PROJECT DISSERTATION REPORT
ON
A STUDY ON FINANCIAL DERIVATIVES (FUTURES & OPTIONS)

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DECLARATION FORM

I Rita Saini, a student of MBA 4th Semester, Delhi School of Management Delhi Technological University hereby declare that the Project report entitled **"A Study on Financial Derivatives (Futures & Options)"** is an independent work carried out by me at Delhi School of Management. To the best of my knowledge & belief, it is an original piece of work and is the sheer outcome of my own efforts. I also declare that no chapter of this manuscript in whole or in part is lifted and incorporated in this report from any earlier/other work done by me or others.

……..

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Date:
Place: Delhi

CERTIFICATE FROM THE INSTITUTE

This is to certify that the Project Report titled **"A Study on Financial Derivatives (Futures & Options)"** is an original and bonafide work carried out by **Ms. Rita Saini** of MBA 2016-18 batch and was submitted to Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-110042 in partial fulfilment of the requirement for the award of the Degree of **Masters of Business Administration.**

Signature of Guide (DSM)	**Signature of HOD (DSM)**
(Ms. Deep Shree)	**(Dr. Rajan Yadav)**

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Date:

ACKNOWLEDGEMENT

Any work of this magnitude can never be completed by individual effort alone and my project is also no exception. This project is not the outcome of an individual effort but a collective effort by each and every member associated with it. This report is the result of the contribution, guidance and co-operation received from a number of people both implicitly and explicitly. It has been an educative, interesting, and motivating experience. No amount of words would be enough and adequate to acknowledge all the people who have offered their help and support in the preparation of this report.

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RITA SAINI

ABSTRACT

The emergence of the market for derivatives products, most notably forwards, futures and options, can be tracked 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. In cash market the profit/loss of the investor depends on the market price of the underlying asset. 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. In a nutshell the study throws a light on the derivatives market.

TABLE OF CONTENTS

CHAPTER NO	NAME OF THE TOPIC	PAGE NO
1	**INTRODUCTION** **1.1 Introduction to the topic** **1.2 Need of study** **1.3 Objectives of study** **1.4 Scope of study** **1.5 Limitations of the study** **1.6 Research methodology**	1 4 4 4 4
2	**LITERATURE REVIEW**	5
3	**RESEARCH METHODOLOGY**	6
4	**DATA ANALYSIS & INTERPRETATIONS**	7
5	**SUMMARY** **SUGGESTIONS** **CONCLUSIONS**	24 25 26
6	**BIBLIOGRAPHY**	27

LIST OF GRAPH

GRAPH NO.	NAME OF GRAPH	PAGE NO.
1	Graph showing the price movements of ICICI Futures	08
2	Graph showing the price movements of ICICI Spot & Futures	12
3	Graph showing the price movements of SBI Futures	13
4	Graph showing the price movements of SBI Spot & Futures	18
5	Graph showing the price movements of HDFC BANK Futures	18
6	Graph the price movements of HDFC BANK Spot & Futures	23

LIST OF TABLES

TABLE NO.	NAME OF FIGURE	PAGE NO
1	Table showing the market and future prices of ICICI bank	07
2	Table showing the call prices of ICICI bank	10
3	Table showing the put prices of ICICI bank	12
4	Table showing the market and future prices of SBI	14
5	Table showing the call prices of SBI	15
6	Table showing the put prices of SBI	17
7	Table showing the market and future prices of HDFC bank	19
8	Table showing the call prices of HDFC bank	20
9	Table showing the put prices of HDFC bank	22

1. INTRODUCTION:

The development of derivative market, with products like futures and options, can be seen from a long time when agents who had less risk taking capabilities or did not wanted to take much risk they wanted some sort of protection for themselves against the continuous change in the price of any asset. There is a very high risk and volatility that is associated with the financial market. By using derivative products, it is to some extent possible that is investor is able to mitigate the price risk. To do this the investor has to in present time agree to a price for an asset with a future price i.e. here the investor is fixing the price for the future. So investors who do not want to take risk but want to invest in the market can invest in derivative market and can lock the price of the asset so that there is no effect of any price changes that take place in the market to the investor and hence the profit of the investor will not be affected.

Value of any derivative is determined by the value of the asset on which it is based. Some of the underlying asset in derivative market are currency, interest, share, bullion etc. Derivatives instruments like options, forwards and futures are used by a large number of player like financial institute, Non-Banking Financial Institutions, private investors, private firms, to mitigate their risk and in order to have profit. As per researchers, derivatives market is expected to grow at a considerably good rate in the time to come.

DERIVATIVES:

Derivatives are instruments which get its value from underlying asset's value.

Emergence of financial derivative products

For almost 300 years, the sole form of derivative products was commodity-linked derivatives. The derivatives were therefore initially used as to just mitigate the risk arising from the changes that take place in the price of any commodity. Post 1970, Financial derivatives got so much attention and they grew rapidly because there was increasing

instability in the markets. From the time these products are available in the market their attractiveness for the investors is increasing. By the year 1990s, 60% of all the deals that used to take place in the derivative market were done in financial derivatives which is a huge percentage. The types of instruments that are available in the market for financial derivatives is increasing this shows that the derivative market has matured exceedingly well. Investors majorly use index-linked derivatives. There is a good amount of similarity between the indexes and large number of portfolios therefore the investor with less money also find derivatives useful due to the easiness with which they can use. Index derivatives are less costly than derivative products this is a major reason why they are widely accepted and used.

PARTICIPANTS:

The participants in the derivative market can be divided into three categories, which are as follows:

HEDGERS:

Hedger use futures/options to eliminate or reduce the risk they face because of the price of the asset.

SPECULATORS:

A Speculator is a person who actually do not have any exposure to the product but want to increase his/her profit and therefore enter into the market. In speculative venture, speculators can both increase their potential gains and losses.

ARBITRAGERS:

Arbitrageurs take benefit of the difference b/w the prices in two different markets.

FUNCTION OF DERIVATIVES MARKETS:

- The financial market primary motive is that the investor who can take the risk have the risk from the investors who do not want to take risk.

