

Option writing strategies are often positioned as suitable components of the risk management portion of a diversified investment program due to their reliable downside protection and features that benefit from elevated equity market volatility. But when both of the foremost option writing strategy benchmarks, the Cboe® S&P 500 BuyWriteSM Index (BXMSM)¹ and the Cboe® S&P 500 PutWrite Index (PUT), deliver a larger loss than the S&P 500® Index in a quarter that featured the first equity market correction in two years and elevated volatility levels for two months, the effectiveness of option writing strategies as risk management tools might be questioned.

A snapshot look at the outcomes for any investment strategy and its associated market over any given month, quarter or year can often mask the way risk and return were realized over the course of the time period in question. When looking at the path the equity market took in Q1 (Figure 1), it is clear to see that the lower return of the option writing benchmarks relative to the S&P 500® Index was due to a low level of participation in the significant market advance that began the year, rather than a lack of downside protection after the equity market reached its year-to-date high in late January.

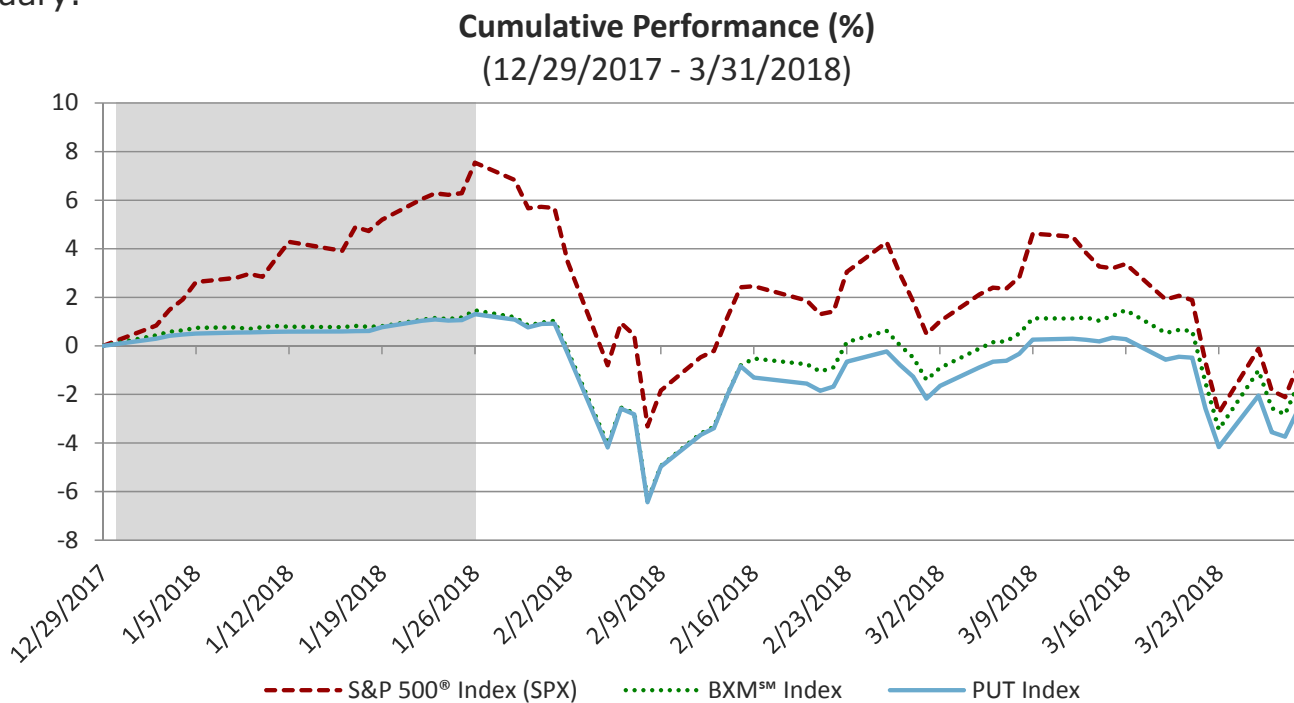


Figure 1: From the year-to-date high for the S&P 500® Index on January 26th through quarter-end, both BXMSM and PUT experienced less than half the decline of the S&P 500® Index.

