Determinants of Profitability-A Firm Level Study of Steel Authority Of India Limited (SAIL)

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Abstract

Profit is the indicator of the efficiency of every business unit. The higher the profit, the more will be the efficiency of the business unit. Profits indicate the efficiency with which a business unit utilizes its funds. In addition to appropriate usage of investment, profit is affected by number of variables. An attempt is made in the present study to identify and analyze determinants of profitability of Steel Authority of India. The variables selected for the present study are size, growth, liquidity, leverage and productivity. The data is analyzed by using correlation and regression techniques through SPSS. It is found that the size, leverage and productivity have shown a negative correlation with profitability and the variables growth and liquidity have shown a positive correlation with profitability. The regression analysis shows that productivity and size are the prominent variables in explaining the profitability of SAIL. However the significance of size is negative. Finally, 98.1 per cent (R value) of variation is caused in the profits of SAIL by these five independent variables.

Keywords: Profitability, Determinants of Profitability, SAIL, Correlation and Regression

Introduction

The primary objective of a business unit is to achieve maximum profit in addition to secondary objectives like increase in sales, assets, market share and the like. Profit is the indicator of the efficiency of a business unit. The higher the profit, the more will be the efficiency of the business unit. Profits indicate the efficiency with which a business unit utilizes its funds. It should be more than the risk free rate of return. In addition to appropriate use of investment, Profit is affected by number of variables such as proportion of debt which affects the expenses of the firm in terms of interest payment, the liquidity position of the firm, growth rate of sales, employee productivity, capacity utilization in case of manufacturing units and the operating expenses. It is the task of the firm’s management to take appropriate policies from time to time taking into account external and internal factors which affect the profits of the firm.

Steel Authority of India Limited (SAIL) is a Maharatna Central Public Sector Enterprise in the steel sector which was incorporated in the year 1073 with 85.82 percent of shareholding by the Government of India. SAIL is India’s largest producer of iron ore. To be a leader in Indian steel business in quality, productivity, profitability and customer satisfaction is the vision of SAIL. SAIL produces Iron and Steel and other by products through its nine plants in different parts of India. During the year 2013-14, the capacity utilization of SAIL is 116 percent with a production of saleable steel of 12.90 million tonnes.

I. Objectives of the Study:

The main objective of this study is to identify and analyze the determinants of profitability of SAIL.

II. Review of Literature:

Farah Margaretha and Nina Supartika (2015) took the data for six years from 2007 to 2012 for 22 SMEs listed in Indonesian Stock Market and analyzed the data with the help of multiple regression analysis to examined the relationship between the profitability and the independent variables which influenced the profitability in their article. They have found that the explanatory or independent variables like size, growth, lagged profitability, productivity and industry affiliation significantly affected the profitability. Among them the variables size, growth and lagged profitability showed a negative effect on profitability and remaining variables have showed the positive effect on profitability.

Sorana Vatavu (2014) in the article entitled ‘The determinants of profitability in companies listed on the Bucharest stock market’ examined by taking 126 Romanian companies data for a period of ten years from 2003 to 2012 the variables which affect the profitability of the companies. The author observed that the debt, size, liquidity, taxation, inflation, crisis and asset tangibility are the variables which have a significant impact on the profitability using cross sectional regression technique for analyzing the data. Further a negative relationship between profitability and tangibility, business risk and level of taxation is observed.

Sivathaasannetal(2013) investigated whether factors like capital structure, working capital, firm size, non-debt tax shield and growth rate have any impact on profitability of manufacturing companies in their paper ‘Factors determining Profitability: A study of selected Manufacturing Companies listed on Colombo Stock Exchange in Sri Lanka’. They took data for five years from 2008 to 2012 and a sample of 287 companies. They found that all independent variables combinely explained 76.6 per cent and 84.7 per cent of the variance in ROA and ROE, with an overall impact on profitability at the rate of 80.5 per cent.
IV. METHODOLOGY:

Taking into account the literature on the determinants of profitability, independent variables are selected. The variables selected for the present study are size, growth, leverage, liquidity and productivity which will have impact on profitability. Determinants of profitability are analyzed using the technique of multiple regression. Correlation between the profitability and its determinants is also calculated. The hypotheses set for the study are:

- There is a negative relationship between leverage and profitability. This is mainly because the more the debt the higher will be the interest payment and the subsequent reduced profits.

- The liquidity is positively correlated with profitability. This is because the amount and composition of current assets and current liabilities involves a tradeoff between liquidity and profitability. A ratio slight more than the standard ratio of 2:1 is always better.

