



RESEARCH ARTICLE

IMPACT OF CAPITAL STRUCTURE ON THE PROFITABILITY OF MANUFACTURING COMPANIES IN NEPAL: A CASE STUDY OF SARBOTTAM CEMENT NEPAL

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ABSTRACT

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The study investigated the impact of capital structure on the profitability of manufacturing companies in Nepal, with a focus on Sarbottam Cement Nepal as a case study. A quantitative research design was adopted, and financial data from the company's financial statements were utilized. The main financial ratios analyzed included debt to total assets, debt to total equity, return on total assets, return on equity, and net profit margin. Regression analysis was employed to examine the relationships between these variables. The findings of the ratio analysis revealed fluctuations and mixed performance in the debt management, profitability, and liquidity of Sarbottam Cement Nepal over the years. The debt-to-equity ratio showed variations, while the debt-to-assets ratio remained relatively stable. Return on equity and return on assets exhibited varying trends, with improvements in profitability until a decline in the later years. Net profit margin remained generally low, indicating a narrow profit margin. Liquidity remained stable throughout the years. The regression analysis results indicated that the debt-to-equity ratio and debt-to-assets ratio did not have a significant impact on return on equity. Similarly, these ratios did not significantly affect the return on assets. Liquidity and size also did not show statistically significant relationships with return on equity and return on assets. The independent variables did not demonstrate significant relationships with the profitability indicators of Sarbottam Cement manufacturing company.

KEYWORDS

Return on Assets, Net Profit, Return on Equity, Debt Equity, Debt Assets

1. INTRODUCTION

The capital structure represents the proportion of equity to debt capital in a company. This ratio is crucial from a financial perspective as it directly influences the company's ability to meet the interests of its stakeholders (Simerly and Li, 2000). The choice between debt and equity financing impacts the company's overall financing strategy, requiring a careful balance to manage risk and shareholder return effectively. An optimal capital structure, achieved through a reasonable mix of debt and equity, can maximize shareholder value and ultimately contribute to their wealth (Basnet, 2021). In the context of a manufacturing company, the management faces a critical decision in determining the capital structure to maximize profits, reduce capital expenditures, and increase shareholder wealth. Most businesses utilize a combination of debt and equity in their capital structure. The decision on the proportion between these two forms of financing should be based on strategic importance and the company's value (Sultan and Adam, 2015). The capital structure, consisting of debt and equity, has a significant impact on a company's financial performance and its ability to meet stakeholder expectations of increased value. Hybrid financing options, such as debt and equity, are commonly used by companies to fund their operations and shape their capital structure (Muhammad et al., 2014).

The capital structure decision holds critical importance for the continued existence of any business organization aiming to maximize returns to stakeholders (Jaishi and Poudel, 2019). Various studies have explored the relationship between capital structure and performance, with some finding a positive correlation between the two (Dare and Sola, 2010),

while others have identified a negative correlation (Iorpev and Kwanum, 2012). However, certain studies have found no significant link between performance and capital structure (Prahathan and Rajan, 2011).

Nepal's manufacturing industry is currently facing significant obstacles, with many businesses shutting down and others on the brink of closure. Despite the potential for profitability, the sector experiences low-profit margins. Persistent weaknesses in technology adoption, inadequate infrastructure, power shortages, slow political processes, challenging trading conditions, international competition, and the global economic downturn have contributed to the uneven growth of the manufacturing sector over the years. The availability of skilled labor and access to raw materials are crucial factors for Nepal's manufacturing sector. Industrial growth plays a vital role in improving the standard of living for Nepalese citizens, considering the country's underdeveloped status. However, due to limited research, the current situation of manufacturing companies remains unclear, and it is necessary to address various issues related to business performance.

Therefore, the focus of the investigation was to determine how the capital structure of manufacturing companies affects their profitability. By examining the relationship between capital structure choices and financial performance in the manufacturing sector of Nepal, the study aims to provide insights into the impact of capital structure on profitability. Such findings would be valuable in understanding the challenges faced by Nepalese manufacturing companies and developing potential strategies to enhance their financial performance.

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2. MATERIALS AND METHODS

2.1 Research Design

For the study on the impact of capital structure on the profitability of manufacturing companies, case study types of research design were selected and applied for in-depth analysis of a company's capital structure and profitability.

