

***Trading Strategies involving options & underlying for
bullish and volatile markets***

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1 Introduction

It is easy to understand why the stock market is thrilling when it comes to personal finance and the accumulation of wealth. Along with this financial rollercoaster ride we are about to take, we do all want to experience the ups without the downs. The question is how do we avoid bad investments or at least set up strategies for finding good underlying asset that give us a rate of return that is greater than the market's overall average? The answer is not simple and it is one that raised many questions and eye borrows within the group. But it is also a one that excited us in our readiness to explore the issue. There is no full proof system for picking an underlying asset and in our report we decided to take our underlying asset to be stock, mainly Ericsson\, Telefonab. L M ser. B (ERIC B). Similarly, to centralise, we agreed to address four different strategies in two different markets namely Bullish and Volatile. It is important to point out the options we use in our strategies are American options. Later you will come to understand how OMX actually is a perfect place for us to trade since our trading takes such a short time and we could exercise whenever we want.

Although there are better strategies than others for different occasions and position, there is still no guarantee for perfect returns because even if all else work, human emotions and confidence are always questionable. There is no constructive systems in stock markets, nor is there explicit formulas to be followed, and although there are massive historical data; even these are of no use sometimes as future stock prices do not depend on historical data. What to do then? What system to follow? Indeed there is always a way with foresight, experience, intuition and a little bit of luck. This is exactly what it was for the investor who invested in Microsoft back 1986, a big return of 35,000% today. In fact, had one had such a foresight in a bullish market one is bound to make a lot of money? This is much harder in a volatile market...

Without further ado, let's start by delving into the fundamental analysis of bullish and volatile market and the theories that underlie all of the strategies we are about to employ in these markets.

1.1 Purpose of the study

The aim of our report is to set up basic trading strategies to explore the fundamental principles of trading theories for Bullish and Volatile markets. As you will come to learn, we will extend these theories practically by going to the Stockholm's stock exchange market (OMX) where we will trade three days a week.

The idea is to use different strategies, specifically four, and adjust these strategies according to the instant performance of the market. Furthermore, we commit ourselves to flexible changes of our positions within strategies when necessary. Although our aim lies with making money we are aware of the fact that we cannot be a winner in every trade we make. Any trading strategy must leave room for some losses so our returns may be positive or negative.

2 Market Strategies

Trading strategies involving options and underlying are divided into four groups namely bullish, bearish, neutral and volatile reflecting the possible views on the underlying stock or index¹. In the course of this project we will focus our attention on some of the strategies for bullish and volatile markets.

2.1 Bullish Market

Bullish can be referred to as a rising market, or a market in which further price increases are expected due to several reasons including strong demand. The table below summarizes some strategies available when the investors believe that stock prices will continue to go up.

Option Spread Strategy	Description	Reason to use	When to use
Buy a Call	Strongest bullish option position.	Loss limited to premium paid.	Undervalued option with volatility increasing.
Sell a Put	Neutral bullish option position.	Profit limited to premium received.	High volatility, bullish trending market.
Buy Vertical Bull Call Spread	Buy Call & sell Call of higher strike price.	Loss limited to debit.	Small debit, bullish market.
Sell Vertical Bear Put Spread	Sell Put & buy Put of lower strike price.	Loss limited to strike price difference less premium received.	Large credit, bullish market.

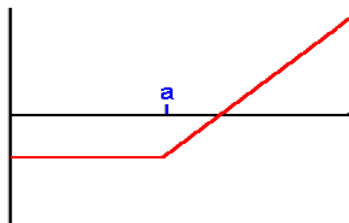
Table1: trading strategies in bullish market.

2.1.1 Very bullish market

Investor thinks that the market will rise significantly in the short-term. If the market does little then the value of the position will decrease as the option time value falls.

Strategy: buy call

Implementation: call options are bought with a strike price of a . The more bullish the investor



is, the higher the strike price should be.

Upside potential: profit potential in this situation is unlimited and increases as the market increases.

Downside risk: limited to the premium paid - incurred if the market at expiry is at, or below,

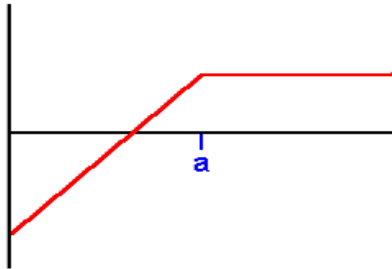
¹ <http://www.numa.com/derivs/ref/os-guide/os-0a.htm> 2004-10-12

the strike a.

