A study of NSC listed companies in India: capital structure and financial performance

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Abstract
A decision that can affect a firm performance is the selection of its capital structure. To maximize a firms' profit or to check the ability of a firm in gung-ho situations, capital structure decisions play a very important role. The expectations of the shareholder towards the firms performance are closely correlated with its capital structure decisions. Capital structure is a technique of a firm to finance its assets and for this, company uses the mixture of equity and debt.

In this study, the researchers investigated the association between capital structure and financial performance of the NSC listed companies from 2017-2018 to 2021-2022. DR is negatively correlated with EPS and ROE but shows significant relationship with GP and NP which means there is a positive correlation with financial performance. In the same way DER is positively correlated with all the financial performance measures i.e. GP, NP and EPS except ROE. The R square value of GP, NP, ESP and ROE ratios represents 25.5%, 35.1%, 32.4% and 73.9% experimental deviation in the financial performance elucidated by the variations in two independent variables i.e. DR and DER ratio.

Keywords: Equity, Debt, Capital Structure, NSC, Capital Structure.

Introduction

It is important for a researcher to know about the capital structure of the selected companies. To understand the decision making process of financing, it is necessary to examine the determinants of a particular company's capital structure or financial decisions. There are many financial ratios which can be used to examine the financial performance but the researcher used four main ratios to analyze an individual company's financing decisions. Capital structure is essential for all organizations and how they finance their respective operations and growth, can be quite complex according to which sources of fund they use.

Working capital management, dividend policy and capital budgeting are topics covered in financial management courses. How much debt is now outstanding or how much debt is required to accurately assess the firm's value, might be used to outline the capital structure decision. The capital structure refers to the company's overall financial structure which is made up of both debt and equity. In a nutshell, a company's capital structure is a combination of its long- and short-term debts, common equity and preferred equity. The capital structure of a company determines how it will use various funding sources to finance its overall operations and expansion.

The Modigliani-Miller method is the most widely acknowledged method as well as the most widely accepted method. Capital structures have always worked as optimal markets. One of the ideal market presumptions is that there are no taxes, rational investors and an efficient market. It was shown that a company's capital structure and financial health are not related to a perfect market. In practise, it might be challenging to ascertain a company's capital structure.

The best capital structure can be hard to determine. Companies must be able to find better combinations of securities that are worth the investment. A capital structure can be effective in optimizing the value of the firm. There are several studies on ideal capital structure but there has been no formula or theory to identify the best capital structure for a corporation. If capital structure was fundamental to company value in an ideal market, then flaws in reality might make it relevant.

Corporate success can be measured by factors like productivity, profitability, growth or even customer happiness. Capital structure is closely linked to corporate performance and these metrics are connected to one another. One tool for identifying company's financial strengths, weaknesses, opportunities and dangers is financial measurement. Some metrics include return on investment (ROI), residual income (RI), earnings per share (EPS), dividend yield, price earnings ratio, sales growth, market capitalization and others.

Theories of capital structure

It is challenging to provide an optional capital structure in practice; managers even express discomfort when asked to specify a variety of potential capital structures. Therefore, rather than worrying about the precise ideal level of debt, financial managers are more concerned with whether their companies are utilising too little or too much debt. Even if a firm's real capital structure deviates significantly from the theoretical ideal, operational decisions especially those involving capital budgeting and the strategic direction of the company take precedence over capital structure decisions. To explain the relationship between capital structures, various hypotheses and theories have been put forth by various authors. The following are the four main capital structure theories:

Net Income Approach: By maximising the use of debt financing, a company can reduce the weighted average cost of capital, raise the value of the company and boost the market price of equity shares. A higher percentage of debt in the capital structure indicates high financial leverage, which lowers the weighted average cost of capital overall. This led to improvements in the firm's worth as well as the value of the equity shares. In the opposite circumstance, the reversible circumstances hold true.

Net Operating Income Approach: This hypothesis is yet another extreme of how leverage affects a company's value. It is the exact opposite of the net income strategy. According to this strategy, a company's market value is unaffected by changes to its capital structure and the overall cost of capital is unaffected by the financing technique. It suggests that the overall cost of capital is unaffected by the debt-to-equity ratio's value, whether it is 60:40, 10:90 or 0:100. Therefore, any capital structure is the optimum capital structure and there is no such thing as an ideal capital structure.

