

**Is Your Gift Annuity
Program Sick or Healthy?
*Diagnosing and Treating
Gift Annuity Risk***

September 30, 2005

Gary M. Pforzheimer
President
PG Calc Incorporated
Cambridge, MA

I. Why do you need to assess gift annuity risk? (*Symptoms*)

Everyone needs to go to the doctor now and again. Even if one is trained as a physician, getting a checkup on a regular basis is important to good health. At the doctor's office, a professional asks questions and probes around. He or she is looking for symptoms – that is, assessing the health of the patient. What is found is often correlated to the age of the patient, but not necessarily. Some people show no signs of concern even at an advanced age while other people exhibit symptoms of illness earlier.

The same can be said for the gift annuity programs at charities. Without the benefit of routine assessments, some programs will fail where an early diagnosis could have saved them.

There are at least three reasons why you need to assess your gift annuity program. First, you want to assess the current level of risk in the program. During what times was your program most active? Was it during the 80s and 90s when payout rates were set to match the high investment returns of those days? Or was your program more active recently, when rates were lower. As a practical matter, although you are looking forward from today, the payout rate of old but still active gifts is important, even if they seemed like a good deal at the time they were made.

Current long-term investment returns, especially fixed obligations, aren't nearly as rosy as they used to be. Did your institution purchase non-callable bonds that matched those high payout rates with terms 20% longer than the life expectancy? Probably not. The total returns today are likely much lower, so the effective yield required to support the annual payments has gone up. Consider the risk of carrying a 10% annuity for a \$100,000 gift made ten years ago. If the current market value is \$80,000 (because of the need to have sold some of the portfolio to make payments), one now has to earn 12.5% of that \$80,000 to make the \$10,000 annuity.

There are other risky types of annuities, including those where people have already reached their life expectancy – please see the end of this paper for some numerical examples.

A second reason to assess your gift annuity program is to make sure the institution stays out of financial trouble. Having some bad apples in the cart has the potential to rot not just those apples but the whole cartful! Mentioned above are some examples of risky annuities, and there are many more, but one also needs to look at the aggregated risk of the theoretical “self sufficient” assets that back the annuity obligation. Since gift annuities are guaranteed obligations of the charity, they are not self sufficient if something goes wrong and require careful monitoring.

In many places, gift annuity assets are placed in one (or more) restricted accounts and own units of the institution's endowment, an arrangement permitted in most but not all states. While I don't want to provide an opinion on whether this is the appropriate investment arrangement for the annuities, it is important to note that this account is not a truly restricted fund in the sense that should this fund run out of money your Treasurer will be taking principal and income from somewhere else!

The third reason to assess the health of your gift annuity program is so you can run it better. Generally speaking, in business, comparing what you do with what others do almost always results in improvement; finding best practices and adjusting yours is part of all process improvements. As stated above, keeping your program healthy is critical in keeping the departments that expect the remainder values happy, as well as the institution overall happy because it doesn't have to dip into other funds.

Assessing the health of your program can pay off in other more specific ways. For one, it can guide investment strategy. While not always practical, the decision of whether your annuity program should have the same asset allocation as the endowment comes from a review of the obligations in the gift annuity program. A review of your current program can help ensure you have the right policies and procedures for gift acceptance going forward. Were there some circumstances in the past that resulted in gifts you'd rather not have now that you could avoid in the future?

An assessment can also be worthwhile for reviewing the cost structure of the program. How have the administration and investment management of these funds played out in the past and are they on the right track for the future?

Finally, what are your reserve maintenance and withdrawal policies and have they served you well? Compliance with some state regulations requires meeting minimum reserves requirements. Do you exceed those reserves by razor thin margins? Do you calculate reserves for internal purposes even if not necessary for compliance? How do you calculate the amount of principal to remove from the fund upon the death of the final annuitant?

The American Medical Association has a motto to “*above all, do no harm*” while treating a patient. I don’t believe there is a motto for looking for symptoms during exams, but I would image it might be “*above all, do not fail to look.*” Being fully informed about the health of your program sets the stage for early detection and, when necessary, treatment and recovery.

