

KNOW WHAT YOU OWN

Understanding the Diversity of Options Strategies

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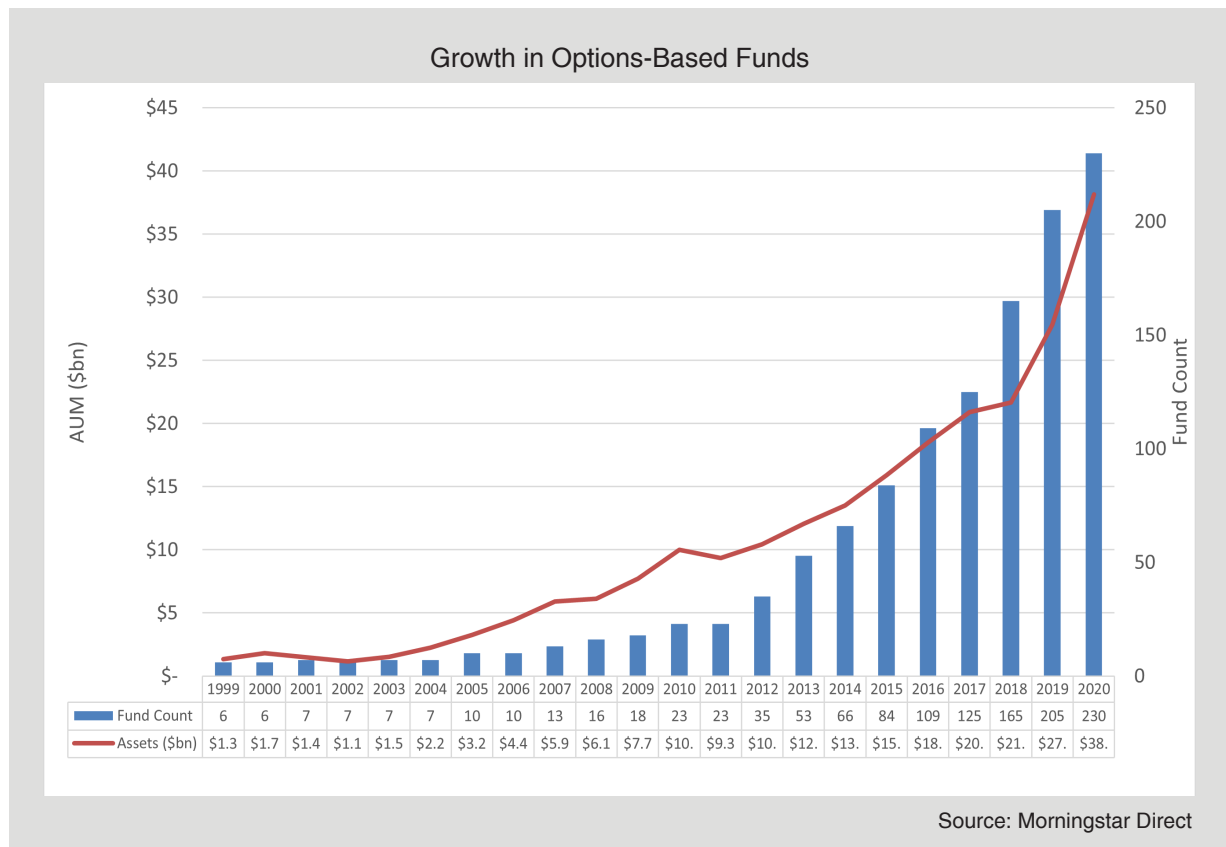
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INTRODUCTION

Given the challenges to both equities and fixed income, one of the most rapidly growing mutual funds and ETF categories is dedicated option strategies. In terms of assets under management and number of products available, options-based strategies have seen significant growth over the last several years.



As the proliferation of options-based strategies has grown, understanding the category’s diversity and employing relevant due diligence considerations will improve strategy selection and portfolio implementation.



CLASSIFICATION OF OPTIONS STRATEGIES

While Morningstar’s coverage of options has improved, their current categorizations are lagging, not leading, the changes in this space. Several years ago Morningstar released a new category called “Option Writing”, which was shortly thereafter renamed to “Options-Based” to encompass those mutual funds and ETFs that use options heavily. More recently, Morningstar further divided their Options-Based group into two new categories: “Derivative Income” and “Options Trading.”

In explaining their decision, Morningstar wrote the following in their white paper, “2021 Global Liquid Alternatives Landscape”:

“In the U.S., we’ve divided one of the most heterogeneous alternative categories- options-based- to distinguish between strategies trading volatility as an asset and those trying to enhance income from long-term stock holdings. The former is an alternative approach; the latter, so-called buy-write strategies that buy stocks and write (or sell) call options on them to generate income, are not an alternative approach because these strategies remain highly correlated to equity markets. They’re classified in a new derivative-income category....More technical funds that trade volatility, such as the VIX index, are less market-sensitive and more relative-value-oriented. Thus, they’re in our options-trading category within the alternative broad category group.”

