

“Earning Potential of Covered Call Writing and Protective Put - Derivatives Strategies”

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ABSTRACT

Options based investment strategies are very popular in investment and portfolio management. An investor having a long position in a stock might want to modify the risk return profile of his investments without selling the position. Adding options can be a useful way for a portfolio manager to modify his equity position as market scenarios change. In recent years, there has been a rising interest in option strategies in the Indian Derivatives Market. The presence of stock options and other financial derivatives in the Indian Market have provided an opportunity to apply stock options and derivatives strategies. This paper has analysed the profit potential of two derivatives options strategies namely, Covered Call Writing and Protective Put in the context of Indian Derivatives Market. The analysis has been done using actual historical data of National Stock Exchange's primary index, CNX Nifty 50 for a period of 5 years. The period ranges from April 01, 2011 to March 31, 2016. Monthly returns under both the strategies have been analysed and compared against the buy and hold strategy in CNX Nifty 50. The findings of the research reveal that the above strategies do not have earning potential in the Indian Derivatives Market. The main reason behind such result is the high implied volatility in the Indian Stock Market which drives up the options prices.

INTRODUCTION

Derivatives Defined

A Derivative security is a financial contract whose value is derived from the value of some underlying asset, such as a stock, a commodity, an exchange rate, an interest rate, or even an index of prices.

In the Indian context, the Securities Contracts (Regulation) Act, 1956 (SC(R) A) defines "Derivative" to include-

1. A security derived from a debt instrument, share, loan whether secured or unsecured, risk instrument or contract for differences or any other form of security.
2. A contract which derives its value from the prices, or index of prices, of underlying securities.

Derivatives are securities under the SC(R) A and hence the trading of derivatives is governed by the regulatory framework under the SC(R)A.

Derivatives Products – Stock Options

Following is a brief description about Futures and Stock Options and its characteristics

- **Futures**

A futures contract is a standardized exchange traded forward contract between two parties to buy or sell an asset at a certain time in the future at a certain price. In futures, the counterparty is derivative exchange and hence the counterparty risk is negligible. The liquidity of futures is high as it is market traded instrument.

- **Stock Options**

Stock Options are derivative securities which gives the holder right (but not an obligation) to buy or sell the underlying security at a predetermined price (exercise price or strike price) on or before expiration period.

Characteristics of Stock Options Contract

a. Call Options and Put Options

- i. Call Options give the buyer the right but not the obligation to buy a given quantity of the underlying security, at a given price on or before a given future date.
- ii. Put Options give the buyer the right, but not the obligation to sell a given quantity of the underlying security, at a given price on or before a given date.

b. American vs European Options

- i. An American Option can be exercised by its owner at any time on or before the expiration date.
- ii. A European Option can be exercised by its owner only on the expiration date and not before it.

c. In-the-money (ITM), At-the-Money (ATM) and Out-of-the-Money (OTM) Options

- i. A Call Option is said to be ITM if the price of the stock is greater than the exercise price, while if the stock price is smaller than the exercise price, the Call is said to be OTM. If the Stock price is equal to the exercise price, then the Call is said to be ATM.
- ii. A Put option is said to be ITM if the price of the stock is less than the exercise price, while if the stock price is greater than the exercise price then the Put is said to be OTM. If the stock price is equal to the exercise price, then the Put is said to be ATM

Options Strategies

Combining any of the four basic kinds of option trades (Long Call, Short Call, Long Put and Short Put) and the two basic kinds of stock trades (long and short) allows a variety of options strategies. There are various types of option strategies such as Covered Call Writing, Protective Put, Money Spread, Time Spread and Calendar Spread, Butterfly, Box Spread and Combination strategies like STRIPs, STRAPs, Straddle, Strangle etc.

1. Covered Call Writing

Covered Call Writing: The Covered Call Writing is a strategy in which an investor sells (writes) a Call option on a stock in which he is long. The Call Option which is sold is usually an OTM Call. The Call would not get exercised unless the stock price increases above the strike price. Till then the investor in the stock (Call seller) can retain the Premium with him and also gain on his long position in the stock. This strategy is usually adopted by a stock owner who is Neutral to Moderately Bullish about the stock.

2. Protective Put Strategy:

Protective Put involves buying one put option for every share of the underlying stock owned. The Put option bought is usually an OTM Put as it reduces the option premium. This put provides the owner the right, but not the obligation, to sell the shares at the strike price at the time the option expires, no matter how low the stock declines in value. It is just like insurance against the downside price movement for which the investor pays a premium (the purchase price paid for the put). A protective put is a risk-management strategy that investors can use to guard against the loss of unrealized gains.

The strategy's upside profit potential is unlimited as long as the price of the underlying stock continues to rise. However, purchasing a protective put in effect increases the purchase price of the stock by the premium paid for the option contract.

REVIEW OF LITERATURE

Merton, Scholes and Gladstein (1978) wrote one of the first papers about option strategies. They wanted to show how investors could benefit from the use of option strategies, which at that time became massively available. Their purpose was to show the return characteristics of two different option strategies, a fully covered writing strategy and a buying strategy combining the purchase of options and riskless commercial paper, and to demonstrate how option strategies can change the risk return patterns of the underlying stocks. The writers concluded from the following results that the Covered Call strategy will do best when the market is stable. Furthermore, they conclude that the buying the strategy will do best when the market is very volatile. They do not give an answer to the question if options strategies deliver higher returns than stocks; however, this was not the purpose of their paper.

Trennepohl and Dukes (1981) investigated the performance of option writing and buying strategies using in-the-money (ITM) and out-of-the-money (OTM) options, and found that covered option writing lowers portfolio standard deviation and improves portfolio mean returns. The study also concluded that OTM options are more preferred over ITM options by investors. The study suggested that using derivatives options trading strategies could lead to improved and more stable returns.

Bookstaber and Clarke (1984) compared the performance of protective-put, covered-call, and pure-stock strategies, and found that call writing is better than put buying in terms of expected return and volatility, but that the former truncates the right-hand side of a distribution causing undesirable negative skewness, while put-buying truncates the left-hand side of a distribution causing desirable positive skewness.

Castellano and Giacometti (2001) compared the performance of protective-put and covered-call strategies to the performance of holding an unhedged currency portfolio and found that the option strategies perform better than the optimal naked portfolios and the protective-put strategy performs well for different VaR models.

Isakov and Morard (2001) investigated the performance of a global investment strategy that combines diversification and option strategies, in particular the Covered Call strategy, and found that the use of option strategies consistently improves the performance of stock portfolios, even in the presence of transaction costs.

Pol Verschaeren (2006) tested every single stock on the DOW JONES 30 with different strategies related to derivatives options. The study concluded that returns on long calls; long puts, long straddles and long strangles exceed the returns on the underlying stocks.

Abid et al (2006) investigated the performance of option strategies, including writing OTM covered-call and buying ITM Protective Put, with that of the pure-stock investment, and found that, in general, the buying ITM protective-put strategy has the best performance, followed by the writing OTM covered-call strategy, both out-performing the naked stock.

McIntyre and Jackson (2006) examined the empirical performance of an investment strategy that uses Covered Call writing to enhance the income from long positions in 27 stocks that are included in the FT-SE 100 Index. Data was collected for the period January 1994–December 1999. Results showed that, contrary to

theory; in most instances Covered Call positions generate returns that exceed returns generated by buy-and-hold strategies.