II. How do you assess gift annuity risk? (*Diagnosis*)

A successful visit to the doctor results in a diagnosis. In a routine physical, the doctor often finds nothing wrong, in which case there is no diagnosis of illness, just the confidence of a clean bill of health. Other times, however, the doctor detects signs and symptoms or receives test results that are not to her liking. Different symptoms call for different tests, although some parts of the examination are done regardless of visible symptoms. For example, blood work may be done every year, but a strep culture is performed only when there is an inflamed throat. How doctors perform their diagnosis is broken into three parts: history and physical, tests, and diagnosis. The same tenets can be applied to reviewing the risk of a gift annuity program.

We can start as doctors do: with the history and physical exam. First, you need to gather your information. If you maintain your own records, review them for accuracy, especially for genders and dates of birth for all income payees. One common mistake is not adding successor annuitants to the records of current annuities. Without knowing who all the annuitants are that must die before you will receive the money there is no way to analyze a gift correctly. Similarly, it is imperative that if a successor beneficiary has died (even before receiving payments) he or she should be removed from the record for purposes of accurate evaluation. While city and zip code aren’t important, the correct dates of birth and genders are. Life expectancy tables simply need to know the right number of people, how old they are and what their gender is (a few tables do not require gender) to give you the right number of years that gift is projected to be making payments.

If your records are with a service provider, request them in a format that is useful and review for genders and dates of birth for all income payees. Remember that your service provider could make the same mistakes as you in not keeping birth dates in, or by failing to remove a second annuitant that dies before needing to be paid. Good, clean, data comes from constant use. Everyone knows that a mailing list is most accurate if used all the time. If you or your service provider are constantly doing compliance reports such as FASB liabilities or state reserves, your data will probably be already in perfect shape; if not, then the process of gathering information in order to diagnose your program will be more of a challenge.

After dates of birth and genders, the next important piece of data you need for each annuity contract is the payout amount. This is usually self-evident from the checks being mailed or the 1099-R printed each year, but sometimes these values don’t match each other, let alone the contract! Also, double check that annuitants are being paid on the right frequency. A common mistake is paying half an annuity four times a year, or paying a quarterly amount once a year. It’s really a matter of comparing the original contract amounts with your current electronic records.

Another area of review revolves around the current market values of the contracts. Before a serious diagnosis of each annuity contract can be performed, one must know how much principal is associated with that gift. Sometimes this can be very hard to “baseline” if the analysis has never been done before. Consider a gift annuity program with four contracts. All the gifts were funded with \$100,000 but now ten years later the fund is worth \$360,000. In order to review the risks of the individual contracts, it is critical to know if each of the contracts is worth \$90,000 or if one is worth \$120,000 and the others are worth \$80,000 each. If you or your service provider uses PG Calc’s GiftWrap software, there is a function called CashTrac that will help you automate this task. If not, Microsoft Excel can do the job. What you want to do for each contract, for each year, is to add the investment return and subtract the fees and payments. That should leave you, each year, with the sum of the contracts equal to the total program. If you have some contracts where the payments and fees are higher than the return in that year, their market values will go down while others that have payments and fees that were less than the investment return would go up. In the back

of this paper, note that some of the examples have higher market values than their original gift amounts and some have lower ones.

As your final task in gathering information for your diagnosis, determine your current investment strategy for the annuity program. Knowing what it has been in the past is also very important. Take, for example, the patient who runs 10 miles a day and eats no fatty foods but as little as three years before had an unhealthy diet, performed no exercise, and had a family history of heart trouble. You can see how the history of investment strategy, as well as its performance, coupled with an understanding of the current investment strategy, is important to discover and disclose.

After taking your history and physical, the doctor will want to run some tests. For gift annuities this can take several forms. Using Microsoft Excel, coupled with other programs such as GiftWrap to determine life expectancies, run out your contracts using a straight-line investment assumption method, such as 6% net return each year. Once you know your investment performance assumptions, you can figure out how much your contract will gain (or lose) in market value each year. Once you know your life expectancies, you can decide how many years to run each contract. Then, you can look at the totals each year in the future to see how well you are doing. An assumption for withdrawals is built into this kind of simplistic analysis – the fair market value at the time of expected completion of each contract is assumed to be removed from the fund and not to play a role in returns after that year.