The Traditional Approach: Also referred to as the intermediate approach, the traditional approach strikes a balance between the two extremes of the Net Income Approach and the Net Operating Income Approach. This idea states that by using more debt, which is a less expensive source of capital than equity, the firm's value can initially increase or its cost of capital can fall. Therefore, a suitable debt equity mix can lead to the best capital structure. Beyond a certain threshold, the cost of equity rises because higher debt puts equity shareholders at greater financial risk. At this stage of the capital structure, the benefit of less expensive debt is offset by rising equity costs.

Modigliani and Miller Approach: If taxes are disregarded, the Modigliani and Miller approach is equal to the net operating income approach. However, their theories resemble the Net Income Approach when corporate taxes are implicitly assumed to exist.

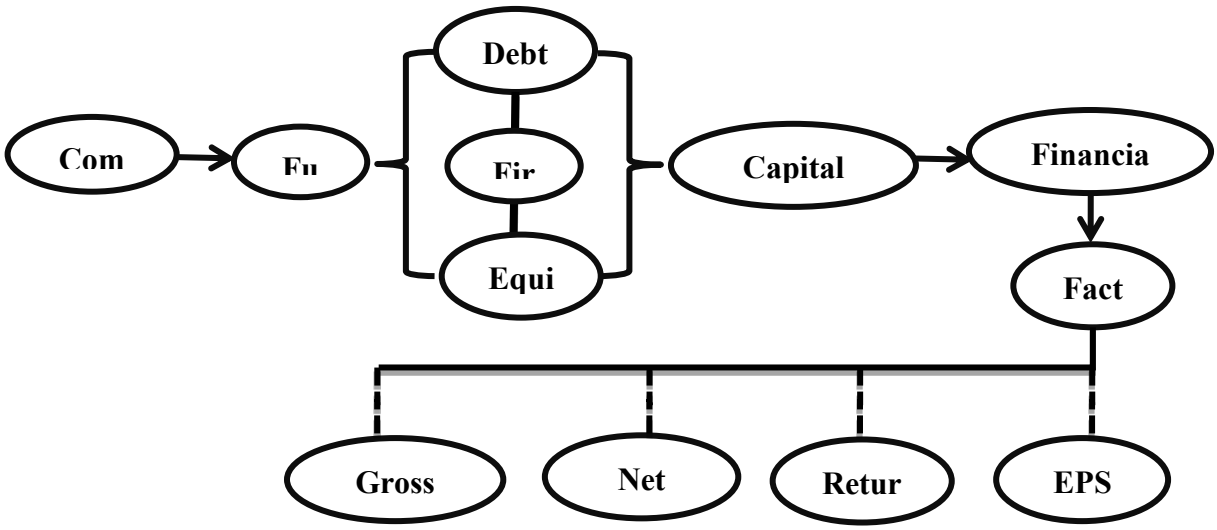
Conceptual structure

The relationship between capital structure and financial performance has been presented in the conceptual model after thorough study.

Review of Literature

Researching the literature is essential because it helps the researcher understand the ideas that have already been developed in the past. A researcher can identify areas for additional research and set acceptable goals for the evaluation, thereby meeting the financial need. Since the goal of the study is to evaluate the financial health and capital structure of the companies that are listed on the national stock exchange, past studies in this field of study are briefly examined. It also incorporated the viewpoints of various authors present in famous books, journals and articles.

The examination of publicly traded manufacturing companies reveals that all profitability ratios (Gross Profit, Operating Profit and Net Profit Ratios) are favourably and significantly correlated with the debt equity ratio.



This concept generation model mentioned above illustrates the connection between the capital structure and the financial performance of listed trading companies in NSC.

Measures of leverage (Degree of Operating Leverage, Degree of Financial Leverage and Dividend Per Share) and performance indicators to turnover (Earnings before Interest and Taxes, Earnings Per Share and Dividend Per Share) are considerably sensitive. There are numerous methods for analysing corporate performance.

Harrington[7] validated the capital structure theories, showing that profitability is a key factor in determining leverage. According to the findings, manufacturing companies operating in concentrated industries see a slower mean reversion of profitability than those in more competitive markets. Leverage reacts to profitability more strongly when mean reversion in profitability is slower.

