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Research Article

An Empirical Study of The FMCG Sector Using Dupont Analysis

Ashutosh Goswami[1*], Rajkumar[2], Manoj Kumar[3], Himanshi Chopra[4], Ruchi Sharma[5]

[1*]Associate Professor, Department of Commerce, Satyawati College, University of Delhi.
[2]Associate Professor, Department of Commerce, Satyawati College, University of Delhi.
[3]Associate Professor, Department of Commerce, Satyawati College, University of Delhi.
[4]Research Scholar, Amity business school, Amity University, Noida.
[5]Assistant Professor, Department of Commerce, College of Vocational Studies, University of Delhi.

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ABSTRACT

This study aims to evaluate the financial performance of the fast-moving consumer goods (FMCG) sector in India. The DuPont model is a valuable instrument in the specialized literature and practice concerning economic and financial performance. The DuPont model analyses Return on Equity (ROE) and Return on Assets (ROA). The Return on Equity (ROE) breaks down performance into three elements: Net Profit Margin, Total Asset Turnover, and the Equity Multiplier. To accomplish the objectives of the study, the study used the DuPont analysis to analyse the financial ratios over a five-year period (2019–2023). The study reveals that DuPont analysis facilitates a comprehensive evaluation by identifying management's efficiency competencies.

Keywords: Dupont Analysis, fast moving Consumer goods industry (FMCG), Return on equity, Return on Asset, Equity Multiplier

1.1 Introduction

The corporate organizations disclose comprehensive information regarding their operations in their financial statements to assist investors in making informed investment decisions (Blessing and Onoja, 2015). In addition, corporate managers aim to maximize firm value, which is influenced by the investment and financing decisions they undertake (McGowan and Stambaugh, 2012).

Further, Ratios establish the relationship between two variables and their mutual influence, while ratio analysis provides a method for effectively diagnosing the financial and operational issues of a business enterprise (Agala, Jadhav and Borhade, 2014). Moreover, various ratios are employed to assess distinct dimensions of business performance, including liquidity, risk, and profitability. Ratios indicate areas that require additional examination. Managers analyse financial statements alongside the provided ratios to inform decision-making. The analysis and interpretation of financial statements serve as crucial instruments for evaluating a company's performance and provide investors with insights into the associated risk levels of the firm. This information is significant and pertinent for all types of investors.

Among the potential indicators, existing literature suggests that the most significant measure of profitability and performance is derived from DuPont analysis. Demmer (2015) indicates that variations in profit margin offer additional insights for forecasting future return on assets, while Soliman (2008) highlights that DuPont components provide significant information regarding a firm's operating characteristics.

1.2 Literature Review

Early in the 20th century, the DuPont model was developed to evaluate a company's profitability (Sheela and Kartikan, 2012). The original DuPont method of financial ratio analysis was developed in 1918 by F. Donaldson Brown, an engineer at DuPont responsible for analysing the finances of a company that DuPont was acquiring. Brown recognized a mathematical relationship between profitability and return on equity (ROE), which was derived from return on assets (ROA). The method was modified twice after its original conception.

ROA influences both profitability and efficiency; therefore, a firm's operating decisions regarding planning and control will prioritize enhancing ROA. However, the initial modification of the DuPont model redirected

attention from ROA to ROE, integrating debt or "leverage" as a third focal area. This modification enhanced the DuPont model's utility as a strategic decision-making tool within organizations aimed at increasing ROE (Collier, McGowan, and Muhammad, 2006).

The most recent revision of the DuPont model integrates five ratios to assess ROE. The annual statements, viewed from a managerial perspective, aim to evaluate a firm's financial performance. The impact of operating decisions, such as profitability and efficiency, alongside financing decisions like leverage, on ROE remains crucial. Recent studies indicate that the modified DuPont approach effectively identifies the underlying causes of financial issues in manufacturing firms (Liesz and Maranville, 2008).

Rogova (2014) indicates that DuPont analysis effectively identified efficiency factors that influenced the investment attractiveness of Russian oil-extracting companies. ROE's significant advantage lies in its ability to be disaggregated into various profitability ratios, reflecting profitability and efficiency from the shareholders' perspective.

