

---

## IMPACT OF LEVERAGE ON STOCK RETURN (A case study of textile sector of Pakistan Stock Exchange)

Hameed Rehman<sup>1</sup>, Dr. Naveed<sup>2</sup>, Muhammad Amir<sup>3</sup>, Dr. Muhammad Mudassir Anwar<sup>4</sup> and Dr. Benish Malik<sup>5</sup>

---

*Keywords:*

Leverage, Debt to Equity Ratio, stock return, Interest Coverage Ratio.

**ABSTRACT**

This research paper scrutinizes the relation between Leverage and Stock returns for Pakistani non-financial sector, textile companies listed on the PSX (Pakistan Stock Exchange) from year 2013 to 2018. For this purpose, the research uses stock returns as dependent variable and total debt and interest coverage ratios as a proxy for leverage which is an independent variable. The results suggested that there is a negative relationship between debt-to-equity ratio and stock returns and a positive relationship between interest coverage ratio and stock return. The results reveal that investors are not paid as much as the extent of their high risk taking with high leveraged firms. Previous numerous empirical studies have also come to the same assumption. This study is in line with those prior experimental studies which gives a common understanding of firms' Leverage.

---

## INTRODUCTION

A firm's capital structure contains of debt and equity, which is significant because it requires a company to borrow. Of particular interest Capital structure is also negligible meanwhile of the unlike tax inferences of debt versus equity and the effect of corporate taxes on profitability of the firm. Firms need be more careful while doing borrowing activities to get rid of the overburden risk or the possibility of becoming bankrupt or any future financial distress happenings. The leverage ratio of the company could also bring affect over the borrowing cost of the firm and also affects the firm's shareholder value (Aharon and Yagil, 2019). A firm's financial leverage can be measured by debt-to-equity ratio which can be obtained by dividing the total debt of the company on total shareholder's equity of the firm. This ratio tells us that how much the company finances its assets through debt and how much it finances through equity. If this ratio is high, it gives us sense that the company is financing its growth by using much debt. This will lead us to unbalanced earnings because of the added interest payments. While we are investigating that how stock returns are affected, stock return could be defined as a stock return is a combination of capital gain plus dividend (Adami, R, Gough, O, Muradoglu, Y G & Sivaprasad, S. 2015).

---

<sup>1</sup> Scholar, Institute of Management Studies, University of Peshawar

<sup>2</sup> Assistant Professor, Qurtuba University, Peshawar.

<sup>3</sup> Scholar, Qurtuba University, Peshawar.

<sup>4</sup> Assistant Professor, University of Kotli, Azad Kashmir

<sup>5</sup> Lecturer, IMS, UOB, Quetta

Financial leverage is the amounts of debt and capital held by the company. The study of systematic risk and leverage, whereby the private sector of Pakistan is confronted in their activities. The industry selected for detailed analysis is textile sector. The goal of this research is to understand if the performance of the stock of a company is explained by its leverage effect and if the fundamental theories and empirical results can be applied to corporations listed on the Pakistan stock exchange. The scope of the research is applicable to the textile industry of Pakistan. This research is applicable on secondary data of 50 textile companies (listed on PSX).

### **LITERATURE REVIEW**

Mohy-ud-din. K and Haq. H (2018) researched a study to get knowledge about the impact of financial leverage by financial performance of cement industry of Pakistan. Their empirical evidence showed that earning per share and return on assets had substantial effect on financial leverage of the firms of cement industry.

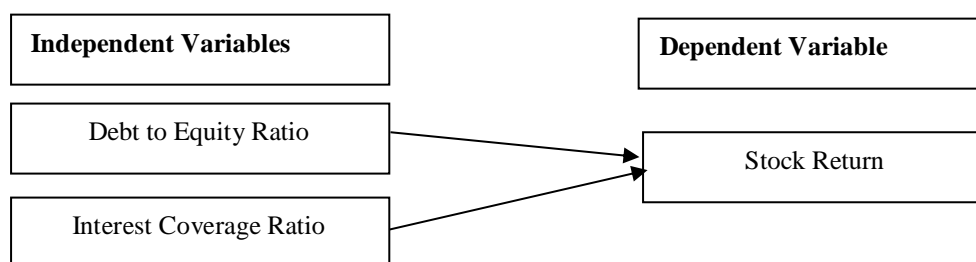
Andersson. M (2016) investigated the relationship between capital structure and stock returns of firms registered at NASDAQ OMX Stockholm Stock Exchange for period (2006-2015). Their study employed multiple regression models. Their results from the conclusive study suggested that there exists negative correlation between stock returns and leverage.

Mirza. N et al (2016) proposed in their investigation the implications of financial leverage on stock returns using Asset pricing models and (Fama and French) four factors model to enlighten the variations in returns for which data from 430-512 companies were taken for the purpose from PSX 100 index. The results confirmed the concept of leverage premium and have vital inferences for financial managers, market participants and investment predictors who take advantage of using asset pricing frameworks for investment assessments.