Santa-Clara and Saretto (2009) investigated in the risk and return of option strategies. They used data from January 1985 to December 2002 on option listed on the S&P 500 and used a lot of different strategies, involving naked and Covered Calls and puts, with different expiration dates and exercise prices. Their results show that in general naked calls deliver positive returns but this comes with high volatilities. Covered Call positions provide the same positive average returns as the underlying stocks but with lower risk than the underlying stocks. Protective Puts, a long position in the stock and a long position in the put option, have lower returns than Covered Calls but also have lower volatilities.

Leggio and Lien (2010) researched Covered Call investment in a Loss Aversion Framework. They used S&P 500 Index to create a Covered Call strategy. They presumed that investor buys S&P 500 and sell options. Then they compare the returns of this portfolio with the returns of simply holding S&P 500. They evaluated the returns using prospects theory as well as Markowitz mean variance efficient utility. The results for returns in mean variance framework were mixed. When considering the loss aversion utility function, however the Covered Call strategy is the superior investment strategy for all investing time frames. They concluded that the use of a more representative investor utility function justifies the existence of a Covered Call strategy. Hoffmann and Fischer (2012) presented a study on behavioral aspects of options strategies, focusing mainly on the 'Covered Call Writing'. The study showed that there exists a positive relationship between risk aversion and Covered Call preference when profit lines of the Covered Call and stock only positions are shown on the graphs. They also found out that more preference is given to OTM calls than ITM calls.

Simon David P. (2013) examined Covered Call strategies on QQQ Stock from January 2002 to January 2012. His findings suggested that downside risk-adjusted returns are attractive both on an absolute basis and relative to those of long QQQ positions.

Shah (2015) tested the bull call debit spread strategy on Nifty Index Options. The objective of the study is to back test the Bull Call debit spread strategy for a time period long enough to cover the various practical scenarios of the capital market

SCOPE OF THE STUDY

As do the aforementioned studies, this paper evaluates the profit potential of the two derivatives strategies that is, Covered Call Writing and Protective Put. The literature is extended in the area that this study focuses on the Indian Derivatives Market. The paper analyses the above strategies in the futures and options segment of CNX Nifty 50 index of the National Stock Exchange of India.

CNX NIFTY 50 INDEX

The CNX **NIFTY 50** index is National Stock Exchange of India's benchmark stock market index for Indian equity market. Nifty is owned and managed by India Index Services and Products Ltd. (IISL), which is a wholly owned subsidiary of the NSE Strategic Investment Corporation Limited.

NIFTY 50 Index has shaped up as the largest single financial product in India, with an ecosystem comprising: exchange traded funds (onshore and offshore), exchange-traded futures and options (at NSE in India and at SGX and CME abroad), other index funds and OTC derivatives (mostly offshore). NIFTY 50 is the world's most actively traded contract. The NIFTY 50 covers 22 sectors of the Indian economy and offers investment managers exposure to the Indian market in one portfolio.

The NIFTY 50 index is a free float market capitalisation weighted index. The Nifty 50 index tracks the behaviour of a portfolio of blue chip companies, the largest and most liquid Indian securities. It includes 50 companies listed on the NSE, captures approximately 65% of its float adjusted market capitalization. The index was initially calculated on full market capitalisation methodology. From June 26, 2009, the computation was changed to free float methodology. The base period for the CNX Nifty index is November 3, 1995, which marked the completion of one year of operations of National Stock Exchange Equity Market Segment. The base value of the index was set at 1000, and a base capital was 2.06 trillion.

Trading in derivative contracts based on Nifty 50 The National Stock Exchange of India Limited (NSE) commenced on June 12, 2000. The futures contracts on the NSE are based on the Nifty 50. The exchange introduced trading on index options based on the Nifty 50 on June 4, 2001. The CNX Nifty is professionally maintained and is ideal for Derivatives trading. (*source:www.wikipedia.org*)

RESEARCH METHODOLOGY

Nature of Research

This research is exploratory in nature. The CNX Nifty 50 index has been selected as the sample for this study. The entire study is based on secondary data.

Collection of Data

For Spot prices, Futures prices, Strike prices and Option prices, the researcher has referred to historical data section of NSE's official website www.nseindia.com

Period of Study

The paper studies the profit potential of the above mentioned 2 strategies in the above index for a period of 5 years (60 Monthly contracts) starting from April 1, 2011 and to March 31, 2016.

Methodology

For both the strategies, instead of taking a long position in the spot market, one-month futures contracts are bought at the opening price. Buying futures reduces the amount of initial investment as only margin amount is to be deposited. On the date of expiry of the contract if the settlement price on the futures is more (less) than the purchase price, the profit (loss) has been duly recorded.

For selecting the strike price for options under Covered Call Writing and Protective Put, following methodology has been used

For Covered Call Writing–

For Covered Call Writing, on the date when futures are bought, nearest OTM calls are written and the premium received is duly recorded. The Strike price which is just above the Opening Futures price of the stock have been selected as the OTM Call. The reason for writing OTM calls instead of ATM or ITM calls is that OTM Calls enables us to speculate between the price of the stock and the strike price. At the expiry of the contract, if the call option expires in the money, then our net outflow will be Option payoff reduced by amount of option premium. If the Call Option expires out of the money then the amount of premium received is our profit. This strategy is best suited if the price of the stock falls between the spot price at the beginning of the contract and the strike price of the call option.

For Protective Put –

For protective put, on the date when futures contracts are bought, nearest OTM puts are bought and the premium paid is recorded as outflow. The strike price which is just below the opening futures price is selected as the OTM Put. The reason for buying OTM Put is that OTM Put is less costly than ITM and ATM Put. At the expiry of the contract, if the PUT expires in the money then the difference between the settlement price and the strike price is recorded as profit along with the loss on futures contract. If, however, the PUT expires out of the money, then the option is allowed to expire worthless and profit on futures is recorded.

Lot Size

The actual lot sizes have been used as prevalent in a month.

- a. Lot size of 50 for contracts expiring on April 28, 2011 to 30 October, 2014
- b. Lot size of 25 for contracts expiring on November 29, 2014 to October 29, 2015
- c. Lot size of 75 for contracts expiring on November 29, 2015 to March 31, 2016

Assumptions

Following points are important to understand the results of the analysis

1. The new contract is bought the next working day when the last contract has expired
2. Once a contract expires, it is assumed that on the next working day, one month Call and Put options as relevant to the strategy are bought or sold and the process continues for all the 60 months covered in the study.
3. Brokerage has been assumed to be 0.01% of the contract value of options and 0.01% of the contract value of futures. Also for calculating returns on traditional Nifty investment brokerage has been assumed to be 0.01% of the total purchase value.
4. For options that are written (sold), initial margin amount has been assumed to be 10% of the Contract Value of Option as reduced by the amount of premium received.
5. The interest on margin amount has been calculated at 10% p.a. on monthly basis assuming each contract is for 30 days and 360 days in a year.

Limitations

1. The study is based on only one index of the National Stock Exchange of India, CNX Nifty 50
2. Only those options which have expiry of one month are bought or sold
3. Options expiring after a period of more than one month have been ignored as steady quotes are not available for them for the entire period under study
4. Early exercise of options has been ignored to provide simplicity and uniformity in the analysis. American Options can be exercised early if the option holder wishes so, which can affect the result of the analysis.
5. During the study, it was observed that on some days, a nearest OTM strike price would have no opening option prices, therefore on those dates the settlement price has been used instead of the opening price.

