S&P Dow Jones Indices

A Division of S&P Global

Research

Defining Paths with Options-Based Index Strategies

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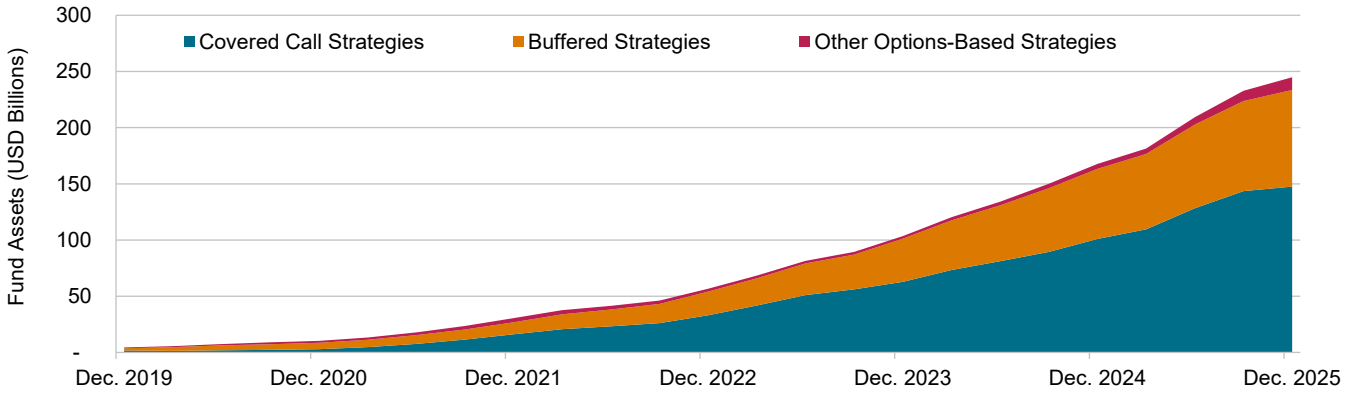
Executive Summary

By providing investors with accessible and innovative tools for income generation, risk management and tactical asset allocation, **options-based exchange-traded funds (ETFs) are an increasingly significant part of the investment landscape**.

This report focuses on two prominent options-based strategies: **covered call** and **buffered** strategies, examining their structures, characteristics and applications via **representative indices**.

In addition to reviewing the typical designs and features of both types of options strategies, we explore how their use may potentially enhance portfolio resilience, improve performance and risk profiles and provide market participants with tools for navigating market volatility.

Exhibit 1: Growth of Options-Based ETF Assets in the U.S.



Source: S&P Dow Jones Indices LLC, Bloomberg. AUM data as of Dec. 31, 2025. Other options-based strategies include put writing, tail risk hedging (long puts), and structured products replications such as Principle Protected Notes, Reverse Convertibles, and Autocallables. Chart is provided for illustrative purposes.

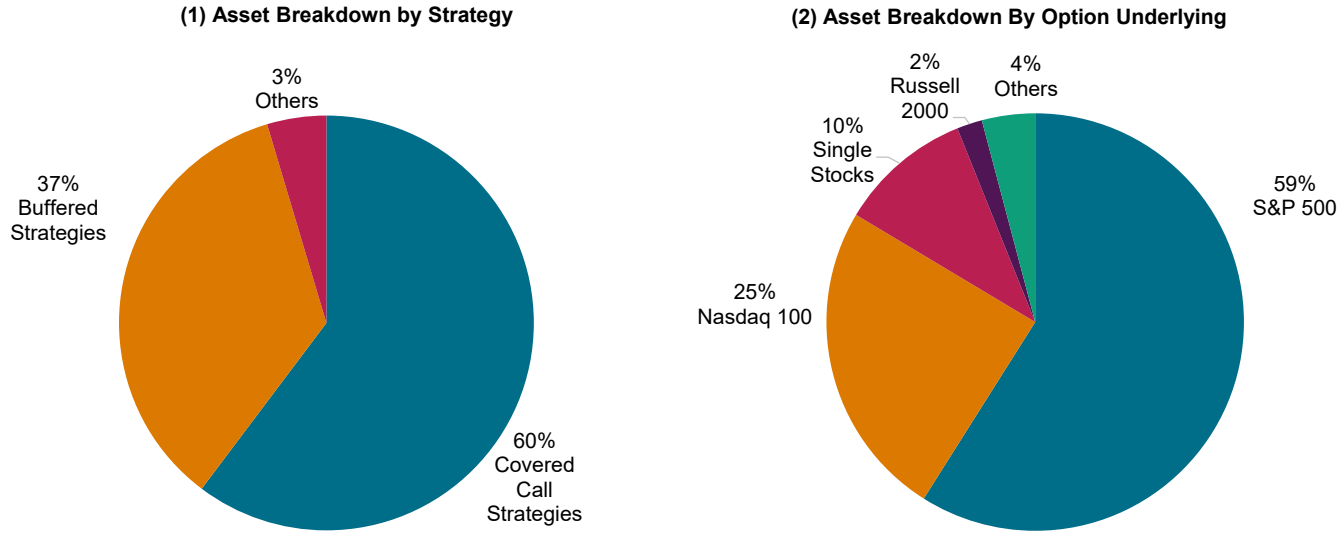
Growth of Options-Based ETFs

Since their initial creation in the early 1990s, ETFs have evolved beyond simple liquid access to broad market indices to encompass a wide range of exposures and applications. More recently, U.S. regulatory changes permitting greater use of derivatives further paved the way for a wide range of options-based ETFs,[1] enabling another evolution.

Market participants have long employed the options markets for income generation, risk management and tactical asset allocation. Options-based ETFs encode these strategies into a single instrument that can—for some investors—prove to be easier to own, more liquid or cheaper than alternatives such as traditional mutual funds, structured products or self-trading. The collective judgement of market participants is visible in the growth of assets under management (AUM) in U.S.-listed options-based ETFs, which grew steadily from less than USD 5 billion at the end of 2019, to USD 245 billion by the end of 2025 (see Exhibit 1).

Exhibit 2 breaks down these ETF assets by strategy and option underlying. Covered call and buffered strategies represent 97% of total assets by strategy, and despite the fact that approximately 91% of these ETFs describe themselves as actively managed,[2] a significant majority use index-based exposures or index-linked derivatives to achieve their goals.

Exhibit 2: U.S.-Listed Options-Based ETF Breakdown by Strategy and Option Underlying



Source: S&P Dow Jones Indices LLC, Bloomberg. AUM data as of Dec. 31, 2025. Other options-based strategies include put writing, tail risk hedging (long puts) and structured products replications such as Principle Protected Notes, Reversal Convertibles and Autocallables. Charts are provided for illustrative purposes.

[1] SEC Adopts Modernized Regulatory Framework for Derivatives Use by Registered Funds and Business Development Companies, October 2020.

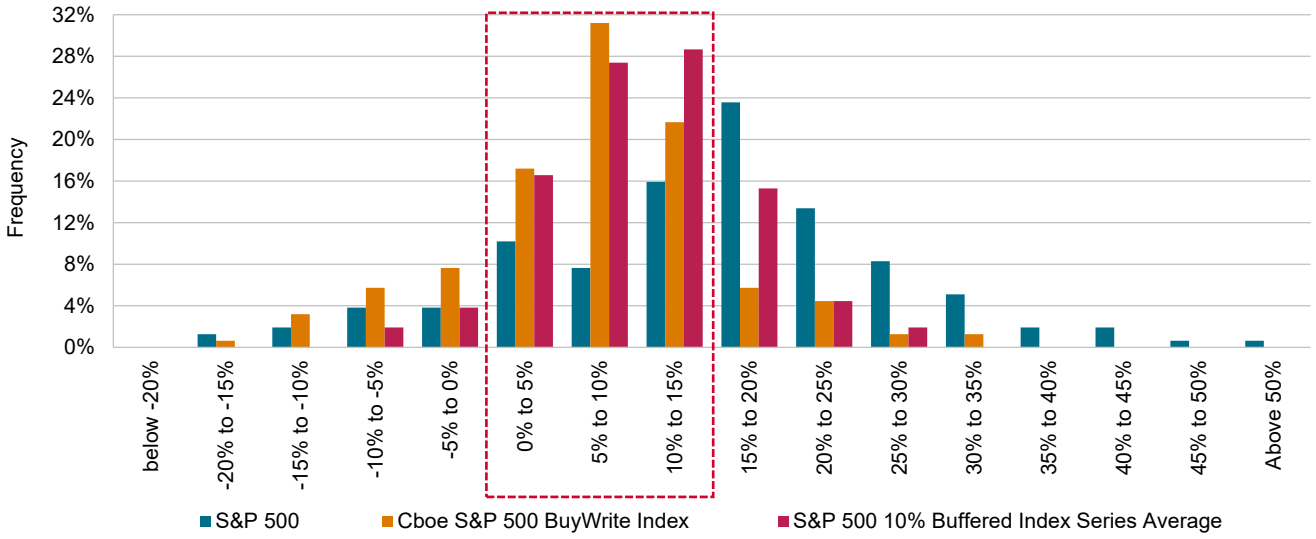
[2] Note that some ETFs are run in a manner that is notably different to traditional active management. For example, a fund described as active may exclusively use S&P 500-linked derivatives and exhibit performance very similar to an index representing the overall strategy.

Indices play several important roles associated with options-based ETFs. First, around 10% of total ETF assets are in funds whose investment objective is to track a particular index. Second, a majority of self-described actively managed ETFs utilize options on indices as core components of their strategies (see Exhibit 2). Third, the value of both active and index strategies may be more rigorously evaluated in comparison to appropriate benchmarks for the type of investment they represent. Therefore, **options-based ETFs present an area of growth potential for indices and for the market participants who use them to design, implement or to evaluate common options-based strategies.**

Key Aspects of Options-Based Strategies

A fundamental appeal of option-based strategies is their potential to make investment returns more predictable and consistent. Selling call options or purchasing put options on an owned asset reduces exposure to that asset's changes in price, effectively narrowing the range of potential return outcomes. Illustrating this point, Exhibit 3 shows an analysis of one-year rolling performance during the period from December 2011 to December 2025 for the S&P 500® and for representative S&P 500 covered call and buffered indices, respectively, using as-reported S&P 500 returns and back-tested data for the options-based indices. The annual performance of the options-based indices was in the range of 0% to 15% for over two-thirds of the 12-month periods. In contrast, only one-third of S&P 500 performance was similarly contained.

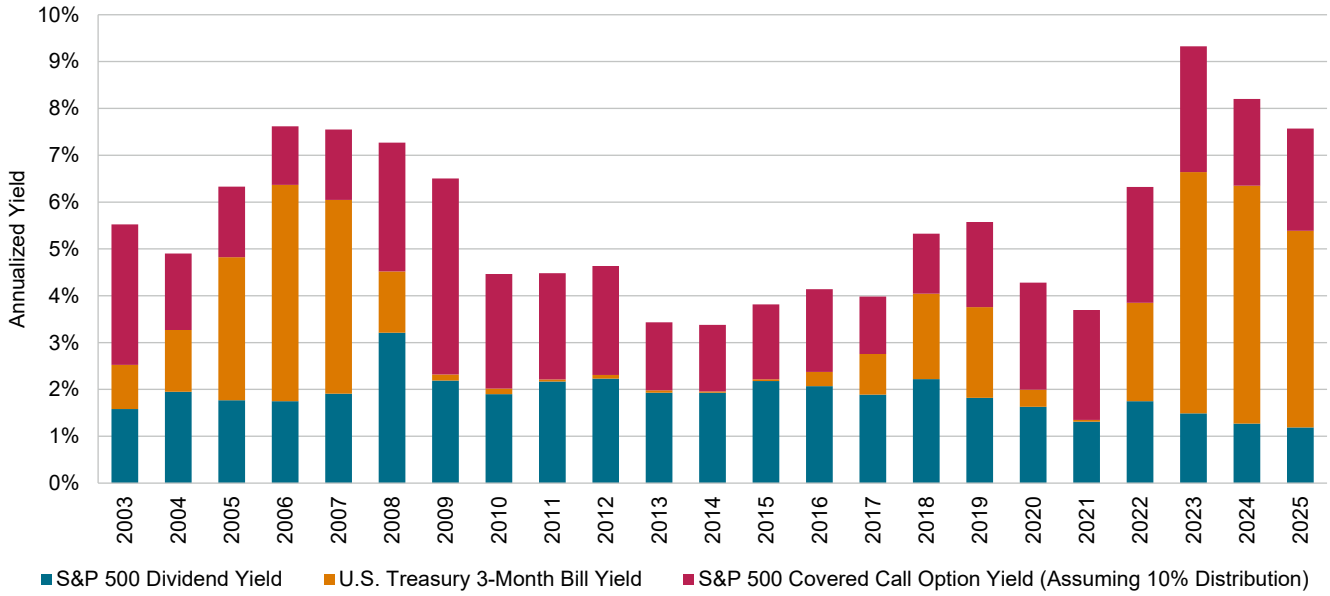
Exhibit 3: Back-Tested Annual Performance Distribution of the S&P 500, Covered Call and Buffered Indices



Source: S&P Dow Jones Indices LLC, Cboe. Data from Dec. 31, 2011, to Dec. 31, 2025. Index performance based on one-year rolling total returns using month-end data. The analysis includes 1) the S&P 500 10% Buffered Index March, June, September and December Series, which were launched Sept. 6, 2024; and 2) the Cboe S&P 500 BuyWrite Index (BXM), which estimates the theoretical performance of the S&P 500 monthly at-the-money covered call strategy. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Covered call strategies may offer an additional benefit by potentially generating **an income stream that is relatively uncorrelated to traditional income sources** such as bond (or money market) yields and stock dividends. They may also take advantage of a so-called "volatility premium," which refers to the observed fact that market participants often pay a premium for options above their expected economic value.[3] Partly in consequence, covered call strategies have historically evidenced a potential to provide diversification in income sources that was more resilient during market downturns. Exhibit 4 illustrates this using a covered call index that will be a key focus in the next section.

Exhibit 4: Diversifying Income across Money Market, Equity Dividends and Equity Option Premium (Back-Tested Data)



Source: S&P Dow Jones Indices LLC, Cboe. Data from Jan. 1, 2003, to Dec. 31, 2025. Option yield is estimated from the Cboe S&P 500 BuyWrite Index on each monthly roll date, assuming 10% of the received option premium is distributed and the remainder reinvested. S&P 500 dividend yield is based on 12-month trailing dividends. U.S. Treasury 3-month Bill yield is based on the S&P U.S. Treasury Current 3-Month Bill Index, which was launched on Nov. 5, 2019. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

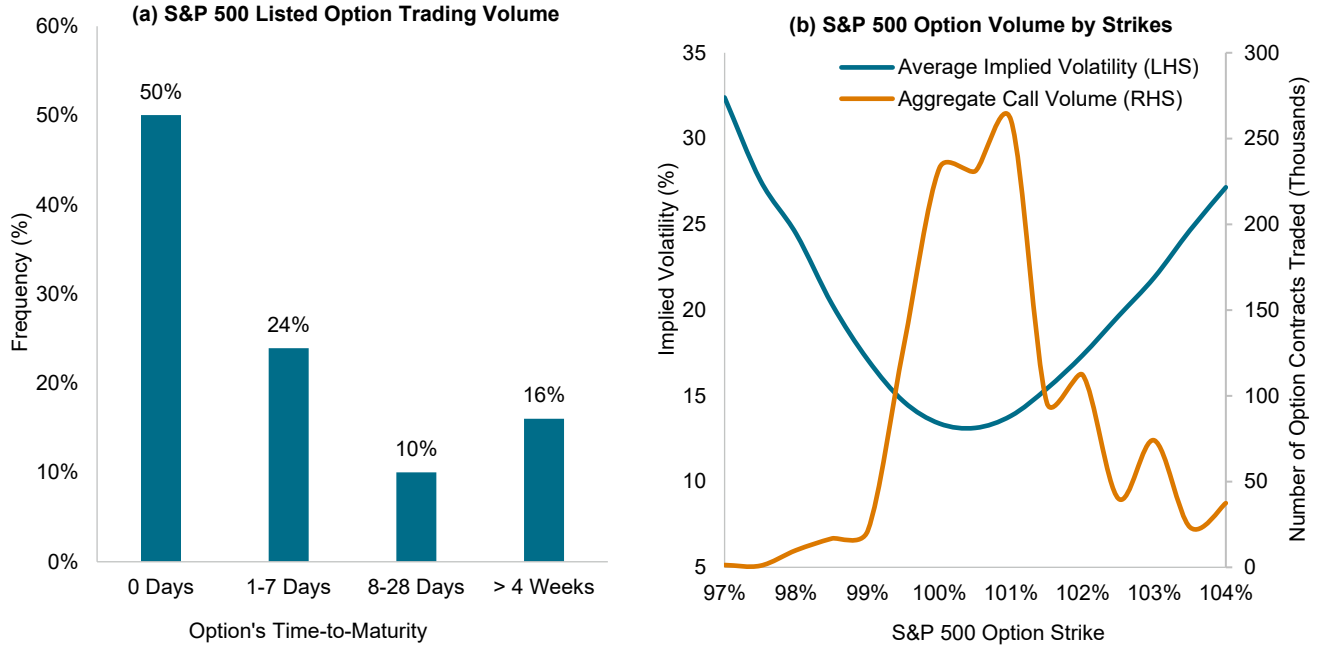
Construction matters for all investment strategies, but due to the complexities involved in trading options, it can be especially vital for options-based strategies. The S&P 500's robust trading ecosystem[4] can facilitate the effective implementation of various strategies that utilize options across different maturities and strike prices. This flexibility enables a range of strategies, from daily covered calls to one-year buffered strategies, catering to diverse investment horizons, objectives and preferences.

