FACTORS AFFECTING TO FINANCIAL LEVERAGE

❑ **Mukesh Kumar Verma***
Shurveer S. Bhanawat**

ABSTRACT

The present research paper aims to identify factors affecting to financial leverage. In order to achieve the objective five Indian industries viz. consumer food, textiles, cement, pharmaceutical and oil & gas were taken as sample and ten companies from each industry were chosen as sample size. Five years financial results of the sample companies were used. Factors were primarily identified through extensive review of literature and then factor analysis technique has been used. Total 30 variables were identified and then factor analysis was done. Apart from review of literature six factors viz. Profitability and Financial Position, Productivity of Shares, Productivity of Capital Employed, Taxation, WACC and Cost of Debt were derived from factor analysis.

Keywords : Financial leverage, factor analysis.

INTRODUCTION

Financial leverage (FL) means the use of borrowed funds to finance the purchase of assets. It is also termed as trading on equity as use of borrowed funds facilitates the increase in returns to shareholders. The use of debt funds leads to an obligation of fixed charges on the firm. The other important characteristic of debt fund is tax deductibility. Thus, deduction of interest expenses for computation of taxable income lowers the tax liability and increases the profits left for equity shareholders. In initial stages of life, large amount of debt may expose the company to greater financial risk as the payment of interest would be difficult in case of unfavourable changes in profits. But as the company gains stability, use of debt funds can significantly increase earnings per share. Thus, use of financial leverage at various stages of business operation may have significant influence on earnings per share.

OBJECTIVE OF THE STUDY- The present study has following objective:

1. To identify the factors affecting to financial leverage.

Research Hypotheses

Following hypothesis has been proposed :

H_0: There is no significant correlation among selected variables.

RESEARCH METHODOLOGY

The present research has been carried out in Indian corporate sector by selecting 50 companies from five industries.

Sample industries : Consumer Food, Textiles, Cement, Pharmaceuticals and Oil & Gas

Sample Size : 50 (10 companies from each industry)

Period of the study : 5 years (from 2013-14 to 2017-18)

Data : various financial data and ratios as secondary data

Source of Data : Annual reports of selected companies and ACE Equity Software

Statistical Tools : To analyze the data, correlation, KMO and Bartlett's test and factor analysis have been used on SPSS.

FACTORS AFFECTING TO FINANCIAL LEVERAGE

To achieve the objective of the present research work various factors have been identified through review

*Assistant Professor - Department of ABST, University of Rajasthan, Jaipur (Raj.)
**Professor - Department of ABST, Mohanlal Sukhadia University, Udaipur (Raj.)

of literature and factor analysis which determine the degree of financial leverage in the firm's capital structure.

1. **Profitability :** Frank and Goyal (2003)found that to offset corporate taxes, the profitable companies should be used more debt. Gaud, Jani, Hoesli and Bender (2005)carried out an empirical study and stated that the trade-off theory works in analyzing the capital structure of selected Swiss companies.

2. **Firm Size :** Firms of larger size have diversified in terms of products and their business operations. This makes them less vulnerable to insolvency and hence more attractive to issue debentures or bonds. These companies have easy access to debt market. Thus larger the size of the firm, higher may be the leverage. Jaggi and Gul (1999) found evidences for the same.

3. **Industry Leverage :** Lemmon et al., (2008)argued that industries' leverage ratios significantly vary. Frank and Goyal (2009) stated that to make leverage decisions, average leverage of the industry is used by the companies.

4. **Interest Rates :** Prevailing interest rates in the market also influence the leverage in a company. The higher the interest rates the lower will be the leverage. Bancel and Mittoo (2004)conducted a sample survey of sixteen European Countries' managers and found that the market undervalues equity of the form or when interest rate is low, then managers issue debt. Findings also suggested that that managers use opportunity windows to elevate capital.

5. **Liquidity :** Profitability is not alone sufficient to increase leverage, liquidity is equally important. If a company earns sufficient profits but faces liquidity crunch, then it will face problems in meeting debt service obligations. Therefore it will tend to keep the leverage low.

6. **Operating Leverage (OL) :** Companies which have low operating leverage might have room for higher financial leverage. When return on capital employed is higher, financial leverage can be kept high and operating leverage should be kept low. Thus,OL and FL has inverse relationship.

7. **Stability of company :** If a company has stable sales and business operations, it will more likely to use debt than those companies which do not have stability in sales and business operations. Stability leads to better earnings, liquidity and better asset backing. All these forces encourage the company to use leveraged funds.

8. **Business Growth :** Frank and Goyal (2003) stated that firms having high growth opportunities, to grab such opportunities, keep its debt level as low. Bhaduri (2002)found that a firm's future growth and long-term debt are negatively associated and suggested that to avoid agency problems, growing firms can use short-term debt in place of long-term debt.