The key capital structure drivers that have a major impact on both long-term debt and short-term debt are return on assets, return on equity, tangibility and liquidity. Long-term debt is significantly impacted by size, risk, flexibility and non-debt tax shielding.

Titman and Wessels[31] stated that there may be a negative correlation between physical assets and debt levels due to managers' propensity to put their own interests ahead of that of the company's shareholders. They utilise depreciation over total assets and the percentage of tax credits over assets as indicators of non-debt tax shelter.

Material and Methods

The research methodology of the extant perusal is contour below:

Sample: The sample for this study is the companies listed in national stock exchange i.e. NSC. Five top most NSC listed companies are selected for the study, these are: HDFC Bank, Reliance Industries, Tata Consultancy Services, Hindustan Unilever Ltd. and Asian Paint Ltd.

Source of Data: The data is collected from the secondary sources, mainly from the companies' financial statement, to fulfil the objectives and hypothesis of the research work. The sample data for the sample period is from 2017-18 to 2021-2022

Method of analysis: The financial performance of a firm has an important impact on its capital structure and the capital structure is based on the following variables:

GP = Gross Profit
NP= Net Profit
ROE= Return on equity
EPS=Earnings per Share

So the financial performance of a firm is more or less impacted by its capital structures. The researchers used multiple regression analysis to study the impact of capital structure on financial performance.

Financial performance = f (GP+NP+ROE+EPS)

$GP = \beta_0 + \beta_1 \times DER + \beta_2 \times DR + e$
$NP = \beta 0 + \beta_1 \times DER + \beta_2 \times DR + e$
$ROE = \beta_0 + \beta_1 \times DER + \beta_2 \times DR + e$
$EPS = \beta_0 + \beta_1 \times DER + \beta_2 \times DR + e$

Here, β_0, β_1 and β_2 are the regression co-efficients.

Research objectives:

- To assess the financial performance of listed companies in NSC during 2017-18 to 2021-2022.
- To evince the efficacy of capital structure on financial performance.
- To appraise the correlation between capital structure and financial performance.

Hypothesis:

The following hypotheses are formulated for the research work.

H0: There is no significant relationship between capital structure and gross profit.
H1: There is a significant relationship between capital structure and gross profit.

H0: There is no significant relationship between capital structure and net profit.
H1: There is a significant relationship between capital structure and net profit.

H0: There is no significant relationship between capital structure and return on equity.
H1: There is a significant relationship between capital structure and return on equity.

H0: There is no significant relationship between capital structure and earnings per share.
H1: There is a significant relationship between capital structure and earnings per share.

Results and Discussion

Correlation Analysis: This analysis is helpful in the relationship between variables: Gross Profit, Net Profit, Earning per Share, Return on Equity, Debt equity ratio, Debt Ratio.

Table 1 depicts that debt ratio is negatively correlated with EPS and ROE but shows significant relationship with GP and NP which means that there is a positive correlation with financial performance. In the same way, DER is positively correlated with all the financial performance measures GP, NP and EPS except ROE.

Regression analysis: Table 2 depicts that R-square value is 0.255, which means that our independent variable i.e. DR and DER cause 25.5% changes in the dependent variable i.e. GP. In table 3, ANNOVA result depicts that p-value is 0.039 which is less that 0.05, hence we can say that there is a significant relationship between our independent variable i.e. DE and DER and dependent variable GP.

This analysis is used to study the impact of CS on FP of the selected companies for the study. To study the impact, four models were created by; researchers and results are summarized as in table 2.

Table 4 shows coefficients results. As indicated, the beta value is 0.963 and -0.777 for DER and DR respectively, which means that the change in independent variables i.e. DER by one unit will bring about the change in the dependent variable i.e. GP by 0.963 units and change in

independent variables i.e. DR by one unit will bring about the change in the dependent variable i.e. GP by -0.777 units. Furthermore, the beta value is positive in DER which indicates the positive relationship between DER and GP and negative in DR which indicates negative relationship between DR and GP. Or in other words, we say that when DER increases by one unit, the GP will also increase by 0.963 units and if DR increases by one unit, then it will reduce the GP by -0.777 units.

