course, to use graphic presentation and tables for other purposes than gift taxes. For example, these may be used to show the continuous relationship between the increasing size of an estate and the probable estate taxes on the estate. Here we are assuming the taxpayer has a present net worth of $250,000.[39] We assume that his wife has a present net worth of $50,000, so that the total net worth of the spouses is $300,000. The purpose of table V is to show how these estates would grow if the taxpayer was able to save from his salary, after payment of current income taxes on the salary, etc., $15,000 per year and his wife was able to save from her invested income, after payment of income taxes thereon, the sum of $1,750 per year. It is assumed that the money which is saved can be invested so that it will net the taxpayer and his wife 3½ per cent per annum, compounded semi-annually, after income taxes thereon. It is recognized that this is necessarily a rather arbitrary assumption but it has utility as a rough guide. An amount other than 3½ per cent could, of course, be used, based on the particular situation of particular taxpayers. To construct table V we have recourse to published tables, such as those previously referred to, which greatly reduce the amount of labor involved in making a fairly reliable prediction of the value of the estate of the husband and the wife, supposing that they both live and accumulate money as stated. Line (d) shows the factor for three years with semi-annual rests to be 6.26870596. This is found from a table giving the "amount of an annuity of unit value per period after a term of n periods at rate of interest of i per period,"[40] and while it

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39. This is a variation from our previous assumption, i.e., that the taxpayer's estate had this valuation only at the end of three years.

40. Standard Tables 354 (line 6, right hand column).

TABLE V—GROWTH OF ESTATES

	Husband	Wife	Total
(a) Value at present	$250,000.00	$ 50,000.00	$300,000.00
(b) Savings per year	$ 15,000.00	$ 1,750.00	$ 16,750.00
(c) Savings per ½ year	7,500.00	875.00	8,375.00
(d) Factor for 3 years with semi-annual rests = 6.26870596			
(e) Amount of accumulation (c) x (d)	47,015.30	5,485.12	52,500.42
(f) Value at end of 3 years (a) + (e)	297,015.30	55,485.12	352,500.42
(g) Factor for 7 years with semi-annual rests = 15.7005325			
(h) Amount of accumulation (c) x (g)	117,821.50	13,745.84	131,567.34
(i) Value at end of 7 years (a) + (i)	367,821.50	63,745.84	431,567.34
(j) Factor for 10 years with semi-annual rests = 23.7016112			
(k) Amount of accumulation (c) x (j)	177,762.08	20,738.91	198,500.99
(l) Value at end of 10 years (a) + (k)	427,762.08	70,738.91	498,500.99
(m) Factor for 20 years with semi-annual rests = 57.2341839			
(n) Amount of accumulation (c) x (m)	429,255.86	50,079.85	479,335.71
(o) Value at end of 20 years (a) + (n)	679,255.86	100,079.85	770,335.71

might be possible to compute this the long-way around for three years by making six computations, it would be quite out of the question to do this for a ten year period and more out of the question for a twenty year period. Yet, as will be seen by line (m) of table V, the factor for twenty years, which would be at the end of forty rests, is 57.2341339, which means that upon the hypothesis taken, one dollar received at the end of each six month period, together with compound interest, would amount to $57.23+ in twenty years. It is observable that in line (c), since we are making semi-annual rests, we must divide the annual savings in half in order to find the amount per half year which is to be multiplied by each factor respectively.

The results of table V are shown on figure 5 for the husband by the curve marked (b) and for the husband plus the wife by the curve marked (a) and the distance between the curves (a) and (b) at any point in time will, of course, be the amount of growth of the wife's estate up to that point.

FIGURE 5
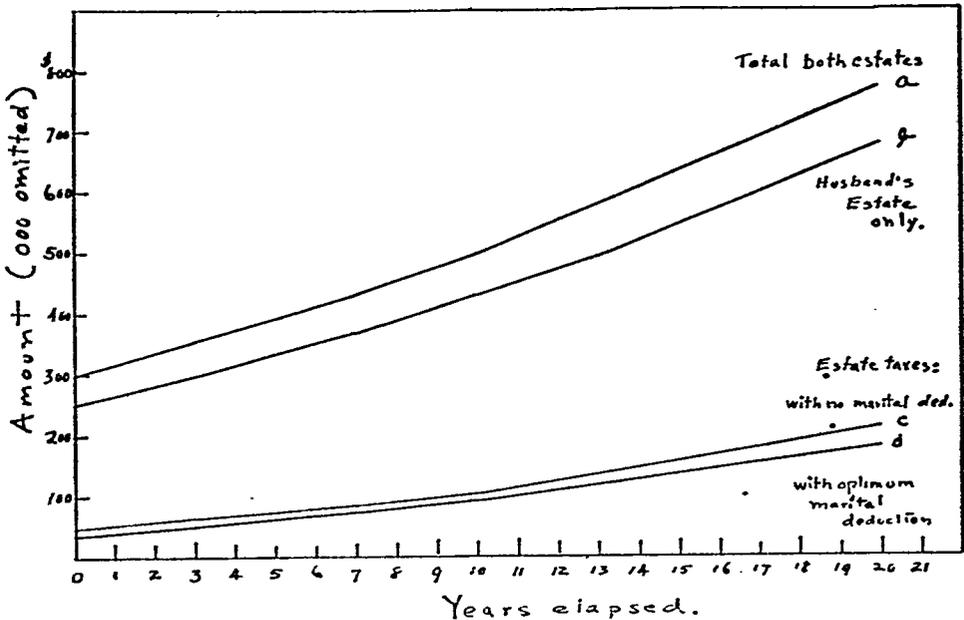
Growth of estates of (a) husband and (b) husband and wife as a function of elapse of time with corresponding estate taxes on estates of both spouses, assuming beginning valuations of estate of husband to be $250,000 and wife $50,000. Interest increment 3½ per cent per annum net after income taxes, compounded semi-annually. Data from tables V and VI.

