

Equity Analysis of Select Commercial Banks by using CAP Model

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The main aim of this paper is to understand the concepts in equity analysis and the price movements of stocks of five select commercial banks namely, Axis Bank Ltd., HDFC Bank Ltd., ICICI Bank Ltd., Punjab National Bank and SBI. It is also to analyze the risk-return characteristics of the securities and find out systematic risk of the securities. Further, it is examined whether the security is underpriced, overpriced or fairly priced by using CAP model for comparison between the select commercial banks.

Keywords: *equity analysis, price movements, risk-return characteristics, CAP model.*

INTRODUCTION

The main purpose of investment is to get a return or income on the funds invested. On a bond, an investor expects to receive interest. On a stock, dividends may be anticipated. The investor may expect capital gains from some investments and rental income from house property. Return may take several forms. The most important characteristic of financial assets is the size and variability of their future returns, which depends on the risk associated with the assets. Hence risk-return analysis has significance in predicting future returns of the assets, which in-turn assist in better decision making. This study mainly focuses on equity analysis of select commercial banks. The risk, return and beta (market risk) of the stocks are calculated for a period of one year, using statistical techniques, which helps in predicting future returns of the assets. By using Capital Assets Pricing (CAP) model, the expected return of the individual security is calculated and which helps to know whether the security is fairly priced, over-priced or under-priced.

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LITERATURE REVIEW

Shweta Bajpai & Anil K Sharma (2015) study focuses on empirical testing of Capital Asset Pricing Model (CAPM) in the Indian equity market. The study is conducted for a period of 10 years ranging from January 2004-December 2013 and the data is daily data for 10 years. This model developed for the second stage regression is a constrained model, in which the intercept term is assumed to be zero. A comparison between the developed model and the traditional model, has been made. The results show that CAPM is very much significant in the Indian equity market and the model developed in this study, performs better than the traditional model. **Reza Raei & Hamed Ahmadiania (2011)** this study introduces the development and modifications of the widely used standard CAPM. Many modifications are applied to the model's challenging financial variables such as: financial risk factors, liquidity risks, downside risks, risk of non expected events, and economic and operational risk factors. This study will show the importance of applying the new models advantages and disadvantages for financial managers, financial analysts and investors. **Ansari (2000)** again supported the CAPM and reported that game is not lost for CAPM in the Indian market. **Dhankar and Kumar (2007)** explained that CAPM helps in explaining the risk return relationship in the Indian market.

David.L.Scott and William Edward (1990) highlights the important risks of owning common stocks and the ways to minimise these risks. They commented that the severity of financial risk depends on how heavily a business relies on debt. Financial risk is relatively easy to minimise if an investor sticks to the common stocks of companies that employ small amounts of debt. **Lewis Mandells (1992)** studied that certain risks that are so global that they affect the entire investment market. Even the stocks and bonds of the well-managed companies face market risk. **Nabhi Kumar Jain (1992)** specified certain tips for buying shares for holding and also for selling shares. He advised the investors to buy shares of a growing company of a growing industry. Buy shares by diversifying in a number of growth companies operating in a different but equally fast growing sector of the economy. **Yasaswy J.N (1993)** evaluated the quantum of risks involved in different types of stocks. Defensive stocks are low risk stocks and hence the returns are relatively slow but steady. Cyclical stocks involve higher risks and hence the rewards are higher when compared to the growth stocks. Growth stocks belong to the medium risk category and they offer medium returns which are much better. **Donald E Fischer and Ronald J. Jordan (1994)** analysed the relation between risk, investor preferences and investor behaviour. The conservative investor requires large increase in return for assuming small increases in risk.

Sivakumar, K (1994) disclosed new parameters that will help investors identify the best company to invest in. It indicates the super profit per share that is available to the investor. The higher the EVAPS, the higher is the likely appreciation in the value in future. He also revealed a startling result of EVA calculation of companies in which 200 companies show a negative value addition that includes some blue chip companies in the Indian Stock Market. **Pattabhi Ram, V (1995)** emphasised the need for using fundamental analysis '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, and the absence of free and instantaneous flow of information, professional broking and so on. **Rajagopal (1996)** commented on risk management in relation to banks. He opined that good risk management is good banking. A professional approach to Risk Management will safeguard the interests of the banking institution in the long run. He described risk identification as an art of combining intuition with formal information. And risk measurement is the estimation of the size, probability and timing of a potential loss under various scenarios.

