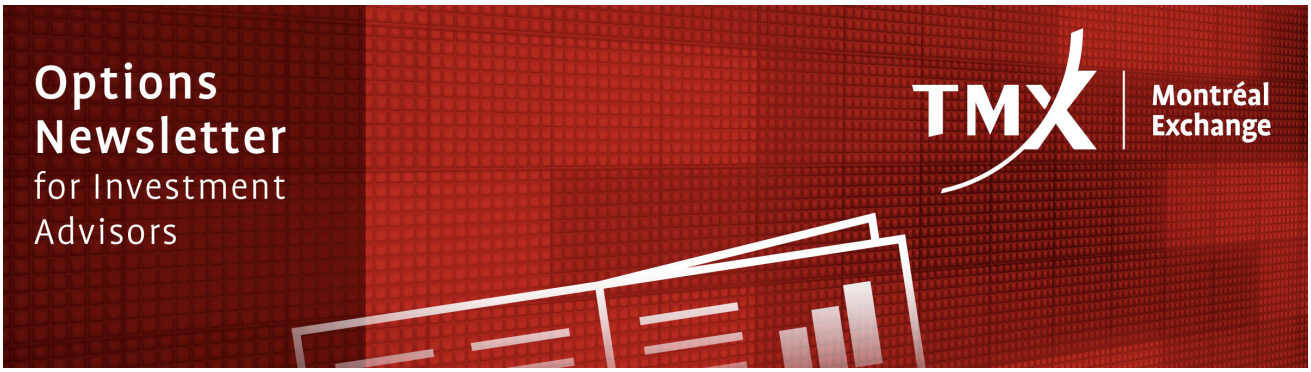

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A Straddle to Play a Volatile Market

At the time of writing, negotiations on the now infamous fiscal cliff were not concluded. The uncertainty related to the outcome has enticed many investors and portfolio managers to adopt defensive strategies in order to limit the negative impacts from the market reaction. On the other side, some investors have implemented volatility strategies to benefit from a negotiation failure or a flawed deal.

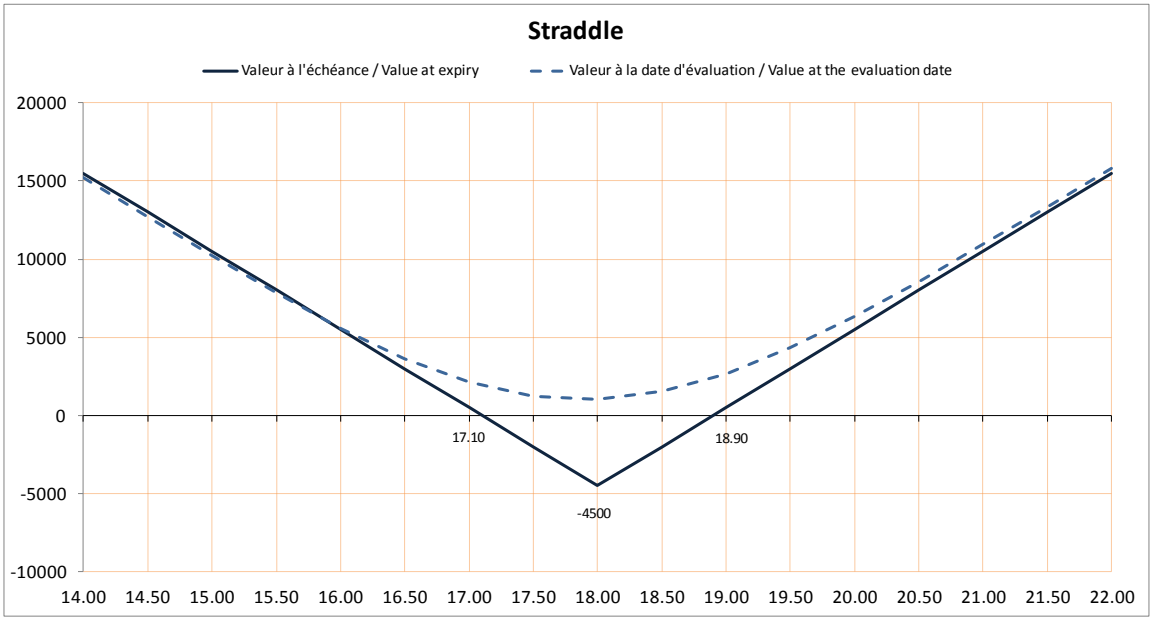
The straddle is an options strategy to take advantage of a sharp impending price move in the general market as well as a sharp increase in market volatility. In this article, we will demonstrate how an investor with a portfolio of Canadian securities highly correlated with the S&P/TSX 60 index can modify the risk-reward profile to be that of a straddle.

