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## LONG STRADDLE STRATEGY TO HEDGE UNCERTAINTY

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### ABSTRACT

This paper examines the use of Long Straddle as a strategy to hedge risk and yield maximum return as opposed to trading in pure options and trading in equity stocks. Our analysis is based on the Long Straddle created for three different well established companies which are Mindtree, TCS and Infosys. The purpose of the paper is to bring out the benefits of using the strategy and comparing it with pure options trading and equity stock trading. The long straddle is a way to profit from increased volatility or sharp move in the underlying stock's price so as to maximize the return of the investor. The research paper is done solely for the purpose of investments in options.

**Key words:** Hedge, Risk & Return, Long Straddle, Options, Equity Stocks, Volatility .

## **1. INTRODUCTION**

Options allow investors and traders to make money in ways that are not possible simply by buying or selling the underlying security. If we only trade the underlying security, we either enter a Long position (buy) and hope to profit from an advance in price, or we enter a short position (sell) and hope to profit from a decline in price. Through the use of options, we can craft a position to take advantage of virtually any market outlook or opinion with the help of a strategy known as the Long Straddle. For aggressive investors who expect short-term volatility yet have no bias up or down (i.e. a neutral bias), the long straddle is an excellent strategy. This position involves buying both a put and a call with the same strike price, expiration, and underlying. The potential loss is limited to the initial investment (i.e. the premium paid). The potential profit is unlimited as the stock moves up or down. The objective of using long straddle is to take advantage of a movement in either direction, a soaring or plummeting value of the stock/index. If the price of the stock/index increases, the call is exercised while the put expires worthless and if the price of the stock/index decreases, the put is exercised, the call expires worthless. In our research, we decided to look at the United States Presidential Elections between Donald Trump and Hilary Clinton. These are two different candidates with vastly different ideals especially when it comes to their Tech & IT Policies. While Hilary Clinton came out with plans to defend Net Neutrality and the freedom of the internet, one of Donald Trump's major policy was to limit the usage of H-1B visas which are used to bring in highly skilled workers in technical fields to the country. Therefore, majority believed that Silicon Valley would indeed vote for Clinton and in the unlikely situation that Trump wins, it would have a negative impact on the stock market especially in the IT sector.

## **2. REVIEW OF LITERATURE**

**1. (Boczar, Thomas and Fichtenbaum, Mark, Stock Concentration Risk Management Strategies, TRUSTS & ESTATES, June 1996.)** Stocks, bonds, and alternative investments such as venture and equity capital generally are understood and utilized by portfolio managers and others who manage the assets of wealthy investors. Conversely, options and other derivatives generally are not well understood and are underutilized by most advisors. Options and other financial derivatives can be utilized by the astute manager not only as a tool to better manage the investment risks potentially impacting portfolio returns, but to craft truly value-added investment strategies customized to meet investors' needs.

**2. (Ross, Robb, A more modest approach to naked straddles, Jan 2011)** The scantily clad straddle is a premium-capturing program that involves selling the straddle and then placing orders in the underlying commodity to provide a level of coverage should the underlying significantly in one direction. Many trading platforms let you sell the straddle instead of executing each leg of the trade separately. By selling the straddle, you collect the option premium. You are thereby naked the straddle. In after-hours trading, the commodity might move against the option owner to where it's not profitable to exercise. When the price is close to the strike, it is best to exit the position. It will cost you a little, but will provide some peace of mind.

**3. (Harvey Lapan, Giancarlo Moschini and Steven D. Hanson Production, Hedging, and Speculative Decisions with Options and Futures Markets, Feb 1991)** This paper analyzes production, hedging, and speculative decisions when both futures and options can be used in an

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expected utility model of price and basis uncertainty. When futures and option prices are unbiased, optimal hedging requires only futures (options are redundant). Options are used together with futures as speculative tools when market prices are perceived as biased. Straddles are used to speculate on beliefs about price volatility and to hedge the futures position used to speculate on beliefs about the expected value of the futures price. Mean-variance analysis in general is not consistent with expected utility when options are allowed.

### **3. RESEARCH DESIGN**

#### **Scope of Study**

Looking at pre-election polls, with almost everyone predicting a Clinton victory, investments were made into multiple IT companies both equity as well as options. Equity stock and options were entered with a long position as well as a long straddle which involved buying a call and put option with the same strike price at the same expiry date.

| IT Companies   |
|--|
| <ul style="list-style-type: none"><li>• Infosys</li><li>• TCS</li><li>• Mindtree</li></ul> |

#### **Duration**

All investments were made on the 24<sup>th</sup> of August, with the options set to expire on the 24<sup>th</sup> of November.

