

**A STUDY ON OPTION TRADING STRATEGIES WITH REFERENCE
TO INDIAN BLUE CHIP COMPANIES**

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ABSTRACT

*The stock market as a market enables large number of investors and gamblers to invest their surplus funds in order to make returns as per their expectations. Stock market serves as good investment alternative whose return helps investors to beat the ongoing inflation. The stock exchanges acts as a platform for the traders to deal with stock markets. Investing in stock markets is beneficial as well as highly risky also because of the uncertainty and fluctuations of the share prices. To handle such risks one should plan well and follow some strategies. Derivatives as an instrument can help traders in managing the risk in stock markets. Traders can use derivatives as a **hedging tool** and thereby reduce the risk in their portfolio. To use derivatives one should have high knowledge about the derivatives markets and the strategies used, otherwise it may lead to huge losses. An **option** is a kind of derivative instrument which can be used as a powerful hedging tool if used properly. A research is done on the option trading strategies, as there are many such strategies, and tries to find out the optimum strategy. Option strategies help investors in managing portfolio. Once investor has found a stock through research and analysis he can make estimate about the direction, magnitude, and timing as best as possible of the future price movement after that investors can choose an appropriate option strategy. For this purpose this research taken seven option trading strategies and the spot prices of three companies and an analysis is done so as to find out the ideal strategy that can be used by the traders. This report seeks to utilize secondary method of data collection through journals, websites and books.*

Keywords: Options, Call, Put, Hedging, Portfolio Management, Synthetic long call etc.

1. INTRODUCTION

ABOUT THE RESEARCH

Options Contract is a type of Derivatives Contract which gives the buyer/holder of the contract the right (but not the obligation) to buy/sell the underlying asset at a predetermined price within or at end of a specified period. The buyer / holder of the option purchase the right from the seller/writer for a consideration which is called the premium. The seller/writer of an option is obligated to settle the option as per the terms of the contract when the buyer/holder exercises his right. The underlying asset could include securities; an index of prices of securities purchasing calls has remained the most popular strategy with investors since listed options were first introduced. Before moving into more complex bullish and bearish strategies, an investor should thoroughly understand the fundamentals about buying and holding call options. Option strategies help investors in managing portfolio. Once investor has found a stock through research and analysis he can make estimate about the direction, magnitude, and timing as best as possible of the future price movement after that investors can choose an appropriate option strategy.

OPTION TRADING STRATEGIES USED IN THE RESEARCH

Long Call

Purchasing calls has remained the most popular strategy with investors since listed options were first introduced. Before moving into more complex bullish and bearish strategies, an investor should thoroughly understand the fundamentals about buying and holding call options.

Long Put

A long put can be an ideal tool for an investor who wishes to participate profitably from a downward price move in the underlying stock. Before moving into more complex bearish strategies, an investor should thoroughly understand the fundamentals about buying and holding put options.

Short Call

A short call can be used when an investor is bearish about the stock. Short call involves selling a call option, but here the risk involved is unlimited and reward is limited to the premium.

Short Put

A short put is same as that of a short call except for the matter that in a short call put option is sold. Here also the risk is unlimited and reward is limited to the premium.

Synthetic Long Call

Synthetic long call involves buying the stock and buying a put option. Here the loss is limited to the stock price and the premium but the profit potential is unlimited.

Covered Call

The covered call is a strategy in which an investor writes a call option contract while at the same time owning an equivalent number of shares of the underlying stock. If this stock is purchased simultaneously with writing the call contract, the strategy is commonly referred to as a "buy-write." If the shares are already held from a previous purchase, it is commonly referred to an "overwrite."

Option contract

Options Contract is a type of Derivatives Contract which gives the buyer/holder of the contract the right (but not the obligation) to buy/sell the underlying asset at a predetermined price within or at end of a specified period. The buyer / holder of the option purchases the right from the seller/writer for a consideration which is called the premium. The seller/writer of an option is obligated to settle the option as per the terms of the contract when the buyer/holder exercises his right. The underlying asset could include securities, an index of prices of securities etc.

An Option to buy is called Call option and option to sell is called Put option. Further, if an option that is exercisable on or before the expiry date is called American option and one that is exercisable only on expiry date, is called European option. The price at which the option is to be exercised is called Strike price or Exercise price.

