June 2019

S&P 500 Buffer Protection Strategies: *Fitting Strategy Design to Investment Goals*

Investors interested in reducing downside equity risk are considering Target Outcome Investments™ in the form of buffer protection strategies.

- These strategies, available in mutual funds and exchange-traded funds (ETFs), provide protection for a range of downside S&P 500 returns in exchange for capping upside returns over an investment horizon.
- They are attractive alternatives to the traditional means of managing risk--shifting some of equity exposure into cash or fixed income--which eliminates both downside and upside equity returns.

An example of a buffer protection strategy that we discuss here is one that offers protection for the first 10% of downside losses in the S&P 500 Index over a 12-month period; the protection is paid for by accepting a cap on the upside from appreciation in the S&P 500 Index over the 12-month period.

Fixed-Term Buffer Protection Strategies

Fixed-term buffer protection strategies allow investors to participate in the gains of an index, up to a cap, in exchange for a predetermined amount of downside protection against losses. The following illustrates such a strategy on the S&P 500 Index over a 12-month period:

CAPPED UPSIDE	**If the S&P 500 Index appreciates more than the cap level:** The Buffer Protect Strategy seeks to provide a total return that equals the predetermined cap level.
UPSIDE	**If the S&P 500 Index appreciates, but less than the cap level:** The Buffer Protect Strategy seeks to provide a total return that increases by the percentage increase of the S&P 500 Index, up to the predetermined cap level.
BUFFER PROTECTION	**If the S&P 500 Index decreases by 10% or less:** The Buffer Protect Strategy seeks to not participate in losses.
BUFFERED DOWNSIDE	**If the S&P 500 Index decreases by more than 10%:** The Buffer Protect Strategy seeks to provide a total return that is 10% better than the price returns of the S&P 500 Index.

Potential Advantages:

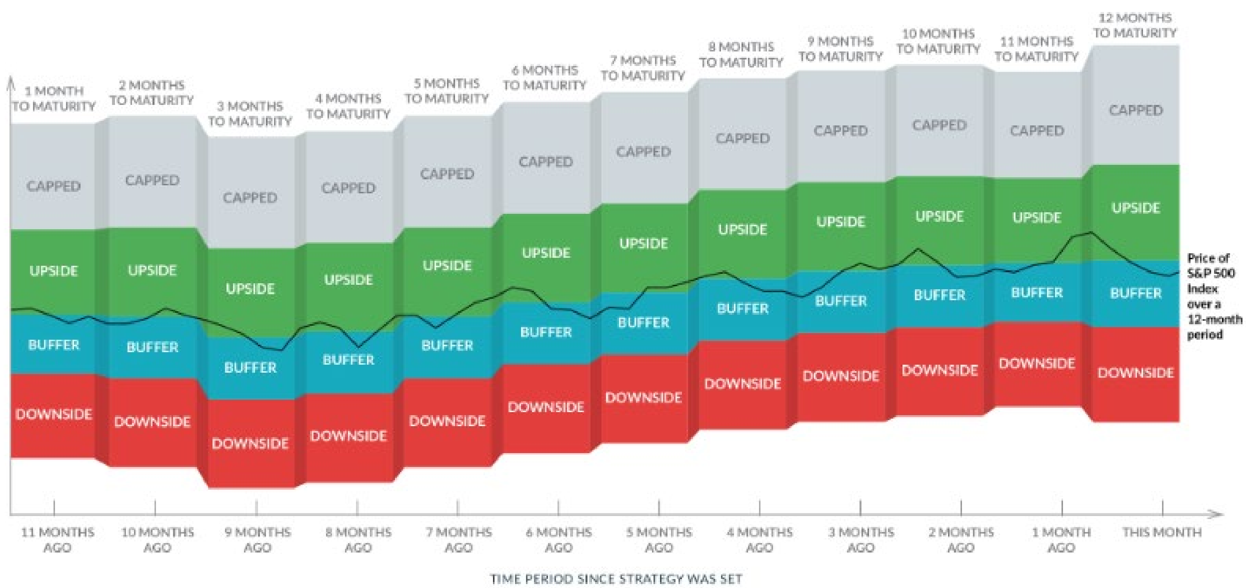
- Fixed-term strategies offer a solution over a specific investment term, which can make investment returns easier to explain to investors.
- When monthly versions are available for the strategy, it allows investors to time the market or hedge tactically to potentially achieve relative outperformance.

Potential Challenges:

- Since the strategy is capped for 12 months, if the S&P 500 Index rises above the cap early on, returns for the remainder of the period could be extremely limited.
- If the market moves down significantly below the downside buffer early on, the downside protection could be extremely limited over the remaining investment term if the index continues to decline.
- In some cases, the S&P 500 level may have appreciated over the investment term, exposing the unhedged appreciation to market decline.

Diversified/Balanced Buffer Protection Strategies

Another approach to downside risk reduction is to diversify into a laddered portfolio of 12 buffer protection strategies. In a laddered portfolio, each month a maturing buffer protect strategy rolls off and is reinvested at the ladder's long end, with a new cap and 10% protection range based on prevailing market conditions that will persist for its 12-month term.