#### **Statement of Problem**

To make an investment during the period of US elections and to try and make a profit over the volatility in the markets using a long straddle options trading strategy in the IT industry in the Indian markets

#### **Objective of Study**

To compare investments made using equity stock, pure options and the long straddle options trading strategy.

#### **Source of Data**

We have used secondary data in this research paper.

- Equity stock prices for the companies were obtained from <https://www.nseindia.com/>
- Pre-election data was obtained from <http://www.electionprojection.com/presidential-elections.php>
- Option prices were obtained from [https://www.nseindia.com/products/content/derivatives/equities/historical\\_fo.htm](https://www.nseindia.com/products/content/derivatives/equities/historical_fo.htm)

#### **Limitations of Study**

- The Long Straddle Options Trading Strategy is only applicable during periods of volatility in the markets.
  - If used during periods of stability, profits are very hard to attain.
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#### 4. METHOD OF ANALYSIS

##### Equity Stock

Equity stock of the following companies were purchased on August 24<sup>th</sup> 2016 was purchased with the expectation of a Clinton Presidency.

| Index | Company Name | Closing Price as on 24/8/16 | Closing Price as on 24/11/16 | Gain/Loss | % Change |
|-------|--------------|-----------------------------|------------------------------|-----------|----------|
| NSE   | Mindtree     | 568.6                       | 462.85                       | -105.75   | -18.598  |
| NSE   | TCS          | 2572.05                     | 2188.45                      | -383.6    | -14.914  |
| NSE   | Infosys      | 1057.4                      | 930.3                        | -127.1    | -12.02   |

Gain/Loss = Closing Price as on 24/11/16 - Closing Price as on 24/8/16

% Change = Loss/ Closing Price as on 24/8/16

##### MINDTREE:



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TCS



Infosys



As we can see from the above table and graphs, all companies fell heavily over the period of 3 months between 24<sup>th</sup> August 2016 to 24<sup>th</sup> November 2016.

### Call Options

| Company  | Expiry   | Closing Price on 24/8/11 | Closing Price on 24/11/16 | Strike Price | LTP    | Gain/Loss | % Gain/Loss |
|----------|----------|--------------------------|---------------------------|--------------|--------|-----------|-------------|
| TCS      | 24-11-16 | 2572.05                  | 2188.45                   | 2600         | 121.15 | -121.15   | -100        |
| Mindtree | 25-11-16 | 568.6                    | 462.85                    | 600          | 34.45  | -34.45    | -100        |
| Infosys  | 26-11-16 | 1057.4                   | 930.3                     | 1100         | 34.8   | -34.8     | -100        |

Similarly, as with equity stock, Call Options were purchased on the 24<sup>th</sup> of August and were set to expire on the 24<sup>th</sup> of November. This was also done with the mindset we would have a Clinton President along with her Tech Policies coming into play.

The strike of call options was set at a lower value so that the options could be bought at that lower value if the stock prices did indeed go up after a Clinton win.

However, as we can see from the above table, these calls were not of any value since prices of stocks went below the strike price. Hence losses were resulted for all options, but they were only limited to a maximum loss of the option premium unlike in equity stock.

Gain/Loss = Closing Price on 24/11/16 + LTP (Last Traded Price of Option) – Strike Price

Or LTP (whichever is lower)

Last Traded Price is also the premium of the options and is the maximum loss that one can suffer

% Change = Gain Loss / Last Traded Price.

