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**REVIEW OF LITERATURE** 

NEED/IMPORTANCE OF THE STUDY

STATEMENT OF THE PROBLEM

**OBJECTIVES** 

**HYPOTHESES** 

**RESEARCH METHODOLOGY** 

**RESULTS & DISCUSSION** 

INDINGS

RECOMMENDATIONS/SUGGESTIONS

CONCLUSIONS

SCOPE FOR FURTHER RESEARCH

ACKNOWLEDGMENTS

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#### APPENDIX/ANNEXURE

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- Use (ed.) for one editor, and (ed.s) for multiple editors.
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VI

#### DETERMINANTS OF LEVERAGE: AN EMPIRICAL STUDY ON INDIAN TEXTILE SECTOR

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#### ABSTRACT

Every firm needs funds to run and manage the business. The success of any firm depends on the effective utilization of funds procured. The principal sources of finance of a firm are owners' equity and the borrowed money. The decision on the composition of funds, otherwise, known as 'capital structure' is an essential decision, which influences the risk and return of the investors. Leverage plays an essential role in framing the capital structure. Textile is a capital intensive sector, where greater prominence has been given in constructing the capital structure. In this backdrop, the study makes an attempt to identify and analyse the determinants of leverage of Indian Textile sector. A panel data approach has been applied to analyse the data. The study reveals that the variables, namely, profitability and size are the key determinants of leverage of Indian Textile sector.

#### **KEYWORDS**

Capital structure, leverage, profitability, size.

#### INTRODUCTION

The performance and survival of a firm depend on the choice of the source of funds and its effective utilization. The decision on the composition of funds, otherwise, known as 'capital structure' is an essential decision, which influences the risk and return of the investors. The decision taken by the firms with respect to capital structure has a great impact on their success. Leverage is an indicator of relationship between owners' funds and borrowed fund. A proper mix of debt and equity would determine the path to increase the shareholder value. Firms have to analyse the factors determining the leverage before framing its capital structure. In this background, the study makes an attempt to identify and analyse the determinants of leverage of Indian textile sector for the period 1995-96 to 2009-10.

#### TEXTILE

Textile sector is one of the major sectors of the economy. It occupies a unique place in our country. It is closely linked with agricultural and rural economy. The industry consists of cotton textiles, synthetic textiles, textile processing, readymade garment and other textiles such as wool & wollen textiles, jute goods, handloom goods etc.; it has contributed 14 per cent to industrial production. 4 per cent to National GDP and10.63 per cent of country's export earnings. It has provided direct employment to over 35 million people. The sector has earned foreign exchange of US\$ 10.32 billion in the year 2011. India has the potential to increase its textile and apparel share in the world trade from 4.5 per cent to 8 per cent. The sector has grown at 3-4 per cent during the last six decades.

#### **REVIEW OF LITERATURE**

Mehdi Janbaz (2010) has conducted a study on "Capital Structure decisions in the **Iranian** corporate sector". He has examined the determinants of capital structure and their influence on capital structure. A sample of 70 companies for the year 2006-2007 has been taken from Tehran Stock Exchange. He has employed statistical techniques such as descriptive statistics, Pearson correlation and multiple regression analysis to analyse the data. He has taken leverage as a dependent variable and the independent variables, such as, profitability, asset tangibility, growth, firm size, tax provision, liquidity and agency conflict. The correlation result has shown that the tangibility, growth, firm size, tax and agency conflict have a positive correlation with leverage. The variables, viz., profitability and liquidity are negatively correlated with the leverage ratio. The regression result has revealed that all factors have a positive impact on leverage except the variables, namely, profitability and liquidity. The study has concluded that the Pecking order theory has more predictions on decision making in the Iranian corporate capital structure.

