

A COMPARATIVE STUDY OF INVESTMENT STRATEGIES WITH REFERENCE TO INDIAN BANKING SECTOR

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The purpose of trading strategies is to maximize the return for a given level of risk. Thorough understanding of strategies and market conditions are the pre requisite for return maximization but apart from that timing also plays a crucial role. In trading it is important to see off some of the choppy sessions, overbought periods or periods of uncertainty so that when the market again resumes trending, traders can get back into the market. Knowing when not to trade is perhaps as important as knowing when to trade. Keeping these benefits and challenges in mind, the researchers have undertaken the present study with the objectives (i) To examine the differential impact of Buy and Hold Strategy, Protected Put and Covered Call on various Indian banks; (ii) To examine the performance of Buy and Hold Strategy, Protected Put and Covered Call on ICICI Bank; (iii) To examine the performance of Buy and Hold Strategy, Protected Put and Covered Call on SBI Bank and; (iv) To examine correlation between the returns of three strategies on ICICI Bank and State Bank of India. In the present study researchers have taken ICICI Bank, the largest Indian private sector bank, and SBI, the largest public sector bank as sample. The data for both the banks would be considered for the period Jan, 2005 to Aug, 2012. Daily closing prices of Stocks as well as Call and Put Options would be considered as reference point for the calculation of daily returns. For Covered Call and Protected Put strategies returns would be calculated on monthly roll – over basis on the date of expiry. Findings of present study suggests that option based investment strategy covered call gives consistently better returns over a period of time as compared to Buy and Hold. Protected Put however, is useful to take advantage of market swings for a very short duration but this should not yield good results in longer period of time. Suggestions for the future research are also discussed.

Key words: Trading Strategies, Maximize the Return, Risk, Buy and Hold Strategy, Protected Put, Covered Call.

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Introduction

With the advent of information and communication technology (ICT), integration of the financial markets throughout the globe has provided superfast highways for free flow of the capital. Financial market integration plays a very significant role in shaping the fortunes of many developing nation. These foreseeable benefits of integration apply not only to the realm of financial markets but for economic growth and infrastructural development. Integrated markets could also help to increase savings and investment, which are essential for economic development. An equity market, by allowing diversification across a variety of assets, helps reduce the risk the investors must bear, thus reducing the cost of capital, which in turn spurs investment and economic growth.

A high degree of integration is not without its limitations. Issues such as vulnerability to foreign price fluctuations, drain of domestic funds and the argument that excessive integration could be self-defeating are valid only when the degree of correlation between markets is very high. Consequently the obvious advantages are what most emerging economies focus on in their drive towards greater integration. Integration itself leads to high volatility in all the assets classes of financial markets as it has become the global playground for all High Networth Individuals (HNIs) and Financial Institutional Investors (FIIs). Because of uncertainties of business scenario risk management takes the centre stage of the financial actions and discussions. This creates the fertile base for financial reengineering and derivative products are introduced and capture the mind – set of investor fraternity. Indian capital market takes these derivative products with both hands and regulatory framework established for the smooth functioning is said to be one of the best in the world – beyond doubt.

One of the important reasons for introducing derivatives trading in India was high volatility of the Indian stock markets. The Indian stock market is one of the most volatile markets in comparison to other developed markets of the world. How the derivatives trading in India is impacting the volatility of the underlying cash market is a question of high significance as high volatility can rob the investors a substantial part of total value of his\her portfolio.

Derivative is a financial instrument which derives its value from another underlying asset such as equity, commodity or FOREX. These are used for hedging purpose by traders initially, but as market matures to a certain extent and technology in place, then

new and better financial derivative products emerged along with commodity derivatives. There are various kinds of derivative products namely Forward, Future and Options.

