



IMPACT OF THE KEY PERFORMANCE DRIVERS ON THE BETA VALUE OF THE BSE 30 COMPANIES

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ABSTRACT

In the present market scenario, the Indian stock market is unpredictable with variations and movements along the market with various factors influencing them. Risk is one such factor that influences the stock prices in the secondary market. The factors in particular range to a high number, as the market works according to the changes in the factors influencing them. It can be indebted that the performance of the companies and the operations carried by them are changing as there is an increased level of competition and infusion of global companies into the market. This paper focuses on determining the impact of the performance of the company on the systematic risk of the company in the stock market. It is to study whether the Key performance drivers of company would have an impact on the systematic risk (Beta Value) of the company. The study makes use of Multiple Regression Analysis, Durbin Watson test and General Linear Model for the purpose determining the direction of each of the performance variable is positive with the systematic risk. The study concludes that, Liquidity, Financial Leverage and Capital Structure has a positive impact on the systematic risk of the company. These variables have a significant relationship with the beta value.

Key words – Systematic Risk, Beta Value, Performance Drivers, Multiple Regression, Durbin Watson, General Linear Model (GLM)

1. Introduction

Systematic risk is the risk prevailing in the entire market which is not subject to any individual segment. It is not defined to a particular company or a particular segment, it is the overall risk factor. The measure through which the systematic risk of the market is determined is the Beta Value. Beta Value is the quantification of the systematic risk prevailing in the market. Beta value is determined by the slope of the regression line generated. Systematic risk is the work of basic portfolio model theory and capital asset pricing model theory. The model defines the riskiness of the given portfolio, in terms of the average beta of the stocks comprising the portfolio rather than the variance. One of the prime factors of the calculation of the beta value is the rate of return that the company has it. Co-variance plays one of the key elements in the calculation of the beta value of the company.

The financial position of the company determines the various aspects of the company's functioning and accordingly the economic condition of the company. The basic financial indicators that determine the company's performance are Profitability, Dividend growth, Sales Turnover, Capital Employed etc. Through these the performance of the company can be determined. Profitability plays a vital role as it is the key driver through which the performance or the growth of any company can be determined. As there are wide number of companies present in the capital market there will be some influence of the company's performance on that of the risk prevailing in the market.

The objective of this research is to monitor whether the performance of the company through its financial indicators would affect the systematic risk or the beta value of the prevailing market. This would fetch an understanding as to whether the performance is one of the factors that is a determinant of the systematic risk. This study is based on the companies that come under the BSE 30; the study is restricted to the companies that come under the purview of BSE 30.

The performance indicators considered for the study are Liquidity – Current Ratio, Solvency Ratio - Debtor Turnover Ratio, Capital Employed, Capital Structure - Debt to Equity Ratio, Size - Asset Turnover Ratio, Financial Leverage, Operating Leverage. The period which has been selected for the study is 3 years.

2. Literature Review

It came to an inference that there is a positive but statistically insignificant effect on systematic risk. Leverage has a positive and statistical effect on the beta value (Mulli, 2014).

The independent variables used for the study are Business cycle, operating and financial leverage, capital structure of the company There are many other factors which influence the beta value of the particular airline stocks. The conclusion of the study was Operating and Financial Leverage was positive to that of the beta of the airlines and for China Airlines, the liquidity was positive. (Hung, 2005).

There is a relationship between the performance of the company and even the macro economic factors would also influence the systematic risk. It was found out that the company size is the only significant factor in determining the beta value of the companies. Financial leverage has a negative impact on that of the systematic

risk. Size has a positive impact on the beta value. Under the financial variables only the Size is positively related to the beta value (Al-Qaisi, 2011).

The output of the study was that fundamental ratio and market ratio does not have any effect on the systematic risk. Business performance has a significant influence. The systematic risk influences return on the shares. The conclusion of the study was that CR, DER, NPM, TATO and TDA does not have any significant influence on the systematic risk. ROA, ROE and ROI significantly influence the systematic risk of the shares (Hatauruk, 2014).

The leverage is not directly related to earnings variability, dividends, size and growth of the firm. The paper gave a theoretical basis of the empirical research into the relationship between systematic risk and firm's leverage and accounting beta. (Robert, 1979)

There is no impact of Asset turnover on restaurant beta. Excess liquidity tends to increase the systematic risk (Gu, 2002).

External factors are affecting the performance of the company. Persistence is negatively related to systematic risk. Macro-economic variables are the one which effect the systematic risk of the company (Jeon, 2006).

It was determined that systematic risk is not an increasing function of growth and maturity for the capital budgeting decisions the firm's capitalisation rate cannot be in general used as a hurdle rate for accepting or rejecting investment project (Turnball, 1977).

