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Impact of Debt Capital on Firm's Performance:

A Study on the Textile Companies Listed in Dhaka Stock Exchange Limited (DSE)

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Abstract:
The combination of a firm's long-term debt, specific short-term debt, common equity, preferred equity and retained earnings which are used to finance its overall operations is known as capital structure and it is a vital financial decision as it is directly related to the risk and return of a firm. Inappropriate capital structure can lower the firm's value as it incurs higher cost of capital while effective capital structure decision can do the opposite. A panel data set of ten years from 2010 to 2019 for the selected textile companies listed in Dhaka stock exchange has been used in this study. ROE and ROA are the dependent variables in the analysis, on the other side short-term debt to total assets and long-term debt to total assets are the proxy variables for debt capital. Age, sales growth is used as the control variables. Descriptive analysis, Correlation analysis, Hausman test and Panel Regression have been conducted to test the hypothesis. This study found that there is significant relationship between debt capital and firm performance. Short- term debt to the total asset is positively related to both profit measure ROE and ROA. In contrast, the other variable long-term debt has a negative association to the both ROE and ROA. The literature on this view also supports these findings as long-term debt costly and increases financial distress for the firms. According to the study result, long-term debt is statistically significant in determining the ROA and ROE.

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1. Introduction

1.1 Preamble of the study

The combination of long-term corporate debt, specific short-term debt, general equity, preferred equity and available reserves is known as a financial framework. All of these factors are used to support its overall performance and growth. The formation of money is directly related to the risk and recovery of the firm and therefore any decision to make unripe money can lead to significant financial costs. There are four major theories of monetization, such as tradeoff theory, agency cost, pecking order theory, and timing theory.

1.2 Objectives of the study

The main objective of this study is to determine whether the debt capital in the textile industry has an impact on the performance of firms and in which context, direction they have the relationship. There are also other objectives of this study- (a) to find out the impact of short term debt on return on equity, (b) to find out the impact of long term debt on return on equity, (c) to find out the impact of short term debt on return on assets & (d) to find out the impact of long term debt on return on assets

Trade-off Theory

The trade-off theory suggests that firm should have a trade-off between interest tax shield and cost of financial distress. The proper balance of cost of tax saving and cost of financial distress will provide optimum capital structure to the firm. As firms are financed with both debt and equity so it has to decide the proportion of debt and equity it wants to take. Interest tax shield is the benefit of taking debt but with increasing debt it also incurs a cost that is cost of financial distress. So, for maintaining optimum capital structure there should be a trade-off between interest tax benefit and cost of distress.

Agency Cost Theory

The cost of minimizing the conflict between the principal and their agents as manager or shareholder is called agency cost theory. The agency's view addresses issues that arise largely from two key areas: Differences in objectives or differences in risk objections. Another central issue that is often addressed by the agency's perspective involves inconsistent levels of tolerance between the head and the agent. For example, bank shareholders may argue that managers have placed a very low line on loan approvals, thus having a greater risk of making mistakes.

Market Timing

Market timing is a type of investment or trading strategy that works by moving in and out of the financial markets or by switching between commodity segments according to predictive methods. Active investors may argue that long-term investors miss out on profits by exerting themselves rather than choosing to reimburse by exiting the market. However, because it is so difficult to measure the future direction of the stock market, investors who try to enter on time and exit are often unsuccessful with investors who are constantly invested.

The pecking order theory

The concept of pecking order explains that internal funding is preferred over foreign funds and if foreign funds are required, firms must first issue credit and equity as a last resort further, the photography order seems to explain why profitable firms have lower credit ratings and this does not happen because they have limited liability of debt, but they do not need to receive foreign currency. Unlike the concept of trading the concept of pecking order is able to explain the differences in financial institutions within the industry.

