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Performance Analysis of Selected Stocks in India Banking Industry

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Abstract: In today's complex financial markets, it is becoming increasingly difficult to select the right investment avenues. Each investment carries some risk and that it is vital to chose wisely. Investment has become complicated and is both an art and science. One makes investment for a return higher than what he can get by keeping the money in a commercial or cooperative bank or even in an investment bank. But the return is higher if the risk is also higher. Return and risk go together and they have a trade off. This study is to analyze the performance of 5 selected stocks in the banking sector namely – HDFC Bank, ICICI Bank, Yes Bank, Axis Bank, Kotak Mahindra Bank for the last five years. This study tries to identify the risk and return of selected banks and arrive at the best investment decision by using statistical tools such as beta, alpha, Correlation standard deviation, Coefficient of determination and mathematical tools such as ratios. This study not only helps to predict how the return will be, but also guides a prospective investor in making good investment decisions.
Keywords: Investment decision, Risk, Return, Alpha, Beta, Perfomance Analysis, Ratio Analysis

INTRODUCTION

The Indian banking scenario has witnessed significant changes in the recent years with entry of private banks and with their focus on retail banking and convergence of services. The ongoing reform process, growing use of technology, increased competition and product innovation has all put the banking sectors on a high growth trajectory. Advancement in communication and information technology has facilitated growth in internal banking. ATM network, electronic transfer of funds and quick dissemination of information structural reforms in the banking sector have improved the health of the banking sector. This study focuses on the performance analysis of the five major banks in India to assess the investment opportunities to invest in banking sector in India.

In the present state of the economy there is an imperative need for investors to protect their investment. Though it is a well known fact that investing in securities such as shares, debentures, bonds, etc. are profitable and exciting, it is an avenue which involves a great deal of risk. Hence investing in financial securities is considered to be one of the best avenues for investing one's savings, while it is acknowledged to be one of the most risky for investment. The Indian capital market is regarded as the barometer for the country's economic health and performance. Thus, any development will reflect on equity prices with positive and negative effects. Therefore the study on performance analysis on shares of five major players become relevant to sporting out the future avenues and prospects in banking sectors there by enabling the investors to make proper decisions at the right time.

The following are the important objectives of the study;

- To identify the risk and return of selected banks
- To identify the best investment decision.
- To identify whether the stocks is undervalued or overvalued
- To find the present level of financial performance of selected banks

Reviewing of all the literature on the area of research is a preliminary step before starting to plan the study. It is essential to review all the relevant material connected with the problem chosen. It is necessary to show how the problem under the study relates to the previous research studies. It is also equally important to show how this work is different from existing literature. There are large no of studies conducted in connection with the performance of banking institutions. A review of the studies closely related to the present topic is given here under.

Grewal S.S and Navjot Grewall [1] revealed some basic investment rules and rules for selling shares. They

warned the investors not to buy unlisted shares, as Stock Exchanges do not permit trading in unlisted shares. Another rule that they specify is not to buy inactive shares, i.e., shares in which transactions take place rarely. They caution not to hold the shares for a long period, expecting a high price, but to sell whenever one earns a reasonable reward.

Jack Clark Francis [2] revealed the importance of the rate of return in investments and reviewed the possibility of default and bankruptcy risk. He opined that in an uncertain world, investors cannot predict exactly what rate of return an investment will yield. However he suggested that the investors can formulate a probability distribution of the possible rates of return. He also opined that an investor who purchases corporate securities must face the possibility of default and bankruptcy by the issuer. Financial analysts can foresee bankruptcy. He disclosed some easily observable warnings of a firm's failure, which could be noticed by the investors to avoid such a risk.

Preethi Singh[3] disclosed the basic rules for selecting the company to invest in. She opined that understanding and measuring return and risk is fundamental to the investment process. According to her, most investors are 'risk averse'. To have a higher return the investor has to face greater risks. She concludes that risk is fundamental to the process of investment. Every investor should have an understanding of the various pitfalls of investments. The investor should carefully analyse the financial statements with special reference to solvency, profitability, EPS, and efficiency of the company.

Pattabhi Ram [4] emphasized the need for doing fundamental analyses and doing Equity Research (ER) before selecting shares for investment. He opined that the investor should look for value with a margin of safety in relation to price. The margin of safety is the gap between price and value. He revealed that the Indian stock market is an inefficient market because of the absence of good communication network, rampant price rigging, the absence of free and instantaneous flow of information, professional broking and so on. He concluded that in such inefficient market, equity research will produce better results as there will be frequent mismatch between price and value that provides opportunities to the long-term value oriented investor. He added that in the Indian stock market investment returns would improve only through quality equity research.

V.T. Godse [5] revealed the two separate but simultaneous processes involved in risk management. The first process is determining risk profile and the second relates to the risk management process itself. He opined that such an elaborate risk management process is relevant in the Indian context. The process would facilitate better understanding of risks and their management

Aswathy Damodaran [6] reviewed the ingredients for a good risk and return model. According to him a good risk and return model should come up with a measure for risk that is universal and translate the risk measure into an expected return.He opined that a risk measure, to be useful, has to apply to all investments whether stocks or bonds or real estate. He also stated that one of the objectives of measuring risk is to come up with an estimate of an expected return for an investment. This expected return would help to decide whether the investment is a 'good' or 'bad' one.

Suseela Subramanya V [7] commented on the risk management processes of banks. She revealed that banks need to do proper risk identification, classify risks and develop the necessary technical and managerial expertise to assume risks. Embracing scientific risk management practices will not only improve the profits and credit management processes of banks, but will also enable them to nurture and develop mutually beneficial relationships with customers. She concluded that the better the risk information and control system the more risk a bank can assume prudently and profitably.

R.B.1 Guidelines for Risk Management system in banks" [8] broadly cover management of credit, market and operational risks. According to the guidelines, the management of credit risk should receive the prime attention of the top management. The guidelines also mention that it would be desirable to adopt international standards on providing explicit capital cushion for the market risk to which banks are exposed.

Rajagopala Nair and Elsamma Joseph [9] revealed the various risks experienced by investors in corporate securities and the measures adopted for reducing risks. They opined that calculated risk might reduce the intensity of loss of investing in corporate securities.

As per their study, many investors are holding shares of those companies that are non-existent at present. They opined that investors may accept risks inherent in equity, but they may not be willing to reconcile to the risk of fraud. Promoters should not be allowed to loot the genuine investors by their fraudulent acts. They observed that political uncertainties and frequent changes in the govt. have put the investors in an embarrassing state of mind.

Akash Joshi [10] reviewed the utility of derivatives in reducing risks. He opined that derivatives allow an

investor to hedge or reduce risks. But they tend to confound investors due to their esoteric nature. The leverage that the derivatives offer to any trader, investor or speculator is tremendous. By the use of derivatives the volatility of the market also gets neutralized. He concluded the article by stating that while the discerning one stands to gain from it, a person who fails to read it right could land up burning his figures.

METHODOLOGY

The present study is mainly based on the secondary data; the analytical research method is used for the interpretation of results.

Sampling:

The study covers stocks of five banking institutions such as HDFC bank, ICICI bank, Axis bank, Yes bank and Kotak Mahindra bank. These banks are selected purposively.

Period Covered:

The study covers a period of 5 years from 2009 to 2013.

Tools used for Analysis:

The data collected are analyzed using the statistical tools such as beta, alpha, Correlation standard deviation, Coefficient of determination and mathematical tools such as ratios.

Beta

It is a measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole. Beta is used in the capital asset pricing model (CAPM), a model that calculates the expected return of an asset based on its beta and expected market returns, also known as "beta coefficient." Beta is calculated using regression analysis, and you can think of beta as the tendency of a security's returns to respond to swings in the market. A beta of 1 indicates that the security's price will move with the market.

A beta of less than 1 means that the security will be less volatile than the market and a beta of greater than 1 indicates that the security's price will be more volatile than the market. For example, if a stock's beta is 1.2, it's theoretically 20% more volatile than the market. Many utilities stocks have a beta of less than 1. Conversely, most high-tech, Nasdaq-based stocks have a beta of greater than 1, offering the possibility of a higher rate of return, but also posing more risk. In finance, the Beta (β) of a stock or portfolio is a number describing the correlated volatility of an asset in relation to the volatility of the benchmark that said asset is being compared.

$$\text{BETA} = \frac{\text{COVARINACE (STOCK VERSUS MARKET RETURN)}}{\text{VARIANCE OF THE STOCKMARKET}} \quad (1)$$

Alpha

Alpha is a measure of performance on a risk-adjusted basis. Alpha takes the volatility (price risk) of a mutual fund and compares its risk-adjusted performance to a benchmark index. The excess return of the fund relative to the return of the benchmark index is a fund's alpha. Alpha is one of five technical risk ratios; the others are beta, standard deviation, R-squared, and the Sharpe ratio. Simply stated, alpha is often considered to represent the value that a portfolio manager adds to or subtracts from a fund's return. A positive alpha of 1.0 means the fund has outperformed its benchmark index by 1%. Correspondingly, a similar negative alpha would indicate an underperformance of 1%.

$$\text{ALPHA} = (\text{Sum of } y) - ((b)\ (\text{sum of } x))]/n \quad (2)$$

n= no of observations
b=beta of the fund
x=rate of return for the market
y=rate of return for the fund

Correlation

The correlation is one of the most common and most useful statistics. A correlation is a single number that describes the degree of relationship between two variables. The formula for the correlation is:

$$r = \frac{N\Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2][N\Sigma y^2 - (\Sigma y)^2]}}$$

Where:

- N = number of pairs of scores
- Σxy = sum of the products of paired scores
- Σx = sum of x scores
- Σy = sum of y scores
- Σx^2 = sum of squared x scores
- Σy^2 = sum of squared y scores

(3)

We use the symbol r to stand for the correlation and r will always be between -1.0 and +1.0. If the correlation is negative, we have a negative relationship; if it's positive, the relationship is positive.