**ANALYSIS OF DATA
Covered Call Writing
Table 1**

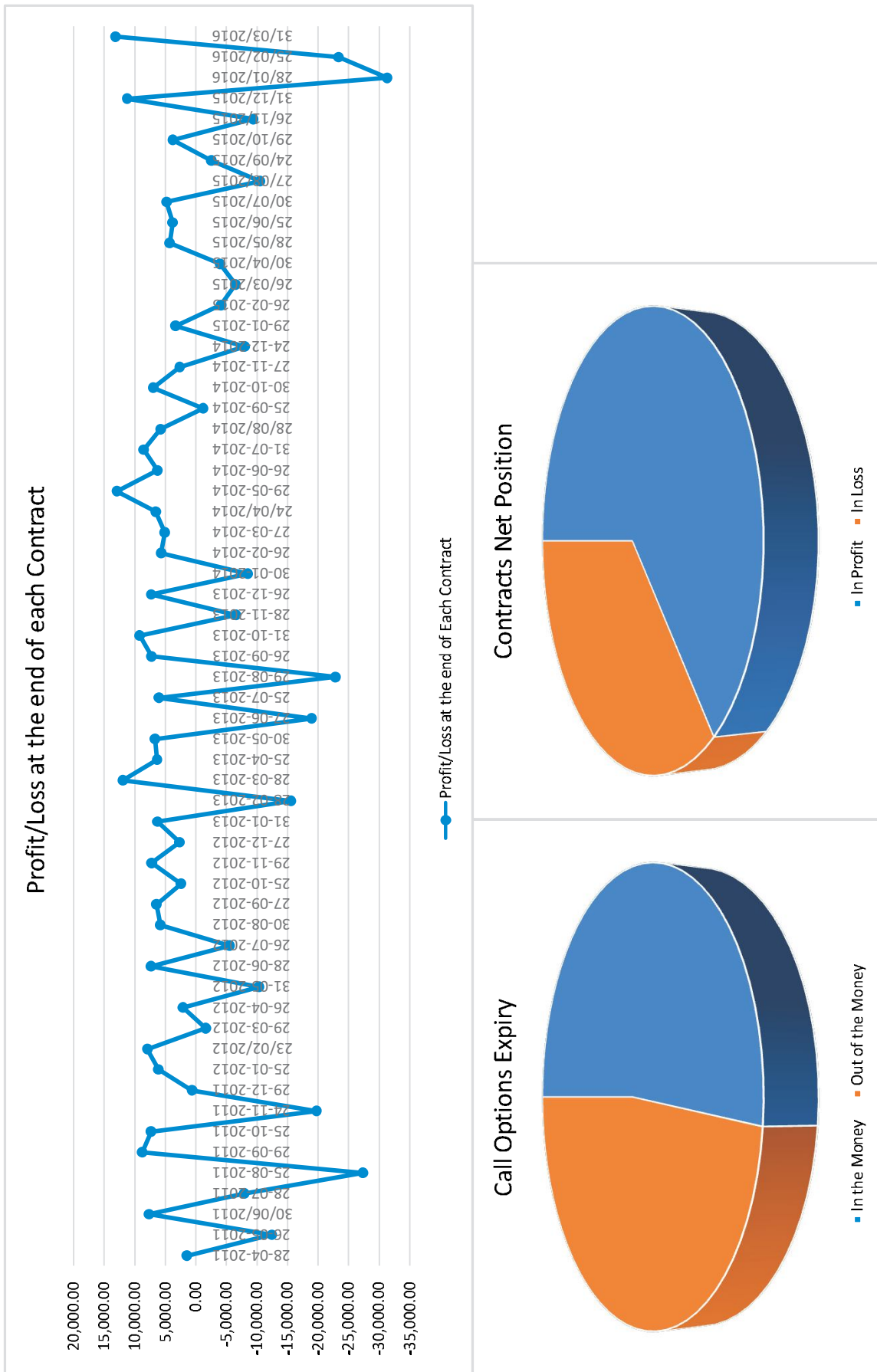
Date of Entering the Contract (₹)	Opening Futures Price (₹)	Lot Size	Contract Value (₹)	Margin Money Paid (₹)	Option Strike Price (₹)	Option Price (₹)	Date of Expiry of Contract	Exercise of Option	Futures Settlement Price (₹)	Gain/Loss on Futures Position (₹)	Total Premium Received (₹)	Interest on Margin Money (₹)	Option Payoff (₹)	Profit/Loss Without Transaction Cost (₹)	Total Transaction Costs (₹)	Profit/Loss with Transaction Costs (₹)
01/04/2011	5,865.10	50	2,93,255.00	29,325.50	5,900.00	115.10	28-04-2011	No	5,785.45	-3,982.50	5,755.00	244.38	0.00	1,528.12	58.83	1,469.30
29/04/2011	5,789.80	50	2,89,490.00	28,949.00	5,800.00	135	26-05-2011	No	5,412.35	-18,872.50	6,750.00	241.24	0.00	-12,363.74	57.95	-12,421.69
27/05/2011	5,415.00	50	2,70,750.00	27,075.00	5,500.00	74.40	30/06/2011	Yes	5,647.40	11,620.00	3,720.00	225.63	7,370.00	7,744.38	54.58	7,689.80
01/07/2011	5,700.20	50	2,85,010.00	28,501.00	5,800.00	60.00	28-07-2011	No	5,487.75	-10,622.50	3,000.00	237.51	0.00	-7,860.01	57.50	-7,917.51
29/07/2011	5,479.90	50	2,73,995.00	27,399.50	5,500.00	99	26-08-2011	No	4,839.60	-32,015.00	4,950.00	228.33	0.00	-27,293.33	54.90	-27,348.23
26/08/2011	4,855.30	50	2,42,765.00	24,276.50	4,900.00	135.75	29-09-2011	Yes	5,015.45	8,007.50	6,787.50	202.30	5,772.50	8,820.20	48.78	8,771.42
30/09/2011	4,999.80	50	2,49,990.00	24,999.00	5,000.00	152	25-10-2011	Yes	5,191.60	9,890.00	7,600.00	208.33	9,580.00	7,401.67	50.00	7,351.68
26/10/2011	5,241.15	50	2,62,057.50	26,205.75	5,300.00	95.00	24-11-2011	No	4,756.45	-24,235.00	4,750.00	218.38	0.00	-19,703.38	52.71	-19,756.09
25/11/2011	4,750.00	50	2,37,500.00	23,750.00	4,800.00	121.50	29-12-2011	No	4,646.25	-5,187.50	6,075.00	197.92	0.00	689.58	47.75	641.83
30/12/2011	4,689.90	50	2,34,495.00	23,449.50	4,700.00	117.80	26-01-2012	Yes	5,158.30	23,420.00	5,895.00	195.41	22,915.00	6,204.59	46.95	6,157.64
27/01/2012	5,201.00	50	2,60,050.00	26,005.00	5,300.00	65.00	23/02/2012	Yes	5,483.30	14,115.00	3,250.00	216.71	9,165.00	7,983.29	52.51	7,930.79
24/02/2012	5,532.00	50	2,76,600.00	27,660.00	5,600.00	120.10	29-03-2012	No	5,385.20	-7,340.00	6,005.00	230.50	0.00	-1,565.50	55.66	-1,621.16
30/03/2012	5,246.00	50	2,62,300.00	26,230.00	5,300.00	104.70	26-04-2012	No	5,189.00	-2,850.00	5,235.00	218.58	0.00	2,166.42	52.73	2,113.69
27/04/2012	5,200.00	50	2,60,000.00	26,000.00	5,300.00	74.30	31-05-2012	No	4,924.25	-13,787.50	3,715.00	216.67	0.00	-10,289.17	52.50	-10,341.67
01/06/2012	4,908.50	50	2,45,425.00	24,542.50	5,000.00	60.35	28-06-2012	Yes	5,149.15	12,032.50	3,017.50	204.52	7,457.50	7,387.98	49.54	7,338.44
29/06/2012	5,215.30	50	2,60,765.00	26,076.50	5,300.00	67.15	26-07-2012	No	5,043.00	-8,615.00	3,357.50	217.30	0.00	-5,474.80	52.58	-5,527.38
27/07/2012	5,144.45	50	2,57,222.50	25,722.25	5,200.00	66.30	30-08-2012	Yes	5,315.05	8,530.00	3,315.00	214.35	5,752.50	5,878.15	51.72	5,826.43
31/08/2012	5,321.00	50	2,66,050.00	26,605.00	5,400.00	56.00	27-09-2012	Yes	5,649.50	16,425.00	2,800.00	221.71	12,475.00	6,528.29	53.61	6,474.69
28/09/2012	5,714.90	50	2,85,745.00	28,574.50	5,800.00	64.30	25-10-2012	No	5,705.30	-480.00	3,215.00	238.12	0.00	2,496.88	57.57	2,439.30
26/10/2012	5,711.10	50	2,85,555.00	28,555.50	5,800.00	62.00	29-11-2012	Yes	5,825.00	5,695.00	3,100.00	237.96	1,250.00	7,307.04	57.56	7,249.48

