Morgan Stanley

WEALTH MANAGEMENT

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Using Option Strategies in Today's Market Through a Mutual Fund or Separately Managed Account

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Introduction[1]

Investors have commonly included traditional stock and bond strategies in their portfolios to meet certain investment objectives. In recent years, another type of strategy that has gained interest is the use of options to generate income and/or provide some hedge from equity market declines. Although basic option-based strategies have been utilized by individual investors for decades, we have seen the growth of firms that specialize in managed option strategies that are accessible broadly in a variety of mutual funds and separately managed accounts (SMAs).

Utilizing option strategies within mutual funds and SMAs can act as an alternative or a complement to an investor's traditional stock and bond portfolio in seeking to deliver investment outcomes in line with an investor's financial objectives. While index options have been in existence for over 30 years, the increasing acceptance of S&P 500 Index options, or SPX options, has led to the development of new strategies that offer benefits such as greater diversification, higher liquidity and tax efficiency as well as corresponding risks.

Given the continued rise in equity markets and low level of interest rates and volatility, we believe option strategies within mutual funds and SMAs are compelling alternatives for clients facing the prospect of more muted equity and fixed income returns going forward. In addition, should volatility revert to historical levels, option strategies could prove effective tools to mitigate equity market declines and generate additional income.

In this paper, Global Investment Manager Analysis (GIMA) will outline several ways of implementing option strategies within mutual funds and SMAs, the advantages of hiring a professional fund manager and a variety of strategies currently being used in both mutual funds and SMAs. These strategies include the protective put, covered call, equity collar and iron condor.

[1] This paper discusses the use of options strategies in the context of separately managed accounts and mutual funds as used by fund managers to address risk and return considerations in their portfolios; it is not intended as a discussion of using these strategies as stand-alone investments outside of mutual funds and separately managed accounts.

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Basics of Options

An option is a contract to buy or sell an underlying security, such as stock, at a specific price ("strike price") prior to or on a certain date ("expiration date"). There are two basic types of options: calls and puts (see Exhibit 1).

Purchasing a call or put option gives the buyer the right, but not the obligation, to buy or sell an underlying security at the strike price prior to or on the expiration date. In contrast to buying options, an option seller has the obligation to buy or sell an underlying security at the strike price prior to or on the expiration date if the option buyer elects to exercise their right.

Investors sell or "write" options to generate income by collecting the option premium paid by the buyer. The option premium can vary based on many factors; however, it is most notably influenced by the price of the underlying security, the strike price, the time remaining until the option expires and the volatility of the underlying security.

A naked option is when an investor sells an option without a position in the underlying security. Selling naked options is an advanced strategy that has potential for profit, but bears a high risk that can lead to significant losses.

Options can offer many benefits, including:

Hedging Ability. Options allow investors to hedge a portfolio by providing limited downside protection or reducing volatility.

Income Generation. Investors can generate income by writing options and collecting a premium.

Cost Efficiency. An options position can closely replicate an underlying security at a significantly lower cost.

Higher Return Potential. Options offer the potential to earn a higher rate of return by making almost the same return as owning the underlying security but with a lower capital commitment.

Flexibility. Options' flexibility allows for more investment alternatives and strategies to meet investor needs.

Although options can offer many benefits, there are characteristics that may make them less attractive for certain investors, such as:

Complexity. Most option strategies are complex and require a proper understanding of options before executing such strategies.

Risky. Option strategies can be risky which can potentially lead to full loss of investment.

Time Sensitivity. An options contract is typically for a short period which may not be appropriate for some investors more comfortable with a longer-term investment.

Intangible Asset. An option is a "book entry" only investment that does not offer a certificate such as with stocks or bank certificates of deposit.

Exhibit 1: Features of Calls and Puts

	Call Option	Put Option
Buyer	**Right to buy** Bullish on underlying security	**Right to sell** Bearish on underlying security
Seller	**Obligation to sell** Generate income in stable or falling markets	**Obligation to buy** Generate income in stable or rising markets

Source: GIMA

How to Implement Option Strategies

Option strategies can generally be implemented by individual and institutional investors alike; however, dedicated option strategies run by professional managers are commonly implemented through mutual funds and separately managed accounts (SMAs) (see Exhibit 2 on page 3). Each vehicle offers different benefits and risks, and the choice between the two can largely depend on the strategy and size of the investment.

