QFS Derivatives

December.27.2011

For 2011, the Derivatives Team focused on strategic investments in index options, single stock options and volatility arbitrage. The latter half of 2011, triggered by the downgrade of U.S. debt by Standard & Poors and debt concerns in Europe endured elevated levels of volatility, with 3-4% daily market moves in either direction becoming commonplace. The heightened levels of volatility allowed for a number of exciting investment opportunities in equity derivatives.

Performance Update:

	Oct 15 '11 – Dec 5 '11
QFS Options Portfolio	8.44%
SP500	4.75%
Global Dow	3.83%

VIX Butterfly Play:

While implied volatility of options remained high throughout the second part of 2011, the implied volatility of VIX index options remained relatively low compared to earlier in the summer. We took advantage of this low "vol on vol" and forecasted that the VIX index would remain relatively range-bound from 25 to 40 barring any new economic surprises. To profit from a range-bound VIX index we decided to sell VIX Call 25-32.5-40 Butterflies. This strategy would have been most profitable when the VIX index closed nearest to 32.50 which is where we forecasted the long term VIX average. We closed out the position a few days prior to November options expiration which coincidently was when the VIX was trading closest to our ideal level of 32.50. We decided against putting on a similar position for December when we saw that the VIX started to make a directional move breaking below the 30 mark, which we saw as a short-term technical support level.

Gamma Scalping:

In addition, to take advantage of the increase in realized equity volatility, we implemented a gamma scalping strategy on SS0, the 2x leveraged SP500 ETF. Gamma scalping is a well-known strategy that is often implemented on top of option positions that are already delta-hedged. By first placing a delta-hedged position on SSO, we then sought to capture the profits generated by swings in SSO before re-hedging. Once the underlying, SS0, had made a large move we would resume our delta-hedge thereby protecting that profit from any new swing in the underlying.

The essence behind the strategy is taking the correct bet on whether the implied volatility of the options is cheap relative to what the realized volatility will be. When the implied volatility of SS0 options reached medium-term lows for the second-half of this year, we expected that the markets had oversold volatility and that the realized volatility of SSO would actually be more significant that priced in.

This strategy is well-documented, however often fails on the execution front. The first is deciding the optimal times to re-hedge a position after a sizeable move. Because our portfolio is fairly large, transaction costs caused minimal restriction in how often we could re-hedge. We traded relatively frequently, up to 5-10 times per day, locking in profits whenever the amount scalped outweighed the cost of transacting.

During periods when we felt the stock was going to be mean-reverting, we simply allowed the position to move without rebalancing. If the delta of the position became overly positive or negative, we would re-hedge if we saw substantial risk to taking that directional view.

The choice behind using SSO as the underlying was because we viewed the leveraged ETFs as being more volatile and hence any discrepancy between realized and implied volatility would be magnified. However we also needed an underlying instrument that was sufficiently liquid so that the cost incurred by re-hedging was limited to the commission and a tight bid-ask spread.

Long Apple:

The one directional bet that our portfolio did take was a covered call position in Apple. This allowed us to profit from what we anticipated to be a modest rise in Apple stock. The fast approaching holiday season coupled with the strong fundamentals of Apple as a company led us to believe that this play would perform well in November and December irrespective of the general market direction. In general we have a more optimistic view of the tech sector, and of companies like Apple and Amazon specifically despite general market headwinds. The position was profitable as Apple did make a modest rise upwards however we do not see substantial upside in the near-term as competition is fierce. Depending on how sales of Amazon's Kindle Fire are compared to Apple's iPad, we will have to reconsider the relative valuation of Amazon to Apple.

ETF Arbitrage & Theta Decay:

We also took advantage of inefficiencies in volatility futures baskets. Many banks are beginning to package up differing maturity futures into ETFs and ETNs that maintain a constant average maturity through daily rebalancing. However, the rebalancing method they use is constantly fighting the theta decay inherent in futures contracts and is always selling the contract with greater decay and buying the one with lesser decay in order to increase maturity. This difference can be arbitraged by buying the basket with greater maturity and selling the basket with lesser maturity, as the decay in the former will always be less than the latter.

This strategy was profitable in its own right, but also took advantage of a second trend we observed which was the implied volatility term structure. The implied volatility for the front-month options tended to be higher than the further out months; a trend that was reversed from during the summer when the further out months had higher implied volatilities. The aforementioned strategy not only took advantage of the theta decay, but also of what we predicted to be a flattening of this backwardation trend.

Outlook:

We see the heightened level of uncertainty remaining into 2012. While concerns in the Euro-zone have temporarily subsided, we believe that the strength of the Euro remains in jeopardy related to sluggish growth and high debt levels in large member-nations like Italy and France. In addition to European concerns, we believe political stalemate in the United States will also contribute to economic uncertainty regarding how Congress tackles debt problems. The longer Washington seems to be in deadlock, the stronger the effect will be on consumer confidence and business investment.

Going ahead, our fund plans to be cautious in the directional plays we choose to take, focusing instead on arbitrage and hedged non-directional plays. We see a high degree of uncertainty regarding the future and therefore believe long-term directional plays may not come to fruition as quickly as expected.

Sincerely,

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Michael Khanarian & Jay Bhalodi