

# **Understanding the Dynamics of the Life Settlements Asset Class, How It Relates to Portfolio Asset Allocation and Why the Synthetic Instrument is the Best Means of Obtaining Longevity Risk**

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In discussing sector allocation within an active investment management model, there are many strategies and asset classes to choose from. An emerging asset class, longevity, more commonly known as senior life settlements, is an investment area that is growing rapidly on Wall Street as well as Main Street and can no longer be overlooked by the global financial markets. As many investment firms look to implement more controls over portfolio risk and volatility while attempting to generate sustained returns using asset allocation strategies, many institutional investors are turning to longevity-linked investments that can provide both capital appreciation and portfolio stability. This asset class is becoming more common in properly diversified institutional portfolios as it has been shown to create higher risk adjusted return for the portfolio as a whole due to the asset classes' low price volatility, high potential returns and minimal correlation to traditional investment arenas, all highly sought after attributes in today's marketplace.

Similar to zero coupon bonds, senior life settlements, which are third party owned universal life insurance, are purchased at a discount to face value. This discount factor is mainly a factor of the underlying insured's estimated life expectancy, which is an actuarial calculation based on age, gender, lifestyle (smoking, extreme activities, place of domicile, etc), medical history and known impairments, among other personal attributes. Other factors that fluctuate in importance over time are insurance carrier credit risk, interest rate risk, cost of and access to capital (for premium financing) and the credit spreads of the asset backed market in general. Currently, due to the recent credit crisis, which strained insurer's balance sheets because of their investments in risky mortgages, corporate debt and commercial real estate that have taken

massive valuation write-downs the past year and a half, carrier credit risk is prominent on investor's radar screens.

When the investment matures, a politically correct way to say the insured experienced a mortality event, the investor receives the full face value of the policy. The main drawback to life settlement investing is the negative cash flow aspect of the asset, which takes the form of insurance premiums that are required to keep the policy "in force" and the investment active. An investor can either use cash to pay for said premiums, which will cause cash drag on performance, or borrow the money from some premium finance facility, which will increase the investor's overall cost of capital on the investment. This is the main reason why accuracy in life expectancy calculations are so important, for even a one year difference in experienced mortality versus modeled mortality can have disastrous effects on realized yields.

One creative solution to such negative cash flow and possible performance issues is to structure the life settlements portfolio in synthetic form instead of buying a portfolio of physical policies. One of the main advantages of a synthetic longevity instrument is that a portfolio can be built on trade date with a very large number of lives (300 to 500, all with equal face values), meaning the tremendous diversification of the portfolio reduces the tracking error of realized mortality versus modeled mortality. High diversification also serves to minimize the dispersion of the standard deviation of life expectancy possibilities, reducing potential volatility. This is extremely difficult to achieve with physical portfolios.

Another benefit is that premium financing is built into the synthetic structure at a very advantageous cost of capital as compared to third party financing options for physical policies. This allows the investor to maximize the upfront cash investment and minimize his cash outflow over the life of the instrument. As for portfolio construction, the synthetic portfolio return distribution profile can be customized depending on the investor's objectives such that it either emulates the economics and cash flows of a physical portfolio of policies, or acts as a pure longevity-linked note whereby no cash flows occur until the note's maturity, as it is based on the actual observed mortality experience of the pool over the investment time horizon.

Most investors, as they look to allocate their capital, will inquire about the risk, return and portfolio construction differences of an investment in longevity linked assets as compared to equities. There is a strong relationship between portfolio construction methodologies when comparing investments in life settlements and equities. Most institutional investors who practice active portfolio management strive to minimize specific risk by structuring a large diversified portfolio to track the beta of a particular asset class or subset of that asset class, and use their specific skill sets to find their competitive advantage by investing in only those areas where they feel they can add alpha. Equities are more easily understood so I will use that as my example; most active S&P 500 managers buy the entire index, either through the holding of all 500 physical stocks (or a large enough sampling that strives to correlate highly with the entire index) or through a total return swap (depending on their ability to hold derivative instruments) and then

try to outperform that index by taking incremental risks where they feel they have an analytical advantage by going more or less long (versus the index weights) certain stocks or industries.

Life settlement portfolio construction is similar in that diversification of at least 350, but ideally 500, distinct lives with equal face values is very important for achieving the beta of the asset class, which can be defined as the expected modeled mortalities of a large population over a specific holding period. Within that portfolio, specific policy selection of those lives the portfolio manager believes will have a higher probability of maturing earlier than the market based life expectancy model expects is where alpha can be created. Synthetic instruments make the creation of a diversified portfolio much more efficient as not only can the entire portfolio be created in one trade, eliminating ramp up risk, but they can be structured to have equal notionals across all lives, eliminating lumpiness risk and minimizing actual to expected mortality basis risk. Neither is realistically conceivable when building portfolios of physical life settlements.

From a high level, the use of a synthetic instrument to obtain longevity risks allows the investment manager to effectively and efficiently isolate and target longevity risk and to transfer most of the unwanted legal and administrative risks commonly found in the physical asset to the swap counterparty. In addition, because the entire portfolio is constructed in one trade, the portfolio risk-return and cash flow profiles can be optimized on day one to maximize the probability of out-performing the index because you can choose all of the underlying lives at once instead of building a physical portfolio over time and being restricted by what is being offered at the time. Such portfolio optimization is only possible with synthetics.

The differences between the longevity and equity asset classes are very striking and yet basic, which is why they are a perfect complement to one another within a large diversified portfolio. Equities are based on the pure equity ownership of corporations and inherently have a lot of specific credit risk as well as industry and macroeconomic risk, while life settlements are based primarily on the expected mortalities of a specific subset of the population and are not dependent on the fortunes of a specific company, industry or macro-economy. Insurance carrier credit risk is present as well, but that can be mitigated through the use of a synthetic instrument, as the buyer has the option whether to take that risk or not. It has been shown that historical returns of life settlements are independent of global macroeconomic events such as recessions, capital liquidity events, extreme market volatility and crises of investor confidence. These facts provide the basis of the argument that life settlements are not correlated to equities, or other traditional assets classes for that matter, such as credit, commodities and real estate.

Equities are a very popular asset class that due in part to the advent of mutual funds, hedge funds and more recently ETFs (exchange traded funds), as well as electronic trading platforms, have become more volatile as the ability to move money in and out of the market as a whole as well as between sectors is much easier. It is this increased volatility and overall risk perception in the equity markets and well as the credit, commodity and real estate markets that

asset allocation strategies are now coming under review and alternative asset classes such as longevity are being closely looked as a portfolio addition.

For the modern portfolio theorist, adding longevity linked assets to a diversified portfolio of equities, bonds, real estate and/or commodities, due to its relatively low price volatility and high potential yields, serves to further optimize the portfolio by shifting the efficient frontier (also known as the Markowitz frontier) up and to the left. To step back for those not schooled in the dismal science, every possible asset combination for a portfolio can be plotted in risk-return space, and the collection of all such possible portfolios defines the investible universe. The line along the upper left edge of these possible portfolios is known as the efficient frontier, representing the greatest expected return for any given level of risk. Adding an asset with a higher Sharpe ratio (the measure of excess risk per unit of risk) to such a portfolio will shift the efficient frontier up and to the left, providing for a higher return for any given level of risk versus the original portfolio.

Now that the dust in the market place from the recent credit crisis as a whole has seemingly settled, historical correlations have begun to trend back to normal (or the New Normal as some market participants are now calling it), and most sophisticated institutional investors are reevaluating their asset class diversification to insulate their portfolios from further unwanted volatility while maintaining returns. That bodes very well for alternative asset classes such as longevity.

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