RUNNING THE NUMBERS:
AN ECONOMIC ANALYSIS OF GRATS AND QPRTS

Lawrence P. Katzenstein
Thompson Coburn LLP
One Mercantile Center
St. Louis, Mo. 63101
(314) 552–6187
E-mail: lkatzenstein@thompsoncoburn.com

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By Lawrence P. Katzenstein
Attorney at Law
St. Louis, Missouri

Introduction

Grantor retained annuity trusts (“GRATs”) and qualified personal residence trusts (“QPRTs”) have become standard weapons in the estate planner’s arsenal. But despite the frequency with which these tools are used, the economics of GRATs and QPRTs are infrequently analyzed and often poorly understood. This paper will examine the mathematics and economics of GRATs and QPRTs, compare them to the economics of outright gifts and other tools, and consider the appropriate use of these devices. We will also examine how the annuity should be set in a GRAT to achieve the best overall tax treatment.

Common–Law GRITs

Some history of the basic technique is useful. Prior to the enactment in 1990 of section 2702 of the Internal Revenue Code of 1986, as amended (“Code”), grantor retained income trusts (“GRITs”) were extremely popular. The basic technique involved the transfer of assets to a trust for a term of years. The grantor typically retained both an income interest in the trust and a reversion if the grantor died during the trust term. Both the actuarial value of the income interest and the retained reversion were deemed retained by the grantor, thus reducing the gift substantially.

Example: Assume a 65–year old grantor who created a ten–year old–style GRIT and funded it with $1,000,000 at a time when the section 7520 rate was 8 percent. The value of the retained income interest was .48081. The value of the retained reversion was .17799, making the total retained interest .65880. Thus, the gift was 34.12 percent of the value of the property transferred. If the grantor died during the trust term, the property would still be includible in the estate under section 2036 but section 2001(b) avoided double taxation by reducing the adjusted taxable gifts by gifts includible in the gross estate. So even if the property were still only worth $1,000,000 at the end of the term, $1,000,000 would have been transferred to family members at a transfer tax cost of only $341,200.

Why did Congress outlaw GRITs in 1990? The actuarial tables correctly value the income interest in a GRIT if the transferred property actually produces income equal to the section 7520 rate. The problem with GRITs was that the tables assumed a rate of return substantially higher than the trust assets were typically producing. The tables were, in the above example, assuming that 8 percent
would be added to the grantor’s estate each year and that the remainder would be discounted at that rate. In fact, the trusts were typically invested to produce an income stream substantially less than that.

The problem would be more severe from the Service’s standpoint when interest rates rose, to as high as 11.6 percent in May 1989. In addition, although the actuarial value of the reversion was deemed a retained interest, thus reducing the taxable gift further, in fact the reversion would not be included in either the estate or the taxable transfer: the initial gift did not reflect the value of the retained reversion at all, even though the reversion added nothing to the grantor’s estate. That value of the reversion passed at the time of termination of the GRIT with all of the other assets to the remainder beneficiaries without a further taxable transfer.

The common law GRIT was too good to last for several reasons. Not only was the retained reversion deemed to be part of the retained interest, but the unrealistic assumptions regarding retained interests made the GRITs extremely attractive, even for assets not expected to appreciate.

Example: Suppose in the above–example that the trust were funded with $1 million of stock of a closely–held corporation paying no dividends. The taxable gift on creation of the trust was $341,200. If the asset produced a dividend less than the assumed 8 percent, the retained income interest was undervalued and the value of the reversion was not taxed at all.

Qualified Personal Residence Trusts

Unlike GRATs, qualified personal residence trusts work well even for property not expected to appreciate. Because the retained reversion is part of the retained interest for purposes of calculating the gift, even if the property declines in value, the qualified personal residence trust may be advantageous. The reason is that the actuarial value of the retained interest does not, in fact, add to the grantor’s estate except in the sense that if the house were not available, other assets would have been consumed to provide housing. If a residence worth $1 million is transferred to a qualified personal residence trust, and the gift of the remainder for gift tax purposes is $500,000, at the end of the QPRT period, a valuable asset will have been transferred to family members at a gift tax cost of $500,000 even though the house may be worth, at that point, more than $1 million. But even if the house were only worth $800,000, it is still transferred at a $500,000 gift tax cost.

One planning concept with qualified personal residence trusts which should be a part of every QPRT is the drop down grantor trust. At the end of the trust term, the house can pass directly to family members who can then rent the house back to the grantor at fair market value rental. (In fact, a fair market rental can even be required without causing estate inclusion problems.) But this arrangement has two disadvantages: first, if the house is sold, it will not qualify for the $250,000 ($500,000 on a joint return) exclusion because the property will not have been used by the children as their principal residence. In addition, rent payments to the children will be taxable income. A solution to both of these problems is to have the property pass not to the children, but to a trust which is a grantor trust for income tax purposes. Obviously, the grantor trust powers should be powers which would not cause the trust to be pulled back into the grantor’s estate for estate tax purposes. It
can also not be a power to substitute assets under Internal Revenue Code section 675(4) as this
would violate the requirement in the Regulations that the trust prohibit buy-backs of the residence. If
the trust is a grantor trust, not only will the rent payments not be taxable income because they are in
effect payments to the grantor, but in addition the house will be considered owned by the grantor for
income tax purposes and therefore qualify for the section 121 exclusion of gain on the sale of a
principal residence.