Bhalla V.K. (1997) examined the various factors influencing the equity price and price earnings ratio. He is of the opinion that equity prices are affected primarily by financial risk considerations that, in turn, affect earnings and dividends. **Juan H Pujadas (1999)** commented on the models of measuring risks. He opined that the models of measuring risk are only as good as the assumptions underlying them. They are not realities, but models. Commenting on default risk in India, he stated that many defaults are not reported. He is of the opinion that default risks are not handled properly. **Akash Josh (1999)** 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 neutralised. **Rukmani Viswanath (2001)** reported that the Primary Dealers in Govt. securities are working on a new internal risk management model suited for the Indian market conditions. The attempt is to lay down general parameters for risk perception.

Keeping in mind, these unresolved, inadequately explained and insufficiently explored issues; the present study has been undertaken.

SIGNIFICANCE OF THE STUDY

The rapid growth of capital markets in India has opened up new investment avenues for investors. The stock markets have become attractive investment

options for the common man. Stock is ownership in a company, with each share of stock representing a tiny piece of ownership. The more shares you own, the more of the company you own. The more shares you own, the more dividends you earn when the company makes a profit. An investor may also expect capital gains from the stocks. As we come across in day-to-day life, many investors are losing their funds by investing without any fundamental knowledge. An efficient market relies on information. A lack of information creates inefficiencies that result in stocks being misrepresented (over or under valued). The role of equity analysis is to provide information to the market. This analysis is valuable because it fills information gaps so that each individual investor does not need to analyze every stock thereby making the markets more efficient.

OBJECTIVES OF THE STUDY

1. To study the concepts in equity analysis and the price movements of stocks of 5 select banks namely, Axis Bank Ltd., HDFC Bank Ltd., ICICI Bank Ltd., Punjab National Bank and State Bank of India;
2. To analyze the risk-return characteristics of the securities and find out systematic risk of the securities; and
3. To know whether the security is underpriced, overpriced or fairly priced, using CAP Model and suggest best security to investors.

SCOPE AND LIMITATIONS OF THE STUDY

This study deals with some of the methods of technical analysis like Risk- Return analysis, Beta valuation; the study also includes CAP Model. Statistical techniques like mean standard deviation, variance, and co-variance are used for the analysis. The scope of the study is limited to stock of five randomly selected commercial banks and is confined to a period of one year from May 6, 2015 to May 4, 2016.

METHODOLOGY

Type of research: The type of research adopted for this study is descriptive in nature.

Sources of data: The relevant data has been collected from secondary source i.e., Daily prices of scripts from Newspapers, Business Magazines, Internet and other reliable sources. This study mainly focuses on analysis of stocks of five select commercial banks from both private and public sector. The study includes calculating the risk, return and beta (market risk) of the stocks for a period of one year.

Statistical tools used: Statistical techniques such as mean, standard deviation, variance, and co-variance have been used for predicting future returns of the assets and this assists in better decision making. For comparison, the CAP Model has been used, the expected return of the individual security is calculated and which helps to know whether the security is fairly priced, over-priced or under-priced.

Sample Frame: Prices of the equities of five select commercial banks namely Axis Bank Ltd., HDFC Bank Ltd., ICICI Bank Ltd., Punjab National Bank and SBI have been analysed, for the period of one year (2015-16). These have been considered for the study purpose.

RESULTS AND DISCUSSION

1. **Axis Bank Ltd. (NSE: AXISBANK)** (previously called UTI Bank) Calculation of average returns and risk for the period from 06 may 2015 to 04 may 2016: The weekly average opening and closing prices of shares of Axis Bank for a period of one year were collected and the total average price for this period was calculated and found to be -0.43286. Using standard deviation, the risk of these shares for this period was calculated and found to be 5.380395.

Estimating the Expected Total Return on Stocks: Estimating future stock returns is the most difficult (if not impossible) step.

Methods of forecasting long-term stock returns: Earnings-Based Approach: In this method, the % expected returns (k) is given by $K = E/P$ Where; E is Earnings per share and P is Stock price. Dividend-Based Approach: In this method, the % expected returns (k) is given by $K = (D/P) + g$

Where D is Dividends per share, P is Stock price and g-growth in dividends and both models assume that current valuation levels are correct.

Table-1: Calculation of Systematic Risk

Covariance	Variance	$\beta = \text{Covariance/Variance}$
11.27964	8.402993	1.342336

As shown in the table 1, it gives that the Beta value was around 1.34. According to the definition of Beta, the market has a beta of 1.0, and individual stocks are ranked according to how much they deviate from the market. A stock that swings more than the market over time has a beta above 1.0.

If a stock moves less than the market, the stock's beta is less than 1.0. High-beta stocks are supposed to be riskier but provide a potential for higher returns; low-beta stocks pose less risk but also lower returns. Here in this case, the beta was greater than 1.0, which means these are at high risk and also yield high returns.

2. **HDFC Bank Ltd.** (NSE: HDFCBANK) Calculation of average returns and risk for the Period from 06 May 2015 to 04 May 2016 as shown in table-2: The weekly average opening and closing prices of shares of HDFC Bank for a period of one year were collected and the total average price for this period was calculated and found to be 0.18331855. Using standard deviation, the risk of these shares for this period was calculated and found to be 4.57545.