The DuPont system of financial analysis relies on return on equity, which comprises the net profit margin, total asset turnover, and equity multiplier (McGowan and Stambaugh, 2012). DuPont analysis serves as a valuable tool for estimating a firm's market value, highlighting the company's leverage to enhance future profitability via more efficient asset utilization, ultimately leading to improved returns for shareholders; thus, higher leverage is often viewed favourably by potential investors. Demmer (2015) discusses existing literature regarding the utility of DuPont disaggregation in forecasting a firm's future profitability, operating income, and stock market returns. The study concludes that variations in profit margin yield significant and pertinent insights into future return on assets. His findings suggest that DuPont components are partially affected by the quality of the firms' anticipated earnings. Recent research in financial statement analysis (FSA) indicates that changes in profit margin are effective predictors of year-ahead changes in RNOA (Demmer, 2015).

Dechow et al. (2010) assert that the quality of earnings is deemed superior when it offers greater insights into the characteristics of a firm's financial performance relevant for decision-making, which is contingent upon the particular context. Prior literature indicates that the accounting system affects both future profitability and market reactions of a firm (Demmer, 2015).

Investment decisions influence a firm's operating leverage, while financing decisions affect its financial leverage. The future cash flows of the firm are subsequently determined by these factors (Collier, McGowan and Muhammed, 2006). Soliman (2008) posits those variations in asset turnover correlate positively with subsequent changes in earnings. He further examines how competitive forces impact a firm's profitability differently, highlighting that substantial profit margins attract new market entrants or prompt existing competitors to replicate innovative concepts. He discovered that competition might pose a reduced threat to the efficient allocation of resources. Efficient production processes create significant cost barriers that hinder the imitation of another firm's ideas. Soliman's findings enhance the existing literature regarding the utilization of accounting information by sell-side analysts. He posits that if DuPont components correlate with equity value, analysts may leverage this data in their forecasting and in evaluating existing literature regarding the firm's future profitability (Soliman, 2008).

Blessing and Onoja (2015) assert that profitability, assets, liabilities, and equities are critical metrics for assessing company performance reports and informing investment decisions. There is a prevailing belief that published financial statements have not fulfilled their obligation to deliver reliable information for investors and other users.

1.3 Research objective

This study aims to objectively assess the financial performance of companies using the DUPONT MODEL. The study has the following primary objectives:

1. To analyse the financial performance of selected companies employing the Dupont model.
2. To analyse the profitability of fast-moving consumer goods (FMCG) companies applying ROE and ROA within the Dupont model.
3. To examine the influence of net profit margin, asset turnover, and equity multiplier on return on equity.

1.4 Research methodology

This study employed secondary data from the financial statements of the top five fast-moving consumer goods (FMCG) companies—Nestle, Britannia Industries Ltd, ITC Ltd, Dabur India Ltd, and Hindustan Unilever Ltd—covering the period from 2019 to 2023 to test the research hypothesis. The DuPont model employed in this research is effective for investment decision-making by prospective investors and for policy formulation by banks and other corporate entities. DuPont is a mathematical model that serves as a factorial examination of profitability derived from the financial return on equity (ROE). Decomposing ROE into elements is a method to elucidate the impact of each model rate on the financial performance of the analysed company. The essence of the DuPont analysis involves the computation of Return on Equity (ROE). The staged development of the model enabled us to discover the elements influencing ROE.

ROE=Net Income / Average Equity (1)
ROE can be analysed using the following components:
ROE= ROA×EM (2)
Where, ROE= Return on Equity, ROA= Return on Assets, EM= Equity Multiplier
Furthermore, ROA can be disaggregated into the following components:
ROA= ROS×AT (3)
Where, ROS= Return on Assets, AT= Asset Turnover
The decomposed DUPONT model is as follows:
ROE=ROS×AT×EM (4)

Where, ROE= Return on Equity, ROS= Return on Assets, AT= Asset Turnover, EM=Equity Multiplier
This factorial analysis pattern enables the identification of factors that positively or negatively impact ROE, considering the unique characteristics of each of the three return rates incorporated in the model. The DuPont model's value is in its comprehensive use of return rates in analysis, exhibiting relevance for both small and large enterprises globally.