PRICING OPTIONS

For option pricing this research use following models:

Black-Scholes Model

The Black-Scholes (1973) option pricing formula prices European put or call options on a stock that does not pay a dividend or make other distributions

The Mode

$$OP = SN(d_1) - Xe^{-rt} N(d_2)$$

Where:

$$d_1 = \ln\{S/X\} + \{r + v^2/2\}t$$

$$d_2 = d_1 - v\sqrt{t}$$

The variables are:

S = stock price

X = strike price

t = time remaining until expiration, expressed as a percent of a year

r = current continuously compounded risk-free interest rate

v = annual volatility of stock price (the standard deviation of the short-term returns over one year).

ln = natural logarithm

N(x) = standard normal cumulative distribution function

e = the exponential function

2. MAIN THEME OF THE RESEARCH

OBJECTIVE OF THE RESEARCH

Setting an Objective is the first and one of the most important stages of any report.

The objectives of our research are:

- To suggest how to reduce risk in portfolio management.
- To show how options can be used as a hedging tool.
- To implement option strategy in different market trends.
- To analyze the option trading strategies and suggest the more ideal one.

SCOPE OF THE RESEARCH

Along with options, futures can also be included in this research for further research. Only seven option strategy has been taken for this research so still many more option strategy can be included in further research. Even many more companies can be analyzed based on spot price and option price to make this research more effective.

Derivatives are useful hedging tool at the same time it is very risky. This is because risk is unlimited as well as the reward is also unlimited. Trading strategies are very essential to be followed to trade safely in derivatives.

The research analyses the seven option trading strategies and they are used with the spot prices of three different companies. Each strategy has different effects on the spot prices. The risk and return pattern also differs. This gives the investor to identify the ideal strategy for trading.

LIMITATIONS OF RESEARCH

- Time is the most important constraints in carrying out this project.
- This research has been limited to 6 months data.
- All the option strategies cannot be implemented in NSE option segment there are some difficulties in it.
- In NSE only limited stocks are traded in option so the investors have only limited options.

RESEARCH METHODOLOGY

The research is descriptive in nature. The research is based on facts and figure, and with the help of primary and secondary data, the required information is obtained for the research.

i. NATURE OF DATA

This research involves only secondary data

ii. RESEARCH DESIGN

The type of research design used in this research was Descriptive research, because it helps to describe a particular situation prevailing within a company. Careful design of the descriptive studies was necessary to ensure the complete interpretation of the situation and to ensure minimum bias in the collection of data.

Descriptive Researches are those studies which are concerned with describing the characters of a particular individual or group or concept.

iii. SAMPLING PLAN

Only 202 securities are available for the research because only those securities are allowed by SEBI for option trading. Out of this 3 companies are taken for research because of time constraint. These 3 companies are selected on the basis of their trade volume.

iv. DATA COLLECTION METHOD

For the survey, we have taken the help of secondary data fully. It includes books, journals, websites and other literatures.

REVIEW LITERATURE

1. National Stock Exchange Of India Ltd (2009) in "*Option Strategy*" revealed the optionality characteristic of options results in a non-linear payoff for options. In simple words, it means that the losses for the buyer of an option are limited; however the profits are potentially unlimited. For a writer (seller), the payoff is exactly the opposite. His profits are limited to the option premium; however his losses are potentially unlimited. These nonlinear payoffs are fascinating as they lend themselves to be used to generate various payoffs by using combinations of options and the underlying. We look here at the six basic payoffs (pay close attention to these pay-offs, since all the strategies in the book are derived out of these basic payoffs).

2. Carolyn Anderson (2009) in his research "*Option Trading Is another Investment Vehicle*" he discusses basic concepts of trading options are the put and call options, short and long positions, intrinsic and time value, and speculation and hedging. Options have more risk than stocks because their initial value declines as day passes until it becomes worthless when it expires thus, the sooner you sell them the better. Remember also that those that are always nearest to the money trade have the lower risk and the ultimate power of options lies solely in their versatility.

3. Mr. Hans Stoll (1969) in his research "*The Relation between Put and Call Prices*" finds out how the premium of a call option implies a certain fair price for the corresponding put option having the same strike price and expiration date, and vice versa. Support for this

pricing relationship is based upon the argument that arbitrage opportunities would materialize if there is a divergence between the value of calls and puts. Arbitrageurs would come in to make profitable, riskless trades until the put-call parity is restored. The two portfolios have the same expiration value, then they must have the same present value. Otherwise, an arbitrage trader can go long on the undervalued portfolio and short the overvalued portfolio to make a risk free profit on expiration day. Hence, taking into account the need to calculate the present value of the cash component using a suitable risk-free interest rate, we have the following price equality

4. Tim Plaehn in the year 2006 published a article on “*Stock Options, Strategies*” which says that Stock options are derivative securities that give the holder the right to buy or sell the underlying stock at a set price, called the exercise price, for a fixed period. There are developed strategies using options for both conservative and aggressive investors. Different option strategies will provide profits in rising, falling or neutral markets. The beginning option investor needs to do her homework and pick strategies that fit her investment goals. The effect of broker commissions must be accounted for when calculating possible returns of different option strategies. Commissions and bid/ask spreads can have a significant impact on final profitability.

