Corporate Leverage and its Impact on Profitability and Shareholder Value Creation in the Indian Textile Sector

*D. Vijayalakshmi
** Padmaja Manoharan

Abstract

Shareholder value creation has become the trait of corporate dialect. The LPG era has made a drastic change in the financing policies of the corporate firms warranting a redesign in their capital structure. Leverage plays an essential role in framing the capital structure. The focal gain of the insertion of fixed cost funds in the capital structure has a domino effect on higher profits. The textile sector is a capital intensive sector, where a greater emphasis has been given in framing the capital structure. In this backdrop, the present study made an attempt to examine the impact of leverage on profitability and shareholder value creation in the Indian textile sector for the period from 1995-96 to 2009-10. A panel data approach was applied to analyze the data. The study revealed that leverage had a significant influence on profitability, and the sector has to concentrate on enrichment of shareholders' wealth.

Keywords: **capital structure, leverage, profitability, shareholder value creation**

JEL Classification: G31, G32, G35

Paper Submission Date : February 10, 2014 ; Paper sent back for Revision : May 4, 2014 ; Paper Acceptance Date : September 29, 2014

In the wake of liberalization, privatization, and globalization, the economic policies have undergone a metamorphosis in the Indian corporate world. Industrial de-licensing, entry of private sector, multinational corporations, inflow of foreign capital, and stringent legislative control on stock market to protect investors' interest have created a competitive environment in the Indian economic scenario (Kaur & Ravi, 2008). The economic reforms have directed the firms to take all their decisions towards maximization of shareholders' wealth. Ultimately, the success of a firm is based on the wealth created for its owners, which has also emerged as the strongest demand of the investor group. A firm must generate adequate returns to its owners, compared to its opportunity cost of investment. When firms' returns exceed the opportunity cost to its owners, it is said to have created shareholder value (Sehrawat, 2009).

Generally, firms procure funds from various sources, such as primary markets, banks, financial institutions, and so forth.Long term funds are mobilized by issuing capital market instruments, such as shares, debentures, and by borrowings from financial institutions. Short term needs are financed by money market instruments, such as, bill of exchange, commercial paper, certificate of deposits, and so forth. The proportion of equity and debt plays a vital role in the capital structure decision of any firm. An appropriate capital structure has to be framed by the firm to maximize the shareholders' wealth (Tandon, 2009). In this background, the present paper attempts to examine the impact of leverage on profitability and the shareholder value creation of the textile sector for the time period from 1995-96 to 2009-10.

* *Assistant Professor,* Department of B.Com (AM), PSGR Krishnammal College For Women, Peelamedu, Coimbatore – 641 004, Tamil Nadu. E-mail : viji5681@gmail.com
** *HoD & Associate Professor (Retd.),* Department of Commerce, PSGR Krishnammal College For Women, Peelamedu, Coimbatore - 641 004, Tamil Nadu. E-mail : padmajamanoharan@gmail.com

Review of Literature

Swamy (2002) examined the measures of shareholder wealth creation and studied the impact of earnings per share, dividend per share, economic value added, market value added, brand value, return on capital employed, and return on net worth on total shareholder return of Indian industries. He took a sample of 478 companies from 10 different industries. The study covered a period of 5 years from 1995-2000. He used summary statistics, simple growth rates, and multiple regression analysis to analyze the data. The analysis revealed that most of the companies generated less economic value added, market value added, brand value, and total shareholders' return, while few companies enriched the shareholders' wealth. The study results revealed that economic value added, market value added, brand value, and total shareholders' returns are the major indicators of shareholders' enrichment.

Kamel and Eldomiaty (2009) examined the association between shareholder value and fundamental financial information. They selected a sample of 31 non-financial firms from Kompar Egypt financial year book and Egypt's stock market publications. The study covered a period of 7 years, from 1998-2004. Shareholder value was measured as firms' market to book ratio (dependent variable). The stock price was converted into stock return. The financial fundamentals : liquidity, asset efficiency, expense control, leverage, and dividend policy, were considered as independent variables. They employed the Partial Adjustment Model. The parameters of the model were estimated by the ordinary least square regression. The results revealed that the fundamental financial information is informative to shareholders.

The Textile Sector in India

The textile sector is one of the major sectors of the Indian 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 garments, and other textiles such as wool & wollen textiles, jute goods, handloom goods, and so forth. In 2010-2011, this sector contributed 14% to industrial production, 4% to the national GDP, and 10.63 % to the country's export earnings. It provided direct employment to over 35 million people. The sector 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% to 8% . The sector has grown at the rate of 3-4% during the last six decades. The share of textile exports in total exports was 11.04% during April - July 2010 (Economic Survey, 2010-2011).