There are various standardized investment strategies available by combination of underlying asset and the derivative products to attain a desired level of risk and return. The main strategies are: Long Call, Short Call, Synthetic Long Call, Long Put, Short Put, Covered Call, Long Combo, Protective Call, Covered Put, Long Straddle, Short Straddle, Long Strangle, Short Strangle, Collar, Bull Call Spread Strategy, Bear Call Spread Strategy, Bear Put Spread Strategy, Long Call Butterfly, Short Call Butterfly, Long Call Condor, and Short Call Condor.

The purpose of trading strategies and actions taken by the arbitrageurs is to maximize the return for a given level of risk. Thorough understanding of the strategies and the market conditions are the pre requisite for return maximization but apart from that timing also plays a crucial role. As they say in cricket, job of the opener is to see off the new ball so that a foundation is laid for the middle order batsmen to get to a big total. Similarly in trading it is important to see off some of the choppy sessions, overbought periods or periods of uncertainty so that when the market again resumes trending, traders can get back into the market. Knowing when not to trade is perhaps as important as knowing when to trade.

The present study is undertaken to examine and understand the application of different strategies namely Buy and Hold Strategy, Protected Put and Covered Call and when applied on the two major players of financial sectors; one from public domain State Bank of India (SBI) and another is the largest private sector bank ICICI Bank and examine which strategy gives better return under given market conditions..

Literature Review

Derivative is an area which fascinates the academicians and researchers ever since its inception. Researchers in 70s came up with models for the real or intrinsic value of the derivative products which are of immense help for the traders to manage their risk within limits. An attempt has been made by researchers and scholars to understand the implications of various trading strategies for the purpose of return maximization. In order to have a deep insight of the object, this section deals with the literature review of some exemplary research work since 1970.

Stoll (1969) proposed a study which showed that an arbitrage mechanism exists to keep put and call prices in line with each other irrespective of the demands of buyers of options. According to researcher, a rise in the relative call price in no way implies that the expected value of the stock price change is greater than before. Stoll suggested that it implies only that the probability distribution of price changes has widened. The fact that relative put and call prices move together, aside from affirming put-call parity, implies only that the probability distribution of relative stock price changes is symmetrical.

Malik (2008) in his study with the data set on daily prices of S & P CNX Nifty comprising of 2466 observations (January 1, 1998 to October 25, 2007) tried to explore the use of index derivatives in the portfolio adopted by individual investors and examined the impact of the use of leveraging on the value of index based portfolio of derivatives. The study involved the in-depth analysis on the relationship between risk and return involved with the use of index derivatives. The results of research conducted by Malik suggested that if index futures (naked) and covered call are considered for long terms on rolling basis as an investment strategy by using value at risk (VaR) measure, it amounts in translating significantly higher rate of returns to its respectively increased risk. Only option backed strategies like straddle and strangle does not at all result in any incentive, if benchmarked with cash portfolio.

The research done by Vipul (2008) examined the cross-market efficiency of the Indian options and futures market using model-free tests. The findings of study suggest that there are numerous Put-call-futures arbitrage profit opportunities even after accounting for transaction costs, which vanish quickly. Findings suggested that put options are overpriced more often than call options. The mispricing showed specific patterns with respect to time of the day, moneyness, volatility, and days to expiry.

Vipul (2009) in his study examined the market efficiency for the European Style Nifty Index options using the Box Spread strategy. Vipul concluded that profit opportunities, after accounting for the transaction costs, are quite frequent, but do not persist even for two minutes. The mispricing is higher for the contracts with higher liquidity (immediacy) risk captured by the moneyness (the difference between the strike prices and the spot price) and the volatility of the underlying.

Chidambaran (2007) conducted a research to study the returns of options arbitrage strategy in the presence of transaction cost. Researchers evaluated the tradeoff between transaction cost and risk exposure under generalized transaction cost structures that includes bid - ask

spread and brokerage commission. The researcher showed that the optimal strategy depends on transaction cost, volatility and option moneyness. Strategies such as rebalancing when the hedge ration changes by 0.25, balances transaction cost and risk exposure, and can be optimal. Results also found that the cost of discretely rebalanced options hedge is a function of option moneyness. At – the – money and in – the – money options have a higher dollar cost of rebalancing as compared to out – of – the – money options. However, as a percentage of the options premium, out – of – the – money options incur higher rebalancing cost.