Construction of Table VI.

Table VI is intended to show the estate tax burden, assuming either maximum marital deduction or no marital deduction or optimum marital deduction for the same hypothetical estate and for the same hypothetical periods. It is generally advisable to make such a calculation during the initial conferences with the client in order to demonstrate what his situation will be if he does not make any gifts or otherwise take steps toward reduction of his taxes. It will be seen that the curves on the graph for no marital deduction and for optimum marital deduction are not very far apart. The optimum marital deduction is the amount of marital deduction which will result in the estate of the wife and the husband being the same absolute amount. It is computed by adding together the estate of the husband plus the estate of the wife, dividing by two and then subtracting the amount of the wife's estate. It has been found that most taxpayers do not desire to utilize optimum marital deduction, but insist upon maximum marital deduction, unless the wife's estate is extremely large. It was not practical to show the maximum marital deducation on figure 5 because it coincides too closely with the optimum marital deduction. In fact, for practical purposes one may read curve (d) as representing maximum marital deduction as well as optimum marital deduction. The quantitative difference is, of course, shown as the difference between the amounts of lines (i) and (j) on table VI. For example, at the end of ten years, the maximum marital deduction results in an estate tax of $94,797.30 on the death of the husband, whereas optimum marital deduction results in an estate tax of $94,950 on the death of the husband. Frequently the brackets are such that the aggregate of amounts paid on both deaths will be exactly the same whether one uses optimum marital deduction or maximum marital deduction; if there is any difference it will probably be slight, so there is little reason to urge taxpayers to depart from the "community custom" which seems to be to insist most definitely on the maximum marital deduction.

CONCLUSION

The purpose of this article is two-fold: first, to show the extraordinary results in tax savings to be obtained through gifts made by taxpayers whose resources are large enough to make them advisable; and, second, to show how a tax planner may have recourse to methodical calculations and definite hypotheses in order to limit the area of uncertainty and bring into a rather complex situation a semblance of order, so that a taxpayer may with some assurance make rather radical changes in his affairs.

It stands to reason that a taxpayer who is advised to give away possibly one-third or one-fourth of his net assets wants to be reason-

TABLE VI—ESTATE TAX ON BOTH ESTATES

If husband and wife both die at the end of period stated (husband dies first).

	At End of 0 Years	At End of 3 Years	At End of 7 Years	At End of 10 Years	At End of 20 Years
(a) Net worth of husband	$250,000.00	$207,015.30	$367,821.50	$427,762.08	$679,255.86
(b) Net worth of wife	50,000.00	55,485.12	63,745.84	70,738.91	100,079.85
(c) Net worth of husband and wife	300,000.00	352,500.42	431,567.34	498,500.99	779,335.71
(d) Maximum marital deduction ½ of (a)	125,000.00	148,507.65	183,910.79	213,881.04	339,627.93
(e) One-half of (c)	150,000.00	176,250.21	215,783.67	249,250.50	389,667.86
(f) Optimum marital deduction (e) — (b)	100,000.00	120,765.09	152,037.78	178,511.59	289,588.09
(g) Wife's estate with maximum marital deduction, (b) + (d)	175,000.00	203,992.77	247,656.63	284,619.95	439,707.78
(h) Total estate tax both estates, using no marital deduction	47,700.00	61,804.59	84,315.26	104,119.94	208,583.28
(i) Same—using maximum marital deduction	36,100.00	51,379.97	74,870.23	94,797.30	181,794.87
(j) Same—using optimum marital deduction	35,800.00	51,150.12	74,870.20	94,950.00	182,387.44

ably well assured that the step is in the right direction and that it will redound to the benefit of himself and his family, substantially in the manner which has been presented to him. It is believed that the use of tables and graphs in the manner suggested by this article will largely contribute to that assurance and make it possible for a taxpayer with reasonable assurance to take much more drastic steps to the end result of much greater savings for himself and his family than he would have been able to do had these or equivalent techniques not been used. Lastly, it is believed that in actual practice the plotting of curves on the engineering engraved paper from relatively few calculations will enable one to eliminate much work by reading sufficiently accurate results *directly from the graphs themselves.*