[3] The next section examines the S&P 500 "volatility premium" in further detail.

[4] See Appendix A for an outline of the magnitude and components of the S&P 500 tradeable derivatives ecosystem.

Exhibit 5 illustrates some of the dynamics that might be considered and indicates some of the potential consequences. Exhibit 5(a) shows a breakdown of trading volumes in S&P 500 index options by maturity. Options with less than a full day before expiry are the most frequently traded (and so may be the most liquid), but their exposure is short-lived, requiring more frequent trading. Exhibit 5(b) shows the "implied" volatility and volumes of S&P 500 one-month index options segmented by strike price. Options with strike prices closer to the current index price are more frequently traded (and may be the most liquid), but their sale harvests a potentially lower "volatility premium."

Exhibit 5: Consideration of Options Liquidity and Trading



Source: S&P Dow Jones Indices LLC, Cboe, CME, Bloomberg. S&P 500 options trading volume distribution in chart (a) is calculated based on the options trading at Cboe in January 2024 to December 2025. Chart (b) is based on data from the latest six index rebalancing dates of the Cboe S&P 500 BuyWrite Index, from June 2025 to December 2025. Implied volatility is derived using the Black-Scholes formula based on the options' mid-price. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Exhibit 5 illustrates that there may be many ways to implement similar-sounding strategies in the options markets, and they may produce materially different results. Accordingly, it is important to assess each component of an options strategy carefully. In the following sections, we will explore covered call indices (see Part 1) and buffered indices (see Part 2) in depth, focusing on their structure, theoretical pricing, characteristics and hypothetical portfolio applications.

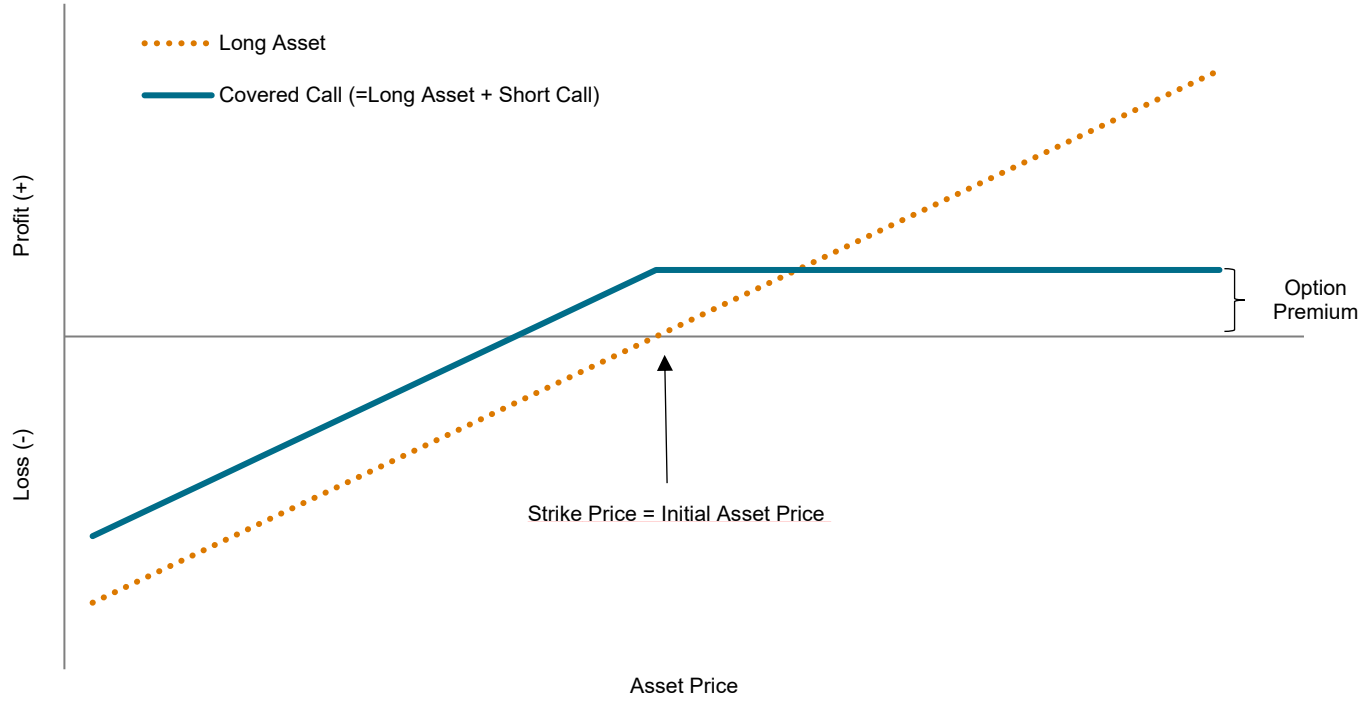
Part 1: Covered Call Indices

1-1. Strategy Overview

In general, covered call strategies, also called “buy write” or “call overwriting” strategies, combine an investment in a particular asset (typically a stock or a basket of stocks), together with the sale of call options linked to the same asset (or a correlated asset). Typically, the portfolio evolves with new options sales conducted when or before the old options expire, for which there are a wide range of potential variations ranging through different frequencies of reconstitution, choices of option strikes and maturities, and underlying assets. Strategies may also incorporate additional inputs that signal what, when or how much to trade.

In broad terms, covered call strategies receive an option premium in return for sacrificing some of the potential price appreciation in an underlying asset that is already held. While these strategies remain exposed to price declines in the asset below the strike price, the received option premium helps cushion the impact. Thus, both large gains and losses are moderated. Exhibit 6 illustrates this trade-off conceptually for a covered call strategy selling at-the-money (ATM) options, specifically showing the “payoff” of the strategy at the expiry of that option, expressed in terms of the return from the time when the option position was first established.[5]

Exhibit 6: ATM Covered Call Strategy – Payoff at Expiry



Source: S&P Dow Jones Indices LLC. Chart is provided for illustrative purposes.

[5] Note that we are distinguishing between investment “strategies” and “indices” that measure the theoretical performance of these strategies.

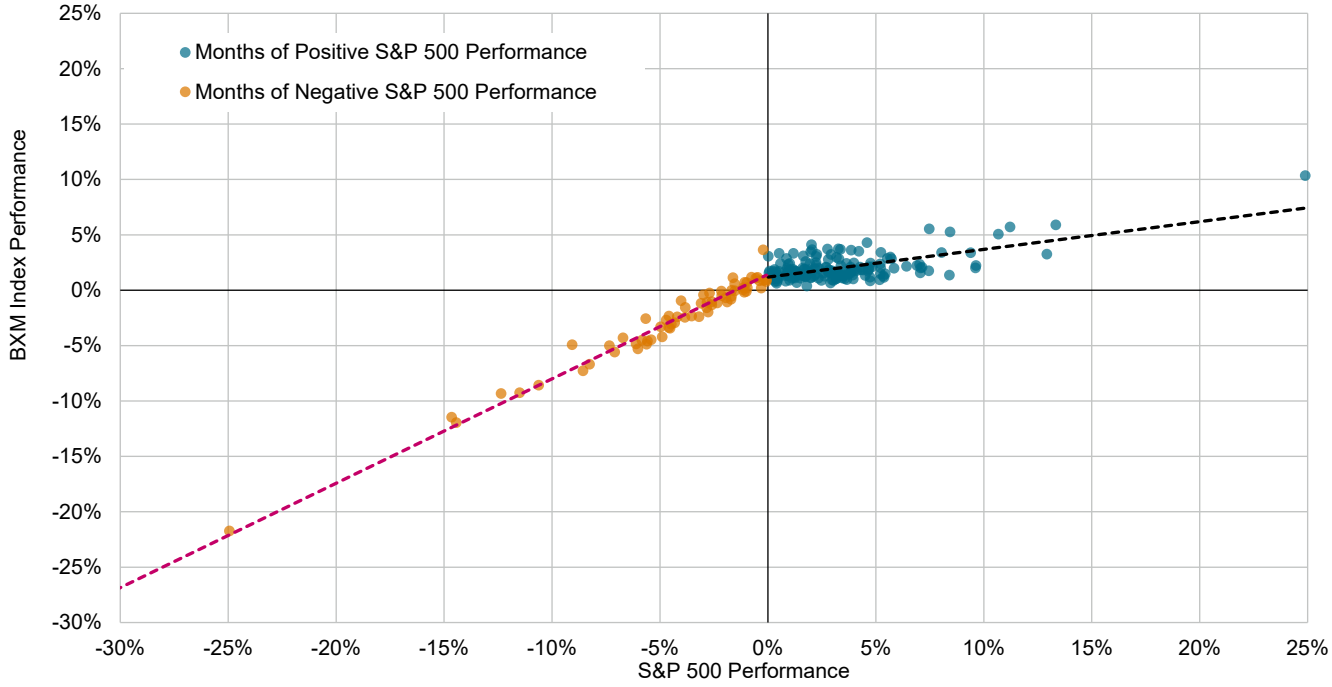
If the design and maintenance of a covered call strategy is fully determined by clear rules, and if the components have available market prices, the strategy may also be represented by an index. **The Cboe S&P 500 BuyWrite Index is perhaps the most well-known such index**; it reflects a hypothetical portfolio composed of, first, a notional pro-rata investment in the constituents of the S&P 500 plus, second, the monthly sale of ATM, one-month listed S&P 500 index options.[6] This index—identified hereafter by its ticker "BXM"—is an archetypical example of covered call strategies, in which option positions are most typically established on a well-known index (such as the S&P 500),[7] and are rolled on a predetermined frequency (such as monthly). It also serves as the main example for the next few exhibits.

As a real-world counterpart to Exhibit 6's hypothetical example, Exhibit 7 compares 20 years of historical one-month changes in the BXM versus the S&P 500, *measured between market closes on the dates when one-month option positions were established*. When the S&P 500 rose (represented by the blue dots on the right), the BXM performance was primarily derived from the hypothetical option premium received. Conversely, in months when the S&P 500 fell (represented by the gold dots on the left), the BXM fell by a typically smaller amount. Importantly, both trendlines have positive y-intercepts, which indicates that the covered call index historically tended to have positive performance in months when the S&P 500 was, or was close to, unchanged.

[6] The Cboe S&P 500 BuyWrite Index (BXM) was launched on April 11, 2002, by the Chicago Board Options Exchange (Cboe) in collaboration with S&P Dow Jones Indices. It was the first widely available index representing a covered call strategy, is often used as a benchmark for investment products, and based on its "back-tested" history to 1986, has enabled a range of academic and practitioner studies over the past two decades.

[7] As evidenced for U.S.-listed ETFs in Exhibit 2.

Exhibit 7: Cboe S&P 500 BuyWrite and S&P 500 Monthly Performance Comparison



Note that the points on either side of the y axis are not strictly arranged in a straight line as in Exhibit 6. This is mostly due to the variations in the premiums obtainable through selling S&P 500 monthly ATM index options at different times in history, although other factors play a part.[8] Source: S&P Dow Jones Indices LLC, Cboe. Data from December 2005 to December 2025. Index performance based on total returns between monthly roll dates. The Cboe S&P 500 BuyWrite Index (BXM) estimates the theoretical performance of the S&P 500 at-the-money monthly covered call strategy. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

1-2. Option Premium Income & Implied Volatility Dynamics

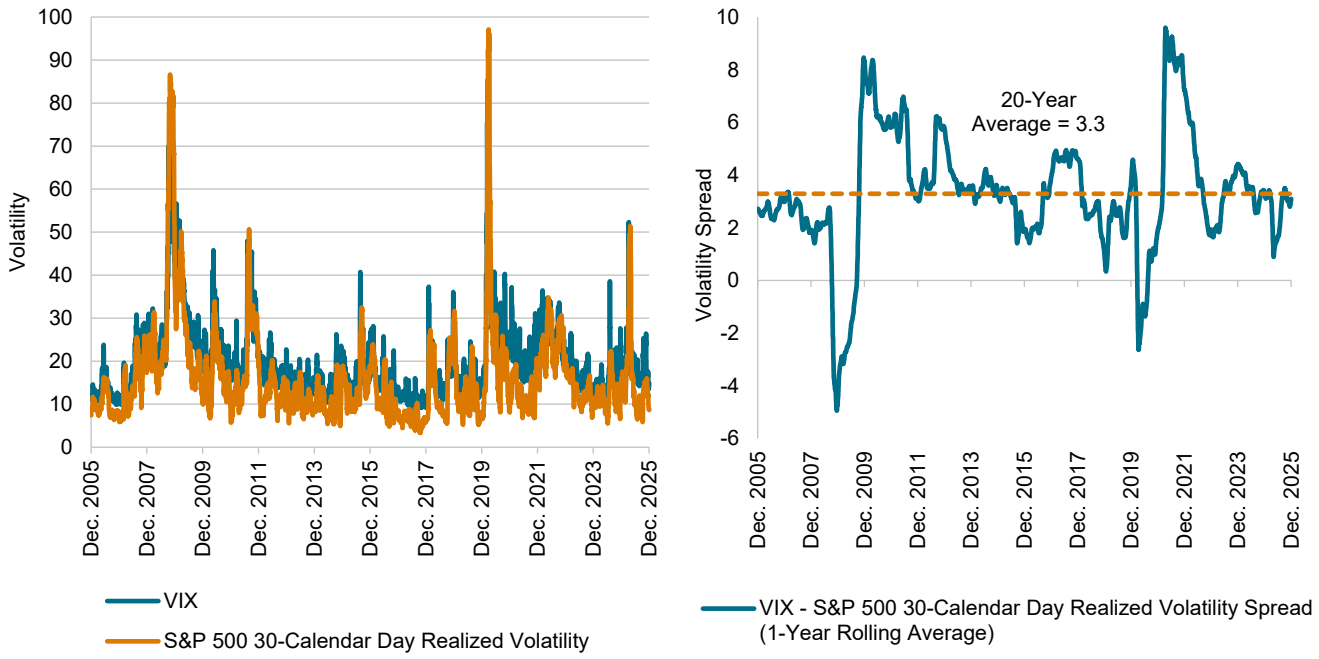
The sacrifice of some upside for a more limited downside—as illustrated in Exhibits 6 and 7—is one reason that covered call strategies have drawn interest from investors seeking reduced risk while retaining exposure to the underlying asset. Beyond this, these strategies have offered two notable historical benefits: (1) a potential income stream that is relatively uncorrelated with traditional income sources such as bond coupons or stock dividends; and (2) the ability to utilize a systemic source of returns in excess of what might be expected from an efficient market, via the so-called "volatility premium."

The existence of a volatility premium in options is supported by extensive evidence documented across academic and practitioner literature, and across asset classes and historical periods. It is sometimes used to describe a premium in option *prices*, but it is more often measured and understood as a premium in the volatility that is "implied" by (that is, derived from) options prices, as compared to the observed asset price volatility. The simplest explanation for such a premium is that the demand for options for hedging purposes usually surpasses their supply, which elevates their prices. Whatever its cause, the phenomenon is

[8] Further illustrations of option premium dynamics follow in the next section. Among other sources of variations, Exhibit 7 plots changes in end-of-day index levels between rebalance dates, whereas the options transactions within the BXM index are notionally executed during a specified period earlier in the trading day. Further details may be found in the BXM index methodology.

simply and emphatically illustrated in the case of U.S. equity index options by comparing the S&P 500's realized volatility with the Cboe Volatility Index (VIX®), a measure of future 30-day volatility that is implied by S&P 500 index option prices.[9] VIX tended to overestimate future realized volatility, by an average of 3.3 annualized volatility points over the past 20 years, as shown in Exhibit 8.

Exhibit 8: Evidence for the S&P 500 "Volatility Premium"



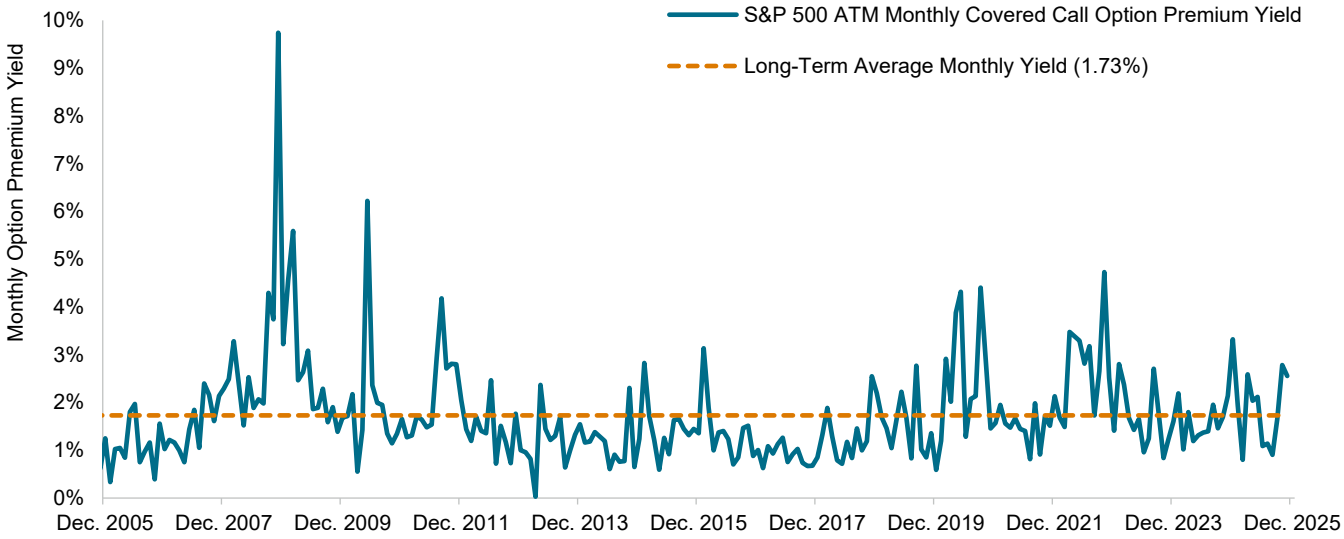
Source: S&P Dow Jones Indices LLC, Cboe. Data as of Dec. 31, 2025. Volatility Spread is calculated as the CBOE Volatility Index (VIX) minus the subsequent 30-calendar day realized volatility of the S&P 500. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

The persistence of such volatility premium suggests that systematically "selling" S&P 500 volatility through options may be a way to utilize a structural market inefficiency, and hence an advantaged way to generate income. However, there are important differences between option premium yield and other types of yields, such as bond or dividend yields, particularly as they relate to an expected or realized cash distribution. Bond coupons and dividends are typically paid out in full, whereas **option premiums from covered call strategies are usually not—and in some cases arguably *should* not be—fully distributed.** Instead, a proportion of the premium is typically reinvested in the strategy. This is because, absent the received option premium, standard covered call strategies remove upside potential and retain downside exposure. Fully distributing option premiums is therefore likely (at least eventually) to lead to a depletion of value, even if the underlying asset has only infrequent declines.