The government has taken a number of initiatives to promote the textile sector. They are:

(1) On January 1, 1995, the Multi Fibre Agreement was replaced by the WTO agreement on textiles and clothing, with a commitment of a 10-year transitional process for the ultimate removal of quotas and to fully integrate the sector into WTO rules by January 1, 2005.

(2) The Technology Upgradation Fund Scheme 1999 was implemented with a view to facilitating modernization and upgradation of the textile industry. Under this scheme, credit has been given at reduced rates to induce rapid investments in targeted segments of the textile industry. An amount of ₹ 85, 091 crore was sanctioned against project cost of ₹ 2,07,747 crore and loans worth ₹ 85,091 crore had been disbursed to 28,302 applicants up to June 30, 2010 (Economic Survey, 2010-2011).

(3) Under the Scheme for Integrated Textile Parks (SITP), 40 integrated textiles parks of international standards, covering the weaving, knitting, processing, and garmenting sectors with a project proposal worth ₹ 4,133.09 crore have been sanctioned. Eight textile parks have been inaugurated.

(4) The Integrated Skill Development Fund Scheme for the textiles and apparel sector, including jute and handicrafts, was launched on August 5, 2010 with the objective of capacity building of institutions providing

skill development and training for workers in the textile sector. The scheme envisaged an investment of ₹ 272 crore to train 2.56 lakh people during 2010-11 and 2011-2012 (Economic Survey, 2010-2011).

Objectives of the Study

(1) To examine the impact of leverage on profitability of the Indian textile sector,
(2) To study the impact of leverage on shareholder value creation in the Indian textile sector .

Hypotheses

The following null hypotheses have been framed for the purpose of the study :

➔ Leverage does not influence profitability,
➔ Leverage does not influence the shareholder value creation.

Framework of the Study

To ascertain the impact of leverage from its different dimensions on profitability and shareholder value creation, the variables, namely, long term debt ratio, short term debt ratio, total debt to asset ratio, debt to equity ratio, capital gearing ratio, interest coverage ratio, fixed assets to funded debt ratio, current liabilities to proprietor fund ratio, ratio of reserves to equity capital, total investment to long term liabilities ratio, financial leverage, operating leverage, combined leverage, and working capital leverage have been considered. To avoid inter-dependence of variables (multicollinearity), correlation analysis was employed with 0.75 as the cutoff point. Those variables with R values less than the cutoff point were selected for the purpose of the analysis. The variables that are finally chosen as leverage dimensions to ascertain the impact on profitability and shareholder value creation are long term debt (LTD) ratio, short term debt (STD) ratio, interest coverage (IC) ratio, financial leverage (FL), operating leverage (OL), combined leverage (CL), and working capital leverage (WCL), which are considered as independent variables.

Independent Variables	Formulae
long term debt ratio (LTD)	long term debt / total assets
short term debt ratio (STD)	short term debt / total assets
interest coverage ratio (IC)	PBIT net of P&E / interest paid
financial leverage (FL)	PBIT net of P&E / PBT net of P&E
operating leverage (OL)	Contribution / PBIT net of P&E
combined leverage (CL)	Contribution / PBT net of P&E
working capital leverage (WCL)	Percentage change in return on investment / Percentage change in current assets where, Return on investment = PBIT net of P&E/ total assets

The dependent variables are return on total assets (ROTA), return on net worth (RONW), return on capital employed (ROCE), earnings per share (EPS), price earnings (P/E) ratio, economic value added (EVA), and market value added (MVA).

Profitability Metrics	Formulae
Return on total assets (ROTA)	PAT net of P&E / average total assets
Return on net worth (RONW)	PAT net of P&E / average net worth

(cont. on next page)

Dependent Variables	Formulae
Return on capital employed (ROCE)	PAT net of P&E / average capital employed
Earnings per share (EPS)	Net profit after tax and preference dividend / No of equity shares
Price earnings ratio (P/E)	Market price per share / earnings per share
Shareholder Value Creation Metrics	
Economic value added (EVA)	**NOPAT - WACC X Capital employed** i) NOPAT refers to net operating profit after taxes (NOPAT= PAT net of P&E + interest paid) ii) Capital employed = Total assets - current liabilities and provisions iii) Weighted Average Cost of Capital (WACC) = (paid up equity capital / capital employed x cost of equity) + (long term debt /capital employed x cost of debt) cost of debt = (Interest paid / long term debt) x 100 Capital asset pricing model has been employed to calculate the cost of equity cost of equity = $R_f + ß_i (R_m - R_f)$ R_f = Risk free rate of return = one year term deposit average interest rate of nationalized banks R_m = market return of a diversified portfolio (current year index - previous year index x100) Risk premium = market return of a diversified portfolio - Risk free return $(R_m - R_f)$ $ß_i$ = Beta coefficient of the firms' portfolio calculation of Beta (β) $\beta = \frac{Cov(X,Y)}{Var(X)}$ where, X = market return Y = stock return Variance is the square of standard deviation Co-variance is a tool to measure how two variables co-vary
Market Value Added (MVA)	MVA = market capitalization - net worth Market capitalization = closing share price x number of shares outstanding as on the date of balance sheet.