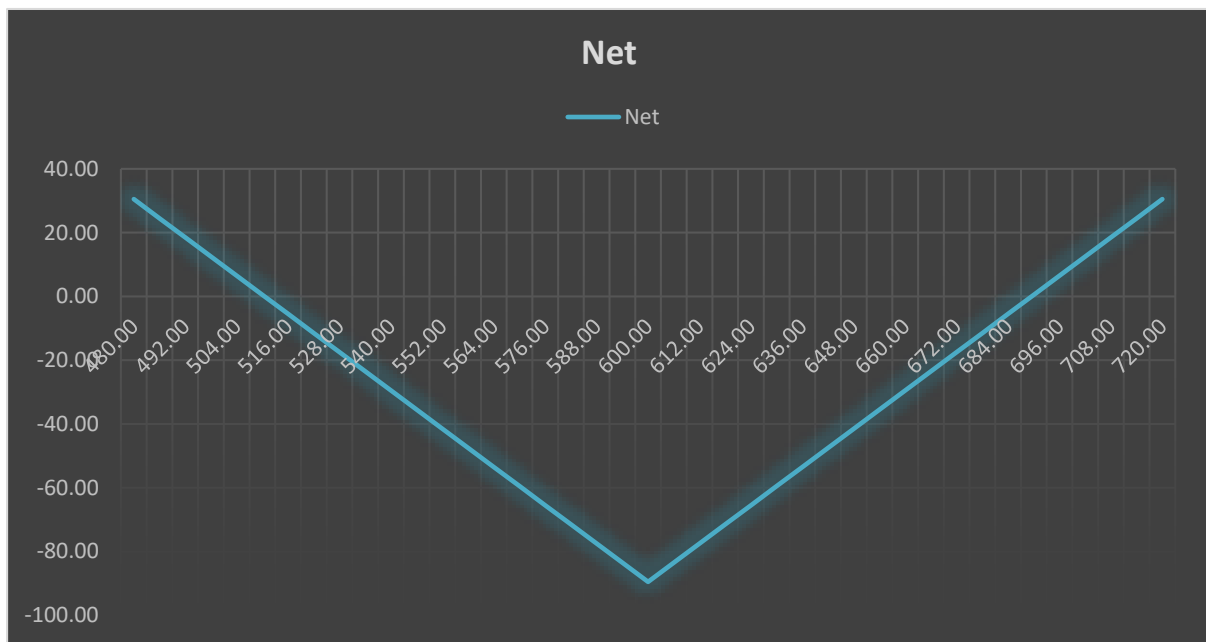
### Long Straddle Trading Strategy

In this options trading strategy, a call and a put option are put at the same strike price and same expiry date. Thus, in periods of high volatility, no matter which way the markets move a profitable position can be attained since either the call or the put will turn a profit. The maximum loss in this trading strategy is the sum of both the premiums i.e. the call premium and the put premium.

#### Mindtree Ltd.

| % Change | Stock Price | Strike Price | Premium on Call | Premium on Put | CE Gain/Loss | PE Gain/Loss | Net    |
|----------|-------------|--------------|-----------------|----------------|--------------|--------------|--------|
| -20      | 480.00      | 600.00       | 34.45           | 55.05          | -34.45       | 64.95        | 30.50  |
| -19      | 486.00      | 600.00       | 34.45           | 55.05          | -34.45       | 58.95        | 24.50  |
| -18      | 492.00      | 600.00       | 34.45           | 55.05          | -34.45       | 52.95        | 18.50  |
| -17      | 498.00      | 600.00       | 34.45           | 55.05          | -34.45       | 46.95        | 12.50  |
| -16      | 504.00      | 600.00       | 34.45           | 55.05          | -34.45       | 40.95        | 6.50   |
| -15      | 510.00      | 600.00       | 34.45           | 55.05          | -34.45       | 34.95        | 0.50   |
| -14      | 516.00      | 600.00       | 34.45           | 55.05          | -34.45       | 28.95        | -5.50  |
| -13      | 522.00      | 600.00       | 34.45           | 55.05          | -34.45       | 22.95        | -11.50 |
| -12      | 528.00      | 600.00       | 34.45           | 55.05          | -34.45       | 16.95        | -17.50 |