Sumikhare and Saima Rizyi (2011) have conducted a study on "Factors affecting the capital structure of BSE-100 Indian firms: A panel data analysis". The objectives of the study are to examine the variables that impact debt-equity choice of a company and they have also identified which of the two theories, namely, trade off or pecking order is suitable for the Indian firms. The data have been collected for 69 firms from BSE 100 index. The study has covered a period of 10 years from 2000-2009. They have taken leverage as a dependent variable and the independent variables, such as, tangibility, size, depreciation to total assets, depreciation over operating profit, profit margin on sales, return on assets and growth opportunities. They have applied panel data model to analyse the data. A random effect model has been fitted to panel data analysis. The result has shown that the variables, namely, profitability, return on asset and profit margin on sales are found to be significant. The result has supported the pecking order theory.

#### FRAMEWORK OF THE STUDY

The dependent variables taken to represent the leverage are Long term debt ratio, Short term debt ratio and Total debt to asset ratio.

Dependent Variables	Formulae
Long term debt ratio (LTD)	Long term debt / Total assets
Short term debt ratio (STD)	Short term debt / Total assets
Total debt to total asset ratio (TDTA)	Total debt / Total assets

#### DETERMINANTS OF LEVERAGE

Leverage depends on many factors, both internal and external. The following variables have been considered to study the determination of the leverage.

Independent Variables	
Profitability	PBIT net of P&E / Total assets
Size	Natural logarthim of total assets
Tangibility	Net fixed assets / Total assets
Non debt tax shield (NDTS)	Depreciation + Amortization / Total assets
Growth	Growth rate in total assets
Business Risk (BR)	Standard deviation of PBIT net of P&E
Liquidty	Current assets / Current liabilities and provision
Free cash flow to total assets (FCFTA)	PAT net of P&E + depreciation /Total assets
Cost of borrowing (COB)	Interest paid / Total Borrowing
Tax rate (TR)	PAT net of P&E
	1
	PBT net of P&E

#### THEORIES OF CAPITAL STRUCTURE

The capital structure is one of the most important debatable issues in the field of finance. The Modigliani and Miller (1958) have made the first attempt to explain the relationship between capital structure and the firm value. The capital structure has been revisited by many theories, such as, pecking order theory, static trade off theory, agency theory and signaling theory.

#### SIGNALING THEORY

The Signaling Theory has been originally developed by Leland and Pyle (1976) and Rose (1977). According to Leland and Pyle the value of a company is positively correlated with the managerial ownership and each change noticed on the level of the managerial ownership results in a modification in the financial policy followed by a new value of the company. He has argued that the higher is the managerial ownership in the capital of the company, the larger is the debt capacity. Such strong ownership is highly recognized by the bond holders and signals confidence in the future investments.

According to Rose (1977), the managers have been informed about the company's profitability than external investors. They know the true distribution of the company returns, but investors do not. He has argued that higher financial leverage can be used by the managers to signal an optimistic future of the company since the debt is a contractual obligation to repay both principal and interest. He has stressed that the usage of more debt in the capital structure is a good signal of the managers' optimism about their companies.

#### STATIC-TRADE OFF THEORY

According to Static trade off model, the tax benefit – bankruptcy cost trade off models have predicted that companies seek to maintain an optimal capital structure by balancing the benefits and the costs of debt (DeAngelo and Masulis, 1980). The benefits include the tax shield whereas the costs include expected financial distress costs. This theory has predicted that companies maintain an optimum capital structure where the marginal benefit of debt equals the marginal cost. The implication of the trade-off model is that companies have target leverage and they adjust their leverage towards the target over time.

#### **OBJECTIVE OF THE STUDY**

To identify and to analyse the determinants of leverage of Indian Textile sector

#### HYPOTHESIS

- The following null hypothesis has been framed for the purpose of the study:
- Leverage is an independent function

#### **RESEARCH METHODOLOGY**

#### SAMPLE AND SAMPLING DESIGN

A sample of 50 firms, which have been listed at both BSE and NSE stock exchange by applying purposive sampling technique have been taken for the study. The data has been collected from PROWESS 3.1 version maintained by Centre for Monitoring Indian Economy Pvt Ltd. The study has covered a period of 15 financial years from post-liberalisation era, namely, 1995 -1996 to 2009- 2010.