[9] Refer to VIX methodology and A Practitioner's Guide to Reading VIX

Accordingly, option premium yields are not directly comparable to bond or dividend yields unless further assumptions are made.[10] For example, when illustrating the different income streams in Exhibit 4, only 10% of the BXM index's option premium was assumed to be available for distribution. Nonetheless and once taken in the appropriate context, an example of the potential magnitude of income that might be generated is provided in Exhibit 9; the rolling monthly total option premium associated to the BXM was equal to an average of 1.73% per month over the past two decades, equivalent to an annual yield of 20.8%.

Exhibit 9: Cboe S&P 500 BuyWrite Index – Call Option Premium Yield



Source: S&P Dow Jones Indices LLC, Cboe. Based on the data from January 2006 to December 2025. Option premium yield is estimated from the Cboe S&P 500 BuyWrite Index on each monthly roll date. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

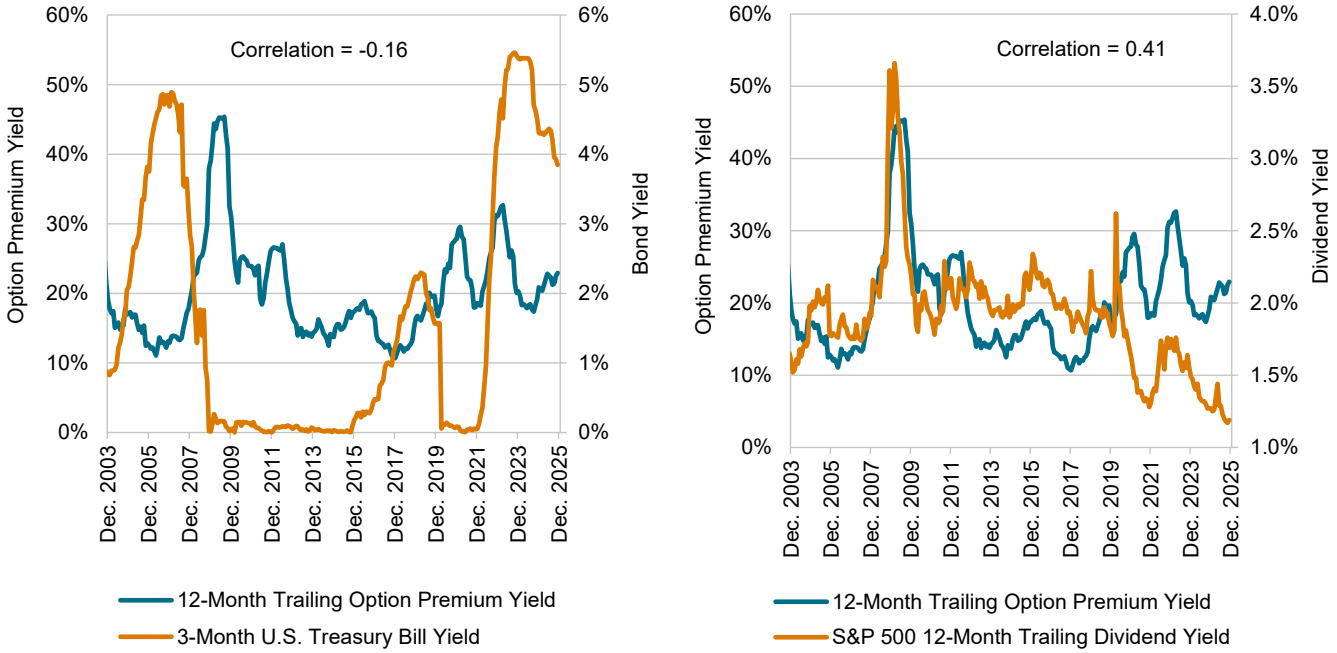
From a statistical perspective, option prices behave quite differently to interest and dividend rates. However, due to shared exposure to macroeconomic drivers, these three metrics for potential income sources are not completely independent. Typically, when expectations for economic growth and inflation rise, interest rates and equity markets rise, while demand for equity market hedges decreases, resulting in lower option premiums. Conversely, a slowdown or reversal in economic growth is usually associated with falling interest rates and falling equity prices, as well as increased market volatility, leading to higher option premiums. A key outcome of these dynamics is that **the received option premiums historically tended to increase during market downturns, helping diminish the impact of declining markets and reduced interest income**. This relationship means that covered call strategies have the potential, when combined with a traditional bond and equity portfolio, to mitigate the impact of equity market declines and increase the stability of income generated by the portfolio.

[10] See Appendix B for further discussion on the balance of income distribution and reinvestment in covered call strategies.

The relationship between option premiums and dividend yields has other subtleties worth highlighting. In the immediate term, yields decrease when prices rise and increase when prices fall while, in the medium and long term, price changes often outpace changes in dividend payments. Thus, for example, rising equity markets may correspond to higher *absolute* levels of dividend income, but dividend yields nevertheless often decrease as equity valuations extend and stock price growth outpaces that of stock dividends.

Exhibit 10 illustrates the typically mildly negative historical correlation between the S&P 500 monthly ATM call option premiums and 3-month U.S. Treasury Bill yields (used as a proxy for money market rates), as well as the typically mildly positive correlation between option premiums and S&P 500 trailing dividend yields. The most recent data illustrates that "typically" does not mean "always": over the past five years, S&P 500 call option premiums have remained relatively elevated even as dividend yields declined and benchmark 3-month Treasury yields surged from nearly zero to briefly exceed 5%. Over the full period examined, call option premiums showed a -0.16 correlation with benchmark U.S. Treasury Bill yields and a 0.41 correlation with S&P 500 dividend yields.

Exhibit 10: Option Premiums May Offer a Source of Income Diversification

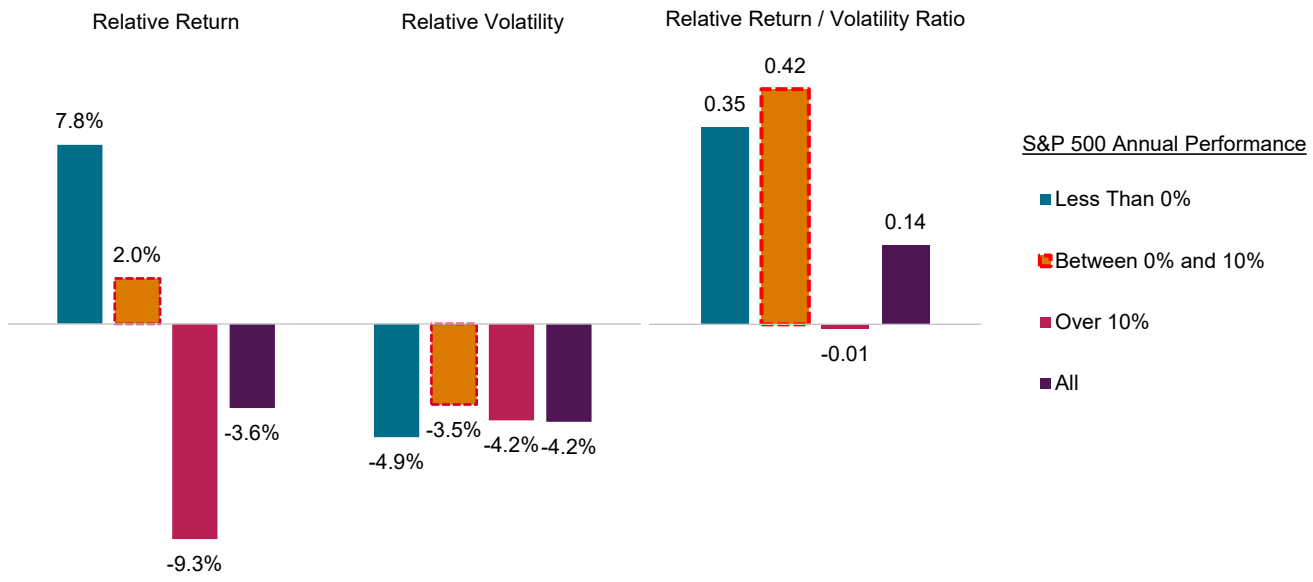


Source: S&P Dow Jones Indices LLC, Cboe. Data from January 2004 to December 2025. Option premium yield is estimated from the Cboe S&P 500 BuyWrite Index on each monthly roll date. 3-month U.S. Treasury Bill yield is based on the S&P U.S. Treasury Current 3-Month Bill Index, which was launched on Nov. 5, 2019. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

1-3. Historical Performance

Historically, in neutral to slightly bullish market environments for their underlying asset, covered call strategies have generally performed well in both relative and absolute terms. They have also tended to perform well in relative (but not absolute) terms during market declines, and moderately well in absolute (but not relative) terms during strong bull markets. For example, since 2000, in calendar years when the S&P 500 rose between 0% and 10%, the BXM outperformed the S&P 500 by an average of 2.0%, with 3.5% lower annualized volatility on average. In years when the S&P 500 fell, the BXM outperformed by an average of 7.8%, with an average volatility decrease of 4.9%. In years when the S&P 500 rose by more than 10%, the BXM underperformed by an average 9.3% (see Exhibit 11), but with 4.2% less volatility.

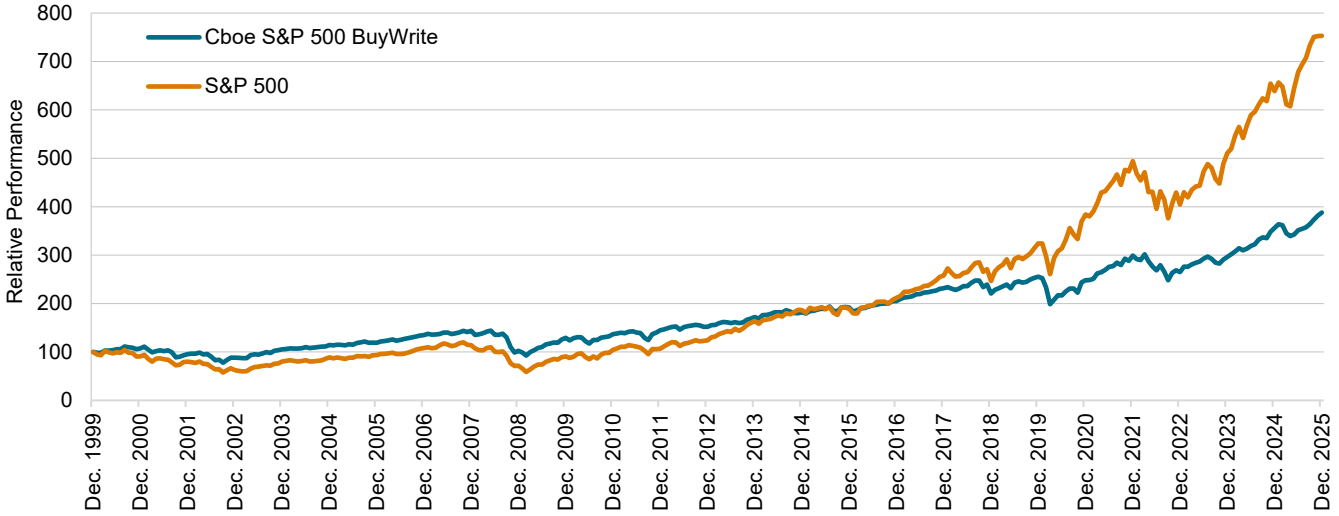
Exhibit 11: Relative Performance of the Cboe S&P 500 BuyWrite Index in Different Market Conditions



Source: S&P Dow Jones Indices LLC, Cboe. Data from 2000 to 2025. The Cboe S&P 500 BuyWrite Index (BXM) estimates the theoretical performance of the S&P 500 monthly at-the-money covered call strategy. Relative performance compared to the S&P 500. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Exhibit 11 shows that covered call strategies can underperform during strong bull markets; indeed, since they conceptually "sell off" upside participation, they are expected to. Exhibit 12 provides a longer-term, cumulative perspective, comparing the BXM's historical performance to the S&P 500 during the last quarter-century. Over the period, the S&P 500 rose more than sevenfold and, as might be expected, the BXM rose by less. However, the BXM's attenuated volatility made the risk-adjusted comparison more balanced: over the full period and during several trailing sub-periods, the two indices had a similar risk-adjusted performance. This highlights a third important consideration of covered call strategies: their **potentially competitive risk/return profile compared to the underlying asset.**

Exhibit 12: Relative Performance of the Cboe S&P 500 BuyWrite Index



Period	Annualized Performance (%)			Annualized Volatility (%)			Performance / Volatility		
	S&P 500	BXM	BXM vs. S&P 500	S&P 500	BXM	BXM vs. S&P 500	S&P 500	BXM	BXM vs. S&P 500
1-Year	17.9	8.9	-9.0	10.9	7.4	-3.5	1.63	1.20	-0.43
3-Year	23.0	13.5	-9.5	11.8	6.3	-5.5	1.95	2.13	0.19
5-Year	14.4	9.3	-5.1	15.1	9.0	-6.1	0.95	1.04	0.09
10-Year	14.8	7.3	-7.5	15.1	10.6	-4.5	0.98	0.69	-0.29
Since 2000	8.1	5.3	-2.7	15.3	11.1	-4.2	0.53	0.48	-0.05

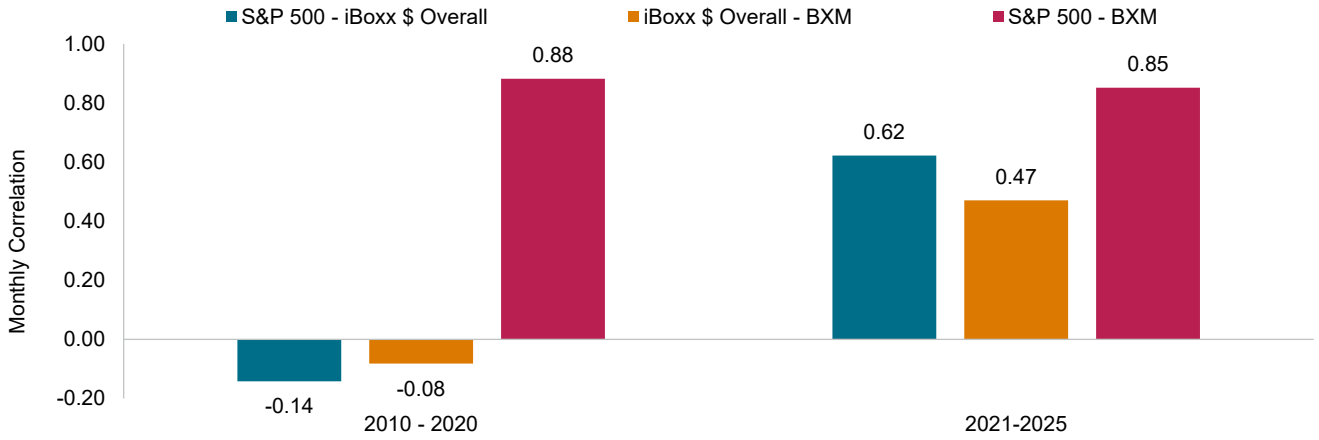
Source: S&P Dow Jones Indices LLC, Cboe. Data from January 2000 to December 2025. Based on monthly total returns in USD. The Cboe S&P 500 BuyWrite Index (BXM) estimates the theoretical performance of the S&P 500 monthly at-the-money covered call strategy. Relative performance compared to the S&P 500. Past performance is no guarantee of future results. Chart and table are provided for illustrative purposes.

1-4. Hypothetical Portfolio Applications

Covered call strategies may provide diversification when combined with traditional equity and bond portfolios, especially during periods when both asset classes decline simultaneously. The possibility of the latter has been of concern in recent years, in which equity-bond correlations rose to become frequently positive, reducing the diversification benefits from their combination.

The recent change in correlation dynamics, and a diversification potential from covered call strategies, is illustrated in Exhibit 13 using the S&P 500, BXM and iBoxx $ Overall—a broad, capitalization-weighted benchmark of USD-denominated investment grade bonds. While the equity and bond indices had a negative average correlation in the prior decade, the average correlation between the S&P 500 and iBoxx $ Overall has been meaningfully positive over the recent five years, averaging at 0.62. Meanwhile, the BXM and iBoxx $ Overall exhibited a lower correlation over the same period, equal to 0.47.