A mutual fund is an investment management company owned by its shareholders, regulated by the US Securities & Exchange Commission (SEC) and the Investment Company Act of 1940. It has become a commonly used investment vehicle for individual and institutional investors. Mutual funds can have lower minimum investment amounts than SMAs and are widely accessible to investors.

An SMA is an individual trading account that is managed by a portfolio manager. It may employ the same strategy as a mutual fund; however, an SMA can be tailored to the investor's preference. Compared to mutual funds, SMAs usually have higher minimum investment requirements, ranging from $500,000 to $5,000,000, and will generally have lower management fees than mutual funds.

When utilizing an SMA, investors may employ the SMA's option strategies such as an overlay to an existing portfolio of equities, mutual funds and fixed income securities. The portfolio can be used as collateral to fund the strategy; there is no additional capital requirement nor is there any impact on the investor's current capital allocation. The margin release rate, or buying power, on the collateral is based on the characteristics of the underlying securities in the portfolio. For the margin release rates, please contact your Morgan Stanley Financial Advisor.

Exhibit 2: Attributes of Mutual Funds And Separately Managed Accounts

	Mutual Funds	Separately Managed Accounts
Ownership Structure	Own shares in the mutual fund, not in the underlying securities	Have direct ownership of underlying securities
Transparency	Major holdings reported quarterly	No requirement for reporting holdings, but has position-level transparency
Regulation	Governed by the Investment Company Act of 1940 and the Securities Act of 1933	Investment advisor/manager must act as a fiduciary to their clients under the Investment Advisers Act of 1940
Fee Structure	Generally higher than SMAs	Generally lower than mutual funds
Customization	Cannot be customized	Can be customized to investor's preference
Governance	Shareholders elect board that has fiduciary responsibility to shareholders	No board oversight
Tax Benefits	Cannot benefit from tax loss harvesting due to owning shares and not individual securities	Can benefit from tax loss harvesting due to owning individual securities
Liquidity	Shares can be liquidated daily	Positions can be liquidated daily

Source: GIMA

Option strategies can be used in many ways and variations; there is no one size fits all as the investment objectives and outcomes can vary. At the same time, investors have varying degrees of risk tolerance, which can influence the attractiveness of different strategies and the level of exposure. For this reason, GIMA believes that investors should consult their Morgan Stanley Financial Advisor when implementing and sizing option strategies within mutual funds and SMAs as a part of their broader portfolio to ensure its suitability with the investors' investment objective and risk/return profile.

Advantages of Hiring a Fund Manager

Investors can simply use the internet to find the latest options for an underlying security and execute trades through various online trading platforms. Although it appears straightforward, trading options involves a number of risks and therefore, investors should carefully consider the advantages of utilizing a fund manager who specializes in option strategies within a portfolio. Benefits of hiring a fund manager include:

Ease of Implementation. The time and effort to actively manage an option strategy can make utilizing a managed fund beneficial. Investors can avoid the complexities of trading options and can instead choose a mutual fund that meets their investment needs and objectives.

Professional Management. The fund manager will apply his or her expertise to actively manage the investment on a daily basis and can make strategic moves to help achieve the fund's objective on the investor's behalf. The fund manager's experience and skill may prove essential as the fund utilizes more complex option strategies.

Active Management. In rapidly changing market environments, the fund manager will be able to devote time and attention to opportunistically capture profits, defensively shift positions based on large market moves and proactively adjust positions to engage in new opportunities.

Convenience. The fund manager can oversee a variety of different individual securities within an investment structure.

Although investors can expect to pay a fee and there are never guarantees on meeting stated investment objectives, GIMA believes that investors seeking option strategies can benefit from professional fund management.

There are several commonly used strategies we see in option-based asset management. While there are countless other option-related trades, we will explore strategies being implemented in a managed fund or SMA format.

