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Title:	Comparative Analysis of Futures and Options with respect to Banking Sector

ABSTRACT

Emergence for derivative products such as futures and options can be traced back to willingness of risk opposing agents in order to save them against uncertainties. Derivatives are instruments which derives their value from that of an underlying asset such as futures and options. .

This study has made a humble attempt to understand the profit and loss positions of investors. The study is carried out basing on the banking sectors giving special reference to ICICI Bank, State bank of India, Yes Bank. Prices in an organized derivatives market show an image of the perception of the market participants with regards to the future; they lead the price of underlying commodity to the perceived future level. Derivative markets have gained a lot of importance in terms of their vital role in the economy. The increasing investments of investors in stocks (domestic as well as overseas) have attracted attention of the researcher in this area. In cash market the profit or the loss of the investor depends on the market price of underlying asset. The investor may either incur a huge profit or a limited downside. Derivatives are mostly used for the purpose of hedging. SEBI may revise some of their regulations like contract size in order to increase the derivatives market in India. In a nutshell it can be said that the study throws a light on the derivatives market in India.

1.1 Introduction to the study

Derivatives are instruments which derives their value from that of underlying commodities such as futures and options. The financial markets are marked with a high degree of volatility. By locking-in asset prices derivative products can be used to either partially or fully transfer price risks. As instruments of risk management, a derivative product usually does not influence the fluctuations in the underlying commodities prices.

Examples of underlying assets can be index, share, bond, currency, interest, etc. Banks, firms, companies and investors minimizes the risk to gain opportunity to cheaper money and to make profits using derivative products. Derivatives are likely to grow at a faster rate in futures.

1.2 Need for the study

Derivatives gained a lot of importance in terms of their vital role in the economy. The increasing investments of investors in stocks (domestic as well as overseas) have attracted attention in this area. Using derivative products, it is possible to transfer price risks either partially or fully by locking-in asset prices. As the volume of trading is very much increasing in derivatives market, this analysis will be of immense help to the investors.

1.3 Scope of the study

The findings and suggestions are based on the data available for three companies including ICICI bank, State bank of India and Yes bank. This study is an attempt to evaluate the derivatives market only in India context. International scenario has not been taken into consideration.

1.4 Objectives of the study

- To study risk management using derivatives.
- To analyze the operations of options and futures.
- To find the positions (profit or loss) of futures buyer and futures seller comparing different banks stock futures.
- To find the positions (profit or loss) of option holder and option writer by comparing different banks stock options.

1.5 Research Methodology

- **Research design:**
 - Descriptive research
- **Techniques:**
 - Comparison through Graphical analysis
 - Moving averages
 - Pay off profile
- **Data collection:**

Data has been collected from secondary source.

1.6 Company Profile

ICICI Bank offers an expansive range of Option products to accommodate to the diverse risk management requirements of clients. A Currency option is a contract between a buyer and a seller that gives the buyer the right to buy (Call option) or to sell (Put option) an underlying currency at a future date at an agreed rate (Strike) for an agreed price (Premium). Interest rate option gives the floating rate borrower, the right to place an upper limit on the rate of interest exposure. Collar can be defined as a combination of a bought Cap agreement and a sold Floor agreement or sold Floor agreement and a bought Cap agreement.

State Bank of India is an Indian multinational, public sector and a financial service company. It is a government owned corporation with its headquarters in Mumbai. On April 1, 2017, the State Bank of India, which was India's largest bank, merged with five of its associate banks and with the Bharatiya Mahila Bank. This stood as the first ever large scale consolidation in the Indian banking industry. With this merger, SBI stood as one among the 50 largest banks in the world.

Yes Bank stands to be the India's fourth largest private sector bank, founded by Rana Kapoor and Ashok Kapoor in 2004. Yes Bank is the only bank awarded with the Greenfield Bank license in the last one decade. It has built a Corporate, Retail & SME Banking franchise, Financial Markets, Investment Banking, Corporate Finance, Branch Banking, Business and Transaction Banking, and Wealth Management business lines across the country.

The S&P BSE SENSEX can be simply called as SENSEX, is a free-float market-weighted stock market index having 30 well established and financially sound companies listed on Bombay Stock Exchange. The 30 companies, among which few are the largest and most actively traded stocks, are representative of various industrial sectors of the Indian economy.

Since 1 January 1986, the S&P BSE SENSEX is regarded as the pulse of the domestic stock markets in India.

The National Stock Exchange of India Limited is a Mumbai-based stock exchange. It stands as the biggest stock exchange in India and as the third biggest in the world in terms of amounts of transactions.

NSE is mutually owned by a set of leading financial institutions, banks, insurance companies and other financial intermediaries but its ownership and management operate as separate groups in India. Having a total market capitalization of 4,274,509 crore INR in July 2007, the NSE stands as the second-largest stock market in South Asia in terms of market capitalization.

Introduction to futures

Futures markets were designed to overcome the issues that exist in forward markets. A futures contract is an agreement between two parties to buy or sell an asset at a certain time in the future at a certain price. Futures contracts are standardized contracts. To facilitate liquidity in the futures contract, certain standard features are specified in the contract.

The standardized items in a futures contract are:

- Quantity of the underlying
- Quality of the underlying
- The date and the month of delivery
- The units of price quotation and minimum price change
- Location of settlement

Features of futures

- Futures are highly standardized.
- The contracting parties are not required to pay any down payment.
- Price risks are hedged.
- Secondary markets exist for futures.

Introduction to options

An option is a contract which gives the buyer the right, but not the obligation, to buy or sell an instrument at a specified strike price on a specified date. The strike price may be set by reference to the spot price of the underlying commodity on the day an option is traded or it may be fixed at a discount or premium. An option that conveys to buy at a specific price is called as a call option, an option that conveys the right to sell at a specific price is called as a put option.

Styles of options

1. American style – It can be traded on or before expiration date.
2. Bermudan style – It can be exercised only on the date of expiration.
3. European style – It can be exercised only on the date of expiration.

1.7 Limitations of the study

- This study has limitation of generalization
- The study also has limitation of time cost and technology
- It has a limitation of market dynamics
- The contract taken is March 2018 ending, one month contract as the data keeps changing for every month.
- The data collected is completely restricted to ICICI BANK, SBI BANK, YES BANK, of March 2018. Hence this analysis cannot be taken as universal.