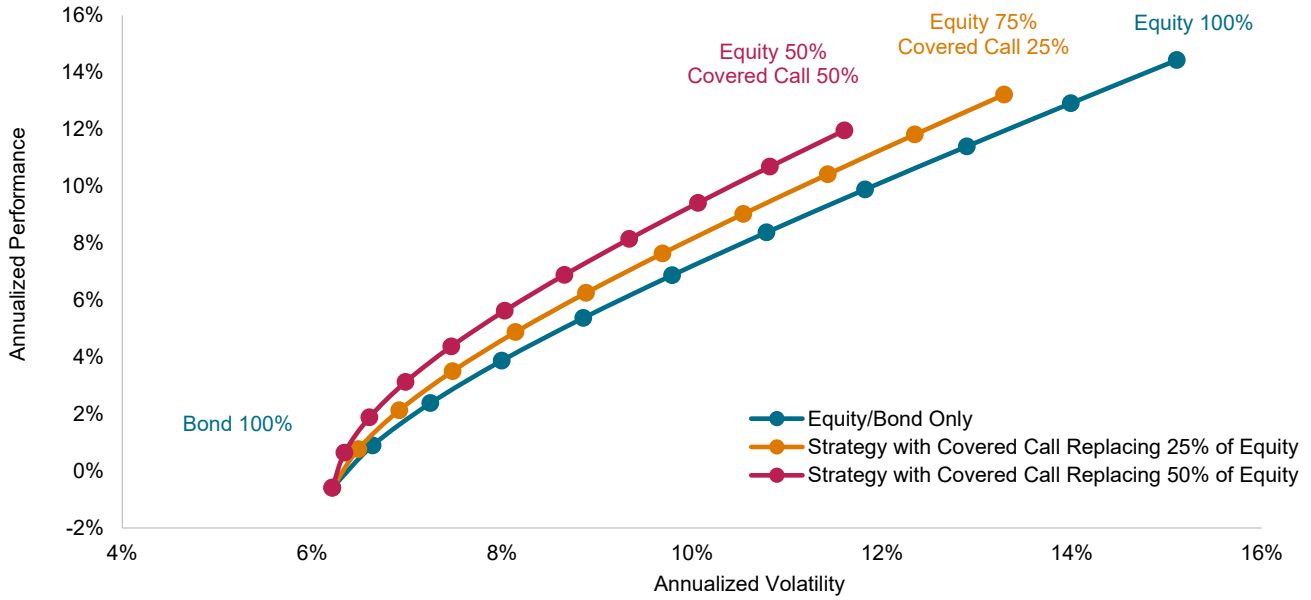
Exhibit 13: Cross-Asset Correlation of the Cboe S&P 500 BuyWrite Index



Source: S&P Dow Jones Indices LLC, Cboe. Data from January 2010 to December 2025. Based on monthly total returns in USD. The Cboe S&P 500 BuyWrite Index (BXM) estimates the theoretical performance of the S&P 500 monthly at-the-money covered call strategy. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Exhibit 13 suggests that, provided their returns were sufficient, covered call strategies could potentially enhance the risk/return profile of traditional equity-bond portfolios. Exhibit 14 confirms that for hypothetical equity/bond portfolios tracking combinations of the S&P 500 and iBoxx $ Overall over the recent five years, a partial replacement of the equity allocation by an allocation tracking the BXM could have resulted in better risk-adjusted performance, whatever the bond/equity allocation was.

Exhibit 14: Hypothetical Equity/Bond Portfolios with Covered Calls



Analysis shown based on hypothetical portfolios.
Source: S&P Dow Jones Indices LLC, Cboe. Data from January 2021 to December 2025. Based on monthly total returns in USD. Each dot represents a portfolio with a proportion of bonds increasing (or decreasing) in 10% intervals. The performance of bond, equity and covered call is represented by the iBoxx $ Overall, S&P 500 and Cboe S&P 500 BuyWrite Index, respectively. The Cboe S&P 500 BuyWrite Index estimates the theoretical performance of the S&P 500 monthly at-the-money covered call strategy. The portfolio is rebalanced to the given asset mix at the end of each month. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

1-5. S&P 500 Covered Call Variations

The most common variation among covered call strategies is the choice of the underlying asset, with the S&P 500 being most frequently used. As illustrated in Exhibit 2, well-known U.S. equity indices are dominant among choices, while there is a growing trend toward utilizing a broader range of underlying assets, including single stocks and other asset classes. Even with the same asset underlying the options, many different implementations are possible. **We will illustrate a few of the most common variations, including the time to maturity of options, option strike prices and the use of different but correlated assets as the underlying portfolio**. We retain the S&P 500 as the option underlying, as this is the most prevalent choice among existing funds and offers the widest range of potential variations using listed instruments.

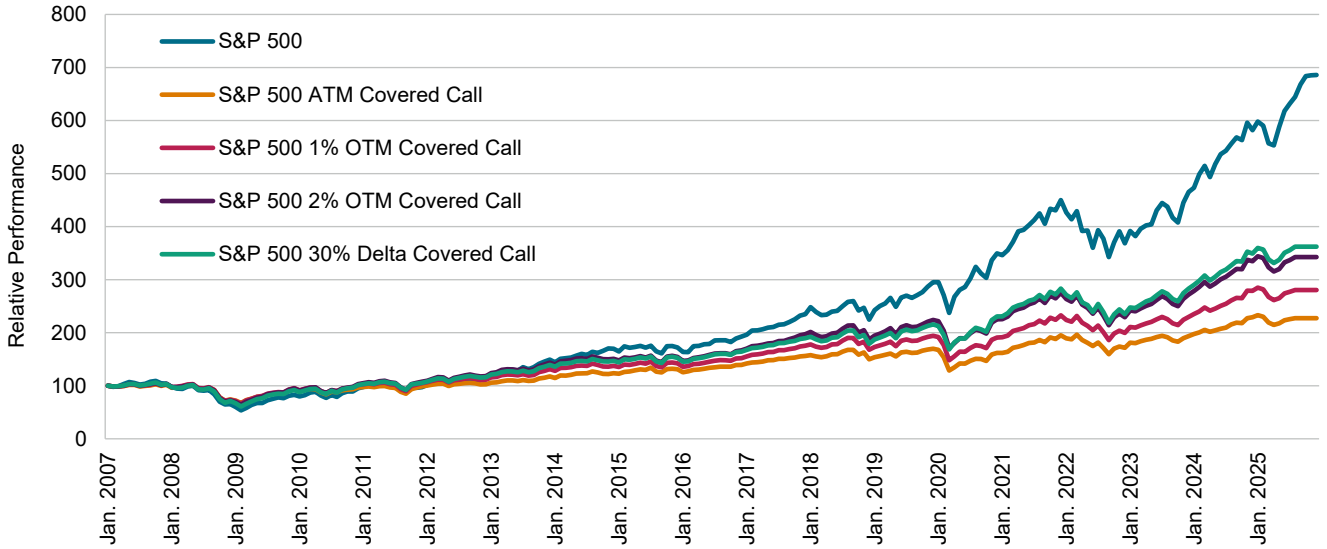
(1) Option Strikes

One of the most common variations among covered call strategies is the use of call options with different strikes. Using out-of-the-money (OTM) options allows greater participation in market gains, at the cost of receiving lower option premiums and less volatility reduction.[11] Alternative strikes are often selected according to their percentage difference from the ATM strike (for example, 2% OTM), or by their underlying "delta"—their initial price sensitivity to the underlying asset.

OTM covered calls may deliver better performance than ATM covered calls when the underlying asset performs well. This was the case with the S&P 500, as illustrated in Exhibit 15. Based on the back-tested data since 2007, the OTM covered call strategies outperformed the ATM covered call strategy in terms of both absolute and risk-adjusted performance.

[11] Use of in-the-money options (ITM) with strikes below the current asset price is quite possible, but strategies that systematically sell ITM options as part of an otherwise standard call overwriting program remain relatively rare at present.

Exhibit 15: Relative Back-Tested Performance of the S&P 500 Monthly Covered Call Strategies with Different Strikes

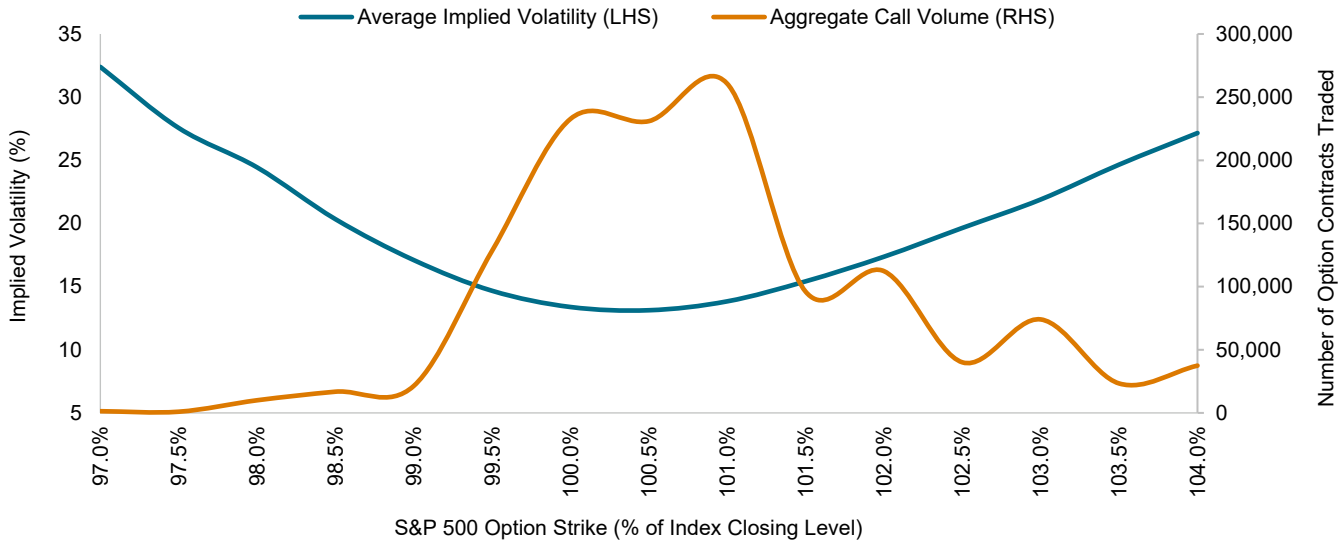


Category	S&P 500 (TR)	S&P 500 ATM Covered Call	S&P 500 1% OTM Covered Call	S&P 500 2% OTM Covered Call	S&P 500 30% Delta Covered Call
Annualized Performance (%)	10.7	4.4	5.6	6.7	7.0
Annualized Volatility (%)	15.6	11.6	12.4	13.1	13.4
Performance / Volatility	0.69	0.38	0.45	0.51	0.53

Source: S&P Dow Jones Indices LLC. Data from January 2007 to December 2025. Based on monthly total returns in USD. An analysis based on a hypothetical combination of a long position in the S&P 500 Total Return Index and a short position in standard S&P 500 monthly call options, with the short call positions being initiated on the third Friday of each month (day t) and held to maturity. The next-month contract is selected based on the S&P 500 closing level on day t-1 as the reference. Past performance is no guarantee of future results. Chart and table are provided for illustrative purposes and reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Options liquidity is another crucial factor to consider for effective implementation of covered call strategies. Reproduced from an earlier section, Exhibit 16 illustrates the S&P 500 call option volume and implied volatility across different strikes during the BXM index rebalancing from July 2025 to December 2025. The call option volume was the highest near the ATM strike and decreased rapidly beyond 1% OTM. While the range of strikes with reasonable options liquidity may vary depending on the market conditions, liquidity diminishes as the option strike moves away from the current index level. Consequently, covered call strategies typically utilize ATM or slightly OTM options.

Exhibit 16: S&P 500 Call Volume and Implied Volatility Across Various Strike Prices



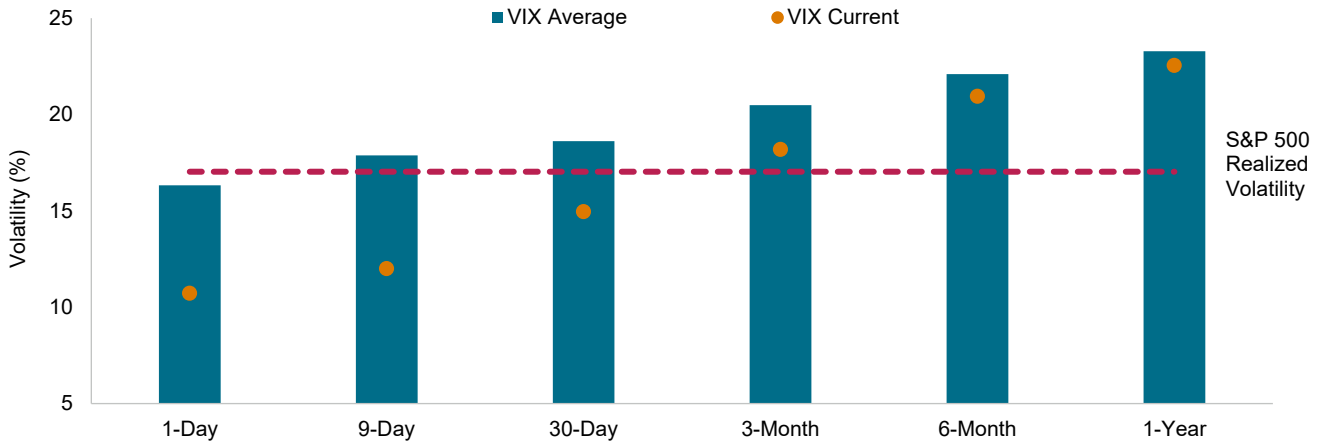
Source: S&P Dow Jones Indices LLC, Bloomberg. Based on the data from the latest six index rebalancing dates of the Cboe S&P 500 BuyWrite Index, from June 2025 to December 2025. Implied volatility is derived using the Black-Scholes formula based on the options' mid-price. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

(2) Option Maturities

Another common variation of covered call strategies is to use options of different maturities. Partly, this can come down to a matter of preference held by the investor: covered call strategies are designed to deliver certain payoffs and generate income at a certain frequency. **Some may prefer a time horizon of one month, while others may prefer longer or shorter time periods**. However, market factors and dynamics also influence these decisions, including the pricing dynamics of longer- and shorter-dated options, and the expected trading costs associated with rebalancing at differing frequencies.

First, the degree of "richness" in option prices or volatility premium tends to increase with longer time horizon, as discussed previously. Exhibit 17 illustrates this by comparing the one-day, nine-day, three-month, six-month and one-year equivalents of the 30-day based VIX. Since May 2022, the average of these implied volatility gauges ranged from 16% for the one-day horizon, to 23% for the one-year horizon. Because all these gauges represent implied annualized volatility for the *same* index (the S&P 500), this indicates that **longer-dated options carried a higher embedded volatility premium than shorter-dated options**.

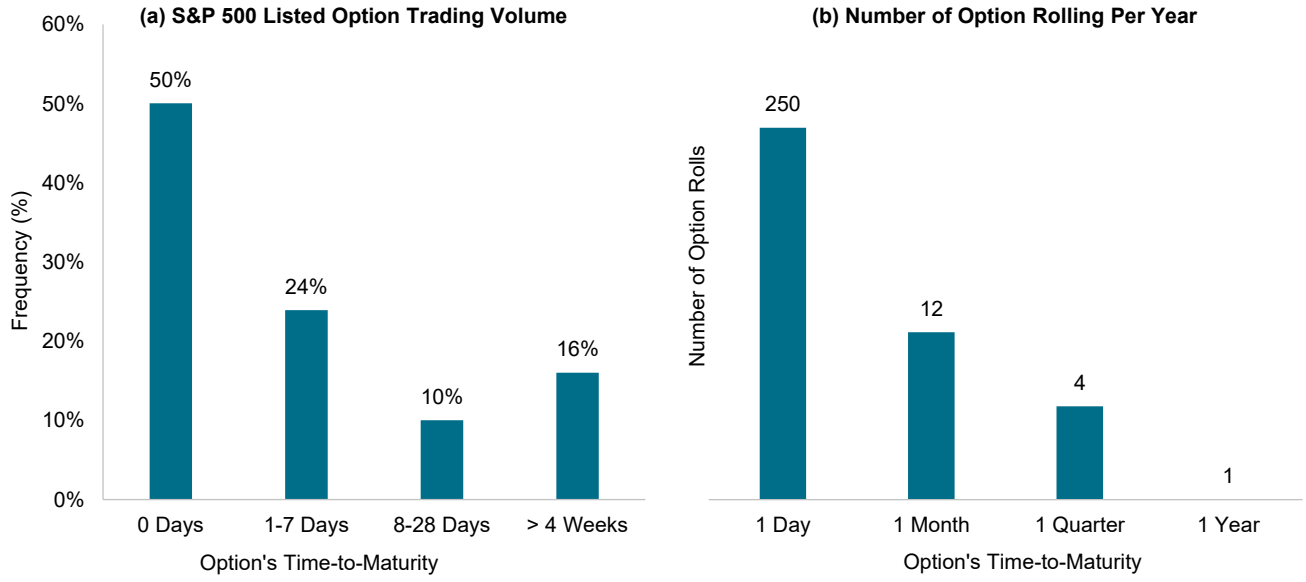
Exhibit 17: Volatility Premium across Various Time Horizons



Source: S&P Dow Jones Indices LLC, Cboe. VIX current levels as of Dec. 31, 2025. VIX averages and S&P 500 realized volatility are calculated based on data between May 13, 2022 (the first value date of the Cboe 1-Day Volatility Index) and Dec. 31, 2025. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Second, from an implementation perspective, trading turnover and costs are typically a significant consideration for market participants. Trading in S&P 500-listed options tends to be concentrated in shorter-dated options, indicating that the trading cost per contract is likely to be lower for shorter-dated options (see Exhibit 18-a). Nevertheless, utilizing shorter-dated options requires more frequent rolling of option positions, as illustrated in Exhibit 18-b, and a high volume of trading may increase the overall cost of running the strategy over time. Seeking to strike a balance between the volatility premium, trading cost and turnover, many covered call strategies employ the S&P 500 options with time-to-maturity of one month or less.