5. Peter Navarro (on November 9, 2009) published a article on “*Preface to The Volatility Edge in Options Trading*” where if one thing isn’t true, then the opposite must be true. Therefore, if time decay hurts us when we buy options, it must help us when we sell options. Because time value decreases (or time decay increases) exponentially during the last month to expiration, we typically don’t like to own options into that last month, but we do like to sell options with one month left to expiration. With these four strategies, we would buy calls and puts with at least three months (or more) left to expiration, thereby looking for the options to increase in value during that time. We would short calls and puts with a month or less to expiration, thereby looking for short-term income as the option hopefully expires worthless.

3. ANALYSIS AND INTERPRETATION

The companies selected for this research is 3

1. Delhi Lease and Finance (DLF)
2. Infosys
3. State bank of India (SBI)

Analysis part deals with three companies of Delhi Lease and Finance (DLF), INFOSYS, and State Bank of India (SBI) the analysis have been done from August to November on spot price and based on that option strategies have been selected. Only seven option strategies have been analyzed they are long call, short call, long put, short put, synthetic long call, covered call and collar.

1.1. DLF- LONG CALL

The following table shows the long call strategy of Delhi Lease and Finance (DLF)

TABLE: 1.1					
DLF - LONG CALL (Strategy: Buy Call Option)					
Month	Strike price	Premium	Breakeven point	Spot price	Pay off
AUGUST	270	50.3	320.3	424.15	103.85
SEPTEMBER	370	55	425	438	13
OCTOBER	390	49	439	471.95	32.95
NOVEMBER	340	23.3	363.3	390.05	26.75

When to Use: Investor is very **bullish** on the DLF stock.

Risk: Limited to the Premium. (Maximum loss if market expires at or below the option strike price).

Reward: Unlimited

Breakeven: Strike Price + Premium

		July	August	September	October	November
Spot price	Low	269.6	362.1	391.35	370.25	335.65
Spot price	High	425.9	424.15	438	471.95	390.05

The above table 1.1 shows the payoff for four months from August to November. Based on July months low and high price the long call option is bought in the month of august in this option strategy the investor is bullish. So he can buy option at strike price 270 for a premium of 50.3 .august month highest spot price is 424.15 if the call option is assigned against the seller of call option the profit for the investor is 103.85.