Standard deviation

Standard deviation is a measure of the dispersion of a set of data from its mean. The more spread apart the data, the higher the deviation. Standard deviation is calculated as the square root of variance. In finance, standard deviation is applied to the annual rate

of return of an investment to measure the investment's volatility. Standard deviation is also known as historical volatility and is used by investors as a gauge for the amount of expected volatility. Standard deviation is a statistical measurement that sheds light on historical volatility.

$$SD = \sqrt{\frac{\Sigma(x-x)^2}{N}} \quad (4)$$

Coefficient of determination

The coefficient of determination, r 2, is useful because it gives the proportion of the variance (fluctuation) of one variable that is predictable from the other variable. It is a measure that allows us to determine how certain one can be in making predictions from a certain model/graph. The coefficient of determination is the ratio of the explained variation to the total variation. The coefficient of determination is such that 0 < r 2 < 1, and denotes the strength of the linear association between x and y.

RESULTS AND DISCUSSION

Performance Analysis

Table 1: Performance Analysis Of HDFC Bank

Year	Market Return (X)	Stock Return (Y)	XY	X^2	Y^2
Apr-08	9.08534	15.46153	140.473257	82.54340292	239.0589099
May-08	-7.50574	11.411	-85.64799914	56.33613295	130.210921
Jun-08	-17.01904	-27	459.51408	289.6477225	729
Jul-08	7.25787	8.192	59.45647104	52.67667694	67.108864
Aug-08	0.65564	16.62555	10.9003756	0.42986381	276.4089128
Sep-08	-9.9837	-1.58463	15.82047053	99.67426569	2.511052237
Oct-08	-26.42247	-17.39903	459.7253482	698.1469209	302.7262449
Nov-08	-4.51583	-12.54797	56.66449937	20.39272059	157.4515511
Dec-08	7.40431	7.92972	58.71410509	54.82380658	62.88045928
Jan-09	-2.98653	-7.06827	21.1096004	8.919361441	49.96044079
Feb-09	-3.78435	-3.31521	12.54591496	14.32130492	10.99061734
Mar-09	9.27258	11.4878	106.5215445	85.98073986	131.9695488
Apr-09	14.88499	11.71065	174.3129081	221.5629273	137.1393234
May-09	27.89116	25.60323	714.1037844	777.9168061	655.5253864
Jun-09	-3.57945	2.6925	-9.637669125	12.8124623	7.24955625
Jul-09	8.01784	0.07343	0.588749991	64.28575827	0.005391965
Aug-09	0.61072	-1.93333	-1.180723298	0.372978918	3.737764889
Sep-09	9.04615	11.5165	104.1799865	81.83282982	132.6297723
Oct-09	-7.38127	-1.17682	8.686426161	54.48314681	1.384905312
Nov-09	6.80036	9.24356	62.85953568	46.24489613	85.44340147
Dec-09	3.20157	-4.35185	-13.9327524	10.25005046	18.93859842
Jan-10	-6.13066	-4.05588	24.86522128	37.58499204	16.45016257
Feb-10	0.82444	4.71744	3.889246234	0.679701314	22.25424015
Mar-10	6.35181	12.15197	77.18700457	40.34549028	147.6703749
Apr-10	0.54865	2.58717	1.419450821	0.301016823	6.693448609
May-10	-3.63936	-4.86397	17.70173786	13.24494121	23.65820416
Jun-10	4.44826	1.55051	6.897071613	19.78701703	2.40408126
Jul-10	1.04573	11.23953	11.75351371	1.093551233	126.3270346
Aug-10	0.61178	0.19953	0.122068463	0.374274768	0.039812221
Sep-10	11.6027	16.56716	192.2237873	134.6226473	274.4707905
Oct-10	-0.20894	-8.51123	1.778336396	0.043655924	72.44103611
Nov-10	-3.76869	-0.5483	2.066372727	14.20302432	0.30063289
Dec-10	4.48816	2.52561	11.33534178	20.14358019	6.378705872
Jan-11	-10.87099	-13.61603	148.019726	118.1784236	185.396273
Feb-11	-3.685	-1.18686	4.3735791	13.579225	1.40863666
Mar-11	8.39371	13.0639	109.6545881	70.45436756	170.6654832
Apr-11	-1.46529	-2.44156	3.577593452	2.147074784	5.961215234
May-11	-3.58511	4.0568	-14.54407425	12.85301371	16.45762624
Jun-11	1.55276	5.25313	8.156850139	2.411063618	27.5953748

Jul-11	-3.92148	-80.8346	316.9912672	15.37800539	6534.232557
Aug-11	-9.5251	-4.35707	41.50152746	90.72753001	18.98405898
Sep-11	-3.25942	-3.37809	11.01061411	10.62381874	11.41149205
Oct-11	9.27703	6.48701	60.18018638	86.06328562	42.08129874
Nov-11	-8.45962	-8.78169	74.28976036	71.56517054	77.11807926
Dec-11	-6.97164	-6.9942	48.76104449	48.60376429	48.91883364
Jan-12	12.04797	14.73536	177.5311752	145.1535811	217.1308343
Feb-12	3.59839	4.57027	16.44561387	12.94841059	20.88736787
Mar-12	-1.31289	0.55126	-0.723743741	1.723680152	0.303887588
Apr-12	-0.91006	4.7297	-4.304310782	0.828209204	22.37006209
May-12	-6.28152	-6.38061	40.07992933	39.45749351	40.71218397
Jun-12	7.49462	11.81547	88.55245777	56.16932894	139.6053313
Jul-12	-1.03806	4.21099	-4.371260279	1.077568564	17.73243678
Aug-12	0.72404	1.67364	1.211782306	0.524233922	2.80107085
Sep-12	8.08869	5.28826	42.77509578	65.42690592	27.96569383
Oct-12	-1.49086	0.82671	-1.232508871	2.22266354	0.683449424
Nov-12	4.81296	11.25246	54.15763988	23.16458396	126.6178561
Dec-12	0.45676	-3.05714	-1.396379266	0.208629698	9.34610498
Jan-13	1.63532	-5.72496	-9.362141587	2.674271502	32.775167
Feb-13	-5.75902	-3.01643	17.3716807	33.16631136	9.098849945
Mar-13	-0.34897	0.056	-0.01954232	0.121780061	0.003136
Total	26.32125	37.93162	3935.705217	3943.531063	11709.68451

Source: Compiled from secondary data collected from NSE

Table 1 clearly depicts the monthly market return and stock return of HDFC bank for the past 5 years from April 2008 to March 2013. Here the stock return and market return is calculated by taking the monthly opening price and closing price of HDFC bank and NSE. And then the following statistical indicators are calculated.

Beta

$$\beta = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{N\Sigma X^2 - (\Sigma X)^2}$$

$$= 0.996714$$

Alpha

$$\alpha = \bar{Y} - \beta \bar{X}$$

$$= 0.19496$$

Correlation

$$r = \frac{N\Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{[N(\Sigma x^2) - (\Sigma x)^2]\,[N(\Sigma y^2) - (\Sigma y)^2]}}$$

$$= 0.57816$$

Standard Deviation

$$SD = \sqrt{\frac{\Sigma(x - \bar{x})^2}{n}}$$

$$= 11.3147$$

Coefficient of Determination

$$CD = (\text{correlation})^2$$

$$= 0.33426$$

Table 2:Statistical Indicators of HDFC Bank

Correlation	0.57816
Standard Deviation	13.955
Coefficient of determination	0.33426
Beta	0.996714
Alpha	0.19496

Source: Compiled from secondary data collected from NSE

Interpretation

Beta describe the relation between stock return and market return, in the above case beta of 0.99 means stock price moves in the same direction as the market price. Above analysis also shows that HDFC bank maintains a positive correlation which indicates that the stock price and market price are connected each other. A positive alpha of 1.0 means the stock has outperformed its benchmark index by 1%. Standard deviation for HDFC bank share price is 13.95, which means there is somewhat a variation among the prices during the period of 5 years.