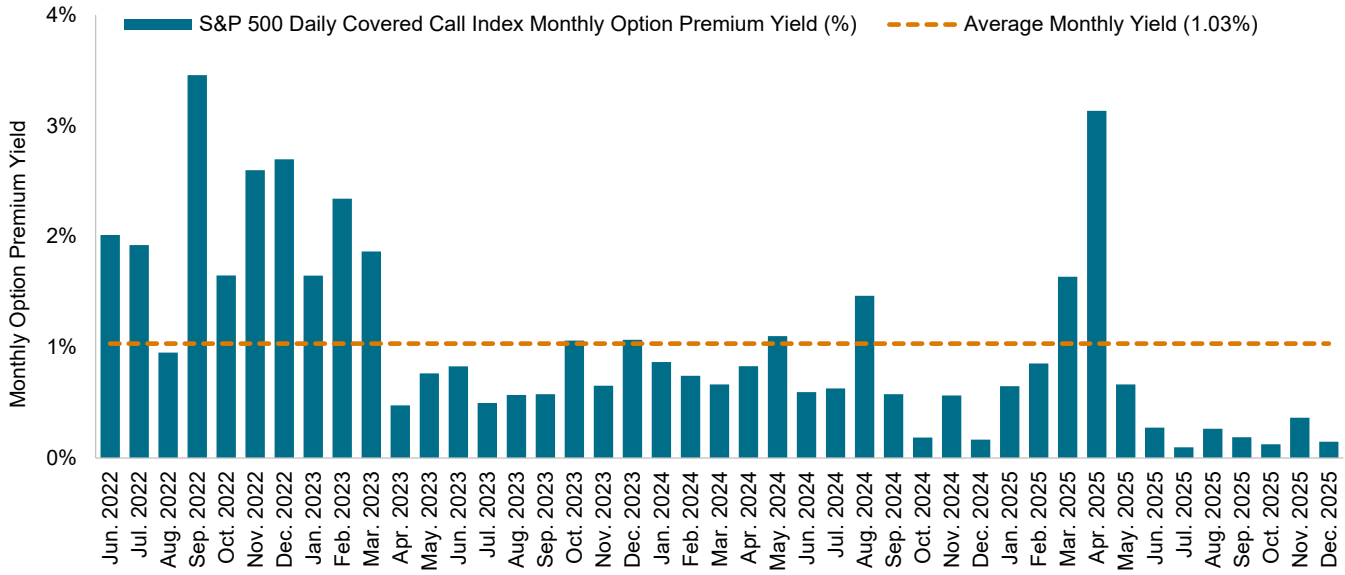
Exhibit 18: Consideration of Options Liquidity and Trading in Covered Call Strategy



Source: S&P Dow Jones Indices LLC, Cboe, CME. Data from Jan. 1, 2024, to Dec. 31, 2025. S&P 500 options trading volume distribution is calculated based on the options trading at Cboe. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

As an example of an index that uses different option maturities, and a different strike price, the S&P 500 Daily Covered Call Index measures the performance of a hypothetical investment in the S&P 500 combined with the daily sale of one-day S&P 500 call options, where an OTM strike is dynamically selected based on the VIX levels.[12] By selling options daily instead of monthly, the index increases its potential for premium collection, although this is balanced by the fact that the call options used are typically 1% to 2% out-of-the-money.[13] Exhibit 19 shows that the S&P 500 Daily Covered Call Index collected an average hypothetical option premium of 12.4% per year between June 2022 and December 2025, with the average option strike set 1.2% above the S&P 500 index level.

Exhibit 19: S&P 500 Daily Covered Call Index – Hypothetical Option Premium Collection



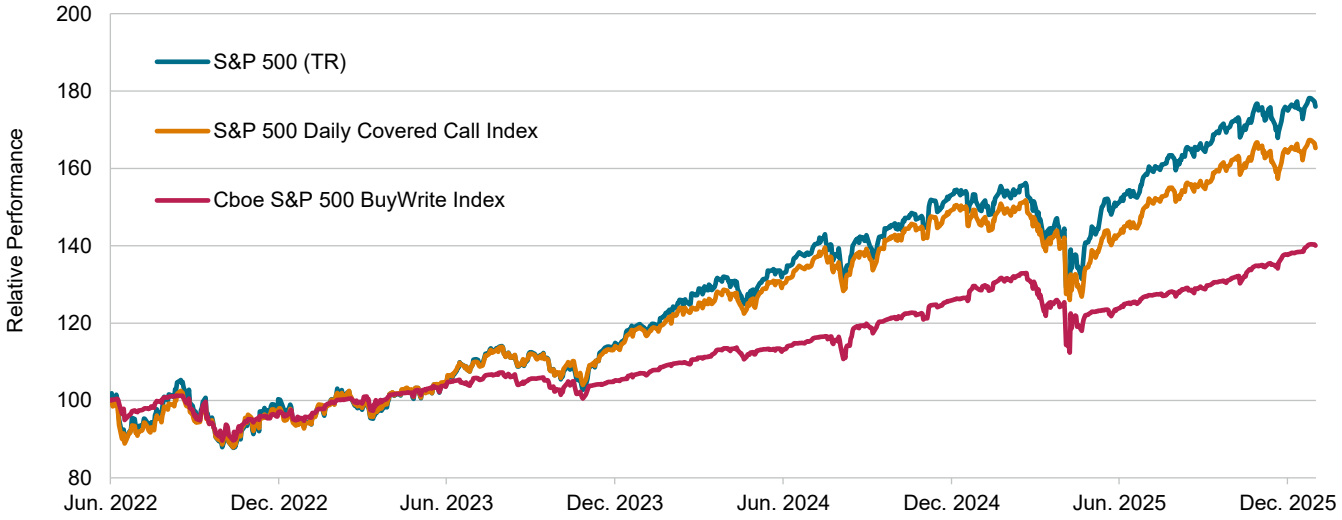
Source: S&P Dow Jones Indices LLC. Data from June 1, 2022, to Dec. 31, 2025. Monthly option premium yield is calculated as the sum of option premium received over the month divided by the initial index level. The S&P 500 Daily Covered Call Index was launched Oct. 5, 2023. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Another potential advantage of a strategy using shorter-dated options is that the option strike prices are more frequently recalibrated in response to movements in the underlying asset. This approach can mitigate timing risk and provide greater upside participation during market upturns, compared to selling options on a monthly basis. This combination of more frequent rebalancing and using OTM options has historically resulted in an S&P 500 Daily Covered Call Index performance that aligned more closely with that of the S&P 500 (see Exhibit 20).

[12] Approximately, the call strike increases linearly with the prevalent VIX level. With VIX close to its median level of 15, the option strike will be around 1% out-of-the-money. With VIX at 30, it will be around 2%. See the index methodology for further details.

[13] As an indication of relative premium capture, assuming options were priced according to the Black-Scholes model and volatility is constant, selling 252 at-the-money daily options over a year would generate approximately 4.6 times the option premium collected from selling 12 at-the-money monthly options.

Exhibit 20: S&P 500 Daily Covered Call Index – Back-Tested Historical Performance



Metric	S&P 500 (TR)	S&P 500 Daily Covered Call Index	Cboe S&P 500 BuyWrite Index
Annualized Performance (%)	17.1	15.0	9.8
Annualized Volatility (%)	16.9	15.1	11.1
Performance / Volatility	1.01	0.99	0.89

Source: S&P Dow Jones Indices LLC, Cboe. Daily data between June 1, 2022 (the first value date of the S&P 500 Daily Covered Call Index), and Dec. 31, 2025. The Cboe S&P 500 BuyWrite Index estimates the theoretical performance of the S&P 500 monthly at-the-money covered call strategy. The S&P 500 Daily Covered Call Index was launched Oct. 5, 2023. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart and table are provided for illustrative purposes and reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

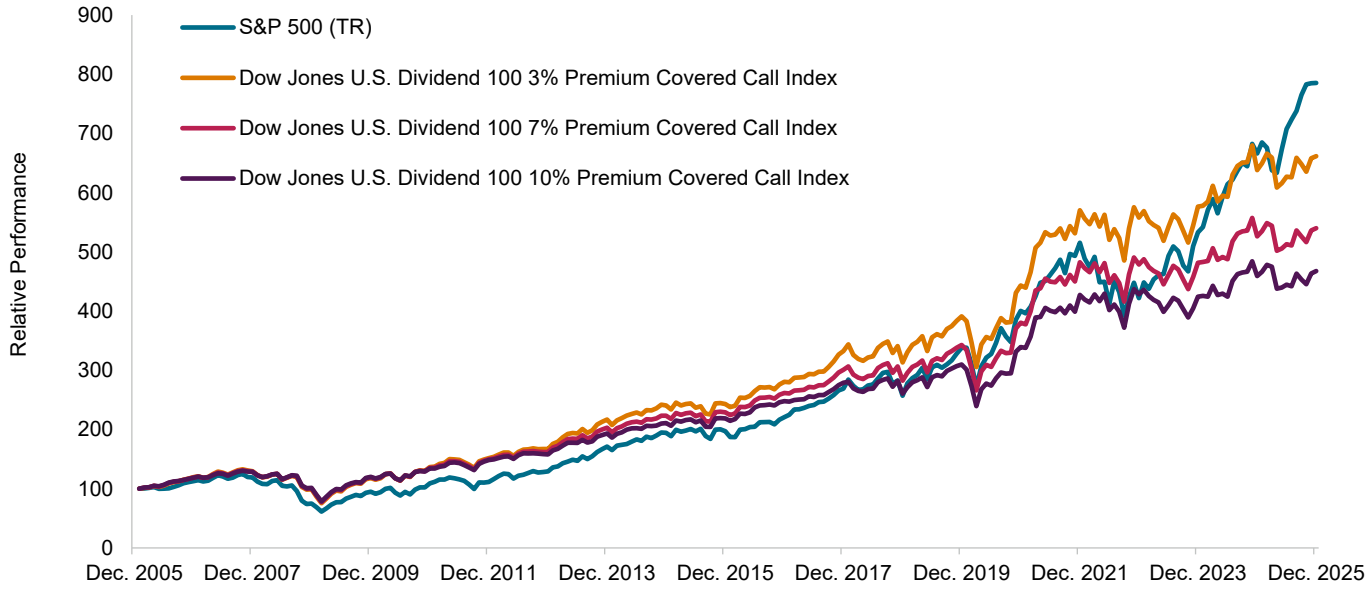
(3) Long Equity Exposure

Additionally, the underlying equity exposure can be adjusted to target specific investment goals. For instance, one might wish to hold a portfolio of high-dividend-yielding stocks to prioritize income generation, but use options on a broad, liquid equity index as the "overwriting" asset. The Dow Jones U.S. Dividend 100 Covered Call Index Series exemplifies this approach, hypothetically overlaying the Dow Jones U.S. Dividend 100 Index, which tracks U.S. stocks recognized for consistently paying dividends and exhibiting strong fundamentals—with the monthly sale of S&P 500 ATM 1-month call options.

The distinguishing feature among the different indices in this series is the targeted annual yield. In each one of three indices, the option notional is dynamically established between 0% and 100% of the long equity position's notional, targeting annual yields of 3%, 7% or 10% from

option premiums.[14] When combined with an indicated dividend yield of 3.95%[15] from the equity position, these index series aims to provide hypothetical income distributions of approximately 7%, 11% and 14% per year.

Exhibit 21: Dow Jones U.S. Dividend 100 Covered Call Series – Back-Tested Historical Performance



Metric	S&P 500 (TR)	DJ U.S. Dividend 100 3% Premium Covered Call	DJ U.S. Dividend 100 7% Premium Covered Call	DJ U.S. Dividend 100 10% Premium Covered Call
Annualized Performance (%)	10.9	9.9	8.8	8.0
Annualized Volatility (%)	15.2	13.9	13.3	12.8
Performance / Volatility	0.72	0.71	0.67	0.63

Source: S&P Dow Jones Indices LLC. Month-end data from January 2006 to December 2025. The Dow Jones U.S. Dividend 100 Covered Call Index Series was launched April 14, 2023. The Dow Jones U.S. Dividend 100 Index was launched Aug. 31, 2011. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart and table are provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 22 summarizes the potential benefits and challenges involved in the different covered call variations discussed so far.

[14] On average, call options were sold for 13%, 31% and 48% of the notional for the 3%, 7%, 10% target premium indices, respectively, over the period between January 2020 and December 2025.

[15] Indicated dividend yield for the Dow Jones U.S. Dividend 100 Index as of Dec. 31, 2025. In comparison, the S&P 500's indicated dividend yield was 1.18%.

Exhibit 22: Covered Call Index Variations – Summary

Considerations	Choices	Potential Benefits	Additional Considerations
(1) Option's Moneyness	ATM	- Higher option premium resulting in larger buffer during market downturns and greater reduction in portfolio volatility - Lower trading cost due to higher liquidity	- Full give-up on the upside potential of the long equity position—may underperform greatly during strong bull markets
	OTM	- Greater participation in asset gains, improved performance in bull markets - May sometimes benefit from higher implied volatility premium	- Lower absolute option premium; reduced buffer during market downturns and less volatility reduction - Potentially higher trading cost due to less options liquidity (more so for further OTM)
(2) Option's Time-to-Maturity	Daily	- Potential for collecting greater option premium - Option strike resets more frequently, mitigating timing risks - More responsive to short-term market moves; may underperform by less during strong bull markets	- Higher beta to the underlying asset and less volatility reduction - Frequent options trading, increasing the overall trading cost - Historically lower volatility premium in shorter-dated options
	Monthly	- Balance between option liquidity, volatility premium and trading frequency - Moderate amount of options trading - Higher levels of volatility premium compared to daily options	- Lower annual option premium collection - Greater timing risk with option strikes being reset once a month - May underperform the long equity position significantly during strong bull markets
(3) Long Equity Exposure	Same as option underlying	- Limited basis risk[16]—payoff of the strategy is in line with expectation as long equity and short call positions offset each other perfectly	- Standardized equity portfolio with no customization
	Different from option underlying	- Can tailor equity portfolio to accommodate different investment goals (e.g. income focus)	- Potential for basis risk—e.g., equity portfolio falls while option underlying asset rises, resulting in losses in both long equity and short call positions - Less certainty on range of potential outcomes.

Source: S&P Dow Jones Indices LLC. Table is provided for illustrative purposes.

[16] Basis risk refers to the financial risk that arises from distinct performances in investments that are similar, but not exactly the same. Typically, basis risk applies to a situation where an investment in a particular asset is "hedged" with an opposite exposure in a more liquid, highly correlated asset.

Part 2: Buffered Indices

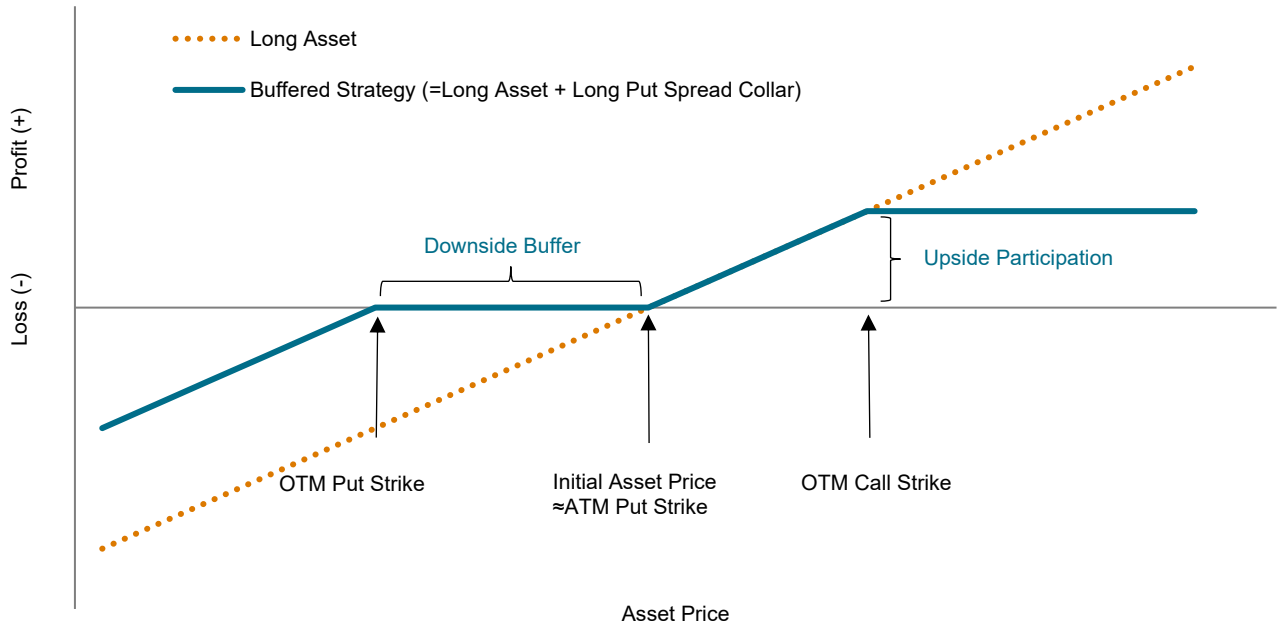
2-1. Strategy Overview

Buffered strategies, also sometimes called “defined outcome” strategies, seek to provide a targeted level of protection against market downturns. They also seek to maintain participation in market gains, but only up to a predetermined maximum (or “cap”). A buffered strategy usually combines an investment in an underlying asset, such as a portfolio tracking the S&P 500, with three additional positions in the options connected to the same underlying asset, typically all with the same option expiry date. These option positions are:

1. The purchase of an at-the-money put option (long ATM put)
2. The sale of an out-of-the-money put option (short OTM put)
3. The sale of an out-of-the-money call option (short OTM call)

Typically, the combination of the put options (1 and 2 above) is designed to result in a fixed level of downside protection—a “buffer” of 10% or 20% of initial asset price, for example. The OTM call strike is then typically selected to offset the net cost of establishing the put positions so that the cost of establishing all the options positions is zero.[17] This structure **prioritizes capital preservation** in a moderate downturn, while allowing for potential **participation in moderate market upswings**, as Exhibit 23 illustrates conceptually.