Rahim et al (2016) evaluated the effect of leverage on stock returns and systematic risk in the corporate sector of Pakistan. Data was collected from eight industries for the period of 2007-15 on a list of PSX 100 index companies. High leverage was experienced which led to high level of systematic risk and volatility in the stock prices.

Abdullah.N.M et al (2015) examined to get known about the influence of financial leverage on market size of some selected stocks and stock returns. OLS model was used over secondary data of 5 companies registered at manufacturing sector of Dhaka Stock Exchange for five years' period (2008 to 2012). Their study results disclosed significant but negative relation between Stock return and leverage.

### **VARIABLES THEORETICAL FRAMEWORK**



*Bollerslev et.al. (2012), Fan, et.al. (2012) and Dyreng, et.al. (2010)*

## RESEARCH METHODOLOGY

The data collected for the analysis is quantitative in nature. The data for Interest coverage ratio (ICR) and Debt to equity ratio (DER) is gathered for 6 years (2013-2018) from the annual reports of the companies of PSX Textile Sector obtained from the websites of the companies, some data from the FSA file obtained from State Bank website. The data for stock prices is gathered from [www.brecorder.com](http://www.brecorder.com). The entire textile sector of the Pakistan Stock Exchange (PSX) is selected as a population for this research. Random sampling technique has been used in this research, the sample of 50 Textile firms of non-financial sector of Pakistan, ranging from 2013-2018 has been selected for this research to evaluate that how stock returns are influenced by Debt-to-Equity Ratio (DER) and Interest Coverage Ratio (ICR)

### DATA ANALYSIS

The statistical analysis applied is given as under:

#### **Dickey fuller test**

Firstly, we test the stationarity of dependent and independent variables as given below:

Table 1: Dickey Fuller

TESTS	HYPOTHESES	P-VALUES	SIGNIFICANCE LEVEL	DECISION
Dickey-Fuller	$H_0 = \text{DER is non-stationary}$ $H_1 = \text{DER is stationary}$	0.0000	0.05	DER is stationary
Dickey-Fuller	$H_0 = \text{ICR is non-stationary}$ $H_1 = \text{ICR is stationary}$	0.0000	0.05	ICR is stationary
Dickey-Fuller	$H_0 = \text{SR is non-stationary}$ $H_1 = \text{SR is stationary}$	0.0000	0.05	SR is stationary

The results given in table 1 shows that both dependent and independent variables are stationary at level.

#### **Breusch-Pagan test**

Table 2: Panel Diagnosis

TESTS	HYPOTHESES	P-VALUES	SIGNIFICANCE LEVEL	DECISION
F test	$H_0 = \text{Pooled OLS model is appropriate}$ $H_1 = \text{Fixed Effect model is appropriate}$	0.998865	0.05	Pooled OLS model is appropriate
Breusch-Pagan test	$H_0 = \text{Pooled OLS model is appropriate}$ $H_1 = \text{Random Effect model is apt.}$	0.315692	0.05	Pooled OLS model is appropriate

## White's test for Heteroskedasticity

In order to check whether data is stationary or non-stationary, we have used White's Test for Heteroskedasticity.

Table 3: White test for heteroskedasticity

As p-value (0.974551) is greater than 0.05 therefore, we accept  $H_0$  and conclude that the data is Homoskedastic.

Heteroskedasticity Test				
OLS, 300 observations				
Dep. variable: uhat^2				
	coeffs.	error	t-ratio	p-value
const	0.510921	0.0569157	8.977	3.40e-017 ***
DER	0.000488501	0.00132840	0.3677	0.7133
ICR	-0.000148789	0.000624731	-0.2382	0.8119
sq_DER	-8.54217e-08	1.65322e-06	-0.05167	0.9588
X2_X3	-1.68746e-06	4.03870e-05	-0.04178	0.9667
sq_ICR	-4.11456e-07	8.10106e-07	-0.5079	0.6119
Unadjusted R-squared = 0.002793				
Test statistic: $TR^2 = 0.837927$ ,				
with p-value = $P(\text{Chi-square}(5) > 0.837927) = 0.974551$				
Null Hyp: $H_0$ : Data is Homoskedastic				
Alt Hyp: $H_1$ : Data is Heteroskedastic				
Significance level: $\alpha = 5\%$				
T Statistic: Chi-Square $\chi^2$				

## Ordinary Least Square Model

Table 4: OLS Model

Pooled OLS, using 300 observations					
Included 2 cross-sectional units					
Time-series length = 150					
Dep. variable: SR					
Robust (HAC) std. errors					
	Coeff	Std. Error	t-ratio	p-value	
constant	0.184101	0.00194937	94.4414	<0.0001	***
DER	-0.000520842	0.000182209	-2.8585	0.0046	***
ICR	7.17769e-05	9.79353e-08	732.9012	<0.0001	***
Mean dep.var	0.178049		S.D. dep variable	0.716418	
Sum squared resid	153.1008		S.E. of regression	0.717977	
R-squared	0.002362		Adj. R-squared	-0.004356	
Log-likelihood	-324.7786		Akaike criterion	655.5573	
Schwarz criterion	666.6686		Hannan-Quinn	660.0041	
rho	-0.111038		Durbin-Watson	2.205725	

As of the case with this research the data was panel, therefore the model used for this analysis is pooled OLS model which was selected after panel diagnosis:

$$SR = 0.184101 - 0.00052084 (\text{DER}) + 7.17769e-05 (\text{ICR}) + e$$

Where alpha ( $\alpha$ ) = 0.184101 which is the value of endogenous variable (SR) when DER and ICR is = 0. If the values of ICR is zero, stock returns go down on average by 0.00052084 units for one-unit increase in DER.