- Profitability is positively related to growth rate of sales. This is because the growth in sales directly contributes to increased profits.

- There is a positive relationship between profitability and productivity and size as economies of scale will be available to a certain level of capacity utilization. Thereafter dis-economies of scale will be in operation.

Data for a period of ten years from 2005-06 to 2014-15 is collected from the annual reports of SAIL. For the purpose of applying multiple regression, the dependent variable identified is Return on Assets which is a ratio of Profit before Tax to Total Assets. The independent factors identified are Size which is Log of Total Assets, Growth which is year over year growth rate in sales, Productivity which is a ratio between turnover to total number of employees, liquidity which is a ratio of Current Assets to Current liabilities and the ratio of Debt to Equity which indicates the leverage.

Correlation and Multiple Regression is used to analyse the data. The model developed is:

\[ P = a + b_1 \text{Leverage} + b_2 \text{Liquidity} + b_3 \text{Growth} + b_4 \text{Productivity} + b_5 \text{Size} + e \]

Where

- \( P \) indicates profitability
- \( b_1, b_2, b_3, b_4 \) and \( b_5 \) are coefficient of regression
- ‘\( a \)’ is constant, and ‘\( e \)’ is the error term

V. ANALYSIS AND INFERENCES

From the results of correlation presented in table 1, it can be observed that the liquidity and productivity are positively correlated with profitability. Leverage, growth and size are negatively correlated with profitability.

Table-1: Correlation Between Profitability And Determinants Of Profitability

<table>
<thead>
<tr>
<th>PROFITABILITY</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEVERAGE</td>
<td>-0.91</td>
</tr>
<tr>
<td>LIQUIDITY</td>
<td>0.57</td>
</tr>
<tr>
<td>GROWTH</td>
<td>-0.94</td>
</tr>
<tr>
<td>PRODUCTIVITY</td>
<td>0.63</td>
</tr>
<tr>
<td>SIZE</td>
<td>-0.88</td>
</tr>
</tbody>
</table>

Source: Author’s Calculations

The value of coefficient of leverage is negative. A firm with high leverage ratio indicates a greater financial risk and thus results in negative relationship with profitability. However as per quantitative terms, leverage effect is not very strong. The second independent variable is current ratio indicating a very low impact on profitability with a coefficient of 0.039. The variable growth is having a positive impact on profitability, with its regression coefficient of 0.164. If seen in quantitative terms, the growth rate of sales effect is not very strong.
Dependent Variable: Profit Before Tax To Total Assets

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSTANT</td>
<td>2.868</td>
<td>1.564</td>
<td>1.834</td>
</tr>
<tr>
<td>LEVERAGE</td>
<td>-0.116</td>
<td>0.210</td>
<td>-0.552</td>
</tr>
<tr>
<td>LIQUIDITY</td>
<td>0.039</td>
<td>0.028</td>
<td>1.355</td>
</tr>
<tr>
<td>GROWTH</td>
<td>0.164</td>
<td>0.296</td>
<td>0.555</td>
</tr>
<tr>
<td>PRODUCTIVITY</td>
<td>0.709</td>
<td>1.111</td>
<td>0.638</td>
</tr>
<tr>
<td>SIZE</td>
<td>-0.640</td>
<td>0.425</td>
<td>-1.506</td>
</tr>
<tr>
<td>R²</td>
<td>0.981</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADJ R²</td>
<td>0.963</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over all F ratio</td>
<td>20.615</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significance of F ratio</td>
<td>0.006</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Author’s Calculations

It is apparent from the results that the strongest structural determinant of profitability appears to be productivity. The coefficients show that an increase of one per cent in productivity results in 0.709 per cent increase in profitability. The size of the firm is indicating a strong negative impact on profitability with a coefficient of 0.64.

The overall explanatory power of the regression of independent variables appears to be high. It is apparent from the coefficient of determination $R^2$ is very high at 98.1 per cent. $R^2$ is a measure of the extent of movement in the dependent variable that will be explained by the independent variables. The adjusted $R^2$ is 96.3 per cent which is highly significant.

VI. CONCLUSION

To conclude, the regression analysis shows that productivity and size are the prominent variables in explaining the profitability of SAIL. However, the significance of size is negative. Finally, 98.1 per cent of variation is caused in the profits of SAIL by these five independent variables. The company should concentrate on its human resources and reduce its debt-equity ratio which will result in increased profitability.

REFERENCES


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