

## **Synopsis**

In order to manage risk, merely diversifying into investments and asset classes defined as non-correlated is not sufficient as an asset protection strategy. For investors and fiduciaries seeking to add value to a portfolio by either generating additional income or managing investment risk, the markets have created an instrument to accomplish this, derivatives or options. The article starts with a short primer on the option pricing model then we will successively be looking into option-writing strategies as a means of generating additional income, option-buying strategies as a means of hedging downside risk, collars, and a strategy that combines elements of all three.

## **Strategies for Generating Income & Managing Investment Risk**

The financial markets are experiencing an evolution, brought on by the exponential growth in computer processing power and the forces of globalization. This has led to a constant stream of product innovation and fundamental changes in the structure of the financial markets. On a micro level, this change has empowered investors with lower trading costs, and increased liquidity. Specialized financial products and their derivative instruments are quoted and traded twenty-four hours a day across the globe. Just ten years ago, most non-institutional investors did not have access to a range of non-correlated asset classes that could truly diversify an investment portfolio. (Asset correlation measures the extent to which the returns on two assets behave similarly in response to market events or stimuli). However, as is the norm in the investment arena, once a portfolio theory or investment style becomes “mainstream” and accessible to all, it becomes outdated. The lesson learned in the most recent market sell-off is that diversification does not mitigate portfolio risk. In times of market stress, supposedly non-correlated asset classes behave in a similar fashion. In order to manage risk, merely diversifying into investments and asset classes defined as non-correlated is not sufficient as an asset protection strategy. Most clients either accept the risk of capital loss for the potential of gain, or shy away from it all together. A risk adverse investor can maintain equity exposure by using a risk management strategy that will minimize the damage to a portfolio of a large, sudden market decline that can wipe out months, if not years in gains.

The most efficient method of asset protection is through the use of derivatives. The advent of liquid, exchange traded derivative instruments based on these newly accessible financial products, has created the opportunity to apply risk management techniques and strategies to a greater subset of portfolio values. As a fiduciary, one now has the ability to diversify and risk manage a two hundred thousand dollar account much the same as a two or even twenty million dollar portfolio.

To a majority of investors, the use of options connotes “risk taking,” and the use of leverage. The option strategies discussed here are methodologies designed to *lower* the risk inherent in holding an investment.

The basis of our discussion will be to illustrate the types of strategies that can be employed to efficiently risk manage a single investment or portfolio of investments. We will successively be looking into option-writing strategies as a means of generating additional income, option-buying strategies as a means of hedging downside risk, collars, and a strategy that combines elements of all three. A short primer on the option pricing model will provide the basis for the balance of our discussion

### **Basic option pricing concepts**

The price of any given option is based on a combination of interest rates, time value, volatility, and the difference between the current price and the strike price. Interest rates and time value are the two prime valuation factors. When an option is purchased, in effect, one is paying an interest charge on the dollar value of the underlying equity that *doesn't* have to be put up as collateral in order to participate in the appreciation (or decline) in the value of the stock.

For example, XYZ Corporation is trading currently at \$52. A call option with a \$50 strike price expiring one month from the time of purchase is bought for \$3. The option has an intrinsic value of \$2 plus \$1 of "premium over parity". The cash needed to purchase the call is \$3 versus the \$52 paid if the stock was bought. The \$1 of premium over the intrinsic value of the option includes an interest charge on the \$50 capital savings.

There is, however, another major component in the valuation of an option, volatility. Volatility is defined as the standard deviation of the change in value of a financial instrument within a specific time horizon. More simply, it is the relative rate at which the price of a security moves up and down. An option price on a stock with a high volatility will be generally higher than one with a low volatility. The length of time until an option expires directly affects the amount of volatility premium in a given option's price. Once the concept is understood, that options are continually depreciating assets because they are based on interest rates and other measures that decline over time, the issue becomes how to use these tools to enhance a portfolio strategy.

### **Income generating strategy: call option writing**

As an owner of stock, the strategy of selling selected call options on one's shares is a way to extract the time and interest rate value of the asset, while waiting for the opportunity of capital gains to manifest. This technique is called a "covered-call" strategy. Because no additional capital is required to execute this strategy, call options, when sold, pay for the time and the opportunity cost of holding an equity investment. When an option is sold against stock that is held in one's portfolio,

money is received from the buyer of the call option, and it will immediately be credited to the seller's cash account balance.