Literature Review

1. Shahsuzan Zakaria in his article ‘The use of financial derivatives in measuring bank risk management efficiency: A data development analysis approach’ published on 29 December 2017, basing on the usage of a financial risk instrument has provided a new approach for measuring risk management efficiency levels in banks by offering depth insight into the data envelopment analysis approach

2. Jack D. Schwager Mark Etzkorn in his article “An Introduction to Options on Futures published on 6 January 2017 said that options and futures greatly expand the range of trading strategies available to both speculators and hedgers. The purchase of a call option provides the buyer with the right, but not the obligation, to purchase contract at a specified price, called the strike or exercise price, at any time up to the expiration date. A put option provides the buyer with the right, but not the obligation, contract at the strike price at any time prior to expiration. The price of an option is called the premium.

3. Shlomo Shlafman Boris Bachelis in his article ‘Analysis of financial derivatives’ has said that a method for trading in a financial derivative of an underlying commodity includes determining a trend predictive of a future value of the asset. Responsive to the change and the variance, a density function is calculated, which is indicative of a probability distribution of the value at a first time in the future.

4. Soniya, G. Mohanraj, Dr.P. Karthikeyan in their article ‘A Study on Financial Derivatives (Future & Options) with Special Reference to ICICI & SBI’ has said that the emergence of the market for derivatives products, especially futures and options, can be traced back to the

willingness of risk-averse economic agents. Derivatives are risk management instruments, which derive their value from an underlying asset such as options and futures.

5. Revathi pendian in her article 'A Study on Financial Derivatives (Futures & Options)' in International Journal of Research in Business Management has said that the derivative market started newly in India and it is not known by every investor, so SEBI may take certain steps to create awareness among the investors about the derivative segment. Derivatives are mostly used for minimizing the risk.

6. Mohammed Rubani PhD Scholar (Commerce) (2014-2017) in his article 'A Study of Derivative Market in India' has said that since 1991, due to liberalization of economic policy, the Indian economy has entered in an era where Indian companies cannot ignore international markets. Exchange rates and interest rates determined by the market also created volatility and instability in portfolio values and securities prices. This paper made a study about the capital market in India with reference to Derivatives.

7. Golaka C Nath, Research Paper (NSE) in his article 'Behavior of Stock Market Volatility after Derivatives' has said new institutions like National Stock Exchange of India, National Securities Clearing Corporation, National Securities Depository have been the change agents. With modern technology in hand, these institutions have set benchmarks and standards for others to follow..

8. Dr. Premalata Shenbagaraman, Research Paper (NSE) in his article 'Do Futures and Options trading increase stock market volatility?' has said that different studies on the effects of futures and options listing on the underlying cash market volatility have been done in the developed markets. This study is of much importance to investors, officials of stock exchange board and regulators in designing trading mechanisms and contract specifications.

Research Methodology

- **Research design:**

Descriptive research: This study answers questions like “what” and does not address questions like how/when/why it occurred. It simply tries to attempt what it is rather than why it is.

- **Techniques:**

- Comparison through Graphical analysis:

This analysis is used to describe the profit or loss position of buyer. Through this chart we can state at which date the buyer and the seller can earn maximum profit.

- Moving averages:

Using this technique the support level and the resistance levels are determined.

- Pay off profile:

This technique enables to calculate the premium as well the net profit or net loss of the buyer and seller.

- **Data collection:**

Secondary Data: Secondary data refers to data that was collected by someone other than the user. The various sources of secondary data are

- Websites
 - Books
 - Articles

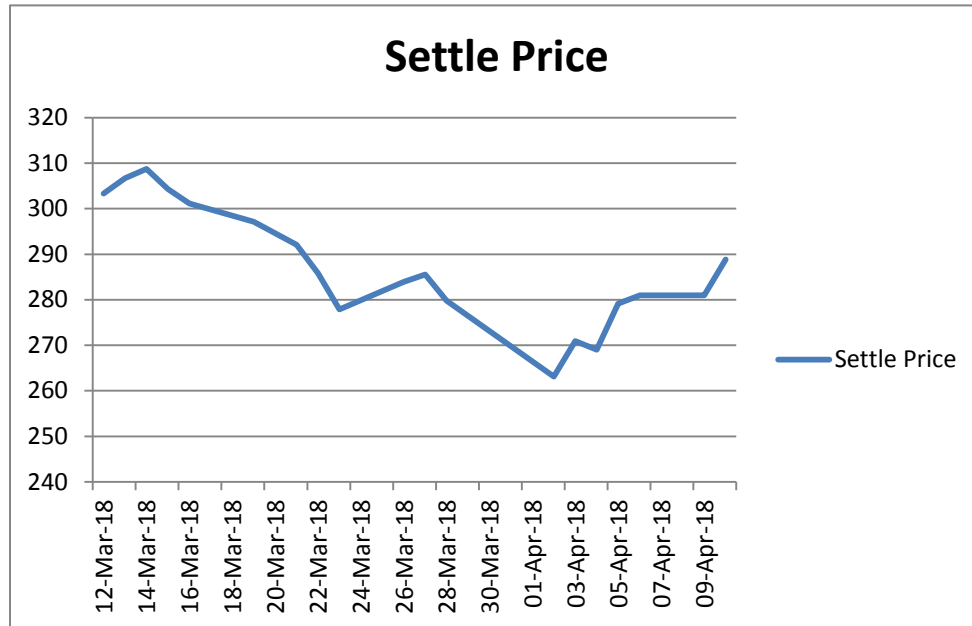
1. Stock Futures: Analysis of ICICI

The objective of this analysis is to evaluate the profit/loss position of futures. This analysis is based on sample data taken of ICICI BANK. This analysis considered the April 2018 contract of ICICI BANK. The lot size taken is 150 and the time period in which the analysis is done is from 12-03-2018 to 10.04.2018.

Date	Settle Price
10-Apr-18	288.85
09-Apr-18	280.95
06-Apr-18	281
05-Apr-18	279.15
04-Apr-18	269
03-Apr-18	270.95
02-Apr-18	263.15
28-Mar-18	279.75
27-Mar-18	285.55
26-Mar-18	283.9
23-Mar-18	277.85
22-Mar-18	285.8
21-Mar-18	292.05
20-Mar-18	294.6
19-Mar-18	297.15
16-Mar-18	301.15
15-Mar-18	304.3
14-Mar-18	308.75
13-Mar-18	306.7
12-Mar-18	303.35

SOURCE:

https://www.nseindia.com/live_market/dynaContent/live_watch/get_quote/GetQuoteFO.jsp?underlying=ICICIBANK&instrument=FUTSTK&type=-&strike=-&expiry



Graph: 1

Findings

If 1 lot futures of ICICI BANK are purchased on 12th Mar, 2018 and sold on 10 April, 2018 then a loss of $288.85 - 303.35 = -14.5$ per share may occur. So the actual loss of 2,175 i.e. $-14.5 * 150$ may be faced.

