Derivative Trading Strategy of Bank Nifty - A Heuristic Model

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Abstract

The primary objective of this paper is to provide small retail traders with a heuristic model in the form of a derivative trading strategy. It is an effort to design an easy and effective derivative trading strategy for retail traders who often lose money in the stock market as a result of insufficient information and ineffective trading methods. We have developed an observational technique that is based on the study of candlesticks that we conducted as part of our research. We tested our technique using bank nifty data for the last five years and found that it had a 60 percent accuracy rate, which is very impressive. Profits rose year after year when this method was used in the trading environment. Additionally, forecasting is also done for the next five years using the linear regression prediction model, with the method achieving an accuracy rate of 60 percent. We were able to demonstrate statistically by using the One-way Anova Test and found that, there is a significant correlation between actual data and predicted data.

Key Words: Bank Nifty, Candlesticks, Heuristic Model, Derivative Trading Strategy, Financial Market, BTST strategy.

Introduction

Bank Nifty : It monitors the performance of Indian banking firms that are liquid and well-capitalized, which is represented by the Nifty Bank Index (also known as Bank Nifty). Since it captures the equity performance of Indian banks, it acts as a benchmark for investors. Twelve businesses from the banking industry are included in the index, for twelve companies. The stocks of HDFC Bank (28.78 percent market capitalization and weight), ICICI Bank (21.06 percent market capitalization and weight), Kotak Mahindra Bank (12.07 percent), Axis Bank (12.06 percent), State Bank of India (SBI) (12.00 percent), the IndusInd Bank (5.36 percent), the AU Small Finance Bank Ltd. (1.98 percent), and Bandhan Bank (1.95 percent market capitalization and weight. The index first appeared in 2003 and has been in continuous operation since then.

Candlesticks: These are employed in the stock market to detect trading patterns and trade patterns. Technical analysts use these to identify the optimum moment to enter and exit the trade. Patterns may be made by placing two or more candles in a certain sequence. A single candlestick pattern, on the other hand, might help in detecting major trading signals, which may be advantageous in certain circumstances. As a result, candlestick models are split into two categories: single candlestick patterns and multiple candlestick patterns.

Derivative Trading: Derivative is an agreement between two parties on the value and price of major assets results in the formation of a derivative contract. Futures and options are the most popular derivatives to trade in terms of volume, and they are the most liquid. There are many distinct types of derivatives, all of which are dependent on the value or price of an asset in one form or another. It is necessary to first establish a corpus, which may be comprised of a single asset or a group of assets, as the first stage in the process. It is unavoidable that the value of underlying assets will vary in response to changes in the value of fundamental assets throughout time. Trading products such as futures and options, which are similar in that they enable investors to benefit while maintaining ownership of their existing assets, have been popular

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in recent years. At any point throughout the contract's duration, a buyer has the option, but not the duty, to purchase (or sell) an asset at a stated price at his or her discretion. Without canceling his or her position before the contract expires, in which case the contract is considered void, the buyer is committed to buying a certain asset, and the seller is committed to selling and delivering that asset at a later period.

Literature Review

In 2020, Nitin Kulshrestha and Vinay K. Srivastava have used Amibroker software to evaluate the findings of the RSI Technical Analysis Indicator and Artificial Intelligence to decrease the magnitude of risk and uncertainty and obtain a strategic advantage in portfolio optimization. They concluded that the AI system they showed in their paper assisted investors in achieving good outcomes and in managing emotions when investing and trading. With the assistance of this approach, 90% of investors saw positive returns. They also said in their paper that additional research might be done in the future utilizing different technological indicators.

In 2019, Atheetha S, Simran Mondal, Dhanusha N, and Raghunandan H J presented a method for trading options. They provided a systematic method for determining the price of an option by examining the underlying's average price fluctuations. This study covers the technical elements of investing as well as a part of the fundamentals. They found that the majority of traders lose money in options trading by waiting for the maturity date. They addressed these disadvantages of options trading for a small trader with a restricted investment by recommending a method based on basic average computation to build wealth and maximize earnings. They found that while trading in the options market, intrinsic value, timing risk, and volatility all play a significant influence.

In 2014, DR.S. Rajmohan and M. Muthukamu conducted a study in which they compared the NSE bank nifty index with other sectoral indexes. The purpose of the research was to determine how the performance of the Bank Nifty Index compares to that of other sectoral indices. There were two hypotheses tested. No positive relationship exists between the performance of the Bank Nifty Index and the performance of other sectoral indices. They concluded that the bank nifty index has a positive effect on most of the NSE indices, independent of the state of the market.

