



ANALYTICS INVESTMENT ADVISORS, LLC

## ETFs and Stop Orders

Richard C. Hoyt

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I wrote in my November 9, 2009 commentary that Exchange Traded Funds are a way to combine the potentially high returns of individual stock trading with the benefits of diversification provided by mutual funds. An ETF is a basket of stocks that trade on an exchange with the simplicity and liquidity of an individual stock. ETFs add flexibility, safety through diversification, access to many varied markets, are low cost, tax efficient, and since they are traded under the jurisdiction of the Security Exchange Commission (SEC), offer protection and liquidity for orderly and continuous trading. Perhaps the biggest advantage of ETFs is the ability to effectively monitor performance and effectuate sound risk management strategies in the form of stop orders. It is the nature of this later feature of ETFs that is the subject of this month's news letter.

"Let your profits run and minimize your losses" is a phrase often heard on Wall Street. Stop orders can be used to help affect this result. Numerous text books and articles advocate this principle, but do not address where stops should be placed. This commentary summarizes a method presented by David Schalow which uses standard deviation as a technique that improves on an arbitrary application of stop orders. (Schalow, David L., Settings Stops with Standard Deviations, *The Journal of Portfolio Management*, Summer 1996, pp. 58-61).

By placing a stop order the investor makes a decision about the selling point before the actual sale, and in doing so removes an emotional element while reducing the risk of significant losses. Judicious use of stop orders allows profits to increase, but automatically triggers a sale if the price drops to some predetermined level.

Where to set the stop price is obviously the key issue. If the stop is set too close to the initial price, a small downward shift before a long-term upward price movement will cause the investor to lose the stock and potential gain. Moreover, if a stop order is set too far below the initial price, a large downward movement in price will be fully absorbed by the investor. The best outcomes are either when the stock rises and the investor stays invested, or the stock goes down and the investor gets stopped out.

|                        | <u>Stock Goes Up</u> | <u>Stock Goes Down</u> |
|------------------------|----------------------|------------------------|
| <u>Stay Invested</u>   | Good Decision        | Bad Decision           |
| <u>Get Stopped Out</u> | Bad Decision         | Good Decision          |

All errors cannot be eliminated, but an investor can choose which type of error to minimize. However, without knowledge of the volatility of an ETF it is difficult to determine the level of each type of risk. Assuming a normal distribution of price movement, it is possible to predict a range of probable

outcomes. For example, if an investor is willing to accept a 16% chance of being stopped out, the investor would set the stop order at one standard deviation. In this manner an investor can change the degree of acceptable risk by changing the standard deviation from the price of the ETF. All other things being equal, the greater the standard deviation, the greater the percentage the stop should be below the current price. This concept is demonstrated in the table below using the most recent one year means and standard deviations for two equities: QQQQ, QQQ Trust; and, QLD, Ultra QQQ.

| Standard Deviation | Probability of Stop | QQQQ<br>Mean 43.7<br>Std.Dev 3.96 | QLD<br>Mean 53.31<br>Std.Dev 9.19 |
|--------------------|---------------------|-----------------------------------|-----------------------------------|
|                    |                     | % Below                           | % Below                           |
| 0                  | 50%                 | 0%                                | 0%                                |
| .5                 | 31%                 | 6%                                | 11%                               |
| 1.0                | 16%                 | 12%                               | 21%                               |
| 1.5                | 7%                  | 18%                               | 32%                               |
| 2.0                | 2%                  | 24%                               | 42%                               |
| 2.5                | 1%                  | 31%                               | 53%                               |
| 3.0                | 0%                  | 37%                               | 63%                               |

Another important consideration in using stop orders with ETFs is liquidity and the ability to execute an efficient trade in fast moving and volatile markets. In most cases stop orders are adequate when investing in ETFs, however, as a precaution, stop limit orders can be used to provide an additional level of safety and comfort.