If sold on 14th Mar, 2018 then there exists a chance of profit of $308.75 - 303.35 = 5.4$ per share. So the total profit can be 810 i.e. $5.4 * 150$

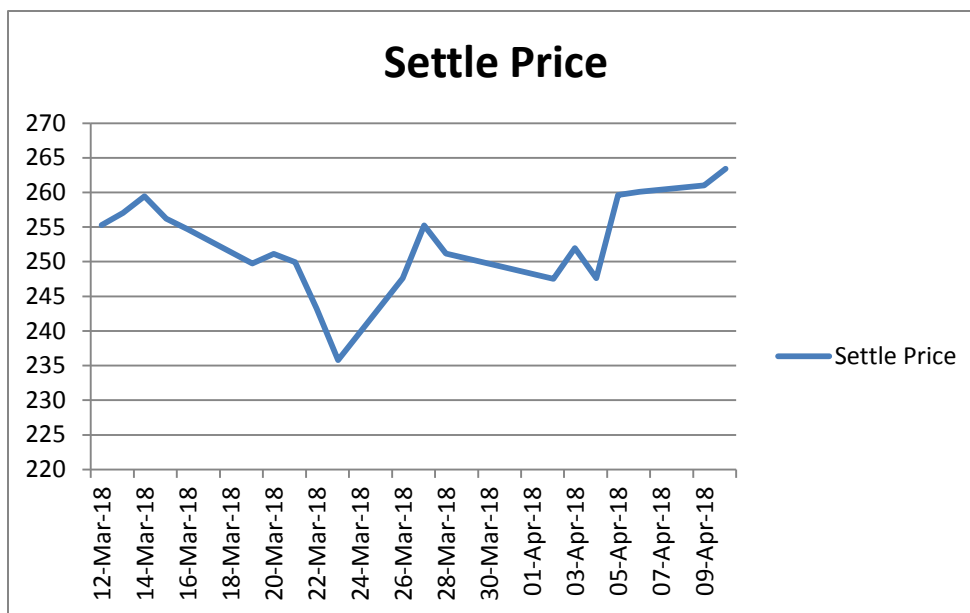
The closing price of ICICI BANK at the end of the contract period is 288.85 and this is considered as settlement price.

State Bank of India: The objective of this analysis is to evaluate the profit/loss position of futures. This analysis is based on sample data taken of STATE BANK OF INDIA. This analysis considered the April 2018 contract of STATE BANK OF INDIA. The lot size taken is 180 and the time period in which the analysis is done is from 12-03-2018 to 10.04.2018.

Date	Settle Price
10-Apr-18	263.4
09-Apr-18	261
06-Apr-18	260.1
05-Apr-18	259.65
04-Apr-18	247.6
03-Apr-18	251.95
02-Apr-18	247.55
28-Mar-18	251.2
27-Mar-18	255.25
26-Mar-18	247.6
23-Mar-18	235.8
22-Mar-18	243.25
21-Mar-18	249.95
20-Mar-18	251.15
19-Mar-18	249.75
16-Mar-18	254.7
15-Mar-18	256.2
14-Mar-18	259.45
13-Mar-18	257.05
12-Mar-18	255.3

SOURCE:

https://www.nseindia.com/live_market/dynaContent/live_watch/get_quote/GetQuoteFO.jsp?underlying=SBIN&instrument=FUTSTK&type=-&strike=-&expiry



Graph: 2

Findings

If 1 lot futures of State Bank of India is purchased on 12 Mar 2018 and sold on 10 April 2018 then a profit of $263.4 - 255.3 = 8.1$ per share may be gained. So the total profit may be 1458 i.e. 8.1×180

If sold on 23 Mar, 2018 then a loss of $235.8 - 255.3 = -19.5$ per share may take place. So the total loss can be 3510 i.e. -19.5×180

The closing price of State Bank of India at the end of the contract period is 263.4 and this is considered as settlement price.

Yes Bank: The objective of this analysis is to evaluate the profit/loss position of futures. This analysis is based on sample data taken of YES BANK. This analysis considered the April 2018 contract of YES BANK. The lot size taken is 175 and the time period in which the analysis is done is from 12-03-2018 to 10.04.2018.

Date	Settle Price
10-Apr-18	320.3
09-Apr-18	317.5
06-Apr-18	315.55
05-Apr-18	314.85
04-Apr-18	305.75
03-Apr-18	314.2
02-Apr-18	307.5
28-Mar-18	306.8
27-Mar-18	305.4
26-Mar-18	305.1
23-Mar-18	288.1
22-Mar-18	300.5
21-Mar-18	303.6
20-Mar-18	305
19-Mar-18	307.4
16-Mar-18	315.4
15-Mar-18	315.05
14-Mar-18	321.3
13-Mar-18	315.3
12-Mar-18	314.95

Source:

https://www.nseindia.com/live_market/dynaContent/live_watch/get_quote/GetQuoteFO.jsp?underlying=ICICIBANK&instrument=FUTSTK&type=-&strike=-&expiry



Graph: 3

Findings

If 1 lot futures of Yes Bank are purchased on 12 Mar 2018 and sells on 10 April 2018 then a profit of $320.3 - 314.95 = 5.35$ per share may be gained. So a total profit of 936.25 i.e. $5.35 * 175$ exists.

If sold on 23 Mar, 2018 then a loss of $288.1 - 320.3 = -32.2$ per share may occur. So total loss can be 5635 i.e. $32.2 * 175$

The closing price of Yes Bank at the end of the contract period is 320.3 and this is considered as settlement price.