|     |        |        |       |       |        |        |        |
|-----|--------|--------|-------|-------|--------|--------|--------|
| -11 | 534.00 | 600.00 | 34.45 | 55.05 | -34.45 | 10.95  | -23.50 |
| -10 | 540.00 | 600.00 | 34.45 | 55.05 | -34.45 | 4.95   | -29.50 |
| -9  | 546.00 | 600.00 | 34.45 | 55.05 | -34.45 | -1.05  | -35.50 |
| -8  | 552.00 | 600.00 | 34.45 | 55.05 | -34.45 | -7.05  | -41.50 |
| -7  | 558.00 | 600.00 | 34.45 | 55.05 | -34.45 | -13.05 | -47.50 |
| -6  | 564.00 | 600.00 | 34.45 | 55.05 | -34.45 | -19.05 | -53.50 |
| -5  | 570.00 | 600.00 | 34.45 | 55.05 | -34.45 | -25.05 | -59.50 |
| -4  | 576.00 | 600.00 | 34.45 | 55.05 | -34.45 | -31.05 | -65.50 |
| -3  | 582.00 | 600.00 | 34.45 | 55.05 | -34.45 | -37.05 | -71.50 |
| -2  | 588.00 | 600.00 | 34.45 | 55.05 | -34.45 | -43.05 | -77.50 |
| -1  | 594.00 | 600.00 | 34.45 | 55.05 | -34.45 | -49.05 | -83.50 |
| 0   | 600.00 | 600.00 | 34.45 | 55.05 | -34.45 | -55.05 | -89.50 |
| 1   | 606.00 | 600.00 | 34.45 | 55.05 | -28.45 | -55.05 | -83.50 |
| 2   | 612.00 | 600.00 | 34.45 | 55.05 | -22.45 | -55.05 | -77.50 |
| 3   | 618.00 | 600.00 | 34.45 | 55.05 | -16.45 | -55.05 | -71.50 |
| 4   | 624.00 | 600.00 | 34.45 | 55.05 | -10.45 | -55.05 | -65.50 |
| 5   | 630.00 | 600.00 | 34.45 | 55.05 | -4.45  | -55.05 | -59.50 |
| 6   | 636.00 | 600.00 | 34.45 | 55.05 | 1.55   | -55.05 | -53.50 |
| 7   | 642.00 | 600.00 | 34.45 | 55.05 | 7.55   | -55.05 | -47.50 |
| 8   | 648.00 | 600.00 | 34.45 | 55.05 | 13.55  | -55.05 | -41.50 |
| 9   | 654.00 | 600.00 | 34.45 | 55.05 | 19.55  | -55.05 | -35.50 |
| 10  | 660.00 | 600.00 | 34.45 | 55.05 | 25.55  | -55.05 | -29.50 |
| 11  | 666.00 | 600.00 | 34.45 | 55.05 | 31.55  | -55.05 | -23.50 |
| 12  | 672.00 | 600.00 | 34.45 | 55.05 | 37.55  | -55.05 | -17.50 |
| 13  | 678.00 | 600.00 | 34.45 | 55.05 | 43.55  | -55.05 | -11.50 |
| 14  | 684.00 | 600.00 | 34.45 | 55.05 | 49.55  | -55.05 | -5.50  |
| 15  | 690.00 | 600.00 | 34.45 | 55.05 | 55.55  | -55.05 | 0.50   |
| 16  | 696.00 | 600.00 | 34.45 | 55.05 | 61.55  | -55.05 | 6.50   |
| 17  | 702.00 | 600.00 | 34.45 | 55.05 | 67.55  | -55.05 | 12.50  |
| 18  | 708.00 | 600.00 | 34.45 | 55.05 | 73.55  | -55.05 | 18.50  |
| 19  | 714.00 | 600.00 | 34.45 | 55.05 | 79.55  | -55.05 | 24.50  |
| 20  | 720.00 | 600.00 | 34.45 | 55.05 | 85.55  | -55.05 | 30.50  |



For the above company Mindtree, the equity stock fell by 18.6 % and the put option resulted in a loss of 34.45, however with the help of the long straddle we were able to achieve a profitable position.

| Stock Price | Strike Price | Premium on Call | Premium on Put | CE Gain/Loss | PE Gain/Loss | Net   | % Gain/Loss |
|-------------|--------------|-----------------|----------------|--------------|--------------|-------|-------------|
| 462.85      | 600          | 34.45           | 55.05          | -34.45       | 82.1         | 47.65 | 53.24       |

CE Gain/Loss = Closing Price on 24/11/16 + LTP(Last Traded Price of Option) – Strike Price  
Or LTP (whichever is lower when considering loss)

PE Gain/Loss = Strike Price - Closing Price on 24/11/16 + LTP  
Or LTP (whichever is lower when considering loss)

Net = CE (Call European) Gain/Loss – PE (Put European) Gain/Loss

% Gain/ Loss = Net/(CE Gain/Loss+PE Gain/Loss)

Thus, a profit of 53.24% was achieved when using a long straddle with risk being minimized to premium amounts as well.

