Study on Financial Derivatives (Futures & Options) At Sharekhan

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ABSTRACT - The study is based proceeding Financial Derivatives with orientation to futures and options. Derivative instruments are used to hedge against value changes in underlying commodities, bonds, currencies, stocks and stock indices. Derivates market stands associate advancement toward cash market. Roughly its day by day gross revenue gives equivalent phase of cash market. In cash market investor must pay total cash. However, in derivatives investors need to pay premiums or margins, that are about level of all total money. Contract size ought to be decreased as a result of small investors can't bear this quite a bit of gigantic premium.

Key words—strike price, spot price, premium, maturity period.

I. INTRODUCTION

Derivatives stand risk managing tools, can get their incentive as of an underlying asset. This asset perhaps bullion, index, share, securities, money, premium, and so forth. Banks, Securities firms, associations & depositors to verge perils, to get more affordable cash and to variate advantage, using derivatives. Derivatives is most probable going for turn out to be smooth at a quicker degree in forthcoming.

Members in derivative market**:** Hedgers, Speculators, Arbitragers

Kinds of derivatives: Forwards, Futures, Options, Warrants, Leaps, Swaps, Swaption.

FUTURES:

A futures agreement is an understanding among both parties to buy or sell the asset on a specific period at specific price.

OPTIONS:

These are dual sorts calls and puts. Calls give buyer honor yet not the responsibility to buy an agreed quantity of underlying asset, at an assumed value on or previously at agreed upcoming day. Puts stretch buyer right, yet not obligation to sell an agreed quantity of underlying asset at an agreed value erstwhile to specified day.

OBJECTIVES OF STUDY:

1. To analyze the actions of futures and options.
2. To discover the P/L situation of future buyer & seller and the option writer and option holder.
3. To learn about risk management with help of derivatives.

NEED OF STUDY:

1. They are mainly shaped for hedging purpose.
2. The basic reason behind the utilization of derivatives is speculation.
3. The usage of derivatives in the marketplace is to circumvent regulation, which means taking the risk-off and make it legal for pension funds to purchase securities.
4. These provide a great way to avoid and evade transaction prices as many depositors don't like transaction prices globally.

SCOPE OF THE STUDY:

This work stands recommended to "Derivatives" by extraordinary orientation toward futures and options inside Indian context & the NSE had engaged by way of testing aimed at this study. This study will not stand held in place of completely great, slightly change might originate. This study takes just complete a modest endeavor on assessing derivatives market in India situation. This study didn't depend on global impression of derivatives markets that occurs at NASDAQ, CBOT and so forth.

RESEARCH METHODOLOGY AND HYPOTHESIS

The examination contains the classification of the information surveying the right places of futures buyer & seller similarly option holder & option writer, speaking to information by charts then creating translation utilizing information.

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The data collected is of both Primary & Secondary data.

1. Primary data: The data gathered from individual discussions with approved agents & individuals from Exchange.
2. Secondary data: The data gathered from the speeches of the administer of the Branch of Market Actions, EDP etc., and the information gathered from Bulletin, Publications of NSE, BSE and various records topics of the work.

HYPOTHESIS:

Based on the nature and objectives of the study the accompanying null hypothesis have been formulated

H0: there is no significant relationship between risk profile of investor and the intention to trade in derivatives.

H1: there is a significant relationship between risk profile of investor and the intention to trade in derivatives.

LIMITATIONS OF STUDY:

You'll be able to find yourself losing a huge amount if you don't have time upon your investment right as the derivatives contracts have specific maturities and get expired after a specific date. Some people believe that financial derivatives makes an unnecessary assumption within the market that isn't precisely helpful to small sell investors.

II. REVIEW OF LITERATURE

Derivative is a commodity where the price is resulting from price of an underlying asset in predetermined method.

1. Supriya (2014) studied derivative as device for coping with risk that gives hesitation and does tough for companies to approximate their upcoming outcome value & sales. The NSE statistics tells the fairness derivative nearly 90% of action is because of stock futures and index futures, while buying and selling in alternatives remains restricted to few stocks, in part due to the fact they're settled in coins and no longer the underlying stock. Additionally, observed NSE has methods to update and train agents, sellers, dealers and marketplace people.
2. Devi. S and Renuga Bharathi, N (2008) observed subsequent variables particularly announcements, risk element, depositor complaints, funding form, trade in existence method, inventory dealer facility, funding information, savings data, private financial reserves, funding dimensions, economic situation and lowering degree of Sensex impacts the awareness of depositors on savings.
3. Lovric M. Et al., (2008), shown a explanation method of character depositor behavior wherein funding selections are relating to system of communications among depositor and funding surroundings. The capital manner turned into inspired via some of dependent factors. They advised that theoretical version is to make growth in separate traders and in addition known about the agent-based artificial monetary markets.
4. Sahoo (2012) discloses "Derivatives commodities firstly developed, as hedging policies towards instability in product prices and product-related derivatives continued only shape of commodities for long time". As of him the prison system for derivatives trading is serious portion of general directing system of by-product markets. The motive of law is to inspire competence & opposition as opposed to delaying it.
5. Neel Kamal Purohit (2013) did study and located out the revenue has giant effect on occurrence of buying and selling in stock marketplace, choice for method of exchange and choice of marketplace sections. Age & profits have tremendous effect on pleasing publicity.