2.1.2 Moderately bullish + certain that the market will not fall

Investor is certain that the market will not go down, but unsure/unconcerned about whether it will rise. If the market does little, and time passes, this helps as the short position gains when the time value erodes.

Strategy: sell put



Implementation: put options are sold with a strike price a. If an investor is very bullish, then in the money puts would be sold.

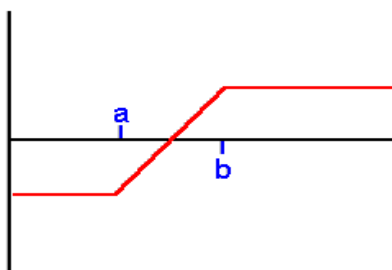
Upside potential: profit potential is limited to the premium received. The more the option is in the money, the greater the premium received.

Downside risk: Loss is almost unlimited ("almost" as the underlying price can not fall below zero!). High-risk strategy. Potential huge losses incurred if the market crashes. [If the strategy appeals, but not the downside risk, investors may prefer a bull spread].

2.1.3 Moderately bullish + fairly certain that the market will not fall

Investor thinks that the market will not fall, but wants to cap the risk. This is a conservative strategy for one who thinks that the market is more likely to rise than fall. The Time value erosion is not too significant due to the balanced position.

Strategy: bull spread



Implementation: call option is bought with a strike price of **a** and another call option sold with a strike of **b**, producing a net initial debit, or put option is bought with a strike of **a** and another put sold with a strike of **b**, producing a net initial credit.

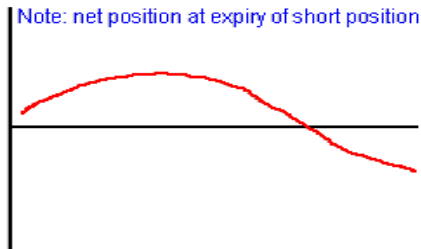
Upside potential: Limited in both cases - calls: difference between strikes minus initial debit
Puts: net initial credit. Maximum profit if market at expiry is above the higher strike.

Downside risk: Limited in both cases - calls: net initial debit. Puts: difference between strikes minus initial credit. Maximum loss if at expiry market is below the lower strike.

2.1.4 Bearish in immediate near-term (weeks) + bullish in longer term (months)

Investor thinks that the market will be weak in the short-term, but then rally later there is a risk of the sold options being called (i.e. being exercised).

Strategy: diagonal spread



Implementation: a near-dated call option is sold, and a longer-dated, further out-of-the-money call option is bought.

Upside Potential: unlimited, if the bought option is held after the short option expires (the position then becomes a straight-forward buy call). If the position is closed at expiry of the near option, maximum profit will accrue if the market is at the level of the sold strike.

Downside Risk: limited to the difference in strikes plus/minus the initial debit/credit when establishing the spread.

2.2 Volatile Market

Volatility is a statistical measure of the affinity of a market or security to rise or fall sharply within a short period of time. Volatility is typically measured by the standard deviation (statistical concept that denotes the amount of variation or deviation that might be expected) of the return of an investment.

Volatile markets are characterized by wide price fluctuations and heavy trading which often result from an imbalance of trade orders in one direction. One solution is to maintain a long-term horizon and ignore the short-term fluctuations

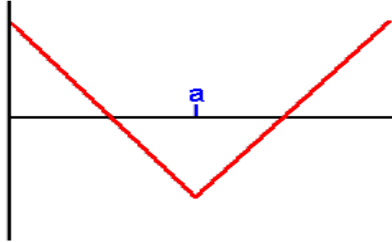
Strategies used in a volatile market

The strategies used in a volatile market will depend on how volatile the market will be.

- Expect prices to be *very* volatile
- Expect prices to be volatile
- Moderately expect prices to be volatile

2.2.1 Very volatile (Straddle)

Investor thinks that the market will be very volatile in the short-term. Position loses value with passage of time as time value decreases on options



Strategy: buy straddle

Implementation: Call option and put option are bought with the same strike price **a** - usually at-the-money.