Research Methodology

➔ **Source of Data :** The study is predominantly based on secondary data. The data were collected from PROWESS 3.1 version maintained by Centre for Monitoring Indian Economy Pvt. Ltd.

➔ **Period of the Study :** The study has covered a period of 15 financial years from the post-liberalization era, namely, from 1995 -1996 to 2009- 2010. This period showed a transition in the Indian corporate sector due to liberalization, privatization, and globalization.

➔ **Sample and Sampling Design :** The textile sector has in total 1,486 firms, of which 127 firms have been listed at the National Stock Exchange and 456 firms have been listed at the Bombay Stock Exchange. Out of 175 firms which have been listed both at BSE and NSE, those firms which satisfied the following conditions were selected for the study :

(i) Firms having a continuous data for 15 years from April 1, 1995 to March 31, 2010.
(ii) Firms which had a positive net worth throughout the study period.
(iii) Firms which had total assets of more than ₹ 100 crores as on March 31, 2010.

Fifty textile firms (excluding multinational corporations and government companies) satisfied all the above parameters. Accordingly, 50 (28.5 %) firms constitute the sample for the study, based on the purposive sampling technique.

Tools for Analysis

Pooled OLS regression and panel data regression were applied to analyze the data.

Pooled OLS Regression

Pooled ordinary least square is an ordinary regression equation type.

$$Y_i = a + b_1X_1i + b_2X_2i + b_3X_3 \ldots . bn_Xn_i + u_i$$

where,
$X_1, X_2 \ldots X_n$ are independent variables,
and Y_i is the dependent variable,
u_i is the error term,
with $i = 1 \ldots ..n$ observations.

In the pooled regression approach, the effect of period (years) is ignored and regression analysis is carried out with the normal estimation procedure.

Panel Data Regression

Panel data is a dataset in which the behaviors of individuals are observed across time. These individuals could be states, companies, persons, countries, and so forth. It facilitates analysis of cross-sectional and time series data. So, it is also known as longitudinal or cross sectional time-series data (Torres - Reyna, 2007).

➔ **Panel Data Analysis :** Fixed and random effect (using stata 10. X). Two basic models of panel data regression have been used in this study.

➔ **Model 1 - Panel Data Regression with Fixed Effect :** Fixed effect (FE) model may be used in analyzing the impact of variables that vary over time. The fixed effect explores the relationship between predictor and outcome variables within an individual. Each individual has its own unique characteristics that may or may not influence the predictor variables. The equation for the fixed effect (FE) model is:

$$Y_{it} = {}_1X_{it} + {}_i + u_{it}$$

where,
– i ($i = 1 \ldots . n$) is the unknown intercept for each individual (n individual -specific intercepts),
– Y_{it} is the dependent variable where i = individual and t = time,
– X_{it} represents one independent variable,
– β_1 is the coefficient for that independent variable,
– u_{it} is the error term.

➔ **Model 2 - Panel Data Regression with Random Effects :** The assumption behind the random effects (RE) model is that unlike in the fixed effects model, the variations across individuals are assumed to be random and are uncorrelated with the predictor or independent variables included in the model if the differences across individuals have some influence on the dependent variable, then the random effects models may be used. The equation for the random effects model is:

$$Y_{it} = \beta X_{it} + \quad + u_{it} + \quad _{it}$$

where,

u_{it} = error variation between the individuals,
ε_{it} = error variation within the individuals.

This study has used all the three models (pooled OLS, FE, and RE) and further, two tests were carried out to decide the appropriateness of these three models. Initially, the Lagrange multiplier test was applied to find the existence of the panel effect in the values. The classical model (Pooled OLS) and the random effect model were compared, and when there is no panel effect, the pooled OLS is chosen for further analysis; otherwise, the random effect model is chosen for the next step of application. As a second step, the random effect model is compared with the fixed effect model using Hausman's specification test, and the appropriate model is chosen for further analysis based on the significance of the chi-square value.

Analysis and Results

Impact of Leverage on Profitability Metrics

The pooled OLS regression and panel data analysis reveal the following results:

➔ **Return on Total Assets :** The dependent variable (ROTA) was regressed with the independent variables, namely, LTD ratio, STD ratio, IC ratio, FL, OL, CL, and WCL with the following null hypothesis :

↳ **H01:** The independent variables, namely, LTD ratio, STD ratio, IC ratio, FL, OL, CL, and WCL do not have a significant influence on ROTA.

