

# USING STRUCTURED PRODUCTS TO IMPLEMENT A CASH AND SHORT PUT STRATEGY

## INTRODUCTION

The [Levendi Defined Return Fund](#) has been designed to offer stable returns for lower risk investors. We target GBP LIBOR +6% with volatility between 5% and 7%. The fund is getting support from investors because it offers the prospect of positive returns that do not depend on rising markets or falling yields.

We have recently updated our [presentation](#) and increased the focus on why we use long dated equity linked securities and the factors that drive returns from our strategy. The two main factors we target are the equity risk premium and the premium of implied volatility over realised volatility. These combine into the Equity Insurance Premium.

It's possible to try to earn the Equity Insurance Premium through a cash and short put strategy, selling short dated listed puts. Investors that want to do this can use the [Wisdom Tree Put Write Fund](#). Which tracks the CBOE PUT Index

We use long dated equity linked defined return investments to implement the strategy because we have identified this type of investment as a better way to capture the Equity Insurance Premium.

## THE DRIVERS OF RETURN

Autocalls have proved to be one of the most popular type of investment with individual investors but have been largely ignored by institutional investors. We would suggest that the popularity of Autocalls is justified, and that this is a structure that enhances and improves on the base cash and short put strategy for the following reasons:

- 1) **Cash and Short Puts;** The starting point is the return from the base cash and short put strategy. The performance of CBOE PUT versus the total return from the S&P 500 Index (SPXT) demonstrates the appeal of a covered put strategy (PUT is a strategy that tracks the performance of long cash short one month at the money puts) Numerous studies have demonstrated the benefits of this strategy. Here is an extract from the latest Wilshire analysis:



## RISK RETURN METRICS

Exhibit 8

June 30, 1986 - December 31, 2018

	Cboe S&P 500 BuyWrite Index (BXM)	Cboe S&P 500 30-Delta BuyWrite Index (BXMD)	Cboe S&P 500 PutWrite Index (PUT)	Cboe S&P 500 Covered Combo Index (CMBO)	Cboe S&P 500 5% Put Protection Index (PPUT)	S&P 500 Index	Wilshire 5000 Total Market Index	MSCI EAFE (USD) Index	S&P GSCI Index	Bloomberg Barclays US Aggregate Bond Index
Annualized Return	8.50%	10.22%	9.54%	9.20%	6.64%	9.80%	9.63%	5.96%	3.24%	6.13%
Annualized Std. Dev.	10.6%	12.8%	9.9%	10.9%	12.1%	14.9%	15.1%	17.0%	20.3%	3.8%
Auto-correlation	0.08	0.04	0.13	0.05	-0.04	0.04	0.07	0.07	0.19	0.08
Maximum Drawdown	-35.8%	-42.7%	-35.5%	-38.1%	-38.9%	-50.9%	-51.0%	-56.7%	-80.9%	-5.1%
Skew	-1.56	-1.11	-2.10	-1.53	-0.28	-0.81	-0.94	-0.40	-0.21	-0.11
Kurtosis	6.40	3.91	9.72	5.87	0.54	2.53	2.94	1.03	2.00	0.62
Annual Alpha	0.25%	0.25%	0.38%	0.25%	-0.29%	0.00%	0.01%	-0.09%	0.10%	0.18%
Beta	0.55	0.77	0.47	0.61	0.84	1.00	1.00	0.82	0.17	0.05
Sharpe Ratio (Annual)	0.51	0.55	0.64	0.55	0.29	0.45	0.43	0.17	0.00	0.78
Sortino Ratio (Annual)*	0.40	0.49	0.43	0.44	0.32	0.42	0.41	0.23	0.10	0.77
Stutzer Index	0.22	0.19	0.20	0.19	0.14	0.17	0.17	0.12	0.11	0.20
Correlation vs. S&P 500	0.89	0.95	0.84	0.91	0.92	1.00	0.99	0.70	0.17	0.11
# of Up months	278	262	297	277	236	257	226	218	267	249
# of Down months	112	128	93	113	154	133	164	172	123	141

\* MAR = prevailing 3-month T-bill rate

» » All three option-writing strategies (BXM, BXMD and PUT) provided a superior risk/return profile versus the S&P 500<sup>®</sup> over the past 32+ years, measured by their Sharpe ratios. Capturing premiums from call option writing dampened return volatility versus the S&P 500, although the lower upside from writing ATM calls reduced returns for the BXM. The BXMD had a higher return and lower volatility than the S&P 500 over the period. The PUT strategy's return was close to the S&P 500's, with significantly lower volatility. Although returns for the option-based strategies are more negatively skewed with fatter tails (higher kurtosis) than S&P 500 returns, Stutzer index values (which penalize both negative skew and excess kurtosis), and Sortino ratios calculated from downside returns are favorable for option-writing strategies. All option-writing strategies also have more 'Up' and fewer 'Down' monthly returns than the S&P 500.

- 2) **Long Dates Puts;** By selling long dated low strike puts, we aim to capture the typical term structure and skew. Long dated implied volatility is more stable than shorter dated volatility and normally higher. Low strike options normally trade at a higher implied volatility than higher strike options.) The result is that fixed term notes with equity linked risk to capital at maturity offer a fixed coupon that is above the yield that would be paid if there was no risk to capital.
- 3) **Multiple Indices;** Selling puts on the worst of two (or more) markets is a form of embedded leverage that is only possible with OTC options. It is a feature that increases the coupon and captures the fact that correlation tends to one as markets fall
- 4) **The return multiplier;** Making the return contingent on markets exceeding a set level is a significant driver of returns. This is the return multiplier. Depending on the level of the trigger, this feature can double the coupon payable even with a memory or snowball feature (where any coupons that are missed will be paid later if the condition is satisfied)
- 5) **Early Maturity;** The early maturity feature boosts the return further – if the markets have increased above the trigger, then future payments are more likely, so the early maturity feature acts like a cap on the payout.

