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Life Insurance: A Valuable Contingent Asset Class?

Properly assess the death benefit in a wealth transfer portfolio management context

Life insurance is often narrowly perceived as a liquidity tool for the estates of high-net-worth individuals. While true, there's a growing view within this community, and among their advisors, of life insurance as a contingent asset class (that is, by paying out on the insured's death), a legacy planning vehicle that can add tremendous value and diversification to a family's wealth transfer portfolio. Life insurance is attracting the attention of sophisticated investors and their advisors who wish to improve the risk-adjusted return in the portion of their wealth that will pass to the next generation.

The phrase, "life insurance as an asset class," isn't new. Traditionally, advisors with this view would generally refer to the projected return on investment (ROI) at death for comparison to other traditional asset classes, which is an incomplete analysis, like comparing stocks to bonds only by their expected returns. Like any asset class, life insurance should be evaluated in terms of the return and risk it's expected to add to a portfolio. In the past, advisors often addressed its expected risk anecdotally by acknowledging its lower risk nature. The methodology discussed below can complete the traditional view by quantifying the expected risk of the death benefit so it can be mathematically assessed in a portfolio management context. Before knowing how life insurance fits, it's necessary to understand certain modern portfolio theory (MPT) principles.

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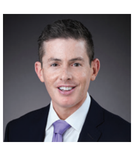

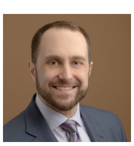

MPT

Harry Markowitz, the creator of MPT said, "A good portfolio is more than a long list of good stocks and bonds. It is a balanced whole, providing the investor with protections and opportunity with respect to a wide range of contingencies."[1] MPT, and its statistical principles discussed below, is the guiding theory used by investment management professionals to build a portfolio of individual asset classes with varying risk and return characteristics and optimize its overall risk and return profile.

This process of risk-return optimization can be used to create an "efficient frontier" of optimal portfolio allocations that yield the most return for a given level of risk or, conversely, the least risk for a given level of return.[2] An optimal portfolio can then be selected based on the investor's risk tolerance.

According to MPT, an individual asset's risk and return shouldn't be examined in isolation but also by how it behaves within and impacts overall portfolio risk and return. Statistical measures such as standard deviation, correlation and the Sharpe ratio can help to do so.

Risk and Return

Expected risk is represented by the expected standard deviation of returns or the average amount by which an asset's individual returns vary from its average return over a given period. A higher standard deviation implies more volatility in the returns of an asset or greater risk. Expected return is simply the expected compound average of the individual realized returns. Both can be based on historical performance or prospective capital market assumptions.

MPT assumes that investors building their portfolio of securities are rational and naturally risk averse, only taking on more risk if they're adequately rewarded with potential higher return. Comparing risk and return

alone for an asset may not provide a complete picture of how valuable it can be to the portfolio. Investment management professionals use the Sharpe ratio, which is an indication of an asset's risk-adjusted return, to help clarify this relationship. The Sharpe ratio[3] measures the amount of return yielded in excess of the return one could earn on a risk-free asset, like cash or Treasury bonds, relative to the risk. The higher the Sharpe ratio, the higher the effective risk-adjusted return. It's a fraction, not a rate of return itself, calculated by dividing the difference between the asset's expected return and the risk-free rate by its standard deviation.

Life Insurance Merits

At its core, life insurance protects against an economic loss resulting from the insured's death, such as replacing income or wealth given to charity, or paying off a liability or estate taxes. While there are various types of permanent life insurance, two primary types are used as contingent asset classes, universal life (UL) and participating whole life (PWL), the differences among the various iterations of which are beyond the scope of this article. If structured properly, both of these enjoy favorable, codified tax attributes, including the exclusion of death benefit proceeds from the beneficiary's gross income, the tax-deferred build-up of earnings in the cash value and the ability to take income tax-free withdrawals or policy loans.[4]

From an asset class perspective, the death benefit has unique benefits not otherwise found with traditional assets from a wealth transfer perspective. Due to its inherent risk-pooling nature based on the law of large numbers, the death benefit received can be considerably higher than premiums paid, the extent to which depends on when the insured passes. It provides a fixed payment correlated to mortality, not the financial markets, offering a hedge against premature death and volatility in other assets, thus stabilizing the transfer of wealth. Therefore, the presence of the death benefit can help reduce risk and increase the risk-adjusted return in the insured's wealth transferred downstream.