2. Stock Options

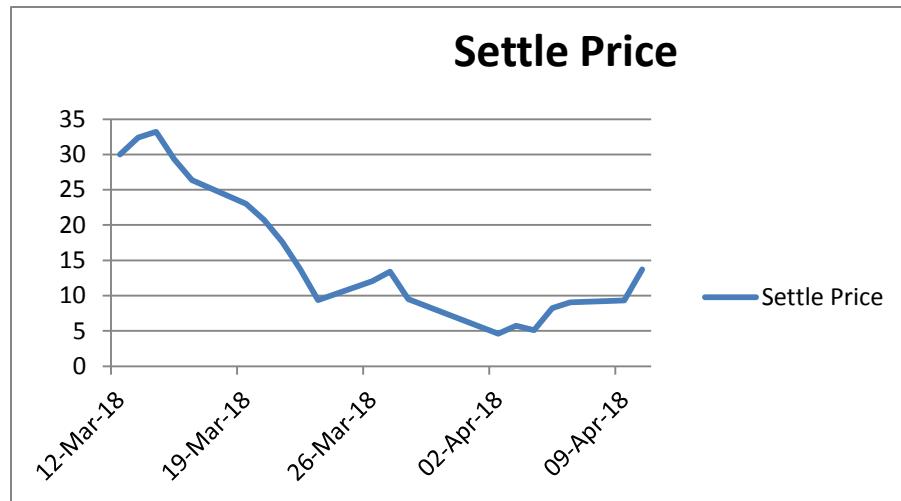
Call Option: The objective of this analysis is to evaluate the profit/loss position of option holder and option writer.

ICICI Bank Limited

Date	Settle Price
10-Apr-18	13.7
09-Apr-18	9.3
06-Apr-18	9.05
05-Apr-18	8.25
04-Apr-18	5.1
03-Apr-18	5.75
02-Apr-18	4.6
28-Mar-18	9.5
27-Mar-18	13.4
26-Mar-18	12.05
23-Mar-18	9.35
22-Mar-18	13.75
21-Mar-18	17.6
20-Mar-18	20.75
19-Mar-18	23
16-Mar-18	26.35
15-Mar-18	29.35
14-Mar-18	33.2
13-Mar-18	32.4
12-Mar-18	30

SOURCE:

https://www.nseindia.com/live_market/dynaContent/live_watch/get_quote/GetQuoteFO.jsp?underlying=ICICIBANK&instrument=FUTSTK&type=-&strike=-&expiry



Graph: 4

Buyers Pay off

- On the expiry date the spot market price is enclosed at 13.7. As it is out of the money for the buyer and in the money for the seller, hence the buyer is in loss.
- The buyer is at a loss of Rs 6.3 per share (i.e. $30 - 13.7 = 16.3$)
- The total loss that the buyer bears is Rs 2,445 ($16.3 \times 150 = 2445$)

Sellers Payoff:

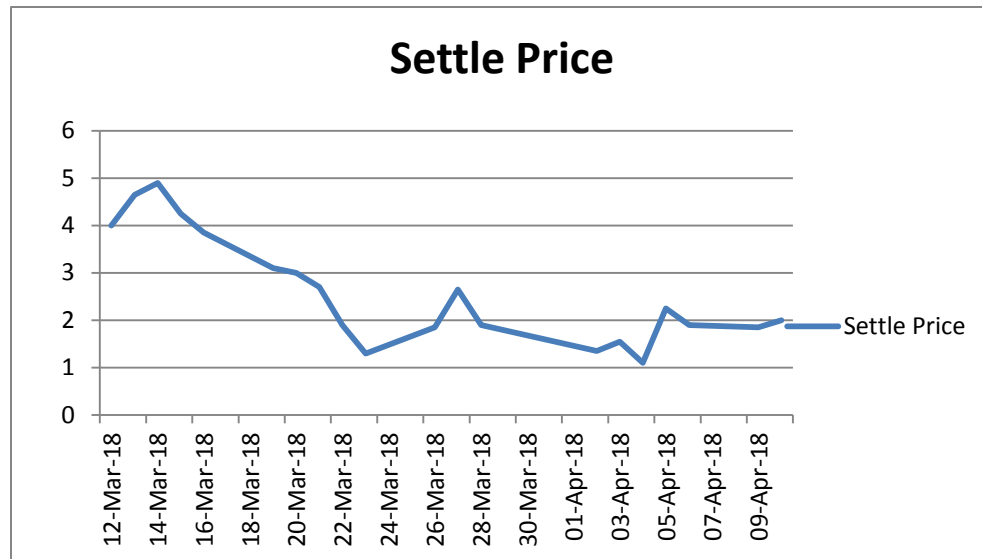
- As Seller sells for Rs 30, he is in a profit of Rs 16.3 per share ($30 - 13.7$)
- The seller total profit amounts to Rs 2,445 ($30 - 13.7$)

State Bank of India

Date	Settle Price
10-Apr-18	2
09-Apr-18	1.85
06-Apr-18	1.9
05-Apr-18	2.25
04-Apr-18	1.1
03-Apr-18	1.55
02-Apr-18	1.35
28-Mar-18	1.9
27-Mar-18	2.65
26-Mar-18	1.85
23-Mar-18	1.3
22-Mar-18	1.9
21-Mar-18	2.7
20-Mar-18	3
19-Mar-18	3.1
16-Mar-18	3.85
15-Mar-18	4.25
14-Mar-18	4.9
13-Mar-18	4.65
12-Mar-18	4

SOURCE:

https://www.nseindia.com/live_market/dynaContent/live_watch/get_quote/GetQuoteFO.jsp?underlying=SBIN&instrument=FUTSTK&type=-&strike=-&expiry



Graph: 5

Findings

Buyers Pay off

- On the expiry date the spot market price is enclosed at 2. As it is out of the money for the buyer and in the money for the seller, hence the buyer is at loss.
- The buyer is at a loss of Rs 2 per share (i.e. $4 - 2 = 2$)
- The total loss that the buyer bears is Rs 360 ($2 \times 180 = 360$)

Sellers Pay off

- As Seller sells for Rs 30, he is in a profit of Rs 2 per share ($4 - 2$)
- The seller total profit amounts to Rs 360 ($2 \times 180 = 360$)

Yes Bank

Date	Settle Price
10-Apr-18	37.35
09-Apr-18	36.95
06-Apr-18	36.75
05-Apr-18	36.75
04-Apr-18	30
03-Apr-18	36.1
02-Apr-18	30
28-Mar-18	30.6
27-Mar-18	30
26-Mar-18	27.2
23-Mar-18	17.05
22-Mar-18	23.95
21-Mar-18	30
20-Mar-18	28
19-Mar-18	30.3
16-Mar-18	37.3
15-Mar-18	36.75
14-Mar-18	42.9
13-Mar-18	37.6
12-Mar-18	36.55

SOURCE:

https://www.nseindia.com/live_market/dynaContent/live_watch/get_quote/GetQuoteFO.jsp?underlying=YESBANK&instrument=FUTSTK&type=-&strike=-&expiry



Graph: 6

Findings

Buyers Pay off

- On the expiry date the spot market price is enclosed at 37.35. As it is out of the money for the seller and in the money for the buyer, hence the seller is at loss.
- The buyer is at a profit of Rs 0.80 per share (i.e. $37.35 - 36.55 = 0.80$)
- The total profit that the buyer gets is Rs 140 ($0.80 \times 175 = 140$)