It is observed from the Table 1 that the signs of the regression coefficient are the same in the FE and RE models, while they differ in the pooled OLS model. The R^2 values show a moderate correlation between the selected independent variables and the dependent variable in all the three models. The *F* - test and Wald chi- square test disclose a significant correlation between the selected independent variables and the ROTA at 1% level of significance. The result of the LM test shows that the chi-square value (2.28) is not statistically significant, revealing that the pooled OLS model is preferred to the RE model. In all the applied three models, the pooled OLS model serves as an appropriate model for further analysis. The pooled OLS model depicts that the ratio, namely, the IC ratio has a significant positive effect on ROTA, and the other two ratios, namely, LTD ratio and STD ratio have a significant negative effect on ROTA. Hence, the null hypothesis (H01) is rejected in respect of these variables. The rest of the variables, namely, FL, OL, CL, and WCL do not have a significant influence on ROTA. Hence, the null hypothesis (H01) is accepted with reference to these variables.

In general, it is found that in the textile sector, the IC ratio, LTD ratio, and STD ratio are the prominent issues of ROTA. The IC ratio is found to have favoured the ROTA, increasing the profitability and the financial position of the sector. The LTD ratio and STD ratio have not favoured the ROTA. Hence, an ideal debt-equity mix, which reduces the financial obligation, would enhance the performance of the textile sector.

Table 1. Pooled OLS and Panel Data Regression Results

	Pooled OLS			Fixed Effect			Random Effect		
	B	*t-value*	*Sig.*	*B*	*t-value*	*Sig.*	*B*	*z-value*	*Sig.*
(Constant)	4.397	6.190	**	9.116097	5.65		**	8.298842	8.05**
Long term debt ratio	-5.539	-4.626	**	-8.244547	-3.13	**	-6.021798	-3.79	**
Short term debt ratio	-5.595	-3.764	**	-2.074585	-0.66	NS	-0.2875982	-0.14	NS
Interest coverage ratio	.477	13.881	**	.2117539	5.03	**	0.2074991	6.32	**
Financial leverage	0.04404	1.231	NS	-.3405107	-2.97	**	-.3251676	-3.12	**
Operating leverage	-0.006661	-.625	NS	-.5527611	-5.05	**	-.6254124	-7.29	**
Combined leverage	-0.006155	-1.232	NS	.0524576	2.15	*	.0496497	2.23	*
Working capital leverage	-0.001287	-1.014	NS	-.0010613	-0.82	NS	-.001074	-0.89	NS
R^2	**.335**			**0.3949**				**0.3892**	
***F* - statistic**	**48.184**		**	**18.46**		**			
Wald (?^{2})							**204.56**		**
Hausman (χ^2)				**4.87**		**NS**			
LM (χ^2)							**2.28**		**NS**

Note : * significant at 5% level ** significant at 1% level

Table 2. Pooled OLS and Panel Data Regression Results

	Pooled OLS			Fixed Effect			Random Effect		
	B	*t-value*	*Sig.*	*B*	*t-value*	*Sig.*	*B*	*z-value*	*Sig.*
(Constant)	15.800	3.930	**	2.817947	0.39	NS	-2.288651	-0.47	NS
Long term debt ratio	-16.824	-2.482	*	3.417736	0.29	NS	19.69872	2.63	**
Short term debt ratio	-30.627	-3.643	**	60.30561	4.24	**	57.91873	6.08	**
Interest coverage ratio	1.029	5.291	**	.3189453	1.69	NS	.4406111	2.85	**
Financial Leverage	.155	.762	NS	-1.86257	-3.62	**	-1.24846	-2.55	*
Operating leverage	-.088	-1.462	NS	-1.946007	-3.96	**	-1.814604	-4.50	**
Combined leverage	-.015	-.543	NS	.3091157	2.82	**	.1872358	1.80	NS
Working capital leverage	-.0042	-.584	NS	-.0032823	-0.56	NS	-.0033309	-0.59	NS
R^2	**.098**			**0.2793**			**0.2566**		
***F* - statistic**	**10.367**		**	**10.96**		**			
Wald (χ^2)							**84.36**		**
Hausman (χ^2)				**22.63**		**			
LM (χ^2)							**8.98**		**

Note : * significant at 5% level ** significant at 1% level

➔ **Return on Net Worth :** The dependent variable (RONW) was regressed with the independent variables, namely, LTD ratio, STD ratio, IC ratio, FL, OL, CL, and WCL with the following null hypothesis :

➲ **H02 :** The independent variables, namely, LTD ratio, STD ratio, IC ratio, FL, OL, CL, and WCL do not have a significant influence on RONW.