There are a number of ways this analysis can be made more sophisticated. For one, you can create optimistic and pessimistic investment return scenarios. This methodology allows you to see the likely boundaries of the outcomes as “best-case” and “worst-case” that can then be compared with the “average-case” results predicted using your original assumptions. Another way to bound the results is to use alternative mortality tables (some more aggressive and some more in line with wealthy donors who tend to outlive the averages). Another way to make these tests more realistic is to offset the ages of a good, current, mortality table to take into account wealth and health and say that you will run your spreadsheet for 3 years longer than the “expectancy.”

Yet another way to improve on the sophistication of the tests is to introduce Monte Carlo simulations. Here, you would employ a technique that can help show the likelihood of exhaustion of funds for each annuity contract. Instead of drawing three straight investment return lines (one high, one low, and one in the center) to approximate how a contract will perform, thousands of random trials, each one with inputs centered around a mean investment return, are performed and statistically averaged. The advantage of Monte Carlo simulations is that they can better show levels of confidence and answer the question of how likely is it that a certain contract will run out of money. This is a better measure of risk than assuming the same investment return year-in and year-out. If your institution’s policy of tolerance for a risk of exhaustion is no more than 5%, Monte Carlo analysis will show if your program is within that standard.

Inherent in a good Monte Carlo simulation is the ability to have estimated inputs randomly generated. Instead of being sure that the lower bound of investments is 5% and the upper is 10%, a Monte Carlo simulation begins with the notion that the average (mean) investment might be 7.5% and 67% of the time the numbers fall between 6% and 9% and 95% of the time they fall between –4% and 20%. It’s the application of “standard deviation” from the mean that makes the random numbers both random and controlled. We don’t just pick any number from a hat – rather, we make the numbers in the hat follow a mathematical set of rules so that when we pick 1,000 numbers over time most are close to the middle and the rest spread out around it evenly. The distance of the spread is related to the risk level of the portfolio.

A second level of sophistication is to randomly generate the number of years each trial in the simulation is run based on data in an appropriate mortality table. As a consequence, some trials will last longer than the annuitant’s life expectancy, others less long, and the average trial length will tend to equal it. This is a more accurate way of reviewing how long a contract pays than even picking an up-to-date mortality table and adding a few years. In this manner, you can see the effect on outcome when a contract terminates “early” or “late.” These results can be combined, too, for an even more sophisticated look at the funds.

It is important to generate test results at both the individual and the pool levels. Sometimes the vast majority of contracts will be deemed to be healthy and the others will have no material impact. In other cases, the many healthy contracts may mask the terrible fact that a few bad contracts threaten to be a drain on all the contract payments.

After the tests are in, the doctor continues his or her work. One idea of differential diagnosis means that one compares the results with a normal patient to see where the changes are. In other words, sometimes it's not the absolute problems that draw attention, but the fact that this test is off from the "norm." Knowing where the test results stand in the context of others done before provides the physician with conclusions not otherwise discovered.

It's during this differential diagnosis process that one identifies problem gifts, especially the largest ones and/or oldest annuitants, and brings them to the fore. One way to do this is to sort results from the diagnostic tests by metrics such as most likely to fail, or by number of dollars into the red a contract goes before its predicted termination. Whether these gifts are the largest ones, or the ones with the oldest donors, or the ones with the highest payouts may be evident from quick inspection, or only when sophisticated tests are coupled with a differential diagnosis.

III Policies and implementation (*Treatment*)

Once the tests have been performed and the diagnoses discovered, you end up in one of two pathways. With any luck, your gift annuity program has passed all the tests with flying colors and is in as good health as an astronaut. Alternatively, problems have been discovered and treatment is indicated. You can treat an illness with either active treatments (such as medication) or by changes in lifestyle ("stay off the hard stuff and get to the gym!"). In the planned giving world the analogous treatments are to either intervene to solve an existing problem or to make policy adjustments.