- Derivatives trading encourages people to invest and earn profit and in such way it is taken by people as an occupation. People are working in different roles that are actually in one way or the other related to thee derivative market.
- In the long run, Derivatives market help investors in making saving.

TYPES OF DERIVATIVES:

The different type of derivative is as follows:

FORWARDS:

Forward is a contract in which one can do customization and it take place between two entities.

In this the two parties decide mutually on the price of the asset and the time of delivery if that asset.

FUTURES:

A futures contract is traded on exchange and are standardized in this one party sells the asset to another party at a price decided by exchange at a future time.

OPTIONS:

Type of Option

Call option

Put option

With Call option, the buyer of the call can in future buy a share at a certain price but if he gets a profit he will buy at the contract price after a particular time if the asset/security is available at a lower price in the spot market then he will get it from the market.

With Put option, the buyer can sell the asset or the share at a price agreed by both parties and if in market the asset/security is selling at the higher price the investor can sell in the market at a higher price.

NEED FOR STUDY:

In a span of 10 years or so, Derivative markets has become one of the most traded market and is attention because of it's the role that it plays in any economy is important. Both players from domestic as well from foreign market are investing their funds in the derivative market. The derivative instruments is part of our curriculum which made me want to know more about this topic which is the reason to do this project and having interest in the derivative market. So investors who do not want to take risk but want to invest in the market can invest in derivative market and can lock the price of the asset so that there is no effect of any price changes that take place in the market to the investor and hence the profit of the investor will not be affected. As there is astounding increase in the amount of trade that is taking place in the market, this study can be used by the investors.

OBJECTIVES OF THE STUDY:

- To study the derivative options and future.
- To know about the position i.e. profit and loss of futures buyer/seller and option writer/holder.

SCOPE OF THE STUDY:

The scope of this report is confined to Derivatives market. In this study, a gentle effort is done to access the derivatives market for the Indian market. International perspective of derivative market is not in scope of this study.

LIMITATIONS OF THE STUDY:

- In this study, research is done only for three banks and the data taken is only future and option

2. LITERATURE REVIEW

Research paper by Golaka C Nath on Behaviour of Stock Market Volatility after Derivatives

The development that took place in Financial market in the year 1990 lead to a large number of transformation in this market and with the formation of "SEBI" which is the body which regulates the financial market there is an increase in the level of trust that people have because SEBI has implemented some measures so that investors cannot cheat.

Other institutes are also there like NSDL, NSCCL which help in the smooth functioning of the financial market. These bodies also help in providing security to the public who invest in financial market. By using up-to-date technology, they have set the criterion very high to be noted as a good institution who is working for the financial market. The cost of transaction was reduced by bringing small changes in the structure. This is helping investor as the cost is reduce so they can spend more and secondly this is helping them to finalize the deal quickly.

In the previous years, large number of policies were implemented which brought many good changes like there was increase in the transparency, the time for diffusion of information decreased and also the cost for carrying out transaction was reduced etc. There was a huge change in the capital market with respect to its structure. The inefficiencies in the way the information is transferred, wrong trade procedure and practice is done, to stop critical information from going outside the organization was improved because of the rules and regulation that were imposed in the market.

Derivative market was introduced in capital market by govt. through a report that was presented in the LC Gupta Committee. This committee firstly recommended the introduction of index future in the derivative market and then after its introduction it also recommended a number of other different products. Index futures were introduced 10

years after they were initially recommended because of the delay that was there in the formation of regulatory structure. After 1 year, indices for option were introduced and within 4 months' stock futures were also available.

3. RESEARCH METHODOLOGY

The Data for this study was collected using secondary research

Secondary Method:

Data from following website and business newspapers was taken:

- www.nseindia.com
- Mint, ET, New Delhi times, Financial express, The Hindu

BOOKS:

- Future, option and other derivative by J C Hull
- Futures and options by N D Vohra and Bagri

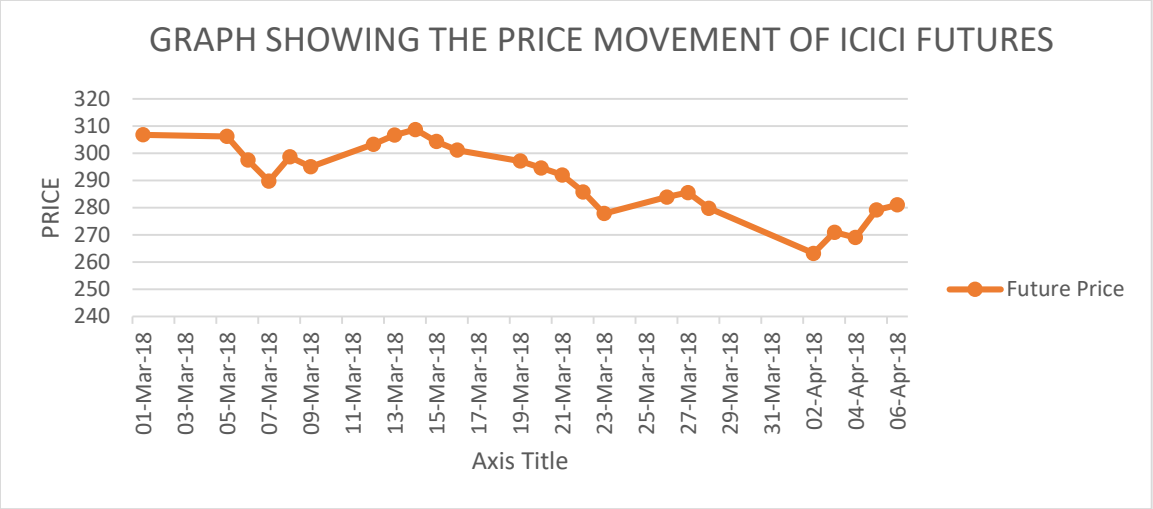
4. DATA ANALYSIS AND INTERPRETATION

ANALYSIS OF ICICI:

The aim here is to check whether the investor get the benefit or not by use of futures and options. This is calculated by taking data from NSE for March 2018 contract for ICICI Bank. The contract size for ICICI BANK is 2750, time is from 01-03-18 to 06-04-18.