The creation of “Derivative Income” is certainly a step forward and one that Swan has been advocating for years. However, we believe the development of Morningstar’s categories trails the evolution seen in the marketplace, and that “Options Trading” could benefit from further delineation. Because the potential to mix and match different option positions and core holdings provides an almost limitless range of profit/ loss scenarios, it helps to classify option strategies into one of three sub-categories, namely:

1. Hedging strategies
2. Income strategies
3. Alpha/trading strategies

We believe that separating out income strategies as a distinct category is a step in the right direction. However, continuing to lump hedging strategies and alpha/trading strategies together in a single category called “Options Trading” creates a rather heterogenous category with quite diverse return objectives and risk profiles.

While no classification system is perfect, most option strategies will fall into one of these primary categories. Each has its own unique risk and return characteristics. But more importantly, these categories are defined by what the strategy is trying to achieve.



Hedging Strategies

Primary Objective: These strategies are defined as having a core, long portfolio but also taking active steps to hedge downside market risk via options. Investopedia defines a hedge as “an investment to reduce the risk of adverse price movements in an asset. Normally, a hedge consists of taking an offsetting position in a related security.” In our opinion, options are an ideal instrument for removing price risk from a portfolio.

It is important to note that many strategies include the term “hedge” in their name but might not be directly reducing market risk. Some strategies produce returns that are uncorrelated to market movements. Combined with more traditional strategies that do track the market, such uncorrelated strategies can reduce the overall volatility of a portfolio. While reducing volatility is a worthy goal, there are two caveats to keep in mind. First, if the correlations increase, the volatility-reducing aspect of such strategies is diminished. Second, such strategies might not be investing in securities which directly reduce market risk.

We are limiting our definition of hedging strategies to those that explicitly seek to offset market risk. Using options nomenclature, hedging strategies actively seek to reduce the delta, or price sensitivity, within their portfolio. In addition, it is important to note that most hedging strategies also include some component of income or alpha/trading as well. These additional trades are usually used to offset the carrying cost of the hedges.

Variations on the Theme: There are a variety of ways in which one can implement a hedging strategy. Some of these variables include:

- The inclusion of additional trades to offset the cost of the hedge (e.g., collars or put spreads)
- Where the levels of hedge protections are set (i.e., ATM or OTM put options)
- The amount spent on hedging or degree of protection
- The time to expiration of the hedges used
- Whether or not the strategy is always hedged or operates on a “risk-on/risk-off” approach

These variables will undoubtedly lead to a dispersion of results within the sub-category. For example, some of funds appear to utilize puts expiring between 120 days and 365 days out, while five funds (all Swan funds) use puts expiring greater than 365 days out. Other funds utilize shorter-term hedging of less than 120 days. Some mutual funds as well as the rapidly expanding “buffered outcome” style ETFs use put spreads to hedge, which offer limited protection.

The time to expiration and type of hedge will have a great impact on how each of these funds will perform during a bear market. If the bear market extends beyond 120 days, most could run into a very cost-prohibitive hedging environment.

When It Works: With an explicit hedge in place it should come as no surprise that hedging



strategies do best when markets sell off. After all, that is what hedging is designed to do.

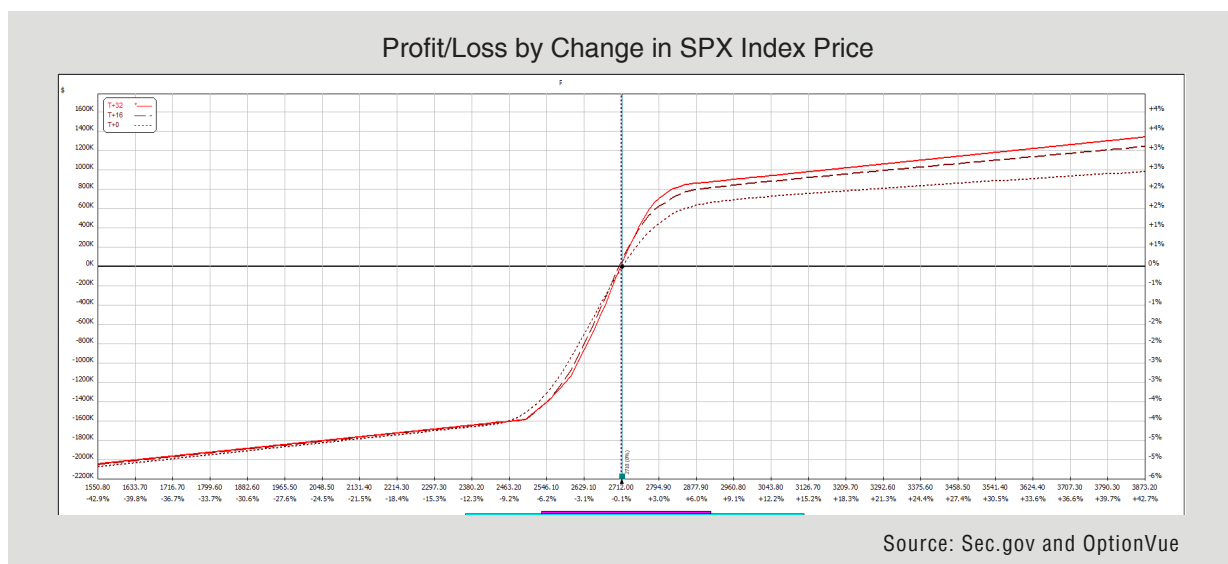
Generally speaking, the bigger the sell-off, the more valuable the hedges become. Given the fact that correlations tend to spike across most asset classes and strategies during a true market rout, direct, explicit hedging is one of the best ways to offset market risk.