Aims and Objectives

- To examine the performance of Buy and Hold Strategy, Protected Put and Covered Call on ICICI Bank.
- To examine the performance of Buy and Hold Strategy, Protected Put and Covered Call on SBI Bank.
- To examine the differential impact of Buy and Hold Strategy, Protected Put and Covered Call on SBI and ICICI bank
- To examine the relationship between the returns of three strategies on ICICI Bank and SBI Bank.

Hypotheses

- H₁:** There would be a significant difference amongst the returns of Buy and Hold Strategy, Protected Put and Covered Call on banking sector.
- H₂:** There would be a significant difference amongst the returns of Buy and Hold Strategy, Protected Put and Covered Call on ICICI Bank.
- H₃:** There would be a significant difference amongst the returns of Buy and Hold Strategy, Protected Put and Covered Call on SBI.
- H₄:** There would be significant correlation between the returns of three strategies on ICICI Bank and SBI.
- H₅:** The impact of three strategies on percentage returns of SBI and ICICI Bank would be significantly different.

Research Methodology

For present study researchers have taken ICICI Bank, the largest Indian private sector bank, and SBI, the largest public sector bank in the Indian banking sphere. The data for

both the banks was taken for the period Jan, 2005 to May, 2012. Daily closing prices of Stocks as well as Call and Put Options were considered as the reference point for the calculation of daily returns. For Covered Call and Protected Put strategies returns were calculated on monthly roll-over basis on the date of expiry. The data was analysed using statistical package SPSS. In the present study we are considering following strategies defined as under:

Buy and hold: This is the simplest way of investing as one buy a particular stock in the beginning and sell at the pre determined exit point. Full amount has to be paid to buy a particular stock.

Covered Call: This strategy is formed if one buys a particular stock and shorts the call option of the same stock. Strike price should be taken slightly higher (2%) than the spot price so as to factor in the normal growth rate of Indian capital market.

Protected put: In this strategy one buys a particular stock and along with that buys a put option of the same stock. Premium has to be paid upfront as one is buying a put option.

Data Analysis and Findings:

1 Sample Statistics:

- a) In the present study, data for the period Jan 2005 to May 2012 have been analyzed. The sample statistics reveal that the mean percentage returns of Buy and Hold strategy on banks are 1.21%, with a standard deviation of 11.88%. The mean percentage returns from Covered Call strategy are 1.95% with a standard deviation 9.11%, and the mean percentage returns from Protected Put strategy are -0.46% with a standard deviation 9.91% (Table 1(a)). Hence we can say that covered call strategy is giving highest returns but the returns are more volatile in case of Buy and Hold strategy.

Table 1(a): Sample Statistics

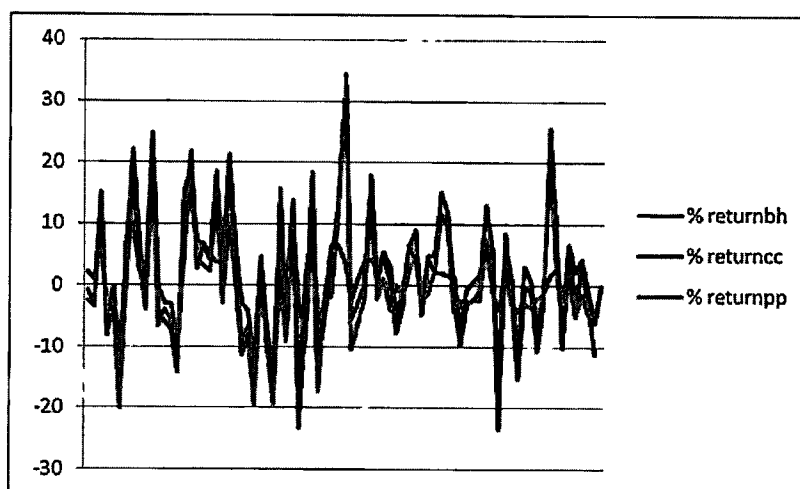
	Mean	N	Std. Deviation	Std. Error Mean
Percentage return of B&H	1.206988	154	11.8785500	.9572008
Percentage return of CC	1.949894	154	9.1076354	.7339142
Percentage return PP	-.458841	154	9.9139211	.7988865