Dates	Market Price of stock	Future Price of stock
1-Mar-18	304.95	306.8
5-Mar-18	303.35	306.2
6-Mar-18	295.05	297.5
7-Mar-18	286.7	289.75
8-Mar-18	296.95	298.65
9-Mar-18	292.7	295
12-Mar-18	300.65	303.35
13-Mar-18	304.35	306.7
14-Mar-18	306.05	308.75
15-Mar-18	301.45	304.3
16-Mar-18	298.1	301.15
19-Mar-18	294.55	297.15
20-Mar-18	292	294.6
21-Mar-18	289.2	292.05
22-Mar-18	283.25	285.8
23-Mar-18	275.55	277.85
26-Mar-18	281.65	283.9
27-Mar-18	283.9	285.55
28-Mar-18	278.35	279.75
2-Apr-18	261.85	263.15
3-Apr-18	270.05	270.95
4-Apr-18	268.65	269
5-Apr-18	278.65	279.15
6-Apr-18	280.65	281

Table Number: 01



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OBSERVATIONS AND FINDINGS:

If an investor takes 1 contract which is of 2750 futures on 1st March, 2018 and then sell the futures on 6th April, 2018 the investor is likely to incur a loss of 281-306.8 = -25.8/share.

Loss for investor = -25.8 * 2750= 70,950

If the investor would have sold the future on 14th March, 2018 he would have got Profit for investor = 308.75-306.8 = 1.95

Which comes out to be 1.95 profit on one share.

Total profit for investor= 1.95 * 2750= Rs 5362.5

The price on the closing is called settlement price which for this contract is Rs 280.65.

Call options:

Table below contains stock price of ICICI and call premium that need to be paid.

- In Ist column are the dates on which trade took place
- In the IInd column, stock price of ICICI bank is given for the respective date
- In the IIIrd column, premium for having call option for the following strike prices are given 260, 270, 280, 290, 300 and 310.

OBSERVATIONS AND FINDINGS

CALL OPTION

BUYERS PAY OFF:

- An Investor had to pay a premium of Rs 13.35 if he had invested in a call option with Rs 310 as strike price.
- At the end of the contract the price is Rs 280.65 so it is not as per the expectation of the investor who invested on strike price of Rs 310 so the investor here will get a loss as his investment is out of the money.
- Here, the investor will lose money which is equal to the premium paid by him as he will buy from the market and will let the contract expire.
- Loss for investor = Rs 13.35 for one share.
  Total loss = Premium*contract size = 13.35*2750
  = Rs 36712.5

SELLERS PAY OFF:

- The seller of the option will get the premium so the seller will be in profit as the investor i.e. the buyer does not buy the stocks.

		Strike Price					
Date	**Market price**	**260**	**270**	**280**	**290**	**300**	**310**
1-Mar-18	304.95	49.6	41.15	33.35	26.45	20.45	13.35
5-Mar-18	303.35	47.55	39	31.2	24	15.85	13.5
6-Mar-18	295.05	40.35	32.45	25.4	19.35	15.85	10.3
7-Mar-18	286.7	33.6	25	20.25	13	9	7.7
8-Mar-18	296.95	42.7	34.9	27.95	21.85	12.05	12.5
9-Mar-18	292.7	39.95	31.25	24.6	15.85	10.45	10.35
12-Mar-18	300.65	45.5	37.35	30	19.05	14.05	8.5
13-Mar-18	304.35	48.5	40.1	32.4	19.05	15.8	9.75
14-Mar-18	306.05	49.75	41.15	33.2	19.95	16.15	11
15-Mar-18	301.45	45.25	36.95	29.35	22.6	13.15	8.15
16-Mar-18	298.1	42.1	33.8	26.35	19.95	11.85	8.4
19-Mar-18	294.55	38.45	30.25	23	14.6	9.75	5.75
20-Mar-18	292	35.9	27.8	20.75	13.25	7.95	4.75
21-Mar-18	289.2	33.15	25.25	17.6	11.35	7.05	3.9
22-Mar-18	283.25	28.05	19.35	13.75	8.2	4.75	2.6
23-Mar-18	275.55	22.3	15.5	9.35	5.5	3.15	1.75
26-Mar-18	281.65	24.5	18.55	12.05	6.9	3.9	2.15
27-Mar-18	283.9	28.05	20.5	13.4	8.05	4.55	2.5
28-Mar-18	278.35	24.75	15.6	9.5	5.4	2.95	1.65
2-Apr-18	261.85	12.75	7.85	4.6	2.5	1.45	0.8
3-Apr-18	270.05	16.25	10.1	5.75	3	1.55	0.8
4-Apr-18	268.65	14.95	9.05	5.1	2.6	1.35	0.75
5-Apr-18	278.65	21.85	14.3	8.25	4.3	2	1
6-Apr-18	280.65	23.15	15.45	9.05	4.6	2.2	1.1

Table Number:2

Put options:

OBSERVATIONS AND FINDINGS

BUYERS PAY OFF:

If an investor buys one lot then he will get 2750 stocks, the premium to be paid is Rs 10.50 share if the investor enter into a contract to sell the share in future at Rs 300

- The price at the end of the contract is Rs280.65 so

Strike price	=	300.00
Spot price	=	280.65
Profit	=	19.35
Premium (-)	=	10.5
Total profit for buyer	=	8.85 x 2750
Buyer Profit	=	Rs. 24337.5