2. Literature Review:

Debt management is one of the most important decisions in any firm. Many studies have been

conducted to determine the company's performance in financial decision making but the impact of the textile company's debt capital on company performance is rare. **Roden and Lewellen (1995)** used a sample of 48 American firms that found a positive relationship between profit and investment. Similar results have been obtained by **Altman (1968)**, **Berger (1995), Khan and Nouman (2017).**Profitable firms use high-quality loans. **Barnea et al. (2000)** concluded that higher levels of debt on capital gains would reduce a company's performance in view of the fact that the company's financial performance has a statistically significant effect on corporate performance such as asset recovery (ROA), sales growth (Gsales), and pre-tax revenue (Ptax). **Berger and DeYoung(1997)** found that agency costs of debt, profit, growth rate, performance and risk of bankruptcy greatly influence the formation of finances in both countries and due to institutional diversity the composition of corporate and agency agencies is different but Japan has better managerial management and Bangladesh it does not work well.

The influence of monetary choice on the strong performance in Egypt was also examined by **Bokhari and Khan (2013)** and his research is based on a sample of firms from the 1997 to 2011 list of firms. Using repeated analysis of the results their results suggested that hard work has weaknesses that have no relationship with financial structures. In addition the negative and insignificant relationship between the short-term and long-term debt ratio, as well as the ROA and profit line also found by **Berger (1993). Akeem et al. (2010)** analyzed the relationship between monetary and fixed value in Bangladesh and found that the growth of shareholders' wealth requires a combination of debt and equity. In addition, financial costs have a negative impact on these options and should be as low as possible. A positive correlation between subsistence and factory performance was obtained by **Berger and Hannan (1998)** using a sample of both the largest and highest French firms of the period 1983-1995 and concluded that the ratio had a better effect on factory performance than the overall sample. **Bokpin (2013)** investigated the relationship between financial structure and firm performance and found a positive and significant relationship between financial performance and firm performance using the GMM retrospect method and panel data with 257 South African firms from 1998 to 2010. **Salim and Jadav (2012)** studied the relationship between financial structure and strong performance through a sample of 237 Malaysian companies in 1995-2011 and pointed out that the strong performance measured by ROA, ROE and EPS has a negative relationship with the capital structure. Tobin's Q has a very good relationship with STD and LTD. **Eichler (2011)** used a sample of 167 Jordanian companies between 1990 and 2010 to obtain similar results. Using a sample of 130 firms for the period 1990-2010 combined with multiple analytical analyzes. **Modigliani and Miller (1958)** found a negative correlation between financial structure and performance of firms while analyzing the impact of debt and stock financing on the operations of listed companies in Bursa Malaysia. According to **Rashid (2016)** there is a positive relationship between profitability and fairness by assessing which financial institution's view governs the financial decision of the textile sector. According to **Modigliani and Miller (1963), Berger (1995) and He (2013)** have significant influence on investment decisions in terms of growth, resilience, capacity, credit service capacity, years of corporate ownership, size and because of agency companies of Bangladesh call the theory and static trade-off theory appropriate. **Manawaduge et al. (2011)** have shown that hard work is adversely affected by debt use and most Sri Lankan firms use short-term debt as compared to long-term debt. **Arowsoshegbe and Idialu (2013**) showed similar results in Nigeria and wrote that firms use savings first, then debts and finally equity. **Phillips and Sipahioglu (2004)** concluded that there is no

significant relationship between financial structure and corporate performance in UK publicly traded companies as sleep companies appear to prefer foreign sources as revenues are low**. Owusu-Antwi (2016)** pointed out that there is a negative relationship between short-term debt and long-term debt and age has a significant relationship with maturity of debt and profit has a significant relationship with the total amount of debt. On the other hand, the opportunity to grow has a negative relationship with debt maturity. **Shyam-Sunder and Myers (2002)** found that high-profit firms with minimal financial risk were not significantly reduced against the concept of trading and concluded that there was a negative correlation between the financial structure and performance of the company. **Chowdhury et al. *(*2014)** studied at a company in Japan and Bangladesh found that the formation of money by institutional shareholders contributes to reducing agency disputes. **Aliakbar et al. *(*2013)** also found a positive correlation between financial structure and strong performance on the Tehran Stock Exchange. In contrast, a comprehensive study was conducted by **Rajan and Zingales (1995)** to investigate the formation of the capital of 48 Americans during the 1981-1990s. The results of that study revealed that there is a negative correlation between profit and credit level, and the relationship will become more apparent as the size of the firm grows.