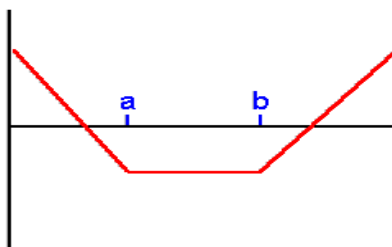
Upside potential: unlimited Breakeven Point at Expiry. Lower point is the strike minus the two premiums paid, and the upper is the strike plus the two premiums.

Downside risk: limited to the two premiums paid. [If the investor would like to decrease the premium paid, a buy strangle might be interesting]

2.3 Very volatile (Strangle)

Strategy: buy strangle

This is similar to the buy straddle but the premium paid here is less.



Implementation: buy a put option with a strike *a*, and a call option with a strike *b*.

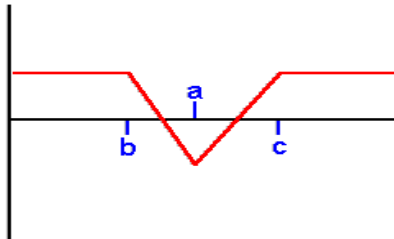
Upside potential: unlimited - should the market fall or rise greatly.

Downside Risk: limited to the two premiums paid. [If the investor would like to reduce the premiums paid still further, a short butterfly might be interesting].

2.3.1 Volatile

Investor slightly thinks that the market will be volatile and it may be difficult to execute this strategy quickly.

Strategy: short butterfly



Implementation: call option is sold with strike **b**, two call options are bought with strike **a** and a call option is sold with strike **c**. [A similar position can be created with puts].

Upside Potential: limited to initial credit received.

Downside Risk: limited to the difference between the lower and middle strikes minus the initial spread credit.

3 Stockholmsbörsen/ OMX

OMX is a Swedish financial services company. It was started by Olof Stenhammar in the 1980s to introduce trading in derivatives instruments in Sweden by use of standardized options. It acquired the Stockholm Stock Exchange in 1998 and unsuccessfully attempted acquisition of the London Stock Exchange in 2001. In 2003 the Helsinki Stock Exchange was acquired and merged with the Stockholm Stock Exchange. On August 31, 2004, the brand name of the company was changed to OMX, previous names include OM HEX, OM and Optionsmarknaden (Option Market).²

The company is also a world leader in financial instruments trading systems and there are two main divisions of the company. OMX Technology, which develops and markets systems for financial transactions used by securities exchanges and OMX Exchanges, which operates stock exchanges in the Nordic and Baltic countries.³ OMX provides marketplace, solutions for the financial and energy market, and it operates the greatest securities market in this region. The market includes stock exchange in Stockholm, Helsinki, Tallin, Riga and Villnius. And it is listed in Stockholm Stock Exchange and Helsinki Stock Exchange.

The company offers complete solutions, from front office through trading, matching, clearing, settlement and depository, and back office all this makes OMX to the world's leading

² <http://www.webster-dictionary.org/definition/OMX> 2004-10-12

³ <http://www.webster-dictionary.org/definition/OMX> 2004-10-12

exchanges, clearing organizations, central securities depositories, banks, brokerage firms and other financial institutions. They can keep their promise “Efficient Securities Transactions” because they always put effort on how to simplify processes and try to come up with new structures and solutions for their customers.

On their homepage we can find massive financial information, that is. You can also obtain financial reports, analysts’ conferences and their financial statistics. Here we can study how the shares are developing.

The values used in this project regarding underlying and options are fully taken from the OMX stock exchange. Their homepage provides massive financial information such as stock prices, option prices, historical price, as well as continuous change in prices. Furthermore, the page provides graphs, tables and other means to compare relative prices, which makes it accessible to users. In this project, the values obtained from OMX are used in the test portfolio (testportföljen) in the avanza webpage⁴.

4 Trading in the real market

Ericsson, Telefonab. L M ser. B



Based on 6-month stock price history, we created our portfolio in www.avanza.se. It cost SEK 99 for each transaction made, we generated a portfolio consisting of 2500 shares of ERIC B. Considering the historical stock prices as can be seen from the chart above. We then presupposed a volatile market. Our decision was based on the fact that the stock prices have been fluctuating considerably in the interval [17.9, 24.3], and we decided to protect our investment against any significant movement in the stock prices by adopting a strategy called long strangle.

