



Estate Planning Mathematics - A Valuation Problem

An Analysis of Life Insurance Alternatives to Maximize After Tax Returns

Executive Summary

The Issue:

If you purchased Whole Life Insurance years ago, then you've probably built up significant cash value. And because these policies have the dual benefit of being an attractive estate planning vehicle and an investment, you will be faced with many alternatives. Deciding which alternative makes the most sense for you and your family can only be resolved with an appropriate financial model.

Available Options:

1. Maintain the existing policy/death benefit and do nothing else
2. Convert current policy to a "second to die policy" & place it into a Trust
3. Add annual gifts (not subject to the lifetime exclusion of \$10.9 million) to the Trust

Solution:

Deciding what to do with a Whole Life Policy ultimately comes down to a valuation problem. A proper financial model can shed considerable light on which alternative is best given your personal liquidity, risk tolerance, and planning goals.

Whole Life Insurance has the dual benefit of being an attractive estate planning vehicle and an investment with a quasi-guaranteed return. "Quasi" because the cash value fluctuates with market returns, but the insurance payoff (death benefit) is guaranteed and fixed in amount. The bad news is the insured will never enjoy the death benefit, but at least his spouse and kids will.

As an estate planning vehicle, whole life policies may provide many benefits. There is no income or capital gain tax on the cash value or death benefit. The cash value and death benefit are protected from creditors, and the policy can be used to pay estate taxes (only the gain in the cash value being subject to estate taxes itself).

Being faced with an estate tax problem is usually a good problem to have because it means one's estate is worth more than \$5.45 million (\$10.9 million combined with a spouse). That said, most wealthy couples would rather not pay the current 40% tax rate on amounts exceeding \$10.9 million.

Successful baby boomers who purchased these policies years ago may be faced with many alternatives, none of which can be resolved without an appropriate financial model. These options may be defined as follows:

Option 1: Do nothing; maintain the existing policy & death benefit

Option 2: Convert policy to a second to die policy and place it into a Trust

Option 3: Add annual gifts of up to \$14,000 per recipient per gifting individual (a couple can gift \$28,000 combined to an individual and the gift is not subject to the life time exclusion of \$10.9 million) to the Trust

There are of course liquidity tradeoffs to be considered as well. You can surrender the policy and spend the cash value on yourself. Or you can keep it for your spouse and/or kids' benefit. But putting it in Trust does much

more because it's out of the estate and not subject to estate taxes. The trade-off is once you do that it's not yours to spend anymore, and your option to surrender and use the proceeds is gone.

So how do the economics shake out if you don't mind your heirs throwing a big party in your honor (that you won't be attending)? Since almost all analysis comes down to a valuation problem, let's figure out the value of the estate at various points in time and the corresponding implied comparative returns.

The analysis below answers this question for a hypothetical baby boomer family ages 59, 58, 27 and 25. A previously purchased policy having a current cash value of \$650,000 with a death benefit of \$2.2 million can be exchanged for a second to die benefit of \$2.4MM. Alternatively, the parents (P1 and P2) can add a maximum of \$14,000 per child (C1 and C2) per year per parent for ten years (\$560,000 total).

Assuming there is an estate tax "problem" (you are over the \$10.9 million in total estate value currently and expect to be over whatever the estate tax exemption is upon death), and so long as P1 and P2 feel they will never need the death benefit money nor the \$55,000 per year contributions to the insurance plan, the analysis illustrates that Option 2 saves significant estate tax on the plan proceeds and is preferable over Option 1. Additionally, adding the maximum annual contribution (Option 3) creates an additional \$2.8 million in estate value. This leaves C1 and C2 about \$5 million to split upon the actuarial death of P2 (worth about half that in real terms). Also, given the implied return from the policy versus an assumed low-risk after-tax return of 3%, combined with the future estate tax savings on the \$560,000 contributions, there is a significant economic benefit to the estate in making the contributions.

Individuals Living		Year	Option 1 Hold As Is	Option 2 Convert + Trust	Option 3 Option 2 + Add \$56k/yr
Total Cash Value in the Policy					
P1/P2/C1/C2		2017	\$650,000	\$650,000	\$707,680
P1/P2/C1/C2		2018	\$669,500	\$669,500	\$788,321
P1/P2/C1/C2		2019	\$689,585	\$689,585	\$873,163
P1/P2/C1/C2		2020	\$710,273	\$710,273	\$962,387
P1/P2/C1/C2		2021	\$731,581	\$731,581	\$1,056,177
P1/P2/C1/C2		2022	\$753,528	\$753,528	\$1,154,730
P1/P2/C1/C2		2023	\$776,134	\$776,134	\$1,258,245
P1/P2/C1/C2		2024	\$799,418	\$799,418	\$1,366,931
P1/P2/C1/C2		2025	\$823,401	\$823,401	\$1,481,006
P1/P2/C1/C2		2026	\$848,103	\$848,103	\$1,600,696
P1/P2/C1/C2		2027	\$873,546	\$873,546	\$1,648,717
P1/P2/C1/C2		2028	\$899,752	\$899,752	\$1,698,178
P1/P2/C1/C2		2029	\$926,745	\$926,745	\$1,749,123
P1/P2/C1/C2		2030	\$954,547	\$954,547	\$1,801,597
P1/P2/C1/C2		2031	\$983,183	\$983,183	\$1,855,645
P1/P2/C1/C2		2032	\$1,012,679	\$1,012,679	\$1,911,314
P1/P2/C1/C2		2033	\$1,043,059	\$1,043,059	\$1,968,654
P1/P2/C1/C2		2034	\$1,074,351	\$1,074,351	\$2,027,713
P1/P2/C1/C2		2035	\$1,106,581	\$1,106,581	\$2,088,545
P1/P2/C1/C2		2036	\$1,139,779	\$1,139,779	\$2,151,201
P1/P2/C1/C2		2037	\$1,173,972	\$1,173,972	\$2,215,737
P1/P2/C1/C2		2038	\$1,209,191	\$1,209,191	\$2,282,209
P2/C1/C2		2039	\$2,200,000	\$1,245,467	\$2,350,676
P2/C1/C2		2040	\$2,266,000	\$1,282,831	\$2,421,196
P2/C1/C2		2041	\$2,333,980	\$1,321,316	\$2,493,832
P2/C1/C2		2042	\$2,403,999	\$1,360,956	\$2,568,647
C1/C2		2043	\$1,485,672	\$2,140,000	\$4,940,000

Once a model like this is built, various scenarios can be run to include the world without estate taxes (it actually happened in 2010), different reinvestment rates and different life spans. As you might expect, the longer you live (or the second to die lives) the worse the economics because the death benefit is fixed. From a holistic or theoretical perspective, it's an interesting hedge...your willingness to trade return for life expectancy, so the economics may still make sense.

One insurance "trick" to be aware of, however, is that of the joint probability issue; that is, the second to die could be the person who was supposed to die first so the statistical life of P1 and P2 combined is

later than the actuarial life of the second to die. So the benefit is not quite as good as would be suggested by a simple actuarial table. (For example, the statistical last to die of a group of 100 people might be age 99 even though all have actuarial lives below 90.) Also, by getting the first to die policy the proceeds are available earlier. The implied return from the period first to die to second to die is often very low.

So it comes down to a valuation problem. And when modeled properly can shed considerable light on which alternative is best given your liquidity, risk tolerance, and planning goals.

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