- b) The sample statistics reveal that the mean percentage returns of Buy and Hold strategy on SBI are 1.58%, with a standard deviation 11.54%. The mean percentage returns from Covered Call strategy on SBI are 1.38% with a standard deviation 7.49%, and the mean percentage returns from Protected Put strategy are 0.094% with a standard deviation 9.14% (Table 1(b), Fig. 1). In case of SBI Buy and Hold strategy is giving better returns and highest volatility.
- c) The sample statistics reveal that the mean percentage returns of Buy and Hold strategy on ICICI bank are 0.83%, with a standard deviation of 12.28%. The mean percentage returns from Covered Call strategy on ICICI bank are 2.52% with a standard deviation 10.45%, and the mean percentage returns from Protected Put strategy are -1.01% with a standard deviation 10.66% (Table 1(b), Fig. 2). Here covered call is giving good returns.

Table 1(b): Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Percentage return B&H of SBI	1.585195	77	11.5351033	1.3145470
Percentage return B&H ICICI	.828780	77	12.2763195	1.3990165
Percentage return CC of SBI	1.376062	77	7.4930802	.8539157
Percentage return CC ICICI	2.523726	77	10.4964753	1.1961844
Percentage return PP of SBI	.094694	77	9.1391433	1.0415020
Percentage return PP ICICI	-1.012375	77	10.6639624	1.2152713

Fig 1: Graph for percentage returns of various strategies on SBI

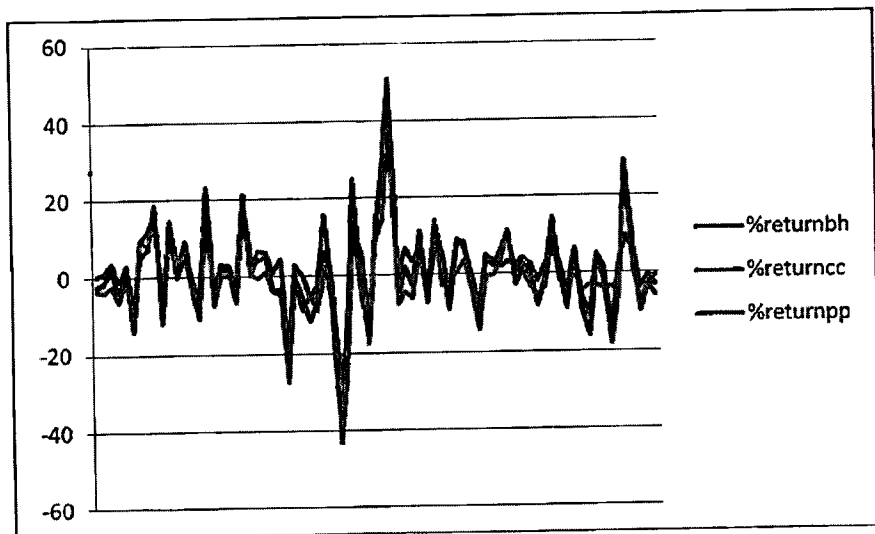


- d) There is a significant strong positive correlation ($r = 0.867$, $p < 0.05$) between the returns of Buy & Hold strategy and Covered Call strategy. It is further revealed by data analysis that there is a significant strong positive correlation ($r = 0.917$, $p < 0.05$) between the returns of Buy & Hold strategy and Protected Put strategy. There is a significant strong positive correlation ($r = 0.78$, $p < 0.05$) between the returns of Protected Put strategy and Covered Call strategy (Table 2).