Exhibit 23: Buffered Strategy – Payoff at Expiry



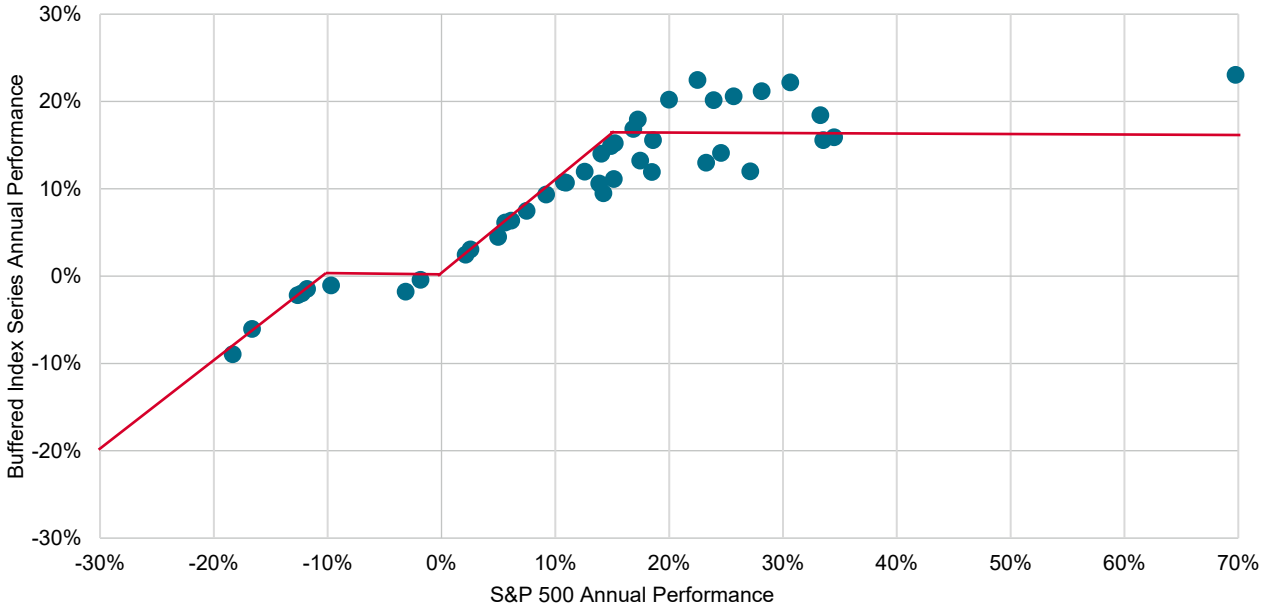
Source: S&P Dow Jones Indices LLC. Chart is provided for illustrative purposes.

[17] This net cost calculation may also incorporate any income anticipated from the underlying asset, such as dividends, that are expected to be paid before the options’ expiry date.

To explore the characteristics of buffered strategies, we will use the S&P 500 10% Buffered Index Series (henceforth, the "Buffered Series" or series of "Buffered Indices"). This series consists of four indices, each rebalancing annually in a different calendar quarter. At each quarterly standard S&P 500 index option expiration in March, June, September and December, the relevant index hypothetically invests in, firstly, a portfolio tracking the S&P 500 and, secondly, *three* one-year S&P 500 index option positions: long an ATM put, short a 10% OTM put and short an OTM call. The final call strike is set so the net cost of all three option positions, plus the expected one-year S&P 500 dividend,[18] equals zero.

Exhibit 24 shows the historical annual performance of the Buffered Series versus the S&P 500 from June 2011 through December 2025, measured using market closes on the dates when one-year option positions were initiated. The data points generally align with the expected payoff of a buffered strategy as depicted in Exhibit 23, noting that different time periods will have different "cap" levels of the buffer (that is, different strike prices for the call option that is sold), with additional deviations occurring primarily because the "nearest" S&P 500 index option strikes are selected based on the time-weighted average price (TWAP) rather than the closing price of the S&P 500.

Exhibit 24: S&P 500 10% Buffered Index Series and S&P 500 Yearly Performance Comparison



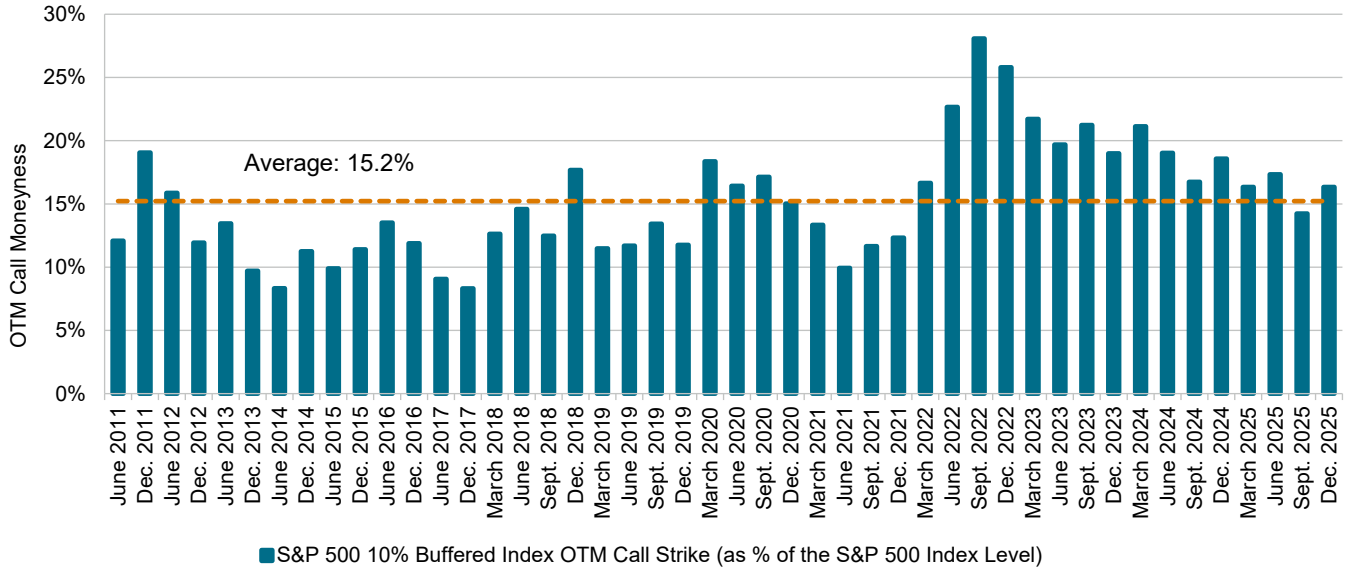
Source: S&P Dow Jones Indices LLC. Based on data on roll dates between June 17, 2011, and Dec. 19, 2025. The analysis is based on the S&P 500 10% Buffered Index March, June, September and December Series. The back-tested data is available since 2011 for the June and December Series and since 2018 for the March and September Series. The S&P 500 10% Buffered Index March, June, September and December Series were launched Sept. 6, 2024. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

[18] A forward-looking measure calculated by multiplying the latest dividend paid per share by the number of dividend payments per year. For more information, please refer to index methodology.

2-2. Option Pricing

The strike level of the hypothetical call option sold at each rebalance of the Buffered Indices (and thus, the “cap” of the buffer) is influenced by several factors, including the implied volatility and indicated dividend levels of the S&P 500, as well as prevailing interest rates. In general, as the S&P 500 implied volatility, dividend yield or interest rate increases, the call strike level also rises. Exhibit 25 illustrates the call strikes derived from historical calculations at each quarterly rebalancing date. The call strikes varied between 8.3% and 28.1%, with an average of 15.2% above the S&P 500 level. Recent years have seen higher-than-average strikes than in the previous decade, driven in part by higher interest rates and higher levels of volatility expectations.

Exhibit 25: Historical Moneyness of Hypothetical Call Options Sold in the S&P 500 10% Buffered Index Series

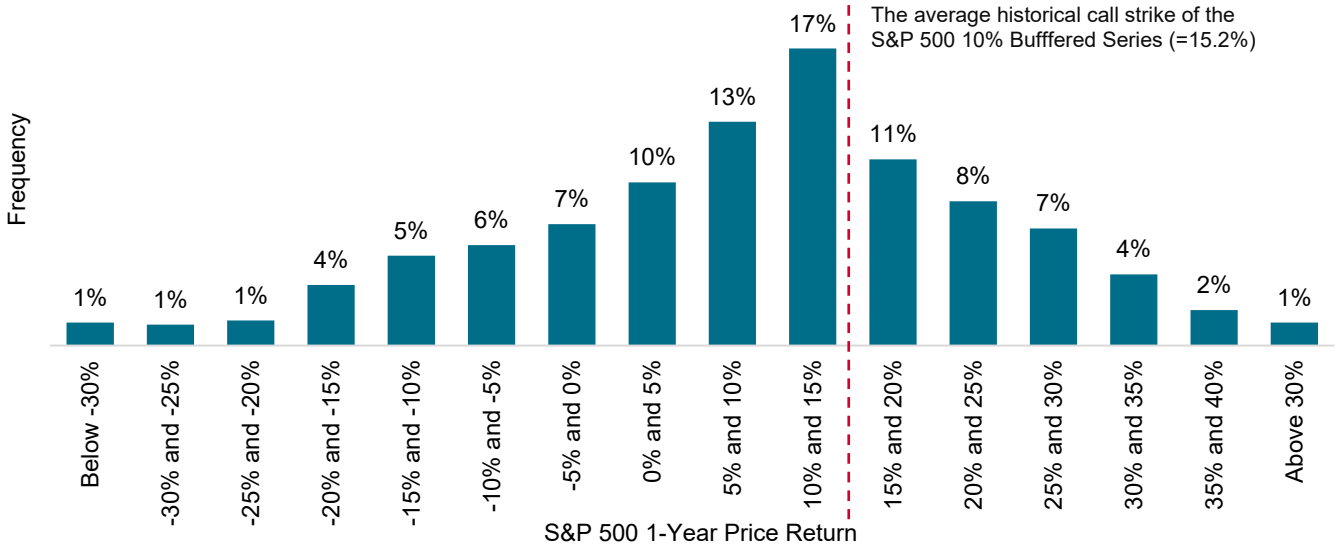


Source: S&P Dow Jones Indices LLC. Data from June 17, 2011, to Dec. 19, 2025. The analysis is based on the S&P 500 10% Buffered Index March, June, September and December Series. The back-tested data is available since 2011 for the June and December Series and since 2018 for the March and September Series. The S&P 500 10% Buffered Index March, June, September and December Series were launched Sept. 6, 2024. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

By design, for years of modest market gains or small declines, Buffered Indices should match the S&P 500’s performance if it rises, or theoretically preserve capital if the S&P 500 falls. Due to the downside protection, Buffered Indices are designed to outperform in periods of extreme market declines, although they may also have negative performance. Conversely, Buffered Indices may perform modestly well in absolute terms, but poorly in relative terms, during periods of large market gains, because the strategy’s performance is capped to a maximum determined by the call strike.

Illustrating the frequency with which such market environments occurred, Exhibit 26 shows the historical distribution of one-year rolling performance for the S&P 500 since its inception in 1957. Over this period, the average S&P 500 one-year price return was 8.8%, with a median of 10.5%. When we compare this with the average historical call strike of 15.2% from Exhibit 25, it suggests that **Buffered Indices would have matched or outperformed the S&P 500 in more than half of one-year periods on an absolute return basis**—assuming that the rebalancing and options expiration dates for the strategy were aligned with the same one-year time frame. Supporting this observation on the more limited time period for which options data are available, the Buffered Indices' back-tested data as shown earlier Exhibit 24 confirms that, from June 2011 to December 2025, the Buffered indices matched or outperformed the S&P 500 in 52% of those one-year periods.[19]

Exhibit 26: Distribution of the S&P 500 One-Year Rolling Returns since 1957



Source: S&P Dow Jones Indices LLC. Based on 12-month rolling returns from March 1957 to December 2025. Past performance is no guarantee of future results. Chart is provided for illustrative purposes. Index performance is not the same as investment product returns. Index performance does not account for trading costs, management fees and expenses.

2-3. Strategy Performance: The Role of Timing Differentials

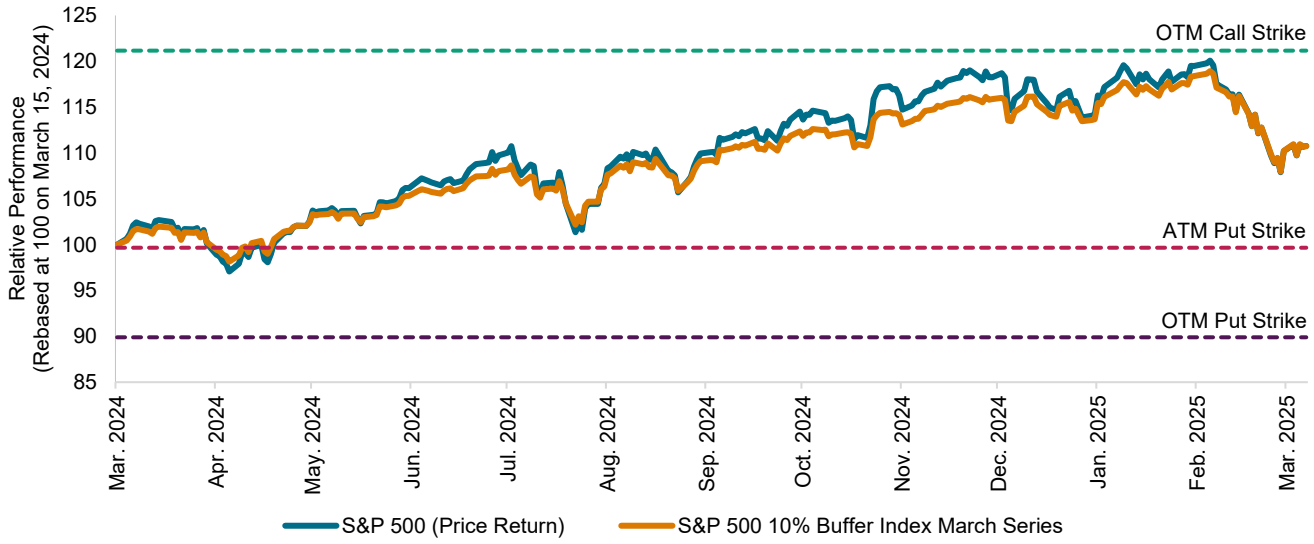
Between consecutive rebalance dates, the performance of typical buffered strategies (and the Buffered Indices series) is determined only by the underlying asset's performance and the relevant option strikes and initial prices, as illustrated conceptually in Exhibit 23. However, **over all time horizons *not* aligned to consecutive rebalancing dates, the market value of the various positions in a buffered strategy can depend on a range of additional factors**. In other words, outside of the periods bracketed by the rebalance dates, the performance of a buffered strategy may not be similarly "buffered."

[19] Note that this period is characterized by overall robust market performance: the average one-year rolling performance was 13.3% and there were only 8 out of 42 one-year periods that delivered negative performance.

The history of the S&P 500 10% Buffered Index March Series provides illustrative examples. First, we will examine two distinct one-year periods, each beginning at an index reconstitution. These first two examples demonstrate how such indices may perform "as expected." Additionally, we present two different one-year periods with starting points *outside* of the rebalance dates, specifically selected to illustrate the potential differential between the buffered index's actual performance and what might be naïvely expected.

Exhibits 27 and 28 show the first kind of example—performance over two one-year periods between rebalance dates: one in which the S&P 500 rose, and another in which it declined. On the rebalance date of March 15, 2024, the ATM put strike was set at 5,100, the OTM put strike at 4,600 (approximately 10% lower) and the OTM call strike at 6,200 (approximately 21% higher). Although the Buffered Index lagged the S&P 500 before expiry, both indices converged at expiry, each gaining 11.7% over the one-year period (see Exhibit 27).