Potential Advantages:

- By having a laddered approach, 1/12th of the investment recalibrates to the prevailing level of the S&P 500 Index each month. This resets the downside protection and cap levels in a rising or falling market environment.
- This approach reduces the risk of having the upside potential for the entire investment capped out in cases of rapid appreciation in the S&P 500 Index. It also reduces the risk of limited downside protection after significant down moves in the S&P 500 Index below a single buffer protection level.
- A laddered portfolio of 12 buffer protection strategies can diversify the timing risk, similar to how laddered bond portfolios seek to manage timing risks for bond investors.

Potential Challenges:

- Since the strategy invests in a rolling ladder of buffer protection strategies, investment returns may be difficult to explain over a specific time horizon.

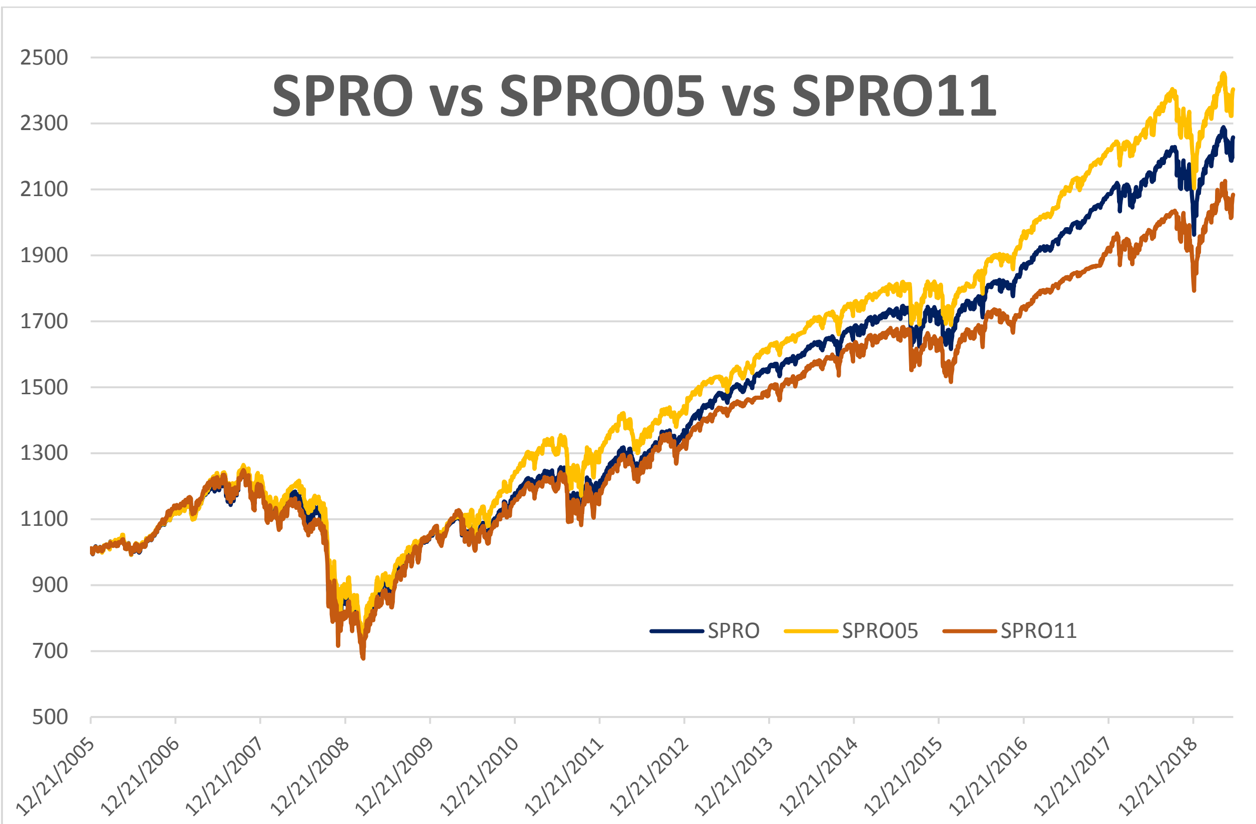
- With 12 strategies blended together with different protection levels and caps, the ability to time the market and tactically hedge can become difficult.

Fixed-Terms vs Diversified/Balanced Buffer Protection Strategies

To analyze the performance of fixed-term versus diversified buffer protection strategies, one can compare the returns of indexes that measure the performance of these strategies on an ongoing basis.

Examples of a fixed-term, 12-month buffer protection index include the Cboe S&P 500 Buffer Protect May Series Index ("SPRO05") and the Cboe S&P 500 Buffer Protect November Series Index ("SPRO11"). These indexes track the returns of a one-year, 0-10% downside buffer protection on the S&P 500, which expires each May and November and is then replaced with a new 0-10% buffer protection strategy expiring the following May and November.

An example of a diversified/balanced strategy index (also known as a laddered buffer protection index) is the Cboe S&P 500 Buffer Protect Balanced Series Index (SPRO). This index tracks the returns of a laddered portfolio of 12 rolling buffer protection strategies with maturities varying from one to 12 months.