Table 3. Pooled OLS and Panel Data Regression Results

	Pooled OLS			Fixed Effect			Random Effect		
	B	***t-value***	***Sig.***	***B***	***t-value***	***Sig.***	***B***	***z-value***	***Sig.***
(Constant)	5.452	4.381	**	9.578238	3.77	**	8.417838	5.03	**
Long term debt ratio	-7.847	-3.739	**	-10.6977	-2.58	*	-7.427721	-2.87	**
Short term debt ratio	-5.590	-2.147	*	10.88401	2.18	*	13.38262	4.09	**
Interest coverage ratio	.757	12.565	**	.322443	4.86	**	.3163872	6.01	**
Financial leverage	.063	1.000	NS	-.5704445	-3.16	**	-.5103871	-3.07	**
Operating leverage	-.027	-1.467	NS	-.8470649	-4.91	**	-.9596072	-6.98	**
Combined leverage	-.0081	-.929	NS	.0895199	2.33	*	.0780974	2.21	*
Working capital leverage	-.0023	-1.015	NS	-.0010853	-0.53	NS	-.0011439	-0.60	NS
R^2	**.280**			**0.4153**			**0.4090**		
***F* - statistic**	**37.224**		**	**20.09**		**			
Wald (χ^2)							**203.39**		**
Hausman (χ^2)				**6.66**		**NS**			
LM (χ^2)							**5.92**		*

Note : * significant at 5% level ** significant at 1% level

It is observed from the Table 2 that the signs of the regression coefficients are the same in both the FE and RE model. The R^2 values display a low correlation between the selected independent variables and the RONW. The *F*- test and Wald chi-square test show a significant correlation between the selected independent variables and the RONW. The LM test indicates that the chi-square value (8.98) is significant at the 1% level, implying the existence of the panel effect. Hence, the RE model has been preferred. The Hausman test results reveal that the value of chi-square (22.63) is significant at the 1% level, showing that the FE model is preferred than the RE model. Among all the applied three models, the FE model is finalized as the best model to study the effect of leverage on RONW for the textile sector. It is further inferred that the variables, namely, STD ratio and CL have a significant positive influence on RONW and the variables, such as, FL and OL have a significant negative influence on RONW. Hence, the null hypothesis (H02) is rejected in respect of these variables. The LTD ratio, IC ratio, and WCL do not have a significant influence on RONW. Hence, the null hypothesis (H02) is accepted for these variables.

Therefore, it is concluded that the STD ratio, FL, OL, and CL are the significant factors of RONW. The STD ratio and CL assist the RONW by strengthening the profitability and the financial position of the sector. The FL and OL have not assisted the RONW. The removal of negative effect of FL and OL by altering its leverage position would improve the performance of the sector.

➔ **Return on Capital Employed :** The dependent variable (ROCE) was regressed with the independent variables, namely, LTD ratio, STD ratio, IC ratio, FL, OL, CL, and WCL with the following null hypothesis :

➲ **H03 :** The independent variables, namely, LTD ratio, STD ratio, IC ratio, FL, OL, CL, and WCL do not have a significant influence on ROCE.

It can be inferred from the Table 3 that the signs of the regression coefficients are the same for the FE and the RE models for all the independent variables, and they differ in the pooled OLS model. The R^2 values depict a moderate correlation between the selected independent variables and the dependent variable in FE and RE models, and a low correlation has been noticed in the pooled OLS. The *F* statistic and Wald chi square test are significant, revealing the existence of correlation between the selected independent variables and the dependent variable. The

Table 4. Pooled OLS and Panel Data Regression Results

	Pooled OLS			Fixed Effect			Random Effect		
	B	*t-value*	*Sig.*	*B*	*t-value*	*Sig.*	*B*	*z-value*	*Sig.*
(Constant)	11.518	3.305	**	26.39195	3.19	**	19.89978	3.02	**
Long term debt ratio	-16.474	-2.814	**	-9.656033	-0.71	NS	-12.83541	-1.22	NS
Short term debt ratio	-7.688	-1.056	NS	-14.14791	-0.86	NS	2.291354	0.18	NS
Interest coverage ratio	.931	5.545	**	.2664367	1.24	NS	.3517411	1.84	NS
Financial leverage	.025	.142	NS	-.504263	-2.07	*	-.450833	-1.87	NS
Operating leverage	-.039	-.742	NS	-1.95616	-4.20	**	-1.418456	-3.54	**
Combined leverage	.00022	.0089	NS	.0570439	1.83	NS	.0471302	1.52	NS
Working capital leverage	-.0033	-.540	NS	-.0035034	-0.51	NS	-.002964	-0.44	NS
R^2	**.085**			**0.1347**			**0.1192**		
***F* - statistic**	**8.911**		**NS**	**4.40**		**			
Wald (χ^2)							**28.18**		**
Hausman (χ^2)				**12.91**		**NS**			
LM (χ^2)							**64.38**		**