Risks/When It Doesn't Work: The drawback to a hedging strategy should also be obvious—it will likely lag in an upward market. If the hedge is expected to rise in value if the market falls, then it stands to reason the hedge should fall in value if the market rises. During upward markets investors tend to view the hedge as a “cost”.

Another risk to hedging strategies is the price paid for the hedge. The price of hedging is driven by supply and demand. During times of complacency, hedging can be cheap. However, when markets start selling off and investors panic, the price of hedging can skyrocket. A good hedging strategy should anticipate the price of hedging will increase when hedging is most needed and have a plan to accommodate that outcome.

Finally, there is counterparty risk. If one owns a hedge that is designed to pay off handsomely if the value of an asset falls, one should be sure that the counterparty in the agreement is in a position to pay. This risk was realized during the Global Financial Crisis (“GFC”), when some hedges were endangered by the counterparty’s inability to meet their contractual obligations. Since the GFC there has been a big push for hedging and derivative contracts to move to exchanges where the terms are standardized and the backing is provided by clearinghouses. Still, an analyst should take counterparty risk into consideration when conducting due diligence.

Below we see a risk-return chart for one type of hedging strategy: a collar strategy. The main thing to note is the downside protection should the markets sell off. However, the trade-off is the upside potential is capped. This is why the strategy is known as a collar; the potential outcomes are fairly range-bound.



Income Strategies

Primary Objective: Like hedging strategies, income strategies typically have traditional, long holdings at the core of their portfolio. However, such strategies seek to supplement the returns of their portfolio by engaging in option trades around the margins. These trades typically involve the systematic writing of short-term calls and/or puts. The premiums collected from this option writing can be additive to the return of the core holdings.

Variations on the Theme: There are a few different types of approaches managers can take to generate income. Covered call strategies, also known as buy-write, typically hold a portfolio of equities and write calls against them. Put-write strategies typically hold cash or fixed income securities and write puts using cash as collateral. There are other trades that can generate income with varying levels of return and risk, but these two strategies are the most popular.

However, it is important to remember that income strategies do not explicitly hedge the market. While they might have lower overall volatility and can help diversify a portfolio in terms of correlation, by definition they are not explicitly mitigating downside risk. As for the different variations within this sub-category, over half focus on buy-write or covered calls. The remaining funds are split fairly evenly amongst 1) only selling puts, 2) both selling puts and selling calls, or 3) something different, such as selling iron condors on an existing core underlying component.

When It Works: Income strategies typically work best in a gently rising market. A covered call strategy does well if the value of the long portfolio edges upward, but not so much that the short calls go in the money and further gains are called away. A put write strategy does well if markets go up, since the cash position will earn interest and the written puts expire worthless, leaving the writer with all of the premium. In benign markets, income-based strategies can make a lot of sense.

Risks/When It Doesn't Work: If income strategies do well in calm, benign markets, it stands to reason that they will do poorly in strongly trending markets, either up or down.

If markets are trending strongly upwards, a covered call strategy could see a good portion of its market gains disappear. If a call is written, say, 2% out of the money and the market goes up 6%, the strategy will not enjoy the full upward move in the market. The gains to the strategy will be capped. The strategy essentially sold off the unknown potential for gains for the known gain of the option premium. This should be viewed as an opportunity cost.

However, the bigger risk to most income strategies happens when markets sell off. A covered call strategy consists of two parts: a traditional long position and some short calls. If markets sell off significantly, the premium collection from the short calls might offset a bit of the downward move in the long portfolio. However, in the face of a significant sell off the long portfolio is unhedged and premium from selling calls is unlikely to fully offset losses.