There are a number of interventions that can be tried, depending on the type of problem. But just as with all pharmaceuticals, you have to match the illness with the cure. And, you may be limited as to which treatments your institution will allow you to use. For example, one way to solve the problem of a single annuity contract that poses an extraordinary risk is to remove it from your portfolio and reinsure it. However you might not be allowed to do that because of regulations or policies. If you can reinsure, this is a solution that may make sense when you spot an annuity that is threatening to be a drain on your whole portfolio.

Another active treatment you can employ with a problem annuity contract is to go back to the donors and ask them to voluntarily reassign the annuity to the charity. If the rate is high enough, and discount rate low, they might get a very favorable charitable income tax deduction in the year they do this. In fact, it is acceptable if the total of the charitable deduction taken at the time of the gift plus an additional deduction taken when a donor severs a contract to be greater than the original fair market value of the gift. And this happens all the time! It happens especially when life expectancy tables have changed (as they did in 1989 and 1999) and when discount rates go down (as they have dramatically in the past 5 years). It makes sense because the IRS is giving the donor a tax deduction for the present value of the income stream he or she is giving up. You know it's a good deal for you because if the deduction is high that means you were on the hook for a long and high payment!

Can you "renegotiate" a contract? Not always and generally not in states that require you use the same rates for all donors. And you have to be careful that there is an assignability clause in the contract that will let the donor assign the interest to the charity. That leaves open the question of whether the contract can be partially assigned that is, some of the income redirected back to the charity to have an effective lower rate. Check with your counsel.

Another important lever not discussed much here yet has to do with adjusting the investment of the funds to match the obligations and the risk. If the fund, across all the contracts, owes \$70,000 and has a market value of \$1,000,000, one might reason that the total rate of return of the fund, net of expenses, should be at least 7%. Of course, at different times a 7% return would carry an unacceptable level of risk (that is, an entire portfolio of junk bonds or only speculative stocks), but this is the exercise to be carried out by the charity and the investment manager, at levels of sophistication way beyond the scope of this paper. The point is that there should be a match between the payment needs of the fund and its investment as well as a match between the risk level of the annuity program and that of the investment policies.

What do you do if your right arm has been injured and can't help as much as it used to with lifting? Of course you try to undergo physical therapy to improve its strength. But you might also try to do things with your left and improve it so you can better compensate. The same might be said of how it could make sense to seek out certain types of strong annuities to compensate for some problem ones identified in your pool. If, for example, you have some high payout rates from annuities written 15 years ago – you might specifically try to encourage some older people to accept lower rates (in states that allow different rates for the same age) or look for some larger gifts from people where the rate schedule is lower.

A final intervention is to be pro-active about the way funds are removed from the pool of assets. This action should be taken in concert with appropriate policies (discussed below) but the concept is certainly elementary enough. One way to shore up the ratio of assets to payments (or assets to the present value of future liabilities, whichever way you choose to look at it) is to leave an asset in that no longer has payments. The corollary to this is to return some assets to the restricted gift annuity fund that may have been taken out in the past in order to balance these ratios.

The second area of treatment, changes in lifestyle (or policy adjustments), is more subtle than the active interventions but form the basis for them. For one, withdrawal policies can thwart the efforts to balance a fund as discussed immediately above. Ahead of time and before you think you need it, have a strategy for withdrawals and ratios that allows you to use tactical maneuvers on the fly. Withdrawal policies should acknowledge the need to maintain adequate reserves, even if the charity is not registered in a regulated state. Furthermore, the formulas used by some of the various states may not be conservative enough for your management so this is an exercise to be done in advance of potential problems. Risk is shared among all annuitants in the pool, so it's always wise to maintain an adequate surplus over the necessary minimum reserve for when the going isn't good. Most states that require a minimum reserve also require a surplus of 10%, but this is not a magic number. Your financial staff needs to determine the surplus percentage that is adequate for your institution.