The Rise of SPX Index Options

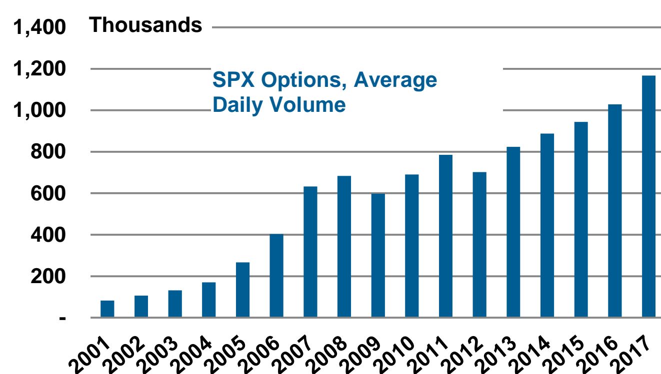
The increasing popularity of SPX options in recent years has led to the development of new contracts that now feature different sizes and expiration periods. In 2017, SPX options traded on a daily average volume of more than 1.1 million contracts, a 13.4% increase from 2016 (see Exhibit 3, page 4). This equates to over $287 billion of notional value traded on a daily average.

SPX options offer greater diversification, higher liquidity and tax efficiency when compared with equity options. For example, for tax purposes, 40% of the gain or loss qualifies as short-term gains and 60% of the gain or loss qualifies as long-term capital regardless of whether the position was held for more than a year.

Key features of SPX options include:

- Underlying instrument is an equity index and not an equity security
- Highly liquid and transparent
- European style exercises (no early exercises)
- Traded through cash settlements (no delivery of stock or ETFs)
- Daily pricing

Exhibit 3: Strong Growth in Trading SPX Options



Source: Bloomberg as of Dec. 29, 2017

- Vary in contract sizes and expiration periods
- Potentially less volatile than equity options
- Clearances of all transactions are guaranteed by the Options Clearing Corp.
- Losses and profits on transactions are taxed as 1256 contracts,[2] entitling taxation rates to 40% short-term and 60% long-term capital loss or gain

SPX options are subject to risks similar to those discussed regarding equity options.

The Equity Volatility Risk Premium

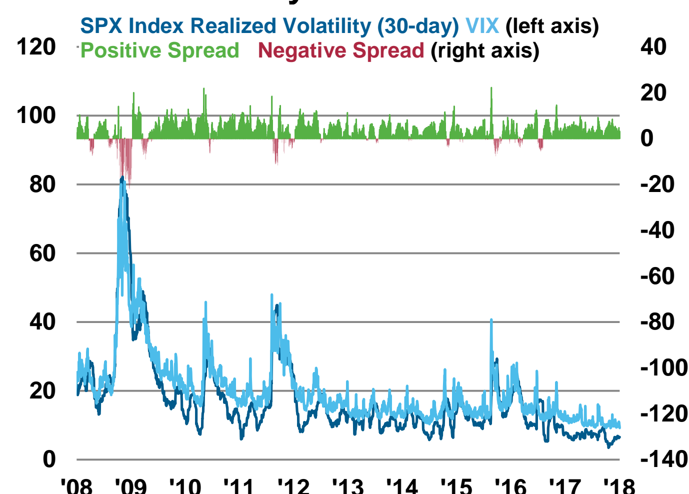
The equity volatility risk premium plays an important role when selling or writing options because it is a key factor in option pricing. To understand the equity volatility risk premium of the S&P 500 Index, investors must first distinguish between implied and historical volatility. Implied volatility represents the expected annualized price change for the S&P 500 Index in the next 30 days and is most commonly measured by the CBOE Volatility Index, or the VIX. Historical or realized volatility, measures the actual volatility in a specific time period.

During the past 10 years, implied volatility was higher than realized volatility (see Exhibit 4). The difference between the two, or the spread, is known as the equity volatility risk premium. The positive spread indicates profit potential, and historically has existed during periods of low and high levels of volatility.

The data indicate that the equity volatility premium is caused by investor aversion to negative returns and therefore a willingness to pay a premium for portfolio hedging. Contributing to this notion is a persistent supply/demand imbalance between buyers and sellers of index options where market participants generally represent the buyers of hedges or puts.

Since 1990, this deviation of implied volatility and historical volatility has been 1.9% on average. This spread continues to hold and was even wider in 2017, as the implied volatility measured an average of 11.1% while the 30-day historical volatility of the S&P 500 Index measured an average of 6.8%, according to Bloomberg.