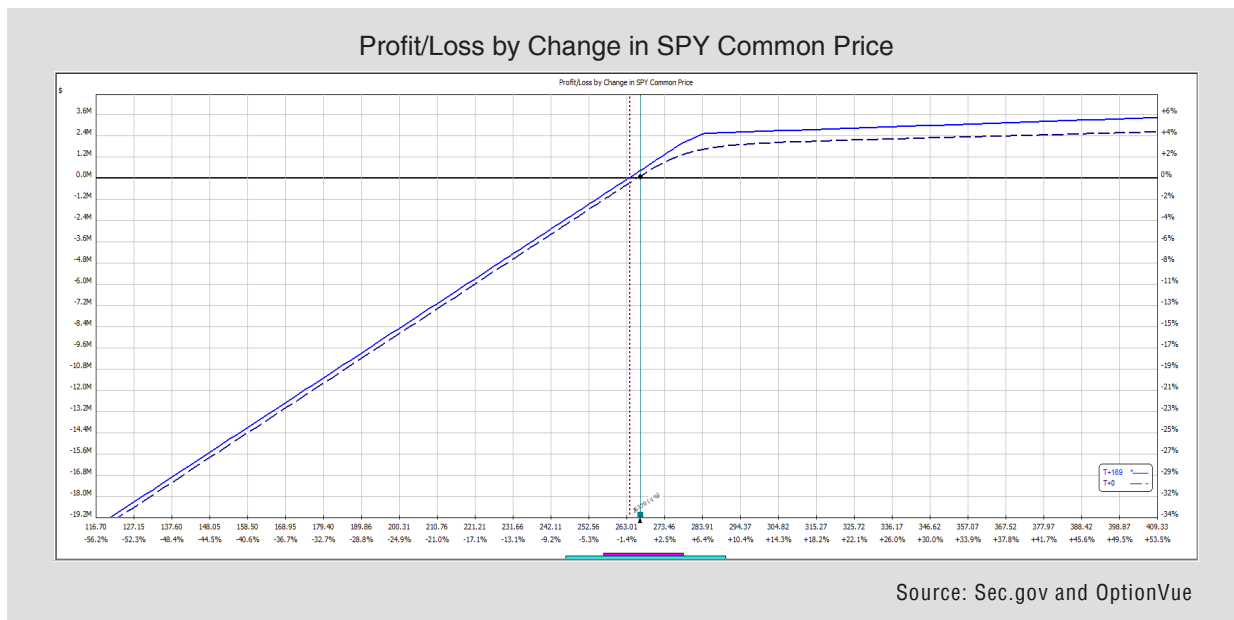


If covered call strategies struggle in big up moves or big down moves, what if they are faced with both in a short time span? What if they face not one but multiple big up and down moves? This kind of “whipsaw” environment with multiple big up and down moves is a worst-case scenario for a covered call strategy. The up market moves are continually under pressure or called away while the strategy is exposed to downside losses.

A put-write strategy has a similar risk-return profile. The cash position will help insulate against a market sell-off, but the short puts expose the strategy to losses the more the market goes down.

Finally, one of the biggest risks to any strategy that writes options is leverage. If a strategy opts to write two, three, four, or more options against their collateral positions, the potential for losses can accelerate quickly. Many of the well-publicized blow-ups in derivative strategies can be blamed on leverage more than anything else.

Below we see a risk-return chart of a basic covered call strategy. All the basic elements are displayed: slight added value from the premium collection should the markets stay range bound, a limit to the upside potential, and the unhedged exposure to the downside.



Alpha/Trading Strategies

Primary Objective: The goal of alpha or trading strategies is to generate returns primarily, if not solely, through the trading of options. The role that a core, long holding plays in the overall returns is secondary. In fact, there might not even be a core holding in an alpha strategy. It could be that the core holding is cash or cash equivalents, maybe with a few futures mixed in for some market exposure. Suffice to say, an alpha strategy will live or die based upon the strength of its trading program.

Some strategies position themselves as being market-neutral, while others as dynamic or tactical. While it might be naïve to think the market does not impact their returns, the implication is that the return stream generated by such strategies have low correlations and betas to traditional portfolios.

Variations on the Theme: As seen in the previous section on synthetics, there is an unlimited number of ways a trader can buy and write calls, puts, strike prices and expiration dates to create different risk-reward outcomes. Sometimes different combinations of options might create very similar risk-return profiles at the end of the day. Conversely, a seemingly small change to a single position in a multi-part strategy can potentially have a dramatic impact on the risk-return profile of another trade. All of these possibilities are on the table for the alpha/ trading strategy.

When It Works: Of the three primary types of options strategies outlined here, alpha strategies are the most difficult to predict. After all, if a hedging strategy is truly hedged, it is reasonable to expect it will do well in down markets and lag in up markets. Conversely, an alpha strategy can be all over the board. Earlier we discussed how options allow for the creation of just about any profit/loss scenario available. Any of these trades might be in use with an alpha strategy.

