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FINANCIAL DERIVATES
A STUDY OF YES BANK AND ICICI BANK

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ABSTRACT

The emergence of the market for derivatives products, most notably forwards, futures and options, can be traced back to the willingness of risk- averse economic agents to guard themselves against uncertainties arising out of fluctuations in asset prices. Derivatives are risk management instruments, which derive their value from an underlying asset. The following are three broad categories of participants in the derivatives market Hedgers, Speculators and Arbitragers. Prices in an organized derivatives market reflect the perception of market participants about the future and lead the price of underlying to the perceived future level. In recent times the Derivative markets have gained importance in terms of their vital role in the economy. The increasing investments in stocks (domestic as well as overseas) have attracted my interest in this area. Numerous studies on the effects of futures and options listing on the underlying cash market volatility have been done in the developed markets. The derivative market is newly started in India and it is not known by every investor, so SEBI has to take steps to create awareness among the investors about the derivative segment. This paper empirically attempts to understand the derivatives market.

Keywords: derivatives, futures and options, perception

Introduction

The investor may incur huge profit or he may incur huge loss. But in derivatives segment the investor enjoys huge profits with limited downside. Derivatives are mostly used for hedging purpose. In order to increase the derivatives market in India, SEBI should revise some of their regulations like contract size, participation of FII in the derivatives market. The emergence of the market for derivatives products, most notably forwards, futures and options, can be traced back to the willingness of risk-averse economic agents to guard themselves against uncertainties arising out of fluctuations in asset prices. By their very nature, the financial markets are marked by a very high degree of volatility. Through the use of derivative products, it is possible to partially or fully transfer price risks by locking-in asset prices. As instruments of risk management, these generally do not influence the fluctuations in the underlying asset prices. However, by locking-in asset prices, derivative product minimizes the impact of fluctuations in asset prices on the profitability and cash flow situation of risk-averse investors. Derivatives are risk management instruments, which derive their value from an underlying asset. The underlying asset can be bullion, index, share, bonds, currency, interest, etc.. Banks, Securities firms, companies and investors to hedge risks, to gain

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access to cheaper money and to make profit, use derivatives. Derivatives are likely to grow even at a faster rate in future.

Objectives of the Study

1. To analyze the operations of futures and options.
2. To find the profit/loss position of futures buyer and seller and also theϖ option writer and option holder.
3. To study about risk management with the help of derivatives.

Data analysis and interpretation

Analysis of ICICI:

The objective of this analysis is to evaluate the profit/loss position of futures and options. This analysis is based on sample data taken of ICICI BANK scrip. This analysis considered the Jan 2013 contract of ICICI BANK. The lot size of ICICI BANK is 175, the time period in which this analysis done is from 28-12-2012 to 31.01.013.

Date	Market Price	Future Price
28-Dec-12	1226.7	1227.05
31-Dec-12	1238.7	1239.7
1-Jan-13	1228.75	1233.75
2-Jan-13	1267.25	1277
3-Jan-13	1228.95	1238.75
4-Jan-13	1286.3	1287.55
7-Jan-13	1362.55	1358.9
8-Jan-13	1339.95	1338.5
9-Jan-13	1307.95	1310.8
10-Jan-13	1356.15	1358.05
11-Jan-13	1435	1438.15
14-Jan-13	1410	1420.75
15-Jan-13	1352.2	1360.1
16-Jan-13	1368.3	1375.75
17-Jan-13	1322.1	1332.1
18-Jan-13	1248.85	1256.45
21-Jan-13	1173.2	1167.85
22-Jan-13	1124.95	1127.85
23-Jan-13	1151.45	1156.35
24-Jan-13	1131.85	1134.5
25-Jan-13	1261.3	1265.6
28-Jan-13	1273.95	1277.3
29-Jan-13	1220.45	1223.85

30-Jan-13	1187.4	1187.4
31-Jan-13	1147	1145.9
28-Dec-12	1226.7	1227.05
31-Dec-12	1238.7	1239.7

Observations and findings:

If a person buys 1 lot i.e. 175 futures of ICICI BANK on 28th Dec, 2012 and sells on 31st Jan, 2013 then he will get a loss of 1145.9-1227.05 = -81.15 per share. So he will get a loss of 14201.25 i.e. -81.15 * 175

If he sells on 14th Jan, 2012 then he will get a profit of 1420.75-1227.05 = 193.7 i.e. a profit of 193.7 per share. So his total profit is 33897.5 i.e. 193.7 * 175

The closing price of ICICI BANK at the end of the contract period is 1147 and this is considered as settlement price.

The following table explains the market price and premiums of calls.

- The first column explains trading date
- Second column explains the SPOT market price in cash segment on that date.
- The third column explains call premiums amounting at these strike prices; 1200, 1230, 1260, 1290, 1320 and 1350.