9. **Tax Rates :** Graham (1996) found that companies which have option-related tax advantagesincline to issue equity. He also concluded that the size of tax benefits when option is exercised and debt ratios were negatively correlated. In the capital structure, use of debt is more fruitful when tax rates are higher. Pittman (2002)evidently found that a new firm at an earlier stage in its development relies less on debt tax shields and more on equity tax shields.

10. **Operating Risk :** People, process and system of the firm creates operating risk. If company faces higher operating risk it leads to fluctuating earnings. These companies have to struggle a lot to provide for their fixed expenses. Hence high operating risk bearing companies have low leverage ratio and vice versa.

11. **Cost of Equity (K_e) :** It is quite apparent that ifK_e>K_d, then companies will more likely to use debt in place of equity and vice-versa. Since the company has two basic source of finance – equity and debt, the cost of one source will definitely affect the demand of other source.

12. **Tangible Assets :** Companies which have larger proportion of tangible assets in total assets, have sufficient access for loan as these assets can be pledged as security. Therefore,such firms will tend to have higher leverage. Rajan and Zingales

(1995), suggested that if a firm has a large fraction of assets as tangible, then leverage will be higher. These assets are used as collateral and diminish the lender risk suffering the agency cost of debt.

13. **Change in Control :** Desire of management and existing shareholders to dilute the ownership has major implications for level of financial leverage. If ownership is not desirable to be diluted, company will rely on debt funds and financial leverage will be higher and vice versa.

14. **Regulatory Framework :** Rivaud-Danset et al. (1998)suggested that the regulations of bankruptcy, a country's accounting and financial practices and relationship between bank and firm determine the capital structure of the firm.

15. **Interest Coverage Ratio :** The higher the interest coverage ratio, the lower is the risk of bankruptcy and lower is the debt burden on the company. All these will lead to a better credit rating and lowers the cost of capital. Thus the company can take more debt and increase its financial leverage. Reverse is the effect in case of lower interest coverage ratio.

16. **Inflation Rate :** Inflation in a country increases the market value of equity shares as well as increases the requirement of cash to meet day to day expenses. Thus inflation increases the value of equity of a company and reduces liquidity position of the company. Thus it will be motivated to use less debt, thereby reducing financial leverage.

Factor Analysis

For exploring factors affecting leverage, first of all several variables were identified based on review of literature. A preliminary correlation analysis was done to filter out those variables which did not have any significant correlation with financial leverage. Initially KMO and Barlett's test was run to find sample adequacy. KMO (Kaiser-Meyer-Olkin) statistic measures variance in the data set that might have caused by underlying factors. The higher the value the better it is; still a value greater than 0.60 is considered appropriate. On the other hand, Bartlett's test of sphericity is applied to test the null hypothesis of no significant correlations among variables.

Table 1: Result of KMO and Bartlett's Test

KMO Measure of Sampling Adequacy.		**.880**
Bartlett's Test of Sphericity	Chi-Square (Approx.)	25656.896
	Df	435
	Sig.	**.000**

(Source: Own Computation from SPSS Output)

Table 1 shows the results of KMO and Bartlett's Test and it is found the KMO value is 0.880 which is greater than 0.60. This shows that the data is appropriate for factor analysis. Bartlett's Test statistic is 25656.9 with a p value of 0.00. Thus, null hypothesis of no significant correlations is rejected at 5% level of significance.

Communalities

Table 2 : Communalities

Variables	**Initial**	**Extraction**
PBIDT	1.000	.980
PBIT	1.000	.988

PBT	1.000	.975
PAT	1.000	.975
Cash Profit	1.000	.978
Equity Paid Up	1.000	.865
Reserves and Surplus	1.000	.971
Net Worth	1.000	.973
Total Debt	1.000	.911
Capital Employed	1.000	.979
Total Current Liabilities	1.000	.906
Total Assets	1.000	.986
ROCE	1.000	.798
RONW	1.000	.928
Close Price Unit	1.000	.905
Price Book Valuex	1.000	.902
Equity Dividend	1.000	.743
Enterprise Value	1.000	.957
Dividend Yield	1.000	.814
Number of Equity Shares Paid Up	1.000	.778
Book Value	1.000	.923
Net Sales	1.000	.771
Total Liabilities	1.000	.986
Earnings Per Share	1.000	.935
DPS	1.000	.831
Tax Rate	1.000	.615
ROA	1.000	.776
ROE	1.000	.480
KD	1.000	.820
WACC	1.000	.677

(Source: Own Computation from SPSS Output)

Total Variance Explained

Table 3: Total Variance Explained

Component	Initial Eigen Values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% Of Variance	Cum. %	Total	% Of Variance	Cum. %	Total	% Of Variance	Cum. %
1	15.771	52.568	52.568	15.771	52.568	52.568	15.546	51.821	51.821
2	3.952	13.173	65.742	3.952	13.173	65.742	3.667	12.225	64.045
3	2.488	8.294	74.035	2.488	8.294	74.035	2.540	8.466	72.511
4	1.463	4.876	78.911	1.463	4.876	78.911	1.762	5.873	78.384
5	1.192	3.973	82.884	1.192	3.973	82.884	1.333	4.445	82.828
6	1.062	3.541	86.425	1.062	3.541	86.425	1.079	3.596	86.425

(Source: Own Computation from SPSS Output)

Table 3 shows the total variance explained by factor analysis. After extraction and rotation (varimax), it is found that in all, these six factors could explain 86.425% variance in the data set.

