

Profitable trading using option analytics.

“Equity option markets are known for uncertainty, but that only fuels the analytics development process.”

Sophisticated analytics has always meant meticulous attention to different parameters that can serve a pledge of untold fortune. Here, it is not a question of how to use complicated mathematical algorithms, but how to always win, independently on market moves.

Rapidly growing securities trading has led to the development of various attendant analytical technologies. The situation on capital markets promotes interest to trading analytics. It turns out that the demand for analytical technology grows not only when the market is growing. The unstable market needs even more analytics and the demand for it is higher than ever.

There are several explanations for this phenomenon. Until recently the American market had been growing rather steadily and making money in securities markets had not been very hard. Market makers, brokers, funds and traders practiced such simple strategies as “buy today – sell tomorrow” and made sufficient profits.

Unfortunately, the situation has changed dramatically: the market is in decline and the latest political events have aggravated the situation. As a result, the volume of transactions has dropped and many individual investors have quitted since simple trading strategies stopped being profitable due to high volatility.

In fact, market instability is not a rare occurrence. It prompts traders to activate trading in derivatives, the option market in particular, since options allow hedging risks and receiving profit even at critical moments. However, for successful trading it is necessary to have professional skills and expertise in sophisticated tools, which are much in demand among market participants and cannot be compared with old simple strategies.

Moreover, launched last year International Security Exchange (ISE) defied competition to non-electronic option trading and took up the third place by sales turnover.

To mention, equity option market is unique in its way since all underlying equities (more than 2500) are highly correlated with each other and with major indices. These correlation characteristics were first to be used in new trading strategies and were quickly followed by such statistical indicators as distribution of volatilities of stocks involved in multi-asset strategies, historical volatility and others.

Volatility Dispersion Strategy is considered to be one of the best working strategies in sophisticated analytics. To analyze this strategy, EGAR Technology set out to offer EGAR Dispersion product that provides users with several measures to assist in correctly choosing the best dispersion candidates.

Implied Volatility Index is the main parameter of dispersion strategy. Calculated as Vega weighting of nearest options' IVs and normalized to fixed maturities, IV Index is an excellent representation of the implied volatility of the stock as opposed to using the implied volatility of a single option on the stock. The averaging method is a proprietary method factoring the moneyness and vega of the options used in the calculations. In contrast to historical volatility IV Index indicates current volatility value. Index normalization to specific periods (30, 60, 90, ... days) gives a possibility to compare index values, which can't be done for implied volatility calculated on option prices since the latter doesn't exclude the time factor. And it is known that the time factor effect on option price increases as expiration approaches.

The Dispersion Strategy typically involves short option positions on an index, against which long option positions are taken on a set of component stocks comprising the index. It is common to see a short straddle or near ATM strangle on the index and long similar straddles/strangles on 30-40% of the stocks that make up the index.

If maximum dispersion is realized, then the strategy will make money on the long options on the individual stocks and lose very little on the short option position on the index as the latter would have net moved very little. The strategy is typically a very low premium strategy, with very low initial delta and typically a small net long vega. This strategy answers the unstable and unpredictable market ideally.

Instead of a strangle, “bearish” or “bullish” strategies can be applied when the market is expected to move up or down. However in the unstable market the double strangle strategy provides equal profits in case of either fall or rise.

The success of the strategy lies in determining which component stocks to pick. At the simplest level they should account for a large part of the index to keep the net risk low and their prices should be correlated with the index. At the same time, it is critical to make sure you are buying “cheap” volatility, i.e. inexpensive options, as well as overall the candidates that are likely to “disperse”.

For an obvious example of the dispersion strategy, let’s examine Dow Jones index.

Chart 1

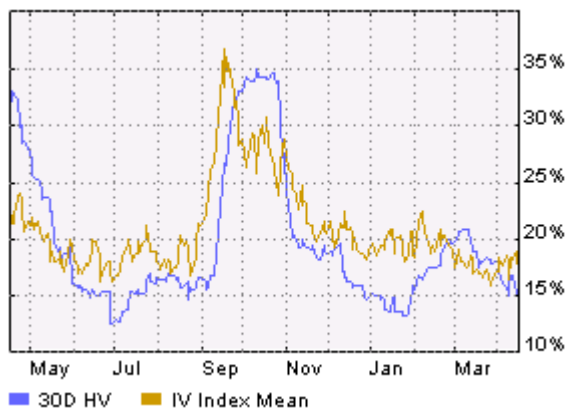
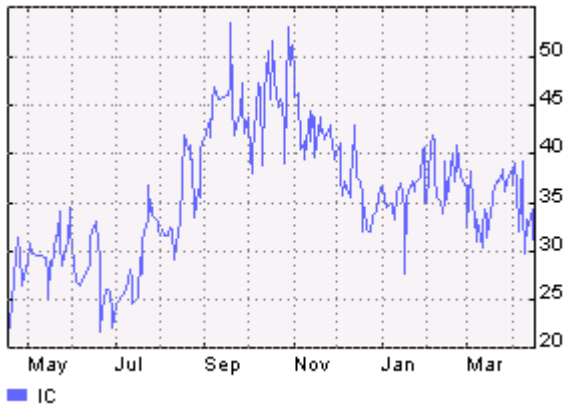