For example, suppose that, on January 3rd, one owns 500 shares of ABC Computer trading at \$63 per share. One might sell a February \$70 call option against those 500 shares of stock for about \$2.50, which is a sale, to someone, of the right to buy the stock at \$70 per share anytime before the February expiration date (the 3rd Friday of the month). If the stock closes below \$70 a share on the February expiration date, the call option will expire worthless, in which event the stockholder will pocket the premium, \$2.50 (representing a 4% return on the \$63 ABC Computer stock), and still own the 500 shares of ABC Computer. If the stock closes above \$70 per share and the owner of the call option chooses to exercise their right to buy ABC Computer at \$70 per share, the stock would have risen from \$63 to the sell price of \$70, earning the shareholder a \$7 profit plus the \$2.50 for which the call option was originally sold. The total return in this example would be \$7.00 plus \$2.50 for a \$9.50 gain, representing a 15% return.

Each time a call is sold against a stock position, positive cash flow is created and the risk of holding stock is reduced, in part by lowering the total cost of the stock(s) in the portfolio. In the example of ABC Computer (above), selling calls 6 times (once every 2 months) over the course of a year would lower the original \$63 cost of ABC Computer by \$12.50 (assuming a \$2.50 premium), to \$51.50. In practice, ½% to 1½ % per month in income might be generated selling covered calls on a portfolio of stocks (given that at least two thirds of the equities held in a portfolio are optionable).

Let us return to what happens if the price of the stock appreciates beyond the strike price. If the owner doesn't want to sell the stock for various reasons (i.e., low cost basis) the call can be bought back before expiration and another one sold with a longer expiration or a higher strike price. For example, suppose one owns 100 shares of XYZ Corporation trading at \$52, then sells a \$55 call option against the stock position. At option expiration, the stock price of XYZ Corporation has climbed to \$56. If one does not want to sell the stock, the \$55 call option can be bought back (covered) and a \$55 or \$60 call option expiring in the next month can be sold to replace it. A program of selling call options on stock positions, when applied correctly, can create additional income and offset portfolio costs such as management fees, transaction costs and margin interest, thus enhancing overall net portfolio returns.

A number of stock market studies have concluded that over 90% of stock market gains can be attributed to fewer than 5% of the trading days<sup>1</sup>. Taking out those few high return days, the market's tendency is to tread water 95% of the time. A good case is made for letting time work for a portfolio by continually collecting interest and volatility premiums.

### **Hedging downside risk**

Options can be purchased to hedge the risk of a stock, or the market in general, from falling in price. Put options, when purchased, give the buyer the right to sell the underlying stock or basket of stocks at any time before expiration of the contract at a predetermined (strike) price. Owning put options effectively “hedges” an investment by putting a floor on an investment’s value.

When the value of a concentrated position in a single equity comprises a high percentage of the net worth of a trust, corporation or individual, the possibility of a single event dissipating a large percentage of the value is greatly increased. A method of mitigating concentrated equity risk is a combination of both selling a call and buying a put at the same time. Both the sold call and the purchased put can be executed at the same price effectively making this a cashless hedge. It is called a zero-cost collar. This strategy not only reduces the risk of owning a concentrated equity position, but also avoids the taxable event that would occur if the stock were sold. Once the position is hedged (collared), the value at the lower limit of the collar is like cash, and the stock can be used as collateral to diversify into other market sectors and asset classes, thus effectively spreading out risk and taking advantage of other investment opportunities.

As long as the investor leaves at least 10% upside and 10% downside risk on each side of the transaction (sale of calls and purchase of puts), currently the IRS will not consider the transaction a “constructive sale” for tax purposes. Guidelines can and do change frequently. Always consult a tax advisor before effecting transactions on low cost basis assets. Such a transaction can be structured to allow for varying degrees of upside participation as well as downside protection. In order to allow greater upside participation than just locking in a long term 10% collar an alternative strategy is to “short date” the expiration of the contracts and adjust the collar periodically. For example, the former CEO of XYZ Corporation, who just retired, owns one hundred thousand shares of XYZ currently trading at \$35 per share. He or she could simultaneously buy a three month put option with a strike price of \$30 and sell a call option with the strike price of \$40 (\$5 above and below the stock price which is more than 10% in either direction) for the same price. Because the value of the call option sold is the same as the purchased put option no money is exchanged (zero-cost). The stock is now collared. If the price of the stock goes to \$45 at expiration in three months the call option can be bought back so the stock does not have to be relinquished, and the stock position can be collared again, this time with a \$40 strike put option and a \$50 strike call option. This strategy can allow for asset appreciation beyond the original 10% collar because of the continual adjustment of the parameters of the collar.