Note : * significant at 5% level ** significant at 1% level

LM test results reveal that the chi square value (5.92) is significant at the 1% level, indicating that the RE model is preferred to the pooled OLS model. The results of the Hausman test show that the chi square value (6.66) is not significant, revealing that the RE model is more effective than the FE model. Among all the three applied models, the RE model serves as an appropriate model to study the impact of leverage on ROCE. The RE model shows that the variables, namely, STD ratio, IC, and CL have a significant positive influence on ROCE. The long term debt ratio, FL and OL have a significant negative influence on ROCE. Hence, the null hypothesis (H03) is rejected in respect of these variables. The WCL does not have a significant influence on ROCE. Hence, the null hypothesis (H03) is accepted in respect of this variable.

It is concluded that in the textile sector, the LTD ratio, STD ratio, IC ratio, FL, OL, and CL are the significant determinants of ROCE. The STD ratio, IC ratio, and CL have favoured the ROCE. The elimination of negative effect of LTD ratio, FL, and OL by altering its debt-equity position would increase the performance of this sector.

➔ **Earnings per Share :** The dependent variable (EPS) was regressed with the independent variables, namely, LTD ratio, STD ratio, IC ratio, FL, OL, CL, and WCL with the following null hypothesis :

➲ **H04 :** The independent variables, namely, LTD ratio, STD ratio, IC ratio, FL, OL, CL, and WCL do not have a significant influence on earnings per share.

It is observed from the Table 4 that the regression coefficient signs are similar in all the three models, except for the variable - short term debt ratio in the RE model and financial leverage in the pooled OLS model. The *F*-value (8.911) is not statistically significant, revealing that there is no significant correlation between the selected independent variables and the EPS in pooled OLS model. The *F*-value (4.40) of the FE model and the Wald chi-square value (28.18) of the RE model show the existence of significant correlation between the selected independent variables and the EPS. The LM test reveals that the chi-square value (64.38) is significant at the 1% level, showing the existence of the panel effect. Hence, the RE model has been selected. The Hausman specification test compares the FE model and the RE model. The results show that the value of chi-square (12.91) is not significant, thereby the RE model has not been chosen. Among all the applied three models, the RE model is considered as the appropriate model to analyze the impact of leverage measures on EPS. The RE model reveals

Table 5. Pooled OLS and Panel Data Regression Results

	Pooled OLS			Fixed Effect			Random Effect		
	B	*t-value*	*Sig.*	*B*	*t-value*	*Sig.*	*B*	*z-value*	*Sig.*
(Constant)	4.682	.903	NS	-4.77628	-0.50	NS	2.290459	0.43	NS
Long term debt ratio	6.117	.700	NS	17.50783	1.11	NS	2.136169	0.26	NS
Short term debt ratio	.514	.047	NS	-2.151887	-0.11	NS	-14.59502	-1.34	NS
Interest coverage ratio	.136	.542	NS	.1122593	0.45	NS	.1926163	1.04	NS
Financial leverage	.695	2.660	**	1.832904	6.54	**	1.864135	7.04	**
Operating leverage	.065	.830	NS	1.108232	2.07	*	1.317277	3.69	**
Combined leverage	-.102	-2.808	**	-.1434276	-3.99	**	-.1680338	-4.87	**
Working capital leverage	.0078	.843	NS	.0125827	1.59	NS	.0115104	1.62	NS
R^2	**.015**			**0.2576**			**0.2476**		
***F* - statistic**	**1.426**		**NS**	**9.81**		**			
Wald (χ^2)							**78.74**		**
Hausman (χ^2)				**9.49**		**NS**			
LM (χ^2)							**0.56**		**NS**

Note : * significant at 5% level ** significant at 1% level

that the variables, namely, LTD ratio, STD ratio, IC ratio, FL, CL, and WCL do not have a significant influence on EPS. Hence, the null hypothesis (H04) is accepted for these variables. The OL variable alone is significant, which has a significant negative influence on EPS. Hence, the null hypothesis (H04) is rejected in respect of this variable.

To conclude, it is inferred that the elimination of negative effect of OL by altering its debt equity position would enhance the performance of the sector.

➔ **Price Earnings Ratio :** The dependent variable (P/E ratio) was regressed with the independent variables, namely, LTD ratio, STD ratio, IC ratio, FL, OL, CL, and WCL with the following null hypothesis :

➲ **H05 :** The independent variables, namely, LTD ratio, STD ratio, IC ratio, FL, OL, CL, and WCL do not have a significant influence on the price earnings ratio.

It is clear from the Table 5 that the signs of the regression coefficient are the same for FE and RE models. The R^2 values reveal a low correlation between the selected independent variables and the dependent variable. The *F*-value of pooled OLS model does not have a significant correlation between the selected independent variables and the dependent variable. The *F*-value and Wald-chi-square value of FE models are statistically significant at the 1% level, indicating the existence of a significant correlation between the selected independent variables and the dependent variable.