III. DATA ANALYSIS

To discover the P/L situation of option writer and option holder:

CALL OPTION:

<table>
<tr><td colspan="3">BUYERS PAY OFF:
Brought 1 lot of DLF INDIA LTD which is 2600, the one who buy for 170, paid 11.05 reward.
Settlement price is 185.40</td><td colspan="3">SUPPLIERS PAY OFF:
It is in the money for the buyer, then it is out of the money for seller; thus his profit is also increase.</td></tr>
<tr><td colspan="2">Spot price</td><td>185.40</td><td colspan="2">Strike price</td><td>170.00</td></tr>
<tr><td>Strike price(-)</td><td>170.00</td><td>15.40</td><td>Spot price(-)</td><td>185.40</td><td>-15.40</td></tr>
<tr><td colspan="2">Premium paid (-)</td><td>11.05</td><td colspan="2">Premium Received</td><td>11.05</td></tr>
<tr><td>Net Profit</td><td>4.35 x 2600</td><td>11310</td><td>Net Loss</td><td>-26.45 x2600</td><td>-68770</td></tr>
<tr><td colspan="3">Since the value is Positive it is out of money contract, subsequently buyer can have more Profit, if spot price rises buyer profit also increase.</td><td colspan="3">Since it is negative that's in the money, henceforth seller will get additional loss, if spot price decline underneath strike price, seller can have profit in premium dimension.</td></tr>
</table>

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PUT OPTION:

BUYERS PAY OFF:			**SUPPLIERS PAY OFF:**		
The one who have purchase put option at strike price of 170, premium payable is 11.90. On maturity day, spot market price bounded at 185.40			As seller is permitted is just to premium, if he is in profit and seller needs to tolerated absolute profit.		
Strike price	170.00		Spot price	185.40	
Spot price(-)	185.40	**15.40**	Strike price(-)	170.00	**15.40**
Amount	-15.40 x 2600	**-40040**	Amount	15.40 x2600	**40040**
Since the value gets negative, in cash agreement, henceforth purchaser can have much loss, if present price decrease purchaser incur profit at premium dimension.			Since the value gets positive, out of the money contract. Later seller receives more profit, if spot price decrease in above strike price seller may have loss at premium dimension.		

To analyse the operations of futures: The analysis based on information taken of M/s. DLF INDIA LTD LIMITED. The lot size of DLF INDIA LTDis **2600**, the period in which this analysis done is from **01st March 2019 to 15th April 2019.**

FUTURE MARKET	**BUYER**	**SELLER**
01-03-2019(Buying)	169.10	169.10
15-04-2019(Closing period)	186.55	186.55
Amount	**17.45**	**-17.45**
Profit/ Loss	17.45 x 2600=**45,370**	-17.45 x 2600= **-45,370**
	Since purchaser future price will increase so, he can get profit.	Seller future price likewise increase so, profit decreases. If seller future will decrease, so may receive profit.

Interpretation:

The closing price of DLF INDIA LTD toward the close of the contract period is 186.55 and is taken as settlement price.
As it is new financial year, prices have been decreased, so that we can purchase them to gain profits.

To learn about risk management with help of derivatives:

USING BLACK-SCHOLES OPTION PRICING MODEL:

S= stock price =185.40,
K= strike price =170,
r= risk free interest rate =4.7%,
t= time =45days,
σ = standard deviation =11.07%
N=cumulative standard normal distribution
e=exponential value
Ln=natural logarithm

$C = S.N(d_1) - k.e^{-rt}N(d_2)$
$P = k.e^{-rt}N(d_1) - S.N(d_2)$
where,

$$d_1 = \frac{Ln\left(\frac{S}{k}\right) + r.t}{\sigma\sqrt{t}} + r.\sigma\sqrt{t}$$

$d_2 = d_1 - \sigma\sqrt{t}$

$$d_1 = \frac{Ln(185.40/170) + 0.47 * 45/365}{0.1107\sqrt{45/365}}$$

$$d_1 = \frac{0.086 + 0.005}{0.038} + 0.019$$

$d_1 = 2.413$
$d_2 = 2.413 - 0.038 = 2.375$

N(d1) =0.9918 N(d2) =0.9906

$C = S.N(d_1) - k.e^{-rt}N(d_2)$

=185.40(0.9918) – 170*$e^{-0.047*45/365}$ *0.9906

=183.88– 170*0.995*0.9906

=183.88-167.56 = 16.32

$P = k.e^{-rt}N(d_1) - S.N(d_2)$

=170*$e^{-0.047*45/365}$ *0.9918 – 185.40(0.9906)

=170*0.995*0.9918 –183.65

=167.76-183.65 = -15.89

Interpretation:

As there is a risk in every project to be done, in the options this is the pricing model to know whether the risk is there or not. So, here we can take the call option price to get the profit of 16.32, if we take the put option price there is a loss of 15.89.

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IV. FINDINGS

A **positive** derivative implies that the function is increasing. A **negative** derivative implies that the function is diminishing. A M/S. DLF INDIA LTD derivative implies that the function has some unique conduct at the given point. It might have a local maximum, a local minimum, (as we see later, a "turning" point).

we ought to recollect the derivative of purpose is, the above-mentioned, a purpose since it varies from point to point. You can think about the signs and slants of the individual tangent lines of the original curve with the graph of the derivative.

V. SUGGESTIONS

To rise derivatives market in India, SEBI must modify about the guidelines like contract size, involvement of FII in derivatives market. Contract size ought to be minimalized since little depositors can't bear the colossal rewards. SEBI must take measures utilize adequately derivatives fragment as instrument of hedging.

VI. CONCLUSION

Derivates market is advancement to money market. In money market P/L of depositor relies upon the market price of underlying asset. The depositor can acquire gigantic returns or can bring huge loss. But, in derivatives segment the investor appreciates immense returns along constrained weakness. In money market the investor must give the total money, as in derivatives the investor must give bonuses or margins, where it is at some level of total cash. Derivatives are generally utilized for hedging purpose.

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