Call Option

Table

		Strikes					
Date	**Market price**	**1200**	**1230**	**1260**	**1290**	**1320**	**1350**
28-Dec-12	1226.7	67.85	53.05	39.65	32.25	24.2	18.5
31-Dec-12	1238.7	74.65	58.45	44.05	32.75	23.85	19.25
1-Jan-13	1228.75	62	56.85	39.2	30	22.9	18.8
2-Jan-13	1267.25	100.9	75.55	63.75	49.1	36.55	27.4
3-Jan-13	1228.95	75	60.1	45.85	34.5	26.4	22.5
4-Jan-13	1286.3	109.6	91.05	68.25	51.35	38.6	29.15
7-Jan-13	1362.55	170	143.3	120	100	79.4	62.35
8-Jan-13	1339.95	140	119.35	100	85	59.2	42.85
9-Jan-13	1307.95	140	101	74.35	62.05	46.65	33.15
10-Jan-13	1356.15	160.6	131	110	95.45	70.85	53.1
11-Jan-13	1435	250.7	151.8	188.9	164.7	130.9	104.55
14-Jan-13	1410	240	213.5	148	134.9	96	88.2
15-Jan-13	1352.2	155	150.05	107.5	134.9	66	52.65
16-Jan-13	1368.3	128.4	140	90	63	78.2	60.95
17-Jan-13	1322.1	128.4	140	95	67.5	50.2	39.15
18-Jan-13	1248.85	128.4	60	54	37.95	29.15	19.3
21-Jan-13	1173.2	52	36.5	26.3	24.45	14.55	9.95
22-Jan-13	1124.95	44.15	31.05	22.55	12.45	10.35	6.7
23-Jan-13	1151.45	50.25	39.3	23.25	17	16.35	8.6

24-Jan-13	1131.85	40.4	22	17.05	12.1	9.45	5.1
25-Jan-13	1261.3	80.5	62	40.85	24.55	16.15	9.75
28-Jan-13	1273.95	91.85	61.65	44.8	31.4	20.25	11.35
29-Jan-13	1220.45	46	25.95	17.45	10.5	4.05	2.95
30-Jan-13	1187.4	18.65	9.05	4.5	1.4	0.75	0.2
31-Jan-13	1147	0.45	0.5	1	1.4	0.1	0.2
28-Dec-12	1226.7	67.85	53.05	39.65	32.25	24.2	18.5
31-Dec-12	1238.7	74.65	58.45	44.05	32.75	23.85	19.25

Observations and findings

Call option

Buyers pay off:

- Those who have purchase call option at a strike price of 1260, the premium payable is 39.65
- On the expiry date the spot market price enclosed at 1147. As it is out of the money for the buyer and in the money for the seller, hence the buyer is in loss.
- So the buyer will lose only premium i.e. 39.65 per share. the total loss will be 6938.75 i.e. 39.65*175

Sellers pay off:

- As Seller is entitled only for premium if he is in profit.
- So his profit is only premium i.e. 39.65 * 175 = 6938.75

Put options:

		Strikes					
Date	**Market price**	**1200**	**1230**	**1260**	**1290**	**1320**	**1350**
28-Dec-12	1226.7	39.05	181.05	178.8	197.15	190.85	191.8
31-Dec-12	1238.7	34.4	181.05	178.8	197.15	190.85	191.8
1-Jan-13	1228.75	32.1	181.05	178.8	197.15	190.85	191.8
2-Jan-13	1267.25	22.6	25.50	178.8	41.55	190.85	191.8
3-Jan-13	1228.95	32	38.00	178.8	82	190.85	191.8
4-Jan-13	1286.3	17.65	25.00	37.05	82	190.85	191.8
7-Jan-13	1362.55	12.4	12.60	20.15	34.85	43.95	191.8
8-Jan-13	1339.95	10.15	12.00	20.05	30	42	191.8
9-Jan-13	1307.95	11.9	15.00	26.5	36	51	191.8
10-Jan-13	1356.15	9	11.00	15	25.2	33.7	47.8
11-Jan-13	1435	3.75	11.00	10	8.9	12.75	18.35
14-Jan-13	1410	3.75	11.00	8.5	12	12.4	22.45
15-Jan-13	1352.2	6.45	7.00	10	17.45	23.1	38.3
16-Jan-13	1368.3	8	8.00	11.25	13.3	22.55	35.35
17-Jan-13	1322.1	7.3	8.00	17.8	25.45	38.25	56.4
18-Jan-13	1248.85	18.15	36.60	35	67.85	76.05	112.2
21-Jan-13	1173.2	103.5	70.00	69.65	135.05	151.35	223.4
22-Jan-13	1124.95	110	138.90	138.6	170.05	210	280
23-Jan-13	1151.45	71	138.90	135	150	210	200
24-Jan-13	1131.85	99	138.90	135	150	210	200
25-Jan-13	1261.3	15.9	26.35	33	50.05	210	200