Source: Bloomberg December 21, 2005 -June 10, 2019

For the period from December 21, 2005[i] through June 10, 2019, the SPRO11 Index has underperformed the SPRO Index by -17.4% and the SPRO05 Index by -31.9%. These large disparities in returns provide support for the benefits of diversification of the timing risk that can be associated with implementing these strategies. Conversely, the SPRO05 Index outperformed the SPRO Index by +14.5%, which can help to illustrate the relative outperformance potential that can be achieved in ideal market timing.

Which Is the Best Buffer Protection Strategy for You?

As with many investment alternatives, the best strategy to use for buffer protection depends on the investment objective and risk tolerance.

If one is looking to tactically hedge a specific event in the near future, or time the market in case of a pullback, a single fixed-term buffer protection strategy could allow an investor to choose entry points in line with their outlook. Investors would be afforded the opportunity for relative outperformance with accurate timing of entry and hedging.

For investors looking to utilize the strategy to mitigate risk in the context of asset allocation, a laddered portfolio of buffer protection strategies can reduce timing risks over the long term. Additionally, investors utilizing a laddered portfolio will also have the potential of reducing trading costs that might be associated with the entry and exit of a single fixed-term buffer protection strategy.

IMPORTANT: Historical Simulated Index and Back-Test Returns

The back-tested performance was derived from the retroactive application of a model developed with the benefit of hindsight.

There are inherent limitations of data derived from the retroactive application of a model developed with the benefit of hindsight. This includes historical data on price and returns that may be incorrectly reported or stored. The actual results may differ due to transaction costs, bid-offer spreads, taxation and composition of strategies that may be different from those in the back-tested performance.

Back-tested performance information is purely hypothetical and is provided solely for informational purposes. Back-tested performance does not represent actual performance and should not be interpreted as an indication of actual performance. It is not possible to invest directly in an index. The trading strategies retroactively applied were not available during the periods presented.

The actual performance in select accounts, such as those in mutual funds that seek to deliver the performance of the strategy / index, has been materially less than the hypothetical results for the same period.

There are significant limitations inherent in hypothetical back-tested model results, particularly that model returns do not reflect actual trading and may not reflect the effect that material economic and market factors may have on the adviser's decision-making when using the performance to actually manage client funds. Such factors could include a different economic cycle, volatility regime, levels of inflation, geopolitical conditions, level and rate of change of short- and long-term interest rates.

The back-tested performance does not reflect the deduction of advisory fees, brokerage or other commissions and expenses that a client would have to pay to access the strategy.

The actual performance of investment vehicles such as mutual funds or managed accounts can have significant differences from the performance of the strategy / index. Investors looking to invest in the strategy / index, or replicate the strategy / index, should discuss possible timing and liquidity issues. The performance does not take into account significant factors such as transaction costs and taxes. Transaction costs and taxes for strategies could be significantly higher than transaction costs for a passive strategy of buying-and-holding stocks. Advisors should consult tax experts as to how taxes affect the outcome of contemplated transactions. Past performance does not guarantee future results.

Any data prior to the launch date of the Cboe S&P 500 Buffer Protect Index Series ("SPRO" or the "Index") is hypothetical. The pre-inception index performance (the "PIP") is based on criteria applied retroactively with the benefit of hindsight and knowledge of factors that may have positively affected its performance and cannot account for all financial risk that may affect the actual performance. The actual performance of the strategy or a fund may vary significantly.

The Index and the historically back-tested performance of the index are designed to represent a hypothetical options strategy. The actual performance of investment vehicles such as ETFs, mutual funds or managed accounts can have significant differences from the performance of the Index and the historically back-tested performance of the Index. Like many passive benchmarks, the Index does not take into account significant factors such as transaction costs and taxes.

The Index and the methodology used to calculate the Index, including the historically back-tested performance of the Index are the property of Cboe Global Markets ("Cboe"), and the Adviser is an affiliate of Cboe. Among other things, the methodology involves the S&P 500 Index. S&P® is a registered trademark of the Standard & Poor's Financial Services LLC ("S&P"); Cboe® is a registered trademark of Cboe. The Index, S&P, and Cboe trademarks have been licensed for use by the Adviser, including for use by the fund advised by the adviser. The Adviser pays an annual license fee to S&P for use of the Index and the historically back-tested performance of the Index. Neither the Cboe Group nor the S&P Group guarantees the adequacy, accuracy, timeliness, and/or completeness of the Index Series, S&P 500® Index, or any methodology or data related thereto, and neither the Cboe Group nor the S&P Group shall have any liability for errors, omissions, or interruptions therein. The investment is not insured by the Federal Deposit Insurance Corporation. This investment is not a deposit or other obligation of, or guaranteed by, the bank. The strategy is subject to investment risks, including possible loss of the principle amount invested.

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[i] The inception date of the SPRO Index is March 30, 2016. The back-test calculations are based on the same methodology that was in effect when the Index was officially launched. The base index value is set as of 1000 as of the initial back-test date.

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