Sellers Pay off

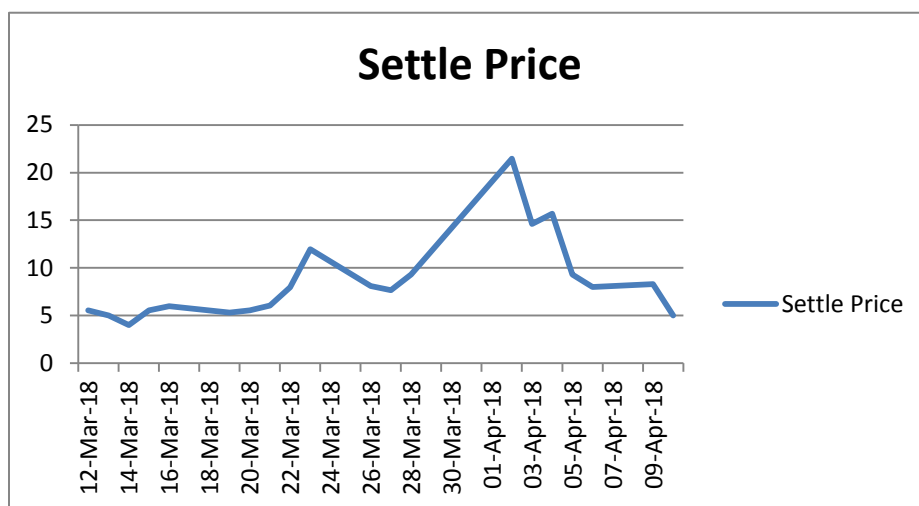
- As Seller sells for Rs 36.55, he is at a loss of Rs 0.80 per share ($36.55 - 37.35 = -0.80$)
- The seller total loss amounts to Rs 140 ($0.80 \times 175 = 140$)

**Put Option
ICICI Bank Limited:**

Date	Settlement Price	Premium at Strike Price 280
10-Apr-18	5	275
09-Apr-18	8.3	271.7
06-Apr-18	8	272
05-Apr-18	9.3	270.7
04-Apr-18	15.7	264.3
03-Apr-18	14.6	265.4
02-Apr-18	21.45	258.55
28-Mar-18	9.3	270.7
27-Mar-18	7.65	272.35
26-Mar-18	8.1	271.9
23-Mar-18	11.95	268.05
22-Mar-18	7.95	272.05
21-Mar-18	6.05	273.95
20-Mar-18	5.55	274.45
19-Mar-18	5.3	274.7
16-Mar-18	6	274
15-Mar-18	5.55	274.45
14-Mar-18	4	276
13-Mar-18	5	275
12-Mar-18	5.55	274.45

SOURCE:

https://www.nseindia.com/live_market/dynaContent/live_watch/get_quote/GetQuoteFO.jsp?underlying=ICICIBANK&instrument=FUTSTK&type=-&strike=-&expiry



Graph: 7

Findings

Buyers Payoff:

1. Those who have purchase put option at a strike price of 280, settlement price 5, the premium payable is 275
2. On the expiry date the settlement price enclosed at 5. As it is out of the money for the buyer and in the money for the seller, hence the buyer is in loss.
3. So the buyer will lose 0.55 (i.e., $5 - 5.55 = -0.55$) and premium i.e. 275 per share.
So the total loss will be 41,332.5 i.e. $(150 \times 0.55 + 150 \times 275)$

Sellers Payoff:

1. As Seller is entitled only for premium if he is in profit.
2. So his profit is only premium i.e. $275 \times 150 = 41,250$

State Bank of India:

Date	Settlement Price	Premium at Strike Price 280
10-Apr-18	18	262
09-Apr-18	21	259
06-Apr-18	21.65	258.35
05-Apr-18	22.75	257.25
04-Apr-18	30.5	249.5
03-Apr-18	30	250
02-Apr-18	33.55	246.45
28-Mar-18	29.85	250.15
27-Mar-18	27.5	252.5
26-Mar-18	35	245
23-Mar-18	43.2	236.8
22-Mar-18	35.15	244.85
21-Mar-18	31.55	248.45
20-Mar-18	30.9	249.1
19-Mar-18	32.95	247.05
16-Mar-18	29.8	250.2
15-Mar-18	29.15	250.85
14-Mar-18	27.05	252.95
13-Mar-18	26	254
12-Mar-18	30	250

SOURCE:

https://www.nseindia.com/live_market/dynaContent/live_watch/get_quote/GetQuoteFO.jsp?underlying=SBIN&instrument=FUTSTK&type=-&strike=-&expiry



Graph: 8

Findings

Buyers Payoff:

1. Purchase of put option at a strike price of 280; settlement price 18, the premium payable is 262.
2. On the expiry date the settlement price enclosed at 18. As it is out of the money for the buyer and in the money for the seller, hence the buyer is in loss.
3. So the buyer will lose 12 (i.e., $30 - 18 = -12$) and premium i.e. 262 per share.
So the total loss will be 41,460 i.e. $(180 \times 12 + 150 \times 262)$

Sellers Payoff:

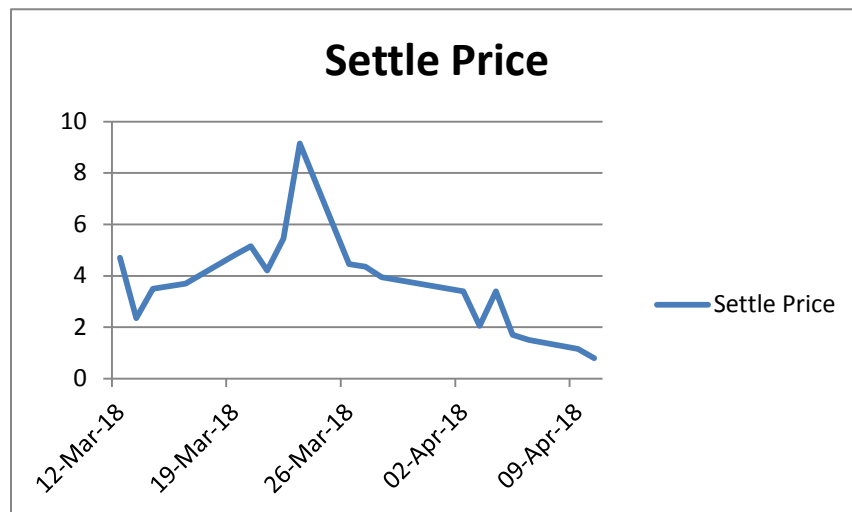
1. As Seller is entitled only for premium if he is in profit.
2. So his profit is only premium i.e. $262 \times 180 = 39,300$