The LM test reveals that the chi-square value (0.56) is not significant, revealing that the pooled OLS model serves as an appropriate model to analyze the effect of leverage on the P/E ratio. The pooled OLS model signifies that the FL has a significant positive impact on the P/E ratio, and the CL has a significant negative impact on the P/E ratio. Hence, the null hypothesis (H05) is rejected for these variables. The independent variables, namely, LTD ratio, STD ratio, IC ratio, OL, and WCL do not have a significant influence on the P/E ratio. Hence, the null hypothesis (H05) is accepted for these variables.

Finally, it is concluded that the FL favours the P/E ratio to improve the profitability and the financial position of the sector. The elimination of negative effect of combined leverage by altering its debt equity position would improve the performance of the sector.

Table 6.Pooled OLS and Panel Data Regression Results

	Pooled OLS			Fixed Effect			Random Effect		
	B	*t-value*	*Sig.*	*B*	*t-value*	*Sig.*	*B*	*z-value*	*Sig.*
(Constant)	27.151	4.324	**	45.5326	4.52	**	31.75886	3.93	**
Long term debt ratio	-71.553	-6.330	**	-142.645	-7.17	**	-96.42361	-6.58	**
Short term debt ratio	-4.737	-.319	NS	.7703613	0.04	NS	3.409513	0.19	NS
Interest coverage ratio	-0.0132	-.725	NS	.0102242	0.47	NS	-.0026312	-0.13	NS
Financial leverage	.582	1.523	NS	.592236	1.58	NS	.5643061	1.53	NS
Operating leverage	-0.00047	-.004	NS	.0238435	0.22	NS	.0048601	0.04	NS
Combined leverage	-0.0664	-1.244	NS	-.0713589	-1.33	NS	-.0663843	-1.26	NS
Working capital leverage	-0.0167	-1.239	NS	-.0160557	-1.24	NS	-.0155881	-1.21	NS
R^2	**.063**			**0.0929**				**0.0912**	
***F* - statistic**	**6.602**		**	**9.37**		**			
Wald (χ^2)							**53.22**		**
Hausman (χ^2)				**17.25**		**0.0158**	*		
LM (χ^2)							**57.86**		**

Note : * significant at 5% level ** significant at 1% level

Impact of Leverage on Shareholder Value Creation Metrics

The Pooled OLS regression and panel data analysis gave the following results:

➔ **Economic Value Added :** The dependent variable (EVA) was regressed with the independent variables, namely, LTD ratio, STD ratio, IC ratio, FL, OL, CL and WCL with the following null hypothesis :

➲ **H06:** The independent variables, namely, LTD ratio, STD ratio, IC ratio, FL, OL, CL, and WCL do not have a significant influence on EVA.

It can be inferred from the Table 6 that the signs of the regression coefficient are the same both in the FE and the RE models, except for the variable, LTD ratio. The R^2 values reveal a low correlation between the selected independent variables and the EVA. The *F*- value and Wald chi-square value depict a significant correlation between the selected independent variables and the EVA. The Lagrange Multiplier test reveals that the chi-square value (57.86) is significant at the 1% level, revealing the existence of panel effect; thereby, the RE model is considered better than the pooled OLS model. The results of the Hausman test reveal the significance at the 5% level, indicating that the FE model is more effective than the RE model. The FE model shows that the LTD ratio has a significant negative influence on EVA. Hence, the null hypothesis (H06) is rejected for this variable.

Six out of seven independent variables, namely, STD ratio, IC ratio, FL, OL, CL, and WCL do not have a significant influence on EVA. Hence, the null hypothesis (H06) is accepted for these variables. It is also concluded that the elimination of negative effect of LTD ratio would enrich the shareholder value creation in the textile sector.

➔ **Market Value Added :** The dependent variable (MVA) was regressed with the independent variables, namely, LTD ratio, STD ratio, IC ratio, FL, OL, CL, and WCL with the following null hypothesis :

➲ **H07 :** The independent variables, namely, LTD ratio, STD ratio, IC ratio, FL, OL, CL, and WCL do not have a significant influence on MVA.