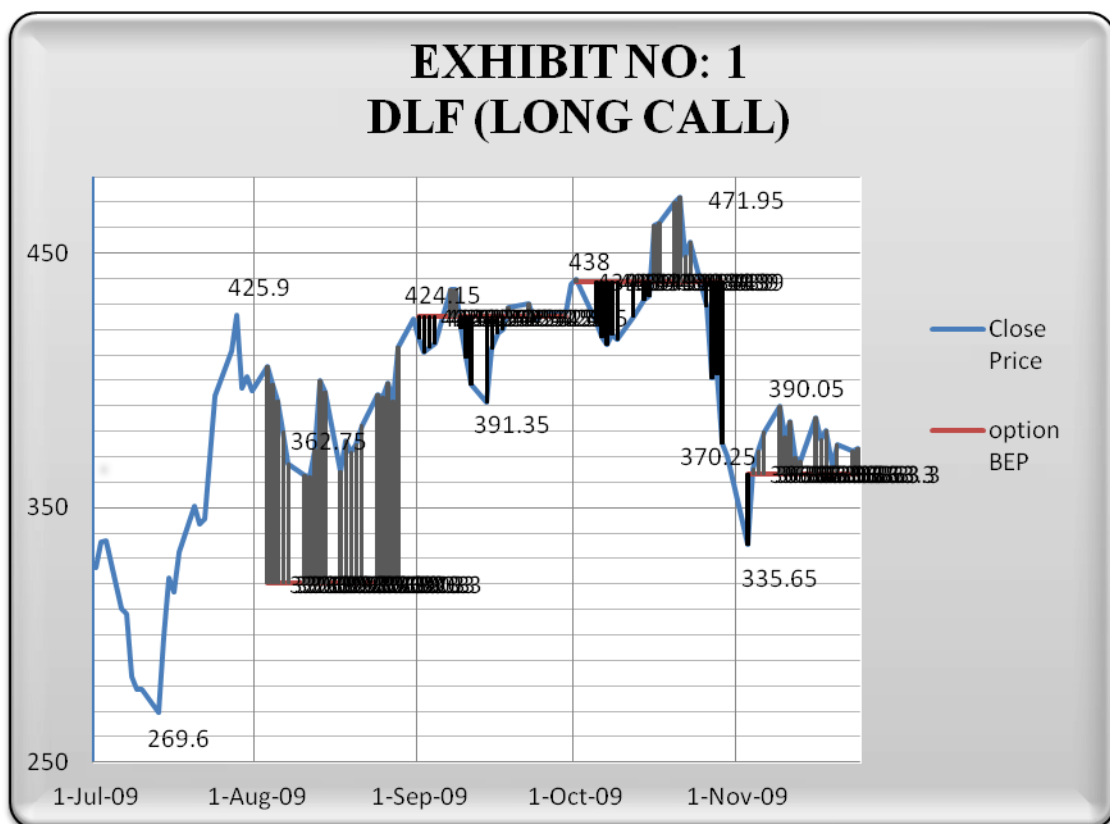


Fig.1 DLF (Long call)

1.2 DLF- SYNTHETIC LONG CALL

The following table 1.2 shows the synthetic long call strategy of Delhi Lease and Finance (DLF)

TABLE 1.2						
DLF-SYNTHETIC LONG CALL(Strategy :Buy Stock + Buy Put Option)						
Month	Strike price	Premium	Spot price buy	Breakeven point	Selling price	Pay off
AUGUST	410	35.2	362.1	397.30	424.15	26.85
SEPTEMBER	420	26.05	391.35	417.40	438	20.60
OCTOBER	430	16.5	370.25	386.75	471.95	85.20
NOVEMBER	470	72.7	335.65	408.35	390.05	-18.30

When to use: When ownership is desired of stock yet investor is concerned about near-term downside risk. The outlook is conservatively bullish.

Risk: Losses limited to Stock price + Put Premium – Put Strike price

Reward: Profit potential is unlimited.

Break-even Point: Put Strike Price + Put Premium + Stock Price – Put Strike Price

		July	August	September	October	November
Spot price	Low	269.6	362.1	391.35	370.25	335.65
Spot price	High	425.9	424.15	438	471.95	390.05

The above table 1.2 shows the payoff for four months from August to November. In this strategy the investor first buys stock and then buys a put option to protect himself from fall in stock price. in above table we can clearly see that in first three months he got profit but in November he has got loss because the spot price has dropped below his expectation.