Yes Bank

Date	Settlement Price	Premium at Strike Price 280
10-Apr-18	0.8	279.2
09-Apr-18	1.15	278.85
06-Apr-18	1.5	278.5
05-Apr-18	1.7	278.3
04-Apr-18	3.4	276.6
03-Apr-18	2.05	277.95
02-Apr-18	3.4	276.6
28-Mar-18	3.95	276.05
27-Mar-18	4.35	275.65
26-Mar-18	4.45	275.55
23-Mar-18	9.15	270.85
22-Mar-18	5.45	274.55
21-Mar-18	4.2	275.8
20-Mar-18	5.15	274.85
19-Mar-18	4.8	275.2
16-Mar-18	3.7	276.3
15-Mar-18	3.6	276.4
14-Mar-18	3.5	276.5
13-Mar-18	2.35	277.65
12-Mar-18	4.7	275.3

SOURCE:

https://www.nseindia.com/live_market/dynaContent/live_watch/get_quote/GetQuoteFO.jsp?underlying=YESBANK&instrument=FUTSTK&type=-&strike=-&expiry



Graph: 9

Findings

Buyers Payoff:

1. Purchase of put option at a strike price of 280, settlement price 0.8, the premium payable is 279.2
2. On the expiry date the settlement price enclosed at 0.80. As it is out of the money for the buyer and in the money for the seller, hence the buyer is in loss.
3. So the buyer will lose 3.7 (i.e., $4.7 - 0.80 = 3.7$) and premium i.e. 279.2 per share.
So the total loss will be 49,507.5 i.e. $(175 \times 3.7 + 175 \times 279.2)$

Sellers Payoff:

1. As Seller is entitled only for premium if he is in profit.
2. So his profit is only premium i.e. $275 \times 15 = 48,860$

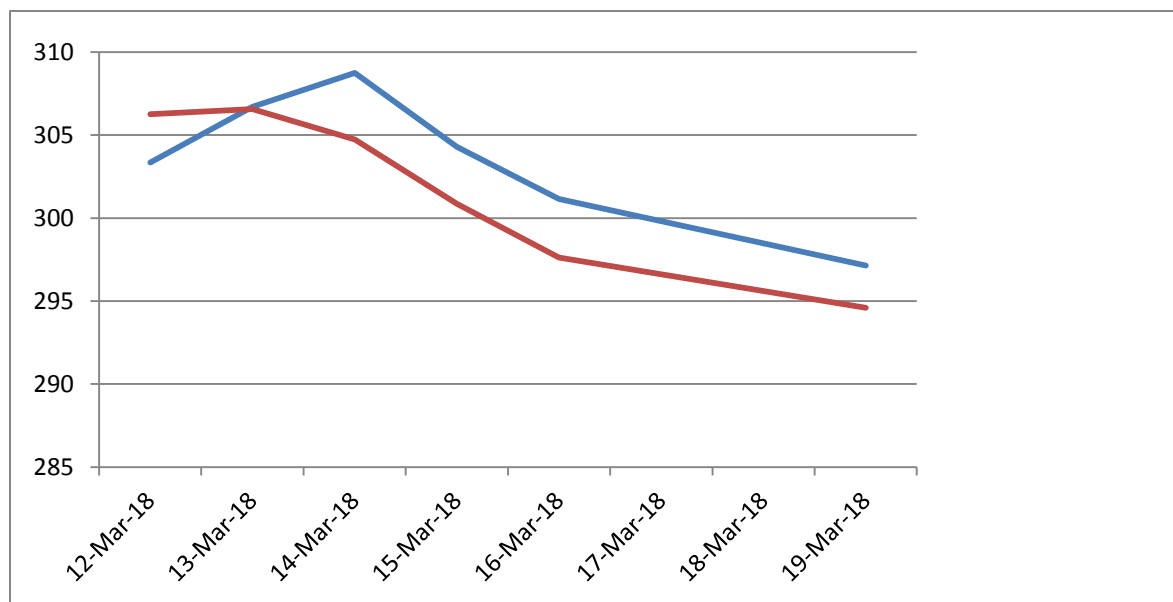
Calculation of Moving Averages

ICICI Bank Limited: Table: 1

Date	Settle Price	3 Years Moving Averages
10-Apr-18	288.85	
09-Apr-18	280.95	
06-Apr-18	281	283.6
05-Apr-18	279.15	280.36
04-Apr-18	269	276.38
03-Apr-18	270.95	273.03
02-Apr-18	263.15	267.7
28-Mar-18	279.75	271.28
27-Mar-18	285.55	276.15
26-Mar-18	283.9	283
23-Mar-18	277.85	282.43
22-Mar-18	285.8	282.56
21-Mar-18	292.05	285.23
20-Mar-18	294.6	290.81
19-Mar-18	297.15	294.6
16-Mar-18	301.15	297.63
15-Mar-18	304.3	300.86
14-Mar-18	308.75	304.73
13-Mar-18	306.7	306.58
12-Mar-18	303.35	306.26

Support level: A low price level for a security or commodity below which prices do not ordinarily fall.

Resistance level: An upper price level for a security or commodity that is repeatedly reached but not exceeded due to resistance from the market.