It was concluded that Financial determinates of the companies in Tehran Stock Exchange doesn't determine the systematic risk. It is concluded that Assess the risk investment according to the degree of risk tolerance (Alaghi, 2013).

The result for the study shows that Size and operating efficiency are positively related to the systematic risk, Airline safety doesn't have any impact on the systematic risk and during the dot.com (2000) crisis the betas were high for the airline companies (Wooi, 2010).

2.1 Statement of Problem

Systematic risk in the market is the constitution of numerous determinants that include micro as well as macro-economic factors. A change in the value of one of the determinants will affect in change in the beta value of the company. In general, it can be determined that a company's performance will affect the index that ultimately will have an impact on the stock price. But evidently, there isn't any research backing the statement as to whether the performance indicators have an effect on the systematic risk. It is to be determined whether in the present-day scenario whether these performance indicators have a direct relationship with the company's risk factor. This research focuses on the effect of the performance in particular on the risk factor.

2.2 Research Objectives

- To analyse the performance drivers of the companies and choose the appropriate variables for the study.
- To analyse the overall factors which are affecting the systematic risk of the company
- Establishing a relationship between the performance drivers and the systematic risk of the companies.
- To see the impact of each variable on the systematic risk and whether it is affecting the dependent variable.

3. Research Methodology

The quantitative approach has been used by ascertaining the variables and using statistical techniques there has been a study developed to check the impact of the performance drivers on the systematic risk. The study is empirical in nature wherein the conclusions of the study are backed by the data that states the impact of the variables at an certain extent.

3.1 Data Specification

- Performance Indicators – The performance Indicators chosen for the study are Current Ratio, Debtor Turnover Ratio, Capital Employed, Asset Turnover Ratio, Debt to Equity Ratio, Financial Leverage, Operational Leverage. These values were determined from the Financial Statements of the BSE 30 companies
- Systematic Risk – The systematic risk is determined by the beta value of the stock. The beta values were derived from a source known as Infront analytics.

Basic Tests in Econometrics

a. Multiple Regression

Regression is carried out to learn about the relationship between several independent variables and a dependent variable. It shows whether there is an impact of one variable on the other variables and whether those variables are influencing the dependent variable in a positive or a negative way.

If the significance value emerges less than 0.05, then it can be concluded that there is an impact of that particular variable on the dependent variable and which shows that it effects the beta value.

Hypothesis

H₀: There is no impact of the performance indicator on the Beta Value

H₁: There is an impact of the performance indicator on the Beta Value

b. Durbin Watson Test

The Durbin Watson statistic is tool used for checking the auto correlation from the residuals in a regression analysis. The Durbin Watson statistic will have a value between 0 and 4. The values from 0

to 2 shows that there is an positive auto correlation between the residuals and values from 2 to 4 will have a negative auto correlation between the residuals.

Hypothesis

H₀: There is an auto correlation in the values

H₁: There doesn't exist any auto correlation in the values.

c. General Linear Model

General Linear Model is one of the important models of comparing the several variables affect different continuous variables. GLM is the foundation of several statistical tests, including ANOVA, ANCOVA and regression analysis. It is majorly related to the analysis of Variance and regression analysis of the multivariate methods including factor analysis.

Hypothesis

H₀: There is an effect of the independent variable on the dependent variable.

H₁: There is no effect of the independent variable on the dependent variable.

4. Results and Discussions

The Multiple Regression results for the independent variables on the dependent variable is as follows: -

TABLE 1 – MULTIPLE REGRESSION ANALYSIS GIST

S.No.	Independent Variable	R Square	Durbin Watson Value	Significance Value
1	Current Ratio	0.104	0.854	0.005
2	Debtors Turnover Ratio	0.022	0.735	0.201
3	Capital Employed	0.007	0.784	0.467
4	Debt to Equity Ratio	0.020	0.758	0.221
5	Asset Turnover Ratio	0.002	0.777	0.730
6	Financial Leverage	0.011	0.765	0.368
7	Operational Leverage	0.024	0.758	0.185

Current Ratio: In this case, Null Hypothesis will be rejected as the Significance value is less than 0.005. This shows that the Current Ratio has an impact on the Beta Value of the company. The Durbin Watson value derived out of the data is 0.854. This concludes that there is an auto correlation between the successive values of Durbin Watson.

Debtor Turnover Ratio: In this case, the Null Hypothesis will be accepted as the Significance value is greater than 0.05. This shows that the Debtor Turnover Ratio has no impact on the Beta Value of the company. The Durbin

Watson value derived out of the data is 0.735. This concludes that there is an auto correlation between the successive values of Debtor Turnover Ratio.