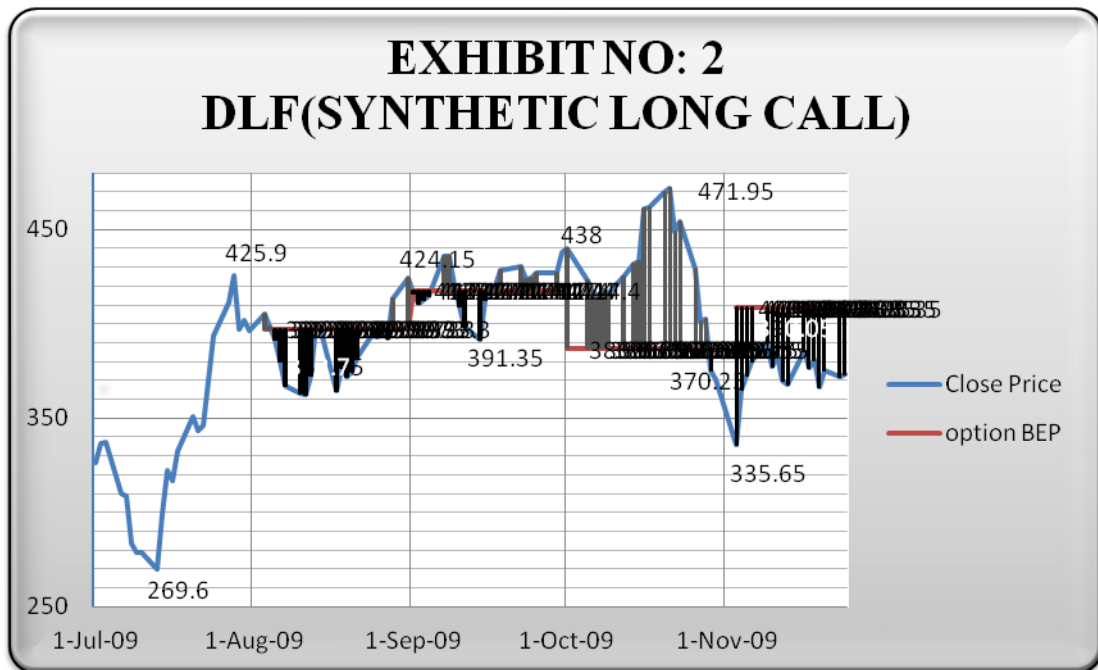


Fig.2 DLF (Synthetic Long Call)

2. INFOSYS- LONG CALL

The following table 2.1 shows the long call strategy of INFOSYS

TABLE: 2.1					
INFOSYS- LONG CALL(Strategy :Buy Call Option)					
Month	Strike price	Premium	Breakeven point	Spot price	Pay off
AUGUST	1680	100	1780	2,191.80	411.8
SEPTEMBER	1980	239	2219	2,410.15	191.15

OCTOBER	2160	116	2276	2,336.75	60.75
NOVEMBER	2190	92.1	2282.1	2,434.70	152.6

When to Use: Investor is very **bullish** on the Infosys stock.

Risk: Limited to the Premium. (Maximum loss if market expires at or below the option strike price).

Reward: Unlimited

Breakeven: Strike Price + Premium

		July	August	September	October	November
Spot price	Low	1,677.55	1,951.50	2,144.90	2,177.60	2,143.05
Spot price	High	2,027.90	2,191.80	2,410.15	2,336.75	2,434.70

The above table 2.1 shows the payoff for four months from August to November. This strategy limits the downside risk to the extent of premium paid by investor. But the potential return is unlimited in case of rise in stock price. A long call option is the simplest way to benefit if you believe that the market will make an upward move and is the most common choice among first time investors in Options. As the stock price rise the long Call moves into profit more and more quickly.

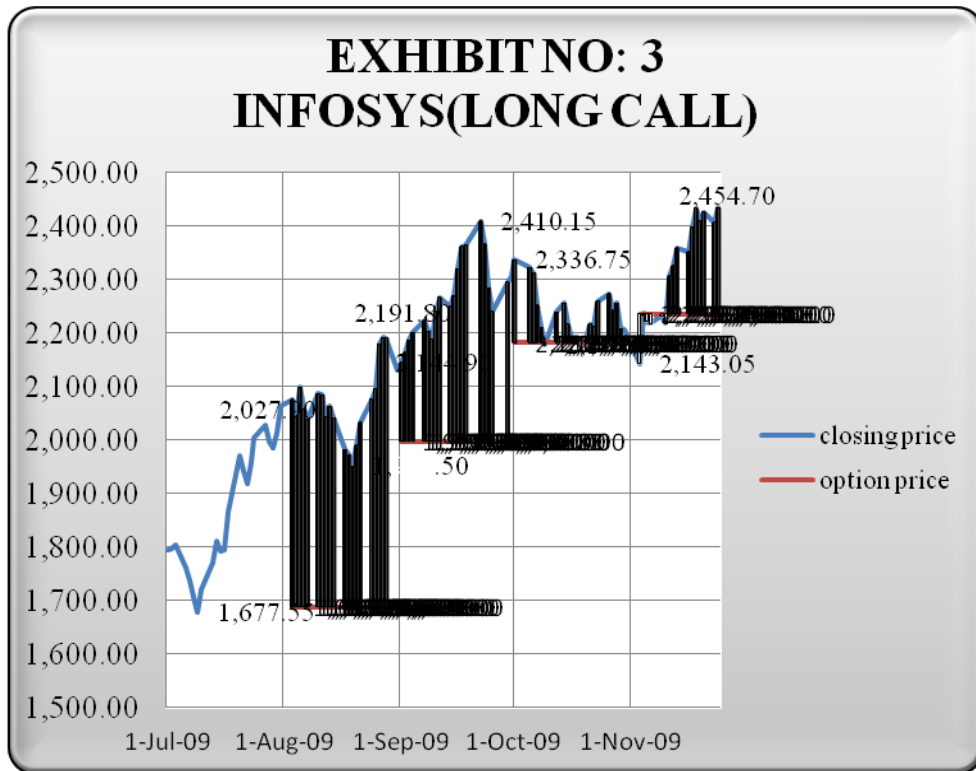


Fig.3 Infosys (Long Call)

2.2 INFOSYS- SYNTHETIC LONG CALL

The following table 2.2 shows the synthetic long call strategy of INFOSYS

When to use: When ownership is desired of stock yet investor is concerned about near-term downside risk. The outlook is conservatively bullish.