Table 3: Performance Analysis of ICICI Bank

Year	Market Return X	Stock Return Y	XY	X^2	Y^2
Apr-08	9.08534	10.79481	98.074519	82.54340292	116.5279229
May-08	-7.50574	-16.87572	126.664766	56.33613295	284.7899255
Jun-08	-17.01904	-24.07228	409.687096	289.6477225	579.4746644
Jul-08	7.25787	1.15873	8.409911	52.67667694	1.342655213
Aug-08	0.65564	9.25203	6.066	0.42986381	85.60005912
Sep-08	-9.9837	-18.48554	184.554085	99.67426569	341.7151891
Oct-08	-26.42247	-24.20642	639.593406	698.1469209	585.9507692
Nov-08	-4.51583	-15.26506	68.934415	20.39272059	233.0220568
Dec-08	7.40431	25.16759	186.348638	54.82380658	633.4075864
Jan-09	-2.98653	-7.5	22.398975	8.919361441	56.25
Feb-09	-3.78435	-18.63122	70.507057	14.32130492	347.1223587
Mar-09	9.27258	2.49461	23.13147	85.98073986	6.223079052
Apr-09	14.88499	37.03174	551.217079	221.5629273	1371.349767
May-09	27.89116	51.02019	1423.012282	777.9168061	2603.059788
Jun-09	-3.57945	-4.81086	17.220232	12.8124623	23.14437394
Jul-09	8.01784	5.34722	42.873154	64.28575827	28.59276173
Aug-09	0.61072	-1.6755	-1.023261	0.372978918	2.80730025
Sep-09	9.04615	20.65939	186.88794	81.83282982	426.8103952
Oct-09	-7.38127	-3.3251	24.54346	54.48314681	11.05629001
Nov-09	6.80036	10.37135	9.325673	46.24489613	107.5649008
Dec-09	3.20157	0.11415	0.365459	10.25005046	0.013030223
Jan-10	-6.13066	-5.3192	32.610206	37.58499204	28.29388864
Feb-10	0.82444	6.34678	5.232539	0.679701314	40.28161637
Mar-10	6.35181	7.61495	48.368715	40.34549028	57.9874635
Apr-10	0.54865	-0.52769	-0.289517	0.301016823	0.278456736
May-10	-3.63936	-8.22323	29.927294	13.24494121	67.62151163
Jun-10	4.44826	1.18006	5.249213	19.78701703	1.392541604
Jul-10	1.04573	5.90438	6.174387	1.093551233	34.86170318
Aug-10	0.61178	7.20394	4.407226	0.374274768	51.89675152
Sep-10	11.6027	13.52578	156.935567	134.6226473	182.9467246
Oct-10	-0.20894	4.11351	-0.859476	0.043655924	16.92096452
Nov-10	-3.76869	-3.72181	14.026348	14.20302432	13.85186968
Dec-10	4.48816	-0.42608	-1.912315	20.14358019	0.181544166
Jan-11	-10.87099	-11.47313	124.724281	118.1784236	131.632712
Feb-11	-3.685	-4.73456	17.446853	13.579225	22.41605839
Mar-11	8.39371	13.44648	112.865853	70.45436756	180.8078244
Apr-11	-1.46529	-0.0314	0.04601	2.147074784	0.00098596
May-11	-3.58511	-2.48698	8.916096	12.85301371	6.18506952
Jun-11	1.55276	1.0011	1.554468	2.411063618	1.00220121
Jul-11	-3.92148	-6.71255	26.32313	15.37800539	45.0583275
Aug-11	-9.5251	-17.0545	162.44581	90.72753001	290.8559703
Sep-11	-3.25942	-1.80594	5.886316	10.62381874	3.261419284
Oct-11	9.27703	8.27325	76.751188	86.06328562	68.44666556
Nov-11	-8.45962	-22.3868	189.383821	71.56517054	501.1688142
Dec-11	-6.97164	-9.19761	64.122425	48.60376429	84.59602971

Jan-12	12.04797	30.71795	370.08894	145.1535811	943.5924522
Feb-12	3.59839	-0.18722	-0.67369	12.94841059	0.035051328
Mar-12	-1.31289	-1.36288	1.789311	1.723680152	1.857441894
Apr-12	-0.91006	-0.61387	0.558658	0.828209204	0.376836377
May-12	-6.28152	-11.5771	72.72178	39.45749351	134.0292444
Jun-12	7.49462	14.7321	110.411491	56.16932894	217.0347704
Jul-12	-1.03806	6.70366	-6.958801	1.077568564	44.9390574
Aug-12	0.72404	-5.23634	-3.791319	0.524233922	27.4192566
Sep-12	8.08869	16.968625	137.253906	65.42690592	287.9342344
Oct-12	-1.49086	-0.92452	1.378329	2.22266354	0.85473723
Nov-12	4.81296	4.54847	21.891604	23.16458396	20.68857934
Dec-12	0.45676	3.949771	1.804096	0.208629698	15.60069095
Jan-13	1.63532	3.90352	6.383504	2.674271502	15.23746839
Feb-13	-5.75902	-12.86432	74.085876	33.16631136	165.4907291
Mar-13	-0.34897	-0.97584	0.340538	0.121780061	0.952263706
Total	26.32125	60.854866	5976.413017	3943.531063	11553.8148

Source: Compiled from secondary data collected from NSE

Table 3 clearly depicts the monthly market return and stock return of HDFC bank for the past 5 years from April 2008 to March 2013. Here the stock return and market return is calculated by taking the monthly opening price and closing price of ICICI bank and NSE. And then the following statistical indicators are calculated.

Beta

$$\beta = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{N\Sigma X^2 - (\Sigma X)^2}$$

$$= 1.51315$$

Alpha

$$\alpha = \bar{Y} - \beta \bar{X}$$

$$= 0.35046$$

Correlation

$$r = \frac{N\Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{[N(\Sigma x^2) - (\Sigma x)^2][N(\Sigma y^2) - (\Sigma y)^2]}}$$

$$= 0.88509$$

Standard Deviation

$$SD = \frac{\sqrt{\Sigma(x-\bar{x})^2}}{n}$$

$$= 13.839$$

Coefficient of Determination

$$CD = (\text{correlation})^2$$

$$= 0.78338$$

Table 4: Statistical Indicators of ICICI Bank

Correlation	0.88509
Standard Deviation	13.839
Coefficient of determination	0.78338
Beta	1.51315
Alpha	0.35046

Source: Compiled from secondary data collected from NSE

Interpretation

In the above case, beta of ICICI bank share is 1.51 which means that the share price is more sensitive than the market index. Investing in this share may have the chance of getting high return with high risk since the share is more volatile than the market. Above analysis also shows that ICICI bank maintains a positive correlation which indicates that the stock price and market price are connected each other. Alpha value of ICICI bank is 0.35 is a healthy sign and would help in positive returns. Standard deviation for ICICI bank share price is 13.83, which means there is some what a high variation among the prices during the past 5 years.

Table 5: Performance Analysis of Axis Bank

Year	Market Return X	Stock Return Y	XY	X^2	Y^2
Apr-08	9.08534	14.15945	128.6434175	82.54340292	200.4900243
May-08	-7.50574	-15.16042	113.7901708	56.33613295	229.8383346
Jun-08	-17.01904	-21.92903	373.2110387	289.6477225	480.8823567
Jul-08	7.25787	7.19672	52.23285819	52.67667694	51.79277876
Aug-08	0.65564	11.2923	7.403683572	0.42986381	127.5160393
Sep-08	-9.9837	0.02778	-0.277347186	99.67426569	0.000771728
Oct-08	-26.42247	-22.02908	582.0627054	698.1469209	485.2803656
Nov-08	-4.51583	-29.84715	134.7846554	20.39272059	890.8523631
Dec-08	7.40431	22.35151	165.497509	54.82380658	499.5899993
Jan-09	-2.98653	-14.70993	43.93164724	8.919361441	216.3820406
Feb-09	-3.78435	-19.65357	74.37598763	14.32130492	386.2628137
Mar-09	9.27258	20.97667	194.5078507	85.98073986	440.0206843
Apr-09	14.88499	32.69047	486.597319	221.5629273	1068.666829
May-09	27.89116	35.46956	989.2871731	777.9168061	1258.089687
Jun-09	-3.57945	5.21491	-18.6665096	12.8124623	27.19528631
Jul-09	8.01784	9.4451	75.72930058	64.28575827	89.20991401
Aug-09	0.61072	-1.65127	-1.008463614	0.372978918	2.726692613
Sep-09	9.04615	7.78446	70.41939283	81.83282982	60.59781749
Oct-09	-7.38127	-7.40343	54.64671576	54.48314681	54.81077576
Nov-09	6.80036	10.18743	69.27819147	46.24489613	103.78373
Dec-09	3.20157	-2.0594	-6.593313258	10.25005046	4.24112836
Jan-10	-6.13066	3.19951	-19.61510798	37.58499204	10.23686424
Feb-10	0.82444	9.60038	7.914937287	0.679701314	92.16729614
Mar-10	6.35181	3.29354	20.91994031	40.34549028	10.84740573
Apr-10	0.54865	8.73287	4.791289126	0.301016823	76.26301844
May-10	-3.63936	-2.81151	10.23209703	13.24494121	7.90458848
Jun-10	4.44826	0.59919	2.665352909	19.78701703	0.359028656
Jul-10	1.04573	8.16827	8.541804987	1.093551233	66.72063479
Aug-10	0.61178	-1.44063	-0.881348621	0.374274768	2.075414797
Sep-10	11.6027	15.47739	179.579513	134.6226473	239.5496012
Oct-10	-0.20894	-4.35305	0.909526267	0.043655924	18.9490443
Nov-10	-3.76869	-8.19732	30.89315791	14.20302432	67.19605518
Dec-10	4.48816	-1.45615	-6.535434184	20.14358019	2.120372823
Jan-11	-10.87099	-8.99633	97.79901347	118.1784236	80.93395347
Feb-11	-3.685	-2.79982	10.3173367	13.579225	7.838992032
Mar-11	8.39371	13.67206	114.7593067	70.45436756	186.9252246
Apr-11	-1.46529	-8.77118	12.85232234	2.147074784	76.93359859
May-11	-3.58511	-1.18653	4.253840568	12.85301371	1.407853441
Jun-11	1.55276	0.56931	0.884001796	2.411063618	0.324113876
Jul-11	-3.92148	1.78843	-7.013292476	15.37800539	3.198481865
Aug-11	-9.5251	-20.47813	195.0562361	90.72753001	419.3538083
Sep-11	-3.25942	-7.70833	25.12468497	10.62381874	59.41835139
Oct-11	9.27703	15.58823	144.6124774	86.06328562	242.9929145
Nov-11	-8.45962	-17.59565	148.8525127	71.56517054	309.6068989
Dec-11	-6.97164	-17.96771	125.2644057	48.60376429	322.8386026
Jan-12	12.04797	32.7222	394.2360839	145.1535811	1070.742373
Feb-12	3.59839	9.60912	34.57736132	12.94841059	92.33518717
Mar-12	-1.31289	-2.45106	3.217972163	1.723680152	6.007695124
Apr-12	-0.91006	-1.69182	1.539657709	0.828209204	2.862254912
May-12	-6.28152	-12.30581	77.29919163	39.45749351	151.4329598
Jun-12	7.49462	4.73809	35.51018408	56.16932894	22.44949685
Jul-12	-1.03806	2.24235	-2.327693841	1.077568564	5.028133523
Aug-12	0.72404	-4.65753	-3.372238021	0.524233922	21.6925857
Sep-12	8.08869	13.81054	111.7091768	65.42690592	190.7310151

