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A study on Financial Statement Analysis (Du -Pont Analysis) on Rexroth Bosch Group of Company

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ABSTRACT :

The purpose of this research paper is to evaluate the financial performance of the Rexroth Bosch Group company by using the Du- Pont Model. The du Pont analysis is a one of important financial tools where it has been used to analyses the company overall performance into different aspects. This Du-Pont analysis breakdown the three different element or separate component. They are the profit margin, asset turnover, and leverage.

By making this type of analysis we can able to know the company financial strength and weakness. This Study was conducted on financial annual report of the Rexroth Bosch Company and from the period of 2019 to 2023. This is study is mainly depended on the secondary data. Data which was collected from the Accounts and Financial Department of the company. The present Study was analyzed using the equity multiplier, net profit margin, asset turnover ratio to calculate return on equity. ROE, ROA, ROCE is the most comprehensive measure of profitability of a firm.

Keywords: financial performance, Du- Pont Model, financial annual report, equity multiplier, net profit margin, asset turnover ratio

Introduction:

Finance is a branch of economics, a science that studies the managements of funds (money and other assets) more specifically, through financial analysis, decision and corrective actions can be taken regarding the collection and use those funds as to optimize their use towards the objectives of an organizations (status, companies, and business) or individual.
Introduction to finance develops the three components of finance in an interactive frame element that is consistent with the responsibilities of all finance -financial professionals, managers, intermediaries, and investors in today ‘s economy. In the last decade, the academic study of finance has experienced an infusion of new concept and quantitative methodologies that pace it among the most sophisticated growing areas of business and economics.

Background of Topic

The study on DuPont analysis applied to Rexroth Bosch Company offers a comprehensive examination of the company's financial performance through a structured framework. DuPont analysis, also known as the DuPont identity or DuPont model, is a method of financial analysis that breaks down return on equity (ROE) into its constituent parts. These parts include profitability, asset utilization, and financial leverage, providing insights into the drivers of a company's return on equity. Rexroth Bosch Company, a renowned player in the industrial technology sector, presents a fascinating case study for DuPont analysis due to its diverse operations, global presence, and complex financial structure. By applying DuPont analysis to Rexroth Bosch, researchers aim to dissect the company's ROE and understand the underlying factors influencing its financial performance.

ABOUT DUPONT ANALYSIS

A method of performance measurement was started by the DuPont Corporation in the 1920s. With this method, assets are measured at their gross book value rather than at net book value to produce a higher return on equity (ROE). It is also known as "DuPont identity".
DuPont analysis tells us that ROE is affected by three things:

- Operating efficiency, which is measured by profit margin
- Asset use efficiency, which is measured by total asset turnover
- Financial leverage, which is measured by the equity multiplier

Formula

ROE = Profit Margin (Profit/Sales) * Total Asset Turnover (Sales/Assets) * Equity Multiplier (Assets/Equity)
DuPont Analysis (also known as the DuPont identity, DuPont equation, DuPont Model or the DuPont method) is an expression which breaks ROE (return on equity) into three parts.
The name comes from the DuPont Corporation that started using this formula in the 1920s.
1 Basic formula
2 ROA analyses
3 ROE analysis
Basic Formula

ROE(Profitmargin)*(Assetturnover)*(Equitymultiplier)=(NetProfit/Sales)*(Sales/Assets)*(Assets/Equity)= (Net Profit/Equity)

- Profitability (measured by profit margin)
- Operating efficiency (measured by asset turnover)
- Financial leverage (measured by equity multiplier)

ROE Analysis

The Du Pont identity breaks down Return on Equity (that is, the returns that investors receive from the firm) into three distinct elements. This analysis enables the analyst to understand the source of superior (or inferior) return by comparison with companies in similar industries (or between industries). The Du Pont identity is less useful for industries such as investment banking, in which the underlying elements are not meaningful. Variations of the Du Pont identity have been developed for industries where the elements are weakly meaningful. Du Pont analysis relies upon the accounting identity, that is, a statement (formula) that is true.

Components of the DuPont Equation

1. Profit Margin
2. Assets Turnover
3. Financial Leverage

Components of the DuPont Equation: Profit Margin

Profit margin is a measure of profitability. It is an indicator of a company's pricing strategies and how well the company controls costs. Profit margin is calculated by finding the net profit as a percentage of the total revenue. As one feature of the DuPont equation, if the profit margin of a company increases, every sale will bring more money to a company's bottom line, resulting in a higher overall return on equity.