The choice of product type among UL and PWL as well as premium pattern, such as a single pay, 10-pay or pay-for-life, is an important consideration based on individual risk tolerance and desire for flexibility. Those with possibly more expensive and less flexible guaranteed premiums offer more certainty as to the policy's outcome, assuming payment is timely. Policies with non-guaranteed charges, interest crediting rates or dividends have a greater possibility of actual policy values or required premiums being more or less over time than illustrated, which can increase uncertainty and variance as to the ultimate rate of return attributable to the death benefit, for better or worse. As the case study below illustrates, though, the death benefit's primary, risk-adjusted portfolio value comes more so from its low risk as opposed to expected return.

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Portfolio Inclusion

These unique characteristics of life insurance can be mathematically valued in the portfolio management context using MPT principles for comparison to, or allocation among, other asset classes. To do so requires computing the expected return and risk of the death benefit.

The expected return for the death benefit can be computed as the annualized ROI realized on premiums paid, assuming death occurred by any given age from issue. Actuarial mortality tables are used to generate a life expectancy (LE) for the insured, or the average age of death for individuals recently underwritten for life insurance, by which point there's roughly a 50% probability of death having occurred. The expected return used can be the projected ROI assuming death occurs at

LE or, to be more conservative, an age beyond LE having a greater probability of death and typically lower ROI.

Expected risk can be measured by computing the standard deviation of all projected annualized ROIs, illustrating the extent to which the ROI varies depending on when death occurs. Not all the projected ROIs are weighted equally, though. Because the death benefit is contingent on the insured's death, the fate of which is certain but the timing of which isn't, the projected ROIs must first be adjusted for, or multiplied by, their likelihood of occurring as represented by the actuarial probability of surviving to, and dying in, each year. The standard deviation is then calculated on this projection of all probability-weighted potential outcomes.

> From a portfolio perspective, due to its low risk and potential bond-like or better return, life insurance can help pull the efficient frontier of optimal portfolios leftwards and upwards, reducing risk, improving return or both.

Sharpe ratio calculations can then be done to compare the risk-adjusted return value relative to other asset classes. As MPT purports, it's important to examine an asset class individually as well as within a portfolio, which can also apply to life insurance, as illustrated in the case study. This approach helps mathematically to prove what many advisors intuitively know about life insurance—that it can yield attractive return with low risk and help improve risk-adjusted return at death.

Case Study

As part of her estate planning, Mrs. Client, age 60, previously created and made gifts to a trust for the benefit of her descendants, to which she allocated her lifetime basic exclusion amount. The trust currently owns investable assets worth $15 million. The trustee is considering acquiring life insurance for wealth transfer diversification, specifically a UL policy with a death benefit of $10 million guaranteed to age 120 on Mrs. Client, who's a standard, nonsmoker underwriting risk. The annual premium to maturity is $154,049, roughly 1% of the trust's current value, will be funded from existing portfolio cash flow and is assumed to be timely paid when due. Her LE is 29 years, or age 89. To quantify the risk and return characteristics of the death benefit, the trustee conducts a contingent asset class analysis.

