



THE APPEAL OF STEP LEAD TRUSTS AND SHARK FIN TRUSTS

PG CALC WEBINAR

APRIL 25, 2013

© All rights reserved

Presented by:
Bill Laskin
Vice President, Product Management
PG Calc
129 Mt. Auburn St.
Cambridge, MA 02138
Phone: 617-497-4978
FAX: 617-497-4975
E-mail Address: bill@pgcalc.com

The modern charitable lead trust (CLT) has been with us for a long time. Like the charitable remainder trust and the pooled income fund, it is a creature of the 1969 Tax Act. Yet, it has always been a low volume gift plan that has been viewed by many (most?) gift planners as esoteric.

Until a few years ago, I saw very few articles about CLTs and received very few calls from customers asking for help putting a CLT proposal together. That pattern has changed. While the trickle has not become a flood exactly, it has become a steady stream. Moreover, in the past few years I have seen articles and received calls on two forms of charitable lead annuity trust (CLAT) that I had never run across before then.

Why have CLTs been receiving more attention in the last 2-3 years? In particular, what is the appeal of these alternative forms of lead trust – the step lead trust and the shark fin lead trust – that were effectively unheard of just a few years ago?

Lead trust basics

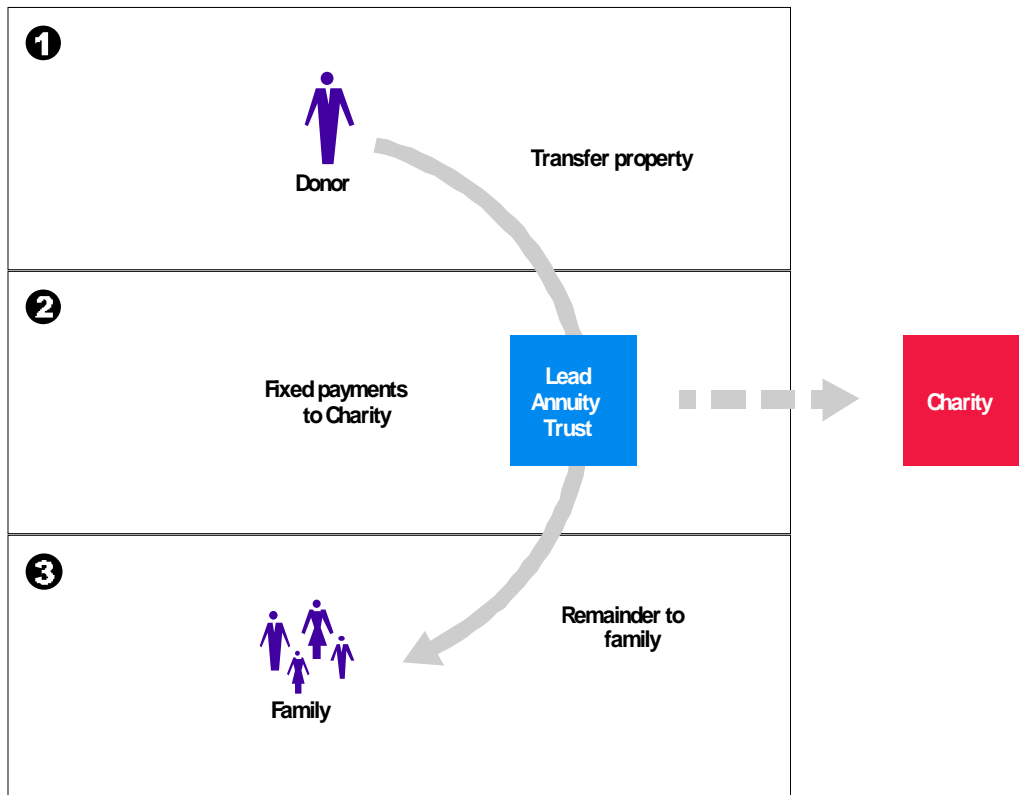
First, let's review some lead trust basics.

Many gift planners describe the lead trust as the opposite of a charitable remainder trust. During its term, a lead trust makes payments each year to charity (the "lead interest"). When the lead trust terminates, it distributes its remaining assets to individuals.

The most common form of lead trust is a non-grantor lead trust, where the assets remaining in the trust at termination go to family members or other heirs. Because the lead trust assets ultimately go to heirs, this gift plan is typically viewed as an excellent estate planning technique for wealthy individuals who want to pass assets to heirs and make substantial charitable gifts.

See Figure 1 for a diagram of how a non-grantor charitable lead trust works.

Figure 1



How it Works

- 1** You transfer cash, securities, or other property to a trust. You receive a gift tax deduction.
- 2** During its term, the trust pays a fixed amount each year to Charity.
- 3** When the trust ends, its remaining principal passes to your family or other heirs you name. Trust growth passes to them tax-free.

A non-grantor lead trust earns a gift tax deduction for the present value of the payments it will make to charity. The difference between this amount and the funding amount of the trust is considered a taxable gift from the donor to the remainder beneficiaries of the trust, typically family members. Income earned by the trust is taxable to the trust. However, the trust's distributions to charity are deductible from this taxable income without limitation, which can result in the lead trust owing no income tax. Assets in the trust are outside the donor's estate; they are not subject to estate tax when the trust terminates and its remaining assets pass to heirs.

While a lead trust can reduce or eliminate gift and estate taxes, it does not avoid capital gains tax. The trust assumes the donor's cost basis in the funding assets. If the trust sells these assets, it must include the realized gain in its taxable income. The trust's remainder beneficiaries, the donor's heirs, assume the cost basis of the assets distributed to them from the trust. If the heirs then sell any of these assets, they must

pay capital gains tax on the appreciation that has accumulated since the trust - or the donor - acquired them. Federal estate tax rates currently are much higher than capital gains tax rates (40% versus 20%), so for a donor with an estate large enough to owe estate tax, passing on a potential capital gains tax to heirs rather than paying an estate tax should be appealing.