Siriporn Thammakesorn and Ohm Sornil developed candlestick-trading techniques in 2018. Patterns in the candlestick series are discovered to give clues about the next one's pricing. They found twenty-six distinguishing characteristics for candlestick chart patterns. The Chi-square Automatic Interaction Detector method is used to construct a trading strategy in the form of a classification tree utilizing features capable of recognizing candlestick chart patterns. Then, it is compared to eight widely utilized techniques on ten equities from Thailand's Stock Exchange. The method is compared to eight commonly utilized techniques on ten equities from Thailand's Stock Exchange.

Ananthi and K. Vijayakumar conducted a stock market analysis in 2020, using candlestick regression and trend forecasting. The k-NN regression model is used to forecast market trends in this instance. If technical indications are analyzed in conjunction with the stock prices of different businesses, a forecast may be made. Consequently, the accuracy was significantly improved when compared to other machine learning methods. In the future, full-fledged sentiment analysis will be introduced to aid in the forecasting of market trends. As the scope of market trend research is very broad, this kind of study may be performed in the future.

R. Amuthan in 2021 found a connection between the NIFTY 50 Index Trend and the NSE's Sector-based Indices Growth Momentum after COVID-19 in India. This study aims to find a connection between the NIFTY 50 and sector-based indices, forecast index points, and discover the best and worst-performing sector indices. March and April 2021 may be predicted using the E-Views-7 program. The results include the co-incident trend that used to exist in NIFTY IT and NIFTY Consumer Durables, which is because of a strong correlation. The co-linearity issue does not exist in this research, and NIFTY Consumer Durables is the best indicator of performance.

Yashasvi Chhikara and Parth Desai found the impact of macroeconomic variables and dividend yield on the Bank NIFTY Index in 2021. The study utilized quarterly data from January 1, 2010, to December 31, 2019. A regression model was employed to assess the impact of independent factors such as macroeconomic variables. The authors also used a multicollinearity test to determine the relationship between the independent variables. They discovered that although GDP, government bond rates, and dividend yields all had a significant impact on bank NIFTY returns, CPI had no influence. Furthermore, the test revealed that none of the independent variables is related to one another.

NEED OF RESEARCH

After conducting the literature survey of many published papers on this area, we concluded that there is no full-proof method for trading the Bank Nifty. Because of the stock market's V-shaped rebound in 2019, more investors poured into the market in 2020. Newcomers to the stock market have begun trading without enough understanding of derivatives trading, because of which they started losing money in the stock market. According to Nitin Khamat, CEO of Zerodha, "80% of all open purchase option positions at the end of each day are in the red" as of July 8, 2021. Hence, we did detailed research on this area and tried to develop a trading strategy for Bank Nifty, which can be easily applied by the investors and as well as result-oriented. If an investor is paying attention to the development of candlesticks, can simply trade using this technique. Trading opportunities utilizing this technique do not occur every day, but when they do, traders may take advantage of them by participating in BTST (Buy Today, Sell Tomorrow) or intraday trading.

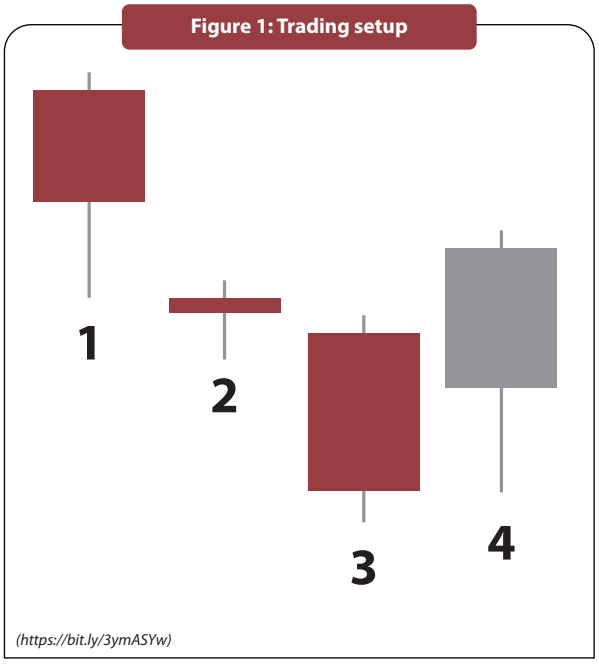
BANK NIFTY STRATEGY – THE HEURISTIC MODEL

Traders employ several trading methods in the stock market, but the majority of them are not entirely reliable. One may lose money rather than make money because of certain techniques. Our trading strategy is completely based on price movement, apart from a few fundamental insights and price movement. We utilize a method that is similar to the buy today, sell tomorrow (BTST) strategy in that it only enables long positions in the market to be traded. This is our bank's nifty strategy, which is safe and lucrative. The goal of this study is to create a derivative trading strategy that is advantageous for small retail traders. Besides that, people who are inexperienced with technical analysis will benefit from this method. Keep in mind that this technique is only applicable to Indian Bank Nifty trading. The followings are the detailed steps of the trading strategy:

STEP-1: Open a bank nifty index chart on any charting provider app or website of your choice to watch the development of candlesticks.