Formula -: The net profit margin is a profitability measure expressed as a percentage of after-tax net income.
Net profit Margin = Net profit / Total Income or Profit After Tax / Total Income

Components of the DuPont Equation: Asset Turnover

Asset turnover is a financial ratio that measures how efficiently a company uses its assets to generate sales revenue or sales income for the company. Companies with low profit margins tend to have high asset turnover, while those with high profit margins tend to have low asset turnover. Like profit margin, if asset turnover increases, a company will generate more sales per asset owned, once again resulting in a higher overall return on equity.

Formula: The formula for calculating asset turnover is
Asset Turnover = Total Income / Total Assets
In a nutshell, the asset usage ratio determines how much income a corporation earns for every rupee of assets it holds.

Components of the DuPont Equation: Financial Leverage

Financial leverage refers to the amount of debt that a company utilizes to finance its operations, as compared with the amount of equity that the company utilizes. As was the case with asset turnover and profit margin, increased financial leverage will also lead to an increase in return on equity. This is because the increased use of debt as financing will cause a company to have higher interest payments, which are tax deductible. Because dividend payments are not tax deductible, maintaining a high proportion of debt in a company's capital structure leads to a higher return on equity

Formula -: By dividing total assets by common stockholders' equity, the equity multiplier is computed.
Equity Multiplier = Total Asset / Stock Holder Equity
A high equity multiplier indicates greater financial leverage, implying that the firm is reliant on debt to fund its assets.

Needs and Important of Du-Pont analysis

The DuPont Analysis is a convenient and helpful tool that helps an investor look at the more detailed aspects of a company's financial health and help them make more informed investment decisions.

The DuPont system is important because it provides a complete, overall picture of any company's financial health and performance compared to the common and limited equity valuation tools.

- In addition to informing about the Return on Investment for shareholders, DuPont analysis also includes three important indicators of the firm's performance, which provide an in-depth insight into the company's well-being. These are profitability measured by profit margin, operational efficiency measured by asset utilization (specifically asset turnover), and financial leverage measured by the assets/equity multiplier.

  If the ROE is higher due to the increasing operational efficiency, it is favourable for financial analysts. However, if DuPont indicates that ROE is increasing only because of increased financial leverage, then it becomes a risky investment as the increased equity returns are not a result of increased profits but of increased debts.
- DuPont analysis helps a company understand its strong factors and helps analyse the reasons behind this growth so that a healthy performance can be retained.
- It also helps identify the weak performance indicators, thus helping the company understand and improve those.
- DuPont analysis helps investors identify the source of increased or decreased equity returns.

Literature Review

1. **A study on Financial Performance Analysis of Tata Steel Ltd,Sathish Kumar R (2016**)- A study on Financial Performance Analysis of Tata Steel Ltd Profitability analysis is increasingly crucial for any company organization. A company's profitability provides insight into its operational efficiency. Increased profitability signifies superior performance, whereas decreased profitability denotes worse performance. To achieve its goals, the research employed just secondary data. The information comes from Tata Steel Limited's 15 financial year annual reports, which span the years 2000–01–2014–15. In the current study, ratios and simple percentage analysis are employed to evaluate the profitability statement. Tata Steel's standalone profitability is at a respectable level. Even yet, the profitability position will rise over its current level if certain internal sources are generated.
2. **A Study on The Financial Performance Analysis Of top 10 Indian IT firm Companies in India by using Du-Pont analysis, Ashok Banta, Faizan ulhaqq Ansari (2020)**- A Study on The Financial Performance Analysis Of top 10 Indian IT firm Companies in India by using Du-Pont analysis. This study aims to evaluate the performance of the top 10 Indian IT firms from the NIFTY Index. The major goal of this essay is to use the Du-point model to assess the profitability of IT businesses. Return on equity, PBIT effectiveness, Interest to Tax Ratio, Asset Turnover Ratio, Equity Multiplier, and Leverage of Companies have all been taken into consideration in this analysis. From 2014 to 2018, a five-year span, was used to conduct the study. Using Du-Pont analysis, a thorough financial examination of every company reveals that TCS has the highest ROE of the firms that were chosen, while Oracle Financial Service and TATA Lexis are in second and third place.
3. **The use of DuPont analysis in abnormal returns evaluation, Marianna Botika (2012**)- The use of DuPont analysis in abnormal returns evaluation. To show which of three regions most effects the aberrant behaviour of the stock, this research thoroughly exposes the du-Pont components. The findings reveal an intriguing evolution: in 2007, it was shown that there was a high correlation between profitability, ROA, and cumulated anomalous returns. Because 2008 and 2009 were transitional years, investors were erratic during this time. 2010 might be seen as a return year because all the statistics are quite like those from 2007 but with distinct components. As a result of the stock abnormal returns examination, the research concludes that DuPont components are a significant and feasible option.