2.2 Population

The population refers to manufacturing companies in Nepal. While the case study focused on Sarbottam Cement Nepal and provided insights into the broader population of manufacturing companies in the country.

2.3 Sample

As a single case study, the focus was on a specific company rather than a broader population. Since the sample size was one, which was Sarbottam Cement Manufacturing Company.

2.4 Nature and Source of Data Collection

Instead of placing more emphasis on qualitative data, the study mainly focused on quantitative data. The related and reliable data from the manufacturing firms intended by Sarbottam Cement Manufacturing Company were used to produce the study's results. The profit and loss statement, balance sheet, cash flow statement, and statement of retained revenue were the main financial statement taken into consideration.

2.5 Method of Data Analysis

A. Financial Tool

(i) Debt to Total Assets: It calculates the proportion of a company's assets that are financed by creditors. The lower the ratio, the greater the protection provided to creditors in the event of liquidation.

$$(D/A) = \text{Total debt/Total assets}$$

(ii) Debt to Total Equity: A company's total liabilities are divided by its shareholder equity to determine its debt-to-equity (D/E) ratio.

$$\text{Debt to equity} = \text{Total Debt/Total Equity}$$

(iii) Return on Total Assets (ROA)

Return on assets measures how profitable a company is in comparison to its total assets.

$$\text{Return on Assets (ROA)} = \text{Net profit/Total Assets}$$

(iv) Return on Equity (ROE):

The financial performance indicator known as return on equity is obtained by dividing net income by shareholders' equity. ROE is considered an estimate of how successfully management is producing profit from a company's assets.

$$\text{Return on Equity} = \text{Net profit/Total Equity}$$

(v) Net Profit (NP)

The net profit margin of a company or business segment is the ratio of net profit to revenue. Although decimal terms can also be used to express net profit margin, percentages are more common.

$$\text{Net Profit} = \text{Net profit/Total sales}$$

B. Regression Analysis

The regression equation undertakes the dependent variable of Return on equity (ROE), Return on Assets (ROA) and Net profit (NP) along with independent variables Debt to total assets ratio, Debt to Total Equity ratio, liquidity and size.

The regression equation for this study was

$$Y_1 = \alpha + B_1 \text{DERj} + B_2 \text{DARRj} + \text{size} + \text{Liquidity} + e_j$$

$$Y_2 = \alpha + B_1 \text{DERj} + B_2 \text{DARj} + \text{size} + \text{Liquidity} + e_j$$

$$Y_3 = \alpha + B_1 \text{DERj} + B_2 \text{DARj} + \text{size} + \text{Liquidity} + e_j$$

The extension forms

$$Y_1 = \text{Dependent variable Return on Equity (ROE)}$$

$$Y_2 = \text{Dependent variable Return on Assets (ROA)}$$

$$Y_3 = \text{Dependent variable Net Profit (NP)}$$

α = Constant value

B_1 = Coefficient variable X1

DARj = Debt to total assets ratio (DAR)

B_2 = Coefficient of variable X 2

DERj = Debt to total equity ratio (DER)

e_j = Error Terms

Here DAR and DER are the independent variables.

3. RESULTS AND DISCUSSION

3.1 Ratio Analysis

The Debt to Equity ratio of Sarbottam Cement Nepal shows a fluctuating trend over the years. It ranged from 2.3081 in 2076 to 3.5191 in 2073. The company experienced a decrease in this ratio from 2068 to 2070, indicating a lower reliance on debt financing. However, from 2070 to 2073, the ratio increased, suggesting increased debt relative to equity. After 2073, the trend shows a declining pattern, reaching the lowest point of 1.351 in 2077. This indicates a reduction in debt and a relatively stronger equity position. In terms of Debt to Assets ratio, Sarbottam Cement Nepal has maintained a relatively stable position. The ratio fluctuated between 0.6719 in 2077 and 0.797 in 2070. The company has generally managed its debt concerning its assets, with the ratio remaining below 1 in all years.