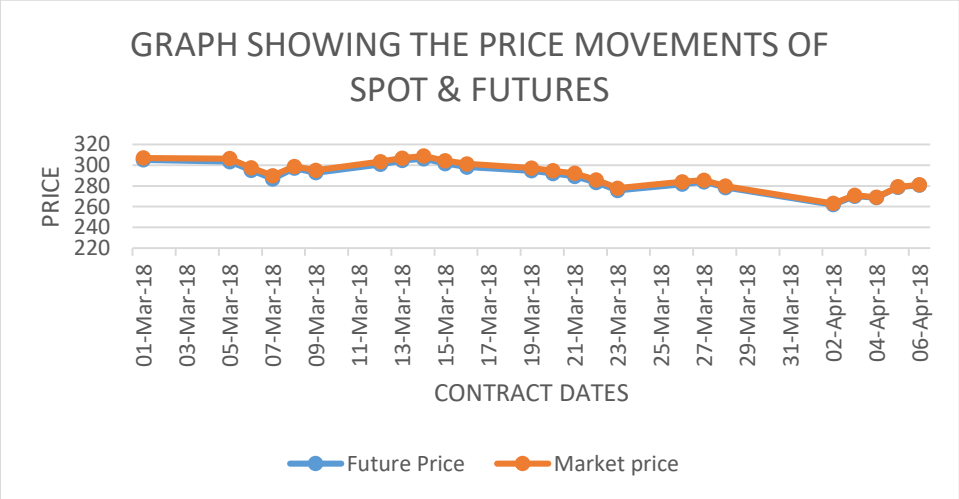
Here the buyer of the put option will get a profit as he has the right to sell at 300 whereas in market the stock is selling at 280.65. If there is a market price decrease, then buyer will get more profit.

SELLERS PAY OFF:

- The seller of the put option is in loss as he has to buy at 300 which is more than what is available in the market. The seller had received the premium but still there is difference in the price he has to buy the stock for. Total loss for the seller will be equal to the profit of buyer as in derivative market it is zero sum game so the loss is Rs 24337.5.

		Strike Price					
Date	**Market price**	**260**	**270**	**280**	**290**	**300**	**310**
1-Mar-18	304.95	1.8	3.2	5.35	6.9	10.5	17.05
5-Mar-18	303.35	2.25	2.9	4.95	7.95	11.95	17
6-Mar-18	295.05	2.7	4.65	5.35	11.35	12.5	22.15
7-Mar-18	286.7	4.65	7.05	10	17.25	19.5	25.55
8-Mar-18	296.95	3.25	5.35	8.25	12.45	15.25	22.55
9-Mar-18	292.7	3.65	6	6.95	10.8	15.2	24.7
12-Mar-18	300.65	2.5	4.3	5.55	7.8	13.35	20.1
13-Mar-18	304.35	1.9	3.4	5	7	10.95	17.7
14-Mar-18	306.05	1.5	2.8	4	5.5	9.1	13.05
15-Mar-18	301.45	1.75	3.25	5.55	6.25	13	13.8
16-Mar-18	298.1	1.9	2.6	6	9.5	10	16.4
19-Mar-18	294.55	2.05	2.65	5.3	7.95	12.5	19.8
20-Mar-18	292	2.2	3.85	5.55	8.9	13.7	19
21-Mar-18	289.2	2.4	4	6.05	10.75	14.8	21
22-Mar-18	283.25	3	4.7	7.95	12.3	18.75	28.5
23-Mar-18	275.55	4.55	7.5	11.95	18.1	26.5	33
26-Mar-18	281.65	3	5.05	8.1	13.15	19.35	29.5
27-Mar-18	283.9	2.75	4.55	7.65	11.95	18.6	26.15
28-Mar-18	278.35	3.5	5.8	9.3	15.45	22.65	30.55
2-Apr-18	261.85	9.65	14.55	21.45	28.35	38.1	44
3-Apr-18	270.05	5.6	9.2	14.6	23.25	30.55	39.75
4-Apr-18	268.65	6.15	10.15	15.7	22.95	31.65	40.25
5-Apr-18	278.65	3.35	5.55	9.3	14.9	22.35	33.3
6-Apr-18	280.65	2.9	4.75	8	13.55	22.1	28

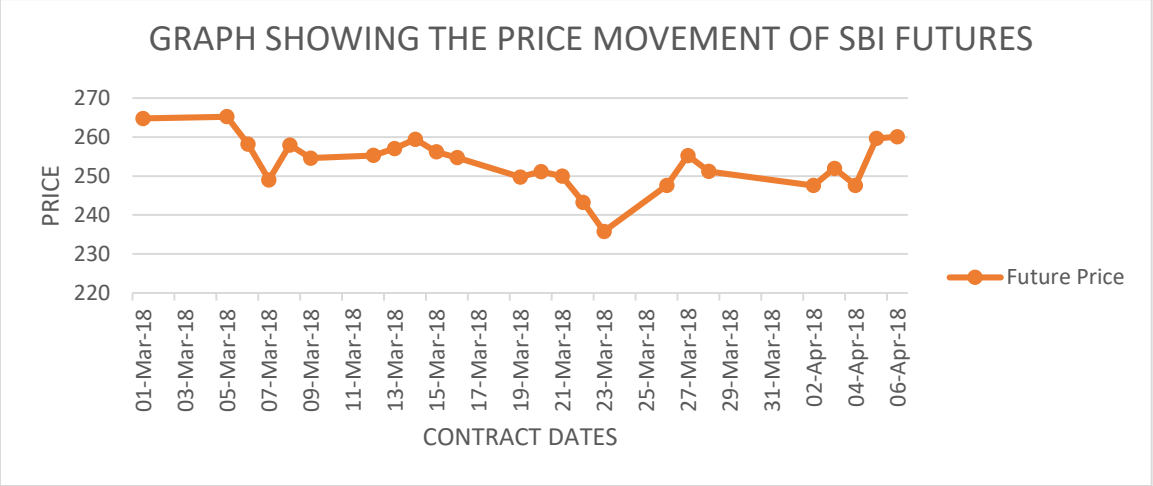
Table number:3



Graph Number:2

ANALYSIS OF SBI: -

The aim here is to check whether the investor get the benefit or not by use of futures and options. This is calculated by taking data from NSE for March 2018 contract for SBI Bank. The contract size for SBI BANK is 3000, time is from 01-03-18 to 06-04-18.



