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Analytical Study on Optimization of Risk and Return using Hedging Bullish Strategy in Indian Stock Market.

Shilpa R [1] & Rakesh H M [2]

1. *Assistant Professor, Dept. of Business Administration, St. Joseph's First Grade College, Mysuru, India*
2. *Associate Professor, Dept. of MBA, Vidyavardhaka College of Engineering, Mysuru, India*

ABSTRACT
The study targeted to explore on the impact of BANKNIFTY derivatives transaction on spot market volatility using bullish strategy in India capital market. The scope is confined to equity future and forward contracts. Bullish options strategies are employed when the options trader expects the underlying stock price to move upwards. It is necessary to assess how high the stock price can go and the time frame in which the rally will occur to select the optimum trading strategy. In most cases, stocks seldom go up by leaps and bounds. Moderately bullish options traders usually set a target price for the bulls run and utilize bull spreads to reduce risk. While maximum profit is capped for these strategies, they usually cost less to employ. In this connection, this research mainly aims at valuation of risk and return using Bullish Strategy on Bank Nifty strike prices. The bullish strategy results in that there is marginal profit earned with bank nifty in the mid-month and again it has earned losses at end of the month. Therefore, it is inferred that the valuation of risk and return positively influencing bullish strategy to earn or maximize the profit in investing bank nifty in the stock market of India.

Keywords: Risk Optimization, Derivatives Trading, Portfolio Management, Investment Performance
JEL Codes: G11, G12, G32, C61

1. INTRODUCTION
Volatility is an integral part of the stock market, where the stock market index is considered as the pillar of a country's economic growth. The stock market indicates bullish and bearish phases where in the bullish market, attracts huge investments from domestic and foreign investors which leads to increase of stock values. In case of bearish market stock value falls and these variations in stock values determine the return on the stock market volatility. Volatility indicates variations in the values of instruments which could result in either gain or loss. Volatility is an obstruction for economic progress due to less investment in stock market. Assessing the value of securities relies on volatility from claiming each security. Volatility can be considered as Historical Volatility based on the past price movements of the security and implied volatility market are measured based on the result of information about the security.

The stock market volatility may be influenced by factors like inflation rate and interest rate, money related leverage, business earnings, profits plans, securities prices and socioeconomic, political and macroeconomic variables like, international developments, economic progression, budget, general business environments, credit policies, etc. Trading volume monitored by arrival of new information regarding the securities or any kind of evidence that incorporate into value of the securities drives the volatility of the stock market. Derivatives are innovative financial instruments, which facilitates the investors to invest in stock market instruments, which have high return potential and at the same time hedge against the volatility in the prices of such instruments. However, the primary objective of Derivative products is to manage/control/reduce volatility in the stock market and thereby improves the activity in the stock market transactions. In fact, 'Derivatives' are considered as the most important pillar for the economic growth, the other three pillars being stock market, banking and insurance sectors (Moses, 2013).

Option contract is one of the variants of derivative contracts. Option contacts give its holder the right, but not the obligation, to buy or sell a specified quantity of the underlying asset for a certain agreed price (exercise/strike price) on or before some specified future date (expiration date). The call option holder (purchaser of call) exercises the option only if the value of the underlying asset on the maturity of the option

is more than the exercise price, otherwise the option is left unexercised. The put option holder exercises the option if the value of the underlying asset on the maturity is less than the exercise price; otherwise, the option is left unexercised. To purchase the right to buy or sell the underlying asset, the option holder shall have to pay a certain price for purchasing the right, called option premium. Call option holder purchases the right to purchase the underlying asset and pays call premium as the purchase price of the right to buy. Put option holder purchases the right to sell and pays put premium as the purchase price of the right to sell the underlying asset.

2. REVIEW OF LITRATURE

Guoping Liu (2015) in their research paper titled **"**Determinants of the Timeliness of Quarterly Reporting: Evidence from Canadian Firms" The Researcher have studied the determinants of the timeliness of quarterly reporting in Canada. Based on the previous study more companies promptly released with high transparency of information than firms with low transparency of information. They found that firms whose interim financial statements were not reviewed by the auditors are taking less time in releasing their interim financial statements than firms having their interim financial statements etc.

Srinivasan (2017), made an attempt to the know the conceptual framework of derivatives market in India, assessed the dynamic relationship between price volatility, trading volume and expected trading volume and on open interest whereas the Market depth does not have any effect on volatility. Market depth for selected stock futures contracts and to identify a suitable model to forecast volatility for stock futures contracts in India. The study was conducted for a period from Jan 2003 to Dec 2008, comprising of 25 stock futures contracts on NSE using ARCH and GARCH models etc.

