

Determinants of Capital Structure of Listed Textile Enterprises of Bangladesh

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Abstract

This empirical study is undertaken to analyze the determinants of capital structure choice of Textile sector of Bangladesh. Further, this study also aims to examine which theory of capital structure rules the financing decision of Textile sector. In this study panel data was employed to estimate fixed-effect model which preserves the time series variation in leverage. The result of fixed-effect estimator reports that tangibility and profitability are statistically significant explanatory variables for Total Debt ratio. The study reports F statistics and found fixed-effect model as a whole to be statistically significant. This result is consistent with both trade-off model and agency cost theory of capital structure which suggests a positive relationship of profitability and tangibility to leverage.

Keywords: Capital Structure, Leverage, Tangibility, Profitability, Size, Growth, Textile.

1. Introduction

During past several decades, capital structure theories have evolved from many directions. Capital structure theories explain the theoretical relationship between capital structure, cost of capital and overall valuation of the firm. Since Modigliani and Miller (1958, 1963) established the first theoretical framework attempting to explain firm's capital structure choice, research on this topic has been vigorously conducted. Despite extensive research for more than forty years, capital structure remains one of the controversial subject of modern corporate finance. An ongoing debate still exists regarding the question of a firm's optimal capital structure. "How do firms choose their capital structure"? Twenty seven year old question of Myers (1984) still remain unanswered. From a practical standpoint, this question is of utmost importance for corporate financial managers which has been first brought about by Myers in 1984. Most capital structure studies till date have focused on the data set of developed countries that have many institutional similarities. There are also a number of studies on determinants of capital structure that provide evidence from developing economies. However, this area still remains under researched in the context of Bangladeshi enterprises. The initial effort has been made by Haque (1989), Chowdhury (2004), Lima (n.d.) and Sayeed (2011) but still a lot of questions remain unanswered. The study attempts to reduce the research gap by analyzing the capital structure question from Bangladeshi business environment. Hence, a dedicated paper for a small country like Bangladesh has been waiting to be undertaken. It is evident from past researches that there exist differences in results in the form of sign and statistical significance of the explanatory variable that vary from study to study. According to empirical results, it is also not very clear which model can better explain capital structure decisions. The conflicting results of these determinants have prompted this study to be undertaken covering mostly the stated firm-specific determinants as supported by the available data from listed manufacturing enterprises of Textile sector in Bangladesh. Further, this study also aims to examine which theory of capital structure rules the financing decision of Textile sector of Bangladesh. Therefore, this study shed light onto different firm-specific capital structure determinants of manufacturing enterprises and also contributes to the existing body of literature written in this context.

2. Research Objectives

The objectives of the study are as follows:

- I. To examine the association between capital structure and a set of firm-specific variables which are profitability, tangibility, size and growth.
- II. To examine which theory of capital structure explains the sources of variation in firm-specific determinants of leverage for the selected textile manufacturing enterprises.

To fulfill the first objective the following null hypothesis is formulated:

H1o: There exists no significant association between firm-specific determinants and capital structure of selected textile manufacturing enterprises.

3. Literature Review

There exist two extreme views of capital structure (Durand, 1959). One is net income approach and the other is net operating income approach. Under the net income approach, the cost of debt and cost of equity are assumed to be independent of the capital structure. The weighted average cost of capital declines and the total value of firm rises with the increased use of leverage. Under the net operating income approach, the cost of equity is

assumed to increase linearly with leverage. As a result, the weighted average cost of capital remains constant and the total value of the firm also remains constant as leverage is changed. Traditional approach is advocated by traditional writers (Solomon, 1963) and this is an intermediate approach between net income and net operating income approach. According to traditional approach, the cost of capital declines and the value of the firm increases with leverage up to prudent debt level and after reaching the optimum point, i.e. minimum cost of maximum value of the firm, coverage causes the cost of capital to increase and the value of the firm to decline.