Source: Bloomberg, L.P.

¹The Cboe® S&P 500 BuyWriteSM Index (the BXMSM) is a passive total return index designed to track the performance of a hypothetical buy-write strategy on the S&P 500® Index. The construction methodology of the BXMSM includes buying an equity portfolio replicating the holdings of the S&P 500® Index and selling a single one-month S&P 500® Index call option with a strike price approximately at-the-money each month on the Friday of the standard index option expiration cycle and holding that position until the next.

What about the idea that option writing strategies benefit from elevated volatility levels? Both option writing benchmarks received higher premiums when implied volatility was elevated in February and March than they had during January when implied volatility was lower. BXMSM collected premiums of 1.62% and 1.39% in February and March versus a premium of 0.92% in January. PUT's premiums were 0.92%, 1.35% and 1.31% for January, February and March, respectively. The longer-term relationship between VIX® levels and the premiums BXMSM and PUT collect for writing at-the-money options can be seen in Figure 2 below.

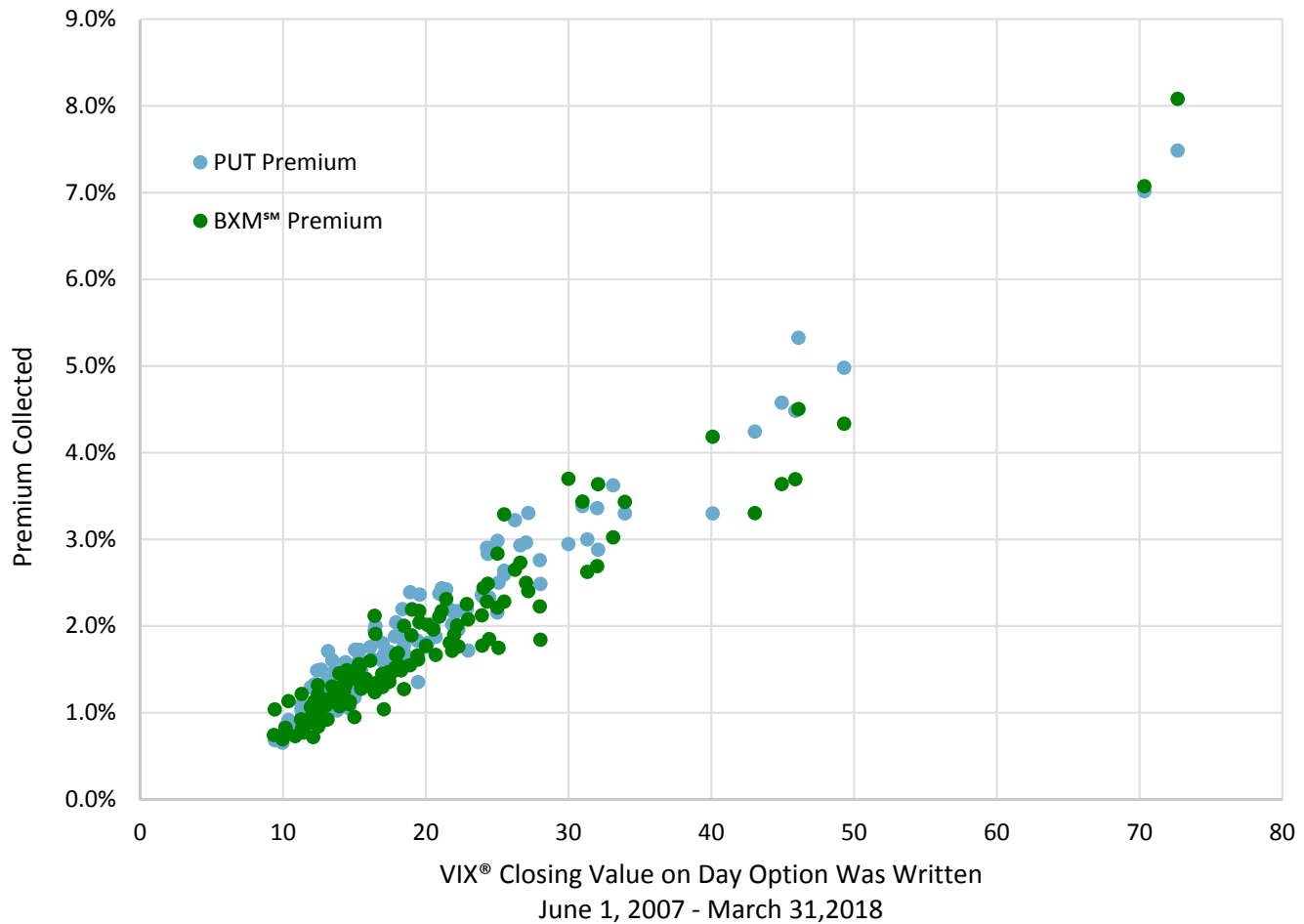


Figure 2: BXMSM and PUT receive higher premiums at higher levels of implied volatility.

Source: Bloomberg, L.P.

BXMSM premium is the price of the call option the BXMSM sells divided by the set price of the S&P 500® Index. PUT Premium is the price of the put option PUT sells divided by its strike price. PUT monthly premium data not available prior to June 2007.

