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## Selecting the Optimal Options Strategy

An increasing number of investment advisors are recommending the use of options to their clients as a simple way to protect their assets, to generate additional income, or to take advantage of price fluctuations in underlying securities. Amongst all the available options strategies, portfolio managers may encounter some difficulties when the time comes to implement such strategies. Selecting the optimal options strategy in line with their client's investment objective may sometimes represent quite a challenge. In this issue of the options letter, we explore the factors that should be taken into consideration in the selection of options when implementing options strategies. We will discover that the optimal options strategy should take into consideration the direction of the implied volatility, and the direction of the price of the underlying security.

### Implied Volatility and Time Value

We all know that the option premium (the price of the option) is composed of both intrinsic value and time value. Intrinsic value is impacted principally by the difference between the market price of the underlying security and the strike price of the option contract, whereas time value is impacted by the time left until the expiration of the option, and the fluctuations of the implied volatility of the option. The time value of an option is the enemy of the options holder (the buyer) since, all things being equal, when the price of the underlying security remains stable up until the expiration date of the option contract, the holder will most likely lose all the time value of the option contract. Obviously, the opposite is true for the writer (the seller) of the option contract. That is, the greater the implied volatility, the greater the value of the option premium, and conversely, the lower the implied volatility, the lower the value of the option premium. By observing the fluctuations of the implied volatility over a relatively important period of time, one can notice that the return to the mean phenomena is present. The return to the mean phenomena relates to the fact that after a relatively important increase in the implied volatility of an option, implied volatility will fall and revert back to its historical average. Conversely, after a relatively important decrease in the implied volatility of an option, implied volatility will tend to rise and revert back to its historical average. As a result, an option holder who does not wish to hold an option contract up until the expiration of the option, will be advised to buy an option when the implied volatility is relatively low, with the expectation that the implied volatility will most likely rise and revert back to its historical average. Conversely, it would be better to sell an option contract when the implied volatility of an option is relatively high, with the expectation that the implied volatility will most likely fall and revert back to its historical average. However, since the time value of an option is the greatest when the option's strike price is at-the-money (ATM), an ATM option should therefore be bought when an increase in the implied volatility is expected. Conversely, an ATM option should be sold, when a decrease in the implied volatility is expected.

## Implied Volatility and the Direction of Prices

Price chart of XIU shares<sup>1</sup>



Implied and historical volatility chart of XIU shares<sup>2</sup>



As we can observe in the volatility chart above, the implied volatility (IV Index Mean) of XIU options has oscillated within a range of 10% to 18%. We notice as well that when implied volatility is at its highest, it corresponds to a bottom in the price of XIU shares. Conversely, when implied volatility is at its lowest, it corresponds to a peak in the price of XIU shares. Consequently, we can conclude in general, the higher the price of the underlying security (shares), the stronger is the tendency for the implied volatility to decrease, and vice versa for a decrease in the price of the shares. We can explain the phenomena by the fact that when the

<sup>1</sup> The iShares S&P/TSX 60 Index Fund seeks to provide long-term capital growth by replicating, to the extent possible, the performance of the S&P®/TSX® 60 Index.

<sup>2</sup> Please take note that the implied and historical volatility chart above comes from the [www.ivolatility.com](http://www.ivolatility.com) website (the Canadian market is available by paid subscription). It is also possible to access this data through a brokerage firm's trading platform.

price of the shares increases, investors are less inclined to protect their shares against a price decline. This results in a decrease in the demand and the price for options and a decrease in the implied volatility as well. When the price of their shares decreases, investors suddenly put aside their complacency and start searching for strategies to protect their shares. This sudden surge in options buying has the effect of pushing the implied volatility and the price of options higher.