Table 1: Ratio Analysis of Sarbottam Cement Nepal

Variable	Year									
	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077
Debt to Equity	2.8494	2.541	2.6214	2.8321	3.0213	3.5191	2.6746	2.7346	2.3081	1.351
Debt to Assets	0.764	0.755	0.797	0.757	0.7301	0.7824	0.7126	0.7312	0.7173	0.6719
Return on Equity	0.0724	0.115	0.2018	0.2418	0.2411	0.4361	0.3143	0.2038	0.214	0.1215
Return on Assets	0.0124	0.0331	0.0421	0.0513	0.0636	0.0634	0.1722	0.1128	0.0715	0.0174
Net Profit Margin	0.0345	0.033	0.014	0.0512	0.0413	0.0518	0.0667	0.0616	0.0325	0.0236
Liquidity	1.0927	1.1082	1.1348	1.1892	1.3127	1.3429	1.1322	1.3846	1.3236	1.3129
Size	7.712	7.736	7.779	7.895	7.916	7.776	8.4277	8.3141	8.0248	8.5252

Sources: SPSS Software

The Return on Equity (ROE) and Return on Assets (ROA) provide insights into the company's efficiency in generating profits. The ROE shows a mixed performance, with values ranging from 0.0724 in 2068 to 0.4361 in 2073. It indicates that the company's profitability varied over the years but generally improved until 2073. However, there was a decline in ROE

in the later years, reaching 0.1215 in 2077. On the other hand, the ROA started at 0.0124 in 2068 and reached a peak of 0.1722 in 2074, reflecting improved asset utilization. However, it decreased to 0.0174 in 2077, indicating a decline in profitability concerning the total assets.

The Net Profit Margin of Sarbottam Cement Nepal experienced fluctuations in this ratio, with values ranging from 0.014 in 2070 to 0.0667 in 2074. The ratio remained relatively low in most years, indicating a narrow profit margin. Regarding liquidity, Sarbottam Cement Nepal maintained a generally stable liquidity position throughout the years, with a Liquidity ratio consistently above 1. This indicates that the company had sufficient current assets to cover its current liabilities. However, there was a slight decrease in liquidity from 2075 to 2076, followed by an increase in 2077.

Sarbottam Cement Nepal showed fluctuations and mixed performance in various ratios over the years. The company exhibited variations in debt management, profitability, and liquidity. It is important to consider additional factors and industry benchmarks to gain a comprehensive understanding of the company's financial health and performance.

3.2 Regression Analysis

The Debt to Equity ratio had a coefficient of -0.02, indicating a negative relationship with ROE. However, the coefficient is not statistically significant ($p = 0.549$), indicating that changes in the Debt to Equity ratio don't have a meaningful impact on ROE. Similarly, the Debt to Assets ratio shows a coefficient of -0.132, indicating a negative relationship with ROE. The coefficient for Liquidity was 0.158, suggesting a positive relationship with ROE. However, it was not statistically significant ($p = 0.167$), indicating that changes in Liquidity do not have a significant impact on ROE. Finally, the coefficients for Size were -0.042, implying a negative relationship with ROE. Although the p-value ($p = 0.086$) is slightly higher than the conventional significance level, it suggests that there might be a weak negative relationship between Size and ROE.

Table 2: Regression Analysis for dependent variable Return on Equity (ROE)

Model Summary						
Model	R	R Square	Adjusted R Square	Std. error of the Estimate		
1	0.572 ^a	0.352	0.253	0.1432		
Coefficient ^a						
Model		Un-standardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.726	1.08		1.521	0.027
	Debt to equity ratio	-0.02	0.059	-0.374	-0.47	0.549
	Debt to assets ratio	-0.132	0.425	-0.393	-1.63	0.287
	Liquidity	0.158	0.114	0.254	1.215	0.167
	Size	-0.042	0.071	-1.023	-1.59	0.086

Sources: SPSS Software

The independent variables collectively account for approximately 35.2% of the variation observed in ROE, as indicated by the R-squared value. The adjusted R-squared value, which takes into account the number of predictors and degrees of freedom, suggests that the model's explanatory power decreases slightly to 25.3%. The independent variables in the model (Debt to Equity ratio, Debt to Assets ratio, Liquidity, and Size) do not have statistically significant relationships with Return on Equity (ROE). These findings imply that other factors not included in the model might have a more substantial influence on ROE in the case of Sarbottam Cement Nepal (Table 2).