At LE, as illustrated in "Examining Life Insurance as a Contingent Asset Class," this page, the death benefit received would represent a 6.6% pre-income tax-equivalent ROI on premiums paid. Should she die prior to

Examining Life Insurance as a Contingent Asset Class

Death benefit represents a 6.6% annualized income tax equivalent return on investment on premiums paid

	Year 1	LE* -10	LE* -5	LE*	LE* +5	LE* +10	Age 120
Return on investment at death	8,251.5%	15.0%	9.7%	6.6%	4.6%	3.2%	0.3%
Probability of surviving to and dying in Year X**	0.04%	1.78%	3.08%	4.61%	4.87%	3.13%	0.01%
Probability-weighted standard deviation	0.47%						

*Note that "LE" denotes life expectancy. **Each probability is calculated by projecting the number of insureds who die in each year from an initial large number of lives based on annual death rates per 1,000 from the mortality table until all have died by age 120. The number of deaths each year is divided by the initial starting number. The sum of all individual year probabilities adds up to 100%.

— Michael Fontanini

LE, the ROI would be similar to returns from private equity or the stock market. If Mrs. Client survives longer than her LE, the ROI would be similar to a balanced portfolio or bonds. More importantly, the probability weighted standard deviation of all potential ROIs is just 0.47%. Note, the death benefit ROIs are adjusted for pre-income tax equivalency assuming a modest 25% average income tax rate, because the historical returns used for traditional asset classes in the comparison don't account for income taxes on any realized gains and income nor for management fees.

For comparison purposes, the trustee evaluates the expected return at LE and probability-weighted standard deviation of the life insurance against the historical performance over the past 30 calendar years ending Dec. 31, 2019 of market indices representing three different asset classes—stocks, bonds and real estate investment trusts (REITs)—the compound average returns and standard deviations of which are used for the expected return and risk. See "Compare With Historical Performance," this page.

Next, the trustee evaluates the risk-adjusted return of each of the above asset classes by calculating their Sharpe ratios. The Sharpe ratio for life insurance can be much higher than that of the other assets in Mrs. Client's portfolio for wealth transfer purposes due primarily to its low risk.[5] For example, using a 2.1% risk-free rate, the historical Sharpe ratio for the S&P 500 Index is 0.46, calculated by dividing the difference between the 9.96% expected return and 2.1% risk-free rate by the standard deviation of 17.18%. For REITs and bonds, the Sharpe ratios are 0.44 and 0.80, respectively. Life insurance comes in at 9.49, implying a higher risk-adjusted return value.

From a portfolio perspective, due to its low risk and potential bond-like or better return, life insurance can help pull the efficient frontier of optimal portfolios leftwards and upwards, reducing risk, improving return or both. Although actual portfolio management involves diversification among more asset classes, "Risk-Return Values," p. 38, is a conceptual model of this effect using stocks, bonds, REITs and life insurance, the risk-return values for each and corresponding covariances.[6]

For a more conservative analysis, the trustee evaluates the various asset classes but with life insurance using LE +5 years, pushing its expected return down to 4.59%.

Despite a more conservative age to measure the life insurance and drop of over 200 basis points in expected return, its Sharpe ratio of 5.30 ((4.59% expected return - 2.1% risk-free rate) ÷ 0.47% standard deviation) still exceeds the other asset classes. Because the denominator of the Sharpe ratio is standard deviation, this example reinforces that the primary risk-adjusted value of the death benefit is derived more so from its low risk as opposed to expected return.

Additional Considerations

It's critical to understand the death benefit is illiquid and realized on the death of the insured or, with certain policies having a corresponding accelerated death benefit rider, a qualifying chronic or terminal illness subject to annual or aggregate limits defined by the rider. Consequently, the individual's inter vivos liquidity needs and the extent to which a post-mortem time horizon exists inform the extent to which life insurance can be incorporated as a piece of the overall allocation.