In addition, alpha strategies can be tactical with the types of trades they put on. It is unlikely that they will stick with one type of trade throughout any environment. One week they might be doing vertical spreads, the next week they might be trading long butterflies. In some cases, such as strategies solely focused on iron condors, the risk profile will look similar to a hedged strategy (collar), as highlighted earlier.

What this amounts to is a highly active, hard-to-predict strategy. An investor who employs an alpha strategy is placing a high degree of trust in the skills of a portfolio manager. Moreover, it is unlikely that the investor will have much visibility into the day-to-day operations of an alpha/trading strategy.

Risks/When It Doesn't Work: Alpha strategies can often be described with the old adage, "live by the sword, die by the sword." It is true that some alpha strategies do a remarkable job of providing outsized returns. Sometimes these strategies might enjoy a stretch of years without a significant downturn. However, when a particular strategy falls out of favor

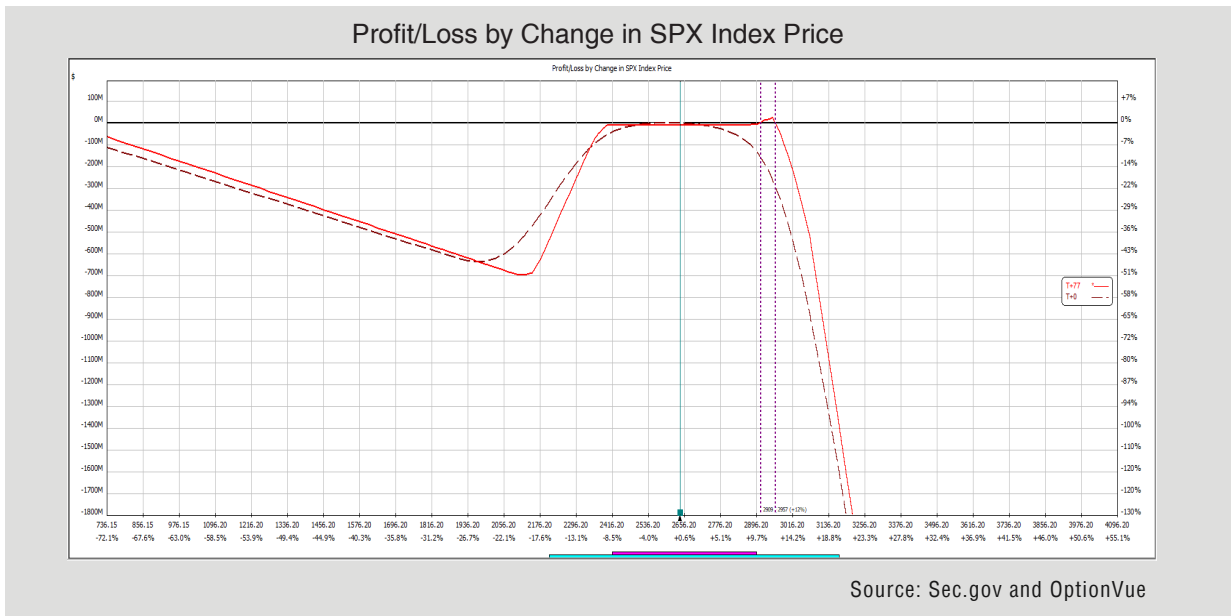


the reversals can be quite harsh.

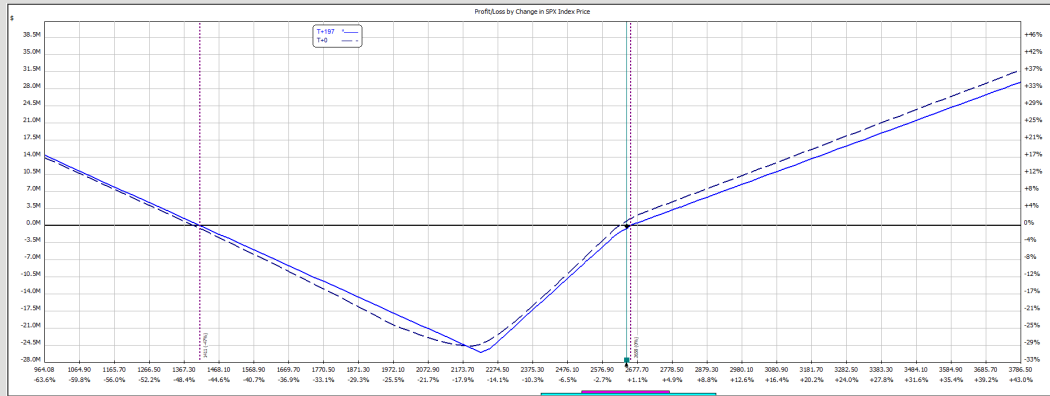
It is very difficult to anticipate how an alpha trading strategy might perform in a bear market. They could do spectacularly well, they could blow up, or they could fall somewhere in-between. That said, the Achilles Heel of many alpha trading strategies are volatility spikes, leverage risks, and liquidity risks. These risks tend to increase in a market sell-off. Many alpha trading strategies are better suited for benign markets rather than choppy markets.