Oct-12	-1.49086	4.10211	-6.115671715	2.22266354	16.82730645
Nov-12	4.81296	11.57227	55.69687262	23.16458396	133.917433
Dec-12	0.45676	3.2382	1.479080232	0.208629698	10.48593924
Jan-13	1.63532	9.88902	16.17171219	2.674271502	97.79271656
Feb-13	-5.75902	-10.45566	60.21435505	33.16631136	109.320826
Mar-13	-0.34897	-3.29368	1.14939551	0.121780061	10.84832794
Total	26.32125	76.34826	5483.017997	3943.531063	10926.8668

Source: Compiled from secondary data collected from NSE

Interpretation

Table 5 clearly depicts the monthly market return and stock return of Axis bank for the past 5 years from April 2008 to March 2013. Here the stock return and market return are calculated by taking the monthly opening price and closing price of Axis bank and NSE and the following Statistical indicators are calculated.

Beta

$$\beta = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{N\Sigma X^2 - (\Sigma X)^2}$$

$$= 1.38594$$

Alpha

$$\alpha = \bar{Y} - \beta \bar{X}$$

$$= 0.664491$$

Correlation

$$r = \frac{N\Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{[N(\Sigma x^2) - (\Sigma x)^2][N(\Sigma y^2) - (\Sigma y)^2]}}$$

$$= 0.8351110$$

Standard Deviation

$$SD = \frac{\sqrt{\Sigma(x - \bar{x})^2}}{n}$$

$$= 13.434$$

Coefficient of Determination

$$CD = (\text{correlation})^2$$

$$= 0.6973$$

Table 6: Statistical Indicators of Axis Bank

Correlation	0.835110
Standard Deviation	13.4348
Coefficient of determination	0.6973
Beta	1.38594
Alpha	0.664491

Source: Compiled from secondary data collected from NSE

Interpretation

Beta describes the relationship between the stock return and market return, in the above cases, beta of Axis bank share is 1.38594, which means that the share price is more sensitive than the market index. Investing in this share may have the chance of getting high return and there is also probability for getting low return even though the market is high. It also shows that Axis bank maintains a positive correlation which indicates that the share price and market price are connected each other. Alpha value of Axis bank is 0.664491 is a healthy sign and would help in positive returns. Standard deviation for Axis bank stock price is 13.4348, which means there is some what a high variation among the prices during the period of 5 years.

Table 7 :Performance Analysis of YES Bank

Year	Market Return X	Stock Return Y	XY	X^2	Y^2
Apr-08	9.08534	-0.40899	-3.715813207	82.54340292	0.16727282
May-08	-7.50574	-10.0578	75.49123177	56.33613295	101.1593408
Jun-08	-17.01904	-28.04265	477.2589821	289.6477225	786.390219
Jul-08	7.25787	6.41666	46.57128411	52.67667694	41.17352556
Aug-08	0.65564	7.36	4.8255104	0.42986381	54.1696
Sep-08	-9.9837	-10	99.837	99.67426569	100
Oct-08	-26.42247	-44.7773	1183.126866	698.1469209	2005.006595
Nov-08	-4.51583	-15	67.73745	20.39272059	225

Dec-08	7.40431	21.2903	157.6399812	54.82380658	453.2768741
Jan-09	-2.98653	-19.75065	58.98590874	8.919361441	390.0881754
Feb-09	-3.78435	-16.10793	60.9580449	14.32130492	259.4654089
Mar-09	9.27258	-0.59642	-5.530352164	85.98073986	0.355716816
Apr-09	14.88499	51.66994	769.1065402	221.5629273	2669.7827
May-09	27.89116	59.05063	1646.990569	777.9168061	3486.976903
Jun-09	-3.57945	16.37998	-58.63131941	12.8124623	268.3037448
Jul-09	8.01784	7.72604	61.94615255	64.28575827	59.69169408
Aug-09	0.61072	4.65625	2.843665	0.372978918	21.68066406
Sep-09	9.04615	21.33136	192.9666823	81.83282982	455.0269194
Oct-09	-7.38127	20.3282	-150.0479328	54.48314681	413.2357152
Nov-09	6.80036	6.269724	42.6363803	46.24489613	39.30943904
Dec-09	3.20157	4.49548	14.3925939	10.25005046	20.20934043
Jan-10	-6.13066	-7.27306	44.58865802	37.58499204	52.89740176
Feb-10	0.82444	-5.36	-4.4189984	0.679701314	28.7296
Mar-10	6.35181	6.35118	40.34148864	40.34549028	40.33748739
Apr-10	0.54865	10.80294	5.927033031	0.301016823	116.7035126
May-10	-3.63936	1.12379	-4.089876374	13.24494121	1.262903964
Jun-10	4.44826	-5.62467	-25.01999457	19.78701703	31.63691261
Jul-10	1.04573	10.73033	11.22102799	1.093551233	115.1399819
Aug-10	0.61178	5.13513	3.141569831	0.374274768	26.36956012
Sep-10	11.6027	12.03	139.580481	134.6226473	144.7209
Oct-10	-0.20894	1.55367	-0.32462381	0.043655924	2.413890469
Nov-10	-3.76869	-14.84005	55.92754803	14.20302432	220.227084
Dec-10	4.48816	1.26254	5.666481526	20.14358019	1.594007252
Jan-11	-10.87099	-16.4761	179.1115183	118.1784236	271.4618712
Feb-11	-3.685	-3.28673	12.11160005	13.579225	10.80259409
Mar-11	8.39371	17.05103	143.121401	70.45436756	290.7376241
Apr-11	-1.46529	-1.80209	2.640584456	2.147074784	3.247528368
May-11	-3.58511	-2.08333	7.468967216	12.85301371	4.340263889
Jun-11	1.55276	3.00379	4.66416496	2.411063618	9.022754364
Jul-11	-3.92148	-1.38095	5.415367806	15.37800539	1.907022903
Aug-11	-9.5251	-11.05592	105.3087436	90.72753001	122.233367
Sep-11	-3.25942	-2.69546	8.785636233	10.62381874	7.265504612
Oct-11	9.27703	17.69331	164.1413677	86.06328562	313.0532188
Nov-11	-8.45962	-13.39484	113.3152564	71.56517054	179.4217386
Dec-11	-6.97164	-14.10071	98.30507386	48.60376429	198.8300225
Jan-12	12.04797	37.6875	454.0578694	145.1535811	1420.347656
Feb-12	3.59839	4.53926	16.33402779	12.94841059	20.60488135
Mar-12	-1.31289	7.74174	-10.16405303	1.723680152	59.93453823
Apr-12	-0.91006	-5.44815	4.958143389	0.828209204	29.68233842
May-12	-6.28152	-6.292613	39.52717441	39.45749351	39.59697837
Jun-12	7.49462	2.89525	21.69879856	56.16932894	8.382472563
Jul-12	-1.03806	6.89301	-7.155357961	1.077568564	47.51358686
Aug-12	0.72404	-10.17759	-7.368982264	0.524233922	103.5833382
Sep-12	8.08869	15.35326	124.1877606	65.42690592	235.7225926
Oct-12	-1.49086	8.31578	-12.39766377	2.22266354	69.15219701
Nov-12	4.81296	7.44655	35.83994729	23.16458396	55.4511069
Dec-12	0.45676	4.70442	2.148790879	0.208629698	22.13156754
Jan-13	1.63532	11.8693	19.41010368	2.674271502	140.8802825
Feb-13	-5.75902	-9.60451	55.31256518	33.16631136	92.24661234
Mar-13	-0.34897	-9.70526	3.386844582	0.121780061	94.19207167
Total	26.32125	135.814571	6602.09587	3943.531063	16484.24882

Source: Compiled from secondary data collected from NSE

Table 7 clearly depicts the monthly market return and stock return of Yes bank for the past 5 years from April 2008 to March 2013. Here the stock return and market return are calculated by taking the monthly opening price and closing price of Yes bank and NSE. And then the following statistical indicators are calculated.