Date of Entering the Contract (₹)	Opening Futures Price (₹)	Lot Size	Contract Value (₹)	Margin Money Paid (₹)	Option Strike Price (₹)	Option Price (₹)	Date of Expiry of Contract	Exercise of Option	Futures Settlement Price (₹)	Gain/Loss on Futures Position (₹)	Total Premium Received (₹)	Interest on Margin Money (₹)	Option Payoff (₹)	Profit/Loss Without Transaction Cost (₹)	Total Transaction Costs (₹)	Profit/Loss with Transaction Costs (₹)
30/11/2012	5,891.10	50	2,94,555.00	29,455.50	5,900.00	81.00	27-12-2012	No	5,870.10	-1,050.00	4,050.00	245.46	0.00	2,754.54	58.96	2,695.58
28/12/2012	5,932.50	50	2,96,625.00	29,662.50	6,000.00	64.55	31-01-2013	Yes	6,034.79	5,112.50	3,227.50	247.19	1,737.50	6,355.31	59.66	6,295.65
01/02/2013	6,068.95	50	3,03,447.50	30,344.75	6,100.00	71.00	28-02-2013	No	5,693.05	-18,795.00	3,550.00	252.87	0.00	-15,497.87	60.84	-15,558.72
01/03/2013	5,718.95	50	2,85,947.50	28,594.75	5,800.00	281.00	28-03-2013	No	5,682.55	-1,820.00	14,050.00	238.29	0.00	11,991.71	57.59	11,934.12
01/04/2013	5,716.35	50	2,85,817.50	28,581.75	5,800.00	49.25	25-04-2013	Yes	5,916.30	9,997.50	2,462.50	238.18	5,815.00	6,406.82	57.58	6,349.24
26/04/2013	5,919.00	50	2,95,950.00	29,595.00	6,000.00	59.00	30-05-2013	Yes	6,124.05	10,292.50	2,950.00	246.63	6,202.50	6,753.38	59.60	6,693.78
31/05/2013	6,119.00	50	3,05,950.00	30,595.00	6,200.00	64.00	27-06-2013	No	5,682.35	-21,832.50	3,200.00	254.96	0.00	-18,887.46	61.60	-18,949.05
28/06/2013	5,761.15	50	2,88,057.50	28,805.75	5,800.00	88.00	25-07-2013	Yes	5,907.50	7,317.50	4,400.00	240.05	5,375.00	6,102.45	57.81	6,044.65
26/07/2013	5,955.00	50	2,97,750.00	29,775.00	6,000.00	95.00	29-08-2013	No	5,409.05	-27,297.50	4,750.00	248.13	0.00	-22,795.63	59.78	-22,855.40
30/08/2013	5,400.00	50	2,70,000.00	27,000.00	5,450.00	100.95	26-09-2013	Yes	5,882.28	24,112.50	5,047.50	225.00	21,612.50	7,322.50	54.25	7,268.25
27/09/2013	5,951.25	50	2,97,562.50	29,756.25	6,000.00	141.85	31-10-2013	Yes	6,299.15	17,395.00	7,092.50	247.97	14,957.50	9,282.03	59.76	9,222.28
01/11/2013	6,315.05	50	3,15,752.50	31,575.25	6,350.00	98.00	28-11-2013	No	6,091.85	-11,160.00	4,900.00	263.13	0.00	-6,523.13	63.33	-6,586.45
28/11/2013	6,162.00	50	3,08,100.00	30,810.00	6,200.00	115.00	26-12-2013	Yes	6,278.90	5,845.00	5,750.00	256.75	3,945.00	7,393.25	61.81	7,331.44
27/12/2013	6,340.00	50	3,17,000.00	31,700.00	6,350.00	102.60	30-01-2014	No	6,073.70	-13,315.00	5,130.00	264.17	0.00	-8,449.17	63.45	-8,512.62
31/01/2014	6,115.00	50	3,05,750.00	30,575.00	6,150.00	85.00	26-02-2014	Yes	6,238.80	6,190.00	4,250.00	254.79	4,440.00	5,745.21	61.33	5,683.88
28/02/2014	6,265.40	50	3,13,270.00	31,327.00	6,300.00	74.10	27-03-2014	Yes	6,641.75	18,817.50	3,705.00	261.06	17,087.50	5,173.94	62.83	5,111.11
28/03/2014	6,708.60	50	3,35,430.00	33,543.00	6,750.00	97.45	24/04/2014	Yes	6,815.35	5,337.50	4,872.50	279.53	3,267.50	6,662.97	67.29	6,595.68
25/04/2014	6,900.00	50	3,45,000.00	34,500.00	6,950.00	215.45	29-05-2014	Yes	7,235.65	16,782.50	10,772.50	287.50	14,282.50	12,985.00	69.25	12,915.75
30/05/2014	7,275.50	50	3,63,775.00	36,377.50	7,300.00	109.00	26-06-2014	Yes	7,493.20	10,885.00	5,450.00	303.15	9,660.00	6,371.85	72.88	6,298.98
27/06/2014	7,550.00	50	3,77,500.00	37,750.00	7,600.00	128.95	31-07-2014	Yes	7,721.30	8,565.00	6,447.50	314.58	6,065.00	8,632.92	75.75	8,557.17
01/08/2014	7,686.05	50	3,84,302.50	38,430.25	7,700.00	109.80	28/08/2014	Yes	7,954.35	13,415.00	5,490.00	320.25	12,717.50	5,867.25	76.93	5,790.32
01/09/2014	8,021.20	50	4,01,060.00	40,106.00	8,050.00	93.90	25-09-2014	No	7,911.85	-5,467.50	4,695.00	334.22	0.00	-1,106.72	80.36	-1,187.07
26/09/2014	7,956.00	50	3,97,800.00	39,780.00	8,000.00	103.85	30-10-2014	Yes	8,169.20	10,660.00	5,192.50	331.50	8,460.00	7,061.00	79.78	6,981.22
31/10/2014	8,234.95	25	2,05,873.75	20,587.38	8,250.00	100.00	27-11-2014	Yes	8,494.20	6,481.25	2,500.00	171.56	6,105.00	2,704.69	41.21	2,663.48
28/11/2014	8,576.10	25	2,14,402.50	21,440.25	8,600.00	92.10	24-12-2014	No	8,174.10	-10,050.00	2,302.50	178.67	0.00	-7,926.17	42.94	-7,969.11
26/12/2014	8,274.90	25	2,06,872.50	20,687.25	8,300.00	117.00	29-01-2015	Yes	8,952.35	16,936.25	2,925.00	172.39	16,308.75	3,380.11	41.44	3,338.67