Sometimes alpha strategies employ leverage to “juice” their returns. If there is no underlying, long holding to help drive the returns of the strategy, alpha strategies will have to generate most or all of their returns from the option trading program. Because the profit potential of any short options position is at most the premium collected, the temptation exists to engage in larger trades. This can create leverage. If things go right, leverage will amplify the gains. However, if things go wrong, the ill impact of leverage can quickly snowball. This is especially true given the asymmetric risk/return parameters of options.

Below we see examples of several different alpha/trading strategies. It is readily apparent how radically different their risk/return charts can be. Moreover, if these strategies are tactical in their trading, they can and will change and rotate between different risk profiles depending upon the whims of the portfolio manager. Such strategies are difficult to analyze and predict.

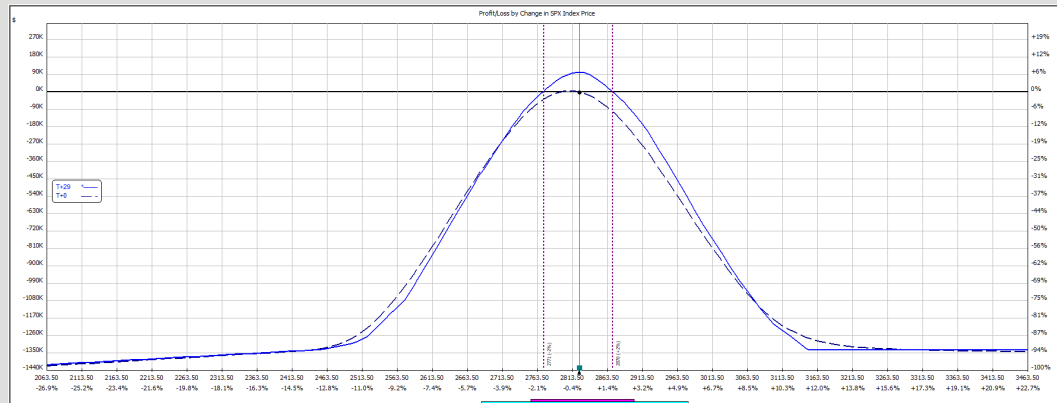


Profit/Loss by Change in SPX Index Price



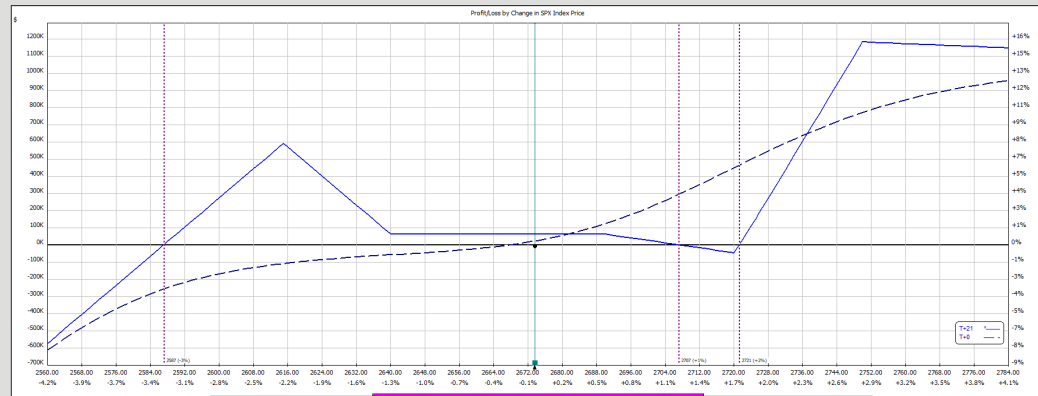
Source: Sec.gov and OptionVue

Profit/Loss by Change in SPY Common Price



Source: Sec.gov and OptionVue

Profit/Loss by Change in SPX Index Price



Source: Sec.gov and OptionVue



The Defined Risk Strategy

Swan Global Investments has been managing the options-based Defined Risk Strategy (“DRS”) since July 1997. As options strategies have proliferated, it is fair to say that Swan is a pioneer in bringing option strategies to the broad investing public.

Having proposed this classification framework, it is only fair to turn the mirror on the DRS and ask these questions of ourselves. How should the DRS be classified? What is its primary objective? When will it work? When will it not work? What are the risks? How might it perform in a bear market?

Primary Objective: Although the DRS contains elements of all three types of option categories, we would classify the DRS as primarily a hedging strategy.