The total return impact of the relationship between implied volatility and option premiums can be seen in Figures 3, 4 and 5. The table in Figure 3 shows that average monthly returns for the option writing benchmarks relative to the S&P 500® Index improve as the monthly average VIX® levels increase. This improvement in relative performance happens for two reasons. The first reason is that higher volatility periods feature larger and more frequent monthly losses for the S&P 500® Index while the premiums collected by the option writing strategies tend to produce smaller and less frequent losses than the S&P 500® Index during those higher volatility periods.

		Implied Volatility Monthly Average Range (January 1988 to March 2018)					
		10 to 14	14 to 18	18 to 22	22 to 26	26 to 30	> 30
Frequency	Months	88	102	66	54	25	28
	Percentage	24%	28%	18%	15%	7%	8%
Average Monthly Return	PUT	1.0%	1.0%	0.9%	1.2%	1.0%	-1.0%
	BXM SM	1.1%	0.9%	0.8%	1.1%	0.6%	-0.9%
	SPX	1.8%	1.0%	1.4%	0.5%	-0.4%	-1.4%
Percentage of Months with Positive Returns	PUT	86%	83%	65%	74%	72%	54%
	BXM SM	85%	75%	62%	67%	68%	54%
	SPX	86%	68%	61%	52%	44%	50%

Figure 3: On average, implied volatility levels in the 22 to 26 range have historically produced the most attractive combination of absolute and relative return for the BXMSM and PUT.

Source: Bloomberg, L.P.

The second reason for improved relative performance in higher volatility months is illustrated in Figures 4 and 5. The larger option premiums collected in higher volatility periods result in better relative returns when the market advances and improved downside protection when the market declines.