3. Research method:

3.1. Sampling Technique

We know there are several sampling techniques for conducting a research such as random sampling, stratified sampling etc. Among the 50 textile companies listed in Dhaka stock exchange, For this study, therefore, those samples have been selected on purposive basis are enlisted in DSE before 2010. So there are 21 companies that are selected for this study on this basis.

3.2 Time horizon

To conduct the study, annual data of the selected 21 textile companies have been collected from 2010 to 2019. This provides us 202 observations.

3.3 Sources of Data

Data have been collected from the annual reports of the textile companies and the websites of Dhaka stock exchange.

3.4 Models & Methods:

3.4.1 Descriptive Statistics

Descriptive statistics are short descriptive coefficients that summarize a set of data provided, either as a whole representation or a sample of people. Descriptive statistics were divided into intermediate inclination measures and variance measures (spreads). Medium inclination measures include module, and mode, while variance measures include standard deviation.

3.4.2 Hausman Test

Husman test is conducted to determine whether fixed model is appropriate or random model is effective. To analyze panel data random model or fixed model is useful. Fixed model is effective when the independent variable is fixed and represents some ratio. Husman test is conducted by formulating the following hypothesis. The null hypoproject of this test is that the preferred model is random effects on the other side the alternative hypoproject of this test is that the preferred model is a fixed effect.

3.4.3 Correlation Analysis

The purpose of the model is to find out the impact of independent variables in explaining the dependent variables and in the case of the regression model; independent variables must be clearly independent by its nature which means that the coefficient of correlation between the variables must be lower at a minimum level. If any of the two variables are correlated at the

coefficient level of more than 0.8 it is supposed to affect by the multicollinearity problem.

3.4.4 Regression

In mathematical modeling, regression analysis is a set of mathematical methods to measure the relationship between variables. It involves many modeling techniques and several dynamic analyzes, focusing on the relationship between dependent variables and one or more independent variables (or 'predictions'). Specifically, regression analysis helps one understand how the average number of dependent variables (or 'variable variables') changes when there are some other independent variables, while other independent variables are maintained.

3.5 Dependent and Independent variables

This study was based on the selected textile companies in DSE operating in Bangladesh. The data are taken for 10 years from 2009 to 2018. For dependent variables there has been used two performance measurement, they are return on equity (ROE) and return on asset (ROA). Capital structure is defined in two indicators in this study like as short-term debt to the total asset (SDTA) and long-term debt to total asset (LTDTA) which are common two ratios and have been used by different empirical studies

Variables	Definitions
Return on equity (ROE)	The ratio of net income to total equity
Return on asset (ROA)	The ratio of net income to total assets
Short-term debt to total assets (SDTA)	The ratio of short-term debt to total assets
Long-term debt to total assets (LTDTA)	The ratio of long-term debt to total assets
Age	Total age of the company
Sales growth (SG)	Current year's sales minus previous year's sales divided by the previous year's sales

3.5.1 Return on Assets

Return on asset means how much return a company can earn by using its asset. It is a key indicator of profitability. Higher return on asset means company will be able to pay higher dividend.

3.5.2Return on Equity

Return on equity means how much return a company can earn by using its equity. It is a key indicator of profitability. Higher return on equity means company will be able to pay higher dividend.

3.5.3Long-Term Debt-to-Total-Assets Ratio

A coverage or solvency ratio which is used to calculate the amount of a company's leverage is known as long-term debt-to-total-assets ratio. The amount or percentage of a company's assets that should be liquidated to repay its long-term debt is reflected by long-term debt-to- total-assets ratio.