Another important way to live is to be sure your gift acceptance policies match your needs and abilities. Some gifts are certainly better than others in terms of their financial health, and adding a bad one to a pool of good annuities is not something that should be done on purpose. Since the definition of good and bad annuity contracts can depend on what other gifts you already have, it isn't possible to simply define bad contracts here. And, it's also dependent on your investment policies in effect at the time and anticipated for the future.

In conclusion, it is important to get a checkup every so many years or certain amount of gifts, whichever comes first (the exact amount depends on the size of your program). This review of policies to actual practices done on a routine basis will help you identify problems before they occur and fix any that are spotted before they get bigger. Sometimes checkups should be done by professionals who look at gift annuity programs all the time, and other times a self exam will be sufficient to ensure early detection. No matter how you do it, remember that the planning and the strategy will not only serve you well with the tactical decisions that come up every day, but will protect the best interests of your institution and your successor.

[this page intentionally blank]

Straight Line Analysis Years to Exhaustion and Projected Residuals

Gift No.	Date of Gift	Annuitant Name	Date of Birth #1	Date of Birth #2	Gift Amount	Annual Payment	Annual Yield Rate	Life Expectancy as per Ann2000 Tables	FMV as of 6/30/05	Deferred Until	Years to Exhaustion (assuming 5% constant net return)	Years to Exhaustion (assuming 6% constant net return)	Years to Exhaustion (assuming 7% constant net return)	Residual at life expectancy assuming 5% constant net return using Ann2000 Tables	Ratio	Residual at life expectancy assuming 6% constant net return using Ann2000 Tables	Ratio
1	5/1/1995	June Cleaver	5/28/1925		10,000	690	6.9	11.3	9,407		23.04	28.61	44.48	6,097.77	0.61	7,397.63	0.74
2	5/1/1997	June Cleaver	5/28/1925		10,000	790	7.9	11.3	8,210		14.76	16.40	18.73	2,492.48	0.25	3,451.40	0.35
3	12/1/1997	Mary Anne and Robert Reilly	9/7/1926	12/17/1921	50,000	3,650	7.3	13.9	41,240		16.75	19.02	22.55	9,635.75	0.19	15,998.01	0.32
4	12/10/1997	Bror Ingeborgsson	2/1/1908		100,000	12,000	12	3.8	58,303		5.60	5.79	5.99	20,541.58	0.21	22,317.56	0.22
5	12/10/1997	George and Christine Flox	5/4/1935	2/2/1932	25,000	2,425	9.7	21.2	33,716	12/31/2004	23.91	30.17	52.18	6,107.34	0.24	16,733.57	0.67
6	8/4/1999	Sissy Mouse	11/11/1911		1,000,000	114,000	11.4	4.8	605,000		6.21	6.44	6.69	153,822.96	0.15	176,474.24	0.18
7	12/4/1999	Fiona Ferrett	7/1/1942		50,000	3,150	6.3	24.8	43,400		23.50	29.43	48.08	(4,102.08)	(0.08)	12,645.92	0.25
8	7/15/2001	Wallace and June Cleaver	8/8/1923	5/28/1925	50,000	3,600	7.2	13.9	44,710		19.52	22.96	29.33	17,553.83	0.35	25,011.97	0.50
9	12/30/2002	Juniper Drinkwell	2/4/1946		40,000	4,440	11.1	28.3	53,160	12/30/2011	n/a	n/a	n/a	42,770.18	1.07	88,131.20	2.20
10	6/25/2003	Christian Feldstrom	6/28/1926		15,000	1,035	6.9	10.8	17,090		35.15	78.59	n/a	14,525.92	0.97	16,945.59	1.13
11	11/14/2004	Bror Ingeborgsson	2/1/1908		250,000	28,250	11.3	3.8	235,678		10.86	11.66	12.64	167,236.22	0.67	175,957.84	0.70
12J	12/14/2004	Roland and Inez Randall	2/8/1921	6/20/1924	75,000	5,400	7.2	13	72,712		22.51	27.70	41.17	40,676.19	0.54	52,504.52	0.70
13J	3/21/2005	Harrison and Jennifer Coppe	5/1/1950	7/14/1953	50,000	4,450	8.9	38.4	50,402	3/21/2015	n/a	n/a	n/a	58,959.84	1.18	159,267.48	3.19
15	4/15/2005	Adrienne Feldstrom	10/6/1924		20,000	1,660	8.3	10.7	19,110		17.25	19.70	23.62	9,221.70	0.46	11,483.96	0.57
		TOTALS			1,745,000				1,292,138					545,539.69	0.31	784,320.91	0.45