Like charitable remainder trusts, charitable lead trust payments can take the form of an annuity, where the payment amount is established at the time of the gift, or a unitrust amount, where the payment amount is a specified percentage of the trust value as revalued each year. For a variety of reasons, some of which are discussed in detail below, most charitable lead trusts take the form of a charitable lead annuity trust.

IRS Statistics Show CLTs are Surprisingly Important to Charities

The table below summarizes information found in separate tables on the IRS site. It gives you a good picture of the number and value of CRTs, CLTs, and PIFs nationwide. The information is based on 5227s filed during 2011, so it's really 2010 information. Note that the dollar amounts are in thousands of dollars, so what appears to be millions in total net assets for each gift type is actually billions.

Split-interest trust statistics from the IRS based on Form 5227s filed in 2011

Item	Total	Size of end-of-year book value of total assets (in \$1,000s)				
		Under \$500,000	\$500,000 under \$1,000,000	\$1,000,000 under \$3,000,000	\$3,000,000 under \$10,000,000	\$10,000,000 or more
	(1)	(2)	(3)	(4)	(5)	(6)
CLT Number of returns	6,617	2,864	1,436	1,306	706	305
Change from 2010	0.1%	-4.2%	9.3%	-5.5%	12.2%	4.1%
CLT Total net assets	20,945,036	395,042	984,235	2,159,982	3,726,160	13,679,616
Change from 2010	8.3%	-9.0%	9.0%	-3.4%	17.5%	8.6%
CRAT Number of returns	15,862	12,854	1,652	1,019	275	62
Change from 2010	-6.3%	-5.9%	-10.9%	-5.0%	-3.2%	1.6%
CRAT Total net assets	7,136,591	1,411,278	1,183,074	1,646,130	1,357,376	1,538,732
Change from 2010	-4.8%	-2.4%	-11.3%	-3.0%	-3.2%	-4.8%
CRUT Number of returns	93,828	67,211	13,897	9,366	2,642	713
Change from 2010	0.0%	1.0%	-3.7%	-1.0%	-1.1%	-0.3%
CRUT Total net assets	86,901,148	11,668,938	9,713,830	14,870,406	13,180,605	37,467,369
Change from 2010	-5.1%	0.2%	-3.4%	-2.0%	-1.0%	-9.5%
PIF Number of returns	1,402	1,070	116	121	71	24
Change from 2010	-0.6%	-0.8%	-1.7%	-3.2%	12.7%	-4.0%
PIF Total net assets	1,311,456	127,767	82,384	192,575	365,321	543,408
Change from 2010	2.7%	4.4%	8.0%	-4.6%	8.3%	0.8%

As you might expect, charitable remainder unitrusts (CRUTs) are by far the most common of the four vehicles listed, outnumbering charitable remainder annuity trusts (CRATs) almost six-fold, CLTs (lead

annuity trusts and lead unitrusts combined) over 14-fold, and PIFs 66-fold. CRUTs also hold the greatest value in assets, but here CLTs come in second, and CRATs a distant third. In other words, CLTs tend to be very large. The average book value of a CLT filing in 2011 was over \$3.1 million, far larger than the average value of a charitable remainder trust or pooled income fund. Nevertheless, a substantial fraction of CLTs, over 40%, had a book value of less than \$500,000.

The statistics above are interesting, but they only hint at the benefit each type of split-interest gift provides to charity. The table below shows how much each type of split interest trust distributed to charity in 2010 (5227s filed in 2011).

Total Charitable Distributions, by Type of Trust and Charity Type, Filing Year 2011¹

[All figures are estimates based on samples—money amounts are in thousands of dollars]

	All		CRTs ²		CLTs		PIFs	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount
Total	27,992	\$3,065,001	10,084	\$1,905,209	17,348	\$1,119,219	561	\$40,573
Arts, culture, and	2,575	\$158,759	632	\$118,253	1,937	\$39,759	6	\$746
Education	6,275	\$741,872	2,634	\$586,612	3352	\$135,481	289	\$19,779
Environment, animals	1,789	\$30,148	359	\$18,010	1,397	\$10,189	33	\$1,950
Health	3,103	\$264,817	971	\$234,306	2,068	\$29,296	64	\$1,216
Human services	4104	\$99,460	932	\$72,069	3098	\$26,292	73	\$1,098
International, foreign	827	\$21,028	248	\$15,801	579	\$5,227	0	\$0
Public, societal benefit	4,580	\$1,492,081	1,262	\$683,743	3,268	\$796,286	50	\$12,052
Religion related	4372	\$194,896	2,939	\$154,884	1399	\$36,297	36	\$3,714
Mutual membership	12	\$21	0	\$0	1	\$4	11	\$17
Other	354	\$61,917	106	\$21,529	248	\$40,388	0	\$0

¹ Values in this table determined by adding values for distributions of principal and distributions of income.

² CRT values determined by adding values for distributions from CRATs and distributions from CRUTs.

One fact that jumps out is that in 2010 CLTs distributed nearly 60% as much to charity as CRTs - \$1,119,219 vs. \$1,905,209 – despite holding less than ¼ the assets. Which is to say, comparing book values overlooks an essential difference between CLTs and CRTs: CLTs distribute funds to charity every year of their existence while almost all CRTs distribute funds to charity just once at their very end.

Interestingly, the same IRS statistics for two years earlier (the 2009 filing year) showed CLTs distributing nearly the same amount to charities as CRTs. What happened to change the relationship so dramatically? Assets recovered a lot of their value after the financial crisis of 2008. The S&P 500 rose 40% over 2009 and 2010, for example. Consequently, the value of the assets distributed by terminating CRTs during 2009 and 2010 also increased substantially, nearly 50%. Meanwhile, distributions from CLTs changed little during the same time span, which makes sense since most CLTs are annuity trusts that make the same payment each year. One lesson to learn from the last few years is that the amount of CRT distributions to charity can change significantly due to economic conditions at the time of termination while distributions from CLTs are less susceptible to the vagaries of timing.

Why the increased interest in charitable lead trusts?