Beta

$$\beta = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{N\Sigma X^2 - (\Sigma X)^2}$$

$= 1.6639$

Alpha

$\alpha = \bar{Y} - \beta \bar{X}$

$= 1.5338$

Correlation

$$r = \frac{N\Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{[N(\Sigma x^2) - (\Sigma x)^2][N(\Sigma y^2) - (\Sigma y)^2]}}$$

$= 0.82033$

Standard Deviation

$$SD = \frac{\sqrt{\Sigma(x-\bar{x})^2}}{n}$$

$= 16.41991$

Coefficient of Determination

CD= (correlation) ^{2}

$= 0.6729$

Table 8: Statistical Indicators of Yes Bank

Correlation	0.82033
Standard Deviation	16.41991
Coefficient of determination	0.6729
Beta	1.6639
Alpha	1.5338

Source: Compiled from secondary data collected from NSE

Interpretation

In the above case, beta of stock is 1.66 which means that the share price is more sensitive than the market index. Above analysis also shows that Yes bank maintains a positive correlation which indicates that the stock price and market price are connected each other. Alpha indicates that the stock return is independent of the market share. Alpha value of Yes bank is 1.53 is a healthy sign and would help in positive returns. Standard deviation for Yes bank share price is 16.41, which means there is some what a variation among the prices during the past 5 years.

Table 9: Performance Analysis of Kotak Mahindra Bank

Year	Market Return X	Stock Return Y	XY	X^2	Y^2
Apr-08	9.08534	25.39003	230.6770552	82.54340292	644.6536234
May-08	-7.50574	-13.38125	100.4361834	56.33613295	179.0578516
Jun-08	-17.01904	-34.07142	579.8628598	289.6477225	1160.861661
Jul-08	7.25787	17.5083	127.0729653	52.67667694	306.5405689
Aug-08	0.65564	17.51116	11.48101694	0.42986381	306.6407245
Sep-08	-9.9837	-7.64166	76.29204094	99.67426569	58.39496756
Oct-08	-26.42247	-39.49941	1043.671976	698.1469209	1560.20339
Nov-08	-4.51583	-3.66379	16.5450528	20.39272059	13.42335716
Dec-08	7.40431	5.11614	37.88148656	54.82380658	26.1748885
Jan-09	-2.98653	-21.18055	63.25634799	8.919361441	448.6156983
Feb-09	-3.78435	-0.72699	2.751184607	14.32130492	0.52851446
Mar-09	9.27258	9.80544	90.92172684	85.98073986	96.14665359
Apr-09	14.88499	35.27036	524.9989559	221.5629273	1243.998295
May-09	27.89116	70.91939	1978.024054	777.9168061	5029.559878
Jun-09	-3.57945	-8.43478	30.19187327	12.8124623	71.14551365
Jul-09	8.01784	2.91437	23.36695236	64.28575827	8.493552497
Aug-09	0.61072	8.53159	5.210412645	0.372978918	72.78802793
Sep-09	9.04615	8.61084	77.89495027	81.83282982	74.14656551

Oct-09	-7.38127	-7.86175	58.02969942	54.48314681	61.80711306
Nov-09	6.80036	11.64539	79.19284434	46.24489613	135.6151083
Dec-09	3.20157	2.14556	6.869160529	10.25005046	4.603427714
Jan-10	-6.13066	-4.20612	25.78629164	37.58499204	17.69144545
Feb-10	0.82444	-3.11767	-2.570331855	0.679701314	9.719866229
Mar-10	6.35181	-0.39275	-2.494673378	40.34549028	0.154252563
Apr-10	0.54865	-1.78856	-0.981293444	0.301016823	3.198946874
May-10	-3.63936	2.50675	-9.12296568	13.24494121	6.283795563
Jun-10	4.44826	0.90968	4.046493157	19.78701703	0.827517702
Jul-10	1.04573	0.17534	0.183358298	1.093551233	0.030744116
Aug-10	0.61178	6.7719	4.142912982	0.374274768	45.85862961
Sep-10	11.6027	-43.00245	-498.9445266	134.6226473	1849.210706
Oct-10	-0.20894	-3.22076	0.672945594	0.043655924	10.37329498
Nov-10	-3.76869	1.1887	-4.479841803	14.20302432	1.41300769
Dec-10	4.48816	-4.29324	-19.26874804	20.14358019	18.4319097
Jan-11	-10.87099	-15.8659	172.4780402	118.1784236	251.7267828
Feb-11	-3.685	5.00324	-18.4369394	13.579225	25.0324105
Mar-11	8.39371	11.46682	96.2491617	70.45436756	131.4879609
Apr-11	-1.46529	-5.89651	8.640097138	2.147074784	34.76883018
May-11	-3.58511	1.59953	-5.734490998	12.85301371	2.558496221
Jun-11	1.55276	8.6715	13.46475834	2.411063618	75.19491225
Jul-11	-3.92148	-7.85714	30.81161737	15.37800539	61.73464898
Aug-11	-9.5251	-1.40311	13.36476306	90.72753001	1.968717672
Sep-11	-3.25942	0.82245	-2.680709979	10.62381874	0.676424003
Oct-11	9.27703	12.6649	117.4926572	86.06328562	160.399692
Nov-11	-8.45962	-7.88512	66.70511885	71.56517054	62.17511741
Dec-11	-6.97164	-10.13358	70.64767167	48.60376429	102.6894436
Jan-12	12.04797	15.11896	182.1527765	145.1535811	228.5829515
Feb-12	3.59839	9.98995	35.94773618	12.94841059	99.799101
Mar-12	-1.31289	0.43278	-0.568192534	1.723680152	0.187298528
Apr-12	-0.91006	6.69107	-6.089275164	0.828209204	44.77041774
May-12	-6.28152	-3.43586	21.58242331	39.45749351	11.80513394
Jun-12	7.49462	5.11091	38.3043283	56.16932894	26.12140103
Jul-12	-1.03806	-9.69237	10.0612616	1.077568564	93.94203622
Aug-12	0.72404	6.8093	4.930205572	0.524233922	46.36656649
Sep-12	8.08869	12.38631	100.1890218	65.42690592	153.4206754
Oct-12	-1.49086	-6.90053	10.28772416	2.22266354	47.61731428
Nov-12	4.81296	11.04761	53.17170503	23.16458396	122.0496867
Dec-12	0.45676	-2.97761	-1.360053144	0.208629698	8.866161312
Jan-13	1.63532	4.19633	6.862342376	2.674271502	17.60918547
Feb-13	-5.75902	-3.06414	17.64644354	33.16631136	9.38895394
Mar-13	-0.34897	-0.2368	0.082636096	0.121780061	0.05607424
Total	26.32125	67.10078	5697.801248	3943.531063	15287.58989

Source: Compiled from secondary data collected from NSE

Table 9 clearly depicts the monthly market return and stock return of Kotak Mahindra bank for the past 5 years from April 2008 to March 2013. Here the stock return and market return are calculated by taking the monthly opening price and closing price of Kotak Mahindra bank and NSE. And then the following statistical indicators are calculated.

Beta

$$\beta = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{N\Sigma X^2 - (\Sigma X)^2}$$

$$= \mathbf{1.44160}$$

Alpha

$$\alpha = \bar{Y} - \beta \bar{X}$$

$$= \mathbf{0.4861}$$

Correlation

$$r = \frac{N\Sigma xy - (\Sigma x)(\Sigma y)}{}$$

$$\sqrt{[N(\Sigma x^2)-(\Sigma x)^2]\ [N(\Sigma y^2)-(\Sigma y)^2]}$$

= **0.73291**

$$SD = \sqrt{\frac{\Sigma(x-\bar{x})^2}{n}}$$

= 15.9230

Coefficient of Determination

CD = (correlation) ^{2}

= 0.53715

Standard Deviation

Table 10: Statistical Indicators of Kotak Mahindra Bank

Correlation	0.73291
Standard Deviation	15.9230
Coefficient of determination	0.53715
Beta	1.44160
Alpha	0.4861

Source: Compiled from secondary data collected from NSE

Interpretation

Beta of stock is 1.44 which means that the share price is more sensitive than the market index. Above analysis also shows that bank maintains a positive correlation which indicates that the stock price and market price are connected each other. Alpha value of the bank is 0.48; it is a healthy sign and would help in positive returns.

Ratio Analysis

Profitability Ratios

Net profit ratio

The net profit margin ratio is the net profit as a proportion of sales. The net profit margin ratio show the proportion of every dollar of sales that is left after all expenses has been paid, and remains as net profit. Net profit is used to pay for interest, tax and distribution to the owners.

