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A COMPARATIVE STUDY ON EFFICIENT MARKET HYPOTHESIS OF AXIS BANK & HDFC BANK (WITH REFERENCE TO NSE NIFTY)

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Abstract: The National Stock Exchange (NSE) is an Indian Stock Exchange located in Mumbai, Maharashtra India, Established in 1992. The NSE is considered to of world's largest derivatives exchange in 2001. Axis bank is the 3rd largest private sector bank in India it offers financial services to customer segment covering large & mid-size corporate, MSME, agriculture etc & HDFC bank limited is an Indian banking and financial services company headquartered in Mumbai, Maharashtra. Established in 1994, it is India's largest private sector bank it's the world's 10th largest bank.

The study attempts to estimate the trends of stocks price of private banks at NSE index. The main objective of this study is to find out the risk and return level of private bank of NSE. The data has been taken from NSE official web address for period from January 2022 to March 2022. The study compares the performance of the private bank at stock exchange. Risk and return analyse plays a key role individual decision-making process. Every investor tries to seek less risk with good return, Risk and Return always go hand in hand. Stock market fluctuates, the concerns of all the investors to get a more return and bear more risk. The study uses different statistical tools and techniques like Run test, Mean, Standard Deviation and Upper & Lower Limit and choose the suitable bank for the Investment.

Key words: Run test, Mean, Standard Deviation and Upper & Lower Limit.

INTRODUCTION

The 'Efficient Market Hypothesis' (EMH), also known as effective market theory, is the idea that the number of shares reflects all the information. According to EMH, stock is always trading at its fair value in trading, making it impossible for investors to buy fewer valuable stocks or sell stocks at higher prices.

Weak Form EMH: According to the weak EMH form, all prior information has a collateral value. Over time, basic collateral research can provide you with information to gain profits beyond market estimates. However, as a result, no basic or technical analysis will provide long-term gains.

Semi-Strong Form EMH: According to the semi-strong EMH form, no basic non-technical analysis can give you an edge. It also means that new information is added to the collateral values almost immediately.

Strong Form EMH: According to the EMH Solid Form, all public and private information is priced in stock, so no investor can make a profit over the entire market. A strong EMH form does not give a chance for a very large return.

NEED OF THE STUDY

The present study will help the investors to enter and exit good quality of stocks. The study consider sample of 2 Banking Industry listed at NSE which are safe for investors to start investing, because run test give an idea and information, which yield more and stock as less volatility compare to others. The sources for study are period from 1 January to 31 March 2022, the stock data had been taken from NSE (NIFTY).

STATEMENT OF PROBLEM

Investors in capital market to trade, they gather information and apply the methods to identify the best stocks available before making an investment, and they normally undertake fundamental and technical analysis to invest in the best stock in the market. (EMH) is also one more tool which helps investors in identifying good stock. Empirical Research across the world, has unearthed evidences against efficient hypothesis. They suggest that past and publicly available information can be used to analysis, The present study is based on "Efficient market Hypothesis", to identify weak, semi-strong and strong form of 'efficient' of selected stock using run test to help investors to purchase and sell the quality stocks. The study consider sample of 2 companies listed at NSE, runs test give an idea, information which yield more stock has less volatility(The rate at which the price of a stock increases or decreases, over a particular period) compress to other.

OBJECTIVES OF THE STUDY

1. To study the price changes in stocks of Banking through NSE data.
2. To apply Run test, Mean and Standard Deviation for Stocks of AXIS & HDFC Private Banks.

HYPOTHESES FOR THE STUDY

Monthly Data from selected two companies from the Banking Industries.

NULL HYPOTHESES (Ho): There is no significant difference between observed runs lies between upper and lower limit.

ALTER NATIVE HYPOTHESES (Ha): There is a significant difference between observed runs lies between upper and lower limit.

REVIEW LITERATURE

Monika Chopra (2022), the COVID-19 pandemic has a wave across the global stock market. And several financial crises in the past too have had a global impact with their reach extending beyond the country of origin. The study also highlights the difference between severities of a liquidity crisis versus a real crisis and identified the markets that remained insulated from all these situations. **Dipasha sharma (2018),** bank efficiency on bank performance both in developed and developing economies. Although abundant research on the association of emerging dimension of stock performance with bank efficiency is available for the developed countries. **Hitakshi Dutta (2016),** rising incomes enchased the need of banking service which resulted in great boom in terms of advance technology prompt communication system and conception of various banks to cope up with multinational led environment committed employees create the customer stories which make brand creditable. **Mainsha Luthra (2014),** the study explored based on secondary data it's descriptive in nature they analysed the tool used in the report multiple regression. The goal of this is to investigate the impact of macro-economic factors on the BSE banker. GDP growth rate, inflation, gold Price and exchange rate make up the macroeconomic climate of this country. Exchange rate, inflation and GDP growth rate all have positive impact on the banking index, whilst gold prices have negative impact on the BSE bank.