Anilkumar & Ramesh (2018), find a relation between the change in the prices of futures contracts of specific stocks and the change in open interest. The popular perception that participants in the stock markets believed that amount of open interest in a particular contract had a bearing on the behavior of the price of the contract was put to test in research by correlating the change in open interest in stock futures with the change in the futures prices. This relationship or the absence of it suggests that a change in open interest in futures contracts is just a phenomenon of the trading volume and it in no way has some directional information.

Susheng & Zhen (2020), investigated the dynamic relationship between volatility, volume and open interest in CSI 300 futures market using asymmetric GARCH model, Granger causality test, variance decomposition and impulse response function based on data. ARMA-EGARCH model was employed and found that both contemporaneous and lagged volume indicated positive relation to volatility, open interest had positive effect on volatility while lagged open interest had negative effect. Furthermore, volume was positively related to volatility and open interest was negatively linked to volatility when (lagged) volume and (lagged) open interest were taken into account.

Yen & Chen (2022), examined the relationships amongst volatility, total trading volume (TVOL) and total open interest (TOI) for three Taiwan stock index futures markets for a period July 21, 1998 to December 31, 2007 using GARCH, concluded that the futures" daily volatilities, the lagged total volume and the lagged total open interest depicted significant in-sample relationships. The sample period helps in testing all three sets of futures using the basic GARCH models predict future volatility in addition to lagged total volume and/or lagged total open interest.

Debasish (2023) focused a study on the effect of futures trading activity on the volatility of the stock market of NSE Nifty stock index for a period of eight year from June 2000 to May 2007 using FPE/multivariate Granger causality modeling technique. The study uses activities in futures market i.e. trading volume and open interest as well as volatility of macroeconomic variables like term structure of interest rates, NSE Junior index (proxy with no futures trading), risk premium, inflation rate, industrial production index.

3. RESEARCH DESIGN AND METHODOLOGY

The present study is purely based on data gathered from secondary sources and has been collected from CMIE economic database and other reliable websites. The gathered secondary data constitutes the main source of information, suitable for the purpose of the present study. In this study an attempt has been made to research on domains, publishing dates, journal language, author's affiliations, as well as methodological characteristics were analyzed respectively. All findings and statements regarding the outbreak in based on published data or information as listed in the references in the study related skill development. The study uses fixed-effects panel regression model to analyses the significance of valuation of risk and return using Bullish Strategy on Bank Nifty in India. The model is given by as follows:

$$y_{it} = a + b_1 \ln(opening\ stock\ price)_{i,t} + b_2(Beta\ Value)_{i,t} + b_3(Current\ stock\ price)_{i,t} + b_4 Future\ stock\ price_{i,t} + u_i + v_t + \epsilon_{i,t}$$

4. DATA ANALYSIS AND INTERPRETATION

Objective: To identify the valuation of risk and return using Bullish Strategy on Bank Nifty stock Market

Hypothesis: There is no Significant Difference between Valuation of risk and return using Bullish Strategy on Bank Nifty strike prices.

The concept of bullish strategy explains that selling optimization market call and one OTM put for same maturity such as, one month. The premium received from selling the options is treated as return and the risk starts when market break beyond the strike price of any of the sold options. This design of using OTM options is called Strangle. The strike price of the call should be at the upper end of range and the strike of put should be at the lower end of range. Summation of two premiums received. Maximum profit occurs when spot price is within strike price. According to the descriptive statistics we observed increasing trend in bank nifty strike prices. Day 1 average mean was recorded 2.27 and was increased to 5.47 at day 13 again it declined to 1.35 respectively. This was followed by bank nifty strike price and increased to 9.88 at day 20 and again it was reducing to 3.45 at the end of 31st day of December. The bullish strategy results shows that there is marginal profit earned by bank nifty in the mid-month and again it was incurring loss at end of the month respectively. The below table shows valuation of risk and return using bullish starter for Bank nifty strike prices.