#### TOOLS FOR ANALYSIS

Panel data set has both cross section dimension and time series dimension. In particular, the same cross-sectional units (e.g. individuals, companies, firms, cities, states) are observed over time. It is different from the Pooled OLS ie., pooling independent cross sections across time. Two main models, viz., Fixed Effect Model (FE) and Random Effect model (RE) are available for panel data. All the three models (pooled OLS, FE and RE) have been applied in the study and further, two tests have been carried out to decide the appropriateness of these three models. Initially, the Lagrange multiplier (LM) test has been applied to find the existence of panel effect in the values. The classical model (Pooled OLS) and the RE model are compared and when there is no panel effect, the pooled OLS will be chosen for further analysis. Otherwise, the RE model will be chosen for the next step of application. As a second step, the RE model is compared with FE model using Hausman Specification test and the appropriate model is chosen for further analysis based on the significance of the chi-square value.

#### **RESULTS AND DISCUSSIONS**

#### LONG TERM DEBT RATIO

The following null hypothesis has been framed to find whether the selected variables have a significant influence on long term debt ratio: H<sub>a</sub>. "The variables, namely, profitability, size, tangibility, NDTS, growth, BR, liquidity, FCFTA, COB and TR do not have a significant influence on LTD ratio"

#### VOLUME NO. 3 (2013), ISSUE NO. 07 (JULY)

TABLE 1 - LTD -POOLED OLS AND PANEL DATA REGRESSION-TEXTILE										
	Pooled OLS			Fixed Effect			Random Effect			
	В	Т	Sig.	В	t-value	Sig.	В	z-value	Sig.	
(Constant)	-0.0375900	-1.100	NS	1597836	-3.23	**	1108109	-2.46	*	
Profitability	1.5800000	7.757	**	1.191906	6.24	**	1.225477	6.51	**	
Size	0.0103200	1.926	NS	.0570876	7.00	**	.0397294	5.58	**	
Tangibility	0.4830000	15.608	**	.2868573	7.49	**	.3692103	10.36	**	
NDTS	1.6010000	5.162	**	.3405722	1.09	NS	.5351249	1.75	NS	
Growth	0.0000989	4.625	**	.0000451	2.30	*	.000053	2.71	**	
<b>Business Risk</b>	-0.0006117	-2.732	**	0002956	-1.71	NS	0003218	-1.81	NS	
Liquidity	-0.0008997	-1.170	NS	0000767	-0.10	NS	0004035	-0.51	NS	
FCFTA	-1.9090000	-8.400	**	-1.388303	-6.61	**	-1.461604	-7.02	**	
СОВ	-0.0440600	-6.172	**	0269886	-4.46	**	0312894	-5.11	**	
TR	-0.0001287	053	NS	.0000814	0.05	NS	.0000391	0.02	NS	
R <sup>2</sup>	.550			0.3572			0.3433			
F-statistic	68.243		**	28.54		**				
Wald (χ2)							362.33		**	
Hausman (χ2)				51.42		**				
LM (χ2)							581.73		**	

Source: Computed

\* significant at 5 per cent level \*\* significant at 1 per cent level

It is observed from the table 1 that the sign of the regression coefficients have been the same in all the three models for all the independent variables, except the variable, tax rate. The R<sup>2</sup> values have shown a high correlation in the pooled OLS model and a moderate correlation has existed in the FE model and the RE model. The F-value and Wald chi-square have shown a significant value at one per cent level indicating the existence of significant correlation between the selected independent variables and the long term debt ratio.

The LM test has revealed that the chi-square value (581.73) is significant at one per cent level implying that the RE model has been considered instead of the pooled OLS model.