TYPE OF RESEARCH

The present study is on descriptive (Descriptive term is a word used to provide additional information and more information.) and Empherical (capable of being verified or disproved by observation or experiment empirical laws.) in nature, the data has been collected through secondary sources, includes NSE (www.nse.com) (www.yahoo.com). The study is selected 2 companies from Banking Industry.

SCOPE OF THE STUDY

The scope of the study describes how well the study area will be processed in the workplace and specifies the parameters within the study that will be used. Basically, this means that you will need to explain what the study will cover and where it will focus on. An effective market hypothesis holds that when new information arrives on the market, it immediately appears in stock prices; no technical analysis (past stock price analysis in an attempt to predict future prices) or basic analysis (financial information analysis) can assist the investor. The run test helps the investors to analysis the data and invest in stock market.

SOURCES OF DATA COLLECTION

1. PRIMARY DATA

As the study mainly depends on Secondary Data on the stock index, Primary Data is one not dependent on other source, such as data collected directly from the first source of data.

2. SECONDARY DATA

The data are acquired from the official websites like (www.NSE India.com) (www. Yahoo finance). This are website the data are gathered and applied for the run test.

STATISTICAL TOOLS AND TECHNIQUES

To study inventory cost are from random procedure, runs test is used. This test is a 'non –parametrical' statistical test, which checks uncertainty of 'Hypothesis'. This runs test use to check whether 'Market Efficient' is of 3 kinds or not. This is random walk theory. This test is calculated as below.

'R' stands for observation of number of runs

'N1' = number of positive runs

'N2' = number of negative runs

'N1+n2'=number of observation in each category

Upper limit =μ+1.96*standard deviation

Lower limit =μ-1.96*standard deviation

Runs = closing price – opening price

'Standard deviation' of runs SD $=\frac{\sqrt{\sum \quad \lfloor X - X \lfloor 2}}{N}$

Mean = (closing price-opening price)/opening*100

Here the determined run fall between 'Upper' and 'Lower' limit, so the H0 is accepted and Ha rejected.

1 TABLE SHOWING CONSOLIDATE VALUE OF AXIS BANK & HDFC BANK

AXIS BANK

Date	Price change	Date	Price change
3/1/22		21/2/22	+
4/1/22	+	22/2/22	-
5/1/22	+	23/2/22	-
6/1/22	+	24/2/22	-
10/1/22	+	25/2/22	+
11/1/22	+	28/2/22	-
12/1/22	+	2/3/22	+
13/1/22	-	3/3/22	-
14/1/22	-	4/3/22	-
17/1/22	-	7/3/22	-
18/1/22	+	8/3/22	+
19/1/22	+	9/3/22	+
20/1/22	-	10/3/22	+
21/1/22	-	11/3/22	+
24/1/22	-	14/3/22	+
25/1/22	+	15/3/22	-
27/1/22	+	16/3/22	+
28/1/22	-	17/3/22	+
1/2/22	+	21/03/22	-
2/2/22	+	22/3/22	+
3/2/22	-	23/3/22	-
4/2/22	-	24/3/22	-
7/2/22	-	25/3/22	-
8/2/22	+	28/3/22	+
9/2/22	+	29/3/22	+
10/2/22	+	30/3/22	+
11/2/22	-	31/3/22	+
14/2/22	-		
15/2/22	+		
16/2/22	+		
17/2/22	+		

HDFC BANK

Date	Price Change	Date	Price change
3/1/22		16/2/22	+
4/1/22	+	17/2/22	-
5/1/22	+	18/2/22	-
6/1/22	-	21/2/22	+
7/1/22	+	22/2/22	-
10/1/22	+	23/2/22	+
11/1/22	+	24/2/22	-
12/1/22	-	25/2/22	-
13/1/22	-	28/2/22	-
14/1/22	+	1/2/22	+
17/1/22	-	2/2/22	+
18/1/22	+	3/2/22	-
19/1/22	-	4/2/22	+
20/1/22	-	7/2/22	-
21/1/22	+	8/2/22	-
24/1/22	-	9/2/22	+
25/1/22	-	10/2/22	+
27/1/22	-	11/2/22	-
28/1/22	-	14/2/22	-
31/1/22	+	15/2/22	+
1/2/22	+	16/2/22	-
2/2/22	+	17/2/22	-
3/2/22	+	18/2/22	+
4/2/22	-	21/2/22	+
7/2/22	-	22/2/22	-
8/2/22	-	23/2/22	-
9/2/22	+	24/2/22	-
10/2/22	+	25/2/22	+
11/2/22	-	28/2/22	-
14/2/22	-		
15/2/22	+		