Graph: 10

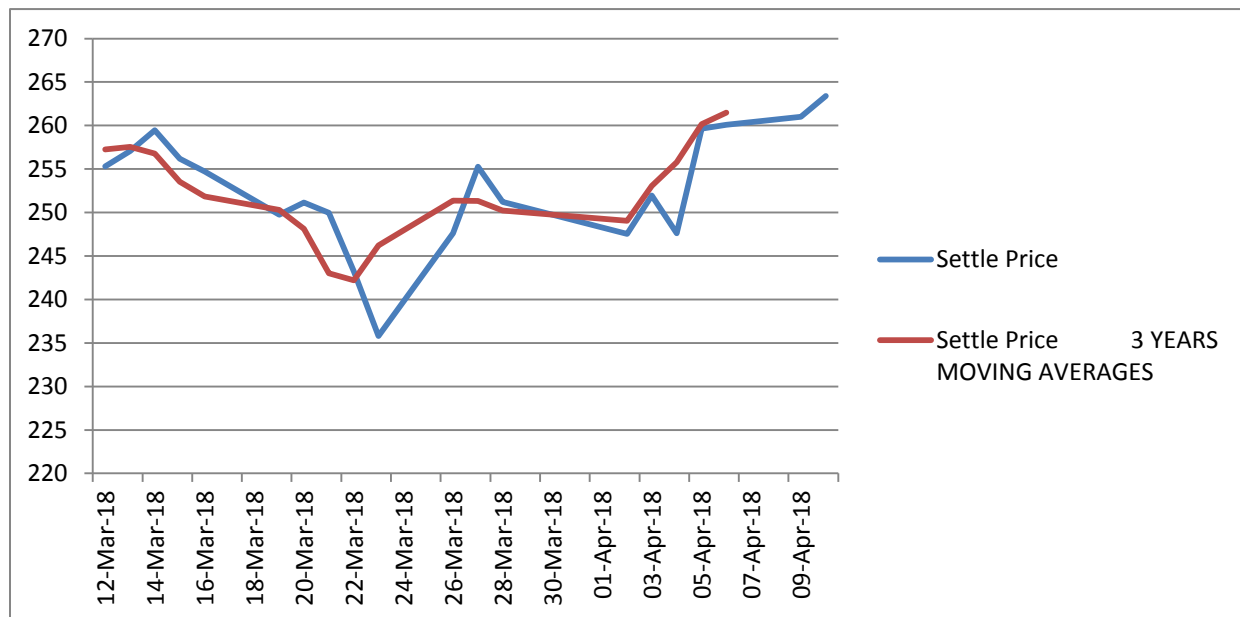
Interpretation

Support Level for ICICI is 267.7 as on 2 April 2018.

Resistance Level for ICICI is 306.58 as on 13 March 2018.

State Bank of India: Table: 2

Date	Settle Price	3 Years Moving Averages
10-Apr-18	263.4	
09-Apr-18	261	
06-Apr-18	260.1	261.5
05-Apr-18	259.65	260.16
04-Apr-18	247.6	255.78
03-Apr-18	251.95	253.06
02-Apr-18	247.55	249.03
28-Mar-18	251.2	250.23
27-Mar-18	255.25	251.33
26-Mar-18	247.6	251.35
23-Mar-18	235.8	246.21
22-Mar-18	243.25	242.21
21-Mar-18	249.95	243
20-Mar-18	251.15	248.11
19-Mar-18	249.75	250.28
16-Mar-18	254.7	251.86
15-Mar-18	256.2	253.55
14-Mar-18	259.45	256.78
13-Mar-18	257.05	257.56
12-Mar-18	255.3	257.26



Graph: 11

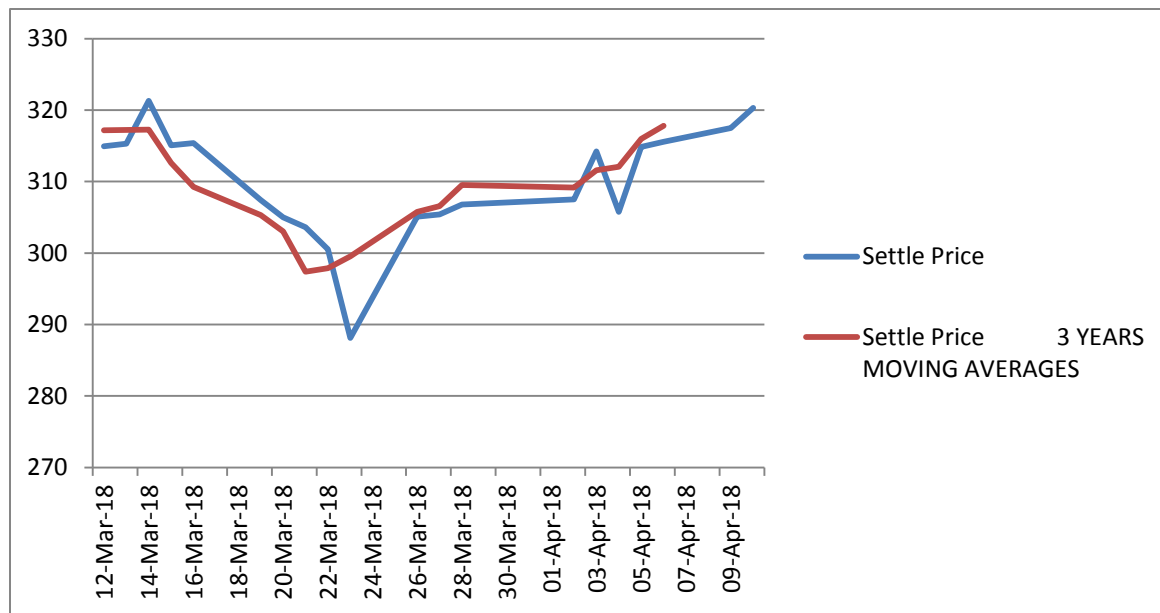
Interpretation

Support Level for SBI is 242.21 as on 23 Mar 2018.

Resistance Level for SBI is 261.5 as on 6 April 2018.

Yes Bank: Table: 3

Date	Settle Price	3 Years Moving Averages
10-Apr-18	320.3	
09-Apr-18	317.5	
06-Apr-18	315.55	317.78
05-Apr-18	314.85	315.96
04-Apr-18	305.75	312.05
03-Apr-18	314.2	311.6
02-Apr-18	307.5	309.15
28-Mar-18	306.8	309.5
27-Mar-18	305.4	306.56
26-Mar-18	305.1	305.76
23-Mar-18	288.1	299.53
22-Mar-18	300.5	297.9
21-Mar-18	303.6	297.4
20-Mar-18	305	303.03
19-Mar-18	307.4	305.33
16-Mar-18	315.4	309.26
15-Mar-18	315.05	312.61
14-Mar-18	321.3	317.25
13-Mar-18	315.3	317.21
12-Mar-18	314.95	317.18



Graph: 12

Interpretation

Support Level for Yes Bank is 297.4 as on 21 March 2018.

Resistance Level for Yes Bank is 317.78 as on 6 April 2018.