The **Hausman test** has revealed that the value of chi-square (51.42) is significant at one per cent level indicating that the FE model has been more effective than the RE model. In all the three models applied, the **FE model** has been taken for further analysis.

The **FE model** has revealed that the variables, namely, profitability, size, tangibility and growth have a significant positive influence on LTD ratio and the variables, namely, free cash flow to total assets and cost of borrowing have a significant negative influence on LTD ratio. Hence, the null hypothesis has been rejected for these variables.

The rest of the variables, namely, NDTS, BR, liquidity and TR have not had a significant influence on LTD ratio. Hence, the null hypothesis has been accepted for these variables.

To conclude, Profitability, size, tangibility, growth, FCFTA and COB have influenced the leverage (LTD ratio) of the Textile sector during the study period. SHORT TERM DEBT RATIO

The following null hypothesis has been framed to find whether the selected variables have a significant influence on short term debt ratio:

 $H_{0.}$  "The variables, namely, profitability, size, tangibility, NDTS, growth, BR, liquidity, FCFTA, COB and TR do not have a significant influence on short term debt ratio"

Pooled OLS Fixed Effect Random Effect В Sig. В t-value Sig. В z-value Sig. \*\* \*\* (Constant) 0.53400000 17.265 .3072807 5.91 .4179814 9.80 \*\* Profitability 0.71900000 2.27 2.55 3.901 .4559612 .4829689 \*\* -0.01334000 -2.750 .0229049 2.67 \*\* Size .0037645 0.56 NS \*\* \*\* \*\* Tangibility -0.33600000 -11.990 -.3540338 -8.80 -.3332544 -9.60 \*\* \*\* \*\* NDTS 1.35900000 4.836 1.524152 4.63 1.353482 4.43 Growth -0.00000846 NS -.0000404-1.96 -.0000259 NS -.437 -1.31 BR -0.00011950 -.589 NS -.0000834 -0.46 NS -.0000917 -0.50 NS Liquidity -0.00764100 -10.971\*\* .0034588 -4.10 \*\* -.0048399 -6.17 \*\* \*\* \*\* \*\* FCFTA -1.29100000-6.275 -.7444473 -3.37 -.853761 -4.07 \*\* \*\* \*\* 0.02622000 4.056 .016462 2.59 .0187374 3.01 COB

.0026293

0.1864

11.77

31.37

Source: Computed

1.43

NS

\*\*

.0026949

0.1759

173.86

279.41

1.45

NS

\*\*

\*\*

TABLE 2 - STD - POOLED OLS AND PANEL DATA REGRESSION-TEXTILE

\* significant at 5 per cent level \*\* significant at 1 per cent level

TR

R<sup>2</sup>

F-statistic

Wald ( $\chi 2$ )

LM (χ2)

Hausman ( $\chi 2$ )

0.00205400

.398

36.942

.943

NS

It is discernible from the table 2 that the regression co-efficient signs have been similar for all the independent variables, in all the three models, except for the variable - size in the pooled OLS model. The  $R^2$  values have revealed a low correlation between the selected independent variables and the STD ratio in the FE model and the RE model. A moderate correlation has been found in the pooled OLS model. The F value and Wald-chi square have shown significant values in all the three models.

The LM test has exhibited that the chi-square value (279.41) is significant at one per cent level revealing the existence of panel effect; thereby, the RE model is found effective.

The result of **Hausman specification test** shows that the chi-square value (31.37) is significant at one per cent level revealing that the FE model is effective, in comparison to the RE model. In all the three models applied, the **FE model** has been taken for further analysis of the determinants of leverage.

The **FE model** has expressed that the variables, namely, profitability, size, NDTS and the COB have a significant positive influence on STD ratio. The ratios, such as, tangibility, growth, liquidity and FCFTA have a significant negative influence on STD ratio. Hence, the null hypothesis has been rejected in respect of these variables.