Straight-line annual investment return, each annuity lasts for life expectancy of annuitant(s)

1. Net rate of return affects results dramatically. The longer the life expectancy of a gift's annuitants, the greater this effect. Compare cases 11 and 13.
2. This effect is important on a pool-wide basis as well. The predicted residuum as a % of total funding amount for all gifts more than doubles from 31% for a 5% net return to 64% for a 7% return.
3. The straight line analysis provides considerable comfort that the annuity pool is in good shape. Only one annuity, Case 7, is predicted to run out of money, and only if the most conservative 5% net return obtains. Even then, the gift is only \$4,100 in the red and is easily compensated for by the other gifts in the pool.
4. Recall that the ACGA assumes a 5% net return when developing its rates and has a target of a 50% average residuum. Why is our residuum only 31% when we assume a 5% net return? Two reasons, at least. One, some of the gifts were made in the 1990s when the ACGA's net return assumption was higher than 5% and thus suggested higher annuity rates. Two, as each year passes beyond the year of the gift, the annuitant's life expectancy extends farther and farther beyond when she was originally expected to die. This effect is especially dramatic in Case 6, where an annuitant who was 88 at the time of gift in 1999 has almost outlived his then life expectancy of 6.9 years by 6/30/2005 and at 94 now has another 4.8 to go.

Is Your Gift Annuity Program Sick or Healthy?
Diagnosing and Treating Gift Annuity Risk

Monte Carlo Analysis
Years to Exhaustion and Projected Residual

Gift No.	Date of Gift	Annuitant Name	Date of Birth #1	Date of Birth #2	Gift Amount	Annual Payment	Annuity Rate	Life Expectancy as per Ann2000 Tables	FMV as of 6/30/05	Deferred Until	Monte Carlo: 50% probability of this ending balance or higher	Monte Carlo: 90% probability of this ending balance or higher	Monte Carlo: number of simulations out of 1,000 where annuity ran dry
1	5/1/1995	June Cleaver	5/28/1925		10,000	690	6.9	11.3	9,407		10,273	4,634	28
2	5/1/1997	June Cleaver	5/28/1925		10,000	790	7.9	11.3	8,210		4,916	(4,443)	209
3J	12/1/1997	May Anne and Robert Reilly	9/7/1926	12/17/1921	50,000	3,650	7.3	13.9	41,240		19,450	(19,342)	242
4	12/10/1997	Bror Ingeborgsson	2/1/1908		100,000	12,000	12	3.8	58,303		22,933	(15,480)	271
5J	12/10/1997	George and Christine Flox	5/4/1935	2/2/1932	25,000	2,425	9.7	21.2	33,716	12/31/2004	25,142	(12,150)	184
6	8/4/1999	Sissy Mouse	11/11/1911		1,000,000	114,000	11.4	4.8	605,000		149,031	(648,793)	374
7	12/4/1999	Fiona Ferrett	7/1/1942		50,000	3,150	6.3	24.8	43,400		28,862	(39,330)	270
8J	7/15/2001	Wallace and June Cleaver	8/8/1923	5/28/1925	50,000	3,600	7.2	13.9	44,710		29,190	(5,795)	137
9	12/30/2002	Juniper Drinkwell	2/4/1946		40,000	4,440	11.1	28.3	53,160	12/30/2011	94,968	579	98
10	6/25/2003	Christian Feldstrom	6/28/1928		15,000	1,035	6.9	10.8	17,090		17,846	10,424	6
11	11/14/2004	Bror Ingeborgsson	2/1/1908		250,000	28,250	11.3	3.8	235,678		171,330	67,902	32
12J	12/14/2004	Roland and Inez Randall	2/8/1921	6/20/1924	75,000	5,400	7.2	13	72,712		58,790	13,533	51
13J	3/21/2005	Harrison and Jennifer Copperfield	5/1/1950	7/14/1953	50,000	4,450	8.9	38.4	50,402	3/21/2015	209,531	20,287	66
15	4/15/2005	Adrienne Feldstrom	10/6/1924		20,000	1,660	8.3	10.7	19,110		12,948	(3,779)	138
		TOTALS			1,745,000				1,292,138				