Modigliani and Miller (1958) rejected the traditional approach and their propositions are identical to the net operating income approach. In 1958, with their path-breaking paper, "cost of capital, corporation finance and the theory of investment", MM introduced the capital structure irrelevancy propositions and began the birth of a modern capital structure theory. They argue that in the absence of taxes, a firm's market value and the cost of capital remains invariant to the capital structure changes. MM's hypotheses are based on certain assumptions. MM assumed a perfect capital market with no transaction or bankruptcy cost and where perfect information prevails; firm and individuals can borrow at the same interest rate; taxes and investment decisions are not affected by financing decisions. MM made two findings under these conditions. Their first proposition was that the value of a firm is independent of its capital structure. They demonstrated that there would be arbitrage opportunities in perfect capital markets if the value of a firm depended on how it is financed. They also argue that if investors and firms can borrow at the same rate, investors can neutralize any capital structure decisions the firm's management may take with home-made leverage. MM's second proposition stated that the cost of equity for a leveraged firm is equal to the cost of equity for an unleveraged firm plus an added premium for financial risk. That means, as leverage increases while the burden of individual risks is shifted between different investors' classes, total risk is conserved and hence no extra value of firm created. The underlying rationale for MM argument is that the value of the firm is determined solely by the left-hand side of the balance sheet, i.e. by investing in positive net present value assets. The right-hand side of the balance sheet which is known as financing side do not contribute to the firm value, so using debt or not debt has nothing to do with increasing the value of a firm.

In 1963, Modigliani and Miller extended their analysis to include the effect of taxes and risky debt. They argue that optimal capital structure would have to be virtually no equity at all and can be obtained for firms with 100 percent debt financing by having the tax shield benefits of using debt. The tax deductibility of interest makes debt financing valuable, that is, the cost of capital decreases as the proportion of debt in the capital structure increases. This was MM's correction model. Miller (1977) in his paper, "Debt and Taxes", has examined the MM model incorporating both corporate and personal income taxes. According to Miller (1977), the advantage of interest tax shield is offset by the personal income taxes paid by the debt holders on interest income. This point establishes the optimum debt ratio for the individual firm when both corporate taxes and progressive personal taxes exist.

Many researchers later have recognized the importance of financial leverage in affecting the overall cost of capital and value of the firm. Hence, many empirical researches were undertaken on the concept developed by Modigliani and Miller. Durand (1989) criticized the MM's theory and suggested several factors which were ignored in MM's model such as market imperfections, transaction cost and institutional reactions and preference for the present income over the future to affect the capital structure of firms. Furthermore, Ebrahim and Mathur (2000, 2007) have found two other limitations in MM's model very recently. According to them, this model ignores the analysis of supply and demand functions and hence the optimal pricing considerations of debts. If capital structure is irrelevant in perfect market, then imperfections which exist in the real world must be cause of its relevance. The theories which addresses some these imperfections by relaxing assumptions made in the MM model are trade-off theory, agency costs theory, signaling hypothesis and pecking-order hypothesis.

3.1 Trade-off Theory

According to trade-off theory a firm's optimal debt ratio is determined by a trade-off between the cost of financial distress and tax advantage of borrowing, holding the firm's assets and investment plans constant. The classical version of this hypothesis was developed by Kraus and Litzenberger in 1973, who considered a balance between the dead-weight costs of bankruptcy and the tax savings benefits of debt. The theoretical optimum is reached when the present value of tax savings due to further borrowing is just offset by the increase in the present value of cost of distress. This is referred to as the trade-off theory of capital structure (Brealey et al., 1981). Unlike Modigliani and Miller's theory, which seemed to say that firms should take on as much as debt as possible, trade-off theory avoids extreme predictions and rationalizes moderate debt ratios. If financial managers of the firm's being asked whether they have target debt ratios; they will usually say yes. This is consistent with the trade-off theory (Graham and Harvey, 2001).