If the value of DER is zero, stock returns go up on average by 7.17769e-05 units for one-unit increase in ICR.

Decision: Since p-values for DER and ICR are less than 0.05, therefore, we accept alternative hypotheses and reject null hypotheses, because there is significantly negative effect of DER on SR and significant positive impact of ICR on SR. The adjusted R-square value is – 0.004356. The negative value occurs because the model contains variables that do not help to the predict response well. Further we tested if the model is correctly specified or not. For this purpose, we have applied Ramsey Reset test as explained below:

### Ramsey Reset Test

Table 5: Ramsey Reset Test

Auxiliary regression for RESET specification test				
OLS, using 300 observations				
Dependent variable: SR				
	Coeff	error	t-ratio	p-value
const	0.210737	0.182495	1.155	0.2491
DER	-0.000782224	0.00185766	-0.4211	0.6740
ICR	8.90661e-05	0.000346549	0.2570	0.7974
yhat^2	-0.721792	4.81165	-0.1500	0.8809

Test statistic:  $F = 0.022503$ ,  
with p-value =  $P(F(1,296) > 0.0225028) = 0.881$

Null Hypothesis:  $H_0$ : Model is accurately specified  
Alt Hypothesis:  $H_1$ : Model is misspecified.

Since the p-value of yhat^2 (0.881) is greater than 0.05. Therefore, our null hypotheses can be accepted, concluding that the model is correctly specified.

Last of all, we checked problem of collinearity as discussed below:

### Variance inflation factor

Table 6: Variance Inflation Factor

VIF	
Min possible value is 1.0	
Values > 10.0 may show problem of collinearity	
DER	1.000
ICR	1.000
VIF(j) = $1/(1 - R(j)^2)$ , where R(j) is the multiple correlation coefficient between variable j and the other independent variables	

Table 6 presents that the values of VIF of independent variables are less than 10, so there is no collinearity problem exists.

## CONCLUSION

We have applied the panel regression analysis on 6 years data from 2013 to 2018 Pakistan non-financial textile sector including 50 firms to explore the impact of Leverage on the Firms' stock return. Our empirical results conclude that there is significantly negative effect of Debt-to-Equity ratio on stock return Whereas, Interest coverage ratio have significantly positive effect on stock return. The result of

this paper shows that Financial Leverage and stock return of firms have significant and positive relationship in textile sector of Pakistan.

### REFERENCES

- Mohy-ud-din. K and Haq. H (2018). An investigation of Financial Leverage by Financial Performance. *Research Journal of Finance and Accounting*, Vol.9, No.13, 2018.
- Andersson. M (2016). The Effects of Leverage on Stock Returns. Lund University School of Economics and Management. Retrieved on Dec 24, 2018 from <http://lup.lub.lu.se/student-papers/record/8889602/file/8890633.pdf>
- Mirza. N et al (2016). Financial leverage and stock returns. *Economic Research-Ekonomska Istraživanja*, 29 (85–100).
- Rahim. A et al (2016). Effect of leverage on stock returns and systematic risk: Evidence from Pakistani industries. *Sarhad Journal of Management Sciences*, Vol.2 (1)
- Abdullah. N. M et al (2015). The impact of financial leverage and market size on stock returns on the Dhaka stock exchange: Evidence from selected stocks in the manufacturing sector. 2015: *International Journal of Economics, Finance and Management Sciences*, Vol.3(1), 10-15.
- Adami, R, Gough, O, Muradoglu, Y G & Sivaprasad, S. 2015, How does a Firm's Capital Structure affect Stock Performance? Available from: Lund University Libraries.
- Ait-Sahalia, Yacine, Jianqing Fan, and Yingying Li. 2013. The leverage effect puzzle: Disentangling sources of bias at high frequency. *Journal of Financial Economics* 109: 224–49.
- Bollerslev, Tim, Natalia Sizova, and George Tauchen. 2012. Volatility in equilibrium: A symmetries and dynamic dependencies. *Review of Finance* 16: 31–80.
- Dyreng, Scott D., Michelle Hanlon, and Edward L. Maydew. 2010. The effects of executives on corporate tax avoidance. *The Accounting Review* 85: 1163–89.
- Fan, Joseph P. H., Sheridan Titman, and Garry Twite. 2012. An International Comparison of Capital Structure and Debt Maturity Choices. *Journal of Financial and Quantitative Analysis* 47: 23–56.