The increased interest in lead trusts coincides closely with the sustained very low monthly IRS discount rates. This rate dipped under 4% in 2008 and has been below that mark ever since, repeatedly setting new historical lows in the process. This summer, the IRS discount rate hit yet another record low when it reached 1.0% in August 2012, a rate that once seemed so impossibly low that the IRS tables for computing planned gift charitable deductions had to be reissued because they previously stopped at 2.0%! The rate has remained between 1.0% and 1.4% through April 2013.

Why is there a strong correlation between interest in lead trusts and low IRS discount rates? Because low IRS discount rates translate to high tax deductions for charitable lead annuity trusts (CLATs). During the past four years, in fact, it has been relatively easy to structure CLATs that earn a 100% tax deduction, and it's never been easier than today.

The chart below shows how the payout rate necessary for a 20-year CLAT to earn a 100% deduction varies with the IRS discount rate. For example, it shows that a 20-year CLAT must pay just 5.54% of its initial value to achieve a 100% deduction when the IRS discount rate is 1.0% (the rate in August 2012), but 8.00% of its initial value when the IRS discount rate is 5% (the rate in December 2007).

IRS Discount Rate	Deduction % for 20-year CLAT with 5% payout rate	100% Deduction Payout Rate for 20-year CLAT
1.0%	88.4%	5.54%
2.0%	81.8%	6.12%
3.0%	74.4%	6.72%
4.0%	68.0%	7.36%
5.0%	62.3%	8.00%
6.0%	57.3%	8.72%

Transfers into a non-grantor CLAT are subject to federal gift tax on the way in, but if a CLAT earns a 100% deduction, there is no taxable gift. This means that a non-grantor CLAT that earns a 100% deduction enables the donor to pass the assets that remain in the CLAT when it terminates to heirs completely free of transfer taxation. This elimination of transfer taxes is very appealing to some donors.

Put another way, an IRS discount rate of 1.0% means that the IRS is assuming that a CLAT will earn an annual investment return of only 1.0% over its term. Most investment advisors are comfortable assuming an annual investment return over the long term that is more in the 6% - 8% range. In effect, the IRS is substantially overvaluing the CLAT charitable deduction.

The economy is still far from robust, of course, and stocks values could decline significantly again in the next year or two. A CLAT that has the misfortune of being created near the beginning of a slide in stock values will have to make payments while its value is depressed, initiating a downward spiral in principal value that could be difficult to pull out of. Many charitable remainder annuity trusts created in the late 1990s have descended toward exhaustion in the last few years for just this reason.

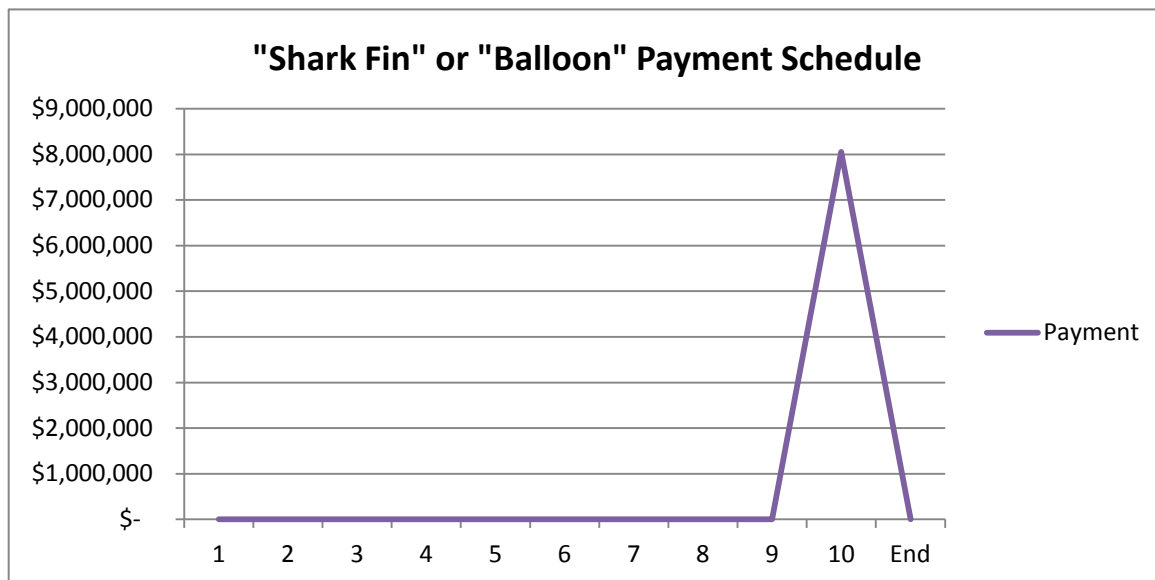
The step lead trust and the shark fin lead trust are two variations of the CLAT that enable a donor to achieve a 100% tax deduction while reducing the risk that an early decline in trust value will lead to a cascade of subsequent declines.

The Step Lead Trust

The step lead trust differs from a standard charitable lead annuity trust only in the pattern of its payments to charity. While a standard lead annuity trust makes payments to charity that are the same amount every year, a step lead trust makes payments to charity that increase in steps during the trust term, for example 10%/year. The IRS made clear in Revenue Procedure 2007-45, which provides annotated sample trust instruments for CLATs created during the donor's life, that this sort of payment schedule meets the requirements of a CLAT. The IRS reaffirmed its position last year with a favorable private letter ruling regarding a 10-year testamentary CLAT with payments that will increase 20% each year (see [PLR 201216045](#)).

The Shark Fin Lead Trust

A shark fin (or "balloon") lead trust is really just an extreme form of step lead trust: rather than increase its payments at a steady clip over the course of its term, a shark fin lead trust makes small payments every year of its term except the last, and then makes a very large payment in its final year. If you graph this payment pattern – and use your imagination – the final payment looks something like a shark's dorsal fin slicing through the water.



It is also possible to structure a shark fin lead trust so that it makes large payments over several final years, not just one. In that case, the fin would look more like an airplane tail fin than a shark fin, with a flat top rather than coming to a point. It most likely would be shorter, too.