4.1 Long strangle

Our first strategy is long strangle. This strategy contains a long call and a long put with the same expiration date but different strike prices. In our case the expiration date is in the end of October 2004. The strike price for the long call option (ERICB4J22) is 22 SEK and the

⁴ <http://info.avanza.se/dsr/home/home.jsp>

premium was 0,74 SEK. We bought 2430 call options. The Strike price of the long put option (ERICB4V20) is 20 SEK and the premium was 0,20 SEK. We bought 1900 put options. We also bought 2500 stocks at a price 22,14 SEK. The total cost for this strategy is 57.533 SEK including the transaction costs (totally 297 SEK).

The table below summarizes the total value of the portfolio using this strategy after two trading days.

Värdepapper	Antal	Pris	Senast	Anskaffnings- kostnad	Marknads- värde	Orealiserat res. %
ERICB4J22	<u>2430</u>	0,74	1,20	1 800	2 916	62,00
ERICB4V20	<u>1900</u>	0,20	0,06	384	114	-29,7
Ericsson B	<u>2500</u>	22,14	23,00	55 349	57 500	3,89
Total				57 533	60 530	5,21

As we can see the value of our portfolio after two trading days increased with 2997 SEK (the value of the market today minus the cost of the portfolio).

Further observation of the stock prices showed continuous upward movement in the prices. We then presumed an increasing market and decided to adopt bullish strategies to rearrange our portfolio.

4.2 Bull Spread

Our second strategy is the Bull Spread (created 2004-09-29). We sold the call and the put option and bought another call option with a lower strike price. Our portfolio after these transactions consisted of stocks and the call option with the strike price 20 and the premium was 3,20 SEK as shown below.

2004-09-29	Bought	ERICB4J20	2430	3,20	-7875	
2004-09-29	Sold	ERICB4J22	2430	1,15	2695,5	
2004-09-29	Sold	ERICB4V20	1900	0,01	18,01	-7875 (+ 2793,51+ 18,01) = -5061,5

After implementing this strategy, which cost SEK 5061,5 in total indicating an increase in the total value of our portfolio to at least SEK 62561,5. This is so because if the stock price remains under the strike price of SEK 24, we could buy the stock at the market price and sell it at the strike price of SEK 24. If on the other hand the strike price will exceed the stock price at maturity, we wouldn't exercise the option; we instead sell the stocks at the spot price.

4.3 Fence

Here we believed that the market would remain positive according to the past few weeks. So we sold the option that we had in the Bull spread and bought call option instead to create a new strategy. We bought a call option that had a strike price of 22 and the premium 0,15. We got 8406 SEK from the sold call option, we used the money to buy the new options that cost 415,5 SEK.

2004-10-06	sold	ERICB4J20	2430	3,50	8506 +8506
2004-10-06	bought	ERICB4V22	2110	0,15	-415,5 -415,5 +8506 = 7990,5

4.4 Result

After we sold everything we calculated the total amount we spent on this strategies and what we have after the trading. We spent 63010 SEK and after trading we got 65648 SEK. So we made a profit of **2638 SEK**

Here is the list of transactions we made:

Date	Bought/ sold	Type of security	Number	Price	Cost/ payout	COST OF PORT 2
2004-09-27	b	Ericsson B	2500	22,10	-55349	
2004-09-27	b	ERICB4J22	2430	0,70	-1701+99	
2004-09-27	b	ERICB4V20	1900	0,15	-28599	- 57533
2004-09-29	b	ERICB4J20	2430	3,20	-777699	
2004-09-29	s	ERICB4J22	2430	1,15	279351	
2004-09-29	s	ERICB4V20	1900	0,01	1801	-7875 (+ 2794,5+ 18,01) = -5061,5
2004-10-06	s	ERICB4J20	2430	3,50	8506	+8506
2004-10-06	b	ERICB4V22	2110	0,15	-415,5	-415,5 = 7990,5
2004-10-13	s	ERICB4V22	2110	0,05	6,5	+6,5
2004-10-13	s	Ericsson B	2500	23,10	57651	+57651

5 Conclusion

To sum up, recall that our main intention in this project was to make use of trading strategies for bullish and volatile markets to trade and rearrange a portfolio that we would have created in advance with SEK 100,000 to spend. We started up by surveying the theory pertaining to the area and after presenting the Stockholm stock market, we involved into the real trading making use of three strategies to rearrange our portfolio over the period. As can be seen from the trading part of our report, not only did we make some profit, but we also have been able to accurately implement the strategies and interpret the results obtained. We have been able to make use of the theory to attain real solutions for real situations.

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