Table 5 depicts R-square value as 0.351, which means that our independent variable i.e. DR and DER causes 35.1% changes in the dependent variable i.e. NP. In table 6, ANNOVA result depicts that p-value is 0.009 which is less that 0.05, hence we can say that there is a significant relationship between our independent variable i.e. DE and DER and dependent variable NP.

Table 7 shows coefficients results. As indicated, the beta value is 1.121 and -0.862 for DER and DR respectively which means that the change in independent variables i.e. DER by one unit will bring about the change in the dependent variable i.e. NP by 1.121 units and change in independent variables i.e. DR by one unit will bring about the change in the dependent variable i.e. NP by -0.862 units.

Table 1
Matrix: Correlation CS and FP

		GP	NP	DER	DR	EPS	ROE
GP	Pearson Correlation	1	.907**	.300	.045	.717**	-.492*
	Sig. (2-tailed)		.000	.145	.832	.000	.012
NP	Pearson Correlation	.907**	1	.386	.094	.880**	-.511**
	Sig. (2-tailed)	.000		.057	.655	.000	.009
DER	Pearson Correlation	.300	.386	1	.853**	.044	-.582**
	Sig. (2-tailed)	.145	.057		.000	.836	.002
DR	Pearson Correlation	.045	.094	.853**	1	-.259	-.166
	Sig. (2-tailed)	.832	.655	.000		.212	.428
EPS	Pearson Correlation	.717**	.880**	.044	-.259	1	-.298
	Sig. (2-tailed)	.000	.000	.836	.212		.148
ROE	Pearson Correlation	-.492*	-.511**	-.582**	-.166	-.298	1
	Sig. (2-tailed)	.012	.009	.002	.428	.148	

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed)

Table 2
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.505[a]	.255	.187	42245.05000	.255	3.756	2	22	.039	.488

a. Predictors: (Constant), DR, DER
b. Dependent Variable: GP

Table 3
ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13407112659.570	2	6703556329.785	3.756	.039[b]
	Residual	39262173489.241	22	1784644249.511		
	Total	52669286148.811	24			

a. Dependent Variable: GP
b. Predictors: (Constant), DR, DER

Table 4
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	90764.952	26216.682		3.462	.002		
	DER	94702.998	34688.252	.963	2.730	.012	.272	3.671
	DR	-153011.212	69484.031	-.777	-2.202	.038	.272	3.671

a. Dependent Variable: GP

Table 5
Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.593[a]	.351	.292	12411.76694	.351	5.953	2	22	.009	.511

a. Predictors: (Constant), DR, DER
b. Dependent Variable: NP

Table 6
ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1834088692.497	2	917044346.249	5.953	.009[b]
	Residual	3389143086.497	22	154051958.477		
	Total	5223231778.994	24			
a. Dependent Variable: NP						
b. Predictors: (Constant), DR, DER						

a. Dependent Variable: NP
b. Predictors: (Constant), DR, DER

Table 7
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	33462.794	7702.567		4.344	.000		
	DER	34719.604	10191.549	1.121	3.407	.003	.272	3.671
	DR	-53488.349	20414.690	-.862	-2.620	.016	.272	3.671

a. Dependent Variable: NP

Furthermore, the beta value is positive in DER which indicates the positive relationship between DER and NP and negative in DR which indicates negative relationship between DR and NP. Or in other words, we say that when DER increases by one unit, the NP will also increase by 1.121 units and if DR increases by one unit, it will reduce the NP by -0.862 units.

Table 8 depicts R-square value as 0.324 which means that our independent variables i.e. DR and DER cause 32.4% changes in the dependent variable i.e. EPS. In table 9, ANNOVA result depicts that p-value is 0.014 which is less that 0.05, hence we can say that there is a significant relationship between our independent variable i.e. DE and DER and dependent variable EPS.

Table 10 shows coefficients results. As indicated, that the beta value is 0.971 and -1.087 for DER and DR respectively which means that the change in independent variables i.e. DER by one unit will bring about the change in the dependent variable i.e. EPS by 0.971 units and change in independent variables i.e. DR by one unit will bring about the change in the dependent variable i.e. EPS by -1.087 units.

Furthermore, the beta value is positive in DER which indicates the positive relationship between DER and EPS and negative in DR which indicates negative relationship between DR and EPS. Or in other words, we say that when DER increases by one unit the EPS will also increase by 0.971 units and if DR increases by one unit, it will reduce the EPS by -1.087 units.