Note: The notion of having payments increase by no more than 20% each year is considered a "safe harbor" by some practitioners. It derives not from the revenue ruling mentioned earlier, but rather from a ruling relating to the grantor retained annuity trust (GRAT), a popular non-charitable estate planning

vehicle that is similar to a charitable lead annuity trust in certain respects (see [Treas. Reg. §25.2702-3\(b\)\(1\)\(ii\)](#)). These planners are concerned that if charitable lead annuity trust payments escalate by more than 20% from any one year to the next, such as with the shark fin lead trust, the IRS could take exception. As yet, the IRS has not ruled specifically on the shark fin lead trust.

Why a Step Lead Trust or Shark Fin Lead Trust?

I've already mentioned that the record low IRS discount rate has made the charitable deduction for funding a CLAT of any kind very attractive. In particular, it has never been easier for a CLAT to earn a 100% deduction, a common goal for CLAT donors.

The potential for asset growth in the long term, coupled with the extremely low IRS discount rate, has created ideal circumstances under which a CLAT can grow in value over time. The step lead trust and shark fin lead trust aim to leverage these benefits even more than a standard charitable lead trust does.

Making the payments of the trust lower in its early years (step lead trust) or very low until its final year (shark fin lead trust) should reduce the effects of poor investment results in the early years, should they occur. Even if investment results are good in the early years, the step lead trust and shark fin lead trust should accumulate more assets for the benefit of the trust's heirs. If this is true, then the appeal of these CLAT variations will be apparent: they are likely to transfer more assets to heirs than a standard CLAT at just as low a tax cost.

Results with Different Investment Returns

To demonstrate the advantages of a step lead trust and a shark fin lead trust, I compared the benefits of these two trusts and a standard lead annuity trust under a variety of investment assumptions.

Each trust has a 20-year term, earns a 100% gift tax deduction, and is funded with \$1 million. The step lead trust payments increase 20% each year. I used an IRS discount rate of 1.0%.

Note: All of the calculations were performed using PG Calc's *Planned Giving Manager 6.6* software, except the Monte Carlo calculations, which were performed using Excel and the MCSim Excel Add-In.

The standard CLAT requires a payout of \$55,416 each year to achieve a 100% deduction. In contrast, the step lead trust can earn a 100% tax deduction by distributing just \$6,246 to charity in its first year, an initial payout rate of only 0.62%. The step lead trust won't need to distribute as much to charity as the standard trust until its thirteenth year. The shark fin lead trust won't need to distribute as much as the standard trust until its final year, of course, when it will distribute \$1,199,170. See the table below for the schedule of payments for each trust.

Schedule of Payouts to Charity

	5.5416% Non-Grantor Lead Annuity Trust	Step Non-Grantor Lead Annuity Trust	Balloon Non-Grantor Lead Annuity Trust
YR	Payout to Charity	Payout to Charity	Payout to Charity
1	\$55,416	\$6,246	\$1,000
2	55,416	7,495	1,000
3	55,416	8,994	1,000
4	55,416	10,793	1,000
5	55,416	12,952	1,000
6	55,416	15,542	1,000
7	55,416	18,651	1,000
8	55,416	22,381	1,000
9	55,416	26,857	1,000
10	55,416	32,228	1,000
11	55,416	38,674	1,000
12	55,416	46,408	1,000
13	55,416	55,690	1,000
14	55,416	66,828	1,000
15	55,416	80,194	1,000
16	55,416	96,232	1,000
17	55,416	115,479	1,000
18	55,416	138,575	1,000
19	55,416	166,290	1,000
20	55,416	199,548	1,199,170
TOT	\$1,108,320	\$1,166,056	\$1,218,170

Model 1: 8% constant rate of return

The table at the top of the next page shows the projected outcome for the family and charity under my first set of investment assumptions, a consistent 8% total return each year (3% income and 5% appreciation).

You can see that the step lead trust and shark fin lead trust are both projected to provide substantially more to the family than the standard trust. Back-loading the payments to charity benefits the family members significantly even when investment returns are steady: the step lead trust and shark fin lead trust each transfers about \$550,000 more to family members than the standard CLAT.

Projected results for 8% constant rate of return

	5.5416% Lead Annuity Trust	Step Lead Annuity Trust	Shark Fin Lead Annuity Trust
Benefit to Family	\$2,123,610	\$2,657,480	\$2,688,855
Benefit to Charity	1,108,320	1,166,056	1,218,170
Total Taxes	1,376	83,021	364,711

Benefit to Charity: Curiously, the step lead trust and shark fin lead trust will also provide more to the charity in total payments than the standard lead trust. How can that be? Keep in mind that the timing of when the charity gets its dollars varies greatly among the three trusts. In current dollars, the standard trust will provide more benefit to charity than the other two trusts if you discount at a rate higher than 1.0%.

For example, if you discount for an inflation rate of 3.0%, the present value of the payments to charity are:

	5.5416% Lead Annuity Trust	Step Lead Annuity Trust	Shark Fin Lead Annuity Trust
Benefit to Charity	\$824,450	\$743,151	\$678,275

In fact, from the charity's point of view, the shark fin lead trust acts very similarly to a charitable remainder trust with a 20-year term: the charity has to wait until the end of the trust's term to receive nearly all of its \$1,218,170.

Since the payments made by all three trusts are not affected by investment performance (short of the trust exhausting all its funds and terminating early), the benefit to charity under all of the investment models that follow is exactly the same as above. It is only the benefit to the family that varies.

Lead Trust Taxes: The total taxes owed by each lead trust over its term varies substantially: the standard CLAT pays just \$1,376 over the 20 years, the step lead trust over \$83,000, and the shark fin lead trust over \$364,000. What's happening here?

Recall that a lead trust is a taxable trust, but that it can deduct from its taxable income every dollar that it distributes to charity during the tax year. In our case, the standard CLAT distributes \$55,416 to charity every year. Only when it grows large enough that its 3% income rate translates to more than \$55,416 of annual income does the trust pay income tax. Under our assumptions, this doesn't happen until the nineteenth year of the trust.

In contrast, the step lead trust distributes just \$6,246 to charity in the first year, but earns \$30,000 in income. The difference, \$23,754, is taxable. The trust must pay \$7,246 in tax on this difference. The step

lead trust will continue to pay some income tax each year until its payments to charity increase to the point that they exceed trust income. Under our assumptions, that will take 14 years.