Research Gap

After Analysing or reading through the various (about 20) Research articles, it was found that all the authors have significantly proved that analysing the financial performance is indispensable in to order to formulate new Technique, methods, strategies where not only in the finance study, but also in other areas like Marketing, Human resource, Various operations etc. According after analysis and understanding the nature of the company and its present financial performance and as per the requirement of the organisation, the researcher has decided to carry out the research entitled- A study on financial statement of Rexroth Bosch Company with the consultation of research guide. Here the researchers try to bring and identify various relevant ratios, tools, methods, and compare various financial components to assess the significance.

Objective of study

1. To analyse and interpret the financial statements of “REXROTH BOSCH GROUP”
2. To examine profitability of the “Rexroth Bosch Group” using ROE and ROA in Dupont model.
3. To analyse liquidity, solvency, and profitability position of “REXROTH BOSCH GROUP.”

Scope of Study

The financial analysis is one of the important useful techniques to the management to know the financial strength of the company and to make the best use of its finance.
The scope of the study is limited only to few tools of financial management (DuPont analysis) this analysis helps the company and other interested parties like shareholders, investors, creditors, government, and analyst etc., to make the best evaluation of financial position of the company.

Research Methodology and Data Collection

Research Methodology

1. The main source of the study is secondary data.
2. The information required was obtained from the published annual reports of the company covering four financial years.
3. All the statement stated in the annual reports are regarded to the company acts and Amendments.

Period Of Study

The study was conducted from March 2019 – March 2023

Source Of Data

The main sources of data are:
- Primary data
- Secondary data

Primary Data

Primary data is the data which is collected for the first time. In the study of primary data are obtained from direct interview and discussion with manager of REXROTH BOSCH GROUP.

Secondary Data

Secondary data is that information which is already collected by some other person and that is utilized by other person for further study. Here, the secondary data is obtained from the company's annual reports of last five years (2019-2020, 2020-2021,2021-22,2022,23

Data Analysis and Interpretation

Hypothesis

H0(Null Hypothesis) - The components of the Dupont analysis (profit margin, asset turnover, and equity multiplier) for Rexroth Bosch Company have remained unchanged over the specified period, indicating no significant variations in the company's return on equity.
H1(Alternative Hypothesis) - There is a significant change in at least one component of the Dupont analysis (profit margin, asset turnover, or equity multiplier) for Rexroth Bosch Company over the specified period, suggesting a notable impact on the company's return on equity.

Empirical Results and discussions

Regression

	Net Profit Margin	Asset Turn Over Ratio	Equity Multiplier	ROE
Number of Observations	6	6	6	6
Mean	.10820430649	2.0272910582	2.0307704822	.4439036803

Std. Deviation	.04362440321	.34957601406	.31050789556	.17563246660

Table 5.1 describe that Bosch companies have an average mean and standard Deviation with; The descriptive statistics provided offer insights into four key financial metrics: Return on Equity (ROE), Net Profit Margin (NPM), Assets Turnover, and Financial Leverage. Starting with ROE, which has a mean of approximately 0.44 and a standard deviation of about 0.18, it suggests that, on average, the company earns a return of 44% on shareholders' equity, with a moderate level of variability across the observed data points.

Moving to NPM, the mean of around 0.11 with a standard deviation of roughly 0.04 indicates that the company retains about 11% of its revenue as profit, reflecting its efficiency in managing costs and generating profits. Assets Turnover, with a mean of approximately 2.03 and a standard deviation of about 0.35, reveals how efficiently the company utilizes its assets to generate revenue. A higher turnover ratio indicates more efficient asset utilization. Finally, Financial Leverage, with a mean close to 2.03 and a standard deviation around 0.31, demonstrates the proportion of debt in the company's capital structure. It indicates that, on average, the company relies moderately on debt financing. In summary, these statistics portray a company that effectively generates returns on equity, maintains healthy profit margins, efficiently utilizes its assets to generate revenue, and manages its financial leverage prudently.