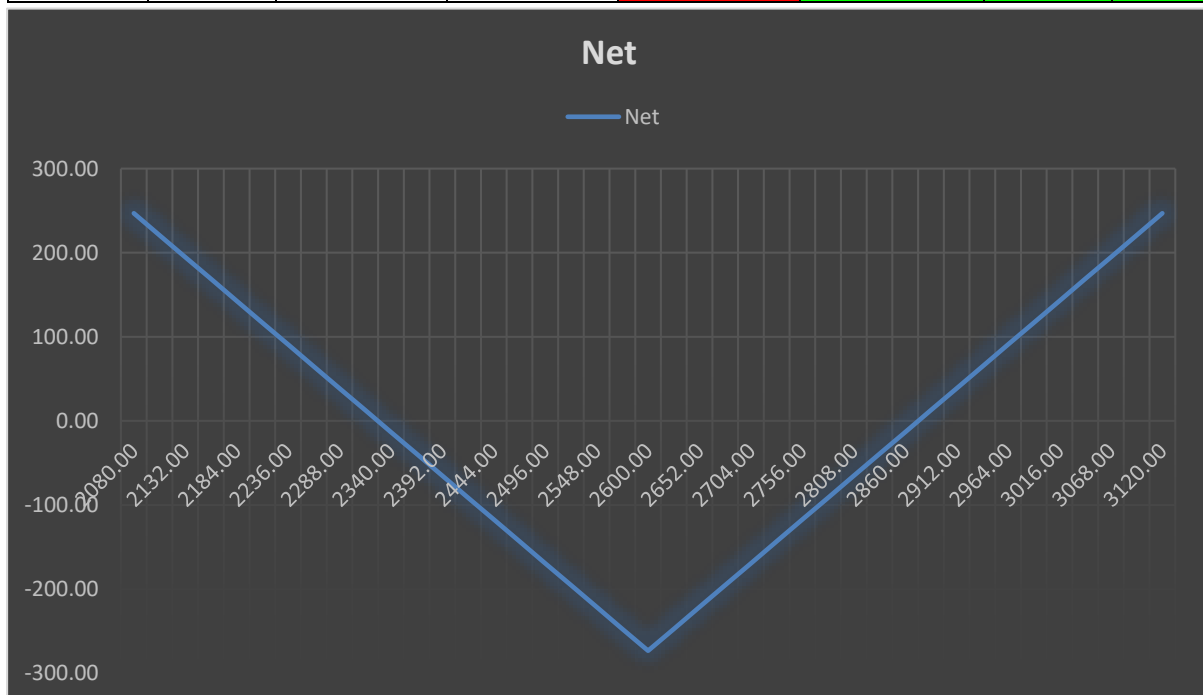


**Tata Consultancy Services Ltd.**

| % Change | Stock Price | Strike Price | Premium on Call | Premium on Put | CE Gain/Loss | PE Gain/Loss | Net     |
|----------|-------------|--------------|-----------------|----------------|--------------|--------------|---------|
| -20      | 2080.00     | 2600.00      | 121.15          | 152.05         | -121.15      | 367.95       | 246.80  |
| -19      | 2106.00     | 2600.00      | 121.15          | 152.05         | -121.15      | 341.95       | 220.80  |
| -18      | 2132.00     | 2600.00      | 121.15          | 152.05         | -121.15      | 315.95       | 194.80  |
| -17      | 2158.00     | 2600.00      | 121.15          | 152.05         | -121.15      | 289.95       | 168.80  |
| -16      | 2184.00     | 2600.00      | 121.15          | 152.05         | -121.15      | 263.95       | 142.80  |
| -15      | 2210.00     | 2600.00      | 121.15          | 152.05         | -121.15      | 237.95       | 116.80  |
| -14      | 2236.00     | 2600.00      | 121.15          | 152.05         | -121.15      | 211.95       | 90.80   |
| -13      | 2262.00     | 2600.00      | 121.15          | 152.05         | -121.15      | 185.95       | 64.80   |
| -12      | 2288.00     | 2600.00      | 121.15          | 152.05         | -121.15      | 159.95       | 38.80   |
| -11      | 2314.00     | 2600.00      | 121.15          | 152.05         | -121.15      | 133.95       | 12.80   |
| -10      | 2340.00     | 2600.00      | 121.15          | 152.05         | -121.15      | 107.95       | -13.20  |
| -9       | 2366.00     | 2600.00      | 121.15          | 152.05         | -121.15      | 81.95        | -39.20  |
| -8       | 2392.00     | 2600.00      | 121.15          | 152.05         | -121.15      | 55.95        | -65.20  |
| -7       | 2418.00     | 2600.00      | 121.15          | 152.05         | -121.15      | 29.95        | -91.20  |
| -6       | 2444.00     | 2600.00      | 121.15          | 152.05         | -121.15      | 3.95         | -117.20 |
| -5       | 2470.00     | 2600.00      | 121.15          | 152.05         | -121.15      | -22.05       | -143.20 |
| -4       | 2496.00     | 2600.00      | 121.15          | 152.05         | -121.15      | -48.05       | -169.20 |
| -3       | 2522.00     | 2600.00      | 121.15          | 152.05         | -121.15      | -74.05       | -195.20 |
| -2       | 2548.00     | 2600.00      | 121.15          | 152.05         | -121.15      | -100.05      | -221.20 |
| -1       | 2574.00     | 2600.00      | 121.15          | 152.05         | -121.15      | -126.05      | -247.20 |
| 0        | 2600.00     | 2600.00      | 121.15          | 152.05         | -121.15      | -152.05      | -273.20 |
| 1        | 2626.00     | 2600.00      | 121.15          | 152.05         | -95.15       | -152.05      | -247.20 |
| 2        | 2652.00     | 2600.00      | 121.15          | 152.05         | -69.15       | -152.05      | -221.20 |
| 3        | 2678.00     | 2600.00      | 121.15          | 152.05         | -43.15       | -152.05      | -195.20 |
| 4        | 2704.00     | 2600.00      | 121.15          | 152.05         | -17.15       | -152.05      | -169.20 |
| 5        | 2730.00     | 2600.00      | 121.15          | 152.05         | 8.85         | -152.05      | -143.20 |
| 6        | 2756.00     | 2600.00      | 121.15          | 152.05         | 34.85        | -152.05      | -117.20 |
| 7        | 2782.00     | 2600.00      | 121.15          | 152.05         | 60.85        | -152.05      | -91.20  |
| 8        | 2808.00     | 2600.00      | 121.15          | 152.05         | 86.85        | -152.05      | -65.20  |
| 9        | 2834.00     | 2600.00      | 121.15          | 152.05         | 112.85       | -152.05      | -39.20  |
| 10       | 2860.00     | 2600.00      | 121.15          | 152.05         | 138.85       | -152.05      | -13.20  |
| 11       | 2886.00     | 2600.00      | 121.15          | 152.05         | 164.85       | -152.05      | 12.80   |
| 12       | 2912.00     | 2600.00      | 121.15          | 152.05         | 190.85       | -152.05      | 38.80   |
| 13       | 2938.00     | 2600.00      | 121.15          | 152.05         | 216.85       | -152.05      | 64.80   |
| 14       | 2964.00     | 2600.00      | 121.15          | 152.05         | 242.85       | -152.05      | 90.80   |
| 15       | 2990.00     | 2600.00      | 121.15          | 152.05         | 268.85       | -152.05      | 116.80  |
| 16       | 3016.00     | 2600.00      | 121.15          | 152.05         | 294.85       | -152.05      | 142.80  |
| 17       | 3042.00     | 2600.00      | 121.15          | 152.05         | 320.85       | -152.05      | 168.80  |