Date of Entering the Contract (₹)	Opening Futures Price (₹)	Lot Size	Contract Value (₹)	Margin Money Paid (₹)	Option Strike Price (₹)	Option Price (₹)	Date of Expiry of Contract	Exercise of Option	Futures Settlement Price (₹)	Gain/Loss on Futures Position (₹)	Total Premium Received (₹)	Interest on Margin Money (₹)	Option Payoff (₹)	Profit/Loss Without Transaction Cost (₹)	Total Transaction Costs (₹)	Profit/Loss with Transaction Costs (₹)
30/01/2015	9,005.00	25	2,25,125.00	22,512.50	9,050.00	165.00	26-02-2015	No	8,688.85	-8,028.75	4,125.00	187.60	0.00	-4,091.35	45.14	-4,136.49
27/02/2015	8,769.00	25	2,19,225.00	21,922.50	8,800.00	175.00	26/03/2015	No	8,342.15	-10,671.25	4,375.00	182.69	0.00	-6,478.94	43.92	-6,522.86
27/03/2015	8,465.25	25	2,11,631.25	21,163.13	8,500.00	134.75	30/04/2015	No	8,181.50	-7,093.75	3,368.75	176.36	0.00	-3,901.36	42.41	-3,943.77
04/05/2015	8,252.10	25	2,06,302.50	20,630.25	8,300.00	132.10	28/05/2015	Yes	8,319.00	1,672.50	3,302.50	171.92	475.00	4,328.08	41.38	4,286.70
29/05/2015	8,324.00	25	2,08,100.00	20,810.00	8,350.00	136.00	25/06/2015	Yes	8,398.00	1,850.00	3,400.00	173.42	1,200.00	3,876.58	41.69	3,834.90
26/06/2015	8,361.00	25	2,09,025.00	20,902.50	8,400.00	161.95	30/07/2015	Yes	8,421.80	1,520.00	4,048.75	174.19	545.00	4,849.56	41.90	4,807.66
31/07/2015	8,483.40	25	2,12,085.00	21,208.50	8,500.00	122.10	27/08/2015	No	7,948.95	-13,361.25	3,052.50	176.74	0.00	-10,485.49	42.46	-10,527.95
28/08/2015	8,101.10	25	2,02,527.50	20,252.75	8,150.00	140.00	24/09/2015	No	7,868.50	-5,815.00	3,500.00	168.77	0.00	-2,483.77	40.63	-2,524.40
28/09/2015	7,890.15	25	1,97,253.75	19,725.38	7,900.00	150.05	29/10/2015	Yes	8,111.75	5,540.00	3,751.25	164.38	5,293.75	3,833.12	39.48	3,793.65
30/10/2015	8,142.05	75	6,10,653.75	61,065.38	8,150.00	141.30	26/11/2015	No	7,883.80	-19,368.75	10,597.50	508.88	0.00	-9,280.13	122.19	-9,402.32
27/11/2015	7,929.05	75	5,94,678.75	59,467.88	7,950.00	141.10	31/12/2015	No	7,946.35	1,297.50	10,582.50	495.57	0.00	11,384.43	119.09	11,265.34
01/01/2016	7,942.00	75	5,95,650.00	59,565.00	7,950.00	107.75	28/01/2016	No	7,424.65	-38,801.25	8,081.25	496.38	0.00	-31,216.38	119.19	-31,335.57
29/01/2016	7,414.45	75	5,56,083.75	55,608.38	7,450.00	140.00	25/02/2016	No	6,970.60	-38,288.75	10,500.00	463.40	0.00	-23,252.15	111.48	-23,363.64
26/02/2016	7,061.15	75	5,29,586.25	52,958.63	7,100.00	144.30	31/03/2016	Yes	7,738.40	50,793.75	10,822.50	441.32	47,880.00	13,294.93	106.21	13,188.72
Total Net Profit/(Loss)															3631.11	-17,906.44

Analysis

From the above table, we can observe that, applying the Covered Call Writing strategy on CNX Nifty systematically for a period of 5 years has resulted in a loss of 17,906.44. This means that Indian Derivatives market was highly volatile during that period. It is noticeable that out of the 60 contracts, 38 contracts resulted in profit, yet the overall result is loss because the contracts which ended in loss gave such high losses which affected the overall performance of the strategy in the negative manner. The position of each contract was also highly volatile as observed from the above chart. The standard deviation of opening prices of CNX Nifty was also volatile as its range during the period of study was as high as 4315.10 with a standard deviation on 1265.68. The options expired in the money 31 times during the period and 29 times they expired out of the money.