Exhibit 4: Implied Has Been Higher Than Realized Volatility in the Past 10 Years



Source: Bloomberg as of Jan. 3, 2018

Option Strategies

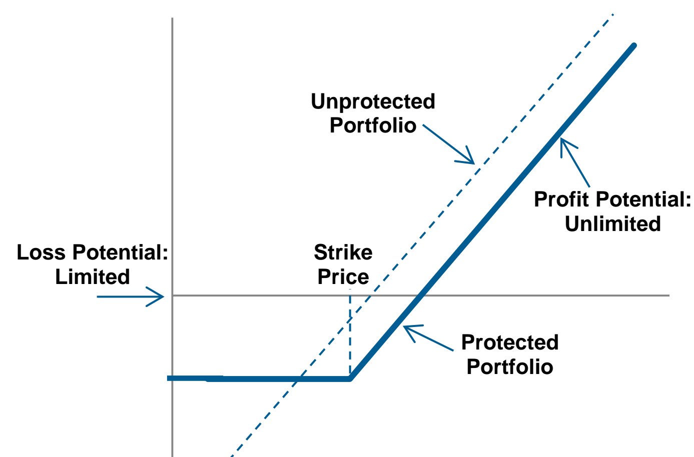
Protective Put

The "protective put" strategy provides some downside protection on an underlying security. This hedging strategy involves purchasing put options on an underlying security that increase in value when the underlying security declines. Potential profits on the puts can be realized by selling the contracts or exercising them when the strike price is above the current price, also referred to as "in the money," such that the gains will partially offset any decline in the underlying security's value. By establishing put options, investors limit losses to a specific level based on the strike price of the put in relation to the underlying security. However, at the same time, this strategy also allows the investor to participate in the upside with unlimited profit potential, reduced by the costs of the put options (see Exhibit 5). The cost of the put will generally increase when the expiration is further out in time and is closer to being in the money. Conversely, the cost of the put will decrease when the expiration is closer in time and further out of the money.

[2] Tax laws are complex and subject to change. Morgan Stanley, its affiliates and Morgan Stanley Financial Advisors or Private Wealth Advisors do not provide tax or legal advice. Individuals are urged to consult their personal tax or legal advisors to understand the tax and legal consequences of any actions, including any implementation of any strategies or investments described herein.

The protective put strategy is appropriate for investors that desire maintaining their equity positions, but are looking for some downside protection. The put options serve as a hedge on the equity position and should benefit the strategy if the underlying security declines.

Exhibit 5: How the Protective Put Works



Maximum Profit = Unlimited
Maximum Loss = Premiums Paid + Purchase Price of Underlying Security - Put Strike Price
Source: GIMA

Covered Call

The “covered call” strategy, also known as a “buy-write,” involves owning a security, such as stock, and then selling or writing “out of the money” call options against the security. The income generated by selling the call is the option premium.

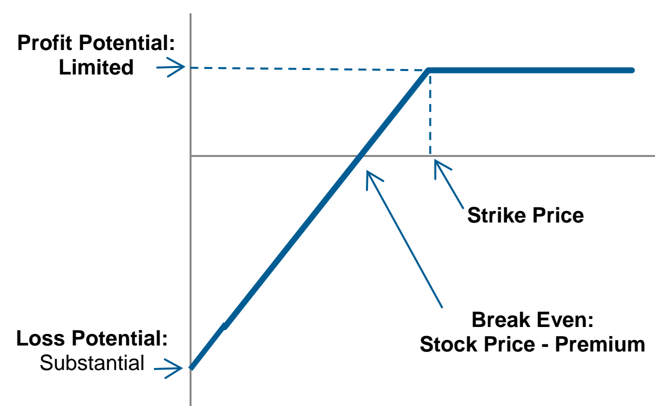
One factor that impacts the amount of the option premium is how far out of the money the call options are written, also referred to as the “delta.” A slightly out-of-the-money option will yield a higher premium while a further out of the money option will yield a lower premium. Although a slightly out of the money call option will generate a higher option premium, this benefit comes at a cost, as the investor forfeits much of the underlying security’s profit potential and increases the probability of the underlying security to be called away.

Another factor that impacts the option premium is the amount of time remaining until expiration. Longer-duration options will yield a higher premium while a shorter duration will yield a lower premium. The writer bears more risk of the underlying security to be called away, or potentially lose money, when closing the option position by buying back the option. Therefore, choosing the strike price and the expiration date of the call option is important when deciding to execute a covered call strategy.