The shark fin lead trust earns the most taxable income, by far. This is the result of two phenomena. First, the shark fin lead trust makes very low distributions to charity in all but its last year (\$1,000 in our example), so almost all of its annual income is taxable except for the year it makes its balloon payment. Second, because the shark fin lead trust payments to charity are so small, its principal is able to grow the fastest of the three trusts, and with this faster growth comes faster growth in income.

Model 2: Negative 20% investment return in first year

What happens if the trusts have a terrible -20% investment return in their first year (think 2008), and then earn a steady 8% thereafter?

Projected results for -20% return in year 1, followed by 8% constant rate of return

	5.5416% Lead Annuity Trust	Step Lead Annuity Trust	Shark Fin Lead Annuity Trust
Benefit to Family	\$916,616	\$1,567,053	\$1,675,326
Benefit to Charity	1,108,320	1,166,056	1,218,170
Total Taxes	0	39,311	265,233

You can see that while each trust is projected to distribute far less to the family than in the previous example, the step lead trust, and even more so the shark fin lead trust, preserve more assets for the family. Since the payments to charity are established at the outset in all three cases, these payments are unaffected by the change in investment performance.

Model 3: Positive 20% investment return in first year

What if the trusts have an excellent +20% investment return in their first year (think 2009) followed by a steady 8% return thereafter?

Projected results for +20% return in year 1, followed by 8% constant rate of return

	5.5416% Lead Annuity Trust	Step Lead Annuity Trust	Shark Fin Lead Annuity Trust
Benefit to Family	\$2,624,722	\$3,116,489	\$3,123,224
Benefit to Charity	1,108,320	1,166,056	1,218,170
Total Taxes	16,289	106,512	407,345

In this case, the standard lead annuity trust narrows the gap between its projected benefit to family and the projected benefit to family of the other two trusts. Nevertheless, the step lead trust and the shark fin lead trust still are projected to provide about \$500,000 more to the family than is the standard lead trust.

Model 4: Negative 20% investment return in last year

What if the trusts experience steady 8% performance until their final year, then suffer a 20% loss?

	5.5416% Lead Annuity Trust	Step Lead Annuity Trust	Shark Fin Lead Annuity Trust
Benefit to Family	\$1,383,275	\$1,716,659	\$1,616,569
Benefit to Charity	1,108,320	1,166,056	1,218,170
Total Taxes	176,507	283,130	428,991

Even when the loss is at the end of the trust term, the point at which the step lead trust and shark fin lead trust payments are greatest, they are projected to provide more to the family than is the standard lead trust.

Model 5: Lower investment return in most years

Now, you may rightly ask what the results are if returns fall short of 8% in most years? To find out, I ran the same four models described above using 6% in place of 8% and 4% in place of 8%. The step lead trust and shark fin lead trust still provided a greater benefit to the family than the standard lead trust, although the step lead trust tends to preserve more assets for family than the shark fin lead trust at these lower rates of return.

In the case of anemic long term investment performance, such as 4% total return/year, followed by a terrible final year, such as a 20% loss, the shark fin lead trust actually leaves less for the family than both the standard lead trust and step lead trust, as shown in the table below.

Model 5: 4% investment return most years, - 20% investment return in last year

	5.5416% Lead Annuity Trust	Step Lead Annuity Trust	Shark Fin Lead Annuity Trust
Benefit to Family	\$384,631	\$518,395	\$291,939
Benefit to Charity	1,108,320	1,166,056	1,218,170
Total Taxes	18,689	26,691	154,668

If the 20% loss is at the beginning of the trust term rather than the end, however, we see the more familiar pattern of the step lead trust and shark fin lead trust outperforming the standard lead trust.

In sum, in the wide range of investment performance tested, the step lead trust always outperformed and the shark fin lead trust almost always outperformed the standard lead trust from a family benefit perspective.

Model 6: Monte Carlo simulation

Monte Carlo simulation uses random numbers and repeated solving of the same problem to approximate its actual solution. Scientists on the Manhattan Project were early users of the technique to solve nuclear physics problems that were too difficult to solve directly. Their code name for the technique was “Monte Carlo.”

With the availability of computers, Monte Carlo has found application in a wide range of disciplines, including financial analysis. I have used Monte Carlo simulation here to examine the likelihood of different outcomes for the three different lead trusts I have been illustrating, based on the results of 5,000 simulations of each trust. What varies in each simulation is the growth rate and income rate from year to year during the trust term. For each of these rates, the annual variation reflects their mean rate and standard deviation (variability from the mean) in a model portfolio of 60% stocks and 40% bonds. I used the S&P 500 index to represent the stock portfolio and Treasury Bonds to represent the bond portfolio.

(Note: There are many Monte Carlo simulation software packages available. I used a free Excel Add-In named MCSim.xla.)

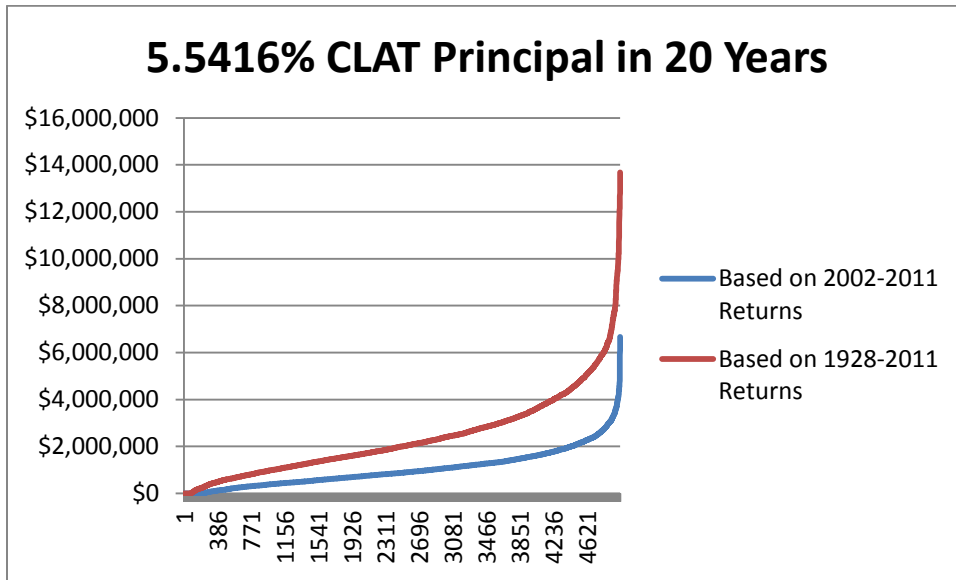
I ran the Monte Carlo simulations using two different sets of means and standard deviations: one reflecting very long term historical returns (1928 - 2011) and the other reflecting recent and not nearly as favorable returns (2002-2011). The means and standard deviations used are summarized in the table below.