Risk: Losses limited to Stock price + Put Premium – Put Strike price

Reward: Profit potential is unlimited.

Break-even Point: Put Strike Price + Put Premium + Stock Price – Put Strike Price

		July	August	September	October	November
Spot price	Low	1,677.55	1,951.50	2,144.90	2,177.60	2,143.05
Spot price	High	2,027.90	2,191.80	2,410.15	2,336.75	2,434.70

The above table 2.2 shows the payoff for four months from August to November. This is a low risk strategy. This is a strategy which limits the loss in case of fall in market but the potential profit remains unlimited when the stock price rises. A good strategy when you buy a stock for medium or long term, with the aim of protecting any downside risk. The pay-off

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TABLE: 2.2						
INFOSYS-SYNTHETIC LONG CALL(Strategy :Buy Stock + Buy Put Option)						
Month	Strike price	Premium	Spot price buy	Breakeven point	Selling price	Pay off
AUGUST	2010	52.5	1,951.50	2,004.00	2,191.80	187.80
SEPTEMBER	2190	110	2,144.90	2,254.90	2,410.15	155.25
OCTOBER	2400	185	2,177.60	2,362.60	2,336.75	-25.85
NOVEMBER	2340	118.45	2,143.05	2,261.50	2,434.70	173.20

called as Synthetic Long Call. As we can see in the table the loss occurs in October month of Rs 25.85. In other months the profit is huge.

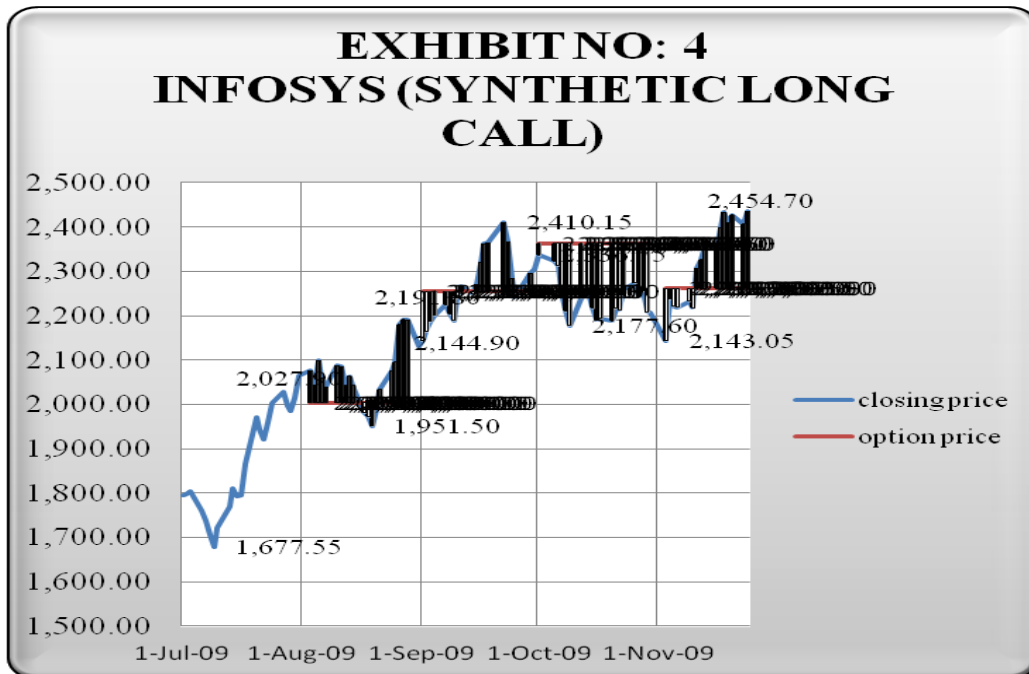


Fig.4 Infosys (Synthetic Long Call)

TABLE: 3.1					
SBI- LONG CALL(Strategy :Buy Call Option)					
Month	Strike price	Premium	Breakeven point	Spot price	Pay off
AUGUST	1560	270	1830	1,857.45	27.45
SEPTEMBER	1710	81.9	1791.9	2,194.95	403.05
OCTOBER	1740	191.8	1931.8	2,470.85	539.05
NOVEMBER	2070	119	2189	2,378.25	189.25

3.1 SBI - LONG CALL

The following table 3.1 shows the long call strategy of State Bank of India (SBI)

When to Use: Investor is very **bullish** on the SBI stock.

