

An Empirical Study of Debt-Equity Mix and its Impact on Earnings Per Share of Selected FMCG Companies in India

Dr. Bhavsinh M. Dodia^{1*} | Sapara Hiralben Rajeshbhai²

¹Professor & Head, Department of Commerce & Management – BKNMU, Junagadh, Gujarat, India.

²Research Scholar, Department of Commerce & Management – BKNMU, Junagadh, Gujarat, India.

*Corresponding Author: drbhavsinhdodia2009@gmail.com

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ABSTRACT

The choice of debt-equity mix is the most significant strategic financial decision since it directly impacts an organization's profitability. This research explores how the debt-equity mix affects earnings per share (EPS) in India's FMCG sector. The study analyses data from five major FMCG companies listed on the NSE over a ten-year span (2016 -2025), utilizing statistical tools such as multiple regression, descriptive statistics, and correlation analysis. Results indicate that higher debt levels and strong interest coverage are positively associated with EPS, whereas a higher equity ratio tends to reduce earnings per share (EPS). These outcomes highlight the importance of maintaining an optimal debt-equity balance to enhance shareholder returns. The findings offer practical value to investors, financial strategists, and policymakers aiming to improve company performance through debt-equity mix decisions. However, the study's conclusions are limited by its small sample size and dependence on secondary data.

Keywords: Debt-Equity Mix, Earnings Per Share, Interest Coverage Ratio, Equity Ratio, FMCG Sector.

Introduction

The most crucial component of any business is finance; every business necessitates capital to carry out its operations effectively and properly. The capital can be raised from two sources: internal and external. Equity capital, preference capital, surpluses, and retained earnings are all examples of internal sources. debenture, loans are examples of external sources.

First and foremost, it's critical to comprehend the elementary differences between equity and debt. Debt is an obligation for which interest must be remunerated regardless of the business's profitability. Whereas equity is composed of the owner's or shareholder's money, dividend payments are dependent on the company's profitability.

The mixture of debt to equity that reaches the supreme levels is known as the debt-equity mix. The core objective of the firm is to maximize income and minimize cost, so they deliberate on this objective while making debt-equity mix decisions. Sometimes, the phrases debt-equity mix and capital structure are used interchangeably.

In the rapidly expanding Fast-Moving Consumer Goods (FMCG) sector of India, which is clear by intense rivalry, fluctuating consumer demand, and the need for constant innovation, the choice between equity and debt financing becomes particularly important.

The key objective of this study is to observe the relationship between the debt-to-equity mix and the earnings per share (EPS) of a subset of Indian fast-moving consumer goods companies over a

specified time frame. According to the classic trade-off hypothesis, it aims to investigate whether a greater reliance on debt financing increases shareholder earnings through tax benefits or if it puts financial strain on the company, which ultimately leads to a fall in profitability. Understanding this link is essential for financial managers, investors, and policymakers alike, given the capital-intensive nature and scale-driven operations of FMCG corporations.

Research Questions

- Are earnings per share and debt-equity mix significantly correlated in the FMCG industry?
- To what extent does the debt-to-equity ratio affect the earnings per share (EPS) of these companies?

In order to contribute to the greater discussion on the ideal capital structure in the Indian FMCG industry, this study will use practical analysis to deliver understanding about in what manner strategic financing decisions affect earnings.

The proper combination of both equity and debt is essential in the FMCG industry, where steady growth, cost effectiveness, and market competitiveness are critical factors. However, little empirical data demonstrates how this mix affects Indian FMCG firms' important performance metrics, such as earnings per share (EPS). In order to help businesses make better capital structure decisions, this study attempts to close this gap by investigating how the debt-equity mix affects earnings per share.

Review of Literature

(Modigliani & Miller, 1958) proposed that an organization's value is unaffected by its capital structure in a perfect market. Their theory indicates that although the cost of equity increases with higher debt, the overall cost of capital remains unchanged due to the tax shield benefit of debt.

(Milton Harris & Artur Raviv, 1991) emphasized that capital structure decisions influence firm value, profitability, and EPS due to factors like agency costs and asymmetric information.

(Bagchi et al., 2012) found an adverse association amongst working capital components and profitability, with LSDV models offering better firm-specific insights.

(Sivathaasan & Rathika, 2013) observed a negative correlation between debt-equity ratios and EPS, though the results were statistically insignificant.

(Alhani Fumani & moghadam, 2015) found a substantial adverse relationship between financial leverage and ROE, but no significant influence proceeding EPS or firm value. The overall conclusion suggests that improved liability levels can harm certain aspects of a company's financial performance.