1.5 Research Findings

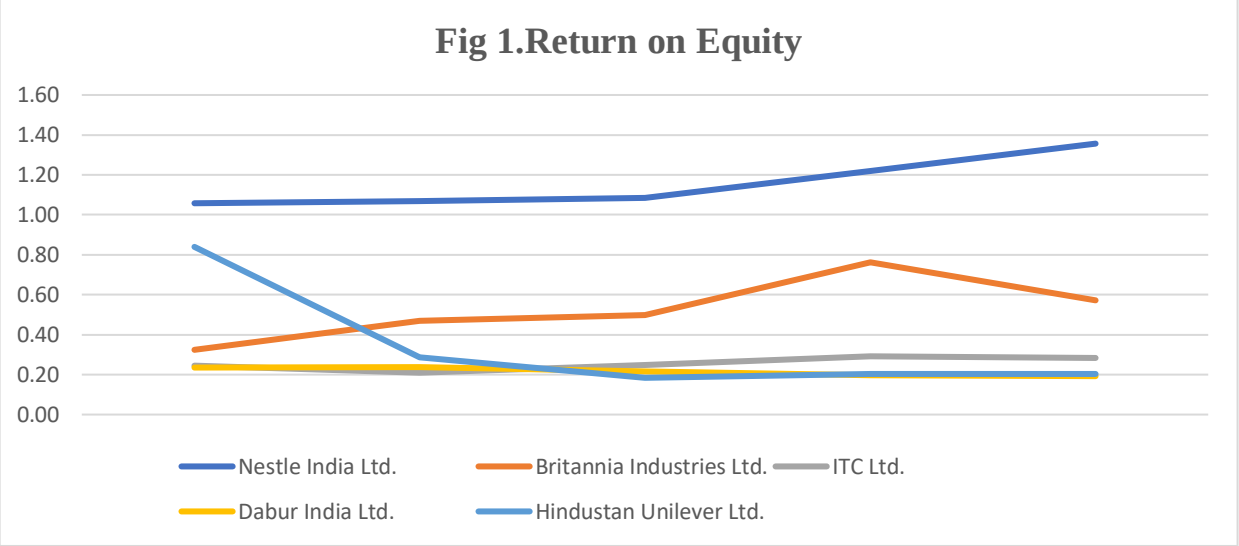
The DuPont analysis was conducted on the financial statements over a 5-year period, emphasizing each of the three components of the model in accordance with the outlined research methodology. The fundamental equation utilized in DuPont analysis is:
ROE=ROS×AT×EM (5)
Where, ROE= Return on Equity, ROS= Return on Assets, AT= Asset Turnover, EM=Equity Multiplier
We obtained the following values by applying the Dupont model

Table 1. The DuPont analysis of FMCG Companies

Company	Year	Net Profit Margin	Asset Turnover Ratio	Equity Multiplier	ROE	ROA
Nestle	2019	0.15	1.79	3.83	1.06	0.28
	2020	0.14	1.84	4.07	1.07	0.26
	2021	0.14	1.98	3.91	1.09	0.28
	2022	0.16	2.14	3.65	1.22	0.33
	2023	0.16	2.60	3.36	1.36	0.40
Britannia Industries Ltd.	2019	0.12	1.65	1.63	0.32	0.20
	2020	0.14	1.66	1.99	0.47	0.24
	2021	0.11	1.82	2.54	0.50	0.20
	2022	0.14	1.93	2.77	0.76	0.28
	2023	0.13	1.82	2.46	0.57	0.23
ITC	2019	0.31	0.66	1.20	0.25	0.21
	2020	0.27	0.65	1.20	0.21	0.17
	2021	0.25	0.80	1.23	0.25	0.20
	2022	0.27	0.87	1.24	0.29	0.24
	2023	0.29	0.80	1.24	0.28	0.23
Dabur	2019	0.17	0.98	1.45	0.24	0.16
	2020	0.18	0.95	1.41	0.24	0.17
	2021	0.16	0.94	1.44	0.22	0.15
	2022	0.15	0.89	1.49	0.20	0.13
	2023	0.15	0.86	1.53	0.19	0.13
Hindustan Unilever Ltd.	2019	0.17	2.05	2.41	0.84	0.35
	2020	0.17	1.06	1.59	0.29	0.18
	2021	0.17	0.75	1.44	0.18	0.13
	2022	0.17	0.84	1.45	0.20	0.14
	2023	0.17	0.82	1.49	0.20	0.14

Source: Research Findings

From Table 1 it can be seen that the ROE, Net Profit Margin, Asset Turnover and Equity Multiplier had an oscillating period within the analysis.



Source: Research Findings

Figure 1 illustrates a notable upward trend in the return on equity (ROE) of the companies during the analysed period. In the analysis of the provided data sets, we examined the relationships among asset turnover, net profit margin, equity multiplier, and return on equity (ROE) as they pertain to the indicators of the DuPont model. The Pearson correlation report was applied showing the following correlations.