One of the more controversial aspects of planning with QPRTs is the fact that Regulation
Section 25.2702-5(c)(9) requires the governing instrument to prohibit the trust from selling or
transferring the residence, directly or indirectly, to the grantor or related parties. The regulations even
go so far as to prohibit a sale back to the grantor at any time after the QPRT term if the trust is then
gantor trust, i.e., a sale from a drop down trust. The purpose of such a buy back might be to pass
the house through the grantor’s estate so it can acquire a new basis, to provide security to the grantor
or other worthy tax or non-tax reasons. In announcing the proposed regulations (Internal Revenue
Bulletin 1996-18), the Service described the retention of the right to buy the house back as “bait and
switch,” stating that Congress intended the personal residence trust exception to the general rules of
Chapter 14 to enable transferors to pass the family home to younger members of the family.
However, in the author’s opinion, this statement misapprehends the purpose of the personal residence
exception. These rules were developed very much in parallel to the Tax Reform Act of 1969 rules
applicable to split interest transfers to charity. In the Tax Reform Act of 1969, Congress excepted
transfers of remainder interests in personal residences to charities from the general rules (Code
section 170(f)(3)(B)(i)) because, according to the Committee reports, the abuse which Congress was
intending to prevent was simply not possible with a retained interest in a personal residence.
Remember the purpose of the rules: transferors were transferring property to remainder trusts and
retaining fiduciary accounting income. The income interest was valued using a prescribed interest
rate, but in fact the trust was being invested in ways which made valuation of the interest inaccurate.
Such manipulation of investments is not possible with possession of a life estate in a personal
residence. Use of a residence is equivalent to an income stream. It is the author’s belief that the buy
back prohibition in the regulations is invalid. (But we still have to comply with it!)
The GRIT is Not Dead

Not only are QPRTs essentially GRITs funded with a personal residence, but common law,
pre–Revenue Reconciliation Act of 1990–type GRITs may still be done for persons who are not
family members within the meaning of section 2701(e)(2). That section is incorporated by reference
in section 2702 and defines family members (to whom the special valuation rules of section 2702
apply) as including with respect to any transferor only transfers to a spouse, a lineal descendant of the
transferor or the transferor’s spouse and spouses of any such descendant. Therefore, old–style
common law GRITs can still be done for nieces and nephews and more distant family members.
Why were houses excepted from the regular GRAT rules? Probably for the same reason the 1969
Act excepted residences from the parallel charitable split interest rules—see Code section
170(f)(3)(B)(i): as noted in the Committee reports, the abuse potential (investing the assets in a way
that makes a monkey of the tables) is not present with a house. That is why not permitting buybacks
from the QPRT or a dropdown grantor trust makes no sense.
GRIT Calculations

It is easiest to understand the mathematics of the common law GRIT by realizing that the gift is essentially the present value of the remainderman’s future interest times the probability that the grantor will survive the term. Let us analyze these two separately. The present value of the remainderman’s future interest — i.e., the value of the right to receive an amount in the future discounted by an interest rate to reflect the time value of money — can be determined by the following formula:

\[ \text{Value} = \frac{1}{(1 + r)^t} \]

where \( r \) = the section 7520 rate and \( t \) equals the number of years in the term.

1. For example, the value of the right to receive $1 in ten years, assuming an 8 percent interest rate is:

\[ \frac{1}{1.08^{10}} = 0.463193 \]

But in a GRIT calculation, the remainderman will receive the GRIT assets only if the grantor survives the term, so we need to further discount this remainder by the probability that the grantor will survive the term. The mortality assumptions underlying all the actuarial calculations rely on a table showing the number of persons living at every age from 0 to 110, starting with a “cohort” of 100,000 people. If I know that there are 1,000 people alive at one age, and 500 people alive at a later age, I know that the probability of survival from the first age to the second age is 500 divided by 1000 or 50 percent. The probability that a 65–year old will live to age 75 is, therefore, 56799 divided by 77107, or .736626. .736626 times .463193 equals .34120, which is the gift. As the age of the grantor increases, the gift decreases as there is an ever–increasing chance that the grantor will not survive the term. The value of the reversion rises faster than the value of the retained income stream falls. Note that this is a far simpler way to calculate the value of the remainder following a common law GRIT with reversion (or the gift in a QPRT) than the method usually shown in the literature.

Articles frequently suggest using commutation tables to calculate first the value of an income interest for a term of years or until the prior death of the grantor, and then the reversion in a separate calculation, and adding the two together to calculate the total retained interest which, if subtracted from one, equals the gift.

Doing this requires the use of commutation tables from Publication 1457 as follows:

\[
\begin{align*}
\text{Nx factor for age 60} & \quad 4216.567 \\
\text{Minus Nx factor for age 70} & \quad 1101.747 \\
\text{=} & \quad 3114.820
\end{align*}
\]