Investment Assumptions for Monte Carlo Simulations

	Asset	Total	
	Percentage	Return	Risk
Large Cap Stocks	25		
<i>large cap diversified</i>	25	12.32	18.36
<i>large cap value</i>	0		
<i>large cap growth</i>	0		
<i>mid cap diversified</i>	0		
<i>mid cap value</i>	0		
<i>mid cap growth</i>	0		
Small Cap Stocks	15		
<i>small cap diversified</i>	15	17.07	29.03
<i>small cap value</i>	0		
<i>small cap growth</i>	0		
<i>micro cap stocks</i>	0		
Taxable bonds	45		
<i>Govt/Corp Bonds</i>	0		
<i>Intermediate Govt Bond</i>	25	6.09	4.96
<i>Long Term Govt bonds</i>	0		
<i>Long Term Corp bonds</i>	20	5.8	8.87
<i>Short Term Corp Bonds</i>	0		
<i>Short Term Govt Bonds</i>	0		
<i>High Yield Bonds</i>	0		
<i>Foreign Bonds</i>	0		
Tax exempt bonds	0		
Cash & Equivalents	5	4.29	4.52
Alternative/Other Assets	10		
<i>Other/undefined</i>	0		
<i>Emerging Markets</i>	0		
<i>Foreign Stock</i>	10	12.32	22.98
<i>Managed Futures</i>	0		
<i>Concentrated Large Cap</i>	0		
<i>Concentrated small cap</i>	0		
<i>Hedge funds</i>	0		
<i>Real Estate/REITS</i>	0		
Overall Portfolio Risk and Return Set			
Risk	10.79		
Total Return	9.77		
Fees	1.00		

Monte Carlo analysis, annuity duration varies based on Annuity 2000 table

1. Contrary to straight-line analysis, Monte Carlo suggests annuity pool may be at considerable risk.
2. Gifts made in 1997 -2002, when ACGA rates were higher, at the most risk of running dry. All should be considered for remediation.
3. Case 6, in particular, poses an enormous risk to the pool. There's a 37% chance it will be in the red and, given its large \$114,000 payout, a 10% chance it could be in the red \$650,000 or more, a huge amount relative to the pool. What happened? An old donor who receives a high payout rate (11.4%) is likely to live well beyond her life expectancy.
4. Even the safest gifts have some small risk of doing badly. The safest in our pool still has a 6/1000 chance of running dry (Case 10).
5. Not all gifts will suffer a bad outcome. Some will terminate early; gifts enter pool at different times and therefore have different investment experiences despite being in the same investment pool. The gifts insure each other. Those that turn out well cover those that do not. Case 6 is simply too big a problem for the other annuities to cover and requires intervention. Case 7 may be too.

Conclusions

1. Monte Carlo analysis can uncover gift and pool risk that straight-line analysis may miss.
2. Gift annuities funded in the '90s, when ACGA rates were higher, may be the most likely to be at risk.
3. Gift annuities funded for very old annuitants who are healthy, can pose a great risk to the charity because their payouts are high and a healthy old annuitant may outlive his or her life expectancy by 50% - 100%. Consider capping your maximum annuity rate below the ACGA rate of 11.3% for 1-life 90+ and 11.1% for 2-life both 95+.

Contact information:

Gary M. Pforzheimer, President
PG Calc Incorporated
Your partner in planned givingSM
129 Mt. Auburn Street
Cambridge, MA 02138
617-497-4970 (phone)
617-497-4975 (fax)
gary@pgcalc.com
www.pgcalc.com