## RISKS

For each of these return enhancing features there is an associated risk. This is the risk to capital, the risk that one market may fall significantly more than the other, the risk that coupons may not be paid and the risk that the Autocall feature ratchets up the reference index levels.

Each of these risks can be identified, we are able to compare the additional return that the associated feature offers with the risk that is taken on. The quantitative process we have developed to estimate real-world risk and return can assess the overall risk/return profile of any investment and compare this with other assets.

## FOCUS ON EQUITY INSURANCE PREMIUM

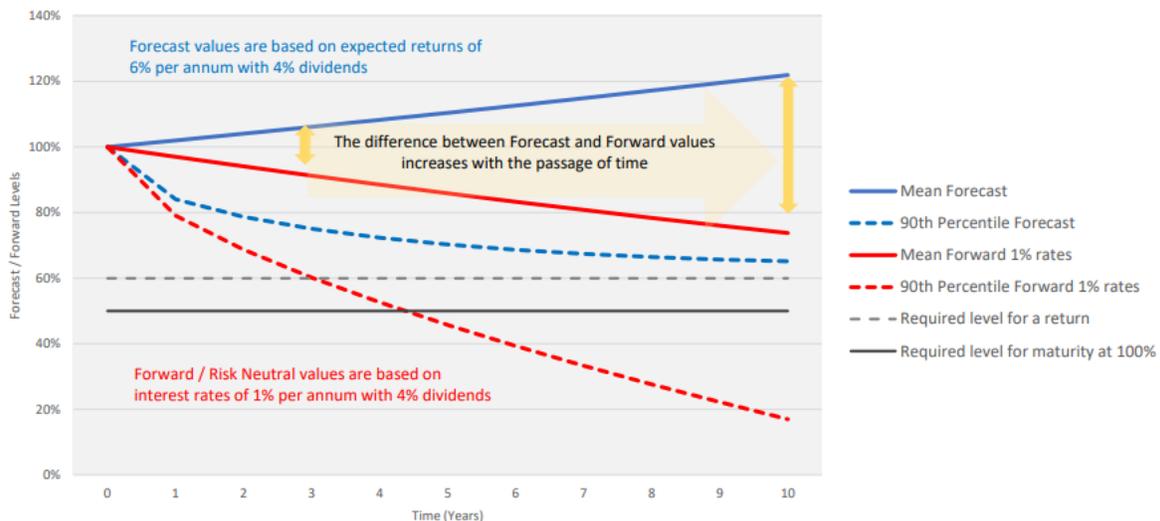
A strategy of holding cash and selling puts captures two drivers of return

- The premium of implied volatility over realised volatility
- The equity risk premium

The first factor has been widely reported. Implied volatility is normally greater than realised volatility. This can be attributed to numerous factors many of which have robust quantitative explanations. Broadly its because buyers of protection are prepared to pay a premium because they must have protection or because they want protection. Sellers of protection demand a premium because they need to be compensated for absorbing risk.

This second driver is one that [Warren Buffet](#) identified. He proposed that Black and Scholes / risk neutral pricing was not the correct way to look at long dated options and started a massive program selling put options. I use the chart below in our presentation to show how risk-neutral forwards deviate from real world forecast values.

## FORECAST AND FORWARD VALUES



This shows how little risk there is that markets will fall by 40% or 50% based on a real-world view of returns, but how there is a much greater risk of this happening using a risk-neutral framework.

Distilling our strategy down to the core; we are ultimately taking a view that in the long-term equity market indices are very likely to be above the trigger / barrier levels and so we will receive the payoff and there will be no loss of capital. This is in stark contrast to the implied probabilities from the risk-neutral model that issuers use – and which is the dominant influence on pricing. Until and unless large financial institutions can absorb equity risk rather than having to hedge this risk, the Equity Insurance Premium will continue to be a driver of excess returns. In a different world the implied volatility of long dated, low strike puts would be below the at the money options.

Here is a [note](#) that uses a simple heuristic solution to show the difference between the value and price of 5-year at the money puts. In this study we adjust the “forward” level used to calculate the price of the put so that it is equal to the “forecast” value. This allows us to calculate the “value” of an at the money put rather than the “price” of the option. The difference between the two represents the value than we can extract from a simple strategy.

INDEX	STRIKE	PRICE	ADJUSTED STRIKE	VALUE	PRICE-VALUE
S&P 500	100%	15%	86%	9%	6%
FTSE 100	100%	22%	73%	8%	14%
EUROSTOXX 50 E	100%	24%	72%	9%	15%
NIKKEI 225	100%	23%	71%	8%	15%

*Source: Levendi Investment Management*

## CONCLUSIONS

We have identified long dated equity linked securities as an effective way to capture the Equity Insurance Premium. This is an attractive strategy that has delivered good risk/return over the long term.

Using structured products allows us to benefit from the typical premium of implied volatility over realised volatility and the long-term equity risk premium. The features that can be embedded in the terms of a note enhance the returns that are available and take advantage of the significant difference between the way that long term equity market risk is valued by investors and priced by the derivative market.

Although a similar payoff could be constructed using a strategy with listed derivatives, the implementation would be very complex and there is a danger that brokerage costs and market spreads erode the returns that investors receive.

The bottom line is that we think that this is an attractive strategy for lower risk investors because it has the capability to generate positive returns under a wide range of conditions. The strategy is based on robust, reliable factors that are enhanced by regulation and economics. It does not rely on rising markets, falling yields or ephemeral correlations and relationships.

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