Table 7. Pooled OLS and Panel Data Regression Results

	Pooled OLS			Fixed Effect			Random Effect		
	B	*t- value*	*Sig.*	*B*	*t-value*	*Sig.*	*B*	*z-value*	*Sig.*
(Constant)	-179.691	-5.181	**	-69.6152	-1.28	NS	-120.158	-2.58	*
Long term debt ratio	157.924	2.529	*	39.48895	0.37	NS	101.5382	1.21	NS
Short term debt ratio	324.587	3.951	**	60.82631	0.52	NS	174.924	1.75	NS
Interest coverage ratio	.182	1.806	NS	.0665099	0.57	NS	.1000038	0.93	NS
Financial leverage	-2.145	-1.015	NS	-1.789242	-0.89	NS	-1.919386	-0.97	NS
Operating leverage	0.0053	.008	NS	.2241218	0.38	NS	.1542647	0.26	NS
Combined leverage	.263	.891	NS	.1644792	0.57	NS	.1973007	0.70	NS
Working capital leverage	-.103	-1.381	NS	-.0543338	-0.78	NS	-.0675332	-0.97	NS
R^2	**.032**			**0.0041**				**0.0034**	
***F* - statistic**	**3.212**		**	**0.37**		**NS**			
Wald (χ^2)							**6.34**		**NS**
Hausman (χ^2)				**6.29**		**NS**			
LM (χ^2)							**133.44**		**

Note : * significant at 5% level ** significant at 1% level

The Table 7 shows that the signs of the regression coefficient are the same in all the three models. The R^2 values reveal a very low correlation between the selected independent variables and the MVA. The *F* -values of pooled OLS model have a significant correlation between the selected independent variables and the MVA ; whereas, the *F*-value of the FE model and the Wald-chi-square value of the RE model do not have a significant correlation between the selected independent variables and the MVA. The results of LM test reveal that the chi-square value (133.44) is significant at the 1% level, revealing the existence of the panel effect ; thereby, the RE model has been preferred to the pooled OLS model. The Hausman test results reveal that the chi-square value (6.29) is not significant ; thereby, the RE model is more effective for further analysis. The RE model shows that all the independent variables do not have a significant impact on MVA. Hence, the null hypothesis (H07) is accepted for these variables. Hence, it is inferred that leverage does not have an effective influence on MVA.

Suggestions

The basic objective underlying the LPG policy along with its potential outcome can be accomplished by the Indian manufacturing sector by framing a comprehensive, effective, and applicable leverage policy and thereby, increasing the profit margin and value addition to the shareholders' wealth. This will pave the way for occupying a pivotal position on the global map.

The textile sector is one of the core manufacturing sectors in India. The change in the economic environment has forced the Indian textile firms to make huge investments for improving technology, and invest in & undertake R & D to compete for the market share. A high level of investment necessitates the firms to change their financial policies . The choice of financial policy of a firm plays a significant role, which influences the debt - equity mix (leverage) and ultimately affects shareholders' wealth, return, and risks. The textile sector has to maximize the profitability and enrich the shareholders' wealth by effective and efficient working capital management and by resorting to long term external resources.

Conclusion

Leverage plays an imperative role in designing the capital structure. The capital structure should be a blueprint of a

model that leads to the enrichment of shareholders' wealth. The study concludes that leverage ratios have proven to have influenced the profitability metrics. The interest coverage ratio played a pertinent role in profitability. The textile sector has to maximize the shareholders' wealth by resorting to long term external resources.

Limitations of the Study and Scope for Further Research

The study is subject to the following limitations:

➲ The financial data that have been used are historical and quantitative in nature without considering the inflationary effects.

➲ The limitations inherent in statistical tools apply to this study as well.

➲ The study has been conducted on the basis of mean value of the sector, due to the presence of enormous companies with a lengthy period. The results are applicable to the sector and not to the individual firms.

The findings of the study have drawn a roadmap for further research in the following areas :

➲ The present research can be extended to other manufacturing sector and services sector too.

➲ A study can be undertaken to know the stock market's reaction to the announcement of debt.

➲ The impact of financial leverage on dividend policy, asset management, and liquidity management can also be studied.

References

Economic Survey (2010-2011). *Statistical appendix.* Retrieved from http://indiabudget.nic.in/es2010-11/estat1.pdf

Kamel, H., & Eldomiaty, T. I. (2009). Shareholder value and the articulation of P/B and stock return in Egypt's case 50 index. *International Research Journal of Finance and Economics, 23*,114-125.

Kaur, M., & Ravi, K. (2008). Indian manufacturing sector: Growth and productivity under the new policy regime. *International Review of Business Research Papers, 4* (2), 136-150.

Sehrawat, M. (2009). *EVA and performance measurement: Text and case studies of Indian companies*. New Delhi: Deep & Deep publications Private limited.

Swamy, G. K. (2002). *Shareholder wealth creation : A study of selected Indian industries* (Ph.D Thesis). Bharathiar University, Coimbatore, Tamil Nadu.

Tandon, R. (2009). *Financial management.* New Delhi: Gnosis publishers.

Torres Reyna, O. (2007, December) . *Panel data analysis: Fixed & Random effects* (using stata. v. 4.2.). Retrieved from http://www.princeton.edu/~otorres/Panel101.pdf