(Mand & Singh, 2015) concluded that capital structure has no significant effect on EPS across sectors, except in telecom, supporting the Modigliani and Miller (1958) theory, suggesting that capital structure commonly does not disturb EPS.

(Sarkar, 2016) reported a strong positive link flanked by the Equity Ratio and EPS in the IT sector. At the same time, Long-Term Debt had a negative or negligible effect, challenging the pecking order theory, signifying that higher debt levels may lead to reduced profitability.

(Olusegun et al., 2019) found that poor capital structure management harms profitability, but a balanced mixture of equity and debt improves firm activity. The study highlighted the importance of adopting sound capital structure strategies to boost profitability and firm value.

(Evanta Br Tarigan et al., 2021) revealed that the positive impact of the current ratio on EPS, while a high debt-to-equity ratio had a negative effect, highlighting the role of liquidity in boosting shareholder earnings.

(Chondough, 2022) highlighted that the association between capital structure and earnings per share remains inconsistent and inconclusive. Studies have revealed assorted outcomes – negative, positive, or no significant effect – while the option of a reverse or bidirectional relationship has largely been overlooked.

(Sharma, 2024) found that capital structure undesirably affects dividend policy, while liquidity and profitability have positive impacts. Company size moderates these relationships, with larger firms maintaining more stable dividends.

Objectives of the Study

The prime objective of the study is to examine the relationship and impact of the debt-to-equity mix on the earnings per share (EPS) of the specific FMCG companies in India.

Research Methodology

• Period of the Study

The study passé has been the last 10 financial years from 2015-16 to 2024-25.

• Sample Size

This study covers a sample of 5 NSE-listed FMCG companies based on their market capitalization. The selected FMCG companies are:

- Hindustan Unilever Limited
- Godrej Consumer Products Limited
- Britannia Industries Limited
- Tata Consumer Products Limited
- Dabur India Limited

Sources of the Study

Secondary data have been used for the study. The essential data have been taken from the profit and loss account and balance sheet of the sample companies. Other data related to the study were compiled from research papers, newspapers, company websites, and Moneycontrol websites.

Hypothesis

H₀: There is no significant relationship between debt-equity mix and earnings per share of selected FMCG companies in India.

H₀: There is no significant impact of debt-equity mix on earnings per share of selected FMCG companies in India.

Tools & Techniques Applied

The collected data have been tested by using the statistical tools with the support of the Statistical Package for Social Science (SPSS).

Descriptive Statistics

- Karl Pearson's Co-Efficient of Correlation Analysis.
- Analysis of variance (ANOVA).
- Multiple Linear Regression Analysis.
- Normality Test.

Table 1: Summary of Variables

Nature of Variable	Name of variable	Notion	Measurement
Dependent	Earnings per share	EPS	Net Income – Preference Dividends / Outstanding Shares
Independent	Debt Equity Ratio	DER	Total Debt / Total S.H. Equity
Independent	Interest Coverage Ratio	ICR	EBIT/Interest Expenses
Independent	Equity ratio	ER	Total Equity / Total Assets

Econometric Model

Regression analysis is a statistical technique to measure the impact of an independent variable on a dependent variable. For detecting the influence of debt-equity mix on earnings per share, regression analysis is used. The multiple linear regression model used in this study is as follows:

$$EPS = \beta_0 + \beta_1 DER + \beta_2 ICR + \beta_3 ER + e$$

Where; β_0 = Constant

$\beta_1, \beta_2, \beta_3$ = Coefficient of The Independent Variable

e = Error Term

DER = Debt-to-Equity Ratio

ICR = Interest Coverage Ratio

ER = Equity Ratio

Significance of the Study

- The investors and internal stakeholders of certain FMCG firms benefit from the study.
- Researchers and academicians will be guided by the findings of the research.
- It will also assist financial managers and decision makers in determining their best debt-equity mix to maximize the firm's worth.
- It bridges the gap between financial theory and practical decision-making in the FMCG sector.

Limitations of the Study

- This study is based on a selected number of FMCG companies, which may not represent the entire industry.
- This study has been completed considering only 10 years, which might not imprisonment long-term structural changes in capital markets.
- Secondary data for the research study is collected from annual reports, websites, and such as such, the findings depend entirely on the accuracy of such data.
- Non-financial factors like management decisions, market trends, macroeconomic policies, etc., are not considered.