The overall goal of the DRS is to directly address the risk of major market sell-offs. We believe the biggest risk any investor faces is systematic risk, also known as market risk. Moreover, we believe if markets sell off by 30%, 40%, 50% or more the traditional risk-mitigation techniques like market-timing and asset allocation offer inadequate protection.

If market risk cannot be diversified away, it should be hedged away. And that is what the DRS is designed to do.

While hedging is the DRS’s primary goal, there is a secondary goal of income trading. In our prior discussion of hedged equity strategies, we mentioned that quite often they engage in additional, supplementary trades to help offset the cost of hedging. The DRS will engage in the buying and writing of shorter-term calls and/or puts in order to generate additional return. Historically speaking this component has contributed significantly to the DRS’s overall return.

It is important to remember the role of the income trades in the DRS. The income trades are meant to offset the carrying cost of the hedge in flat markets, help with upside capture in rising markets, and potentially profit from heightened volatility in down markets. It is important to remember that while the income trades are separate from the core equity holdings and the hedge, the role the income trades play is to complement those holdings. We often describe the income trades as “the hedge on our hedge.”

When It Works: It’s been said that the DRS is at its best when markets are at their worst. This is broadly true. Swan has always made a distinction between the big, life-altering bear markets and smaller, short-term corrections. Since the start of the new millennium the U.S. has undergone two very large bear markets and one brief bear market (the Covid-19 panic). During the Dot-Com Crash of 2000-02 the S&P 500 lost almost 45% of its value. During the Global Financial Crisis of 2007-09 the S&P 500 lost over half its value. During both those events the DRS performed very well.



This is by design. One of the reasons why the DRS uses long-term put options is to lock-in their purchase price before a bear market starts. Like most things, the cost of hedging is driven by supply and demand. After a market sell-off begins in earnest, the price of protection can become price-prohibitive. Swan never wants to have to purchase its protection while under duress.

Because the DRS rolls its hedges rather than allowing the put options to expire, this allows for the “transfer of value” during times of heightened volatility. If the DRS performs its annual re hedge during a time of heightened volatility, one might suspect that the cost of hedging will be higher. This is true; hedging is usually more expensive during periods of market uncertainty. But one needs to remember that the DRS will still own its existing hedge in such an environment, and that the hedge will have a significant amount of time left before expiration. If the cost of hedging goes up, so does the value of the existing hedge on the DRS’s books. This allows the DRS to offset the cost, or transfer the increased value, if the re hedge is completed during a more volatile environment.

In such a scenario, the DRS will be both a buyer and seller of volatility. In contrast, a strategy using short-term hedges that either expired or were exercised will only be a buyer of volatility.

In addition, the long-term put options give the DRS the opportunity to re hedge the portfolio during a large sell off. If the put options go deep-in-the-money, two things can be inferred: 1), the market will have sold off significantly, and 2) the put options become very valuable. In such a scenario the DRS will rebalance the DRS back to target by liquidating the deep-in-the-money hedge, purchasing a new hedge around current market levels, and then re-invest the excess proceeds in the market when the market is at a low point. By design, the DRS re-hedge process is “buy low, sell high.”

These characteristics make the DRS rather unique. Most hedging strategies tend to use short-term options. Swan regards these strategies as “penny wise and pound foolish.” Strategies using short-term hedging might think the upfront cost of short-term options justifies their use. However, in our opinion, the subsequent spike in hedging costs in the middle of a crisis outweighs their benefits.

Risks/When It Doesn’t Work: No strategy is bullet proof. Every strategy has certain environments or situations where it will lag or underperform.

The biggest risk to the DRS tends to happen in the initial stages of a volatility spike. The income component of the strategy is that which is most negatively impacted by a jump in volatility. If the realized volatility of the market exceeds the implied volatility, the short option trades can come under pressure and might be susceptible to short-term losses.



With a track record extending over twenty years, the DRS has successfully navigated many short-term volatility spikes. Even though short-term losses do occasionally occur, the income trades have generated nearly half of the DRS's return since July 1997. Some volatility spikes the DRS has weathered include:

- The Russian Default & Long-Term Capital Management blow-up (1998)
- September 11th Attacks (2001)
- The "Flash Crash" (2010)
- US debt downgrade/Euro crisis (2011)
- China "hard landing" fears (2015)
- Brexit (2016)
- January-February 2018 whipsaw (2018)
- The Covid-19 panic (2020)

The DRS is actively managed. Should the income trades come under pressure, the DRS has a process in place to close out the trades then attempt to recover losses in subsequent trades. This has helped limit losses during historic volatility spikes.