Table 2: Samples Correlations

	N	Correlation	Sig.
Percentage return B&H and Percentage return CC	154	0.867	.000
Percentage return B&H and Percentage return PP	154	0.917	.000
Percentage return CC & Percentage return PP	154	0.780	.000

Fig 2: Graph for percentage returns of various strategies on ICICI Bank



- e) There is a significant strong positive correlation ($r = .759$, $p < 0$) between the percentage returns of Buy & Hold strategy of SBI and Buy & Hold strategy of ICICI banks. There is a significant strong correlation ($r = .669$, $p < 0$) between the percentage returns of Protected Put strategy of SBI and ICICI banks. However, there is a significant but weak correlation ($r = 0.45$, $p < 0.05$) of

Covered Call strategy of SBI and ICICI bank (Table 3). Therefore, on the basis of (d) and (e), it could be concluded that hypothesis H_4 is satisfied.

Table 3: Sample Correlations

	N	Correlation	Sig.
Percentage return B&H of SBI & Percentage return B&H ICICI	77	.759	.000
Percentage return CC of SBI & Percentage return CC ICICI	77	.450	.000
Percentage return PP of SBI & Percentage return PP ICICI	77	.669	.000

2 Comparison of impact of various strategies on the returns:

- a) Scores of t-test suggest that there is no significant difference ($t = -1.528$, $p > 0.05$) of returns of Buy & Hold strategy and returns of Covered Call strategy on banking sector. There is a significant difference of returns of Buy & Hold strategy and returns of Protected Put Strategy ($t = 4.266$, $p < 0.05$) (Table 4). Also, from Table 1(a), it is clear that mean percentage returns of Buy & Hold strategy are more than the mean percentage returns of Protected Put strategy. Results from Table 4 suggests that there is a significant difference of percentage returns of Covered Call strategy and percentage returns of Protected Put strategy ($t = 4.703$, $p < 0.05$). Further, it's been revealed that mean scores for Covered Call strategy are more than the mean scores of Protected Put Strategy (Table 1(a)). This helps us to conclude that hypothesis H_1 is partially satisfied.

Table 4: t – test scores for the comparison of returns of various strategies on banking sector

Comparison of various strategies on banking sector	t	df	Sig.
Percentage return B&H - Percentage return CC	-1.528	153	.129
Percentage return B&H - Percentage return PP	4.266	153	.000
Percentage return CC - Percentage return PP	4.703	153	.000

- b) t - scores for the comparison of returns of Buy & Hold strategy on SBI and ICICI bank suggest that there is no significant difference ($t = 0.8, p > 0.05$) between the percentage returns of Buy & Hold strategy on both the banks. Also it is found that there is no significant difference ($t = -1.03, p > 0.05$) in the returns of Covered Call strategy for both the banks. Further it has been found that there is no significant difference ($t = 1.189, p > 0.05$) in the returns of Protected Put strategy for SBI and ICICI bank (Table 5). Therefore, it could be concluded that H_0 is not satisfied and hence it is rejected.

Table 5: t - test scores for the comparison of returns of various strategies on ICICI Bank and SBI

		t	df	Sig.
Pair 1	Percentage return B&H of SBI - Percentage return B&H ICICI	.800	76	.426
Pair 2	Percentage return CC of SBI - Percentage return CC ICICI	-1.030	76	.306
Pair 3	Percentage return PP of SBI - Percentage return PP ICICI	1.189	76	.238

- c) From Table 6, it is clear that there is a significant difference of returns of Buy & Hold strategy and Protected Put for SBI ($t = 2.520, p < 0.05$). Mean scores of Buy & Hold are more than the mean scores of Protected Put (Table 1(b)). But in other cases, for the comparison of returns of Buy & Hold strategy and Covered Call; and for the comparison of returns of Covered Call and Protected Put, there were found no significant differences, $p > 0.05$ in both the cases (Table 6). Thus, hypothesis H_0 is partially satisfied.