Net profit ratio=Net profit (after tax)/net sales*100 (5)

Table 11: Net profit ratio for the period of 5 years .

Sl No	BANK	2009-10	2010-11	2011-12	2012-13	2013-14	Average	Rank
1	HDFC BANK	14.76	16.18	15.88	16.04	17.28	16.028	2
2	ICICI BANK	12.17	15.79	15.75	17.19	17.96	15.772	3
3	AXIS BANK	16.10	17.12	15.47	15.35	16.34	16.076	1
4	YES BANK	16.30	15.56	13.66	13.61	13.82	14.59	5
5	KOTAK MAHINDRA BANK	15.23	16.46	15.15	16.46	15.23	15.706	4

Source: www.moneycontrol.com

As it is clear from above table, the Axis bank has succeeded in maintaining a stable net profit ratio. It also reveals that the net profit ratio of ICICI bank has been increasing year after year where as in case of Yes bank it has been decreasing. Net profit ratio of Kotak Mahindra bank and HDFC bank shows a fluctuating trend during the period of 5 years.

The figure given below clearly shows that the Axis bank is on the top position with highest average net profit of 16.07 followed HDFC bank (16.028) and ICICI bank (15.772) respectively. The Yes bank occupied the lowest position with value of 14.59. It means that Axis bank is the better option for the investors as compared to other banks.

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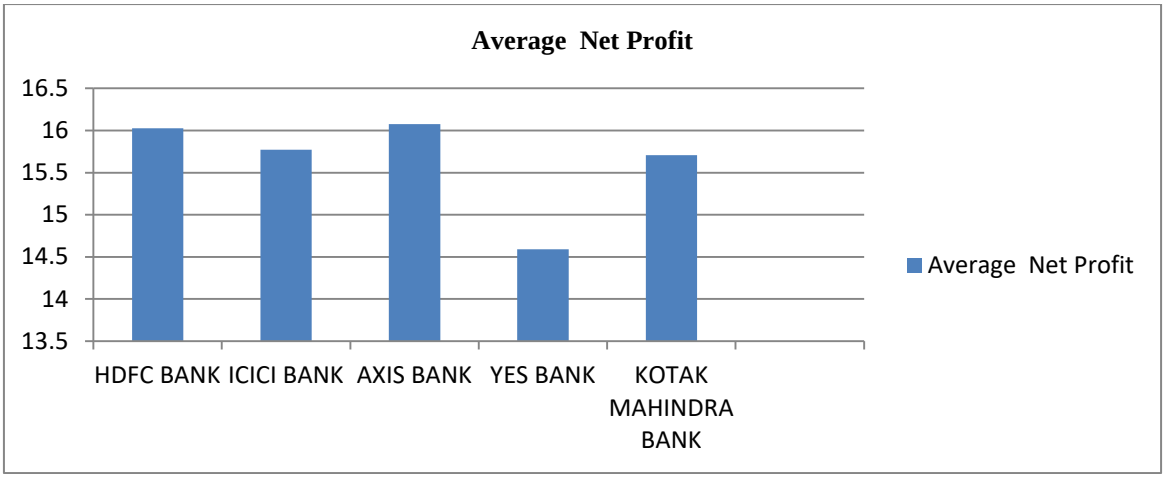

Fig-1: Average net profit of Sample units

Dividend payout ratio

Dividend payout ratio is the ratio of dividend per share divided by earnings per share. It is a measure of how much earnings a company is paying out to its shareholders as compared to how much it is retaining for reinvestment. The ratio provides an idea of how well the earning support the dividend payment. A stable dividend payout ratio indicates a solid dividend policy by the company's board of directors.

$$\text{Dividend payout ratio} = \frac{\text{Dividend per share}}{\text{EPS}} * 100 \quad (6)$$

Table 12: Dividend payout ratio for the period of 5 years.

Sl No.	BANK	2009-10	2010-11	2011-12	2012-13	2013-14	Average	Rank
1	HDFC BANK	21.72	19.55	19.52	19.46	19.38	19.92	2
2	ICICI BANK	37.31	31.30	29.41	27.71	27.07	30.56	1
3	AXIS BANK	22.56	16.91	15.51	16.29	15.11	17.27	3
4	KOTAK MAHINDRA BANK	5.28	4.50	4.10	3.84	4.19	4.38	5
5	YES BANK	12.47	11.93	14.45	16.54	17.83	14.64	4

Source: www.moneycontrol.com

As it is clear from above table Axis bank and HDFC bank maintain a stable dividend payout ratio. It also reveals that the dividend payout ratio of Yes bank is increasing year after year whereas in case of ICICI bank it shows a decreasing trend during the period of 5 years. Kotak Mahindra bank maintains a low dividend payout ratio throughout the period of 5 years.

From the above figure , ICICI bank is on the top position with highest average of 30.56 followed by HDFC bank (19.92) and Axis bank (17.27) respectively. Kotak Mahindra bank scored the lowest position with least ratio of 4.38.

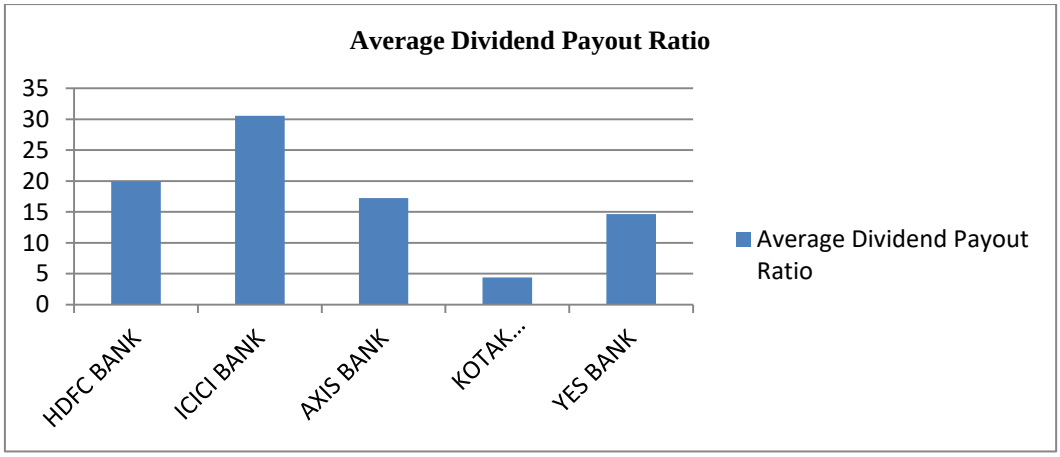

Figure 2: Average Dividend Payout Ratio of Sample Units

Earning Retention ratio

It is the percent of earnings credited to retained earnings. Earning Retention Ratio or Plowback Ratio is the ratio that measures the amount of earnings retained after dividends have been paid out to the shareholders.

$$\text{Earnings retention ratio} = \frac{\text{Net income-Dividend}}{\text{Net income}} \quad (7)$$

Table 13:Earning retention ratio of sample units for the period of 5 years

Sl. No	Banks	2009-10	2010-11	2011-12	2012-13	2013-14	Average	Rank
1	HDFC BANK	81.35	80.54	80.48	80.54	80.62	80.706	4
2	ICICI BANK	65.62	68.70	70.59	72.29	72.93	70.026	5
3	AXIS BANK	77.47	83.09	84.49	83.71	84.89	82.73	3
4	KOTAK MAHINDRA BANK	94.75	95.50	95.90	96.16	95.81	95.624	1
5	YES BANK	87.54	88.08	85.57	83.46	82.17	85.364	2

Source: www.moneycontrol.com

As it is clear from above table that Kotak Mahindra and HDFC bank maintains stable earnings retention ratio. It also reveals that the ratio of ICICI bank is increasing year after year where as in case of Axis bank and Yes bank it shows a fluctuating trend during the period of 5 years.

From the figure , Kotak Mahindra is on the top position with highest average of 95.624 followed by Yes bank and Axis bank. They have retained a higher earnings retention ratio after the dividend has been paid. ICICI bank is on the scored the lowest position with a ratio of 70.026.

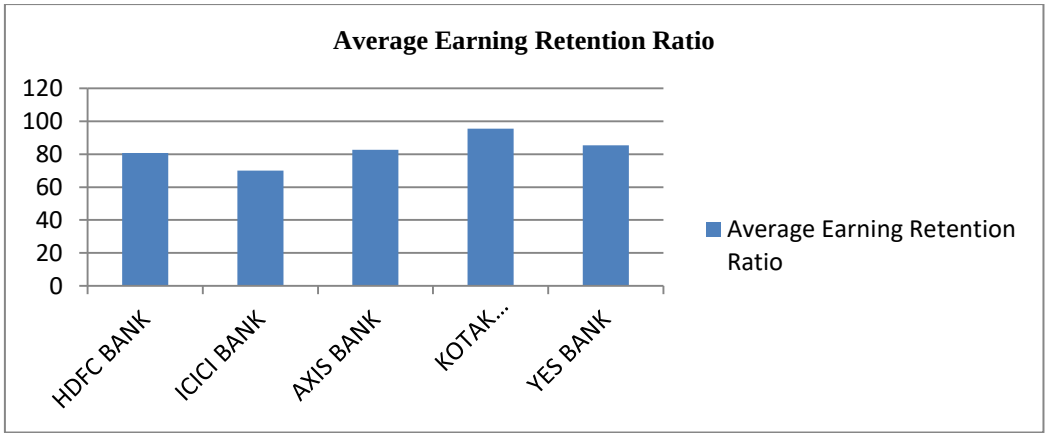

Fig- 3: Average earning retention ratio of sample units

Leverage Ratios

Current ratio

The ratio is mainly used to give an idea of the company's ability to pay back its short-term liabilities (debt and payables) with its short-term assets (cash, inventory, receivables).