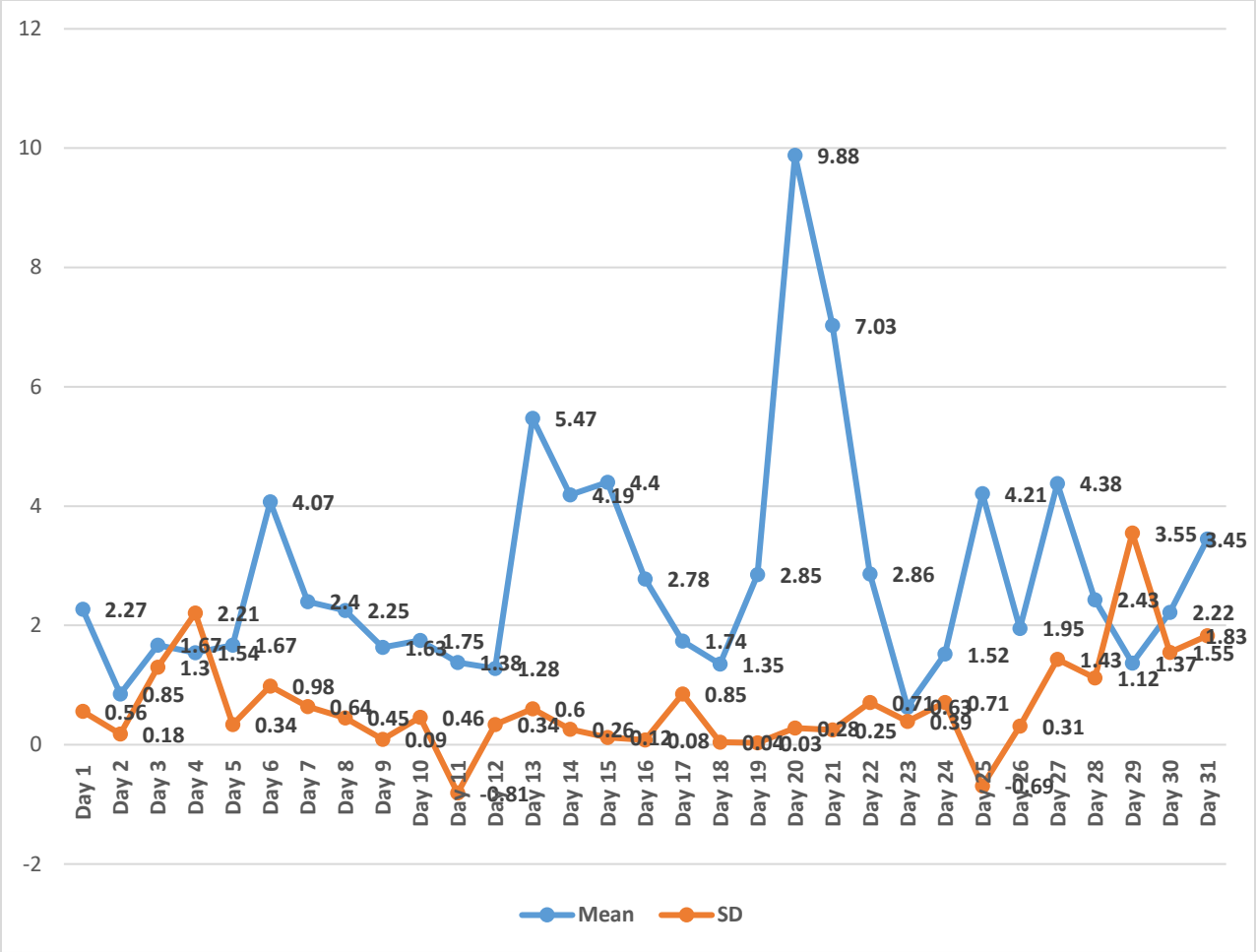
Table No.1: Descriptive statistics of valuation of risk and return using Bullish Strategy

Bank Nifty Stock Prices	Mean	S. D	Skewness
Day 1	2.27	0.56	4.74
Day 2	0.85	0.18	0.82
Day 3	1.67	1.3	-0.07
Day 4	1.54	2.21	-0.55
Day 5	1.67	0.34	3.4
Day 6	4.07	0.98	6
Day 7	2.4	0.64	2.6
Day 8	2.25	0.45	6.69
Day 9	1.63	0.09	3.88
Day 10	1.75	0.46	-0.15
Day 11	1.38	-0.81	-0.93
Day 12	1.28	0.34	0.75
Day 13	5.47	0.6	12.43
Day 14	4.19	0.26	11.68
Day 15	4.4	0.12	4.69

Bank Nifty Stock Prices	Mean	S. D	Skewness
Day 16	2.78	0.08	4.43
Day 17	1.74	0.85	1.85
Day 18	1.35	0.04	3.62
Day 19	2.85	0.03	1.06
Day 20	9.88	0.28	15.46
Day 21	7.03	0.25	14.4
Day 22	2.86	0.71	14.51
Day 23	0.63	0.39	5.18
Day 24	1.52	0.71	0.93
Day 25	4.21	-0.69	-0.44
Day 26	1.95	0.31	8.82
Day 27	4.38	1.43	23.37
Day 28	2.43	1.12	4.55
Day 29	1.37	3.55	3.86
Day 30	2.22	1.55	1.33
Day 31	3.45	1.83	1.27

Source: CMIE Data base.