Average Monthly Returns in Positive S&P 500® Index Months Grouped by Monthly Average Implied Volatility Level (Jan '88 to Mar '18)

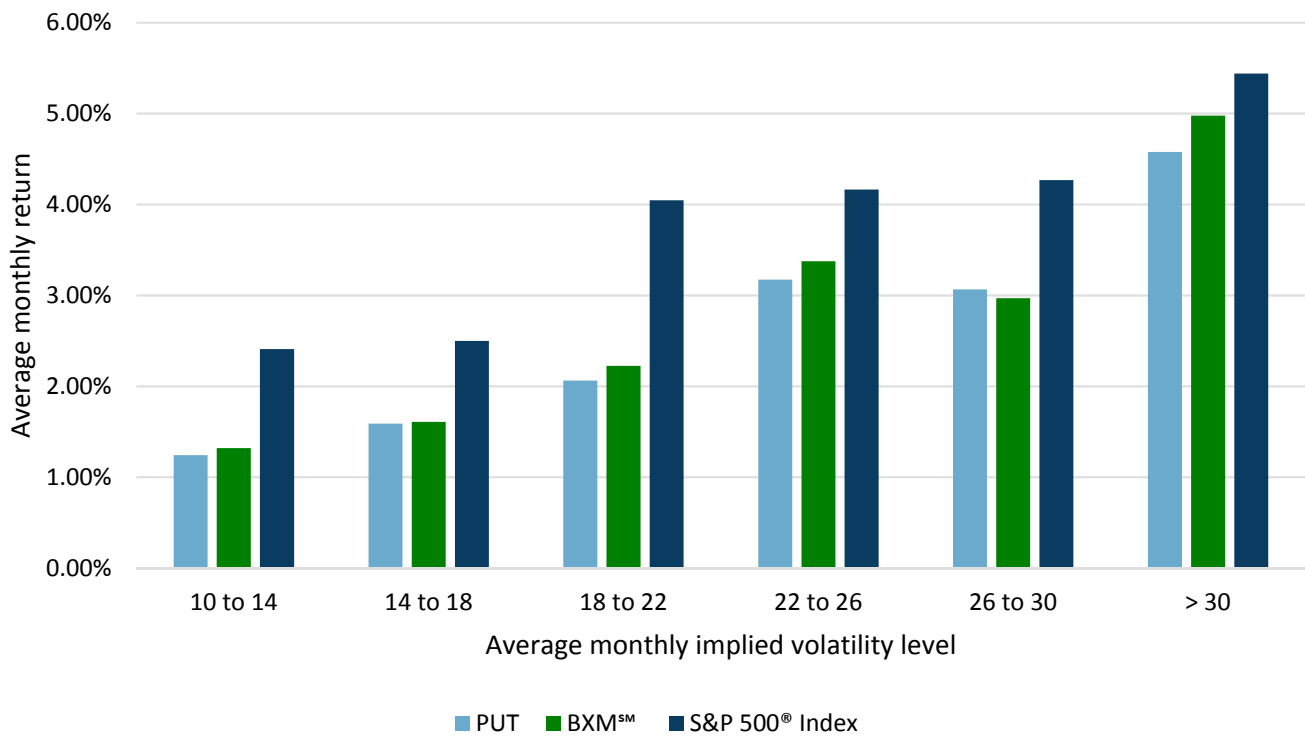


Figure 4: Historically, as implied volatility increased, higher option premiums drove higher cash flow, resulting in increased returns for BXMSM and PUT relative to lower implied volatility levels.

Source: Bloomberg, L.P.

Average Monthly Returns in Negative S&P 500® Index Months Grouped by Monthly Average Implied Volatility Level (Jan '88 to Mar '18)