28-Jan-13	1273.95	16.7	19.00	30	45	55	81.45
29-Jan-13	1220.45	18	38.00	50	45	100	145
30-Jan-13	1187.4	27.5	60.00	85.2	120	145.05	145
31-Jan-13	1147	50	60.00	85.2	120	145.05	145

Observations and findings
Put option
Buyers pay off:

- As brought 1 lot of ICICI that is 175, those who buy for 1200 paid 39.05 premium per share.
- Settlement price is 1147

Strike price 1200.00
Spot price 1147.00
53.00
Premium (-) 39.05
13.95 x 175= 2441.25
Buyer Profit = Rs. 2441.25

Because it is positive it is in the money contract hence buyer will get more profit, incase spot price decreases, buyer’s profit will increase.

Sellers pay off:

- It is in the money for the buyer so it is in out of the money for the seller, hence he is in loss.
- The loss is equal to the profit of buyer i.e. 2441.25.

ANALYSIS OF YES BANK
The objective of this analysis is to evaluate the profit/loss position of futures and options. This analysis is based on sample data taken of YES BANK scrip. This analysis considered the Jan 2013 contract of YES BANK. The lot size of YES BANK is 1100, the time period in which this analysis done is from 28-12-2012 to 31.01.13.

Date	Market Price	Future Price
28-Dec-12	249.85	252.5
31-Dec-12	249.3	251.15
1-Jan-13	258.35	260.85
2-Jan-13	265.75	268.1
3-Jan-13	260.7	262.85
4-Jan-13	260.05	261.55
7-Jan-13	263.4	264.4
8-Jan-13	260.2	261.1
9-Jan-13	260.1	262.2
10-Jan-13	259.4	260.2
11-Jan-13	258.45	260.35
14-Jan-13	257.7	259.95
15-Jan-13	258.25	260.25
16-Jan-13	250.75	254
17-Jan-13	252.3	254.25
18-Jan-13	248	248.05

21-Jan-13	227.3	225.4
22-Jan-13	209.95	209.85
23-Jan-13	223.15	218.1
24-Jan-13	220.65	216.75
25-Jan-13	232.6	230.5
28-Jan-13	243.7	242.35
29-Jan-13	244.45	242.95
30-Jan-13	244.45	241.4
31-Jan-13	251.45	250.35
28-Dec-12	249.85	252.5
31-Dec-12	249.3	251.15

Observations and findings:

If a person buys 1 lot i.e. 1100 futures of YES BANK on 28th Dec, 2012 and sells on 31st Jan, 2013 then he will get a loss of 250.35-252.50 = -2.15 per share. So he will get a loss of 2365.00 i.e. -2.15 * 1100

If he sells on 15th Jan, 2013 then he will get a profit of 260.25-252.50 = 7.75 i.e. a profit of 16.15 per share. So his total loss is 8525.00 i.e. 7.75 * 1100

The closing price of YES BANK at the end of the contract period is 251.45 and this is considered as settlement price.

The following table explains the market price and premiums of calls.

- The first column explains trading date
- Second column explains the SPOT market price in cash segment on that date.
- The third column explains call premiums amounting at these strike prices; 230, 240, 250, 260, 270 and 280.

Call options:

							Strikes
Date	**Market price**	**230**	**240**	**250**	**260**	**270**	**280**
28-Dec-12	249.85	17.05	32.45	13.1	9	18.55	15
31-Dec-12	249.3	16.45	32.45	12.45	9	18.55	15
1-Jan-13	258.35	22.15	32.45	16.3	11.6	18.55	15
2-Jan-13	265.75	31.45	32.45	24.9	16	14.5	15
3-Jan-13	260.7	31.45	32.45	21.5	13	5.1	3
4-Jan-13	260.05	31.45	32.45	21.5	12.2	5.15	3
7-Jan-13	263.4	31.45	32.45	21.5	12.2	9.25	3
8-Jan-13	260.2	31.45	32.45	21.5	9.95	7.45	3
9-Jan-13	260.1	31.45	32.45	21.5	10.95	6.45	3
10-Jan-13	259.4	31.45	32.45	21.5	17.5	8	8
11-Jan-13	258.45	31.45	32.45	21.5	10.75	5.05	8
14-Jan-13	257.7	31.45	32.45	21.5	9	5.05	8
15-Jan-13	258.25	31.45	32.45	21.5	14	8.25	8
16-Jan-13	250.75	31.45	32.45	21.5	5.7	4	8
17-Jan-13	252.3	31.45	32.45	21.5	7.5	5.5	2