AXIS BANK

Months	Opening price	Closing price	X	X-Mean Of X	Sq. Of X	Variance	Standard Deviation
Jan	680	773.1	93.1	64.65	4179.623	1393.208	37.32
Feb	777	742.6	-34.4	-34.4	1183.36	394.4533	19.86
Mar	734	760.65	26.65	26.65	710.2225	236.7408	15.38
Total			**85.35**				**24.19**

n=3	Mean	28.45

HDFC BANK

Months	Opening Price	Closing Price	X	X-Mean Of X	Sq. X	Variance	Standard Deviation
Jan	1479.8	1485.55	5.75	-0.05	0.0025	0.00	0.028
Feb	1500	1426.7	-73.3	-79.1	6256.81	2085.85	45.669
Mar	1385	1469.95	84.95	79.15	6264.7225	2088.24	45.69
Total			**17.4**				**91.39**

n=3	Mean	5.8

ANALYSIS : Axis bank has both increasing and decreasing prices, this is also called as bull and bear prices.In this company analysis done for 3 months from january to march, number of ‘positive runs’ is 32 and no ‘negative runs’ is 27.So that more no of positive runs, so this company has bull price. The company have good average return of 28.45 and the standard deviation is 24.19. HDFC Bank has both increasing and decreasing prices ,this is also called as bull and bear prices.In this company analysis done for 3 months from january to march , no of ‘positive runs’ is 28 and no ‘negative runs’ is 32. So that more no of positive runs, so this company has bear price. The HDFC bank as a bear price with more negative runs by seeing this the bank has not performed well in past 3 months.

CALCULATIONS OF AXIS BANK

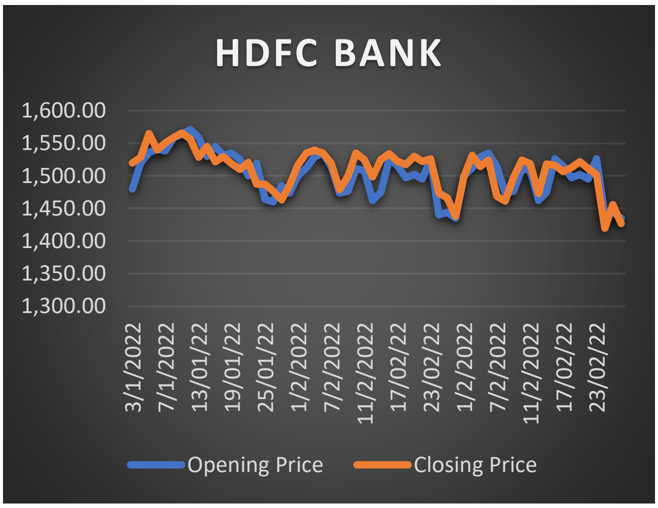
Total runs (r) = 32

No of positive runs (n1) =28
No of negative runs (n2) =32
Mean (μ) = 5.8
Standard deviation (σ) = 91.39
Upper limit = 184.92
Lower limit = 173.32

CALCULATIONS OF HDFC BANK

Total runs (r) = 26

No of positive runs (n1) = 36
No of negative runs (n2) = 27
Mean (μ) = 28.45
Standard deviation (σ) = 24.190
Upper limit = 75.86
Lower limit = 18.96