Scope of the Future Study

- Although the current study has observant on the FMCG industry, it might be applied to other industries in India.
- Researchers can study the impact of debt-equity mix on other financial performance metrics, not just EPS.
- Comparative studies can be conducted between Indian and global FMCG companies to examine international trends.

Data Analysis & Interpretation

- **Descriptive Statistics**

Table 2: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Earnings per share	50	4.37	88.82	26.8266	25.84978	1.242	.337	.249	.662
Debt-equity ratio	50	.00	.91	.0964	.20561	2.814	.337	7.716	.662
Interest coverage ratio	50	8.42	1115.36	161.955	273.7503	2.451	.337	5.160	.662
Equity ratio	50	.34	.90	.6723	.14944	-.638	.337	-.379	.662
Valid N (listwise)	50								

The descriptive statistics table offers important information on the distribution and features of the four financial variables under study: equity ratio, debt-to-equity ratio, interest coverage ratio, and earnings per share (EPS). With a mean EPS of 26.86 and a standard deviation of 25.89, there is significant variation within organizations. Its kurtosis of 0.249, which is near a normal distribution, and positive skewness of 1.742, which indicates that a small number of companies report noticeably larger earnings, are both present. There are outliers and a peaked distribution in the Debt-Equity Ratio, which has a mean of 2.0861 and a kurtosis value of 7.716. It is also strongly positively skewed (2.814). Certain companies have extraordinarily high interest coverage levels, as indicated by the Interest Coverage Ratio's very high average of 265.586, strong positive skewness (2.451), and high kurtosis (5.160). With a mean of 0.618 and a kurtosis of -0.379, the Equity Ratio, on the other hand, is negatively skewed (-1.038) and shows that most firms have equity ratios that are more consistent and have fewer extreme values. In general, there are notable departures from normalcy in the DER and ICR data, which might need to be fixed before running certain statistical tests.

Correlation Analysis

- H₀:** There is no significant relationship between debt-equity mix and earnings per share of selected FMCG companies in India.

Table 3: Correlation

		EPS	DER	ICR	ER
Earnings per Share	Pearson Correlation	1	.586**	.347*	-.606**
	Sig. (2-tailed)		.000	.014	.000
	N	50	50	50	50
Debt-equity Ratio	Pearson Correlation	.586**	1	-.238	-.584**
	Sig. (2-tailed)	.000		.096	.000
	N	50	50	50	50
Interest Coverage Ratio	Pearson Correlation	.347*	-.238	1	-.056
	Sig. (2-tailed)	.014	.096		.698
	N	50	50	50	50
Equity Ratio	Pearson Correlation	-.606**	-.584**	-.056	1
	Sig. (2-tailed)	.000	.000	.698	
	N	50	50	50	50
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					

The correlation analysis was conducted to examine the linear relationship between EPS and financial indicators such as Debt-Equity Ratio, Interest Coverage Ratio, and Equity Ratio among selected FMCG companies in India.

Table 3 shows that EPS is positively and significantly related to the Debt-Equity Ratio ($r = 0.586$, $p < 0.01$) and Interest Coverage Ratio ($r = 0.347$, $p < 0.05$), indicating that higher debt use and better interest coverage are linked to higher earnings. EPS is negatively and significantly related to Equity Ratio ($r = -0.606$, $p < 0.01$), meaning more equity financing may reduce earnings per share (EPS).

Regression Analysis

H₀: There is no significant impact of debt-equity mix on earnings per share of selected FMCG companies in India.

$$\text{Model: EPS} = \beta_0 + \beta_1 \text{DER} + \beta_2 \text{ICR} + \beta_3 \text{ER} + e$$

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.798 ^a	.637	.613	16.07945	.637	26.880	3	46	.000
a. Predictors: (Constant), equity ratio, interest coverage ratio, debt-equity ratio									
b. Dependent Variable: earnings per share (EPS)									

Table 5: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.	Result
1	Regression	20849.099	3	6949.700	26.880	.000 ^b	significant
	Residual	11893.243	46	258.549			
	Total	32742.342	49				
a. Dependent Variable: earnings per share (EPS)							
b. Predictors: (Constant), equity ratio, interest coverage ratio, debt-equity ratio							

Table 6: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		Result
		B	Std. Error	Beta			Tolerance	VIF	
1	(Constant)	44.040	14.674		3.001	.004			-
	DER	67.969	14.598	.541	4.656	.000	.586	1.707	H ₀ rejected
	ICR	.043	.009	.460	4.875	.000	.886	1.129	H ₀ rejected
	ER	-45.818	19.539	-.265	-2.345	.023	.619	1.616	H ₀ rejected
a. Dependent Variable: Earnings Per Share									

$$\text{EPS} = 44.040 + 67.969\text{DER} + 0.043\text{CR} - 45.818\text{ER} + e$$