|    |         |         |        |        |        |         |        |
|----|---------|---------|--------|--------|--------|---------|--------|
| 18 | 3068.00 | 2600.00 | 121.15 | 152.05 | 346.85 | -152.05 | 194.80 |
| 19 | 3094.00 | 2600.00 | 121.15 | 152.05 | 372.85 | -152.05 | 220.80 |
| 20 | 3120.00 | 2600.00 | 121.15 | 152.05 | 398.85 | -152.05 | 246.80 |

| Stock Price | Strike Price | Premium on Call | Premium on Put | CE Gain/Loss | PE Gain/Loss | Net    | % Gain/Loss |
|-------------|--------------|-----------------|----------------|--------------|--------------|--------|-------------|
| 2188.45     | 2600         | 121.15          | 152.05         | -121.15      | 259.95       | 138.35 | 50.64       |



For the above company TCS, the equity stock fell by 14.91 % and the put option resulted in a loss of -121.15, however with the help of the long straddle we were able to achieve a profitable position.

CE Gain/Loss = Closing Price on 24/11/16 + LTP(Last Traded Price of Option) – Strike Price  
Or LTP (whichever is lower when considering loss)

PE Gain/Loss = Strike Price - Closing Price on 24/11/16 + LTP  
Or LTP (whichever is lower when considering loss)