Table 2. The Computed Correlation

	Net Profit Margin	*Asset Turnover Ratio*	*Equity Multiplier*	*ROE*
Net Profit Margin (NPM)	1			
Asset Turnover Ratio (ATR)	-0.584463387	1		
Equity Multiplier (EM)	-0.505728743	0.856099095	1	
Return on Equity (ROE)	-0.355594335	0.900602104	0.946803478	1

Source: Research Findings

Table 2 revealed the result of the Pearson correlation of coefficient among Net profit margin (NPM), Asset Turnover Ratio (ATR), Equity Multiplier and Return on Equity (ROE) which explain that there is a significant relationship among all these variables. The strong relationships among these variables indicates that high level of management effectiveness and efficiency of investor's money can predict high level of profit margin.

Table 3. Regression Statistics

Regression Statistics	
Multiple R	0.99
R Square	0.97
Adjusted R Square	0.97
Standard Error	0.07
Observations	25.00

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	-0.79	0.08	-9.39	0.00
Net Profit Margin	1.84	0.31	5.99	0.00
Asset Turnover Ratio	0.32	0.05	6.60	0.00
Equity Multiplier	0.26	0.03	9.55	0.00

Table 4. Regression Coefficients

The tables above summarize the results of the multiple regression analysis. The results demonstrate that the overall model is significant, as the p-value is 0.000, which is below the threshold of 0.05. This suggests that the applied model can statistically predict the outcome variable of ROE, and all linear variables are stationary. The model summary of the multiple regression analysis reveals a R square value of 0.970, indicating that 97.0 percent of the observed variability in ROE is accounted for by the independent variables: Net Profit Margin (NPR), Asset Turnover Ratio (ATR), and Equity Multiplier (EM). Further results indicate that 3.0 percent of

the variations in ROE remain unexplained by the independent variables of the study. The F statistic for ROE is 251.76. The Net Profit Margin (NPM), Asset Turnover Ratio (ATR), and Equity Multiplier (EM) demonstrate a significant positive influence on profitability as indicated by Return on Equity (ROE). The coefficient value of the Net Profit Margin (NPM) is 1.84. An increase of 1 unit in Net Profit Margin (NPM) will result in a 1.84 increase in Return on Equity (ROE). The coefficient value of the Asset Turnover Ratio (ATR) is 0.32. This indicates that an increase of 1 unit in ATR will result in a 0.32 increase in ROE. The coefficient value of EM is 0.26. This indicates that a 1 unit increase in EM will result in a 0.26 increase in ROE. The P Value of 0.00, which is less than 0.05, indicates substantial evidence against the null hypothesis; therefore, we reject the null hypothesis and conclude that a significant difference exists in the financial performance of selected companies concerning Return on Equity.

1.5 Findings and Conclusion

This study aims to assess the financial performance of fast-moving consumer goods (FMCG) companies. To achieve its goal, the researcher applied DuPont analysis to the following ratios connected with the DuPont model: net profit margin, assets turnover ratio, and leverage ratio. The data, which are the audited financial accounts of the company being studied, is obtained online. It is analysed using five-year trend analysis (2019-2023). The following ratios were examined: net profit margin, asset turnover ratio, and equity multiplier (leverage). The study presents five important findings:

- The study confirms the importance of financial ratios in assessing a company's performance, notwithstanding their limitations. Furthermore, the DuPont analysis approach contributes to a more in-depth review by disclosing management's efficiency capabilities.

- According to the DuPont analysis, Nestle's current return on equity is 135.64 percent, which is 29.85 percent greater than previous years. Its performance can be ascribed to a greater asset turnover margin of 2.60%. However, the leveraged ratio has remained more or less consistent over the years. This shows that they exploit leverage in a similar way while being profitable.

- Britannia Industries Ltd's return on equity is greater than prior years, with ordinary shareholders receiving Rs 57.25 for every Rs 100 invested. On the other hand, Britannia Industries ltd's debt-equity ratio is 2.46, which is disappointing to shareholders because it indicates that Britannia Industries ltd has fewer total assets to pay off its total liabilities.

- ITC Ltd's net profit margin decreased from 30.99% to 28.87%, while its return on equity (ROE) increased from 24.61% to 28.48%, indicating investor interest in the company's shares. However, the asset turnover and equity multiplier are constant throughout time.

- Dabur India Ltd's earnings per share decreased by 5.0 percent year on year, putting it at a disadvantage compared to other companies under review. According to DuPont's research of financial statistics, Dabur India Ltd.'s asset utilization efficiency is trending downward.

- In 2023, Hindustan Unilever Ltd had a return on equity of 20.26%, which is 63.69% lower than the previous five years. This decrease in return on equity is mostly attributable to a drop in the asset turnover ratio, which encourages investors to invest in Hindustan Unilever Ltd.

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