Unlike the protective put strategy, the investor forfeits upside potential on an underlying security in exchange for limited downside protection. The covered call strategy outperforms the underlying security when the price of the underlying security trades flat or when the prices fall (see Exhibit 6).

The covered call strategy is most suitable for investors seeking equity appreciation with lower volatility and the potential for enhanced returns or income from writing call options. This type of strategy is most profitable in steadily rising markets, as it benefits from the appreciation of the underlying stock and the collection of the option premium.

Exhibit 6: How the Covered Call Works

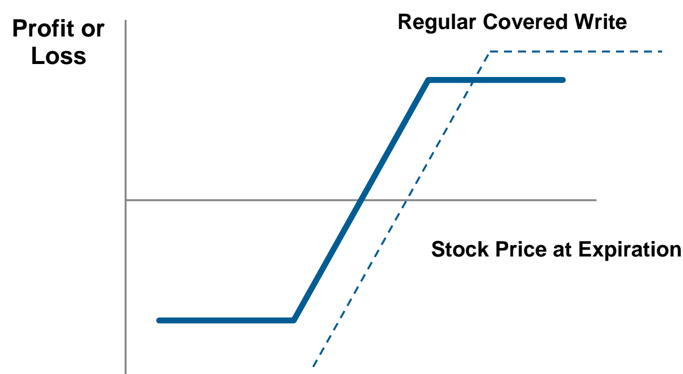


Maximum Profit = Strike Price of Short Call Option - Purchase Price of Underlying Security + Net Premiums Collected
Maximum Loss = Substantial, limited only by amount of premium received
Source: GIMA

Equity Collar

The “equity collar” strategy combines the covered call and protective put. This strategy is appropriate for investors seeking to collect an option premium while simultaneously protecting an underlying security from an unexpected and sharp drop in price. The equity collar strategy consists of purchasing a put option and writing a call option, both out of the money, on an underlying security to limit downside at little or no cost. While the equity collar provides downside protection, the investor foregoes upside potential of the underlying security due to the written call (see Exhibit 7). The same principles and dynamics apply to the equity collar strategy as the covered call and protective put in that the option premiums vary on the moneyness of option, or delta, and the time remaining before expiration.
The equity collar strategy is appropriate for investors who desire to maintain equity exposure, but are cautious of equity markets. The puts, which are partially or fully paid by the written calls, act

Exhibit 7: How the Equity Collar Works



Source: GIMA

as a hedge to the equity exposure and are most beneficial when markets sell off.

Short Iron Condor

The short "iron condor" is a non-directional (meaning, the investor is hoping for underlying stock to trade in a narrow range during the life of the options), limited loss/limited gain option strategy that collects option premiums by capturing the equity volatility risk premium in an underlying security. Iron condor strategies are typically used in a mutual fund or as an overlay to an existing portfolio of securities in an SMA. The short iron condor strategy is best suited for clients seeking to generate income from option writing, which has historically exhibited low correlations to broader markets. This strategy can be profitable in periods of both low and high volatility and is most successful when the underlying security trades steadily within a range.

Using four different options typically with the same expiration date, the iron condor is structured by selling an out of the money call and put option while simultaneously buying a further out of the money call and put option. This results in a net cash credit.

The following example (which does not include commissions that would reduce any gain or profit) further illustrates the components of the structure:

- Current underlying security price $45
- Sell 1 XYZ Dec 50 call for $3.55
- Buy 1 XYZ Dec 55 call for $2.05
- Sell 1 XYZ Dec 40 put for $5.50
- Buy 1 XYZ Dec 35 put for $4.75
- **Net Cash Credit of $2.25**

This strategy is designed to have a higher probability of generating small incremental returns. Conversely, in unstable markets where the price of the underlying security exhibits more volatility, the strategy could potentially lead to lower returns or even losses if the underlying security moves toward or outside the sold call or put options.