STEP-2: Every day, traders must keep an eye on the Bank Nifty and look for three consecutive red candles, as shown in the following figure: 1. All three of the candles in the first, second, and third rows are red, and the fourth green candle indicates that a profit will be made. If the development of a red candle takes place on the third day, traders need to initiate a trade on that day. It is recommended that you enter the market at least five minutes before it shuts. To utilize this strategy, traders must have overnight positions open at all times.

Figure 1: Trading setup

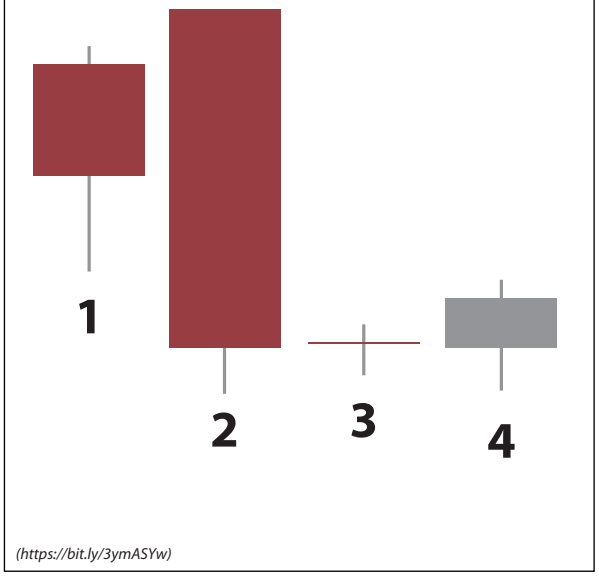


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Now we will go over a few cases to keep in mind while utilizing our BTST bank nifty trading strategy to trade in the stock market.

CASE-1: When three consecutive red candles develop, as illustrated in figure 2, candlestick patterns such as doji may be integrated into those three candles for trading purposes.

Figure 2: Trading setup including doji

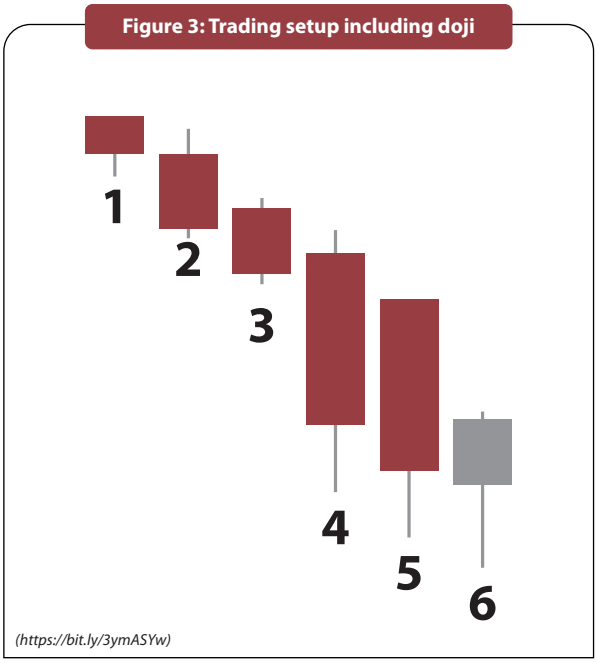


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CASE-2: Although it is not always essential for a green candle to appear after the placing of trade on the development of the third red candle, failing to create a green candle may have its advantages. The result is four red candles placed in a row adjacent to each

other, as illustrated in Figure 3. A green candle should be anticipated the next day in this instance because of our approach, and three consecutive candles from the second, third, and fourth candles should be considered three consecutive candles in this situation. When a red candle is created the next day, on the fifth day, as shown in figure 3, one should now inspect three consecutive candles from the third, fourth, and fifth candles produced earlier in the series, as shown in figure 3.

Figure 3: Trading setup including doji



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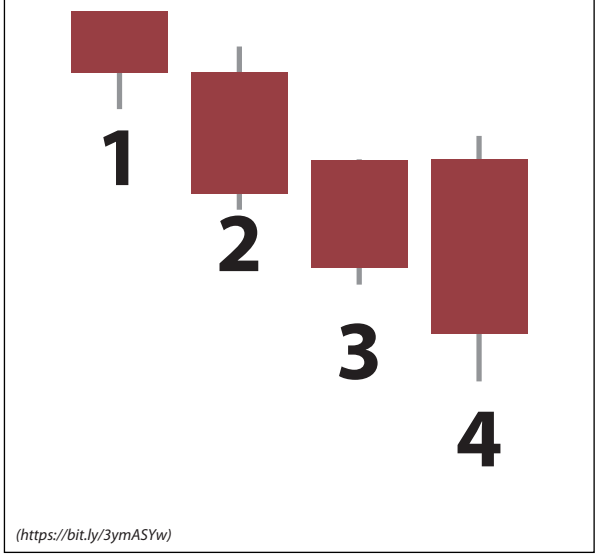
How To Trade The Strategy