Table 6: t - test scores for the comparison of returns of various strategies on SBI

		t	df	Sig.
Pair 1	Percentage return B&H of SBI - Percentage return CC of SBI	.269	76	.789
Pair 2	Percentage return B&H of SBI - Percentage return PP of SBI	2.520	76	.014
Pair 3	Percentage return CC of SBI - Percentage return PP of SBI	1.610	76	.111*

- d) Scores of t- test reveal that there is a significant difference ($t = -2.983$, $p < 0.05$) of percentage returns of Buy & Hold strategy and Covered Call of ICICI bank (Table 7). Also mean scores of Covered Call are better than the mean scores of Buy & Hold further suggesting that in case of ICICI bank Covered Call gives better returns as compared to Buy & Hold Strategy (Table 1(b)).
- e) There is a significant difference of returns ($t = 3.588$, $p < 0.05$) of Buy & Hold strategy and Protected Put in case of ICICI bank (Table 7). Buy & Hold strategy gives better results as compared to Protected Put, since the mean percentage returns in case of Buy & Hold strategy are more than the mean percentage returns of Protected Put (Table 1(b)).
- f) There is a significant difference of returns ($t = 5.664$, $p < 0.05$) of Covered Call and Protected Put in case of ICICI bank (Table 7). Covered Call gives better results as compared to Protected Put, since the mean percentage returns in case of Covered Call are more than the mean percentage returns of Protected Put (Table 1(b)). From above discussion in the points (d), (e) and (f), it is clear that hypothesis H_2 is satisfied.

Table 7: t – test scores for the comparison of returns of various strategies on ICICI Bank

		t	df	Sig. (2-tailed)
Pair 1	Percentage return B&H ICICI - Percentage return CC ICICI	-2.983	76	.004
Pair 2	Percentage return B&H ICICI - Percentage return PP ICICI	3.588	76	.001
Pair 3	Percentage return CC ICICI - Percentage return PP ICICI	5.664	76	.000

Conclusion:

In the present study, researchers have tried to understand and examine the impact of different strategies namely Buy and Hold Strategy, Protected Put and Covered Call when applied on the two major players of Indian Banking sector. The performance of all the three investment strategies is significantly different. When calculated independently, covered call gives best mean returns (1.949%) better than Buy and Hold (1.54%) and much better than Protected Put (-0.4588%). However, looking at the volatility of return; Buy and Hold provides more opportunities as well as risk while covered call and

protected put provides more consistent results. When applied individually, Buy and Hold and protected put gives better returns in case of SBI and covered call gives higher returns in case of ICICI Bank. Risk and returns are in line with the previous results of Malik (2008). ICICI Bank is more risky and volatile as compared to SBI that is more consistent.

There is a strong positive and significant correlation between Buy and Hold and covered call; Buy and Hold and protected put; but correlation is a bit moderate between covered call and protected put investment strategies. Correlation is not so strong when each strategy is applied to both the banks individually and it is lowest in case of covered call. There is no significant difference in the comparative returns between Buy and Hold and covered call; but the difference is quite significant in case of Buy and Hold and protected put and on the similar line between covered call and protected put. When applied to both the banks individually there is no significant difference in returns in case of all the three strategies. When applied to SBI, there is a significant difference in case of B&H and protected put but, in case of ICICI bank, there is a significant difference between all the three strategies.

Hence the present study suggests that option based investment strategy covered call gives consistently better returns over a period of time as compared to Buy & Hold. Protected Put however, is useful to take advantage of market swings for a very short duration but this should not yield good results in longer period of time.

Future implications and limitations

Present study has been conducted only on few strategies and two banks only. The data have been collected for a certain period from the national stock exchange (NSE). Study is limited to Indian context only as monthly option series are taken and positions are maintained on roll-over basis at the date of expiry. Results may vary if we change the entry and exit point of our strategies.

More work can be done by considering more number of investment strategies and more number of stocks from different sectors as we are limited to only two players of Indian banking sectors. As the scope of the study is quite limited the results may not be generally applicable to all the sectors and the markets.

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