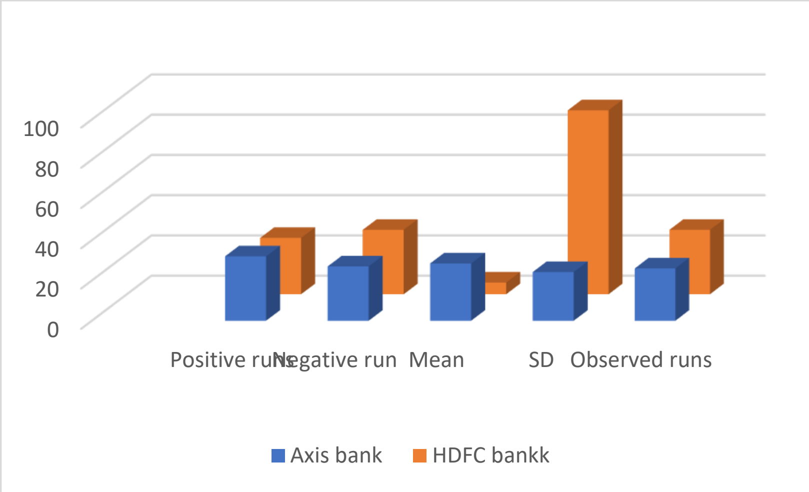
Graph Showing The Opening Price And Closing Price Of Axis Bank & HDFC Bank

INTERPRETATION: From the above graph observed that 32 and 27 of positive and negative runs, so there is no significant difference between observed runs lies between ‘positive’ and ‘negative’ runs. Hence the company has bull price. From the above calculation observed that it has good average rate of return and positive runs are more so that the investors can invest in the company for good rate of return. From the above graph observed that the number 28 and 32 of positive and negative runs, so there is no significant difference between observed runs lies between ‘positive’ and ‘negative’ runs. Hence the company has the bear price. The bank has bear price which shows that company has not performed good in past three months so the investor should see before investing on the bank and it’s not giving better return to the investors.

CONSOLIDATED TABLE

Company name	N1	N2	Mean	Standard deviation	Upper Limit	Lower limit	Observed run	Hypothesis testing & given level of significance
AXIS BANK	32	27	28.45	24.19	75.86	18.96	26	H0 accepted
HDFC BANK	28	32	5.8	91.39	184.92	173.32	32	H0 accepted

ANALYSIS: From the above table, the data on mean, standard deviation, upper limit & lower limit, observed runs and hypothesis testing value of Axis and HDFC Bank for the consecutive months from January to March 2022. The mean 28.45 & 5.8, standard deviation 24.19 & 91.39, upper limit 75.86 & 184.92, lower limit 18.69 & 173.32, respectively the observed runs as 26 & 32.



Bar Graph – Consolidated table

INTERPRETATION: From the above graph the on-AXIS Bank and HDFC Bank shows fluctuation in the determination of the Mean, Standard deviation, Upper & Lower limit and observed runs. According to above graph AXIS BANK as a good positive run with less risk rather than the HDFC Bank.

FINDINGS

- After the 'Efficient Market Hypothesis'(EMH) of selected 2 companies from NSE(nifty), we can educate buyers to carry positive facts in their thoughts before making investing in stock market. 'Efficient market'(EM) is been projected that market, however market place never been efficient, in truth constantly functions & confuse
- Market hypothesis'.(MH) It could be sensible for traders to invest not handiest on past costs, however after making systematic and secure analysis of factors like economic & political, inflation, investment, fundamental, technical beyond the past prices .They should invest on the premise of fundamental of the enterprise and may not forget the 'capital appreciation', however the earnings of capital appreciation and dividend .Investors adopt properly varying portfolio composed of various market risk and, it provide risk weighted return.
- Axis bank has both increasing and decreasing prices, In this company analysis done for 3 months from january to march, number of 'positive runs' is 32 and number 'negative runs' is 27.So that more number of positive runs, so this company has bull price. The company have good average return of 28.45 and the standard deviation is 24.19.
- HDFC Bank has both increasing and decreasing prices ,this is also called as bull and bear prices.In this company analysis done for 3 months from january to march ,number of 'positive runs' is 28 and number 'negative runs' is 32. So that more number of positive runs, so this company has bear price. The HDFC bank as a bear price with more negative runs by seeing this the bank has not performed well in past 3 months.

CONCLUSION

The study is to find the efficiency of NSE throughout duration. During study 'random walk model' tells those previous prices modifications aren't useful in destiny prices or return modifications. After applying the statistical like run. From the analysis and the findings of the study one can conclude their exits no significant relationship between stock price and stock return. The null hypothesis is being accepted .There is no significant difference between observed runs lies between 'upper' and 'lower' limit in all selected companies.

Stock market is a fear full market which needs a good knowledge about the stocks to invest in the stock market. The efficient market hypothesis is a great tool for the initial investors to know about the different stocks and run test help the investors to the analysis the stocks & it helps the investors to make a decision. The test gives the result in positive and negative. This test is more effective than the other tests it helps the investors to gain the good return.

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