Current Ratio= Current Asset/Current liabilities (8)

Table 14: Current ratio of sample units for the period of 5 years

Sl No.	BANK	2009-10	2010-11	2011-12	2012-13	2013-14	Average	Rank
1	HDFC BANK	0.03	0.06	0.08	0.78	0.06	0.202	3
2	ICICI BANK	0.14	0.07	0.12	0.98	0.09	0.28	2
3	AXIS BANK	0.03	0.02	0.03	0.03	0.03	0.028	5
4	KOTAK MAHINDRA BANK	0.05	0.05	0.05	0.04	0.03	0.044	4
5	YES BANK	0.04	0.05	0.08	0.72	0.77	0.332	1

Source: www.moneycontrol.com

From table 7.14 it is clear that the current ratio of Axis bank and Kotak Mahindra are stable in all the years. Yes Bank shows a steady increase in the current ratio from 2009 onwards. ICICI Bank and HDFC Bank show wide fluctuations in the current ratio.

Quick ratio

This ratio is an indicator of a company's short-term liquidity. The quick ratio measures a company's ability to meet its short-term obligations with its most liquid assets.

Quick Ratio=Cash and cash equivalents+ Marketable securities+ Account Receivable /Current Liabilities (9)

Table 15: Quick ratio of sample units for the period of 5 years:

Sl No.	BANK	2009-10	2010-11	2011-12	2012-13	2013-14	Average	Rank
1	HDFC BANK	7.14	6.89	6.20	7.84	8.55	7.324	5
2	ICICI BANK	14.70	15.86	9.37	10.53	11.31	12.354	3
3	AXIS BANK	19.19	19.60	21.63	20.10	18.57	19.818	1
4	KOTAK MAHINDRA BANK	8.46	10.86	16.85	18.95	17.39	14.502	2
5	YES BANK	14.54	15.34	7.83	10.18	10.40	11.658	4

Source: www.moneycontrol.com

From table 7.15, it is clear that there is a dramatic increase in the current ratio of Kotak Mahindra bank where as Axis bank and HDFC bank maintains a stable quick ratio during the period of 5 years. It also reveals that ICICI bank and Yes bank shows a fluctuating trend throughout the year.

Solvency Ratio

Debt Equity Ratio

A measure of a company's financial leverage calculated by dividing its total liabilities by stockholders' equity. It indicates what proportion of equity and debt the company is using to finance its assets.

Debt equity ratio=Total debt/Total equity (10)

Table 16: Debt equity ratio of sample units for the period of 5 years.

Sl No.	BANK	2009-10	2010-11	2011-12	2012-13	2013-14	Average	Rank
1	HDFC BANK	7.78	8.22	8.24	8.18	8.45	8.17	3
2	ICICI BANK	3.91	4.10	4.23	4.39	4.53	4.23	1
3	AXIS BANK	8.81	9.96	9.65	7.63	7.35	8.68	4
4	KOTAK MAHINDRA BANK	5.26	4.31	4.85	5.40	4.81	4.92	2
5	YES BANK	8.67	12.11	10.51	11.53	10.42	10.64	5

Source: www.moneycontrol.com

As it is clear from the table 3.16 all the banks shows a debt equity ratio more than one which indicates a high risk. Yes bank shows a high debt equity ratio throughout the year as compared to other banks, thus it is more aggressive in financing its growth with debt. So investing money in this bank is considered to be more risky. In case of ICICI bank, it maintains a low debt equity ratio during the period of 5 years.

From figure 3.9, ICICI bank is on the top position with least average of 4.23 followed by Kotak Mahindra bank (4.92). Yes bank scored the lowest position with highest percentage of 10.64.

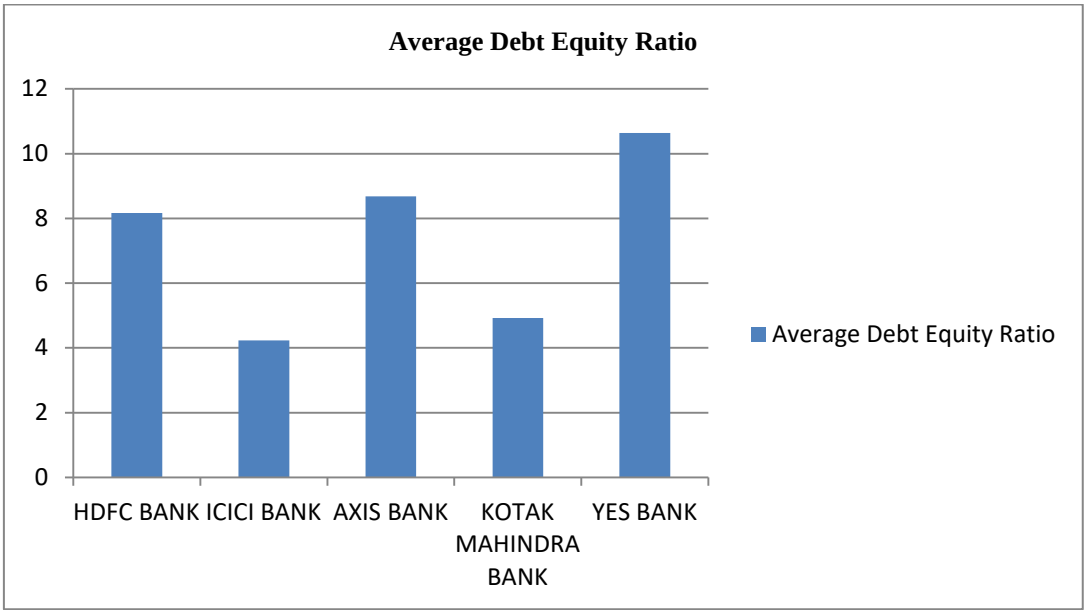

Figure 4: Average debt equity ratio of sample units:

Management Efficiency Ratios

Return on equity

The amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested.

Return on Equity=Profit after Tax/Net worth (11)

Table 17: Return on equity of sample units for the period of 5 years :

Sl No.	BANK	2009-10	2010-11	2011-12	2012-13	2013-14	Average	Rank
1	HDFC BANK	9.32	12.65	12.46	13.99	15.08	12.7	4
2	ICICI BANK	10.05	11.45	12.15	14.42	14.45	12.504	5
3	AXIS BANK	19.64	18.53	19.74	18.44	16.30	18.53	2
4	KOTAK MAHINDRA BANK	13.52	14.50	14.72	15.65	13.83	14.444	3
5	YES BANK	23.7	21.1	23.1	24.8	25	23.54	1

Source: www.moneycontrol.com

As it is clear from the table 7.17 that Yes bank and Kotak Mahindra bank shows a stable return on equity ratio. It is also depicts that return on equity of HDFC bank is increasing year after year where as in case of ICICI bank and Axis banks it shows a fluctuating trend during the period of 5 years.

From the figure 7.5 yes bank is on the top position with highest average of 23.54 followed by Axis Bank (18.53) respectively. ICICI scored the lowest position with least ratio of 12.504.

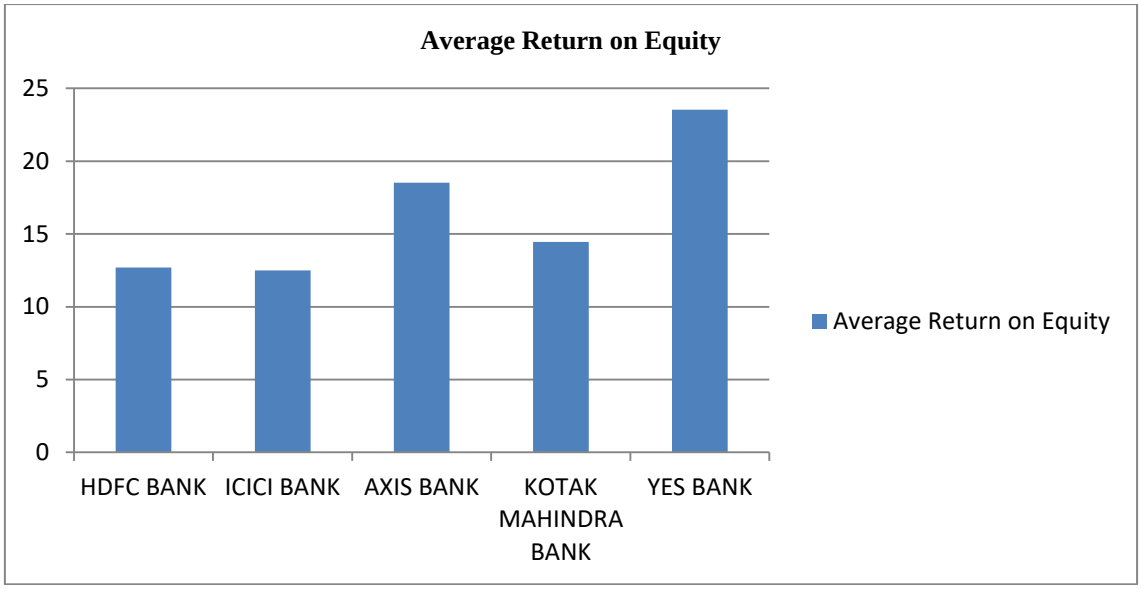

Figure 5:Average Return on Equity of sample units

Growth Ratios

Earnings Per Share (EPS)