18-Jan-13	248	31.45	32.45	9.5	7.5	5.5	2
21-Jan-13	227.3	6	32.45	9.5	7.5	1.5	2
22-Jan-13	209.95	6	32.45	9.5	8	1.5	4
23-Jan-13	223.15	6	32.45	9.5	8	4.5	4
24-Jan-13	220.65	6	32.45	9.5	2.1	2.9	4
25-Jan-13	232.6	6	32.45	9.5	2.1	2.9	4
28-Jan-13	243.7	15.95	32.45	9.5	2.1	2.9	4
29-Jan-13	244.45	15.95	32.45	9.5	2.1	2.9	4
30-Jan-13	244.45	15.95	32.45	5	2.1	2.9	4
31-Jan-13	251.45	29.15	32.45	4.7	5	0.8	0.5
28-Dec-12	249.85	17.05	32.45	13.1	9	18.55	15
31-Dec-12	249.3	16.45	32.45	12.45	9	18.55	15

Observations and findings
Call option
Buyers pay off:

- As brought 1 lot of YES BANK that is 1100, those who buy for 280 paid 17.05 premium per share.
- Settlement price is 251.45

Spot price 251.45
Strike price 230.00
21.45
Premium (-) 17.05
4.40 x 1100= 4840
Buyer Profit = Rs. 4840

Because it is positive it is in the money contract hence buyer will get more profit, incase spot price increase buyer profit also increase.

Sellers pay off:

- it is in the money for the buyer so it is in out of the money for the seller, hence he is in loss.
- the loss is equal to the profit of buyer i.e. 4840.

Put options:

		Strikes					
Date	**Market price**	**230**	**240**	**250**	**260**	**270**	**280**
28-Dec-12	249.85	6.95	10.55	15.15	20.75	27.25	34.5
31-Dec-12	249.3	6.2	9.75	14.35	20	26.6	34.1
1-Jan-13	258.35	4.3	7.05	10.75	15.5	21.25	27.9
2-Jan-13	265.75	3	5.1	8.1	12.1	17.1	23.1
3-Jan-13	260.7	3.45	5.9	9.3	13.75	19.3	25.8
4-Jan-13	260.05	3.15	5.5	8.9	13.4	19	25.65
7-Jan-13	263.4	2.1	3.95	6.85	10.9	16.15	22.55
8-Jan-13	260.2	2.2	4.25	7.4	11.75	17.45	24.25
9-Jan-13	260.1	1.85	3.8	6.85	11.2	16.9	23.8

10-Jan-13	259.4	1.65	3.5	6.55	10.95	16.75	23.8
11-Jan-13	258.45	1.5	3.3	6.3	10.8	16.8	24.05
14-Jan-13	257.7	1.1	2.7	5.6	10.15	16.35	23.95
15-Jan-13	258.25	0.8	2.2	4.95	9.35	15.55	23.2
16-Jan-13	250.75	1.6	3.85	7.8	13.6	20.95	29.55
17-Jan-13	252.3	1.15	3.05	6.65	12.15	19.4	27.95
18-Jan-13	248	1.5	3.95	8.3	14.7	22.75	31.8
21-Jan-13	227.3	9.75	16.2	24.1	33	42.5	52.25
22-Jan-13	209.95	22.15	30.8	40.1	49.8	59.65	69.6
23-Jan-13	223.15	13	20	28.25	37.25	46.8	56.55
24-Jan-13	220.65	13.8	21.3	30	39.4	49.1	59
25-Jan-13	232.6	7	12.6	19.85	28.3	37.6	47.25
28-Jan-13	243.7	1.6	4.6	10	17.55	26.6	36.25
29-Jan-13	244.45	0.75	3.05	8.3	16.2	25.6	35.45
30-Jan-13	244.45	0.15	1.65	6.95	15.65	25.5	35.5
31-Jan-13	251.45	0	0	0	0	0	0
28-Dec-12	249.85	6.95	10.55	15.15	20.75	27.25	34.5
31-Dec-12	249.3	6.2	9.75	14.35	20	26.6	34.1

Observations and findings
Put option
Buyers pay off:

- Those who have purchase put option at a strike price of 250, the premium payable is 15.15 on the expiry date the spot market price enclosed at 251.45. as it is out of the money for the buyer and in the money for the seller, hence the buyer is in loss. As such the buyer will lose only premium i.e. 15.15 per share. so the total loss will be 16665 i.e. 15.15*1100

Sellers pay off:

- as seller is entitled only for premium if he is in profit.
- so his profit is only premium i.e. 15.15 * 1100 = 16665

Observations and findings

- the future price of Yes bank is moving along with the market price.
- if the buy price of the future is less than the settlement price, than the buyer of a future gets profit.
- if the selling price of the future is less than the settlement price, than the seller incur losses.

Conclusions

- 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.

- In the above analysis the market price of YES bank is having low volatility, so the call option writer enjoys more profits to holders

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