Graph number:3

OBSERVATIONS AND FINDINGS:

If an investor takes 1 contract which is of 3000 futures on 1st March, 2018 and then sell the futures on 6th April, 2018 the investor is likely to incur a loss of 260.1-264.75 = -4.65/share.

Loss for investor = -4.65 * 3000 = 13,950

If the investor would have sold the future on 2nd March, 2018 he would have got Profit for investor = 265.2-264.75 = 0.45

Which comes out to be 0.45 profit on one share.

Total profit for investor= 0.45 * 3000= Rs 1350

The price on the closing is called settlement price which for this contract is Rs 259.7.

Date	Market Price	Future price
1-Mar-18	262.15	264.75
5-Mar-18	263.5	265.2
6-Mar-18	256.55	258.2
7-Mar-18	246.65	249
8-Mar-18	256.8	257.95
9-Mar-18	253.25	254.6
12-Mar-18	252.85	255.3
13-Mar-18	254.7	257.05
14-Mar-18	257.05	259.45
15-Mar-18	253.7	256.2
16-Mar-18	252.3	254.7
19-Mar-18	247.95	249.75
20-Mar-18	249.1	251.15
21-Mar-18	248	249.95
22-Mar-18	241.55	243.25
23-Mar-18	234.8	235.8
26-Mar-18	246.5	247.6
27-Mar-18	254.35	255.25
28-Mar-18	249.9	251.2
2-Apr-18	246.15	247.55
3-Apr-18	250.5	251.95
4-Apr-18	247.3	247.6
5-Apr-18	259.3	259.65
6-Apr-18	259.7	260.1

Table Number:4

Table below contains stock price of SBI and call premium that need to be paid.

- In Ist column are the dates on which trade took place
- In the IInd column, stock price of SBI bank is given for the respective date.
- In the IIIrd column, premium for having call option for the following strike prices are given 230, 240, 250, 260, 270 and 280.

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

		Strike Prices					
Date	**Market Price**	**230**	**240**	**250**	**260**	**270**	**280**
1-Mar-18	262.15	37.95	30.35	23.65	15	10.3	7.6
5-Mar-18	263.5	38.45	30.55	23.6	15	10.6	7.3
6-Mar-18	256.55	32.65	25.4	19.2	12.1	8.05	5.5
7-Mar-18	246.65	25.75	18	12.5	8.3	5.5	3.75
8-Mar-18	256.8	34.2	16.2	16.9	10.65	7.25	4.9
9-Mar-18	253.25	31.05	24.35	14.55	9.75	6.95	4.45
12-Mar-18	252.85	29.9	23.1	15.1	9.3	6.2	4
13-Mar-18	254.7	30.95	23.9	15.5	10.7	6.75	4.65
14-Mar-18	257.05	32.5	25.1	17	11.6	7.45	4.9
15-Mar-18	253.7	29.45	22.3	14.65	10.1	6.45	4.25
16-Mar-18	252.3	28	20.85	13.9	9.15	6.05	3.85
19-Mar-18	247.95	23.95	17.3	11.55	7.3	4.8	3.1
20-Mar-18	249.1	24.45	19.2	11.5	7.4	4.7	3
21-Mar-18	248	23.2	17	11	6.95	4.4	2.7
22-Mar-18	241.55	22	11.95	7.5	4.55	2.9	1.9
23-Mar-18	234.8	13.45	8.4	5.05	3	1.9	1.3
26-Mar-18	246.5	21.65	14.25	8.7	4.95	2.9	1.85
27-Mar-18	254.35	28.25	19.4	12.6	7.7	4.5	2.65
28-Mar-18	249.9	25.35	15.85	10.05	5.9	3.3	1.9
2-Apr-18	246.15	20.6	13.1	7.75	4.25	2.35	1.35
3-Apr-18	250.5	23.75	15.75	9.55	5.3	2.85	1.55
4-Apr-18	247.3	19.7	12.85	7.3	3.9	2.05	1.1
5-Apr-18	259.3	29.5	21.45	13.9	8	4.35	2.25
6-Apr-18	259.7	29.75	22.1	13.4	7.55	3.85	1.9

Table Number: 5

OBSERVATIONS AND FINDINGS

CALL OPTION

BUYERS PAY OFF:

- An Investor had to pay a premium of Rs 7.6 if he had invested in a call option with Rs 280 as strike price.

- At the end of the contract the price is Rs 259.7 so it is not as per the expectation of the investor who invested on strike price of Rs 280 so the investor here will get a loss as his investment is out of the money.
- Here, the investor will lose money which is equal to the premium paid by him as he will buy from the market and will let the contract expire.
- Loss for investor = Rs 7.6 for one share.

  Total loss = Premium*contract size = 7.6*3000

  = Rs 22800

SELLERS PAY OFF:

- The seller of the option will get the premium so the seller will be in profit as the investor i.e. the buyer does not buy the stocks.
- Profit for the seller = 7.6 * 3000 = Rs 22800

OBSERVATIONS AND FINDINGS

PUT OPTION

BUYERS PAY OFF:

- If an investor buys one lot then he will get 3000 stocks, the premium to be paid is Rs 21 share if the investor enter into a contract to sell the share in future at Rs 280
- The price at the end of the contract is Rs 259.7 so

Strike price	=	280.00
Spot price	=	259.7
Profit	=	20.3
Premium (-)	=	21.00
Total profit for loss	=	-0.7 x 3000
Buyer loss	=	Rs. -2100

Here the buyer of the put option will get a loss. If there is a market price decrease, then buyer will get profit.