Rotated Component Matrix

Table 4 : Rotated Component Matrix

Factors	Variables	Component					
		1	2	3	4	5	6
Factor 1	Total Assets	.991					
	Total Liabilities	.991					
	PBIT	.986					
	Capital Employed	.986					
	Net Worth	.985					
	Reserves and Surplus	.984					
	Cash Profit	.983					
	PAT	.983					
	PBIDT	.982					
	PBT	.980					
Factor 2	Earnings Per Share		.945				
	Close Price Unit		.940				
	Book Value		.932				
Factor 3	RONW			.938			
	ROA			.846			
	ROCE			.729			
Factor 4	Tax Rate				.707		
Factor 5	WACC					.807	
Factor 6	KD						.894

(Source: Own Computation from SPSS Output)

Table 4 displays the rotated component matrix. This matrix shows the variables classified into six factors to which they are highly correlated. For first factor, those variables were removed whose value was less than 0.980; for second factor, those variables were removed whose value was less than 0.930; for third factor, those variables were removed whose value was less than 0.720 and for fifth factor, those variables were removed whose value was less than 0.80.

Naming of Factors

Six factors have been identified through administered factor analysis. These factors have been clubbed in a particular heading. As per the nature of financial variables covered in each factor has to give a particular name. Table 5 shows the naming of factors-

Table 5: Naming of Factors

S.No.	Factor Number	Name of Factor
1	Factor 1	Profitability and Financial Position
2	Factor 2	Productivity of Shares
3	Factor 3	Productivity of Capital Employed
4	Factor 4	Taxation
5	Factor 5	Weighted Average Cost of Capital (WACC)
6	Factor 6	Cost of Debt (K_d)

(Source: Own Work)

CONCLUSION

The present paper attempts to identify the factors affecting to financial leverage. The study was carried out in Indian corporate sector by selecting fifty companies from five industries and by using five years financial data of these companies. An extensive review of literature was done to identify the factors and then thirty variables have been chosen which have significant correlation with financial leverage. Apart from factors identified through ROL, the present study finds Profitability and Financial Position, Productivity of Shares, Productivity of Capital Employed, Taxation, WACC and Cost of Debt as factors affecting to financial leverage through administered factor analysis.

References :

• Frank, Murray Z.; Goyal, Vidhan K. (2003). Testing the pecking order theory of capital structure. *Journal of Financial Economics*, 67 (2), 217.

• Gaud Philippe, Elion Jani, Martin Hoesli and Andre´ Bender (2005). The capital structure of Swiss companies: An empirical analysis using dynamic panel data. *European Financial Management*, 11 (1), 51–69.

• Jaggi, Bikki and Ferdinand A. Gul (1999). An analysis of joint effects of investment opportunity set, free cash flows and size on corporate debt policy. *Review of Quantitative Finance and Accounting*, 12 (4), 371-381.

• Lemmon, M. L., Roberts, M. R. &Zender, J. F. (2008). Back to the beginning: Persistence and the cross-section of corporate structure. *The Journal of Finance,* 63 (4), 1575-1608.

• Bancel, Franck; Mittoo, Usha R.(2004). Cross-country determinants of capital structure choice: A survey of European Firms. *Financial Management*, 33 (4), 103-132.

- Bhaduri, Saumitra N. (2002). Determinants of corporate borrowing: Some evidence from the Indian corporate structure. Journal of Economics and Finance, 26 (2), 200-216.
- Graham, J. R., (1996). Debt and the marginal tax rate. *Journal of Financial Economics*, 41 (1), 41-73.
- Pittman Jeffrey A. (2002). The influence of firm maturation on tax-induced financing and investment decisions. *Journal of the American Taxation Association (JATA)*, 24 (2), 35-59.
- Rajan, Raghuram G.; Zingales, Luigi. (1995). What do we know about capital structure? Some evidence from international data. *Journal of Finance*, 50 (5), 1421-1460.
- Rivaud-Danset, Dorothe, Dubocage, Emmanuelle and Salais, Robert, (1998). Comparison between the financial structure of SME versus large enterprise using the BACH database. Working Paper Series.

□ □ □