This technique is based on derivatives trading, which means that to make a trade or position, any derivative trading instruments, such as options or futures, will need to be utilized. Options traders must purchase an in-the-money call option to enter a position. If the trading formation occurs on Thursday (the weekly expiration day of a weekly contract), the trader must select from among the available call option contracts the call option contract for the following week, which is usually the most favorable. The current month's futures contract, which is the month in which the trade setup is created, is where a trader must trade to be successful if he or she wants to use this technique for trading futures contracts.

The trader should set a stop loss before the creation of a position or the execution of a trade. This approach may help traders reduce their losses by making them more acquainted with what they are doing. If the bank nifty starts with a gap down the next trading day after you place a trade, you should immediately close out the position.

In the process of backtesting, we discovered that if you are in profit the next day, but the Bank Nifty turns red from green, wiping away your whole profit, you should establish a target at which one must book their profit. In figure: 42, it can be seen that the bank nifty was in the green on the fourth day, but subsequently went into the red.

Figure 4: Case when bank nifty turns red from green



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Research Methodology

We have used the free charting platform www.tradingview.com to keep track of the setup's development. Then, using Microsoft Excel, we compiled all of the information by reviewing all of the formations that had happened during the last five years. We next used Microsoft Excel to calculate all of the potential returns and earnings connected with this strategy. Following that, we used a statistical model (the F-test) to see whether the data was significant, and we used Microsoft Excel to compute the F-statistical value and the P-value of the gathered data. We were then able to forecast future returns and accuracy for the method using a linear regression prediction model in Microsoft Excel.

Data And Analysis

The meaning of the terminologies used in the table given below as a part of the analysis are explained below:

- **Trade date:** This shows the date on which a trade was completed, or the date on which a trade setup was created and ready to go into effect.

- **Previous close:** This demonstrates at what price the Bank Nifty was closed, and it indicates that we must enter the trade on the same day it was closed.
- **Close on trade date:** This reflects the Bank Nifty index's closing price on a given day. We must either book profit or close out the position on this day.
- **Total up/down points:** Depending on the closing prices of both the closing prices, this data shows how many points the bank nifty was up or down.
- **Percentage of change:** This shows how much of a percentage point the Bank Nifty index was up or down.
- **Total profit on one lot:** It is shown by this number, which indicates the amount of profit that can be earned by just trading one lot of bank nifty futures. A single lot of bank nifty futures has twenty quantities; therefore, the calculation is twenty times the total number of up/sown points in a single lot.

Table:1 Back-tested five-year data

Trade Date	Previous Close	Close on Trade Date	Total Up/Down Points	% Change	Total Profit on One Lot of Bn
2016-2017					
8/4/2016	15530.75	15568.35	37.6	0.24%	752
5/5/2016	16274.25	16281	6.75	0.04%	135
6/5/2016	16281	16296.8	15.8	0.10%	316
18/5/2016	16762.75	16728.95	-33.8	-0.20%	-676
24/5/2016	16407.55	16456.65	49.1	0.30%	982
2/6/2016	17423.45	17567.8	144.35	0.83%	2887
15/6/2016	17672.4	17917.9	245.5	1.39%	4910
7/7/2016	18004.25	18084.9	80.65	0.45%	1613
3/8/2016	18708.25	18602	-106.25	-0.57%	-2125
5/8/2016	18571.7	18925.95	354.25	1.91%	7085
11/8/2016	18647.8	18640.4	-7.4	-0.04%	-148
29/8/2016	19195.75	19217	21.25	0.11%	425
12/9/2016	20245.3	19790.6	-454.7	-2.25%	-9094
23/9/2016	20109.6	19901.8	-207.8	-1.03%	-4156
28/9/2016	19518.7	19653.55	134.85	0.69%	2697
10/10/2016	19400.1	19378.55	-21.55	-0.11%	-431
17/10/2016	19020.15	19070.4	50.25	0.26%	1005
17/11/2016	19108.1	19087.85	-20.25	-0.11%	-405
22/11/2016	18446.4	18548.65	102.25	0.55%	2045
25/11/2016	18256.1	18507.3	251.2	1.38%	5024
21/12/2016	18069.4	18084.5	15.1	0.08%	302
23/12/2016	17891.45	17884	-7.45	-0.04%	-149
10/2/2017	20151.15	20213.9	62.75	0.31%	1255
15/2/2017	20258.1	20163.7	-94.4	-0.47%	-1888
20/2/2017	20551.35	20677.1	125.75	0.61%	2515
28/2/2017	20613.05	20607.25	-5.8	-0.03%	-116
22/3/2017	21019.00	20781.35	-237.65	-1.13%	-4753