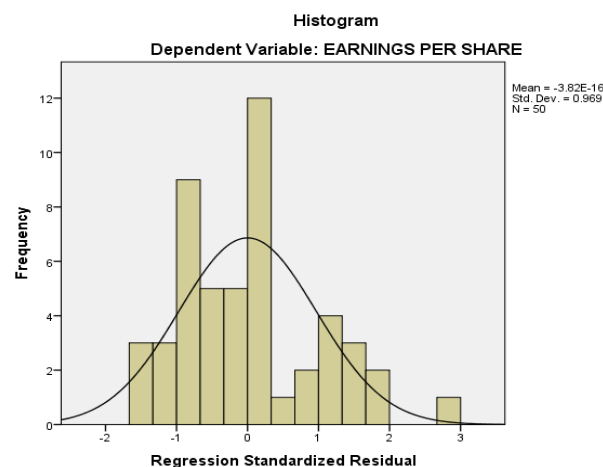
Table 4 displays the model summary of the multiple regression analysis. The R value is 0.798, indicating a strong positive relationship between the independent variables and EPS. The R^2 value is 0.637, meaning that approximately 63.7% of the variance in earnings per share is described by the model. The Adjusted R^2 of 0.613 accounts for the number of predictors, suggesting a reliable fit.

The ANOVA (Table 5) shows the overall significance of the regression model. The F-statistic is 26.880 with a p-value of 0.000, which is a lesser amount of than 0.05. This indicates that the regression model is statistically significant, and the predictors (Equity Ratio, Interest Coverage Ratio, and Debt-Equity Ratio) collectively have a substantial impact on EPS.

Table 6 indicates that all independent variables have a statistically substantial impact on earnings per share (EPS). The Debt-Equity Ratio demonstrates a positive and significant association with EPS ($B = 67.969$, $P = 0.000$), suggesting that a rise in debt relative to equity can enhance shareholder earnings. Similarly, the Interest Coverage Ratio has a positive and significant result on EPS ($B = 0.043$, $P = 0.000$), indicating that companies with a better ability to meet interest obligations tend to report higher EPS. In contrast, the Equity Ratio shows a negative and significant relationship with EPS ($B = -45.818$, $p = 0.023$), implying that higher equity financing may dilute earnings per share.

Furthermore, the Variance Inflation Factor (VIF) values for all forecasters are below 2, indicating no serious multicollinearity issue. Overall, the findings support the view that a firm's debt-equity mix significantly influences its earnings performance.

Normality Test



This histogram illustrates the distribution of standardized residuals from the regression model used to forecast earnings per share. The residuals appear approximately normally distributed, as suggested by the bell-shaped curve superimposed on the bars. The maximum of the residual clusters is about zero, demonstrating that the model's predicted values closely match the observed values for a majority of the cases. The mean of standardized residuals is approximately zero ($3.82E-16$), which is expected in a well-fitted regression model. The standard deviation is 0.969, and the sample size (N) is 50. There is a slight skewness to the right, with a few residuals greater than +2, but no severe exoduses as of normality are observed.

Therefore, the assumption of normality of residuals is reasonably met, supporting the validity of the regression analysis.

Conclusion

This study validates that there is a significant relationship between the debt-equity mix and earnings per share (EPS) among selected FMCG companies in India. The discoveries expose that both the Debt-Equity Ratio and Interest Coverage Ratio (ICR) have a positive and statistically significant impact on EPS, indicating that strategic use of debt can enhance shareholder earnings. On the other hand, the Equity Ratio shows a negative impact on EPS, suggesting that excessive reliance on equity financing may dilute earnings.

The result of the multiple regression analysis more settles that the chosen financial indicators significantly influence EPS. With approximately 63.7% of the variation in earnings per share (EPS) explained by the model, it highlights the importance of maintaining an optimal debt-equity mix. Therefore, for firms in the FMCG sector, maintaining an optimal balance for maximizing earnings per share.

Recommendations

Based on the findings, it is recommended that FMCG companies maintain an optimal stability between equity and debt to maximize earnings per share. Strategic use of debt can be advantageous due to tax advantages, while excessive reliance on equity may dilute shareholder earnings. Companies should focus on improving their interest coverage ratio and customizing their debt-equity mix according to their financial position and risk capacity.

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