Table- 2: Calculation of Systematic Risk

Covariance	Variance	$\beta = \text{Covariance/Variance}$
7.604036	8.402993	0.90491997

According to table 2, it is seen during the study period, the Beta value was around 0.90. According to the definition of Beta, the market has a beta of 1.0, and individual stocks are ranked according to how much they deviate from the market. A stock that swings more than the market over time has a beta above 1.0. If a stock moves less than the market, the stock's beta is less than 1.0. High-beta stocks are supposed to be riskier but provide a potential for higher returns; low-beta stocks pose less risk but also lower returns. Here in this case, the beta was less than 1.0, which means these are at low risk and also yield low returns.

3. **ICICI Bank Ltd.** (NSE: ICICIBANK) (formerly Industrial Credit and Investment Corporation of India) Calculation of average returns and risk for the Period from 06 may 2015 to 04 may 2016: The weekly average opening and closing prices of shares of ICICI Bank for a period of one year were collected and the total average price for this period was calculated and found to be -0.46687. Using standard deviation, the risk of these shares for this period was calculated and found to be 4.976192.

Table - 3: Calculation of Systematic Risk

Covariance	Variance	$\beta = \text{Covariance/Variance}$
12.72192717	8.402993	1.513975779

Table 3 presents the Beta value was around 1.51. According to the definition of Beta, the market has a beta of 1.0, and individual stocks are ranked according to how much they deviate from the market. A stock that swings more than the market over time has a beta above 1.0. If a stock moves less than the market, the stock's beta is less than 1.0. High-beta stocks are supposed to be riskier but provide a potential for higher returns; low-beta stocks pose less risk but also lower returns. Here in this case, the beta was greater than 1.0, which means these are at high risk and also yield high returns.

- Punjab National Bank (NSE: PNB)** Calculation of average returns and risk for the period from 06 may 2015 to 04 may 2016: The weekly average opening and closing prices of shares of Punjab National Bank for a period of one year were collected and the total average price for this period was calculated and found to be -0.82486. Using standard deviation, the risk of these shares for this period was calculated and found to be 4.57545.

Table- 4: Calculation of Systematic Risk

Covariance	Variance	$\beta = \text{Covariance/Variance}$
8.664182	8.402993	1.031083

Table 4 depicts, the Beta value was around 1.03. According to the definition of Beta, the market has a beta of 1.0, and individual stocks are ranked according to how much they deviate from the market. A stock that swings more than the market over time has a beta above 1.0. If a stock moves less than the market, the stock's beta is less than 1.0. High-beta stocks are supposed to be riskier but provide a potential for higher returns; low-beta stocks pose less risk but also lower returns. Here in this case, the beta was slightly greater than 1.0, which means these are slightly towards high risk and also yield high returns.

5. **State Bank of India (NSE: SBIN)** Calculation of average returns and risk for the Period from 06 may 2015 to 04 may 2016: The weekly average opening and closing prices of shares of State Bank of India for a period of one year were collected and the total average price for this period was calculated and found to be -0.65811. Using standard deviation, the risk of these shares for this period was calculated and found to be 5.241823.

Table- 5: Calculation of Systematic Risk

Covariance	Variance	$\beta = \text{Covariance/Variance}$
10.31685	8.402993	1.227759

As seen in the table 5, the Beta value was around 1.23. According to the definition of Beta, the market has a beta of 1.0, and individual stocks are ranked according to how much they deviate from the market. A stock that swings more than the market over time has a beta above 1.0. If a stock moves less than the market, the stock's beta is less than 1.0. High-beta stocks are supposed to be riskier but provide a potential for higher returns; low-beta stocks pose less risk but also lower returns. Here in this case, the beta was greater than 1.0, which means these are at high risk and also yield high returns.

Comparison of Average Returns of Select Commercial Banks

From the analysis of table 6, it is observed that the average returns of HDFC Bank is positive, while the average returns of all other stocks are negative during the period. The systematic risk for HDFC Bank was lowest compared to the other four stocks. Standard deviation is a statistical measurement which measures volatility. A volatile stock will have a high standard deviation while the deviation of a stable stock will be lower. This measure tells us how much the return on the stock is deviating from the expected normal returns. Here, the most volatile stock is Axis Bank, and the least volatile stock is HDFC bank.