The constant term (0.485) represents the expected ROA when all the independent variables are zero. None of the independent variables showed statistically significant relationships with ROA at conventional levels ($p < 0.05$). The Debt to Equity ratio was a coefficient of -0.28, indicating a negative relationship with ROA. However, the coefficient was not statistically significant ($p = 0.347$), suggesting that changes in the Debt to Equity ratio did not have a significant impact on ROA. Similarly, the Debt to Assets ratio was a coefficient of -0.24, implying a negative relationship with ROA. However, this coefficient indicated that changes in the Debt to Assets ratio do not significantly affect ROA (Table 3).

Table 3: Regression Analysis for Dependent Variable Return on Assets (ROA)

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.641 ^a	0.236	0.11	0.0213		
Coefficients ^a						
Model		Un-standardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.485	0.241		1.435	0.241
	Debt to equity ratio	-0.28	0.042	-0.526	-0.75	0.347
	Debt to assets ratio	-0.24	0.035	-0.424	-1.63	0.132
	Liquidity	0.033	0.043	0.154	0.675	0.374
	Size	-0.035	0.052	-0.647	-1.18	0.376

The coefficients for Liquidity were 0.033, suggesting a positive relationship with ROA. However, it was not statistically significant ($p = 0.374$), indicating that changes in Liquidity did not have a significant impact on ROA.

The independent variables in the model (Debt to Equity ratio, Debt to Assets ratio, Liquidity, and Size) did not have statistically significant relationships with Return on Assets (ROA). This suggests that other factors not included in the model may have a more substantial influence on ROA for Sarbottam Cement Nepal (Table 3).

The Debt to equity ratio showed a negative coefficient of -0.32, suggesting that an increase in the Debt to equity ratio was associated with a decrease in Net Profit. Although it falls just short of statistical significance with a p-value of 0.056, it is worth noting and may require further investigation. The coefficient for Liquidity was positive (0.016), indicating that higher

liquidity was associated with a slight increase in Net Profit. Similarly, the Debt to assets ratio had a negative coefficient of -0.14, implying that higher ratios were linked to a decrease in Net Profit. This relationship was statistically significant, as indicated by the p-value of 0.023. It suggests that a higher level of debt relative to assets were a detrimental effect on Net Profit. The coefficient for Size was -0.036, indicating that larger companies tend to have slightly lower Net Profits. However, this relationship only approaches significance, with a p-value of 0.077 (Table 4).

The Debt to equity ratio, Debt to assets ratio and Size seem to have some impact on Net Profit, although the significance varies. The Liquidity predictor, while showing a positive coefficient, does not reach statistical significance. These findings provide initial insights, but further analysis and consideration of additional factors may be necessary to fully understand the relationship between the predictors and Net Profit.

Table 4: Regression Analysis for Dependent Variable Net Profit (NP)

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.583 ^a	0.326	0.638	0.0233		
Predictors: (Constant), Size, Liquidity, Debt to assets ratio, Debt to equity ratio						
Coefficients ^a						
Model		Un-standardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.731	0.231		1.568	0.538
	Debt to equity ratio	-0.32	0.016	-0.584	-1.23	0.056
	Liquidity	0.016	0.038	0.14	0.673	0.092
	Debt to assets ratio	-0.14	0.064	-0.693	-1.34	0.023
	Size	-0.036	0.062	-0.528	-1.61	0.077

4. CONCLUSION

The company showed a fluctuating Debt to Equity ratio trend over the years, with a decrease in the ratio from 2068 to 2070 and an increase from 2070 to 2073. However, the trend shows a declining pattern after 2073, indicating a reduction in debt and a stronger equity position. The Debt to Assets ratio remained relatively stable, with the company managing its debt about its assets. Similarly, Return on Equity (ROE) and Return on Assets (ROA) varied over the years. ROE improved until 2073 but declined in the later years. ROA reached a peak in 2074 but decreased afterward, indicating a decline in profitability with total assets. Likewise, the Net Profit Margin also fluctuated, with a generally low ratio, indicating a narrow profit margin. Liquidity remained stable, with a ratio consistently above 1, indicating sufficient current assets to cover liabilities. The regression analysis showed that the Debt to Equity ratio and Debt to Assets ratio did not have a statistically significant relationship with ROE and ROA. Liquidity also did not have a significant impact on ROE and ROA.

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