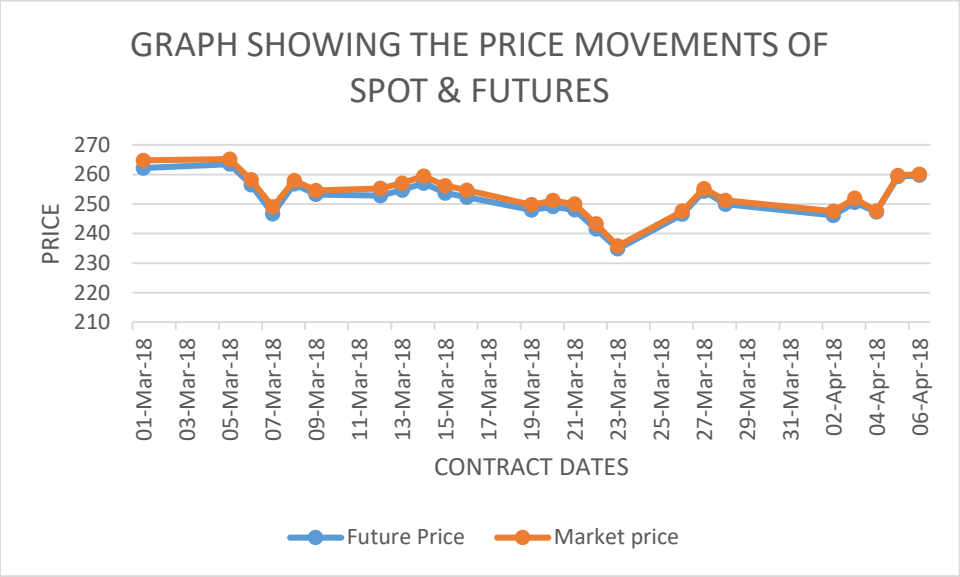
		Strike Price					
Date	**Market Price**	**230**	**240**	**250**	**260**	**270**	**280**
1-Mar-18	262.15	3.3	4.15	6.9	13	13.5	21
5-Mar-18	263.5	2.55	4	6.65	10.5	16	22
6-Mar-18	256.55	3.8	5.9	7	12.85	18.9	25.3
7-Mar-18	246.65	6.85	8.15	12.8	17	26	35.6
8-Mar-18	256.8	5.1	6	8.6	13.05	22.65	30
9-Mar-18	253.25	5.15	6.7	10	15	20.9	31.3
12-Mar-18	252.85	4.5	6.1	11.15	17.5	21	30
13-Mar-18	254.7	4.25	5.2	9.25	13.55	17.5	26
14-Mar-18	257.05	3.1	4.95	8.15	12.7	18	27.05
15-Mar-18	253.7	3.15	5.4	8.75	13.7	19	29.15
16-Mar-18	252.3	3.35	5.9	9.5	15	20	29.8
19-Mar-18	247.95	4	6.9	11.8	18.1	25	32.95
20-Mar-18	249.1	3.95	6.7	10.45	16.3	22.75	30.9
21-Mar-18	248	4	6.65	10.95	16.6	20.1	31.55
22-Mar-18	241.55	4.95	8.55	14.05	20.9	27.3	35.15
23-Mar-18	234.8	7.95	12.6	18.7	27.4	37	43.2
26-Mar-18	246.5	3.65	6.5	10.8	17.5	25.05	35
27-Mar-18	254.35	2.5	4.35	7.55	12.3	18.5	27.5
28-Mar-18	249.9	2.8	5	8.85	14.4	21.85	29.85
2-Apr-18	246.15	2.95	5.65	10.1	16.6	24	33.55
3-Apr-18	250.5	1.95	3.95	7.6	13.15	20.05	30
4-Apr-18	247.3	2.65	5.25	9.75	16.15	24.05	30.5
5-Apr-18	259.3	1.05	2.05	4.25	8.15	14.05	22.75
6-Apr-18	259.7	0.95	1.85	3.75	7.55	13.3	21.65

Table Number:6

SELLERS PAY OFF:

- The seller of the putoption is in profit as the buyer of the option is in loss.

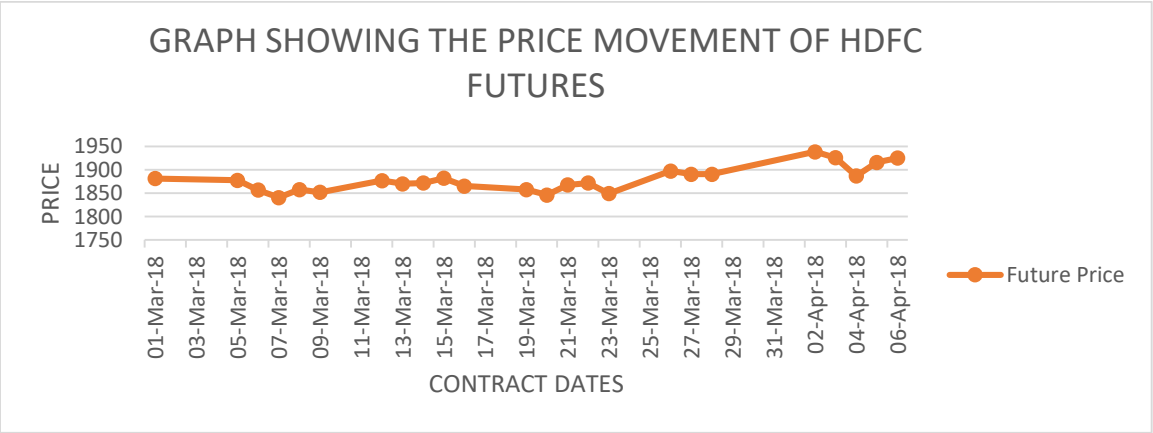
- Total profit for the seller will be equal to the loss of buyer as in derivative market it is zero sum game so the loss is Rs 2100.



Graph Number:4

ANALYSIS OF HDFC BANK:

The aim here is to check whether the investor get the benefit or not by use of futures and options. This is calculated by taking data from NSE for March 2018 contract for HDFC Bank. The contract size for ICICI BANK is 500, time is from 01-03-18 to 06-04-18.