Net = CE (Call European) Gain/Loss – PE (Put European) Gain/Loss

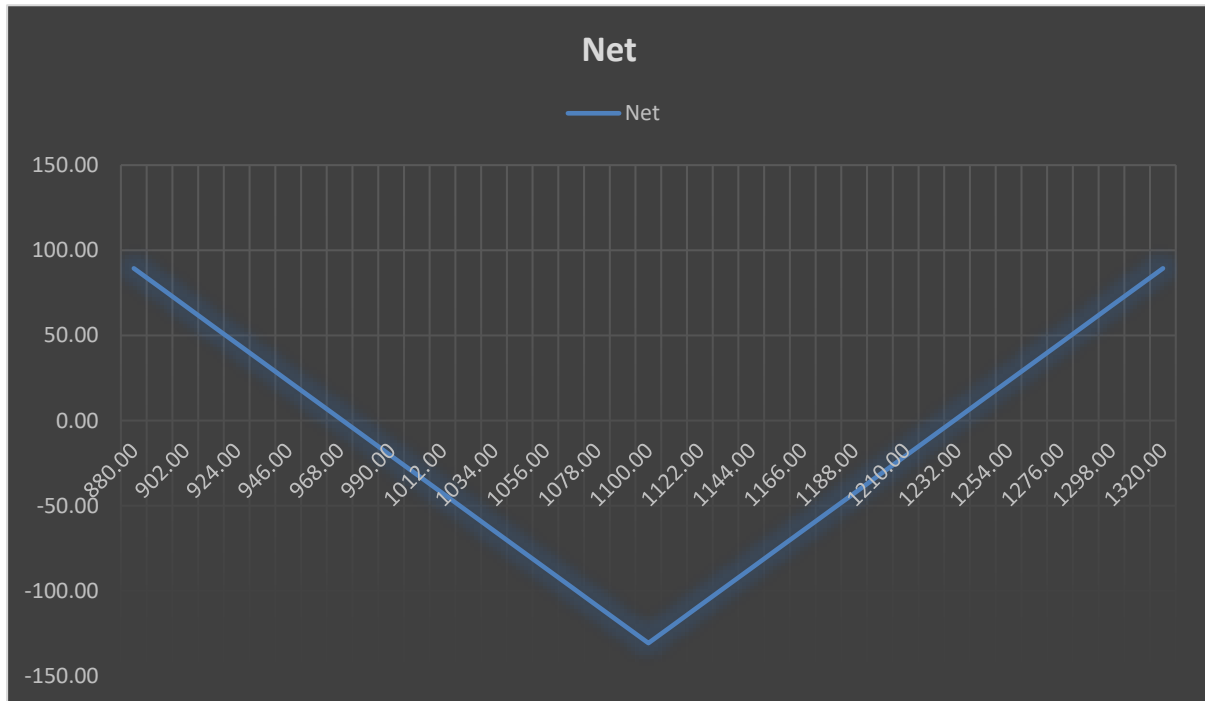
% Gain/ Loss = Net/(CE Gain/Loss+PE Gain/Loss)

Thus, a profit of 50.64% was achieved when using a long straddle with risk being minimized to premium amounts as well.

Infosys Ltd.

| % Change | Stock Price | Strike Price | Premium on Call | Premium on Put | CE Gain/Loss | PE Gain/Loss | Net     |
|----------|-------------|--------------|-----------------|----------------|--------------|--------------|---------|
| -20      | 880.00      | 1100.00      | 34.8            | 95.85          | -34.80       | 124.15       | 89.35   |
| -19      | 891.00      | 1100.00      | 34.8            | 95.85          | -34.80       | 113.15       | 78.35   |
| -18      | 902.00      | 1100.00      | 34.8            | 95.85          | -34.80       | 102.15       | 67.35   |
| -17      | 913.00      | 1100.00      | 34.8            | 95.85          | -34.80       | 91.15        | 56.35   |
| -16      | 924.00      | 1100.00      | 34.8            | 95.85          | -34.80       | 80.15        | 45.35   |
| -15      | 935.00      | 1100.00      | 34.8            | 95.85          | -34.80       | 69.15        | 34.35   |
| -14      | 946.00      | 1100.00      | 34.8            | 95.85          | -34.80       | 58.15        | 23.35   |
| -13      | 957.00      | 1100.00      | 34.8            | 95.85          | -34.80       | 47.15        | 12.35   |
| -12      | 968.00      | 1100.00      | 34.8            | 95.85          | -34.80       | 36.15        | 1.35    |
| -11      | 979.00      | 1100.00      | 34.8            | 95.85          | -34.80       | 25.15        | -9.65   |
| -10      | 990.00      | 1100.00      | 34.8            | 95.85          | -34.80       | 14.15        | -20.65  |
| -9       | 1001.00     | 1100.00      | 34.8            | 95.85          | -34.80       | 3.15         | -31.65  |
| -8       | 1012.00     | 1100.00      | 34.8            | 95.85          | -34.80       | -7.85        | -42.65  |
| -7       | 1023.00     | 1100.00      | 34.8            | 95.85          | -34.80       | -18.85       | -53.65  |
| -6       | 1034.00     | 1100.00      | 34.8            | 95.85          | -34.80       | -29.85       | -64.65  |
| -5       | 1045.00     | 1100.00      | 34.8            | 95.85          | -34.80       | -40.85       | -75.65  |
| -4       | 1056.00     | 1100.00      | 34.8            | 95.85          | -34.80       | -51.85       | -86.65  |
| -3       | 1067.00     | 1100.00      | 34.8            | 95.85          | -34.80       | -62.85       | -97.65  |
| -2       | 1078.00     | 1100.00      | 34.8            | 95.85          | -34.80       | -73.85       | -108.65 |
| -1       | 1089.00     | 1100.00      | 34.8            | 95.85          | -34.80       | -84.85       | -119.65 |
| 0        | 1100.00     | 1100.00      | 34.8            | 95.85          | -34.80       | -95.85       | -130.65 |
| 1        | 1111.00     | 1100.00      | 34.8            | 95.85          | -23.80       | -95.85       | -119.65 |
| 2        | 1122.00     | 1100.00      | 34.8            | 95.85          | -12.80       | -95.85       | -108.65 |
| 3        | 1133.00     | 1100.00      | 34.8            | 95.85          | -1.80        | -95.85       | -97.65  |
| 4        | 1144.00     | 1100.00      | 34.8            | 95.85          | 9.20         | -95.85       | -86.65  |
| 5        | 1155.00     | 1100.00      | 34.8            | 95.85          | 20.20        | -95.85       | -75.65  |
| 6        | 1166.00     | 1100.00      | 34.8            | 95.85          | 31.20        | -95.85       | -64.65  |
| 7        | 1177.00     | 1100.00      | 34.8            | 95.85          | 42.20        | -95.85       | -53.65  |
| 8        | 1188.00     | 1100.00      | 34.8            | 95.85          | 53.20        | -95.85       | -42.65  |
| 9        | 1199.00     | 1100.00      | 34.8            | 95.85          | 64.20        | -95.85       | -31.65  |
| 10       | 1210.00     | 1100.00      | 34.8            | 95.85          | 75.20        | -95.85       | -20.65  |
| 11       | 1221.00     | 1100.00      | 34.8            | 95.85          | 86.20        | -95.85       | -9.65   |
| 12       | 1232.00     | 1100.00      | 34.8            | 95.85          | 97.20        | -95.85       | 1.35    |
| 13       | 1243.00     | 1100.00      | 34.8            | 95.85          | 108.20       | -95.85       | 12.35   |
| 14       | 1254.00     | 1100.00      | 34.8            | 95.85          | 119.20       | -95.85       | 23.35   |
| 15       | 1265.00     | 1100.00      | 34.8            | 95.85          | 130.20       | -95.85       | 34.35   |
| 16       | 1276.00     | 1100.00      | 34.8            | 95.85          | 141.20       | -95.85       | 45.35   |
| 17       | 1287.00     | 1100.00      | 34.8            | 95.85          | 152.20       | -95.85       | 56.35   |