Growth and Income Rates in Model Portfolio

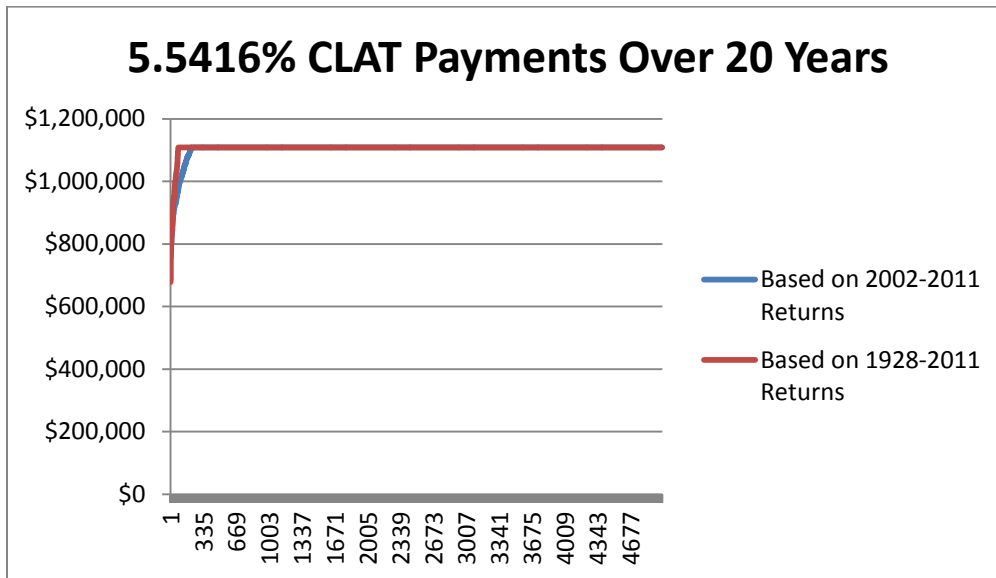
	Year Range	Growth Rate	Income Rate
Mean	1928-2011	4.41%	4.34%
Std. Deviation	1928-2011	12.07%	1.38%
Mean	2002-2011	3.07%	2.60%
Std. Deviation	2002-2011	9.12%	0.28%

Whether either of these sets of means and standard deviations turns out to anticipate well future investment returns only time will tell. My purpose is to analyze how substantially different assumptions for these values affect the outcomes for our three different lead trusts.

The graph below shows how the principal remaining at the end of the standard lead annuity trust’s 20-year term will vary. I’ve sorted the results from the 5,000 simulations from lowest principal amount to highest principal amount. You can see that the outcomes vary over an enormous range whether using 1928-2011 historical returns or 2002-2011 historical returns. In both cases, a few simulations ended with \$0 principal: 77 (1.5%) using 1928-2011 historical returns and 206 (4.1%) using 2002-2011 historical returns. At the opposite extreme, the maximum principal amount using the 1928-2011 returns was \$13,677,778, but “only” \$6,661,249 using the 2002-2011 returns.



Since the payments from a CLAT are fixed, the only instance where they would differ among the 5,000 simulations would be when a simulation predicts exhaustion of the trust principal before the trust terminates. We have just seen that the Monte Carlo simulation predicts this will be a rare event, so the total payments graph looks like this:



While the above graphs are interesting, the real power of Monte Carlo analysis is in assessing the likelihood that the standard lead annuity trust will distribute at least a certain amount for the family. For example, the table below shows that we can be 25%, 50%, 75%, and 90% confident that this trust will distribute at least the amounts shown for each confidence interval.

Confidence interval	1928-2011 Returns	2002-2011 Returns
25%	\$3,152,526	\$1,410,747
50%	\$1,999,122	\$875,183
75%	\$1,158,950	\$467,708
90%	\$605,642	\$182,508

So, for example, if we assume investment returns that vary according to their history from 1928 through 2011, there is a greater than 75% chance that the standard lead annuity trust will distribute more to heirs than the original \$1 million with which it was funded. On the other hand, if investment returns vary as they did from 2002 through 2011, there's a less than 50% likelihood the standard lead annuity trust will perform this well.

Now, let's examine the distribution of outcomes predicted by Monte Carlo simulations for the step lead trust and shark fin lead trust we've been analyzing.

As with the standard lead annuity trust, the step lead trust and shark fin lead trust both have a small probability of exhausting their principal. The table below summarizes the \$0 principal outcomes for all three types of lead trust. In all cases, the likelihood of corpus exhaustion is very low, ranging from 1.0% to 4.1%. Among the three trusts, the step lead trust displays the least likelihood of running dry under both sets of investment return assumptions. This is because the step lead trust is least sensitive to the timing of good and bad investment return years. Unlike the standard lead annuity trust, the step lead trust's low initial charitable payout helps preserve principal in the face of poor investment performance in the early years. At the same time, the step lead trust's final payment is not nearly as large as the shark fin lead trust's, so it is less affected by poor investment performance in the final years of the trust term.