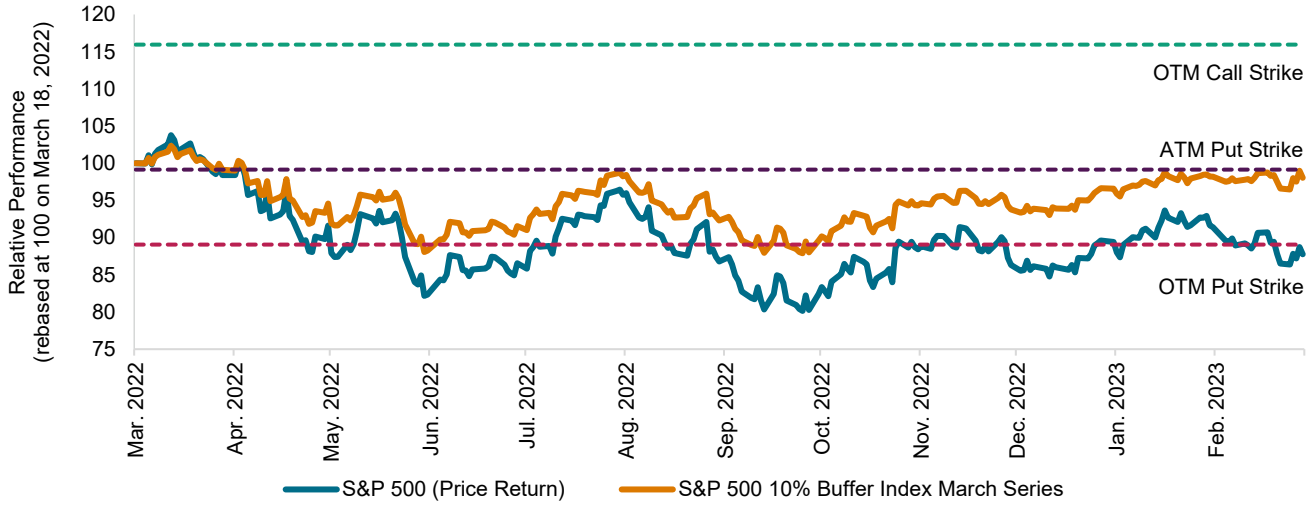
Exhibit 27: Back-Tested Performance of the S&P 500 10% Buffered Index March Series during Rising Market between Rebalance Dates in March 2024 and March 2025



Source: S&P Dow Jones Indices LLC. Data from March 15, 2024, to March 21, 2025. The S&P 500 10% Buffered Index March Series was launched Sept. 6, 2024. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

In contrast, Exhibit 28 illustrates a scenario where the "protective" effect of the puts was in effect. On March 18, 2022, when the S&P 500 was at 4,436, the ATM put strike was set at 4,425, the OTM put strike at 4,975 (10% lower) and the OTM call strike at 5,175 (17% higher). Despite both the Buffered Index and the S&P 500 declining over the period, the Buffered Index closed only 2.0% lower at expiry date of March 17, 2023, compared to the S&P 500's 12.2% decline—demonstrating effective downside protection up to 10%.

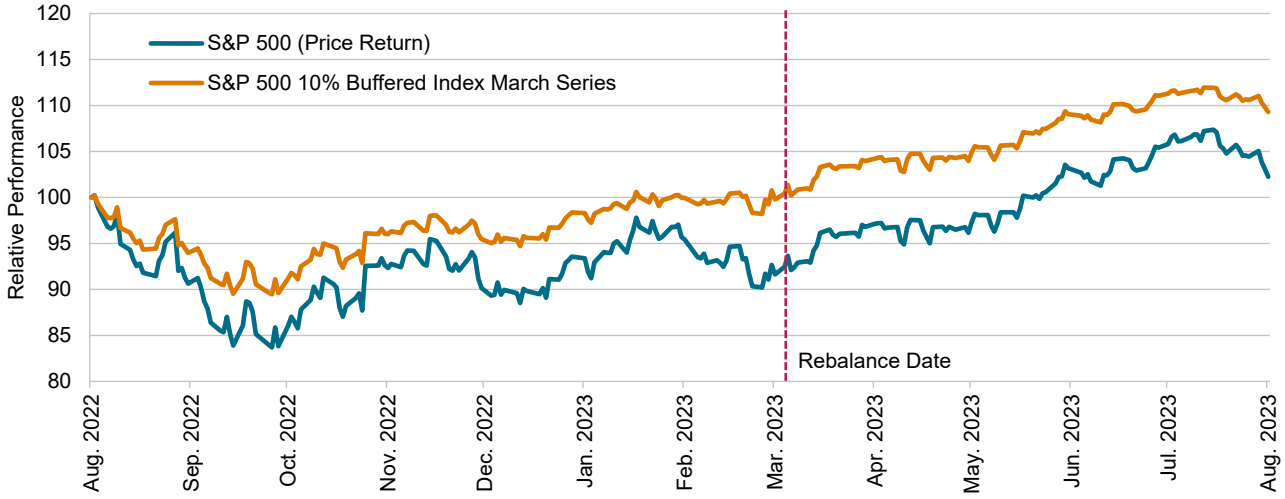
Exhibit 28: Back-Tested Performance of the S&P 500 10% Buffered Index March Series during Market Downturn between Rebalance Dates in March 2022 and March 2023



Source: S&P Dow Jones Indices LLC. Data from March 18, 2022, to March 17, 2023. The S&P 500 10% Buffered Index March Series was launched Sept. 6, 2024. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibits 29 and 30 present very different examples, each based on two different one-year periods that started and ended between rebalance dates. For the one-year period between August 2022 and August 2023, shown in Exhibit 29, the S&P 500 rose 2.3% while the Buffered Index was higher, up 9.3%. This outperformance is largely attributed to the fact that the Buffered Index was protected against downside risk until the rebalance date of March 17, 2023, as illustrated in Exhibit 28.

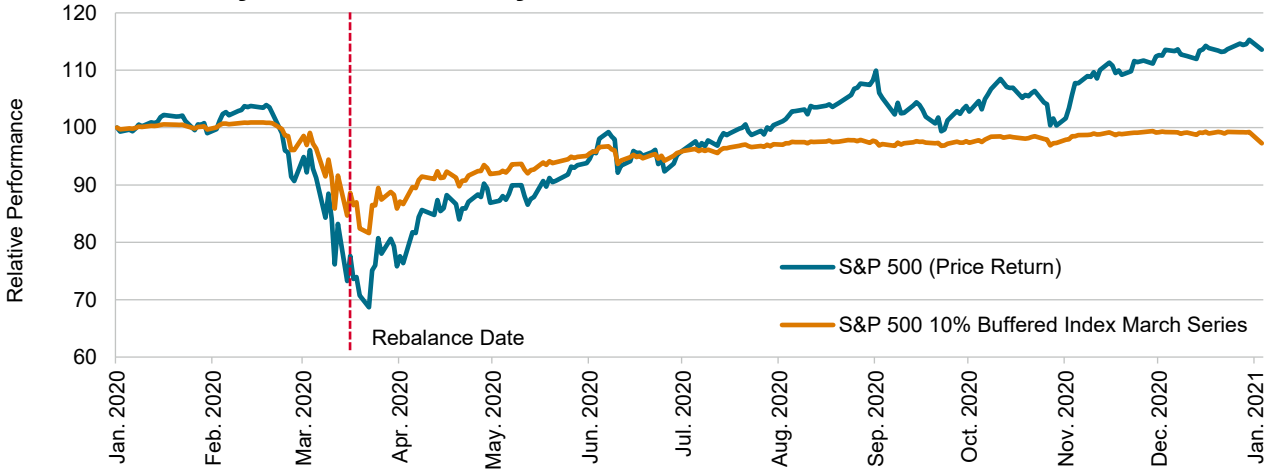
Exhibit 29: Back-Tested Performance of the S&P 500 10% Buffered Index March Series between August 2022 and August 2023



Source: S&P Dow Jones Indices LLC. Data from Aug. 24, 2022, to Aug. 24, 2023. The S&P 500 10% Buffered Index March Series was launched Sept. 6, 2024. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibits 30 illustrates another one-year period, from January 2020 until January 2021. During this time, the S&P 500 fell sharply amid the onset of the COVID-19 pandemic but quickly recovered, ending the period up 13.6%. The Buffered Index initially benefited from a degree of protection but subsequently lagged, ultimately posting a one-year decline of 2.7%. This example highlights that the rebalance made during a short-lived sell-off helped limit further losses but also restricted participation in gains during a rapid market recovery.

Exhibit 30: Back-Tested Performance of the S&P 500 10% Buffered Index March Series between January 2020 and January 2021



Source: S&P Dow Jones Indices LLC. Data between Jan. 2, 2020, and Jan. 4, 2021. The S&P 500 10% Buffered Index March Series was launched Sept. 6, 2024. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

2-4. Back-Tested Historical Performance

Exhibit 31 summarizes the back-tested performance of the Buffered Series. Note that, due to the later development of availability and liquidity in one-year options expiring in the first and third calendar quarters, the June and December series of Buffered Indices have a longer historical "back-testing" period than the March and September series.

Exhibit 31: Historical Performance of the S&P 500 10% Buffered Index Series

Metric	S&P 500 (TR)	Buffered March	Buffered June	Buffered September	Buffered December	S&P 500 (TR)	Buffered June	Buffered December
	(1) Based on Data since September 2018					(2) Based on Data since December 2011		
Annualized Performance (%)	14.31	9.03	10.96	11.12	11.62	14.95	10.44	10.72
Annualized Volatility (%)	17.06	9.83	10.73	11.10	11.02	13.92	8.62	8.80
Performance / Volatility	0.84	0.92	1.02	1.00	1.05	1.07	1.21	1.22

Source: S&P Dow Jones Indices LLC. Based on month-end data from December 2011 to December 2025. The back-tested data is available since 2011 for the June and December Series and since 2018 for the March and September Series. The analysis is based on the S&P 500 10% Buffered Index March, June, September and December Series, which were launched Sept. 6, 2024. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Based on the (longer) back-tested data from December 2011 to December 2025, the S&P 500 10% Buffered Index June and December Indices posted total annual gains of 10.4% and 10.7%, respectively, compared to 15.0% for the S&P 500. The Buffered Indices demonstrated volatility of 8.6% to 8.8%, significantly lower than the S&P 500's volatility of 13.9%, resulting in enhanced risk-adjusted performance. Similar results were observed in the back-tested performance of the March, June, September and December Series over a shorter timeframe since September 2018, while the March Series exhibited notably lower performance than the others, primarily due to the impact of the March 2020 roll, as illustrated in Exhibit 30.

2-5. Buffered Index versus Other Defensive Strategies

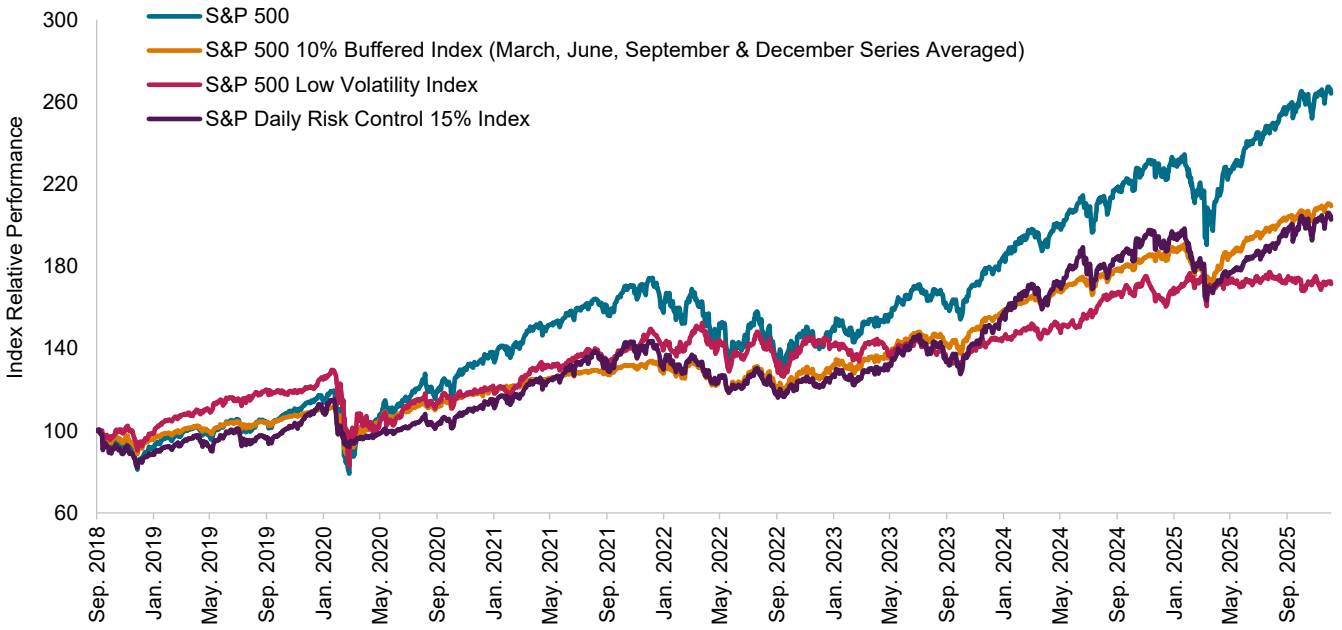
Given their focus on limiting the range of potential outcomes, Buffered Indices can be compared with other defensive index strategies that seek to lower volatility. The S&P 500 Low Volatility Index and the S&P 500 Daily Risk Control Index provide two illustrative examples.

- The S&P 500 Low Volatility Index ("Low Vol") measures performance of the 100 least volatile stocks in the S&P 500. Constituents are weighted relative to the inverse of their one-year trailing realized volatility, with the least volatile stocks receiving the highest weights.
- The S&P 500 Daily Risk Control Index ("Risk Control") series overlays mathematical algorithms to maintain specific volatility targets. The risk control framework is applied to the S&P 500 and helps to reduce volatility toward targets of 5%, 10%, 12%, 15%, and 18%, respectively, by adjusting the weight between the underlying index and cash based on market volatility.

An important conceptual difference between these indices is that the Buffered Indices seek to provide downside protection against the first 10% loss over rebalancing dates, whereas the Low Vol and Risk Control indices aim to reduce volatility and drawdowns without explicit downside protection or a specific time horizon.

Analysis of back-tested data in Exhibit 32 shows that the Buffered Indices showed stronger performance with lower volatility than the Low Vol and Risk Control 15% indices, achieving higher risk-adjusted performance over the longest period for which comparisons are available between all three. Focusing on the past market downturns, when the S&P 500 eroded by as much as 33.8% and 24.5% in 2020 and 2022, respectively, the Buffered Index series provided downside protection of up to 10%, reducing drawdown as effectively as or better than the others. However, in the sharp and ultimately short-lived market downturn that occurred between February and April 2025, the Buffered Index series fell by an average of 13.8%, compared to a 18.7% correction in the S&P 500, while the Low Vol's loss was contained at 9.1%.

Exhibit 32: Back-Tested Historical Performance of the S&P 500 10% Buffered Index versus Other Defensive Strategies



Metric	S&P 500 (TR)	S&P 500 10% Buffered (Averaged)	S&P 500 Daily Risk Control 15%	S&P 500 Low Volatility
Annualized Performance (%)	14.3	10.7	10.2	7.7
Annualized Volatility (%)	17.1	10.5	14.8	14.1
Performance / Volatility	0.84	1.02	0.69	0.55
Performance / Downside Volatility	1.30	1.47	1.15	0.77
Beta	1.00	0.60	0.79	0.65
Notable Drawdowns (%)				
February 2020-March 2020	-33.8	-22.4	-20.1	-36.1
January-October 2022	-24.5	-12.2	-19.2	-17.2
February-April 2025	-18.7	-13.8	-17.6	-9.1
Average of Three Periods Above	-25.7	-16.1	-19.0	-20.8

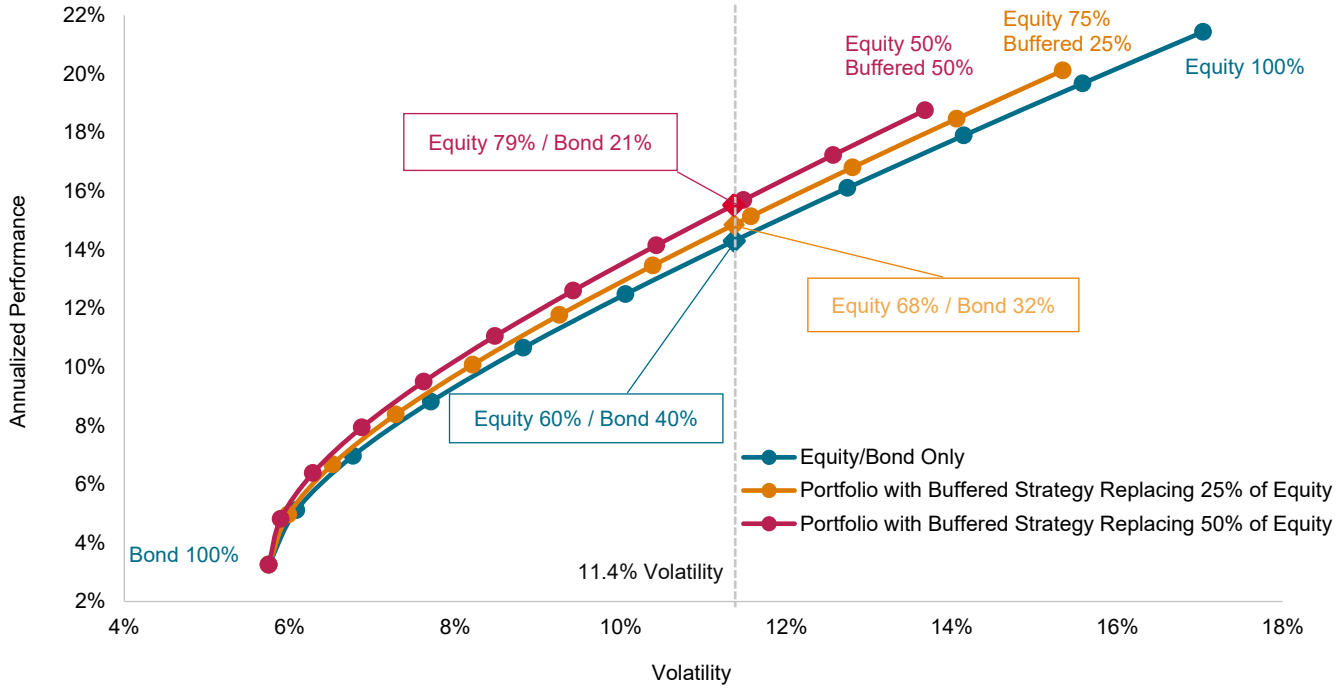
Source: S&P Dow Jones Indices LLC. Data between Sept. 28, 2018, and Dec. 31, 2025. Annualized performance, volatility and beta are calculated based on monthly data, whereas Maximum Drawdowns are calculated based on daily data. The S&P 500 10% Buffered Index (March, June, September and December Series Averaged) represents a hypothetical portfolio of the S&P 500 10% Buffered Index March, June, September and December Series initiated with equal weightings on Sept. 28, 2018. The S&P 500 10% Buffered Index March, June, September and December Series were launched Sept. 6, 2024. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart and table are provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

2-6. Hypothetical Portfolio Applications

Incorporating a buffered strategy into a hypothetical equity/bond portfolio could have resulted in an enhanced overall risk/return profile. Using the same index components for hypothetical analysis as before, analysis of back-tested data since September 2018 indicates that

substituting a portion of the equity weight with a component tracking the Buffered Indices would have resulted in stronger risk-adjusted performance compared to a traditional equity/bond portfolio (see Exhibit 33).