Graph Number:5

Date	Market price	future price
1-Mar-18	1874.35	1881.2
5-Mar-18	1869.95	1877.6
6-Mar-18	1846.25	1856.45
7-Mar-18	1832.6	1840.6
8-Mar-18	1852.85	1857.75
9-Mar-18	1851.05	1851.95
12-Mar-18	1867.25	1876.7
13-Mar-18	1860.25	1870.1
14-Mar-18	1864.5	1871.6
15-Mar-18	1880.8	1881.95
16-Mar-18	1853	1865.2
19-Mar-18	1847.25	1857.5
20-Mar-18	1839.5	1845.9
21-Mar-18	1858.9	1867.65
22-Mar-18	1867.75	1871.65
23-Mar-18	1841.55	1849.15
26-Mar-18	1893.45	1897.2
27-Mar-18	1892.6	1890.4
28-Mar-18	1886.1	1890.4
2-Apr-18	1931.2	1938.3
3-Apr-18	1915.9	1925.8
4-Apr-18	1883.25	1886.6
5-Apr-18	1908.9	1915.85
6-Apr-18	1923.4	1925.1

Table Number:7

OBSERVATIONS AND FINDINGS:

If an investor takes 1 contract which is of 500 futures on 1st March, 2018 and then sell the futures on 6th April, 2018 the investor is likely to have profit of 1925.1-1881.2 = 43.9/share.

Profit for investor = 3.9 * 500= 21950

The price on the closing is called settlement price which for this contract is Rs 1923.

Table below contains stock price of HDFC and call premium that need to be paid.

- In Ist column are the dates on which trade took place
- In the IInd column, stock price of HDFC bank is given for the respective date.
- In the IIIrd column, premium for having call option for the following strike prices are given 1840, 1860, 1880, 1900, 1920 and 1940.

		Strike Price					
Date	**Market price**	**1840**	**1860**	**1880**	**1900**	**1920**	**1940**
1-Mar-18	1874.35	84.95	72.75	61.7	51.75	43	35.35
5-Mar-18	1869.95	78	65.9	55.1	45.5	37.1	29.9
6-Mar-18	1846.25	63.6	53.05	43.7	35.6	28.65	22.75
7-Mar-18	1832.6	54.55	44.85	36.4	31.1	23.05	18
8-Mar-18	1852.85	66.15	55.2	45.45	26.1	29.75	14.95
9-Mar-18	1851.05	62.9	52	42.45	24.3	27.1	21.2
12-Mar-18	1867.25	70.95	58.95	48.35	30.95	31.1	24.4
13-Mar-18	1860.25	64.6	53.05	42.9	27.7	26.75	16.5
14-Mar-18	1864.5	65.45	53.55	43.1	28	26.5	16
15-Mar-18	1880.8	75.95	56	51.25	33.6	32.35	25
16-Mar-18	1853	58.9	42	38.35	25.3	23.4	15
19-Mar-18	1847.25	52.1	37.2	31.35	22.15	18.75	14.55
20-Mar-18	1839.5	43.5	30.35	24	18.55	13.8	12
21-Mar-18	1858.9	51.4	41.35	31.55	23.05	17.1	11
22-Mar-18	1867.75	61.6	43.35	32.3	24.85	17.75	13.05
23-Mar-18	1841.55	42	31.7	23.8	17.45	12.5	9.1
26-Mar-18	1893.45	72.95	58.6	45.3	34.85	26.35	18.95
27-Mar-18	1892.6	63.05	50.2	41.75	31.55	22.95	16.95
28-Mar-18	1886.1	62	55	40.1	30.85	22.4	16.2
2-Apr-18	1931.2	100.35	84.35	71.5	55.8	42.8	31.95
3-Apr-18	1915.9	91.8	74	62	45.25	33.9	24.7
4-Apr-18	1883.25	60	46.7	35	26.1	18.6	12.95
5-Apr-18	1908.9	76.7	65.5	49.6	38.25	27.95	19.8
6-Apr-18	1923.4	80.3	63.4	54.7	42.85	31.45	21.8

Table number: 8

OBSERVATIONS AND FINDINGS

CALL OPTION

BUYERS PAY OFF:

- An Investor had to pay a premium of Rs 61.7 if he had invested in a call option with Rs 1880 as strike price.
- At the end of the contract the price is Rs 1923 it is not good for the buyer as he can buy by exercising the contract but still he will get loss as he had paid a high premium of Rs 61.7 because of which he will get loss although he will be able to buy at less than what is selling in market.

Market price	=	1923.4
Strike price	=	1880.00
Profit for buyer	=	43.4
Premium (-)	=	61.7
Loss for buyer	=	-18.3 x 500= -9150
Buyer Loss	=	-Rs. 9150

SELLERS PAY OFF:

- Although the seller has to sell the contract at less price than what is available in market but still here he seller will get profit because of the premium so profit for him will be equal to the loss that the buyer has to incur which is Rs 9150.

Put options:

		Strike Price					
Date	**Market price**	**1840**	**1860**	**1880**	**1900**	**1920**	**1940**
1-Mar-18	1874.35	30.3	37.9	46.6	56.45	67.45	79.6
5-Mar-18	1869.95	29.15	36.85	45.8	56	67.45	80.05
6-Mar-18	1846.25	38.85	48.05	58.55	70.25	83.05	97
7-Mar-18	1832.6	43.75	53.85	65.2	77.8	91.5	106.25
8-Mar-18	1852.85	35.4	44.25	54.35	65.7	78.2	91.85
9-Mar-18	1851.05	34.3	43.2	53.45	64.95	77.75	91.65
12-Mar-18	1867.25	27.2	35.1	44.3	54.85	66.7	79.8
13-Mar-18	1860.25	29	36.55	46.2	48.4	69.7	83.4
14-Mar-18	1864.5	25.3	33.2	42.55	53.4	65.65	92
15-Mar-18	1880.8	19.8	26.55	34.75	44.4	55.5	68
16-Mar-18	1853	30.95	35.3	50.05	61.75	74.75	89.1
19-Mar-18	1847.25	31	40.3	51.1	62	77.05	92
20-Mar-18	1839.5	33	42.9	54.85	67.4	81.85	97.35
21-Mar-18	1858.9	24.6	36.35	44.85	55.25	68.3	82.75
22-Mar-18	1867.75	24.8	27.5	41.35	56.55	61.4	75.3
23-Mar-18	1841.55	33	42.7	51.75	69	80.95	96.45
26-Mar-18	1893.45	16.75	21.75	29.05	37.55	49.25	66.75
27-Mar-18	1892.6	16.95	23.05	30.9	39.55	50.5	65.35
28-Mar-18	1886.1	16.75	23.1	28.95	39.15	55.05	64.5
2-Apr-18	1931.2	6.9	9.5	13.35	18.55	25.55	33.45
3-Apr-18	1915.9	6.65	9.7	14.15	20.3	28.25	38.55
4-Apr-18	1883.25	14	19.6	28.7	37.9	49.85	63.4
5-Apr-18	1908.9	7	10.35	15.55	22.7	31.55	44.1
6-Apr-18	1923.4	5.25	7.9	12.4	18.35	25.95	36