Simulations Resulting in Principal Exhaustion

5.5416% CLAT		Step CLAT		Shark Fin CLAT	
1928-2011 Returns	2002-2011 Returns	1928-2011 Returns	2002-2011 Returns	1928-2011 Returns	2002-2011 Returns
77	206	53	161	87	192
1.5%	4.1%	1.0%	3.2%	1.7%	3.8%

The table below summarizes the highest ending principal value for each of the three lead trusts under each set of investment assumptions. When investment returns go well, it is apparent that the step lead annuity trust and shark fin trust substantially outperform the standard lead annuity trust. Though they still outpace the standard lead annuity trust under the less optimistic 2002-2011 assumptions, the differences are not nearly so pronounced.

Greatest Principal Value at End of 20-Year Trust Term

Trust Type	1928-2011 Returns	2002-2011 Returns
5.5416% CLAT	\$13,677,778	\$6,661,249
Step CLAT	\$18,384,910	\$7,234,968
Shark Fin CLAT	\$19,935,369	\$7,922,663

As mentioned above, the most telling results from Monte Carlo simulations are the confidence intervals. The table below compares the 25%, 50%, 75%, and 90% confidence intervals for the standard lead annuity trust with those of the step lead trust and the shark fin trust.

Confidence Intervals for Principal Value at End of 20-Year Term

Confidence interval	5.5416% CLAT		Step CLAT		Shark Fin CLAT	
	1928-2011 Returns	2002-2011 Returns	1928-2011 Returns	2002-2011 Returns	1928-2011 Returns	2002-2011 Returns
25%	\$3,152,526	\$1,410,747	\$3,898,938	\$1,873,024	\$4,008,992	\$1,886,472
50%	\$1,999,122	\$875,183	\$2,476,817	\$1,198,481	\$2,411,929	\$1,172,321
75%	\$1,158,950	\$467,708	\$1,404,615	\$655,025	\$1,363,304	\$624,048
90%	\$605,642	\$182,508	\$724,586	\$270,846	\$651,110	\$245,420

You can see that at every confidence interval, and under both sets of investment return assumptions, the step lead trust and the shark fin trust accumulate significantly greater assets for the benefit of the family than does the standard lead annuity trust. Also worth noting is that the confidence interval values for the step lead trust and shark fin trust are similar to each other, although the step lead trust values are higher than the shark fin trust values at the higher confidence intervals (50%, 75%, and 90%), but lower at the lowest confidence interval (25%). This pattern supports the notion that the step lead trust is a less risky structure than the shark fin trust, but the differences are hardly dramatic and could be reversed under different term length, step increase %, and/or investment return assumptions.

Gift and Estate Taxes

Lead trusts are particularly attractive to donors whose estates are large enough to pay gift and estate taxes. A lead trust can reduce or eliminate gift tax on the assets used to fund the trust, as well as eliminate gift and estate taxes on any asset growth that occurs after the trust is formed. The gift tax and estate tax exclusion for 2013 is \$5.25 million per person and \$10.5 million per married couple. This means that except to the extent donors have made other taxable gifts in the past, only donors who plan to transfer taxable amounts above these very substantial thresholds need to worry about paying gift tax on transfers they make this year. These generous exclusion amounts were made permanent by provisions in the American Taxpayer Relief Act that went into effect on January 1, 2013.

Those who do exceed the \$5.25/\$10.5 million thresholds face a 40% federal gift tax or estate tax on the excess, depending on whether they make the transfers during life or at death.

The sizable gift and estate tax thresholds do not affect the outcomes for the three types of lead trust we have been reviewing. All three have been designed to earn a 100% charitable deduction, so in each case there is no taxable gift regardless of the funding amount of the trust or the donor’s prior taxable gifts.

Nevertheless, the current gift and estate tax exclusion amounts do mean that lead trusts are attractive gift plans primarily to single donors with estates over \$5.25 million and married couples with estates over \$10.5 million. Although these exclusion amounts don’t affect lead trusts that earn a 100% charitable deduction, they do profoundly affect non-charitable wealth transfer alternatives, such as transfers to heirs through a will or a non-charitable irrevocable trust.

The table below shows what would be left for heirs after taxes under two different non-charitable alternatives. In one case, the donor invests \$1 million for the 20 remaining years of his life and then transfers the accumulated principal to an heir through his will. In the other, the donor transfers \$1 million to an irrevocable non-charitable trust that distributes its accumulated principal when the donor dies 20 years later. I assumed the donor has a \$10 million estate and is able to earn 3% income and 5% growth each year on these assets.

Model 7: pass assets to heirs through will or trust in 20 years; 8% constant return

	Pass Assets Through Will	Irrevocable Non-Charitable Trust
Benefit to Family	\$2,194,203	\$3,740,163
Total Taxes	\$1,979,288	\$482,574

Enormous differences in the total tax amounts under the two transfer options translate into equally dramatic differences in the benefit to family amounts.

By way of comparison, the table below shows the benefit to family and total taxes under the same investment assumptions for our three types of lead trust.

Projected results for three lead trusts: 8% constant rate of return

	5.5416% Lead Annuity Trust	Step Lead Annuity Trust	Shark Fin Lead Annuity Trust
Benefit to Family	\$2,123,610	\$2,657,480	\$2,688,855
Total Taxes	\$1,376	\$83,021	\$364,711

Relative to passing the same \$1 million through one's will, funding a standard lead annuity trust will cost the family about \$0.08 for each dollar given to charity (not bad), while the step lead trust and shark fin trust will actually transfer more to the family while at the same time giving over \$1 million to charity over 20 years.

The better the investment performance, the better the lead trust benefit to the family will look in comparison to passing the same asset through the will because the lead trust will shelter more asset growth from tax. On the other hand, the opposite is also true: the worse the investment performance, the worse the lead trust benefit to the family will look in comparison to passing the same asset through the will.

The results for the irrevocable non-charitable trust show that a taxpayer lacking charitable motivation has much better planning options than simply holding on to \$1 million and passing it on through his will. The advantage of the irrevocable non-charitable trust over passing assets through the will rests in the trust's ability to shelter asset growth from taxes. While the assets transferred to the trust are subject to gift tax at

the time of transfer, any asset growth that occurs within the trust will not be subject to gift or estate tax. This is a potentially huge tax advantage over passing assets through a will.