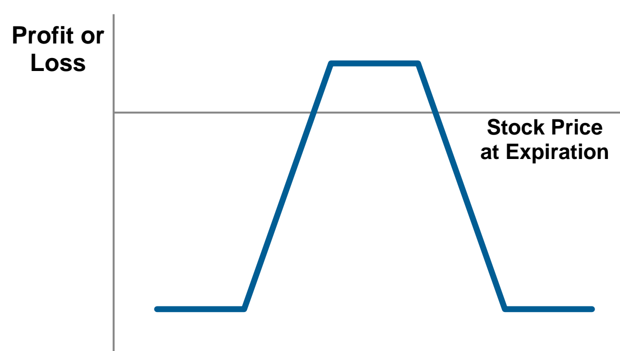
The risk and return profile of the strategy is determined by how far the option is out of the money, the difference between the strike price of the call and put spreads, and the total number of contracts traded. This flexibility allows the investor to generate returns by either increasing the probability of a successful trade at the expense of profit potential or decreasing the probability of a successful trade, but increasing the profit potential.

The structure of the option trades creates a payoff diagram that results in limited gains and limited losses (see Exhibit 8). The maximum profit from the strategy is limited to the net premiums collected and can be achieved when the underlying security at expiration is between the strikes of the sold call and put. Although, the maximum loss for the strategy is limited, it is higher than the maximum profit. The maximum loss occurs when the underlying security rises to or above the higher strike price of the purchased call or falls to or below the purchased put.

The strategy does not utilize "naked" options, as there is always an offsetting trade. As such, any sold option in the iron condor strategy should be fully covered by being paired with a purchased option of identical contract size and maturity so that the loss under the written option is capped.

This past year had exceptionally low S&P 500 volatility, measuring just below 4% on an annualized basis. This was significantly less than the average of 14.6% from 2007 to 2017, according to Bloomberg. This decline in volatility has resulted in muted returns on option-writing strategies. GIMA believes that

Exhibit 8: How the Short Iron Condor Works



Maximum Profit = Net Premiums Received (from all options expiring worthless)
Maximum Loss = Strike Price of Long Call or Put - Strike Price of Short Call or Put - Net Premiums Received
Source: GIMA

Please refer to important information, disclosures and qualifications at the end of this material.

current volatility levels are not sustainable over an extended period and should increase to more normalized levels.

Should volatility increase, it would likely be a favorable entry point for income-generating strategies, as increased volatility levels would result in higher premiums for option writers. For other iron condor strategy features when utilizing SPX options in an SMA account see Exhibit 9.

Exhibit 9: Short Iron Condor Features

	When Utilizing SPX Index Options
Returns	Low correlation to traditional markets Potential to generate an unlevered single digit addition return on an existing portfolio
Liquidity	Listed, highly traded index option that is highly liquid
Transparency	Index options are priced daily Positions are viewable in client's SMA
Tax	Favorable tax treatment as any gain or loss from a 1256 Contract is treated for tax purposes as 40% short-term gain and 60% long-term gain
Margin	Existing portfolio of marginable securities can be used as collateral to fund the strategy Does not require liquidation or altering of existing portfolio
Counterparty	Listed options are cleared and guaranteed by the Options Clearing Corporation

Source: GIMA

Asset Allocation of Option Strategies

Since option strategies can vary based on their investment objective, asset allocation decisions must take into account the risk and return profile of the strategy. As such, GIMA looks at the option strategy holistically at both the strategy and manager level to determine its appropriateness. The Global Investment Committee (GIC) categorizes alternatives into five buckets based around primary client goals (see Exhibit 10). In general, option strategies will fit into one of three outcomes groups: absolute return assets, with the primary goal being income; equity hedge assets, with a focus on balanced growth; and equity return assets, aiming for market growth with some potential risk mitigation.

GIMA generally views the covered call strategy as an equity return asset, and the protective put and equity collar strategy as equity hedge assets based on their return/risk characteristics. GIMA generally sees protective put, covered call and equity collar strategies being implemented by both mutual fund and SMAs. GIMA typically views the short iron condor strategy as an absolute return asset based on its return/risk characteristics and low correlation to broader markets in addition to its income-generating capabilities. Fund managers utilizing more or less aggressive strategies in each of these categories could be classified differently than these general guidelines at the individual manager level and should be classified accordingly.