Risk: Limited to the Premium. (Maximum loss if market expires at or below the option strike price).

Reward: Unlimited

Breakeven: Strike Price + Premium

		July	August	September	October	November
Spot price	Low	1,543.65	1,691.10	1,733.20	2,067.55	2,103.00
Spot price	High	1,811.65	1,857.45	2,194.95	2,470.85	2,378.25

The above table 3.1 shows the payoff for four months from August to November. Based on July months low and high price the long call option is bought in the month of

august in this option strategy the investor is bullish. Only in the month of August the payoff is low other three months the payoff is very high.

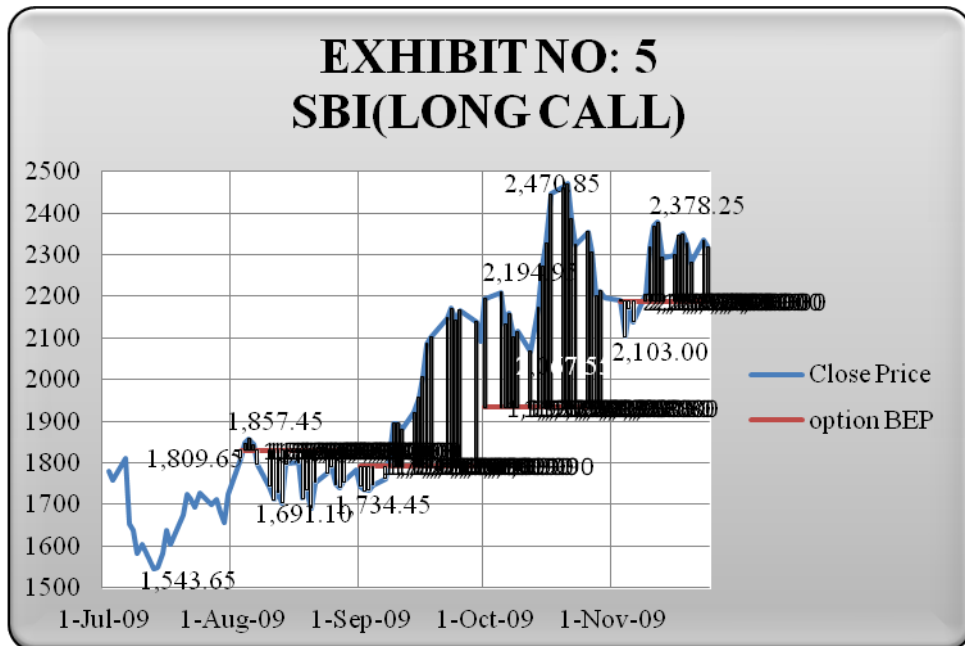


Fig.5 SBI (Long call)

3.2 SBI - SYNTHETIC LONG CALL

The following table 3.2 shows the synthetic long call strategy of State Bank of India (SBI).

When to use: When ownership is desired of stock yet investor is concerned about near-term downside risk. The outlook is conservatively bullish.

Risk: Losses limited to Stock price + Put Premium – Put Strike price

Reward: Profit potential is unlimited.

Break-even Point: Put Strike Price + Put Premium + Stock Price – Put Strike Price

		July	August	September	October	November
Spot price	Low	1,543.65	1,691.10	1,733.20	2,067.55	2,103.00
Spot price	High	1,811.65	1,857.45	2,194.95	2,470.85	2,378.25

The above table 3.2 shows the payoff for four months from August to November. This is a bullish strategy and the price of the stock is also keep on moving up from August to October only in November the price has fallen little bit the payoff is also to high for every

TABLE: 3.2						
SBI-SYNTHETIC LONG CALL(Strategy :Buy Stock + Buy Put Option)						
Month	Strike price	Premium	Spot price buy	Breakeven point	Selling price	Pay off
AUGUST	1800	66.35	1,691.10	1,757.45	1,857.4	100.00
SEPTEMBER	1830	97.6	1,733.20	1,830.80	2,194.9	364.15
OCTOBER	2190	81.75	2,067.55	2,149.30	2,470.8	321.55
NOVEMBER	2190	155.81	2,103.00	2,258.81	2,378.2	119.44

month only in November the payoff is low because the prices has fallen.