Policy ownership and premium funding considerations must be addressed with respect to any estate or gift tax planning concerns. If premium dollars are to be

Compare With Historical Performance

Expected return vs. expected risk

	Stocks[1] Historical	Bonds[2] Historical	REITs[3] Historical	Life Insurance Illustrated at Life Expectancy
Expected return	9.96%	5.91%	10.23%	6.60%
Expected risk	17.18%	4.74%	18.41%	0.47%
Sharpe ratio	0.46	0.80	0.44	9.49

Endnotes

1. Stocks: S&P 500 Total Return Index
2. Bonds: Bloomberg Barclays U.S. Aggregate Bond Index
3. Real estate investment trusts (REITs): FTSE Nareit U.S. Real Estate Index Series All REITs Total Return

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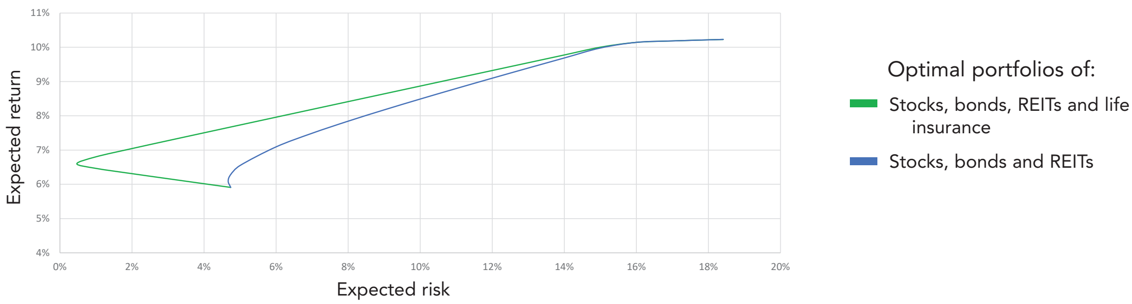
Risk-Return Values

Life insurance pulls the efficient frontier of optimal portfolios leftwards and upwards



Notes:
Stocks: S&P 500 Total Return Index
Bonds: Bloomberg Barclays U.S. Aggregate Bond Index
Real estate investment trusts (REITs): FTSE Nareit U.S. Real Estate Index Series All REITs Total Return

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sourced by selling securities, income tax considerations must be addressed. Taxpayers should seek guidance from a tax, legal or investment professional accordingly.

Because expected risk and return can change over time due to changes in LE, premium requirements or several other factors, it's important to periodically review policy performance and update the analysis accordingly. As mentioned, if premiums are based on non-guaranteed elements, actual performance may be better or worse than illustrated. To demonstrate the risk and impact of changes to or deviations in non-guaranteed elements, the analysis can be done using projections based on current, mid-scale and guaranteed pricing assumptions for the policy. If the policy underperforms or sufficient premiums aren't paid, the policy could lapse and the death benefit may be lost. External factors, such as policy owner behavior or downgrades in carrier financial strength, should be acknowledged and monitored but aren't possible to reasonably predict or quantify. Carrier selection is equally important with that of policy type because a carrier with lower financial strength may pose higher risk in terms of its ability to pay the death benefit.

External factors, such as policy owner behavior or downgrades in carrier financial strength, should be acknowledged and monitored but aren't possible to reasonably predict or quantify.

—The authors would like to acknowledge Christian Kaplan, CFA, of Equitable in New York City. Many of the views expressed herein are based on Chris' initial work on this subject.

Endnotes

1. Harry M. Markowitz, *Portfolio Selection: Efficient Diversification of Investments* (1959).
2. Harry M. Markowitz, "Portfolio Selection," *Journal of Finance* 7 (1952).
3. William F. Sharpe, *The Journal of Portfolio Management* (Fall 1994).
4. *See* Internal Revenue Code Sections 72, 101, 7702 and 7702A. Guarantees can be adversely affected by deviations in amount and timing of premium payments.
5. The 2.1% risk-free rate is based on BlackRock's Capital Market Assumptions for cash over the next 25 years as of April 2020, *www.blackrock.com/institutions/en-zz/insights/charts/capital-market-assumptions.*
6. Covariance among stocks, bonds and real estate investment trusts is based on calendar year returns from 1990-2019 for the respective indices. Because the death benefit is correlated to mortality, its covariance is assumed to be zero with the others.