Capital Employed: In this case the null Hypothesis will be accepted as the Significance value is greater than 0.05. This shows that the Capital Employed has no impact on the Beta Value of the company. The Durbin Watson value derived out of the data is 0.784. This concludes that there is an auto correlation between the successive values of Capital Employed.

Debt to Equity Ratio: In this case, the null Hypothesis will be accepted as the Significance value is greater than 0.05. This shows that the Debt to Equity Ratio has no impact on the Beta Value of the company. The Durbin Watson value derived out of the data is 0.758. This concludes that there is an auto correlation between successive values of Debt to Equity Ratio.

Asset Turnover Ratio: In this case, the null hypothesis will be accepted as the Significance value is greater than 0.005. This shows that the Asset Turnover Ratio has no impact on the Beta Value of the company. The Durbin Watson value derived out of the data is 0.777. This concludes that there is an auto correlation between the successive values of Asset Turnover Ratio.

Financial Leverage: In this case the null hypothesis will be accepted as the Significance value is greater than 0.005. This shows that the Financial Leverage has no impact on the Beta Value of the company. The Durbin Watson value derived out of the data is 0.765. This concludes that there is an auto correlation between the successive values of Financial Leverage.

Operational Leverage: In this case, the null hypothesis will be accepted as the Significance value is greater than 0.005. This shows that the Financial Leverage has no impact on the Beta Value of the company. The Durbin Watson value derived out of the data is 0.758. This concludes that there is an auto correlation between the successive values of Operating Leverage.

The analysis of the General Linear Model for the variables is as follows: -

TABLE 2 – GENERAL LINEAR MODEL ANALYSIS GIST

S.No.	Independent Variable	Mean Square	Significance Value
1	Current Ratio	0.270	0.48
2	Debtors Turnover Ratio	0.261	0.131
3	Capital Employed	0.266	0.125
4	Debt to Equity Ratio	0.317	0.001
5	Asset Turnover Ratio	0.212	0.923
6	Financial Leverage	0.279	0.030
7	Operational Leverage	0.274	0.056

Current Ratio: The significance level in case of the GLM of Current Ratio and Beta Value is 0.48 which is less than 0.05. Therefore, through this test we could infer that there is significance of Current ratio on that of the Beta Value of the company.

Debtor Turnover Ratio: The significance level in case of the GLM of Current Ratio and Beta Value is 0.13 which is greater than 0.05. Therefore, through this test we could infer that there is no much significance of Debtor turnover Ratio on that of the Beta Value of the company.

Capital Employed: The significance level in case of the GLM of Current Ratio and Beta Value is 0.12 which is greater than 0.05. Therefore, through this test we could infer that there is no much significance of Capital Employed on that of the Beta Value of the company.

Debt to Equity Ratio: The significance level in case of the GLM of Current Ratio and Beta Value is 0.01 which is lesser than 0.05. Therefore, through this test we could infer that there is a significance of Debt to Equity Ratio on that of the Beta Value of the company.

Asset Turnover Ratio: The significance level in case of the GLM of Asset Turnover Ratio and Beta Value is 0.92 which is greater than 0.05. Therefore, through this test we could infer that there is no much significance of Asset turnover Ratio on that of the Beta Value of the company.

Financial Leverage: The significance level in case of the GLM of Financial Leverage and Beta Value is 0.92 which is greater than 0.05. Therefore, through this test we could infer that there is no much significance of Asset turnover Ratio on that of the Beta Value of the company.

Operational Leverage: The significance level in case of the GLM of Operational Leverage and Beta Value is 0.056 which is greater than 0.05 in a minor way. Therefore, through this test we could infer that there is no much significance of Operational leverage on that of the Beta Value of the company.

5. Conclusion

From the study, we have concluded that the performance of the company has a minimal effect on determining the systematic risk as some of the prime indicators of the performance are impacting the beta value of the company. Liquidity, Leverage and Debt to Equity composition has an impact on the beta value. In Indian scenario, Liquidity has a major impact on the determination of beta value as it was impacting the dependent variable in all the aspects and techniques in the tests that were used. It was pragmatic that Debt to Equity Ratio will impact the systematic risk as the percentage of equity has an impact of it on the beta value as it is trading the stock exchanges and there would be a risk involved in the same.

Overall it can be concluded that, the performance indicators of the company have a significant but minimal impact on the beta value. It can also be inferred that it is also company specific as to whether it is influencing it or

not. The study proved that there is a significant impact of the performance drivers on the systematic risk but is not at a greater scale as there are other market specific factors that would influence the same. The performance factors chosen for the study has shown impact of them on the systematic risk and are influencing the beta value of the company.

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