|    |         |         |      |       |        |        |       |
|----|---------|---------|------|-------|--------|--------|-------|
| 18 | 1298.00 | 1100.00 | 34.8 | 95.85 | 163.20 | -95.85 | 67.35 |
| 19 | 1309.00 | 1100.00 | 34.8 | 95.85 | 174.20 | -95.85 | 78.35 |
| 20 | 1320.00 | 1100.00 | 34.8 | 95.85 | 185.20 | -95.85 | 89.35 |



For the above company, Infosys, the equity stock fell by 12.02 % and the put option resulted in a loss of -34.8, however with the help of the long straddle we were able to achieve a profitable position.

| Stock Price | Strike Price | Premium on Call | Premium on Put | CE Gain/Loss | PE Gain/Loss | Net   | % Gain/Loss |
|-------------|--------------|-----------------|----------------|--------------|--------------|-------|-------------|
| 930.3       | 1100         | 34.8            | 95.85          | -34.8        | 73.85        | 39.05 | 29.88       |

CE Gain/Loss = Closing Price on 24/11/16 + LTP(Last Traded Price of Option) – Strike Price

Or LTP (whichever is lower when considering loss)

PE Gain/Loss = Strike Price - Closing Price on 24/11/16 + LTP

Or LTP (whichever is lower when considering loss)

Net = CE (Call European) Gain/Loss – PE (Put European) Gain/Loss

% Gain/ Loss = Net/(CE Gain/Loss+PE Gain/Loss)

Thus, a profit of 29.88% was achieved when using a long straddle with risk being minimized to premium amounts as well.

## **5. FINDINGS & CONCLUSION**

Looking at the above data and comparing all three investment strategies, we can clearly see that the long straddle is the one that pays off the most. Both equity investments as well as the pure options performed poorly and lost money. The purpose of the paper was to bring out the benefits of using the strategy and comparing it with pure options trading and equity stock trading. The long straddle is a way to profit from increased volatility or sharp move in the underlying stock's price so as to maximize the return of the investor. The research paper is done solely for the purpose of investments in options.

The long straddle however was able to make huge profit margins even crossing 50% of the initial investment due to the volatile nature of the markets during the time period from 24<sup>th</sup> August to 24<sup>th</sup> November.

However, we can clearly see from the long straddle table that if there had not been fluctuations in the market price we would not be able to make such profit.

## **6. REFERENCE**

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