**Protective Put Strategy
Table 2**

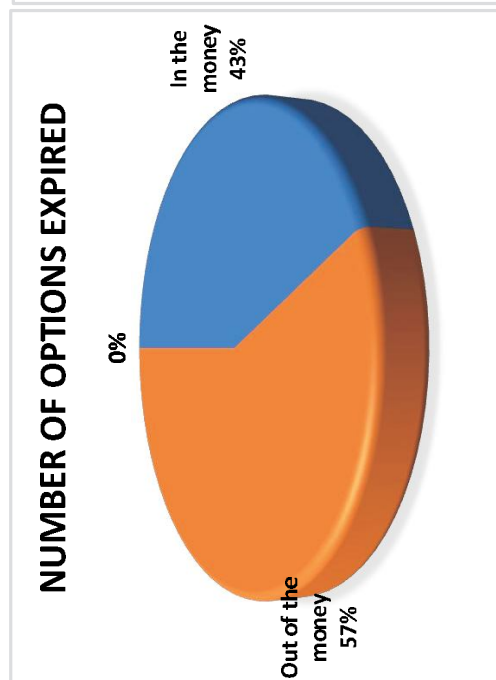
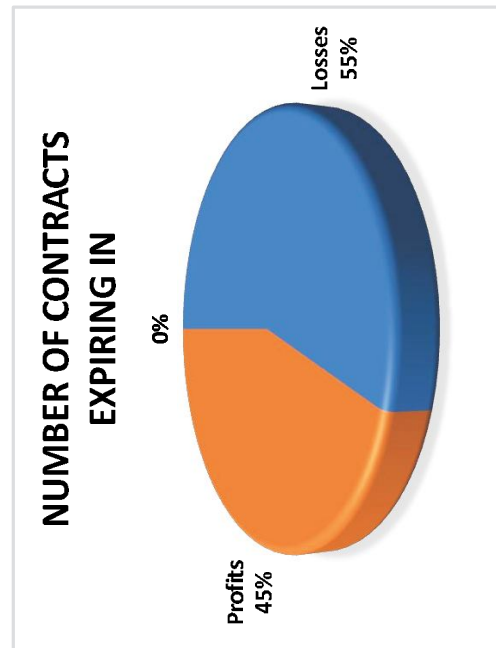
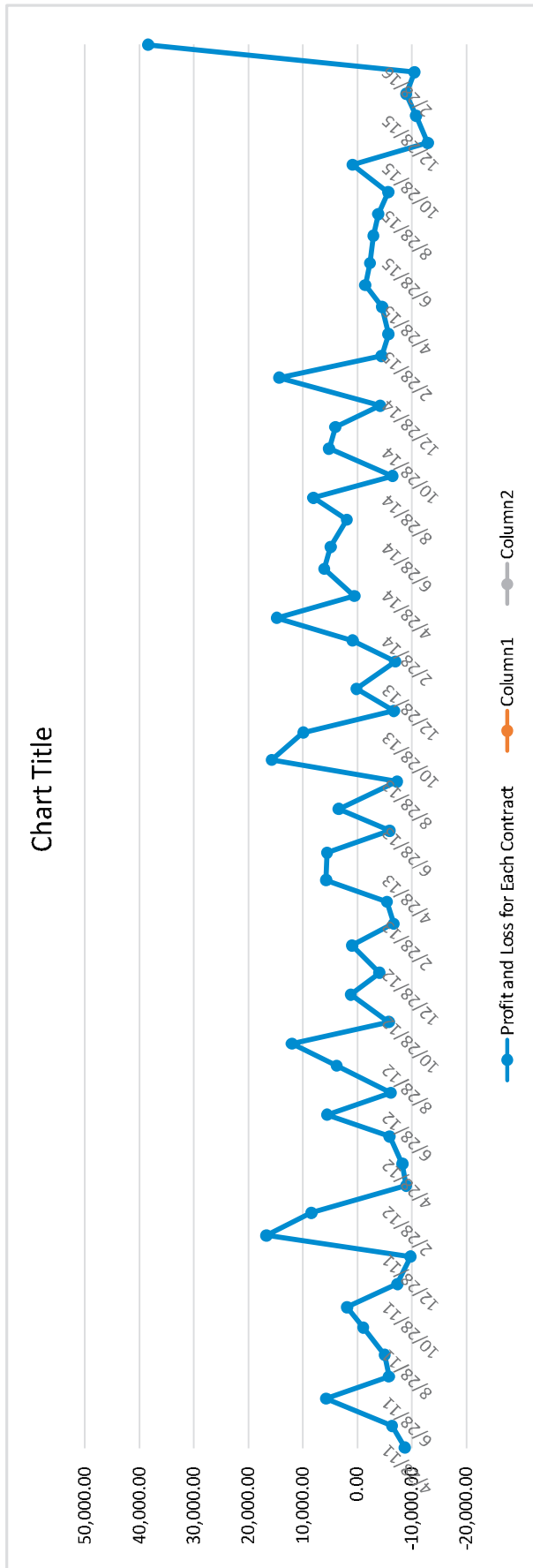
Date of entering	Opening Futures Price (₹)	ATM Put Strike Price(₹)	Put Option Price(₹)	Lot Size	Futures Contract Value(₹)	Margin Money(₹)	Date of Expiry	Futures Settlement price(₹)	Option Exercised	Gain/Loss on Futures Position(₹)	Premium Paid(₹)	Interest Margin Money (₹)	Option Payoff(₹)	Profit/Loss before transaction cost(₹)	Brokerage Paid(₹)	Profit with transaction cost(₹)
01/04/2011	5,865.10	5,800.00	104.00	50	2,93,255.00	29,325.50	28-04-2011	5785.45	Y	-3,982.50	5,200.00	244.38	727.50	-8,699.38	58.33	-8,757.70
29/04/2011	5,789.80	5,800.00	131.85	50	2,89,490.00	28,949.00	26-05-2011	5412.35	Y	-18,872.50	6,592.50	241.24	19,382.50	-6,323.74	57.95	-6,381.69
27/05/2011	5,415.00	5,400.00	112.50	50	2,70,750.00	27,075.00	30/06/2011	5647.4	N	11,620.00	5,625.00	225.63	0.00	5,769.37	54.08	5,715.30
01/07/2011	5,700.20	5,700.00	110.00	50	2,85,010.00	28,501.00	28-07-2011	5487.75	Y	-10,622.50	5,500.00	237.51	10,612.50	-5,747.51	57.00	-5,804.51
29/07/2011	5,479.90	5,500.00	114.50	50	2,73,995.00	27,399.50	25-08-2011	4839.6	Y	-32,015.00	5,725.00	228.33	33,020.00	-4,948.33	54.90	-5,003.23
26/08/2011	4,855.30	4,800.00	176.40	50	2,42,765.00	24,276.50	29-09-2011	5015.45	N	8,007.50	8,820.00	202.30	0.00	-1,014.80	48.28	-1,063.08
30/09/2011	4,999.80	5,000.00	149.00	50	2,49,990.00	24,999.00	25-10-2011	5191.6	N	9,590.00	7,450.00	208.33	0.00	1,931.68	50.00	1,881.68
26/10/2011	5,241.15	5,200.00	101.00	50	2,62,057.50	26,205.75	24-11-2011	4756.45	Y	-24,235.00	5,050.00	218.38	22,177.50	-7,325.88	52.21	-7,378.09
25/11/2011	4,750.00	4,700.00	140.25	50	2,37,500.00	23,750.00	29-12-2011	4646.25	Y	-5,187.50	7,012.50	197.92	2,687.50	-9,710.42	47.25	-9,757.67
30/12/2011	4,689.90	4,700.00	130.00	50	2,34,495.00	23,449.50	25-01-2012	5158.3	N	23,420.00	6,500.00	195.41	0.00	16,724.59	46.95	16,677.64
27/01/2012	5,201.00	5,200.00	108.40	50	2,60,050.00	26,005.00	23/02/2012	5488.3	N	14,115.00	5,420.00	216.71	0.00	8,478.29	52.01	8,426.29
24/02/2012	5,532.00	5,500.00	141.50	50	2,76,600.00	27,660.00	29-03-2012	5385.2	Y	-7,340.00	7,075.00	230.50	5,740.00	-8,905.50	55.16	-8,960.66
30/03/2012	5,246.00	5,200.00	114.00	50	2,62,300.00	26,230.00	26-04-2012	5189	Y	-2,850.00	5,700.00	218.58	550.00	-8,218.58	52.23	-8,270.81
27/04/2012	5,200.00	5,200.00	112.65	50	2,60,000.00	26,000.00	31-05-2012	4924.25	Y	-13,787.50	5,632.50	216.67	13,787.50	-5,849.17	52.00	-5,901.17
01/06/2012	4,908.50	4,900.00	124.80	50	2,45,425.00	24,542.50	28-06-2012	5149.15	N	12,032.50	6,240.00	204.52	0.00	5,587.98	49.04	5,538.94
29/06/2012	5,215.30	5,200.00	102.00	50	2,60,765.00	26,076.50	26-07-2012	5043	Y	-8,615.00	5,100.00	217.30	7,850.00	-6,082.30	52.08	-6,134.38
27/07/2012	5,144.45	5,100.00	90.00	50	2,57,222.50	25,722.25	30-08-2012	5315.05	N	8,530.00	4,500.00	214.35	0.00	3,815.65	51.22	3,764.43
31/08/2012	5,321.00	5,300.00	83.00	50	2,66,050.00	26,605.00	27-09-2012	5649.5	N	16,425.00	4,150.00	221.71	0.00	12,053.29	53.11	12,000.19
28/09/2012	5,714.90	5,700.00	100.00	50	2,85,745.00	28,574.50	25-10-2012	5705.3	N	-480.00	5,000.00	238.12	0.00	-5,718.12	57.07	-5,775.20
26/10/2012	5,711.10	5,700.00	84.00	50	2,85,555.00	28,555.50	29-11-2012	5825	N	5,695.00	4,200.00	237.96	0.00	1,257.04	57.06	1,199.98