Trade Date	Previous Close	Close on Trade Date	Total Up/Down Points	% Change	Total Profit on One Lot of Bn
2017-2018					
20/4/2017	21556.35	21491.4	-64.95	-0.30%	-1299
22/5/2017	22769.8	22652.85	-116.95	-0.51%	-2339
24/5/2017	22536.3	23190.8	654.5	2.90%	13090
4/8/2017	24675.05	24827.45	152.4	0.62%	3048
11/8/2017	24217.35	23985.75	-231.6	-0.96%	-4632
22/8/2017	23936.5	23974.45	37.95	0.16%	759
22/9/2017	24799.25	24368.85	-430.4	-1.74%	-8608
26/9/2017	24165.05	24199.15	34.1	0.14%	682
5/10/2017	24113.3	24058.05	-55.25	-0.23%	-1105
19/10/2017	24313.75	24009.75	-304	-1.25%	-6080
23/10/2017	24009.75	24088.9	79.15	0.33%	1583
9/11/2017	24184.35	25291.35	1107	4.58%	22140
16/11/2017	25218.9	25446.6	227.7	0.90%	4554
24/11/2017	24736.25	25779.65	1043.4	4.22%	20868
4/12/2017	25191.95	25075.1	-116.85	-0.46%	-2337
5/12/2017	25075.1	25124.85	49.75	0.20%	995
14/12/2017	25000.35	25168.2	167.85	0.67%	3357
4/1/2018	25318.6	25462.6	144	0.57%	2880
11/1/2018	25617.3	25660.9	43.6	0.17%	872
21/2/2018	24874.4	24936.7	62.3	0.25%	1246
5/3/2018	24902.55	24818.7	-83.85	-0.34%	-1677
8/3/2018	24134.1	24477.65	343.55	1.42%	6871
20/3/2018	24245.1	24168.2	-76.9	-0.32%	-1538
26/3/2018	23670.4	24244.35	573.95	2.42%	11479

Trade Date	Previous Close	Close on Trade Date	Total Up/Down Points	% Change	Total Profit on One Lot of Bn
2018-2019					
20/4/2018	25126.15	24943.85	-182.3	-0.73%	-3646
24/4/2018	24960.65	25042.1	81.45	0.33%	1629
18/5/2018	26073.8	25875.6	-198.2	-0.76%	-3964
24/5/2018	25684.95	26016.8	331.85	1.29%	6637
6/6/2018	26251	26367.6	116.6	0.44%	2332
12/6/2018	26453.55	26607.1	153.55	0.58%	3071
18/6/2018	26417.4	26409.3	-8.1	-0.03%	-162
20/6/2018	26265.75	26557.7	291.95	1.11%	5839
3/8/2018	27355.95	27695.5	339.55	1.24%	6791
27/8/2018	27834.7	28264.2	429.5	1.54%	8590
31/8/2018	28103.25	28061.75	-41.5	-0.15%	-830

6/9/2018	27376.05	27468.7	92.65	0.34%	1853
14/9/2018	26819.2	27163.85	344.65	1.29%	6893
21/9/2018	26277.85	25596.9	-680.95	-2.59%	-13619
25/9/2018	24970.35	25330.35	360	1.44%	7200
1/10/2018	24119.85	25367	1247.15	5.17%	24943
29/10/2018	24421.05	24959.7	538.65	2.21%	10773
9/11/2018	25737.5	25771	33.5	0.13%	670
5/12/2018	26693.8	26519.6	-174.2	-0.65%	-3484
7/12/2018	26198.3	26594.3	396	1.51%	7920
15/1/2019	27248.25	27400.75	152.5	0.56%	3050
25/1/2019	27266.4	27115.3	-151.1	-0.55%	-3022
30/1/2019	26573.4	26825.3	251.9	0.95%	5038
12/2/2019	27227.8	27010.75	-217.05	-0.80%	-4341
15/2/2019	26970	26794.25	-175.75	-0.65%	-3515
19/2/2019	26654.25	26684.85	30.6	0.11%	612