### **Reducing portfolio risk**

A variation of the collar technique, called a “reverse-dispersion” strategy, can be applied to whole portfolios of stocks. This hybrid of the collar strategy might be appropriate if an investor is concerned about preservation of wealth but still wishes to participate in the capital gains potential of the equity market.

The basis of the strategy is that prices of the options on individual stocks are generally higher than the prices of the options on whole indexes. Using this pricing discrepancy as a hedging device, one would sell the calls on each stock in a portfolio and use the proceeds generated by these sales to purchase the puts on an index that might, as closely as possible, mirror the performance of the stocks within the portfolio. Currently there are many index and sector Exchange Traded Funds with options, making it easier to hedge a wider universe of portfolio variations.

By offsetting the cost of buying protective index puts with the cash generated by selling the higher volatility calls on the individual components, one can create a hedged portfolio for little or no cost. As a general rule, a portfolio of 30 or more stocks equally weighted across eight or more market sectors will correlate highly to a broad based index. The reverse-dispersion strategy will have an appeal to many risk-averse individual investors, charities, foundations and similar trusts because of the low cost downside protection to the asset base.

While most of these strategies can be executed by any individual with experience and knowledge of option theory, they do require that a certain amount of added attention be paid to the execution and maintenance of option positions. The costless collar will usually be the most cost efficient versus executing another type of asset protection strategy advocated by the investment banks, (because of the large fees generated) called an asset swap. This is because of the competitive bid process, especially if the transaction can be executed on a major options exchange.

For tax advantaged accounts such as retirement accounts (IRAs, 401ks), private foundations, charities, and charitable remainder trusts these strategies are quite effective for preserving wealth, lowering total volatility, and generating income. Using the covered call strategy a high income can be generated and the potential for capital gains maintained by permitting an appreciable portion of the portfolio to be invested in equities, eliminating the need to use fixed income instruments to generate income. These are just a few examples of the strategies that might be used as part of an overall risk management and diversification strategy. Derivatives can be utilized to manage the overall risk of virtually any investment portfolio, and given the recent amendments to the trust accounting guidelines with respect to derivatives, to a majority of trusts.

For example, certain marital trusts (e.g., QTIPs), the income generating strategy can be especially useful both to the income beneficiary and the remaindermen. Typically, to generate current income, investments with a high current yield are employed at the expense of growth and capital gains for the remaindermen. Using the covered call strategy a high income can be generated and the potential for capital gains maintained by permitting the entire portfolio to be invested in equities, eliminating the tradeoff of interests. In considering this strategy, however, attention must be given to governing law allocations between income and principal (e.g., sections 403 and 414 of the Uniform Principal and Income Act).

## **Summary and conclusion**

An asset manager's fiduciary responsibility is to treat all clients equally to the best of his or her ability. Technology and market innovation has truly evened the playing field in this respect. For fiduciaries with the responsibility of choosing an asset manager or investment consultant this is a new benchmark. There is an obvious resistance by the large firms to providing the same "sophisticated" diversification and risk management techniques to smaller accounts, that they now provide to their largest customers under the moniker of "private client services".

Derivatives and standardized option contracts are useful tools that are generally misunderstood. Used as risk management tools they expand investment opportunity for all risk tolerance levels. Risk management is a discipline today that goes well beyond the ideas that diversification and large cap investing satisfy the "prudent man" requirements of a fiduciary's responsibilities. The application of the strategies described here and other techniques to control systematic risk and add to the compounded returns of both taxable and tax advantaged portfolios, can be invaluable as part of any thoughtful investment plan.

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<sup>1</sup> H. Nejat Seyhun, the Chairman of Finance at the University of Michigan School of Business Administration, analyzed the 7,802 trading days for the 30 years from 1963 to 1993. A mere 90 days over 30 years contained 95% of all the market gains. That is an average of 3 days per year. Similarly, the SEI Corporation performed a study in 1993 for the 10-year period from 1980-1989. The 40 trading days with the biggest gains accounted for 88% of the total gains for that period which was over 227%.