Chart 1 displays historical volatility: maximum IV Index value (36%) in 2001 was in the last week of September (the explanation lies in the tragic events of September 11 in New York). Today’s volatility (18%) is far from the maximum, which is not a good sign for selling options on the Dow Jones index in the dispersion strategy as this means selling cheap options.

Chart 2



Other parameters to be analyzed are Implied Index Correlation, volatility coefficients (WtdCompIV/Index IV and HistCorrWtdCompIV/IndexIV). Implied index correlation defines correlation level between the implied volatility of all the component stocks and the implied volatility of the index. High positive correlation means best time to engage in the dispersion strategy. Last year correlation was positive and its current value of 35% it is not far from the maximum (53%). That means a not bad strategy opportunity (chart 2).

Volatility level coefficients also measure the total weighted implied volatility of the components relative to the implied volatility of the index. WtdCompIV/Index IV uses a simple sum of the weighted volatilities of the components, while HistCorrWtdCompIV/IndexIV calculates the total volatility of the components adjusted by the correlations of the component stocks. The best time to engage in the dispersion strategy is when WtdCompIV/Index IV and HistCorrWtdCompIV/IndexIV are relatively low, as it suggests that the overall implied volatility of the index components is closer or lower than the implied volatility of the index. On the day displayed on chart, WtdCompIV/Index IV =1.7, HistCorrWtdCompIV/IndexIV =0.8, which are rather good in comparison to last year (charts 3 and 4).

Chart 3

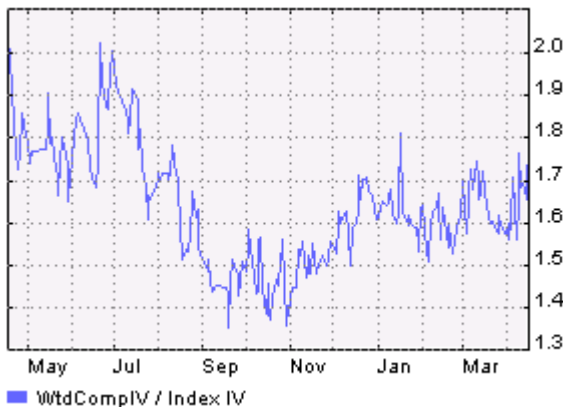
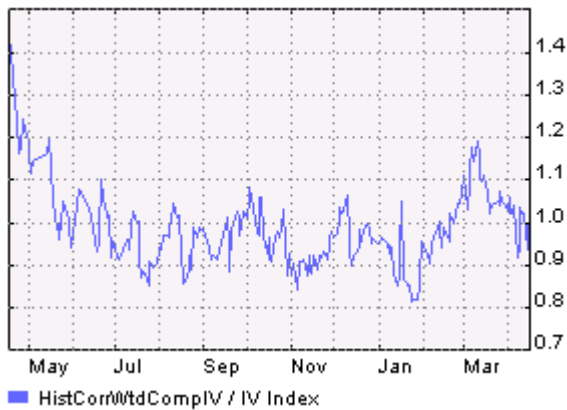


Chart 4



When selecting stocks for the strategy, it is necessary to pay attention to the following parameters:

- Volatility index - it is better to choose stocks with low volatility, since it means less expensive options.
- Equivalent Index IV - is a measure of the level of the stock's implied volatility relative to that of the index. Thus it is a measure of the index proxy volatility and represents the "cheapness" of the stock's implied volatility. It typically is one of the prime measures used for determining relative value of the stock's implied volatility. An Equiv. Index IV below the implied volatility of the index represents cheap index proxy volatility.
- Specific variance measures the residual variance in the part of the stock movement that is not explained by the movement in the index. Thus statistically it is the variance of the error term in the regression calculation of the beta of the stock to the index. You would like to keep residual variance low, as a high number suggests instability in the beta of the stock.
- Weight – Obviously the higher the stock weight, the better a candidate for the dispersion strategy the stock is.
- Correlation and Beta – correlation with index and the linear coefficient describing the index profit margin should be high.

This example has proven that sophisticated analytics enables traders to gain profit independently of the direction of the market move. In the unstable market when customary tools don't produce any effect, advanced analytics offers an opportunity to attain a distinct result in your trading. Today the dispersion strategy is applied at financial institutions, brokerage firms, investment funds and corporations.