Trade Date	Previous Close	Close on Trade Date	Total Up/Down Points	% Change	Total Profit on One Lot of Bn
2019-2020					
4/4/2019	30093.3	29904.9	-188.4	-0.63%	-3768
24/4/2019	29479.7	29860.8	381.1	1.29%	7622
9/5/2019	28994.4	28884.6	-109.8	-0.38%	-2196
10/5/2019	28884.6	29040.5	155.9	0.54%	3118
9/7/2019	30603.85	30569.15	-34.7	-0.11%	-694
16/7/2019	30445.95	30570.8	124.85	0.41%	2497
23/7/2019	29284.95	29128.1	-156.85	-0.54%	-3137
25/7/2019	28952.25	29043.05	90.8	0.31%	1816
6/8/2019	27648.05	28022.1	374.05	1.35%	7481
22/8/2019	27719.05	27034.2	-684.85	-2.47%	-13697
23/8/2019	27034.2	26958.65	-75.55	-0.28%	-1511
19/9/2019	27172.65	26757.65	-415	-1.53%	-8300
20/9/2019	26757.65	28981.55	2223.9	8.31%	44478
3/10/2019	28725.5	28414.1	-311.4	-1.08%	-6228
9/10/2019	27767.55	28785	1017.45	3.66%	20349
15/10/2019	28181.95	28555.1	373.15	1.32%	7463
25/10/2019	29107.95	29395.95	288	0.99%	5760
4/12/2019	31613.35	31979.3	365.95	1.16%	7319
10/12/2019	31316.65	31160.35	-156.3	-0.50%	-3126
11/12/2019	31160.35	31256.75	96.4	0.31%	1928
27/12/2019	31997.7	32412.35	414.65	1.30%	8293
2/1/2020	32102.9	32443.85	340.95	1.06%	6819

8/1/2020	31399.4	31373.65	-25.75	-0.08%	-515
23/1/2020	30701.45	31004.05	302.6	0.99%	6052
30/1/2020	30877	30647.4	-229.6	-0.74%	-4592
3/2/2020	29820.9	30023.25	202.35	0.68%	4047
18/2/2020	30680.7	30562.5	-118.2	-0.39%	-2364
20/2/2020	30838.2	30942.85	104.65	0.34%	2093
3/3/2020	28868.4	29177.05	308.65	1.07%	6173

Trade Date	Previous Close	Close on Trade Date	Total Up/Down Points	% Change	Total Profit on One Lot of Bn
2020-2021					
7/4/2020	17249.3	19062.5	1813.2	10.51%	36264
6/5/2020	19271.75	19694.55	422.8	2.19%	8456
12/5/2020	18950.5	18862.85	-87.65	-0.46%	-1753
18/5/2020	18833.95	17573.2	-1260.75	-6.69%	-25215
20/5/2020	17486.25	17840.2	353.95	2.02%	7079
27/5/2020	17440.35	18710.55	1270.2	7.28%	25404
15/7/2020	21392.2	21340.75	-51.45	-0.24%	-1029
16/7/2020	21340.75	21597.15	256.4	1.20%	5128
3/8/2020	21640.05	21072.1	-567.95	-2.62%	-11359
4/8/2020	21072.1	21490.5	418.4	1.99%	8368
18/8/2020	21700.85	22170.6	469.75	2.16%	9395
8/9/2020	22945.05	22744.4	-200.65	-0.87%	-4013
14/9/2020	22479.95	22101.25	-378.7	-1.68%	-7574
15/9/2020	22101.25	22465.65	364.4	1.65%	7288
23/9/2020	21139.1	21178.5	39.4	0.19%	788
25/9/2020	20456.58	20982.35	525.77	2.57%	10515.4
2/11/2020	23900.9	24892.5	991.6	4.15%	19832
4/1/2021	31225.85	31212.45	-13.4	-0.04%	-268
5/1/2021	31212.45	31722.25	509.8	1.63%	10196
12/1/2021	31998.9	32339	340.1	1.06%	6802
19/1/2021	31811.75	32424.85	613.1	1.93%	12262
27/1/2021	31198.4	30284.55	-913.85	-2.93%	-18277
28/1/2021	30284.55	30358.3	73.75	0.24%	1475
11/2/2021	35783.1	35752.1	-31	-0.09%	-620
19/2/2021	36587	35841.6	-745.4	-2.04%	-14908
24/2/2021	35116.95	36452.3	1335.35	3.80%	26707
2/3/2021	35296	35419.7	123.7	0.35%	2474
16/3/2021	35182.55	34804.6	-377.95	-1.07%	-7559
19/3/2021	33856.8	34161.6	304.8	0.90%	6096
30/3/2021	33318.2	33875.1	556.9	1.67%	11138

Source: Compiled by the Authors

"FORECAST.ETS(target_date, values, timeline, [seasonality], [data_completion], [aggregation])" is the function used to forecast data in excel. FORECAST.ETS function computes or forecasts a future value based on current (historical) data using the AAA version of the Exponential Smoothing (ETS) approach, which is a kind of exponential smoothing procedure. The forecast is that historical values will be used in the specified target date, which should correlate to the projected timeline.