Exhibit 33: Hypothetical Equity/Bond Portfolios with Back-Tested Buffered Indices



Analysis shown based on hypothetical portfolios.
Source: S&P Dow Jones Indices LLC, Cboe. Data from September 2018 to December 2025. Each dot represents a portfolio with a proportion of bonds increasing (or decreasing) in 10% intervals. The performance of bond, equity and buffered strategies are represented by the iBoxx $ Overall, S&P 500 and a portfolio of the S&P 500 10% Buffered Index March, June, September and December Series initiated with equal weightings on Sept. 28, 2018, respectively. The portfolio is rebalanced to the given asset mix at the end of each month. The S&P 500 10% Buffered Index March, June, September and December Series were launched Sept. 6, 2024. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Because of their risk, performance and correlation dynamics, **Buffered Indices may allow for increased equity market exposure while maintaining the same level of portfolio risk**. For instance, a hypothetical 60/40 combination (60% in the S&P 500 and 40% in the iBoxx $ Overall) would have generated an annualized performance of 14.3% with a corresponding volatility of 11.4% over the given period. With the same level of volatility, the hypothetical mix consisting of 68% in equity-linked components (51% in the S&P 500 plus 17% in the S&P 500 10% Buffered Index Series) and 32% in bonds resulted in higher hypothetical performance equal to 14.9%. Alternatively, a hypothetical portfolio comprising 79% in equities (39.5% each in the S&P 500 and the S&P 500 10% Buffered Index Series) and 21% in the bonds could have yielded an even higher performance of 15.5%.

Conclusions

The remarkable growth of options-based ETFs in the U.S.—from under USD 5 billion in 2019 to USD 245 billion in 2025—underscores **their increasingly mainstream adoption**. This trend also stands within a broader history of increasing sophistication in the ETF industry, which has lowered costs, simplified access and improved liquidity across an expanding range of markets and exposures. In tandem, the creation of rules-based, transparent approaches to options-based strategies has catalyzed product innovation, lowered barriers to entry, broadened awareness and established new standards for portfolio construction.

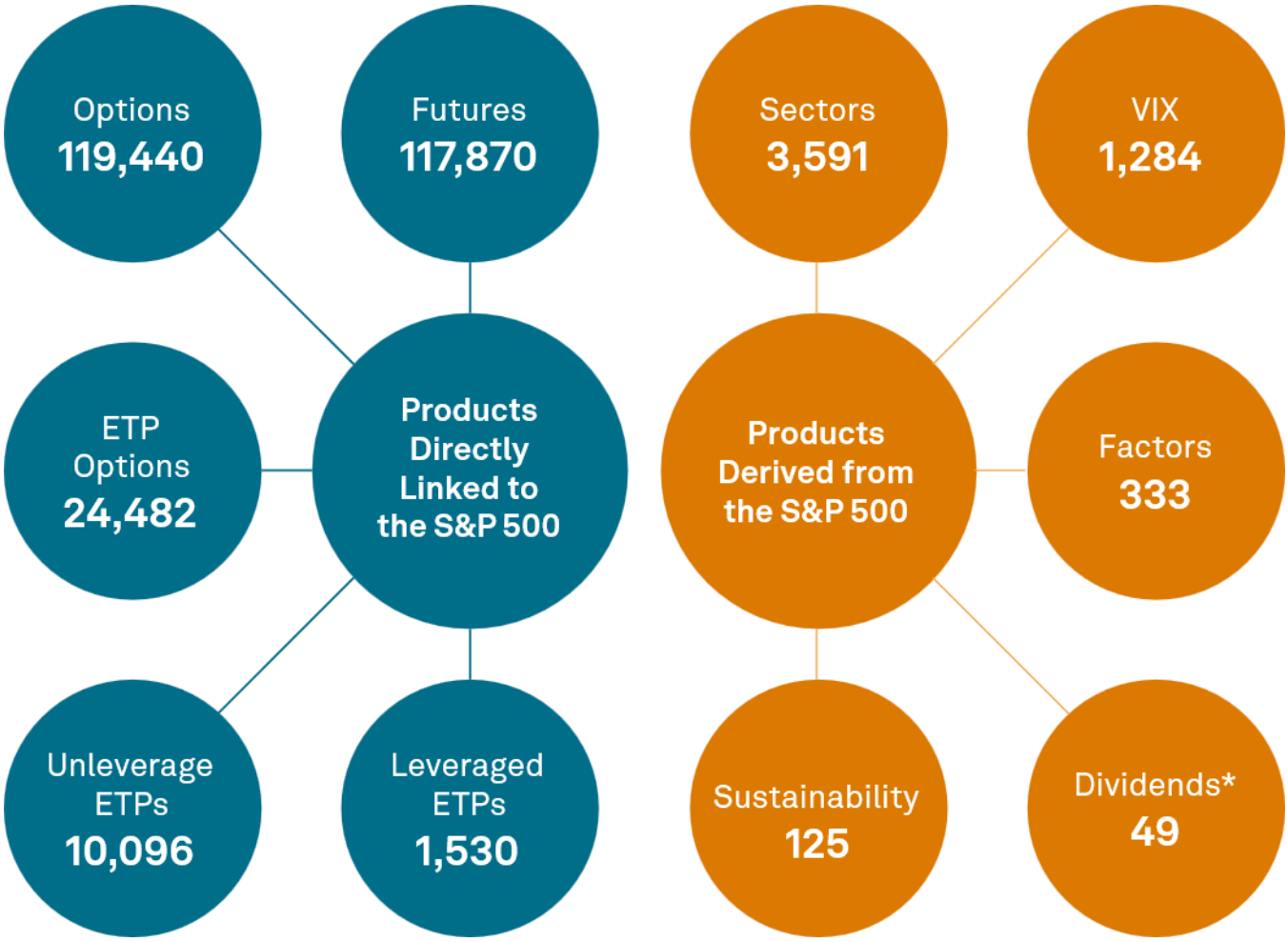
These trends have helped a wider range of market participants to **increase or diversify their income, manage risks or take a more structured approach to managing equity market participation and loss protection**, either as standalone solutions or as a part of broader portfolios. Indices on the two most common forms of strategies—call overwriting and buffered—have provided robust benchmarks for both active and passive options strategies, while well-known equity benchmarks continue to be the most popular underlying for the options used in these investments. Consequently, covered call and buffered indices, especially those built on the S&P 500 trading ecosystem, have played a significant role in this evolution.

Beyond passive fund replication, **indices serve as objective benchmarks for performance evaluation, risk attribution and product development**. Their transparency, reliability and extended histories enable investors to understand, monitor and compare outcomes, fostering trust and supporting informed decision-making as the industry continues to evolve. The adaptability of index methodologies across strikes, maturities and underlying exposures ensures that **solutions can be tailored to diverse and changing investor needs, market environments and regulatory frameworks**.

Appendix A: The S&P 500 Trading Ecosystem

The S&P 500 serves as the primary options underlying in options-based ETFs, representing 59% of total assets (see Exhibit 2). The index benefits from a robust trading ecosystem, with an estimated aggregate economic value of USD 279 trillion traded in 2024 (see Exhibit 34). This large and active index trading ecosystem has been crucial to the rapid growth of options-based ETFs.

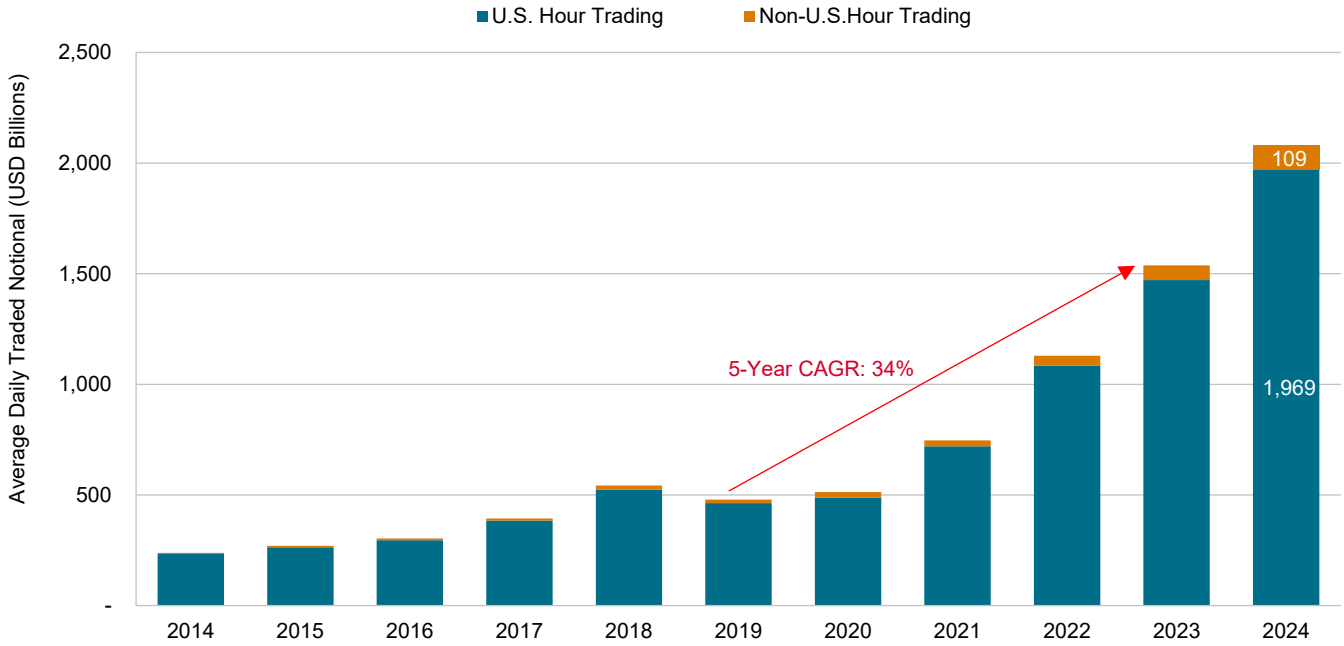
Exhibit 34: The S&P 500 Ecosystem – Aggregate Index Equivalent Trading Volume in USD Billions



Source: S&P Dow Jones Indices LLC, FIA, Bloomberg. Data as of Dec. 31, 2024. Based on "Index Equivalent Trading Volumes" as defined in "The Liquidity Landscape" S&P Dow Jones Indices' research September 2025. Volumes were adjusted for the degree of short-term index sensitivity, including estimates of average delta for options volume. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Notably, liquidity for the S&P 500 options has increased recently, achieving a five-year compound annual growth rate (CAGR) of 34% overall and 47% during non-U.S. trading hours (see Exhibit 35). This around-the-clock liquidity enables a range of options-based strategies utilizing the S&P 500 options to be offered in various markets outside the U.S.

Exhibit 35: Growth of the S&P 500 Listed Options Trading Volume



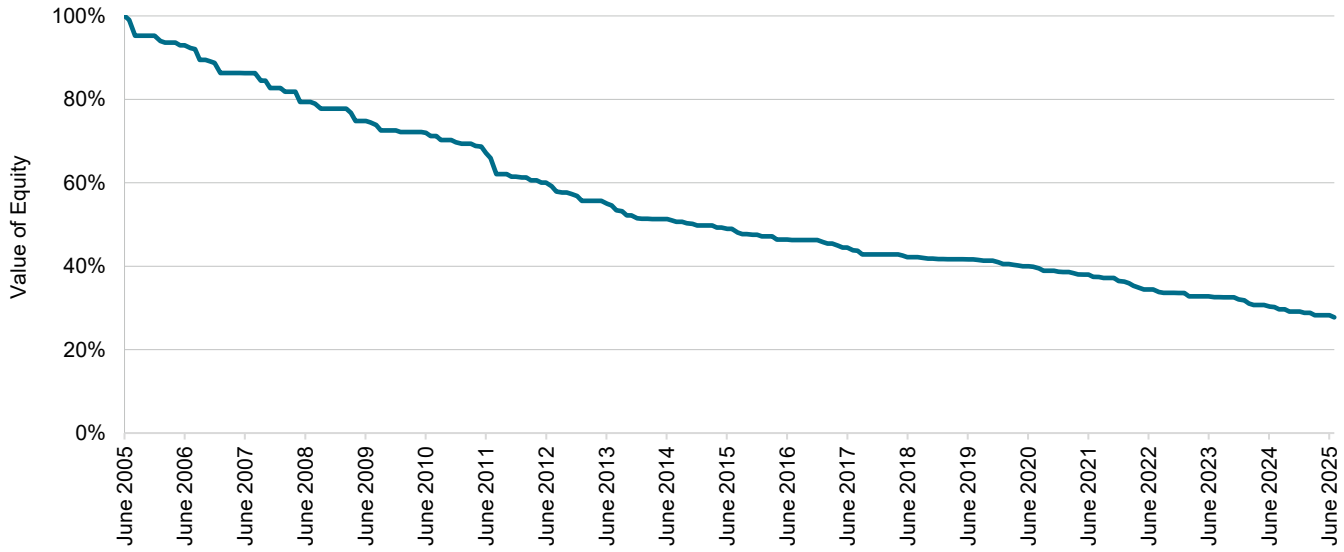
Source: S&P Dow Jones Indices LLC, Cboe, CME, Bloomberg. Data as of Dec. 31, 2024. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Appendix B: Income Distribution and Reinvestment of Covered Call

In this paper, we primarily focused on the structure, characteristics and potential applications of covered call strategies, and conducted all analyses based on the total return versions of covered call indices, assuming that option premiums are fully reinvested. However, when executing the strategy, **the decision regarding the allocation of option premiums—whether to distribute or reinvest—is crucial**, as it significantly affects the growth (or depletion) of the portfolio's equity.

We can conceptualize this using the BXM. Given the strong performance of the S&P 500 over the past decades, the short S&P 500 call positions in the BXM often went in-the-money and were exercised. This means that during the months that the S&P 500 rose, gains were offset by the cash settlement of the short call position, while in other months, the S&P 500 either declined or was unchanged. This also implies that the growth in the BXM primarily stemmed from the reinvestment of call option premiums and stock dividends. In other words, if the call option premium had been entirely distributed, the hypothetical portfolio would have gradually depleted over time, as illustrated in Exhibit 36.

Exhibit 36: Hypothetical Equity Position of the Cboe S&P 500 BuyWrite Assuming Full Distribution of Option Premiums



Source: S&P Dow Jones Indices LLC. Based on the S&P 500 price returns between monthly roll dates in June 2005 to June 2025. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

For further insights on this topic, please refer to our previous paper, "Seeking Income: Cash Flow Distribution Analysis of S&P 500 Buy-Write Strategies."

Performance Disclosure/Back-Tested Data

The S&P U.S. Treasury Current 3-Month Bill Index was launched on Nov. 5, 2019. The S&P 500 Daily Covered Call Index was launched Oct. 5, 2023. The Dow Jones U.S. Dividend 100 Index was launched Aug. 31, 2011. The Dow Jones U.S. Dividend 100 Covered Call Index series was launched April 14, 2023. The S&P 500 10% Buffered Index March, June, September and December Series were launched Sept. 6, 2024. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance. The back-test calculations are based on the same methodology that was in effect on the index Launch Date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. Complete index methodology details are available at www.spglobal.com/spdji. Past performance of the Index is not an indication of future results. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results. Please refer to the methodology for the Index for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations. Back-tested performance is for use with institutions only; not for use with retail investors.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the index is set to a fixed value for calculation purposes. The Launch Date designates the date when the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its data feed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate S&P DJI's ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using "Backward Data Assumption" (or pulling back) of ESG data for the calculation of back-tested historical performance. "Backward Data Assumption" is a process that applies the earliest actual live data point available for an index constituent company to all prior historical instances in the index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as "product involvement") were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on "Backward Data Assumption" please refer to the FAQ. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific data points and relevant time period for which backward projected data was used.

Index returns shown do not represent the results of actual trading of investable assets/securities. S&P Dow Jones Indices maintains the index and calculates the index levels and performance shown or discussed but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US $100,000 investment for a 12-month period (or US $10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US $1,650), the net return would be 8.35% (or US $8,350) for the year. Over a three-year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US $5,375, and a cumulative net return of 27.2% (or US $27,200).

General Disclaimer