Capital Asset Pricing (CAP) Model:

It is the most prominent model in asset pricing. The model takes into account the asset's sensitivity to non-diversifiable risk (also known as systematic risk or market risk), often represented by the quantity beta (β) in the financial industry, as well as the expected return of the market and the expected return of a theoretical risk-free asset. This model was developed to establish market

equilibrium. Sharpe, Markowitz and Merton Miller jointly received the Nobel Memorial Prize in Economics for this contribution to the field of financial economics. In this model, asset prices (or equivalently expected asset returns) will no longer be exogenously given, but be an equilibrium of the market. The current price affects the expected returns and vice versa. Given future expected dividends and assuming that markets are efficient, i.e. that the prices of assets equal their fundamental value, a high current price results in a low expected return in the next period and a low current price in a high expected return. In the same way in order to expect a high return, the price has to be low and for a low expected return a high price is needed.

CAPM Formula: $R(e) = R(f) + \beta(R(m) - R(f))$ Where:

- $R(e)$ is the expected return on the capital asset;
- $R(f)$ is the risk-free rate of interest such as interest arising from government bonds;
- β (the *beta*) is the sensitivity of the expected excess asset returns to the expected excess market returns, or also $\beta = \text{Cov}(R(e), R(m)) / \text{Var}(R(m))$;
- $R(m)$ is the expected return of the market;
- $(R(m) - R(f))$ is sometimes known as the *market premium* (the difference between the expected market rate of return and the risk-free rate of return);
- $(R(e) - R(f))$ is also known as the *risk premium*. Restated, in terms of risk premium, we find that: $R(e) - R(f) = \beta(R(m) - R(f))$ which states that the *individual risk premium* equals the *market premium* times β .

Table-6: Calculation of Expected Return (R(e))

Bank	β (Beta)	$\beta(R(m) - R(f))$	$R(e) = R(f) + \beta(R(m) - R(f))$	R(avg)
Axis	1.342336	-0.425829249	-0.34583	-0.43
HDFC	0.90491997	-0.287067762	-0.20707	0.18
ICICI	1.513975779	-0.480278536	-0.40028	-0.47
PNB	1.031083	-0.32709046	-0.24709	-0.82
SBI	1.227759	-0.389481988	-0.30948	-0.66

Table 6 presents the calculation of expected returns for all five select banks for comparison by using CAP Model. According to the CAP Model,

an asset is correctly priced when its estimated price is the same as the CAPM valuation. If the estimated price ($R(\text{avg})$) is higher than the CAP Model valuation, then the asset is undervalued, and overvalued when the estimated price is below the CAP Model valuation. Here in this case, the estimated price of HDFC Bank's stock was 0.18, which is higher than the CAP Model valuation, -0.20707. Hence, HDFC Bank's stock is undervalued. The estimated prices of ICICI bank, SBI, Axis bank and PNB are: -0.47, -0.66, -0.43 and -0.82 respectively, which are less than their respective CAP model valuations. Hence, these stocks are overvalued.

CONCLUSIONS AND SUGGESTIONS

Based on Beta Value - The beta of ICICI Bank, Axis bank and State Bank of India were found to be 1.51, 1.34 and 1.23 respectively. Since these values are greater than the beta of market value which is 1, these stocks are at high risk and may yield higher returns. The beta of Punjab National Bank was found to be 1.03. Since this value is marginally greater than the beta of market value which is 1, these shares are at slightly high risk and may yield a little higher return. The beta of HDFC Bank was found to be 0.9. Since this value is less than the beta of market value which is 1, this stock is at low risk and may yield lower returns.

Based on CAP Model - The estimated price of HDFC Bank's stock was 0.18, which is higher than the CAP Model valuation -0.20707. Hence, HDFC Bank's stock is undervalued. The estimated prices of ICICI bank, SBI, Axis bank and PNB are: -0.47, -0.66, -0.43 and -0.82 respectively, which are less than their respective CAP Model valuations. Hence, these stocks are overvalued.

Based on Volatility - The volatility of Axis Bank was found to be the highest among the five select commercial banks and its market risk is also higher, whereas, the volatility and market risk of HDFC Bank was found to be the lowest.

Based on Average Returns - The average returns for HDFC Bank were positive whereas, the average returns for the other four banks stocks were found to be negative.

Suggestions: The shares of AXIS Bank, ICICI Bank, Punjab National Bank and State Bank of India, are more volatile, and are at high risk, but may yield higher returns. All these shares are overvalued. So, in future their prices are likely to come down. Whereas, the shares of HDFC Bank are less volatile, are at low risk, and may yield low returns. Its shares are found to be undervalued. So, in future, their prices are likely to go up. Though the shares of HDFC Bank may yield lower returns than the market, the risk

and volatility associated with them is lower and their prices will increase in future. So, the investors are suggested to invest in these shares. Though the shares of AXIS Bank, ICICI Bank, and Punjab National Bank, State Bank of India may yield higher returns than the market, the risk and volatility associated with them is higher and their prices will decrease in future. So, these commercial banks shares are not suggested for as better investment decision.

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