Table:2 Actual and Forecasted data

ACTUAL DATA					
PARTICULAR	2016	2017	2018	2019	2020
Total No. of Trades	27	24	26	29	30
Winning Trades	16	15	17	17	19
Lossing Trades	11	9	9	12	11
Winning Accuracy (%)	59.26	62.5	65.38	58.6	63.33
Lossing Accuracy (%)	40.74	37.5	34.62	41.38	36.67
FORECASTED DATA					
Particular	2021	2022	2023	2024	2025
Total No. of Trades	31	34	35	38	38
Winning Trades	19	21	21	24	22
Lossing Trades	12	13	14	14	16
Winning Accuracy (%)	61.29	61.76	60.00	63.16	57.89
Lossing Accuracy (%)	38.71	38.24	40.00	36.84	42.11

Source: Computed by the Authors

Given below is the table that depicts the formula of calculation of the One-way ANOVA Test.

Table:3 Formula for calculating model in Excel

Source	Degrees of Freedom (DF)	Sum of Squares (SS)	Mean Square (MS)	F-Stat	P-Value
Between Groups	k – 1	SSb	MSb = SSb / (k – 1)	F = MSb / MSw	Right tail of F (k-1, N-k)
Within Groups	N – k	SSw	MSw = SSw / (N – k)		
Total:	N – 1	SSt = SSb+SSw			

Were,

- Between Groups Degrees of Freedom: $DF = k - 1$, where k is the number of groups
- Within Groups Degrees of Freedom: $DF = N - k$, where N is the total number of subjects
- Total Degrees of Freedom: $DF = N - 1$
- Sum of Squares Between Groups: $SSb=\sum k\ i=1^{ni}\ (xi-x)^2$, where n_i is the number of subjects in the i-th group
- Sum of Squares Within Groups: $SSw=\sum k\ i=1^{ni}\ (ni-1)\ Si^2$, where Si is the standard deviation of the i-th group

Total Sum of Squares: $SSt = SSb + SSw$

- Mean Square Between Groups: $MSb = SSb / (k - 1)$
- Mean Square Within Groups: $MSw = SSw / (N - k)$
- F-Statistic (or F-ratio): $F = MSb / MSw$

Table: 4 Data summary of ANOVA test for total no. of trades actual and forecasted

Data Summary				
Groups	N	Mean	Std. Dev.	Std. Error
Total no. of trades (actual)	5	27.2	2.3875	1.0677
Total no. of trades (forecasted)	5	35.2	2.9496	1.3191

ANOVA Summary					
Source	Degrees of Freedom DF	Sum of Squares SS	Mean Square MS	F-Stat	P-Value
Between Groups	1	160	160	22.2218	0.0015
Within Groups	8	57.6012	7.2001	-	
Total:	9	217.6012	-		

Source: Computed by the Authors

Table: 5 Data summary of ANOVA test for winning trades actual and forecasted

Data Summary				
Groups	N	Mean	Std. Dev.	Std. Error
Winning trades (actual)	5	16.8	1.4832	0.6633
Winning trades (forecasted)	5	21.4	1.8166	0.8124

ANOVA Summary					
Source	Degrees of Freedom DF	Sum of Squares SS	Mean Square MS	F-Stat	P-Value
Between Groups	1	52.9	52.9	19.2367	0.0023
Within Groups	8	21.9997	2.75	-	
Total:	9	74.8997	-		

Source: Computed by the Authors

Table: 6 Data summary of ANOVA test for losing trades actual and forecasted

Data Summary				
Groups	N	Mean	Std. Dev.	Std. Error
Lossing trades (actual)	5	10.4	1.3416	0.6
Lossing trades (forecasted)	5	13.8	1.4832	0.6633

ANOVA Summary					
Source	Degrees of Freedom DF	Sum of Squares SS	Mean Square MS	F-Stat	P-Value
Between Groups	1	28.9	28.9	14.4508	0.0052
Within Groups	8	15.9991	1.9999	-	
Total:	9	44.8991	-		

Source: Computed by the Authors

Table: 7 Data summary of ANOVA test for winning accuracy actual and forecasted

Data Summary				
Groups	N	Mean	Std. Dev.	Std. Error
Winning accuracy (actual)	5	61.814	2.8433	1.2716
Winning accuracy (forecasted)	5	60.82	1.9898	0.8899

ANOVA Summary					
Source	Degrees of Freedom DF	Sum of Squares SS	Mean Square MS	F-Stat	P-Value
Between Groups	1	2.4701	2.4701	0.4102	0.5398
Within Groups	8	48.1746	6.0218	-	
Total:	9	50.6447	-		

Source: Computed by the Authors

Table: 8 Data summary of ANOVA test for losing accuracy actual and forecasted

Data Summary				
Groups	N	Mean	Std. Dev.	Std. Error
Losing accuracy (actual)	5	38.182	2.8377	1.269
Losing accuracy (forecasted)	5	39.18	1.9898	0.8899