3.5.4Short-Term Debt-to-Total-Assets Ratio

A short-term debt ratio indicates that a company will be able to deliver payments on its outstanding short-term liabilities and these debts include liabilities with a repayment period of less than one year.

3.6Model Specification

To test the hypoproject, panel data has been used as it captures the impact of omitted variables in the model. The regression model is presented below:

Firm performance= ƒ Capital structure

Following two regression models are specified for the study.

ROEit= a+ b1 SDTAit + b2 LTDTAit +b3 SGit +b4 AGEit ROAit= a+

b1 SDTAit + b2 LTDTAit +b3 SGit +b4 AGEit

Where ROE is the return on equity of the ith company at time t, ROA is the return on total assets of the firms that are specified. SDTA and LTDTA are the two ratios of short-term to total assets and long-term to total assets respectively of the company at time t. SG means sales growth based on the comparison between the current year and its beginning year.

4. Results and Discussion:

4.1 Descriptive Analysis

The descriptive statistics of the data is given below

Table 1: Descriptive Statistics

Variables	Age	ROE	STDA	SG	ROA	LTDTA
Mean	25.63861	.037199	.431079	.8449907	.020600	.153944
Median	25.00000	.049908	.429154	.029335	.017108	.110288
Maximum	55.00000	.420628	.879417	94.71269	.144207	.572112
Minimum	6.000000	-.843700	.053190	-1.000000	-.127886	0.00000

Source: software output

The mean value for ROE is 3.71 percent that indicates that equity holders are paid at the rate which might not be as per the expectation of shareholders. Moreover some z category firm may go for manipulation which could be responsible for this minimum rate of return on equity.The standard deviation of ROE is 13.25 percent indicating the volatility at a general level which also states that equity holders are getting paid at this minimum rate little bit consistently.On the other side mean value ROA, is 2.06 percent which could not be satisfactory too like the above ROE and the standard deviation for ROA is 3.94 percent which shows the consistency of small returns generated by the firms. It is observed textile companies in Bangladesh listed in DSE are not too much levered and we found that 50 per cent of assets are financed by using debt in which average 38 per cent is short-term debt and an average of 15 per cent is long-term debt. The minimum value for long-term debt is observed 0 which indicates that some companies do not have any long-term debt and most of the firms are using short-term debt than the long-term and the range is 5.3 percent to terribly 87.94 percent.The mean value for sales growth is found at 85 percent indicating the textile industry is developing in Bangladesh.

4.2 Hausman Test

Table 2: Hausman Test

Particulars	Model 1 (ROE)	Model 2 (ROA)
Chi square	16.02	33.44
P value	0.0068	0.0000

Source: software output

Table 2 shows the results found from the Hausman test that will help to determine which model will be appropriate for the test. As the table shows that p value is 0.0068 and 0.0000 for both the model 1 and model 2 respectively and the figures are lower than 0.05 Which indicates that fixed effect is applicable for both the models. The null hypoproject is also showed as not systematic that is the indicator to reject the random effect.

4.3 Correlation Analysis

The given table shows pair-wise correlation level between the variables that have been

selected to conduct the model and it examines the pattern of relationships between the variables.

Table 3: Correlation matrix

Variables	STDA	LTDA	SG	AGE
STDA	**1.000000**	-.304374	.084228	-.079854
LTDA	-.304374	**1.000000**	-.012703	.334289
SG	.084228	-.012703	**1.000000**	-.002291
AGE	-.079854	.334289	-.002291	**1.000000**

Source:software output

From the above table we can see that no pairwise correlation carries the value more than 0.8 so we can conclude that these are not affected by multicollinearity problem.