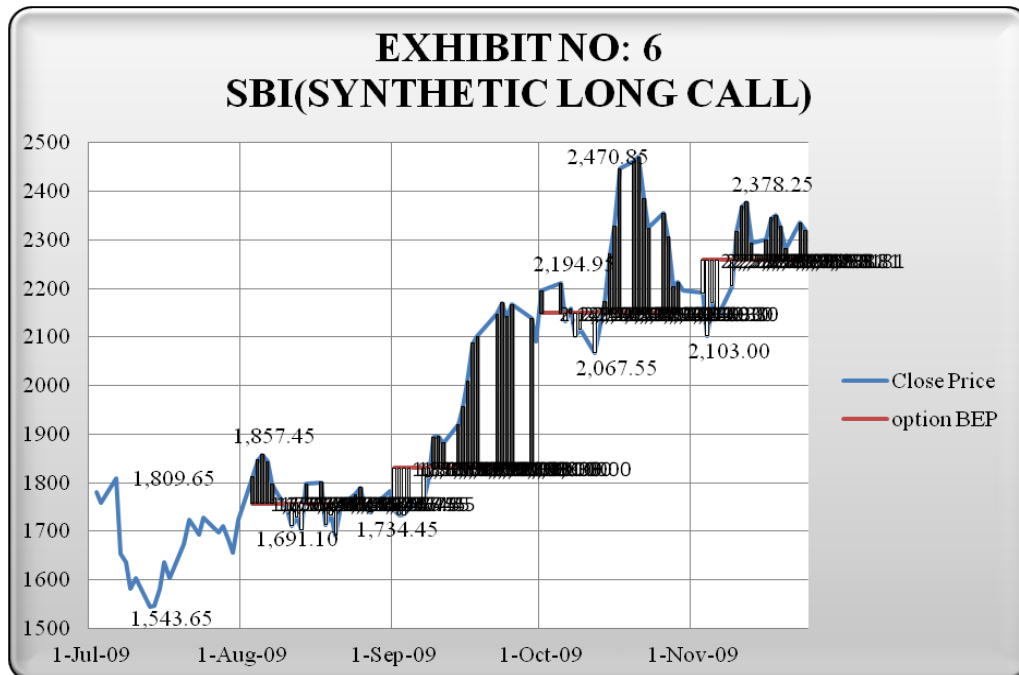


Fig.6 SBI (Synthetic Call)

4. FINDINGS, RECOMMENDATIONS AND CONCLUSIONS

4.1 FINDINGS

The major findings of the studies are as follows

- Only buying a call option an investor can definitely earn profit. Tables of long call of each company show it clearly shows that the pay off of each month is in positive.

- Selling a call option is more risky than buying call option because the risk is unlimited and reward is limited to premium amount, In exhibit no 2 it is found that in the month of October the price are above the breakeven point this will lead to loss for investor if call option buyer executes the contract when the investor is in profit.
- In Long put the investors has only little opportunity because the price of all the stock was more bullish during the research, but still the investors can earn profit when contract are executed when pay off is in positive.
- Short put strategy is risky strategy; it has to be selected carefully. But last month prices has helped the investor in most of the situation only reliance share prices are more bearers so the investors dealing it that stock option has to suffer loss .
- Synthetic Long Call has helped investor in both trend if the stock price is bearish the loss is limited to premium but in this research almost all the time investor has positive pay off.

4.2 RECOMMENDATIONS

- ✓ If investors want to deal only in option they can deal in Long Call, Short Call, Long Put and Short Put if the investor buying call or put option has to invest the amount of premium per call along with lot size of that particular underlying security.
- ✓ It is recommended that the investors selling option have unlimited risk, he should be little bit careful in selecting short call and short put.
- ✓ Last month spot price of underlying security gives a some indication towards movement of underlying price of the next month, but other factors should also be consider before investing.

4.3 CONCLUSIONS

❖ From the above research it is been concluded that using option strategies helps investors in managing portfolio. Once investor has found a stock through research and analysis he can make estimate about the direction, magnitude, and timing as best as possible of the future price movement after that investors can choose an appropriate option strategy.

❖ Before considering any option strategy, the first step is to look at the implied volatility of the underlying stock. Any strategy or position is made up of a combination of one or more of these components, either short or long. With these three components, the investors can establish a stock or option position or a combination of the two that covers any investment outlook or scenario. However, there is a fundamental relationship among these three components that most traders may be unaware of. It is important for investors to understand this relationship because investors can exploit it to create trades that have higher returns on investment and provide better use of the capital.

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