ANOVA Summary					
Source	Degrees of Freedom DF	Sum of Squares SS	Mean Square MS	F-Stat	P-Value
Between Groups	1	2.49	2.49	0.4146	0.5377
Within Groups	8	48.0474	6.0059	-	
Total:	9	50.5374	-		

Source: Computed by the Authors

Table 9: Summary of F-statistical value and P-value

F-Statistical value and P-Value		
Particulars	**F-Statistical value**	**P-Value**
Total no. of trades	22.22176	0.00151
Winning trades	19.23665	0.00233
Lossing trades	14.45082	0.00523
Winning auuracy (%)	0.41019	0.53978
Lossing accuracy (%)	0.41459	0.53767

Source: Computed by the Authors

Findings

We have tested our method by using data from the Bank Nifty Index for the last five years, as we have utilized bank nifty futures in the calculation. As shown in table:1, we have incorporated all of the information regarding the total number of trades and the accuracy percentage. With our strategy, we found to have a sixty percent success rate. As we projected data for the next five years, we found that our method has a sixty percent yearly accuracy rate. This was a significant finding for us. Following that, we computed the total profit that may be made by trading a single lot of bank nifty futures contracts on the open market. Trading our approach has the potential to generate Rs.3,58,346/-in five years.

We also used a linear regression prediction model to anticipate data for the next five years, which proved to be very accurate. In our research, we found a consistent accuracy of sixty percent, as previously indicated. More detailed predicted data is shown in the table: 2.

Using the One-way Anova test, we found to have a significant relationship between actual and forecasted data. All the related data for the test are given in the table: 4 to table: 9.

μ0

=there is no significant relationship between actual and forcasted data of selected

vaiable.

μ1

=there is significant relationship between actual and forcasted data of selected

vaiable.

Where μ1 is the alternative hypothesis which we can denote when the μ0 is rejected. The hypothesis will be rejected if the p-value is less than the usual significant threshold of 0.05, and the alternative hypothesis will be taken into account. Below are the results of a square test.

- A one-way ANOVA test of independence showed that there was a significant relationship between TOTAL NO. OF TRADES (actual and forecasted) as $p < 0.05$.
- A one-way ANOVA test of independence showed that there was a significant relationship between WINNING TRADES (actual and forecasted) as $p < 0.05$.
- A one-way ANOVA test of independence showed that there was a significant relationship between LOSING TRADES (actual and forecasted) as $p < 0.05$.
- A one-way ANOVA test of independence showed that there was no significant association between WINNING AUURACY (actual and forecasted) as $p > 0.05$.
- A one-way ANOVA test of independence showed that there was no significant relationship between LOSING AUURACY (actual and forecasted) as $p > 0.05$.

We can define that the forecasted data for winning and losing accuracy is insignificant.

Recommendations

- We suggest that small retail traders trade one lot of Bank Nifty options or futures to trade our Bank Nifty strategy since we can only trade our Bank Nifty strategy using options and futures.
- One needs to ensure that while trading, a stop loss should be established for the transaction before the beginning.
- Wait until the setup has been established before entering the trade.
- When major events occur, such as an announcement by the RBI, a press release by the government, an announcement of the monitory policy, an announcement of GDP data, an announcement of the government's budget, and so on, avoid trading or trading with a tight stop loss because there will be significant volatility on that day.
- If you are a novice trader, we recommend that you start with paper trading to understand our technique before going on to the live market.
- Trading our technique does not entail a promise that one will make a profit every time the strategy is used. Trading our technique may result in a loss for any trader who does not have a firm grasp of the strategy or does not comprehend how it works.
- Depending on one's understanding of strategy and trading methods, one must decide whether to engage in trading activities. It is solely the responsibility of the trader who is using our technique to bear any losses made because of the strategy's implementation.

Conclusion

It has been seen that, now-a-days many retail traders have been flocking to the stock market in record numbers, without the required knowledge or a trading strategy in place. The results of our study shows that individual retail traders are more interested in derivative trading as compared to stock trading. Many a times investors are interested in options trading, as they are more appealing to traders since their margin requirements are smaller, and the cost of buying an option is extremely cheap. We have developed an easy-to-understand and implement the trading method for retail traders who wish to trade derivatives. This approach is called bank nifty trading. The promise of being ninety percent accurate should be greeted with caution since no technique can guarantee accuracy ninety percent of the time. For big traders, the risk-to-reward ratio is becoming more crucial to their decisions. Regardless of how precise one's trading is, if one's risk-to-reward ratio is incorrect, one will lose money because of the inherent risk involved in the trading process. For example, every trader should use basic methods, physiological principles, trading regulations, and discipline to conduct himself or herself professionally.

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