Table 11 depicts R-square value as 0.715, which means that our independent variables i.e. DR and DER cause 71.5% changes in the dependent variable i.e. ROE. In table 12, ANNOVA result depicts that p-value is 0.000 which is less that 0.05, hence we can say that there is a significant relationship between our independent variable i.e. DE and DER and dependent variable ROE.

Table 8
Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.569[a]	.324	.262	19.09743	.324	5.265	2	22	.014	.598

a. Predictors: (Constant), DR, DER
b. Dependent Variable: EPS

Table 9
ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3840.517	2	1920.259	5.265	.014[b]
	Residual	8023.658	22	364.712		
	Total	11864.175	24			
b. Predictors: (Constant), DR, DER						

a. Dependent Variable: EPS
b. Predictors: (Constant), DR, DER

Table 10
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	81.251	11.852		6.856	.000		
	DER	45.317	15.681	.971	2.890	.009	.272	3.671
	DR	-101.630	31.411	-1.087	-3.235	.004	.272	3.671

a. Dependent Variable: EPS

Table 11
Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.860[a]	.739	.715	12.46603	.739	31.122	2	22	.000	1.046

a. Predictors: (Constant), DR, DER
b. Dependent Variable: ROE

Table 12
ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	9672.685	2	4836.343	31.122	.000[b]
	Residual	3418.839	22	155.402		
	Total	13091.525	24			

a. Dependent Variable: ROE
b. Predictors: (Constant), DR, DER

Table 13
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.717	7.736		.351	.729		
	DER	-79.238	10.236	-1.616	-7.741	.000	.272	3.671
	DR	119.096	20.504	1.213	5.808	.000	.272	3.671

a. Dependent Variable: ROE

Table 14
Model 1, 2, 3 and 4: Summary Predictor of FP.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
GP	.505[a]	.255	.187	42245.05000	.255	3.756	2	22	.039	.488
NP	.593[a]	.351	.292	12411.76694	.351	5.953	2	22	.009	.511
EPS	.569[a]	.324	.262	19.09743	.324	5.265	2	22	.014	.598
ROE	.860[a]	.739	.715	12.46603	.739	31.122	2	22	.000	1.046

Table 13 shows coefficients results. As indicated, the beta value is -1.616 and 1.213 for DER and DR respectively which means that the change in independent variables i.e. DR by one unit will bring about the change in the dependent variable i.e. ROE by 1.213 units and change in independent variables i.e. DER by one unit will bring about the change in the dependent variable i.e. ROE by -7.741 units. Furthermore, the beta value is positive in DR which indicates the positive relationship between DR and ROE and negative in DER which indicates negative relationship between DER and ROE. Or in other words, we say that when DR increases by one unit, the ROE will also increase by 1.213 units and if DER increases by one unit, it will reduce the EPS by -1.616 units.

The measurement of the two variables i.e. DR and DER in the above table depicts the ability to predict FP (R square = 0.225, 0.351, 0.324 and 0.739 respectively). R square value of GP, NP, ESP and ROE ratios represents that 25.5%, 35.1%, 32.4% and 73.9% experimental deviation in the financial performance in table 2 can be elucidated by the variations in two independent variables that is DR and DER ratio respectively.

The outstanding 74.5%, 64.9%, 67.6% and 26.1% are not expounded because the remnant part of the variable in financial performance is related to other variables which are not shown in this model.

A visitation of the model review in annexation with ANOVA (F-Value) alludes that the model deciphers the most possible annexation of predictor variable that could bestow to the relationship with the dependent variables. For model 3, the F value is 31.22 and the P value is 0.00 which is statistically significant at 5% levels. The complete model in this research depicts that the F Value is significant in respect to their resultant P value. In spite of all these variables, there are umpteenth others variables which can also have an important efficacy on the financial performance and all these umpteenth variables should also need to be investigated.

Conclusion

This research is based on the listed companies of NSC and examined the capital structure and financial performance. The analysis of companies listed in NSC depicts that debt ratio is negatively correlated with EPS and ROE but shows significant relationship with GP and NP. It means that there is a positive correlation with financial performance. In the same way. DER is positively correlated with all the financial performance measures GP, NP and EPS except ROE.

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