Correlation of return on equity components

CORRELATION	ROE	NPM	ATR	EM
RETURN ON EQUITY	1.000	.646	.430	-.044
NET PROFIT MARGIN	.646	1.000	-.382	-.554
ASSETS TURNOVER	.430	-.382	1.000	.398
FINANCIAL LEVERAGE	-.044	-.554	.398	1.000
Sig. (1-tailed)				
RETURN ON EQUITY		.083	.197	.467
NET PROFIT MARGIN	.083		.228	.127
ASSETS TURNOVER	.197	.228		.217
FINANCIAL LEVERAGE	.467	.127	.217	

Table 5.2 Represents the Correlation between the Return on Equity and Different Variables on the ROE. ROE exhibits a strong positive correlation with Net Profit Margin (0.646) and a moderate positive correlation with Assets Turnover (0.430). This implies that companies with higher ROE tend to have higher net profit margins and more efficient asset utilization. Net Profit Margin demonstrates a significant negative correlation with Financial

Leverage (-0.554), indicating that as leverage increases, the net profit margin tends to decrease. This aligns with the notion that higher financial leverage often leads to increased interest expenses, thereby impacting profitability negatively.
Assets Turnover is positively correlated with ROE and has a moderate positive correlation with Net Profit Margin (0.398), suggesting that companies effectively utilizing assets tend to have higher profitability and return on equity.

The negative correlation between Assets Turnover and Financial Leverage (-0.382) indicates that as leverage increases, the efficiency of asset utilization tends to decrease. This could imply that companies with higher leverage may not be effectively utilizing their assets to generate revenue. The correlation coefficients for ROE and Net Profit Margin with Financial Leverage are small (-0.044 and -0.083, respectively), suggesting a weak negative relationship. However, both ROE and Net Profit Margin do not have a statistically significant correlation with Financial Leverage.

Overall, the correlations suggest interdependencies among these financial metrics. Understanding these relationships can aid in financial analysis and decision-making, helping stakeholders assess a company's financial health, profitability, and efficiency in asset utilization.

Find and Suggestion

- Return on Equity of the company showing an increase in the first two years and there is a decrease in the year 2020, again we can find a gradual increase for the following two years Increasing ROE shows that the company is growing and decrease in the year 2023 this shows the profit earning ability of the company has decreased. Here Company Equity Capital is constant for all the five years and decreased in the year 2023, so my suggestion to the Company is, Company should increase equity capital so that company will get higher return on investment in upcoming years.
- Return on Asset of the company showing an increase in the first two years and there is a decrease in the year 2020, again we can find a gradual increase for the following two years and decrease in the year 2023, which shows organization is not using its assets efficiently to generate earnings, my suggestion is company should effectively and efficiently use all the assets to generate more sales. When sales increases profit earning ability of the company increases.
- The company earned Gross Profit in the year 2018, but it shows downtrend in next following years, and in the remaining years it is showing Gross profit Hence it is a good Sign for the company. My suggestion is company should make some strategies for controlling the cost of production and they should manage inventory by following various inventory methods, so that they can increase the production i.e., increase in production leads to increase in sales that helps the company to earn more profit.
- The Net Profit Margin of the company showing increasing trend in the year 2019, 2020 and 2021. And in the year 2022 and 2023 it is showing decreasing trend hence company’s effectiveness of converting revenue into actual profit is reduced. My suggestion is company should concentrate on reducing its cost of production and managing inventory.
- Financial leverage of the company showing increasing trend from 2018, 2021, 2022 and 2023 but in the year 2019 and 2020 it has been decreased, and but in the year 2022 and 2023 the company ratio has been increased, hence this shows that the company’s ability is reduced in usage of fixed income securities such as debt, preferred equity and other liabilities which helps in earning more profit, because the higher the investment the higher will be the income the company gets. My suggestion is company should use its debt and preferred equity in investing in those assets which helps in earning more profits.

CONCLUSIONS

Rexroth Bosch Group company profit is fluctuating year by year and in the previous year i.e., 2023 the company Profit earning ability of the company has been reduced as compared to previous years. This is because of lack of planning and improper management of assets, debts, and equity capital.
To overcome from those entire draw Backs Company should concentrate on

- Here Company Equity Capital is constant for all the five years and decreased in the year 2023, so my suggestion to the Company is, Company should increase equity capital so that company will get higher return on investment in upcoming years.
- Company should effectively and efficiently use all the assets to generate more sales.
- Company should make some strategies for controlling the cost of production and they should manage inventory by following various inventory methods, so that they can increase the production i.e., increase in production leads to increase in sales that helps the company to earn more profit.
- And company can also raise their gross profit by increasing the price of the goods or by decreasing cost of packing, designing, labor cost and period cost.
- Company should concentrate on reducing its cost of production and managing inventory.
- Company should use its debt and preferred equity in investing in those assets which helps in earning more profits.

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