Date of entering	Opening Futures Price(₹)	ATM Put Strike Price(₹)	Put Option Price(₹)	Lot Size	Futures Contract Value(₹)	Margin Money(₹)	Date of Expiry	Futures Settlement price(₹)	Option Exercise	Gain/Loss on Futures Position(₹)	Premium Paid(₹)	Interest on Margin Money (₹)	Option Payoff(₹)	Profit/Loss before transaction cost(₹)	Brokerage Paid(₹)	Profit with transaction cost(₹)
30/11/2012	5,891.10	5,800.00	54.00	50	2,94,555.00	29,455.50	27-12-2012	5870.1	N	-1,050.00	2,700.00	245.46	0.00	-3,995.46	58.46	-4,053.92
28/12/2012	5,932.50	5,900.00	77.00	50	2,96,625.00	29,662.50	31-01-2013	6034.75	N	5,112.50	3,850.00	247.19	0.00	1,015.31	59.16	956.15
01/02/2013	6,068.95	6,000.00	58.45	50	3,03,447.50	30,344.75	28-02-2013	5693.05	Y	-18,795.00	2,922.50	252.87	15,347.50	-6,622.87	60.34	-6,683.22
01/03/2013	5,718.95	5,700.00	83.80	50	2,85,947.50	28,594.75	28-03-2013	5882.55	Y	-1,820.00	4,190.00	238.29	872.50	-5,375.79	57.09	-5,432.88
01/04/2013	5,716.35	5,700.00	79.80	50	2,85,817.50	28,581.75	25-04-2013	5916.3	N	9,997.50	3,990.00	238.18	0.00	5,769.32	57.08	5,712.24
26/04/2013	5,919.00	5,900.00	88.10	50	2,95,950.00	29,595.00	30-05-2013	6124.05	N	10,252.50	4,405.00	246.63	0.00	5,600.88	59.10	5,541.78
31/05/2013	6,119.00	6,100.00	93.00	50	3,05,950.00	30,595.00	27-06-2013	5882.35	Y	-21,832.50	4,650.00	254.96	20,882.50	-5,854.96	61.10	-5,916.05
28/06/2013	5,761.15	5,700.00	72.20	50	2,88,057.50	28,805.75	25-07-2013	5907.5	N	7,317.50	3,610.00	240.05	0.00	3,467.45	57.31	3,410.15
26/07/2013	5,955.00	5,900.00	85.10	50	2,97,750.00	29,775.00	29-08-2013	5409.05	Y	-27,297.50	4,255.00	248.13	24,547.50	-7,253.13	59.28	-7,312.40
30/08/2013	5,400.00	5,400.00	162.00	50	2,70,000.00	27,000.00	26-09-2013	5882.25	N	24,112.50	8,100.00	225.00	0.00	15,787.50	54.00	15,733.50
27/09/2013	5,951.25	5,900.00	142.95	50	2,97,562.50	29,756.25	31-10-2013	6299.15	N	17,395.00	7,147.50	247.97	0.00	9,999.53	59.26	9,940.27
01/11/2013	6,315.05	6,300.00	112.90	50	3,15,752.50	31,575.25	28-11-2013	6091.85	Y	-11,160.00	5,645.00	263.13	10,407.50	-6,660.63	63.08	-6,723.70
29/11/2013	6,162.00	6,100.00	106.95	50	3,08,100.00	30,810.00	26-12-2013	6278.9	N	5,845.00	5,347.50	256.75	0.00	240.75	61.31	179.44
27/12/2013	6,340.00	6,300.00	93.35	50	3,17,000.00	31,700.00	30-01-2014	6073.7	Y	-13,315.00	4,667.50	264.17	11,315.00	-6,931.67	63.20	-6,994.87
31/01/2014	6,115.00	6,100.00	100.05	50	3,05,750.00	30,575.00	26-02-2014	6238.8	N	6,190.00	5,002.50	254.79	0.00	932.71	61.08	871.63
28/02/2014	6,265.40	6,250.00	74.55	50	3,13,270.00	31,327.00	27-03-2014	6641.75	N	18,817.50	3,727.50	261.06	0.00	14,828.94	62.58	14,766.36
28/03/2014	6,708.60	6,650.00	89.35	50	3,35,430.00	33,543.00	24/04/2014	6815.35	N	5,337.50	4,467.50	279.53	0.00	590.48	66.79	523.68
25/04/2014	6,900.00	6,800.00	207.00	50	3,45,000.00	34,500.00	29-05-2014	7235.65	N	16,782.50	10,350.00	287.50	0.00	6,145.00	68.50	6,076.50
30/05/2014	7,275.50	7,250.00	111.95	50	3,63,775.00	36,377.50	26-06-2014	7493.2	N	10,885.00	5,597.50	303.15	0.00	4,984.35	72.63	4,911.73
27/06/2014	7,550.00	7,500.00	125.55	50	3,77,500.00	37,750.00	31-07-2014	7721.3	N	8,565.00	6,277.50	314.58	0.00	1,972.92	75.25	1,897.67
01/08/2014	7,686.05	7,650.00	99.00	50	3,84,302.50	38,430.25	28/08/2014	7954.35	N	13,415.00	4,950.00	320.25	0.00	8,144.75	76.68	8,068.07
01/09/2014	8,021.20	8,000.00	100.00	50	4,01,060.00	40,106.00	25-09-2014	7911.85	Y	-5,467.50	5,000.00	334.22	4,407.50	-6,394.22	80.11	-6,474.32
26/09/2014	7,956.00	7,900.00	101.10	50	3,97,800.00	39,780.00	30-10-2014	8169.2	N	10,660.00	5,055.00	331.50	0.00	5,273.50	79.28	5,194.22
31/10/2014	8,234.95	8,200.00	89.95	25	2,05,873.75	20,587.38	27-11-2014	8494.2	N	6,481.25	2,248.75	171.56	0.00	4,060.94	41.09	4,019.85