THE STRADDLE

A straddle is constructed with the simultaneous purchase of a call option and a put option with the same expiration date and strike price. The straddle strategy generally profits if the stock price moves sharply in either direction during the life of the options. Specifically, investors use a straddle because they expect a big price move either up or down and/or much higher volatility in the foreseeable future. In the case of a price increase, the call options held offer an unlimited profit potential; whereas in the case of a price decline, the put options offer a profit potential equal to the strike price less the premium paid for the purchase of the call options and the put options. However, this strategy carries a certain level of risk because if the stock price moves very little from its current price and closes exactly at the strike price of both the call options and put options, the holder will experience the maximum loss which corresponds to the total premium paid to purchase the options. To generate profit, the stock price must cross the higher breakeven price or the lower breakeven price before options expiry.

Let's take an example using options on the iShares S&P/TSX 60 Index Fund (XIU) as at December 21, 2012 when XIU was trading at $18. A straddle can be implemented with the purchase of both call options and put options contracts expiring in March 2013 with a strike price of $18. The XIU MAR 18 call options are available at a price of $0.43 per share (or $43 per contract) while the XIU MAR 18 put options are available at a price of $0.47 per share ($47 per contract), for a total cost of $90. An investor who wishes to obtain a market risk exposure equivalent to $90,000 in XIU value would be required to construct a straddle with 50 contracts since an XIU position of 5,000 shares at a price of $18 is worth $90,000.

The following chart illustrates the risk/reward profile of a straddle position with 50 options contracts for a total cost of $4,500:

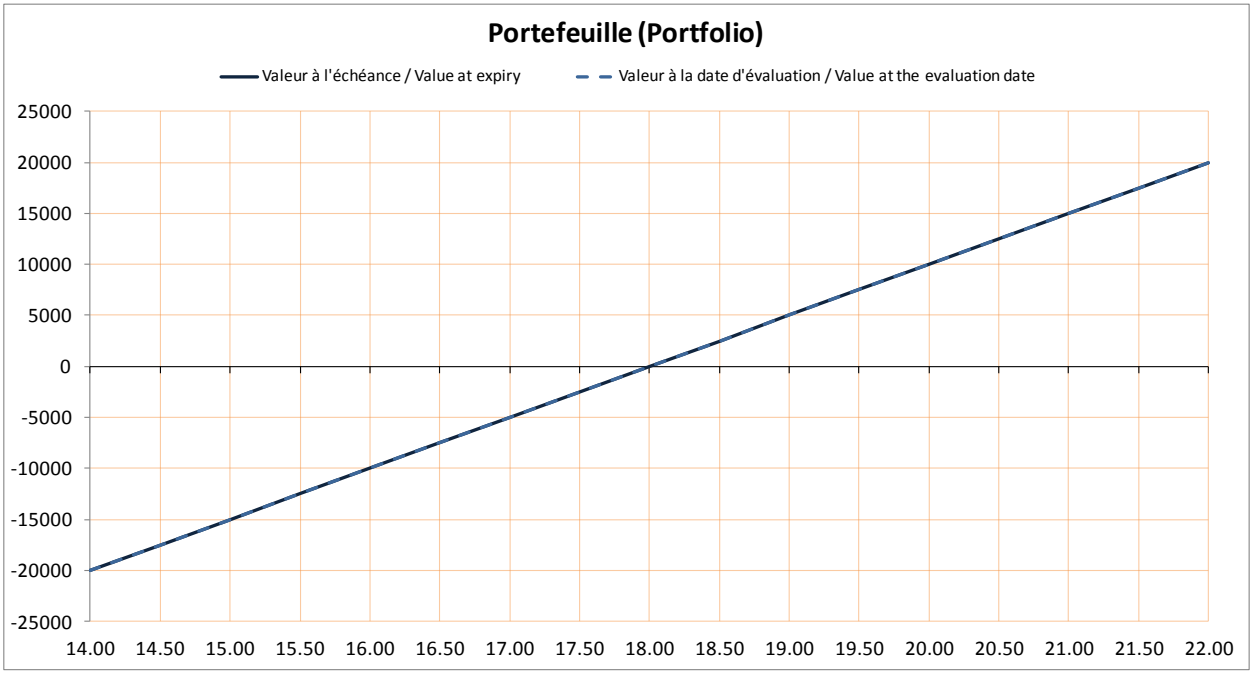


We observe that the risk/reward profile of the straddle is perfectly symmetrical around the $18 strike price. The maximum loss of $4,500 is realized when the market remains stable at XIU current price of $18 at the expiry of the calls and puts in March 2013. Losses are realized when the price of XIU is between the two breakeven prices. Any increase above the higher breakeven price of $18.90 will generate a profit while any decline below the lower breakeven price of $17.10 will also generate profits. An increase or a decline of $4 per share generates profits of $15,500 in both cases. Hence, the straddle is the perfect strategy for an investor who is uncertain about the direction of the market, but is convinced that a large price move (either up or down) will occur before options expiry in March 2013.

THE SYNTHETIC STRADDLE

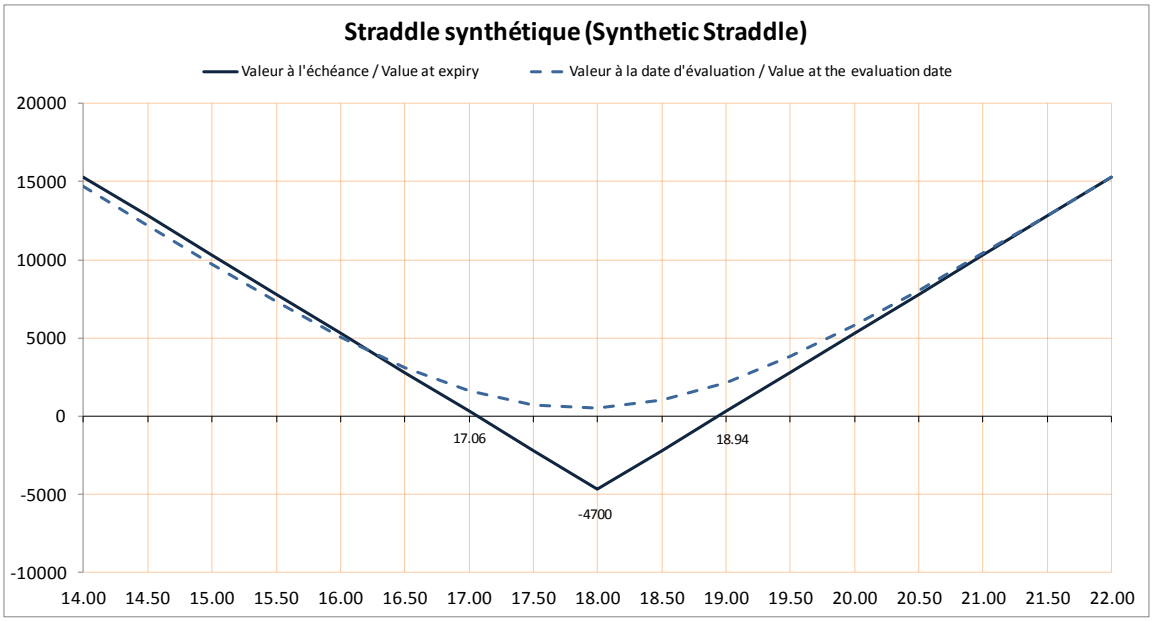
In the following example, suppose an investor that holds a well diversified stock portfolio worth $90,000 with a beta of 1 in relation with the S&P/TSX 60, meaning that the portfolio follows precisely the price fluctuations of the index. Let's also use options on XIU as at December 21, 2012 when XIU was trading at $18 a share. The investor would like to transform the portfolio's profit and loss using a straddle without having to sell the securities in the portfolio.