### Selecting the optimal options strategy

In the preceding volatility chart, it is possible to estimate, for the period from September 2012 to February 2013, that on average the value of the implied volatility of XIU options was approximately 14%. Therefore, when the value of implied volatility is close to 10%, it is possible to buy put options contracts as insurance policy, or to take advantage of a potential decrease in the price of XIU shares. When the implied volatility is relatively low, the holder of the put options contracts can take advantage of the potential decrease in the shares of XIU, and at the same time, of a potential increase in implied volatility of options resulting from the decrease in the share price. It is a win-win situation.

When the value of implied volatility is close to 18%, it is possible to sell secured put options contracts in order to take advantage of a possible increase in the price of XIU shares, or to purchase the underlying shares otherwise. In addition of being able to profit from an increase in the underlying share price, the writer of the put options contracts can take advantage of the corresponding decrease of the implied volatility resulting from the share price increase. Again, it is a win-win situation.

Please note, the implied volatility levels we just observed in the previous illustration are not static and may vary depending on the market conditions present at the time the options strategies are implemented.

The two options strategies we just covered are not the only ones that can be used. You will find below a non-exhaustive list of options strategies that can be implemented to take advantage of share price and of implied volatility trends.

### Trend

#### Price (higher), Implied Volatility (Lower)

We just observed that **selling put options** contracts is a good strategy to adopt when an investor expects the price of a share to increase and the implied volatility of an option to decrease. The **covered call** strategy is equivalent to selling put options, and as a result, can be implemented as well. The use of **bull spreads** can also be implemented with the use of at-the-money options on the short options leg of the spread.

#### Price (higher), Implied Volatility (stable or higher)

Even if an increase in the price of a share generally produces a decrease in implied volatility, it is not always the case. Investment advisors that expect the price of a share to increase and the implied volatility of an option to increase, or at least remain stable, should favor the **purchase of call options**. The implementation of **bear spreads** with the use of at-the-money options on the long options leg of the spread is also a good choice.

### **Price (lower), Implied Volatility (stable or lower)**

Although a decrease in the price of a share and implied volatility is not a frequent event, it is however a distinct possibility. A portfolio manager that expects a decrease in the price of a share and implied volatility to remain relatively stable or to decrease, can **short naked call** options contracts or implement **bear spreads** with the use of at-the-money options on the short options leg of the spread.

### **Price (lower), Implied Volatility (higher)**

As we have seen above, the **purchase of put options** contracts can be used to take advantage of a decrease in the price of a share and an increase in the implied volatility of options. It is also possible to achieve the same results with **bear spreads** using at-the-money options on the long options leg of the spread.

### **Price (stable), Implied Volatility (higher)**

The ideal strategy to use to take advantage of a stable environment in the price of a share and an increase in the implied volatility of options is the **horizontal spread** which involves the purchase of an option with a longer expiration date and the sale of an option of the same type (call or put) with the same strike price and a shorter expiration date.

### **Price (stable), Implied Volatility (lower)**

The **sale of a straddle, or the sale of a strangle**, are ideal strategies to take advantage of a stable environment in the price of a share and a decrease in the implied volatility of options. **Butterfly spreads and condor spreads** are excellent strategies as well.

### **Price (important fluctuations), Implied Volatility (higher)**

When important fluctuations in the price of a share and an increase in the implied volatility of options are expected, the **purchase of a straddle or the purchase of a strangle** are ideal strategies to use. Similar results are possible with the **reverse butterfly spread or the reverse condor spread**.

### **Conclusion**

Many market participants make the mistake of implementing options strategies without taking into account the very important factors impacting the value of options. Logically, investment advisors, anticipating an increase in the price of a share of a particular security, will most likely implement bull options strategies when an increase in the price of a share is expected, and bear options strategies when a decrease in the price of a share is expected. Since the implied volatility of options has an important impact on the time value of options, astute portfolio managers will tend to use the most appropriate options strategy allowing them to benefit from the anticipated direction of the implied volatility of options. Hence, it is preferable to implement options strategies where at-the-money options are bought when the implied volatility is most likely expected to increase, and to implement options strategies where at-the-money options are sold when the implied volatility is expected to decrease.