Figure No.1: Descriptive statistics of valuation of risk and return using Bullish Strategy



The bullish spread options strategy is also known as the bull call spread. You can apply this strategy when you are bullish but not convincingly certain that the market will rise. In this strategy, you buy an in-the-money call option and sell an out-of-money call option of the same expiration date. When you sell a call option, you get the premium and use that amount to buy the call option. While the profit in this strategy is usually less than the buy call option strategy, so are the losses. According to the panel regression analysis. It was found to be a significant difference in valuation of risk and return between bullish strategy. The researchers observed that day wise analysis results of the beta and significant values. A p-value is more than the significant value, null hypothesis is not accepted. Therefore, it is inferred that the valuation of risk and return positively influences the bullish strategy to earn or maximize the profit in bank nifty.

Table No. 2 Descriptive statistics of valuation of risk and return using Bullish Strategy

Dependent Variable: Lower Strike Price and Higher Strike Price						
Parameter	B	Std. Error	t	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Intercept (December 2021)	-	-	-	-	-	-
Day 1	20,424.233	4,166.810	4.902	0.000	12,143.573	28,704.893
Day 2	2,594.275	789.768	3.285	0.001	1,024.776	4,163.774
Day 3	-2,205.303	630.598	-3.497	0.001	-3,458.484	-952.122
Day 4	3,823.206	438.943	8.710	0.000	2,950.900	4,695.512
Day 5	-3.703	599.991	-0.006	0.995	-1,196.060	1,188.654

Day 6	-1,778.625	466.344	-3.814	0.000	-2,705.385	-851.865
Day 7	-2,698.457	773.457	-3.489	0.001	-4,235.542	-1,161.373
Day 8	-1,338.451	474.466	-2.821	0.006	-2,281.353	-395.548
Day 9	416.120	785.257	0.530	0.598	-1,144.413	1,976.653
Day 10	-2,092.876	616.353	-3.396	0.001	-3,317.747	-868.004
Day 11	-1,929.656	545.369	-3.538	0.001	-3,013.462	-845.850
Day 12	-3,081.756	698.039	-4.415	0.000	-4,468.961	-1,694.551
Day 13	-663.874	513.714	-1.292	0.200	-1,684.774	357.025
Day 14	-629.071	973.799	-0.646	0.520	-2,5642	1,3061
Day 15	-1,593.342	474.663	-3.357	0.001	-2,536.635	-650.048
Day 16	-1,310.913	420.625	-3.117	0.002	-2,146.817	-475.008
Day 17	-1,384.190	378.755	-3.655	0.000	-2,136.887	-631.493
Day 18	-921.317	367.132	-2.509	0.014	-1,650.915	-191.719
Day 19	-795.938	360.074	-2.210	0.030	-1,511.509	-80.366
Day 20	-947.802	340.643	-2.782	0.007	-1,624.760	-270.845
Day 21	-827.996	335.929	-2.465	0.016	-1,495.583	-160.408
Day 22	-604.287	327.479	-1.845	0.068	-1,255.083	46.509
Day 23	-4.807	3.198	-1.503	0.138	-11.210	1.595
Day 24	-5.525	2.998	-1.843	0.070	-11.526	0.475
Day 25	-2.788	2.941	-0.948	0.347	-8.675	3.100
Day 26	-0.231	2.814	-0.082	0.935	-5.864	5.402
Day 27	0.476	2.692	0.177	0.860	-4.913	5.864
Day 28	0.646	4.523	0.143	0.887	-8.407	9.699
Day 29	0.740	3.932	0.188	0.851	-7.131	8.611
Day 30	-2.037	3.571	-0.570	0.571	-9.186	5.111
Day 31	8.129	3.819	1.899	0.182	6.512	15.786

a. This parameter is set to zero because it is redundant.
b. R Squared = .773 (Adjusted R Squared = .706)

Source: CMIE Data base / Significant Level at 5%

5. CONCLUSION

The stock market had seen major functional and operational changes as an outcome of continuing financial sector improvements introduced by the GOI (Government of India). The panel regression model will be good when there is no serial correlation, and residuals are normally distributed in valuation of risk and return positively influenced to the bullish strategy to earn or maximizing profit in bank nifty investment in the stock market. Residuals are not normally distributed, which is not desirable and favorable for investors. As stock futures contract provide a mechanism to hedge, speculate and arbitrage, shall help in reducing the volatility in spot market by the process of risk transfer. Hence, it can be concluded that derivatives market is supporting spot market in reducing volatility and can help investors to trade in spot market and making it more liquid. Further research work can be carried to analyze effect of derivatives transaction on volatility of spot market using other derivative instruments viz., index and stock options is currently progressing in stock market in India.

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