Table Number:9

OBSERVATIONS AND FINDINGS

PUT OPTION

BUYERS PAY OFF:

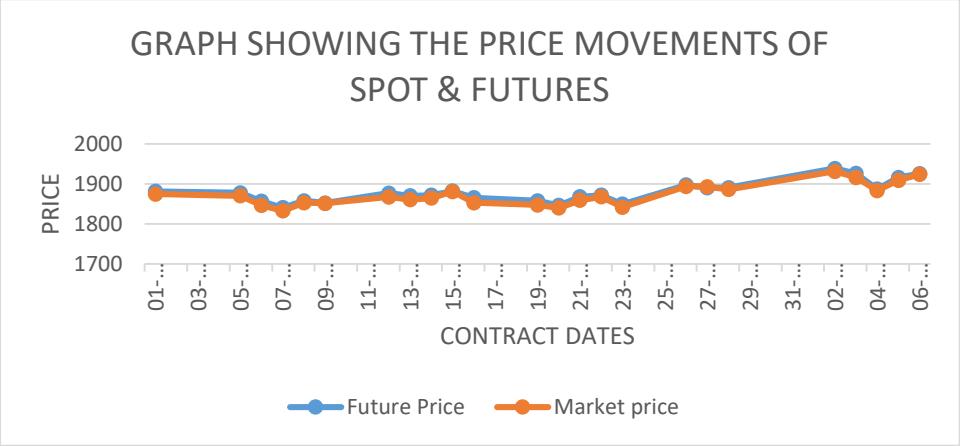
- If an investor buys one lot then he will get 500 stocks, the premium to be paid is Rs 46.6 share if the investor enter into a contract to sell the share in future at Rs 1880
- The price at the end of the contract is Rs 1928 so the buyer of the put option will not exercise his right and let the option expire and sell in the market instead therefore the loss for the buyer of put option is limited to the premium paid by him.
- Loss for buyer of PUT option = Rs 46.6/share

  Total loss = 46.6*500 = 23300

If there is a market price decrease, then buyer will get more profit.

SELLERS PAY OFF:

- The seller of the put option is in profit as the buyer will let the contract expire so the profit for him will be the premium that he got.
- Total profit for the seller will be equal to the loss of buyer as in derivative market it is zero sum game so the loss is Rs 23300.



Graph Number:6

5. SUMMARY

- If an investor does not want to invest in spot market he can go for derivative market as it is as big as spot and also its day-to-day turnover is approximately equal to the spot market.
- For spot market, the market price of underlying asset determines profit and loss for investor. The investor may incur huge losses but he may have profits as well. On the other hand, by investing in derivatives instruments he can have huge amount of profits but at the same time the loss in this case will be limited.
- For investors who do not want to pay upfront his market is attractive s in this market he only need to pay margin or premium but in case of spot market whose amount need to be paid to enter into contract. for derivative he only need to pay.
- The primary aim of Derivatives is not profit making but to have less loss i.e. it is mainly used for hedging.
- For derivative, fluctuations in underlying asset determine the profit/loss of the option writer.

6. SUGGESTIONS

- SEBI should come up with awareness programs as the derivatives market is in the initial phase in our country and a lot of investor do not know about this market.
- For growth of the derivatives market in India, Security exchange of India should do some modification in the regulation like foreign institutional investors should be allowed to enter into this market and contract size.
- Small investors are not able to enter into derivative market Because of the size of the contract therefore the contract size should be minimized they cannot afford huge premiums.

7. CONCLUSION

- When the market is bullish i.e. there are chances for increase in the stock price in that situation the investor who sells the call option will have loss as he need to sell his stock at a lesser than what is price in market therefore to avoid this loss he should keep the option with him. On the other hand, the buyer of put option will suffer as he would not exercise his contract and in this process lose the premium so he should sell put option.
- When the market is bearish i.e. there is less change in the market or the market is slow then if an investor is buying the call option then he will lose money as there will not be that much change in the stock price and he can take it from market so there will not be so much different and the buyer will lose the premium so in order to mitigate that he should sell the call option. On the other hand, the seller of the put option will lose more and to mitigate this loss he should hold the put.
- Future price is moving closer to market price for the futures of HDFC, ICICI and SBI bank.
- For the investor, if he buys at a price that is less than the price of the future at the end of the contract then the investor, in this case, will have profit.
- Similarly, if the seller sells at a price that is less than the price of the future at the end of the contract then the seller will get a loss
- The change in the price of HDFC bank stocks is minimum, so the investor should take a short position in call option in order to make a profit.

8. BIBLIOGRAHY:

https://en.wikipedia.org/wiki/Derivative

https://nseindia.com/products/content/derivatives/equities/historical_fo.htm

https://shamit8.files.wordpress.com/2014/11/options-futures-and-other-derivatives-8th-john.pdf

https://www.investing.com/indices/indices-futures

https://www.investopedia.com/terms/d/derivative.asp

https://www.investopedia.com/terms/f/futures.asp

https://www.investopedia.com/terms/o/option.asp

https://www.nseindia.com/content/press/nov2003a.pdf