The rest of the variables, namely, BR and TR have not had a significant influence on STD ratio. Hence, the null hypothesis has been accepted in respect of these variables.

In general, it is inferred that in the Textile sector, the factors, namely, **profitability**, size, NDTS, COB, tangibility, growth, liquidity and FCFTA have influenced the leverage (short term debt ratio) during the study period.

#### TOTAL DEBT TO TOTAL ASSET RATIO

The following null hypothesis has been framed to find whether the selected variables have a significant influence on total debt to total asset ratio:

H<sub>o</sub>: "The independent variables, namely, profitability, size, tangibility, NDTS, growth, BR, liquidity, FCFTA, COB and TR do not have a significant influence on TDTA ratio"

TABLE 3 - TDTA - POOLED OLS AND PANEL DATA REGRESSION-TEXTILE										
	Pooled OLS			Fixed Effect			Random Effect			
	В	t	Sig.	В	t-value	Sig.	В	z-value	Sig.	
(Constant)	0.497000	12.774	**	.1474971	2.87	**	.2624824	5.35	**	
Profitability	2.299000	9.921	**	1.647867	8.31	**	1.678574	8.31	**	
Size	-0.003023	496	NS	.0799925	9.45	**	.0517736	6.70	**	
Tangibility	0.147000	4.173	**	0671764	-1.69	NS	.02269	0.59	NS	
NDTS	2.960000	8.385	**	1.864724	5.74	**	1.916936	5.84	**	
Growth	0.000090	3.717	**	0.00000470	0.23	NS	.0000208	0.99	NS	
BR	-0.000731	-2.870	**	000379	-2.11	*	0004063	-2.14	*	
Liquidity	-0.008540	-9.759	**	0035355	-4.24	**	0046288	-5.48	**	
FCFTA	-3.200000	-12.375	**	-2.132751	-9.78	**	-2.247937	-10.07	**	
СОВ	-0.017840	-2.196	*	0105266	-1.68	NS	01315	-2.01	*	
TR	0.001926	.703	NS	.0027107	1.50	NS	.0027236	1.42	NS	
R <sup>2</sup>	.473			0.3193			0.2953			
F-statistic	50.134		**	24.09		**				
Wald ( $\chi 2$ )							256.54		**	
Hausman(χ2)				81.38		**				
LM (χ2)							629.21		**	

#### Source : Computed

\* significant at 5 per cent level \*\* significant at 1 per cent level.

It is observed from the table 3 that the signs of the regression coefficients have been the same for all the variables both in the FE and RE models, except for the variable, tangibility. The R<sup>2</sup> values have revealed a moderate correlation between the selected independent variables and the TDTA ratio. The F value and chi-square values have shown a significant correlation between the selected independent variables and the TDTA ratio.

The result of LM test has revealed that the chi-square value (629.21) is significant at one per cent level implying that the RE model is considered better than the pooled OLS model.

Nevertheless, the result of **Hausman specification test** has revealed that the chi-square value (81.38) is significant at one per cent level implying that the FE model is more effective than the RE model. Among all the three models applied, the **FE model** serves as an appropriate model for further analysis.

The FE model has displayed that the variables, namely, profitability, size and NDTS have a significant positive influence on TDTA ratio.

The variables, namely, BR, liquidity and FCFTA have a significant negative influence on TDTA ratio. Hence, the null hypothesis has been rejected for these variables. The rest of the variables, namely, tangibility, growth, COB and TR have no significant influence on TDTA ratio. Hence, the null hypothesis has been accepted for these variables.

In general, it is inferred that in the textile sector, the factors, namely, profitability, size, NDTS, BR, liquidity and FCFTA have influenced the leverage during the study period.

#### CONCLUSION

To conclude, **profitability and size** are identified as the major determinants of leverage of Indian textile sector with a positive influence. They have supported the trade off theory and signaling theory, according to which, higher profitable firms have higher debt capacity and larger firms are expected to employ greater amount of debt in their capital structure.

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