The other risk to the DRS is when the market goes on a lengthy, extended bull run. It is important to acknowledge that hedged equity strategies will almost certainly lag in an upward market. This is true for the DRS as it is true for any other hedged equity strategy. The cost of protecting to the downside will inevitably be sacrificing some of the upside. It is also important to note that not all hedging strategies are equal; some purposely spend more on hedging and target lower market exposure/beta, while others spend less on hedging and seek to focus more on participating in upside markets. Some are better geared for protection against short, sharp corrections while others are better prepared for bear markets.

Ultimately it is up to the investor to determine just how aggressive or conservative they want to be with hedging. Just as a 30/70 portfolio might be appropriate for a conservative client and an 80/20 for an aggressive one, different hedging strategies will suit different risk/return profiles.

In addition, it is important to note that the recent growth in the number and size of option strategies has occurred since March 2009, during the second-longest bull market in U.S. history. Many of these strategies have yet to be tested by a true bear market. It will be interesting to see how well the newer hedging strategies will protect during a major sell off of 40%, 50% or more. It would be equally interesting to see how income or alpha/ trading strategies perform in the highly volatile environment that usually accompany major sell-offs.



It is worth noting that the Defined Risk Strategy has been battle-tested by not one but two major bear markets: the Dot-Com crash of 2000-02 and the Global Financial Crisis of 2007-09. These two bear markets were the largest sell-offs since World War II, and the DRS weathered both quite well.

In conclusion, Swan Global Investments believes the DRS is best suited for a full market cycle, one that encompasses both a bull and a bear portion. As detailed previously, the DRS has the following advantages:

- A lower cost of hedging due to the rolling of the hedge annually while it still has value and sufficient time to expiration
- “Always hedged” with risk mitigation continuously in place, alleviating the need for panic
- Transfer of value if the annual rehedg is completed during times of volatility
- “Sell high, buy low” via opportunistic rehedging during major market sell-offs
- Active management of the shorter-term options trades to seek additional return and lower risk, rather than passive premium harvesting

Both the overall options industry and professionally managed options-based funds have been growing rapidly. We expect that trend to continue. However, it is important to recognize that currently options are still not considered mainstream investments and underrepresented in many portfolios.

This is a mixed blessing. On one hand, there is a lot of growth potential and room for innovation as options gain wider adoption. It is an evolving, growing space. On the other hand, many investors need a considerable amount of education to better understand options and options strategies. As a leader in hedged equity and options strategies, Swan Global Investments has dedicated significant resources to help investors become more knowledgeable regarding options and make well-informed decisions and meet their goals and objectives. We hope this paper has contributed to those efforts. For more information visit our website, swanglobalinvestments.com/resources.



IMPORTANT DISCLOSURES:

Swan Global Investments, LLC is a SEC registered Investment Advisor that specializes in managing money using the proprietary Defined Risk Strategy (“DRS”). SEC registration does not denote any special training or qualification conferred by the SEC. Swan offers and manages the DRS for investors including individuals, institutions and other investment advisor firms.

All data used herein; including the statistical information, verification and performance reports are available upon request. The S&P 500 Index is a market cap weighted index of 500 widely held stocks often used as a proxy for the overall U.S. equity market. Indexes are unmanaged and have no fees or expenses. An investment cannot be made directly in an index.

All Swan products utilize the Defined Risk Strategy (“DRS”), but may vary by asset class, regulatory offering type, etc. Accordingly, all Swan DRS product offerings will have different performance results due to offering differences and comparing results among the Swan products and composites may be of limited use.

Swan’s investments may consist of securities which vary significantly from those in the benchmark indexes listed above and performance calculation methods may not be entirely comparable. Accordingly, comparing results shown to those of such indexes may be of limited use. The adviser’s dependence on its DRS process and judgments about the attractiveness, value and potential appreciation of particular ETFs and options in which the adviser invests or writes may prove to be incorrect and may not produce the desired results.

There is no guarantee any investment or the DRS will meet its objectives. All investments involve the risk of potential investment losses as well as the potential for investment gains. Hypothetical performance analysis is not actual performance history. Actual results may materially vary and differ significantly from the suggested hypothetical analysis performance data. This analysis is not a guarantee or indication of future performance. Prior performance is not a guarantee of future results and there can be no assurance, and investors should not assume, that future performance will be comparable to past performance. Further information is available upon request by contacting the company directly at 970.382.8901 or visit swanglobalinvestments.com. 191-SGI-080621



ABOUT SWAN GLOBAL INVESTMENTS

Investing Redefined

Since 1997, our hedging and options strategies have been redefining investing to directly address the biggest threat long-term investors face: market risk.

Market risk is too big a threat to investors to be dealt with passively. So we hedge it.

Our simple, yet innovative investment philosophy is the foundation of our Defined Risk Strategy, a rules-based, multi-asset hedged equity strategy, with a track record of generating consistent returns while defining, or limiting, downside risk to improve investment outcomes and protect irreplaceable capital through full market cycles.



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