Date of entering	Opening Futures Price(₹)	ATM Put Strike Price(₹)	Put Option Price(₹)	Lot Size	Futures Contract Value(₹)	Margin Money(₹)	Date of Expiry	Futures Settlement price(₹)	Option Exercise	Gain/Loss on Futures Position(₹)	Premium Paid(₹)	Interest on Margin Money (₹)	Option Payoff(₹)	Profit/Loss before transaction cost(₹)	Brokerage Paid(₹)	Profit with transaction cost(₹)	
28/11/2014	8,576.10	8,500.00	84.00	25	2,14,402.50	21,440.25	24-12-2014	8174.1	Y	-10,050.00	2,100.00	178.67	8,147.50	-4,181.17	42.69	-4,223.86	
26/12/2014	8,274.90	8,200.00	95.95	25	2,06,872.50	20,687.25	29-01-2015	8952.35	N	16,936.25	2,398.75	172.39	0.00	14,365.11	41.19	14,323.92	
30/01/2015	9,005.00	9,000.00	164.10	25	2,25,125.00	22,512.50	28-02-2015	8683.85	Y	-8,028.75	4,102.50	187.60	7,903.75	-4,415.10	45.01	-4,460.12	
27/02/2015	8,769.00	8,700.00	150.45	25	2,19,225.00	21,922.50	26/03/2015	8342.15	Y	-10,671.25	3,761.25	182.69	8,946.25	-5,668.94	43.67	-5,712.61	
27/03/2015	8,465.25	8,400.00	108.00	25	2,11,631.25	21,163.13	30/04/2015	8181.5	Y	-7,093.75	2,700.00	176.36	5,462.50	-4,507.61	42.16	-4,549.77	
04/05/2015	8,252.10	8,250.00	116.50	25	2,06,302.50	20,630.25	28/05/2015	8319	N	1,672.50	2,912.50	171.92	0.00	-1,411.92	41.26	-1,453.17	
29/05/2015	8,324.00	8,350.00	157.80	25	2,08,100.00	20,810.00	25/06/2015	8398	N	1,850.00	3,945.00	173.42	0.00	-2,268.42	41.69	-2,310.10	
26/06/2015	8,361.00	8,400.00	170.00	25	2,09,025.00	20,902.50	30/07/2015	8421.8	N	1,520.00	4,250.00	174.19	0.00	-2,904.19	41.90	-2,946.09	
31/07/2015	8,483.40	8,450.00	113.05	25	2,12,085.00	21,208.50	27/08/2015	7948.95	Y	-13,361.25	2,826.25	176.74	12,526.25	-3,837.99	42.33	-3,880.32	
28/08/2015	8,101.10	8,050.00	168.10	25	2,02,527.50	20,252.75	24/09/2015	7868.5	Y	-5,815.00	4,202.50	168.77	4,537.50	-5,648.77	40.38	-5,689.15	
28/09/2015	7,890.15	7,900.00	179.00	25	1,97,253.75	19,725.38	29/10/2015	8111.75	N	5,540.00	4,475.00	164.38	0.00	900.62	39.48	861.15	
30/10/2015	8,142.05	8,100.00	121.95	75	6,10,653.75	61,065.38	26/11/2015	7888.8	Y	-19,368.75	9,146.25	508.88	16,215.00	-12,808.88	121.82	-12,930.69	
27/11/2015	7,929.05	7,900.00	152.90	75	5,94,678.75	59,467.88	31/12/2015	7946.35	N	1,297.50	11,467.50	495.57	0.00	-10,665.57	118.72	-10,784.28	
01/01/2016	7,942.00	7,950.00	119.10	75	5,95,650.00	59,565.00	28/01/2016	7424.65	Y	-38,801.25	8,932.50	496.38	39,401.25	-8,828.88	119.19	-8,948.07	
29/01/2016	7,414.45	7,400.00	118.00	75	5,56,083.75	55,608.38	25/02/2016	6970.6	Y	-33,288.75	8,850.00	463.40	32,205.00	-10,397.15	111.11	-10,508.26	
26/02/2016	7,061.15	7,050.00	157.75	75	5,29,586.25	52,958.63	31/03/2016	7738.4	N	50,793.75	11,831.25	441.32	0.00	38,521.18	105.83	38,415.34	
Total Net Profit/Loss															-6,957.92	3610.12	-10,567.94

Analysis

From the above table, we can conclude that applying Protective Put Strategy to the Indian Derivatives Market systematically does not generate profits. As we can observe, applying the strategy to CNX Nifty for a period of 60 monthly contracts has resulted in a loss of Rs, 6957.92 without accounting for transaction costs and 10567.94 after transaction costs are considered. The above analysis revealed that the implied volatility of Nifty is high resulting in high Put option price which reduced the earning potential of the strategy. During the period under study, it was found that Put option exercised 26 times and for the remaining 34 contracts the options expired worthless. The overall volatility of nifty futures prices was also high as the standard deviation of opening futures prices at the date of entering the contract was 1265.68. The coefficient of variation of these prices was 5.17 which presents high variability from the mean. The following chart presents the final position at the end of each monthly contract based on the above analysis. It is observed that out of the 60 contracts only 27 contracts were profitable and the remaining 33 had negative payoff at the end of each contract.



Return on Traditional Nifty Investment during the period

If the Investor has traditionally invested in Nifty using the same lot sizes as considered during the same period of investment, then the return earned by him over the 60-month period is computed as follow:

The investment horizon has been divided into 3 periods due to the lot size changes in the futures and options segment of the CNX Nifty 50. The three periods respectively are

1. Holding period 1 – From April 1, 2011 to October 30, 2014 (43 Contracts)
2. Holding Period 2 – From October 31, 2014 to October 29, 2015 (12 Contracts)
3. Holding Period 3 – From October 30, 2015 to March 31, 2016 (5 Contracts)

Table 5

Date of Entering	Opening Spot Price	Lot Size	Months	Investment	Date of Exit	Closing Price	Profit/Loss Without Transaction Cost	Brokerage	Profit/Loss with Transaction Cost
01-04-2011	5,835.00	50	43	2,91,750.00	30-10-2014	8,169.20	1,16,710.00	70.03	1,16,639.97
31-10-2014	8,200.80	25	12	2,05,020.00	29-10-2015	8,111.75	(2,226.25)	40.78	(2,267.03)
30-10-2015	8,123.55	75	5	6,09,266.25	31-03-2016	7,738.40	(28,886.25)	118.96	(29,005.21)
Net Profit/Loss on Traditional Nifty Investment							85,597.50	229.77	85,367.73

Calculation of Compounded Return under Traditional Investment in Nifty (without transaction Charges)

Holding Period 1 (01-04-2011 to 26-06-2014) – 9.43%

Holding Period 2 (27-07-2014 to 30-07-2015) – (-1.09%)

Holding Period 3 (31-07-2015 to 31-03-2016) – (-11.60%)

Total Compounded Return without transaction Charges – 5.87%

Calculation of Compounded Return under Traditional Investment in Nifty (with transaction Charges)

Holding Period 1 (01-04-2011 to 26-06-2014) – 9.42%

Holding Period 2 (27-07-2014 to 30-07-2015) – (-1.10%)

Holding Period 3 (31-07-2015 to 31-03-2016) – (-11.62%)

Total Compounded Return without transaction Charges – 5.85%

CONCLUSION

From the above analysis, we can conclude that Derivative Strategies like Covered Call Writing and Protective Put do not have earning potential in the Indian Derivatives Market. There is very high volatility in the Indian Derivatives Market which results in high option prices and thus negative positions for many contracts. The traditional investment in Nifty on the other hand produced profits during the entire period under study. The following comparative analysis of the measures of dispersion will present a clear picture of the results

Table 6

Name of the Statistical Measure	Covered Call Writing Strategy	Protective Put	Traditional Nifty Investment
Standard Deviation of Opening Futures/Spot Positions as relevant to the strategy	1,265.68	1,265.68	1,261.76
Coefficient of Variation	5.17	5.17	5.19
Final Position	Loss	Loss	Profit

This table reveals that volatility under both the strategies as well as in spot market is high, but due to high options prices due to high volatility, the options strategies have resulted in losses. Also, the transaction costs have increased the magnitude of the losses.

SUGGESTIONS AND IMPLICATIONS

From the above research, we can highlight that

1. Indian Derivatives market has high implied volatility which affects the options prices and thus the earning potential of option strategies
2. Derivatives and Options strategies such as covered call writing and protective put can be a very useful tool for hedging but their profitability in the Indian Derivatives Market is still speculative.
3. Indian Derivatives market, as witnessed from the above study, is not ready for systematic speculation
4. The prices of the options in the Indian Derivatives Market are high compared to the strike prices. From the above data, we have seen option prices to be close to 2.5% of the strike price which is very much higher than the normal range.

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