Permanent Transfer Tax Rules Should Encourage Lead Trusts

Until the American Taxpayer Relief Act (ATRA) became law at the beginning of 2013, a return to a \$1 million gift and estate tax exemption and a 55% top gift and estate tax bracket loomed as a possibility. While some donors and advisors saw this possibility as motivation to make transfers in 2012 while the exclusion was a much higher \$5.12 million and the top rate just 35%, many others chose to wait until there was more clarity on the future of exclusion amounts and transfer tax rates before making estate planning decisions. ATRA has given them that clarity, removing an important impediment to many lead trust discussions. Donors and their advisors are now able to evaluate the benefits of a lead trust with much more confidence than just a few months ago. This new confidence can only help advance their decision-making, which in some instances will result in a new lead trust.

Donor Profile

What does a typical lead trust donor look like? First and foremost, she is wealthy. By wealthy, I mean someone who has the capacity to relinquish all access to assets worth at least several hundred thousand dollars. A typical lead trust donor has a net worth of \$10 million or more.

In addition to possessing the wealth to make a lead trust gift possible, the typical lead trust donor is planning her estate. Surveys suggest that this process commences for most donors when they are in their 40s or 50s, followed by periodic reviews as they grow older. Don't count out an otherwise strong lead trust prospect just because the prospect is younger than 60.

Since one or more individuals must be remainder beneficiaries of a CLT, the typical lead trust donor has heirs to whom she wishes to pass on assets, but not immediately. In many instances, in fact, the term of a CLT is selected in large part based on when the donor wants her heirs to receive the trust assets. The donor may feel, for example, that her children will not be mature enough to handle a large distribution from a CLT until they are 20 years older, and therefore choose a trust term of 20 years.

In addition to possessing the capacity to fund a CLT, a lead trust donor must be willing to make a major gift to charity of several hundred thousand dollars or more. As a CLT can make payments to more than one charity, the donor does not necessarily need to be willing to make a gift on that level to just one charity.

Given that a CLT donor must be willing to make a major gift, it follows that the typical lead trust donor will already be a major supporter of the charity or charities to which the donor's CLT makes payments. The donor may have made a previous major gift in the past or be a high level annual supporter.

Apart from CLT donors being wealthy, the characteristics reviewed above are true of most lead trust donors, but not all. There are exceptions, so keep an open mind.

Funding Considerations

Most any kind of property can be transferred to a CLT. Property with a potential for significant future appreciation is especially appropriate to transfer to a non-grantor CLAT, as the appreciation can be accumulated for heirs and sheltered from gift and estate taxes. As we have seen, this is particularly true for step lead trusts and shark fin trusts. Cash is often included as part of the funding assets in order to make payment of the charitable distributions during the early years possible without forcing the sale of other funding assets.

The non-grantor CLT can be used to preserve a closely held business for the next generation. The children receive the stock at the end of the trust term, possibly with only a fraction of the value having been subject to transfer taxes.

One concern is making the required payments to charity if the stock pays little or no dividends. These payments must be made, since a "net income" CLUT is not permitted. Using the step lead trust or shark fin trust form can ameliorate this issue by reducing the payment obligations of the trust during its early years.

In addition, the corporation might be willing to purchase some stock from the trust. Or the trust could distribute stock to the charity in satisfaction of the required payments. At some future time the charity would sell the stock to the corporation, to other stockholders, or perhaps to an external buyer to whom all stockholders are willing to sell. When in-kind distributions are made in satisfaction of the payment, the trust will be taxed as if it had sold the property and paid the proceeds to charity. The deduction for charitable payments should, however, offset the taxable gain.

A non-grantor lead trust could be used to replace an appreciated stock with a diversified portfolio over the duration of the trust. The trustee would sell shares of the stock each year such that the realized gain would be offset by the charitable distribution deduction, resulting in no capital gain tax. The sale proceeds in excess of those used to make the charitable distribution would be reinvested in a diversified portfolio. Over the course of the trust term, the appreciated stock could be largely or completely replaced by diversified investments at no tax cost. The standard lead annuity trust works better with this sort of plan than a step lead trust or certainly a shark fin trust because its larger distributions in the early years can shelter more capital gain from the sales of stock.

Note that a CLT is prohibited from acts of self-dealing and, if the deductible value of the lead trust's lead interest is 60% or more, it is also subject to the prohibitions against excess business holdings (the trust plus the donor and all other "disqualified" persons must hold less than 20% of a business enterprise) and jeopardy investments. In the case of a lead trust funded with closely held stock or a family business, the restriction against excess business holdings may influence the donor to limit her deduction to less than 60% of the funding amount, or seek other assets with which to fund the lead trust.

Conclusion

The step lead trust and shark fin lead trust are interesting variations on the standard charitable lead annuity trust that may offer particular advantages in the current economic environment. Under almost all

investment performance assumptions, the step lead trust and shark fin lead trust are able to transfer more assets to heirs than a standard lead annuity trust. Monte Carlo analysis shows that the step lead trust and shark fin lead trust also outperform the standard lead trust at every confidence interval, suggesting that they are consistently more beneficial to family than the standard lead annuity trust under a wide variety of investment return patterns.

Although the step lead trust and shark fin trust also distribute more dollars to *charity* during their term than a standard lead annuity trust, this is not true when you take inflation or the time value of money into account. From the charity's perspective, it is better to get more dollars sooner, as provided by the standard lead annuity trust.

Lead trust donors are uncommon, but they are also uncommonly generous and well worth pursuing. The step lead trust and shark fin lead trust represent alternatives to the standard lead annuity trust that require less charitable motivation to be appealing to a donor. They thereby enlarge the pool of potential lead trust donors (yes, this is one shark fin you want swimming around in your pool of gift options). Nevertheless, they do still require significant charitable motivation.

While your charity might prefer the steady payments of a standard lead annuity trust over the escalating payments of a step lead trust or the single balloon payment of a shark fin lead trust, the step lead trust and shark fin lead trust present creative opportunities to attract very significant gifts that otherwise might not happen at all.