3.2 Agency Cost Theory

Agency theory focuses on the costs which are created due to conflicts of interest between shareholders, managers

and debt holders. In much of the corporate finance literature, agency costs are assumed as an important determinant of firm's capital structure (Jensen and Meckling, 1976 ; Harris and Raviv, 1991 and Stulz, 1990). The three types of agency costs which can help explain the relevance of capital structure are: i) asset substitution or (risk shifting), ii) underinvestment problem and iii) free cash flow

3.2.1 Asset Substitution Effect

The risk shifting hypothesis states that stockholders have the incentive to exploit bondholders once the debt is issued. As debt to equity increases, management has increased incentive to undertake risky even negative net present value projects. This is because if the project is successful, shareholder get all the upside, if it is unsuccessful, debt holders get all the downside. If such projects are undertaken, there is chance of firm value decreasing and a wealth transfer from debt holders to shareholders. This effect is known as asset substitution effect (Drobtz and Fix, 2003).

3.2.2 Underinvestment Problem

The under investment problem refers to the tendency of managers to avoid safe positive net present value projects in which the value increase of firm consists of an increase in the value of debt and a smaller decrease in the value of equity. If debt is risky, for instance, in a growth company, the gain from the project will accrue to debt holders rather than shareholders. Thus, management have an incentive to reject positive net present value projects, even though they have potential to increase firm value (Drobtz and Fix, 2003). Brealey and Myers (2000) argue that the underinvestment problem theoretically affects all firms with leverage, but it is pronounced for highly leveraged firms in financial distress. The underinvestment problem tilts the capital structure towards equity.

3.2.3 Free Cash Flow

Companies that produce stable operating cash flow, high leverage can add value to those firms by improving managers' financial discipline (Easterbrook, 1984 and Jensen, 1986). Firms with substantial free cash flow face conflicts of interest between stockholders and managers. debt reduces the agency cost of free cash flows for mature companies by reducing the cash flow available for spending at the discretion of managers (Drobtz and Fix, 2003).

3.3 Pecking Order Theory

Pecking order model developed by Stewart C. Myers and Nicolas Majluf in 1984 starts with asymmetric information that indicates managers know more about their companies' prospects, risks and values than do outside investors. Asymmetric information affects the choice between internal and external financing and between new issues of debt and equity securities. This leads to a pecking order, in which they prefer first to finance investment with internal funds (Donaldson, 1961), i.e. retained earnings primarily. If the internal funds are not sufficient to meet the investment outlay, firms go for external finance. Firms start with the debt, then possibly hybrid securities such as convertible debentures, then perhaps equity as a last resort (Myers, 1984). Myers has called it pecking order theory since there is not a well defined debt-equity. Pecking order theory says that external equity will be issued only when debt capacity is running out and financial distress threatens (Brealey et al., 1981). Firms do not target any debt ratio but the debt ratio is merely the outcome of cumulative requirements for external finance over time (Baker and Wurgler, 2000). Shyam-Sunder and Myers (1999) in their working paper series found that pecking order is still the first and effective order of describing the behavior of corporate financing.

3.4 Relationship between Models and Firm-specific Capital Structure Determinants

3.4.1 Profitability

The trade-off theory and agency cost suggests a positive relationship of profitability to leverage. According to trade-off theory, agency costs, taxes and bankruptcy costs push more profitable firms toward higher usage of debt. In the agency models of Jensen and Meckling (1976), Easterbook (1984), and Jensen (1986), higher leverage helps to control agency problems. To avoid agency problem, profitable firms would employ higher leverage in order to pay out more cash (Fama and French, 2002 and Gracia and Mira, 2008). The strong commitment to pay out a larger fraction of firm's pre-interest earnings to debt payments suggests a positive relationship between leverage and profitability. This notion is also consistent with the signaling hypothesis by Ross (1977), where higher levels of debt can be used by managers to signal an optimistic future of the firm. However, the pecking order theory, based on works by Myers and Majluf (1984), firms that are profitable will use their internal funds (retained earnings) to finance their investments and operations and thus they will borrow relatively less than firm with low profitability (Garcia and Mira, 2008, Booth et al, 2001, Fan et al, 2008). Therefore, pecking-order model predicts a negative relationship between leverage and profitability.