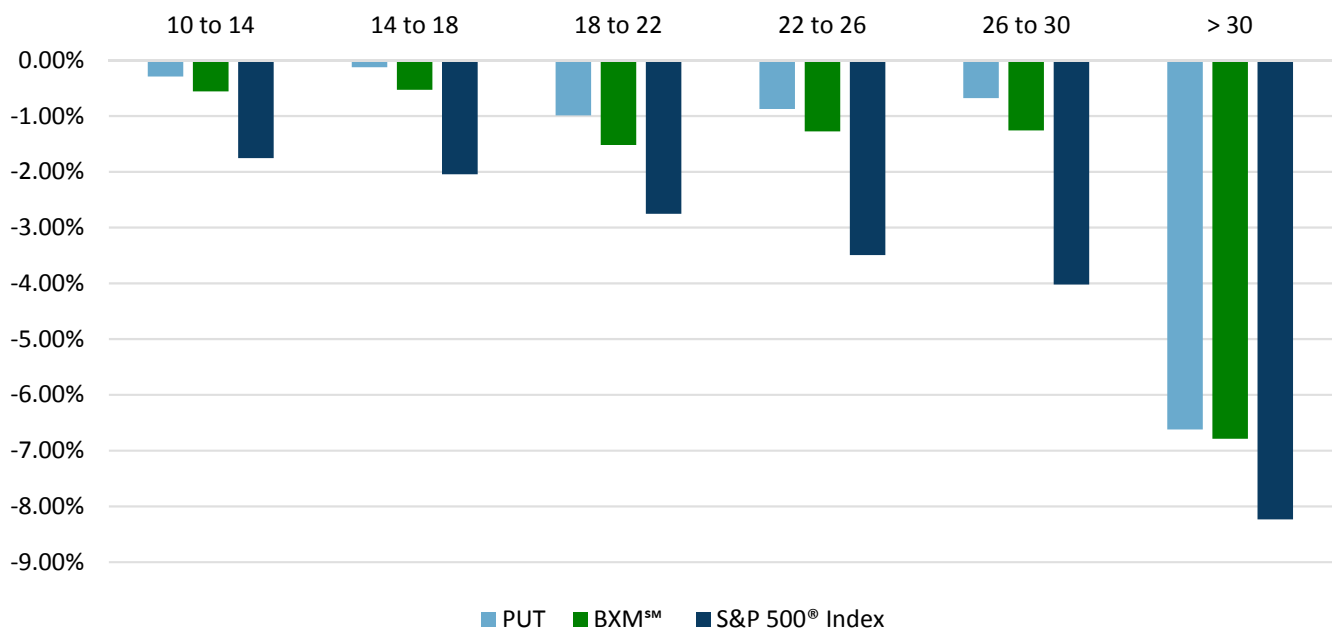


Figure 5: Historically, as implied volatility increased, higher option premiums translated into increased protection, i.e. return differential to the S&P 500® Index, for BXMSM and PUT at all but the highest implied volatility level.

Source: Bloomberg, L.P.

Figure 5 shows that the downside protection delivered by option writing benchmarks is not as effective in extremely volatile markets, relative to markets with lower volatility levels. This phenomenon is part of the case for applying active management to option writing. The option writing benchmarks write their options once a month and hold their respective option positions until they expire the next month. This aspect of the option writing benchmarks' construction methodology makes their outcomes relative to the S&P 500® Index highly path-dependent. If there is a reversal of market direction mid-month with a large market move on one or both sides of the reversal, an option writing benchmark with a single contract can end up having much higher participation in the down leg of the reversal than the up leg. Moreover, when the reversal happens in close proximity to the day its option expires and it writes a new one, an option writing benchmark is particularly susceptible to the negative outcomes of a market reversal. Active management has the potential to soften the path dependency inherent in managing risk with one instrument that expires. This risk can potentially be reduced by writing a portfolio of options that is diversified by strike price and expiration date and also through active decision-making regarding whether or not to hold contracts to expiration.

Despite the slightly larger losses for option writing benchmarks versus the S&P 500® Index in Q1, option writing strategies remain a viable risk management approach for investors looking for reliable protection against equity market declines. If the elevated levels of implied volatility observed in February and March persist, premiums collected by option writing strategies will continue to be more attractive than premiums collected in recent years. For strategies that combine equity market exposure with option writing, the higher premiums that come with elevated volatility could help maintain positioning for improved participation in market advances relative to the participation of the market advances of recent years. Additionally, in the event the equity market falls further below January's highwater mark, these strategies are potentially well positioned to continue delivering meaningful downside protection.