4.4 Regression results Analysis

E-Views10 has been used to analyze the model characterized as panel data. Data is set for selected textile companies in DSE for the time series of 2010 to 2019. Here to recall, ROA and ROE are the two performance measures set as the dependent variables of the test. SDTA and LTDTA are the two measurements of capital structure and the other two variables such as SG, AGE are considered as control variables.

4.4.1 : Regression coefficients (considering ROA as dependent variable)

Table 4: Regression coefficients (considering ROA as dependent variable)

Variables	Coefficient	Std.Error	P value
C	0.045717	0.010159	0.0000
SDTA	0.061394	0.014134	0.0000
LTDTA	-0.114372	0.018682	0.0000
SG	-0.00950	0.000336	0.0052
AGE	0.00771	0.000297	0.0102

Source: software output

4.4.2 : Regression coefficients (considering ROE as dependent variable)

Table 4.5: Regression coefficients (considering ROE as dependent variable)

Variables	Coefficient	Std.Error	P value
C	0.040720	0.036034	0.0259
SDTA	0.082211	0.050134	0.0102
LTDTA	-0.234554	0.066267	0.0005
SG	-0.004316	0.001191	0.0004
AGE	0.002796	0.001055	0.0087

Source: software output

P-values and coefficients in regression analysis indicates which relationships are statistically significant or insignificant and it also explains the nature of those relationships .The relationship between each independent variable and the dependent variable is explained by the coefficients. The p-values for the coefficients indicate whether these relationships are significant or insignificant. Table 4 and 5 include the results from the regression that will help to determine which variable is statistically significant for both the ROE and ROA respectively. Short-term debt is positively related and statistically significant for both profit measure of ROE and ROA. On the other side long term debt is statistically significant with both ROA and ROE but negatively related. As increasing long term debt also increases cost and financial distress. Moreover it makes the firm riskier. The control variables like sales growth and age are both resulted significant as P value is less than 5%.

5. Conclusion:

The main purpose of this study was to determine whether the debt-carrying capacity in the textile industry has an impact on the performance of firms and if that means what they have the relationship in context and direction. There is not enough research on the impact of the textile company's capital structure on firm's performance, so this study will add value to further studies in the textile sector. By allowing other regulatory variables in addition to the financial structure also attempted to identify any other variables that may affect the performance of the company or not. Revenue equity (ROE) and asset return (ROA) are two measures used as the variance in profit variance that depends on the analysis. Short-term liabilities for net assets and long-term debt on net assets are the representative assets of the financial structure. The study found that there is a relationship between financial structure and firm performance which means that the short-term liability of the total asset is closely related to both the ROE and ROA profit rates. These receivables are conclusively proven as short-term debt such as repayment, overdue etc. Short-term debt is statistically significant in determining whether both ROE and ROA are also included in this study. In contrast to long-term debt has a negative relationship with ROE and ROA and the literature in this view also supports these findings as long-term debt is expensive and increases financial anxiety for firms although according to the result, long-term debt is important figures in determining ROA and ROE. Outside of the capital structure, only sales growth resulting from regulatory variables is negatively associated with ROA and ROE. However, all the findings mean that the loan is sensitive to the company's performance and that there is an impact on the company's capital structure to its profitability.

References:

Akeem, L. B., Terer, E. K., Kiyanjui, M. W., & Kayode, A. M. (2014). Effects of capital structure on firm's performance: Empirical study of manufacturing companies in Nigeria. *Journal of Finance and Investment analysis*, *3*(4), 39-57.

Aliakbar, R., Seyed, H. S. N., & Pejman, M. (2013). The relationship between capital structure decisions with firm performance: Comparison between big and small industries in firms listed at Tehran stock exchange. *World of sciences journal*, *1*(9), 83-92.

Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The journal of finance*, *23*(4), 589-609.

Arowoshegbe, A. O., & Idialu, J. O. (2013). Capital structure and profitability of quoted companies in Nigeria. *International Journal of Business and Social Research*, *3*(3), 99-106.