Exhibit 10: The Global Investment Committee's Framework

Client Goals	Alternative Assets	Primary Traditional Assets	Alternatives' Portfolio Main Purpose	Client Goal Suggested Benchmark
Wealth Conservation	Real Assets	Cash, Money Market Fund Short-Duration Bonds	Inflation Protection	CPI Plus
Income	Absolute Return Assets	Bonds, High Yield Equity, Convertibles, Preferred Stock	Income/Cash Flow Preservation	T-Bill or LIBOR Plus
Balanced Growth	Equity Hedge Assets	60%/40% Equities/Bonds	Volatility Reduction	Risk-Adjusted 60/40
Market Growth	Equity Return Assets	S&P 500 Plus	Equity Diversification	Risk-Adjusted S&P 500 Plus
Opportunistic Growth	Private Investments	80% Plus Equities	Growth Amplification	Customized

Source: Morgan Stanley Wealth Management GIC

Conclusion

As we move further along the market cycle, the prospect for lower returns from equities and fixed income, coupled with an increased potential for volatility could provide a favorable backdrop for certain option strategies. These investment needs can include hedging equity exposure and generating additional income in a low interest rate environment. Although options can be traded independently, GIMA believes that investors can benefit from a professional fund manager's ability to effectively implement a particular strategy utilizing active management. While options trading can be complicated and risky, GIMA believes that option strategies present attractive benefits that warrant consideration for an asset allocation in an investors' portfolio.

Important Disclosures:

This paper is for educational purposes only and is not a recommendation or endorsement of any particular investment or investment strategy. Past performance is not necessarily indicative of future results. Returns will vary and all investments involve risks, including loss of principal.

Investing in the market entails the risk of market volatility. The value of all types of securities may increase or decrease over varying time periods.

Asset allocation and diversification do not assure a profit or protect against loss in declining financial markets.

Options may not be suitable for all investors

Before engaging in the purchase or sale of options, clients should understand the nature and extent of their rights and obligations and be aware of the risks involved, including, without limitation, the risks pertaining to the business and financial condition of the issuer of the underlying security/instrument. Options investing, like other forms of investing, involves tax considerations, transaction costs and margin requirements that can significantly affect clients' potential profits and losses. The transaction costs of options investing consist primarily of commissions (which are imposed in opening, closing, exercise and assignment transactions), but may also include margin and interest costs in particular transactions. Prior to opening an options account you should receive and review the "Characteristics and Risks of Standardized Options" (ODD) booklet published by the Options Clearing Corporation. Clients may not enter into options transactions until they have received, read and understood the ODD Disclosure Document. Prior to investing in options you should determine that options are a suitable investment for you based on your investment needs and risk profile and have discussed transaction costs with your Financial Advisor or Private Wealth Advisor. A copy of the ODD is also available online at: https://www.theocc.com/about/publications/publication-listing.jsp.

Supporting documentation for any claims (including any claims made on behalf of options programs or the options expertise of sales persons), comparisons, recommendations, statistics, or other technical data, will be supplied upon request.

A covered call strategy can limit the upside potential of the underlying stock position, as the stock would likely be called away in the event of substantial stock price increase and the investor forgoes upside stock price appreciation. Additionally, any downside protection provided to the related stock position is limited to the premium received. (Short options can be assigned at any time up to expiration regardless of the in-the-money amount.)

There is risk of a stock being called away as the ex-dividend day gets closer. If this happens prior to the ex-dividend date, eligibility for the dividend is lost. Income generated is at risk should the position move against the investor, if the investor later buys the call back at a higher price. The investor can also lose the stock position if assigned.

The protective or married put strategy provides only temporary protection from a decline in the price of the corresponding stock. The passage of time will have a negative impact on this strategy, all other things being equal. Should the long put position expire worthless, the entire cost of the put position would be lost.

Collars, Iron Condors, and other multiple-leg option strategies can entail substantial transaction costs, including multiple commissions, which may impact any potential return. These are advanced option strategies and often involve greater risk, and more complex risk, than basic options trades

Transaction costs (commissions and other fees) are important factors and should be considered when evaluating any options trade.

Supporting documentation for any claims, comparisons, statistics, or other technical data will be supplied upon request.

Margin can be very risky, and is not suitable for all investors. Before opening an account, the client should fully understand the risks associated with margin. These risks include: The client can lose more money than invested, the client may have to deposit additional cash or marginable securities on short notice to cover market losses, the client may be forced to sell some or all securities when there is a decline in account equity value, some or all of the client's securities may be sold without prior notice in order to maintain account equity at required maintenance levels.

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