The following chart illustrates the portfolio's risk/reward profile:



We observe that if there is a satisfactory agreement on the fiscal cliff, a favourable market reaction could have the potential to generate a profit of $20,000 if there is an increase of $4 in the price of XIU; whereas a negative market reaction could produce a loss of $20,000 if there is a decline of $4 in the price of XIU. While uncertain about the direction of the market, the investor is convinced that a large stock price move (either up or down) will result from the negotiations. The investor would like to profit from either an increase or a decline in the market.

In order to transform the current portfolio's risk/reward profile into that of a straddle, the investor will have to buy two put options for every 100 XIU shares held. Since the investor holds the equivalent of 5,000 shares of XIU, they need to buy 100 MAR 18 XIU put options at a price of $0.47 per share for a cost of $4,700. The first 50 contracts will compensate the portfolio’s losses, whereas the other 50 contracts will generate the appropriate profits. Since the investor holds 5,000 XIU shares, the first 50 contracts guarantee that the shares can be sold at a price of $18. As a result, any loss from the portfolio associated to a market decline below this price will be compensated by the profits generated by these 50 put options. Therefore, the other 50 put options will generate the profits. In the case of an increase, the investor, who still holds 5,000 XIU shares, will be able to benefit from any increase in the XIU stock price above the higher breakeven point, which is equal to the price of XIU plus the premium paid for the purchase of the 100 put options contracts. Consequently, the purchase of the 100 put options allows the investor to construct a synthetic straddle—as shown in the following risk/reward illustration.



The synthetic straddle and the straddle have almost the same risk/reward profile. Both strategies have symmetrical risk/reward profiles on each side of the $18 strike price. The maximum loss of $4,700 (compared to $4,500) is realized when the market remains stable around the current price of $18 at the put options expiry in March 2013. Losses will occur if the price of XIU remains between the two breakeven prices. Profits will be generated for any increase above the higher breakeven price of $18.94 (compared to $18.90) or any decline below the lower breakeven price of $17.06 (compared to $17.10). An increase or decline of $4 in the price of XIU will result in a profit of $15,300 (compared to $15,500).

With the purchase of 100 MAR 18 XIU put options the investor still holds the shares in the portfolio and they will continue to receive all the dividends issued by the underlying shares. Hence, the investor can take advantage of any large increase or decline resulting from the negotiations on the fiscal cliff. This strategy can also be applied in other situations. An investor only needs to anticipate a large price move either up or down over a certain period of time. However, investors using this strategy must be prepared to incur the maximum loss in case the stock price moves very little. That is, the maximum loss is equal to the total cost of the put options purchased.

CONCLUSION

Straddles are a good strategy if an investor believes that a stock price will move significantly, but is unsure as to which direction (either up or down) the stock price will move. The stock price must move significantly for the investor to profit. A straddle consists in the simultaneous purchase of a call option contract and a put option contract with the same expiration date and strike price. If the underlying stock price changes very little from the current price, the investor will incur losses when prices remain between the higher and lower breakeven prices. The maximum loss will occur if the underlying stock price moves very little or closes exactly at the strike price of the call options and put options purchased.

An investor with a portfolio of securities strongly correlated with the market and who wishes to hold onto them can synthetically reproduce the straddle risk/reward profile by purchasing twice as many put options compared to the equivalent value of the portfolio position held. The synthetic straddle is the perfect strategy for an investor who wants to keep the securities in their portfolio to receive dividends and to have the opportunity to take advantage of a large impending price move either up or down in the general market.

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