Barnea, A., Haugen, R. A., & Senbet, L. W. (1985). *Agency problems and financial contracting*. Prentice Hall.

Berger, A. N., & DeYoung, R. (1997). Problem loans and cost efficiency in commercial banks. *Journal of Banking & Finance*, *21*(6), 849-870.

Berger, A. N. (1993). "Distribution-free" estimates of efficiency in the US banking industry and tests of the standard distributional assumptions. *Journal of productivity Analysis*, *4*(3), 261-292.

Berger, A. N., & Hannan, T. H. (1998). The efficiency cost of market power in the banking industry: A test of the "quiet life" and related hypotheses. *Review of economics and statistics*, *80*(3), 454-465.

Bokhari, H. W., & Khan, M. A. (2013). The impact of capital structure on firm's performance (A case of non-financial sector of Pakistan). *European Journal of Business and Management*, *5*(31), 111-137.

Bokpin, G. A. (2013). Ownership structure, corporate governance and bank efficiency: an empirical analysis of panel data from the banking industry in Ghana. *Corporate Governance: The international journal of business in society*.

Berger, A. N. (1995). The relationship between capital and earnings in banking. *Journal of money, credit and Banking*, *27*(2), 432-456.

Chowdhury, F. U., Vaidyanathan, S., Bould, M., Marsh, J., Trickett, C., Dodds, K., ... & Thorley, P. J. (2014). Rapid-acquisition myocardial perfusion scintigraphy (MPS) on a novel gamma camera using

multipinhole collimation and miniaturized cadmium–zinc–telluride (CZT) detectors: prognostic value and diagnostic accuracy in a 'real-world'nuclear cardiology service. *European Heart Journal–Cardiovascular Imaging*, *15*(3), 275-283.

Eichler, S. (2011). Exchange rate expectations and the pricing of Chinese cross-listed stocks. *Journal of Banking & Finance*, *35*(2), 443-455.

Khan, F., & Nouman, M. (2017). Does Ownership Structure Affect Firm's Performance? Empirical Evidence from Pakistan. *Empirical Evidence from Pakistan (April 16, 2017). Pakistan Business Review*, *19*(1).

He, T. (2013). The comparison of impact from capital structure to corporate performance between Chinese and European listed firms.

Manawaduge, A., Zoysa, A. D., Chowdhury, K., & Chandarakumara, A. (2011). Capital structure and firm performance in emerging economies: An empirical analysis of Sri Lankan firms. *Corporate Ownership & Control*, *8*(4), 253-263.

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American economic review*, *48*(3), 261-297.

Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital: a correction. *The American economic review*, *53*(3), 433-443.

Owusu-Antwi, G., Antwi, J., Owusu-Peprah, N. T., & Barnoh, E. A. (2016). Capital structure and firm's performance in Ghana. Do macroeconomic factors matter. *Journal of Research in Business, Economics and Management*, *6*(2), 874-887.

Phillips, P. A., & Sipahioglu, M. A. (2004). Performance implications of capital structure: evidence from quoted UK organisations with hotel interests. *The Service Industries Journal*, *24*(5), 31-51.

Rajan, R., & Zingales, L. (1995). What do we know about capital structure: Evidence from G-7 countries. *Journal of Finance*, *50*(5), 1421-1460.

Rashid, A. (2016). Managerial ownership and agency cost: evidence from Bangladesh. *Journal of business ethics*, *137*(3), 609-621.

Roden, D. M., & Lewellen, W. G. (1995). Corporate capital structure decisions: evidence from leveraged buyouts. *Financial Management*, 76-87.

Salim, M., & Yadav, R. (2012). Capital structure and firm performance: Evidence from Malaysian listed companies. *Procedia-Social and Behavioral Sciences*, *65*, 156-166.

Shyam-Sunder, L., & Myers, S. C. (1999). Testing static tradeoff against pecking order models of capital structure. *Journal of financial economics*, *51*(2), 219-244.

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