Calculation of Pay off for Put option

ICICI Bank Limited: Table: 4

Spot Price (St)	Exercise Price (X)	Premium	Net Profit (St<X) (X-St)-Premium
5	280	275	0
8.3	280	271.7	0
8	280	272	0
9.3	280	270.7	0
15.7	280	264.3	0
14.6	280	265.4	0
21.45	280	258.55	0
9.3	280	270.7	0
7.65	280	272.35	0
8.1	280	271.9	0
11.95	280	268.05	0
7.95	280	272.05	0
6.05	280	273.95	0
5.55	280	274.45	0
5.3	280	274.7	0
6	280	274	0
5.55	280	274.45	0
4	280	276	0
5	280	275	0
5.55	280	274.45	0

State Bank of India: Table: 5

Spot Price (St)	Exercise Price (X)	Premium	Net Profit (St<X) (X-St)-Premium
18	280	275	13
21	280	271.7	12.7
21.65	280	272	13.65
22.75	280	270.7	13.45
30.5	280	264.3	14.8
30	280	265.4	15.4
33.55	280	258.55	12.1
29.85	280	270.7	20.55
27.5	280	272.35	19.85
35	280	271.9	26.9
43.2	280	268.05	31.25
35.15	280	272.05	27.2
31.55	280	273.95	25.5
30.9	280	274.45	25.35
32.95	280	274.7	27.65
29.8	280	274	23.8
29.15	280	274.45	23.6
27.05	280	276	23.05
26	280	275	21
30	280	274.45	24.45

Yes Bank: Table: 6

Spot Price (St)	Exercise Price (X)	Premium	Net Profit (St<X) (X-St)-Premium
0.8	280	279.2	0
1.15	280	278.85	0
1.5	280	278.5	0
1.7	280	278.3	0
3.4	280	276.6	0
2.05	280	277.95	0
3.4	280	276.6	0
3.95	280	276.05	0
4.35	280	275.65	0
4.45	280	275.55	0
9.15	280	270.85	0
5.45	280	274.55	0
4.2	280	275.8	0
5.15	280	274.85	0
4.8	280	275.2	0
3.7	280	276.3	0
3.6	280	276.4	0
3.5	280	276.5	0
2.35	280	277.65	0
4.7	280	275.3	0

Calculation of Net profit

Exercise price	
- Spot price	
- Premium	

Net Profit	

Findings

For,

ICICI Bank Limited

At exercise price 280 and spot price 5, premium payable is 275.

280	
- 5	

275	
- 275	

0	

The net profit for ICICI is 0

State Bank of India

At exercise price 280 and spot price 5, premium payable is 275.

280	
- 18	

262	
- 275	

-13	

As the net profit cannot be negative, we apply mod; hence the net profit earned by SBI is 13 at exercise price 280 and spot price 18.

Yes Bank

At exercise price 280 and spot price 0.8, premium payable is 279.2.

$$\begin{array}{r}
 280 \\
 - \quad 0.8 \\
 \hline
 279.2 \\
 - \quad 279.2 \\
 \hline
 0 \\
 \hline
 \end{array}$$

The net profit for Yes Bank is 0

Calculator for Premium: <https://www.marketcalls.in/option-premium-calculator>

Pay off profile for Call option

ICICI Bank Limited: Table: 7

Spot Price (St)	Exercise Price (X)	Premium	Net Profit (St<x) Zero-Premium
13.7	280	0	0
9.3	280	0	0
9.05	280	0	0
8.25	280	0	0
5.1	280	0	0
5.75	280	0	0
4.6	280	0	0
9.5	280	0	0
13.4	280	0	0
12.05	280	0	0
9.35	280	0	0
13.75	280	0	0
17.6	280	0	0
20.75	280	0	0
23	280	0	0
26.35	280	0	0
29.35	280	0	0
33.2	280	0	0
32.4	280	0	0
30	280	0	0

State Bank of India: Table: 8

Spot Price (St)	Exercise Price (X)	Premium	Net Profit (St<x) Zero-Premium
2	280	0	0
1.85	280	0	0
1.9	280	0	0
2.25	280	0	0
1.1	280	0	0
1.55	280	0	0
1.35	280	0	0
1.9	280	0	0
2.65	280	0	0
1.85	280	0	0
1.3	280	0	0
1.9	280	0	0
2.7	280	0	0
3	280	0	0
3.1	280	0	0
3.85	280	0	0
4.25	280	0	0
4.9	280	0	0
4.65	280	0	0
4	280	0	0

Yes bank: Table: 9

Spot Price (St)	Exercise Price (X)	Premium	Net Profit (St<x) Zero-Premium
0.8	280	0	0
1.15	280	0	0
1.5	280	0	0
1.7	280	0	0
3.4	280	0	0
2.05	280	0	0
3.4	280	0	0
3.95	280	0	0
4.35	280	0	0
4.45	280	0	0
9.15	280	0	0
5.45	280	0	0
4.2	280	0	0
5.15	280	0	0
4.8	280	0	0
3.7	280	0	0
3.6	280	0	0
3.5	280	0	0
2.35	280	0	0
4.7	280	0	0

Interpretation:

In case of call option, if spot price is less than exercise price then Net profit=|Zero-Premium|

The premium for buyer is zero as the seller receives the premium and buyer pays the premium.

Hence the net profit for buyer is zero.

Calculator for premium: <https://www.marketcalls.in/option-premium-calculator>

Findings

- After comparing stock futures of 3 banks (dated:12 March to 10 April) it can be said that SBI and Yes bank stock buyers were in profit if they sell on maturity date whereas stock buyers of ICICI suffered a loss as on maturity date.
- After comparing call option, option buyer of ICICI and SBI suffered a loss and option buyer of Yes bank gained a profit.
- In case of put option, option buyer of all the three banks suffered a loss.
- The least support level among the banks is that of State Bank of India (242.21) and the highest resistance level is that of Yes bank (317.78).
- Pay off profile for call option is zero as the buyer pays the premium and the seller receives the premium.

Suggestions

- The derivatives market is not known by every investor, so SEBI has to take steps to create awareness among the investors about the derivative segment.
- In order to increase the derivatives market in India, SEBI should revise some of its regulations like size of the contract. Contract size should be minimized because small investors cannot afford huge premiums.
- Banks need to take further steps in the risk management mechanism.
- Banks have to take measures to use effectively the derivatives segment as a tool of hedging.

Conclusion

Derivatives market act as risk minimizing agent, the lock in the asset prices for both the buyers and sellers. The investor in derivatives market can incur huge profits but limited losses. In derivatives market either the buyer will bear the risk or the seller will bear the risk. In bullish market the call option writer incurs more losses so the investor is suggested to go for a call option to hold, where as the put option holder suffers in a bullish market, so he is suggested to write a put option. In bearish market the call option holder will incur more losses so the investor is suggested to go for a call option to write, where as the put option writer will get more losses, so he is suggested to hold a put option. Still many people are not aware of the derivatives market so certain measures should be taken to create awareness.

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