Earnings per share, also called net income per share, is a market prospect ratio that measures the amount of net income earned per share of stock outstanding. In other words, this is the amount of money each share of stock would receive if all of the profits were distributed to the outstanding shares at the end of the year.

$$\text{Earnings Per Share} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Weighted Average Common Share Outstanding}} \quad (12)$$

Table 18: Earnings per share of sample units for a period of 5 years :

Sl No.	BANK	2009-10	2010-11	2011-12	2012-13	2013-14	Average	Rank
1	HDFC BANK	64.42	84.40	22.02	28.27	35.34	46.89	3
2	ICICI BANK	36.10	44.73	56.09	72.22	84.95	58.818	2
3	AXIS BANK	62.06	82.54	102.67	110.68	132.33	98.056	1
4	KOTAK MAHINDRA BANK	16.12	11.10	14.65	18.23	19.51	15.922	5
5	YES BANK	14.06	20.95	27.68	36.27	44.86	28.764	4

Source: www.moneycontrol.com

As it is clear from table 7.18 the earnings per share of Axis bank and ICICI bank shows a dramatic increase during the period of 5 years. In case of Kotak Mahindra bank and HDFC bank it shows a fluctuating trend throughout the year.

From the figure Axis is on the top position with highest average earnings per share of 98.056 followed by ICICI (58.818) respectively. Kotak Mahindra scored the lowest position with least ratio of 15.922. Axis bank and ICICI bank shows a dramatic increase in the value of EPS from the year 2009 onwards.

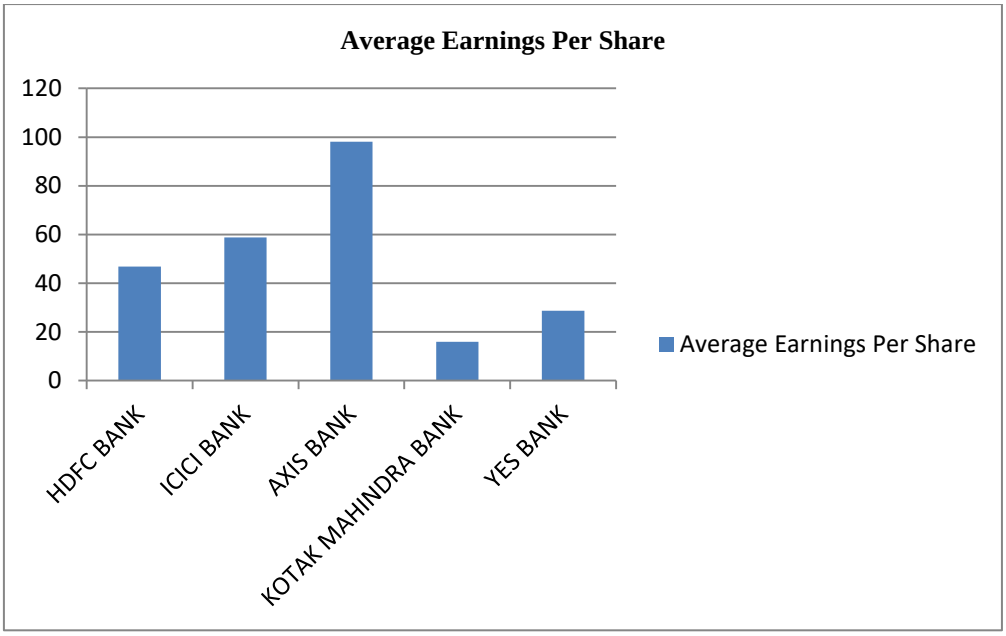

Figure 6: Average earnings per share of sample units

Findings

- The Beta describes the volatility between stock price and market price, in case of HDFC bank it is 0.99, ICICI bank is 1.51, Axis bank is 1.38, Yes bank is 1.66, and Kotak Mahindra is 1.44. This reveals that the stock price is more volatile than the market price in case of all the banks, except the HDFC bank. HDFC bank is less volatile when compared to other bank.
- The Correlation between the stock price and market price of HDFC bank is 0.57, ICICI bank is 0.88, Axis bank is 0.83, Yes bank is 0.82, and Kotak Mahindra is 0.73. This depicts that all the above bank maintain a positive correlation which indicates that stock price and market price are connected with each other.
- The Alpha of HDFC bank is 0.19, ICICI bank is 0.35, Axis bank is 0.66, Yes bank is 1.53 and Kotak Mahindra bank is 0.14. All the above stocks are out performed.
- The Standard deviation related to the variation in the stock price, in case of HDFC bank is 13.95, ICICI bank is 13.83, Axis bank is 13.43, Yes bank is 16.41 and Kotak Mahindra bank is 15.92. This shows that Yes bank is more volatile than the other banks, thus investing in this bank is comparatively more risky.
- Axis bank has succeeded in maintaining a stable net profit ratio. It also reveals that the net profit ratio of ICICI bank has been increasing year after year where as in case of Yes bank it has been decreasing. Net profit ratio of Kotak Mahindra bank and HDFC bank shows a fluctuating trend during the period of 5 years.
- Axis bank and HDFC bank maintain a stable dividend payout ratio. The dividend payout ratio of Yes bank has been increasing year after year whereas in case of ICICI bank it shows a decreasing trend during the period of 5 years. Kotak Mahindra bank maintains a low dividend payout ratio throughout the period of 5 years covered under the study.
- Kotak Mahindra and HDFC bank maintains stable earnings retention ratio. The ratio of ICICI bank is increasing year after year where as in case of Axis bank and Yes bank it shows a fluctuating trend during the period of 5 years. Kotak Mahindra is on the top position with highest average retention ratio of 95.62 followed by Yes bank (85.36) and Axis bank (82.73). They have retained a higher earnings retention ratio after the dividend has been paid. ICICI bank scored the lowest position with a ratio of 70.02.
- The current ratio of Axis bank and Kotak Mahindra were stable during the years covered under the study. Yes Bank shows a steady increase in the current ratio from 2009 onwards. ICICI Bank and HDFC Bank show wide fluctuations in the current ratio.
- Yes bank shows a high debt equity ratio throughout the year as compared to other banks, thus it is more aggressive in financing its growth with debt. So, investing money in this bank is considered to be more risky. In case of ICICI bank, it maintains a low debt equity ratio during the period of 5 years.
- Yes bank and Kotak Mahindra bank shows a stable return on equity ratio. The return on equity of HDFC bank is increasing year after year where as in case of ICICI bank and Axis banks it shows a

fluctuating trend during the period of 5 years.

- The earnings per share of Axis bank and ICICI bank show a dramatic increase during the period of 5 years. In case of Kotak Mahindra bank and HDFC bank it shows a fluctuating trend throughout the year. Axis bank is on the top position with highest average earnings per share of 98.05 followed by ICICI (58.81). Kotak Mahindra occupied the lowest position with the ratio of 15.92.

Suggestions

- It is suggested that the investors should make a detailed analysis of the fluctuations in the market price of the shares of selected banks before making investment decision.
- Investing in one security alone is not recommended as returns may not be favorable always. Investing in multiple and diversified securities reduces the risk and provides a stable return.
- The investor should take an informal advice about the investment in a particular security.
- Investing in share market using borrowed funds should be avoided as far as possible.
- Considering the fact that HDFC bank is less volatile, an investor who is interested in long term benefit is advice to select this bank for investment.
- An investor who is interested in regular income is advised to choose either Axis bank or HDFC bank for investment.
- Since the EPS and Return on equity are higher in case of Axis bank and Yes bank respectively, investors who are interested to take advantage of the increasing share prices in the market, are advised to choose these banks.
- The high debt equity ratio found in the Yes bank indicates a threat to long term solvency. Therefore, investors are advised to be more carefully while making investment in the shares of Yes bank.

CONCLUSION

The Performance analysis of banking is a very relevant topic on account of the increased investor interest in banking industry. There is always a need to study and analyze the fluctuations in the share price before investing in to the share market. Investor can arrive at rational decisions and avoid unnecessary losses if they make a performance analysis of the stocks.

This study helps to point out the risks associated with the stocks through the various techniques used in this study. Though the return from the shares will be satisfactory, there is an increased need on the part of the investor or the portfolio manager to study the associated risk. This not only helps to predict how the return will be, but also guides a prospective investor in making good investment decisions. The calculations are based on past figures which has already happened and become a part of the history. The economy is uncertain and a rational investor should incorporate several other aspects before taking an investment decision

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