3.4.2 Asset Tangibility

Galali and Masulis (1976), Jensen and Meckling (1976), Myers (1977) and Bradely et al (1984) argue that firms that heavily invest in tangible assets also have higher financial leverage since they borrow at lower interests if their debt is secured with such assets. Creditors have an improved guarantee of repayment and without collateralized assets such a guarantee does not exist, i.e. the debt capacity should increase with the proportion of tangible assets on the balance sheet. Hence, trade-off theory predicts a positive relationship between measures of leverage and the proportion of tangible assets. Agency cost theory also predicts the same relationship (Jensen and Meckling, 1976 and Williamson and Oliver, 1988). The agency cost of equity lead to underinvestment problems. Further, the information asymmetry results in new equity being underpriced. Issuing debt secured by tangible assets reduces these agency costs. Chen (2003) confirms positive relationship between a firm's leverage, particularly long-term debt, and the tangibility of its assets. This result is consistent with both the trade-off model in terms of financial distress and bankruptcy costs and the pecking order hypotheses in terms of asset mispricing. From the perspective of testing the pecking order, according to Harris and Raviv (1991), firms with few tangible assets would have greater asymmetric information problems. Therefore, firms with few tangible assets will tend to accumulate more debt over time and become more highly levered. Harris and Raviv (1991), argue that the pecking order predicts that a negative relationship is expected under this framework. Another possible argument from Gracia and Mira (2008) which supports this negative relationship is that lots of tangible assets may mean that a firm has already found a stable source of return which provides it with more internally generated funds and allows avoiding external financing. Negative relationship between tangibility and leverage has also been observed by Bauer (2004), Ferri and Jones (1979), Karadeniz, Kandir, Balcilar and Onal (2009) and Mazur (2007), thus supporting pecking order theory.

3.4.3 Size

According to the trade-off model, larger firms are more diversified and have lower variance of earnings, thus less exposed to the risk of bankruptcy, making them able to tolerate higher debt ratios (Castanias, 1983, Titman and Wessels, 1988 and Wald, 1999). On the other hand, smaller firms should operate with low leverage because these firms are more likely to be liquidated when facing financial distress, thus bankruptcy costs are relatively higher for smaller firm (Titman and Wessels, 1988, Warner, 1977, and Ang, Chua & McConnel, 1982 and Garcia & Mira, 2008). Fama and Jensen (1983) and Myers and Majuuf (1984) argue that larger firms tend to provide more information to lender than smaller firms, thus, reducing the agency costs associated with debt, i.e. relatively low monitoring costs because of less volatile cash flows and easy access to capital markets. Thus, agency cost theory also predicts a positive relationship between size and leverage. According to pecking order hypothesis, informational asymmetries between insiders within a firm and capital markets or outside investors are expected to be lower for large firms (Rajan and Zingales, 1995). If this is the case then larger firms favor equity financing and have lower debt, thus implying negative relationship.

3.4.4 Growth Rate

According to pecking order theory there is positive relationship between growth (past growth) and leverage since a high growth implies a higher demand for funds and ceteris paribus, a greater reliance on external financing through the preferred source of debt (Sinha, 1992). Thus, the pecking order theory suggests the higher proportion of debt in the capital structure of the growing enterprises than that of the stagnant one. However, static trade-off theory does not make any definite prediction. Agency cost theory contrary to pecking order theory suggests a negative relationship between the growth rate and debt level of enterprises. According to agency cost theory equity controlled firms have a tendency to invest sub-optimally to expropriate wealth from the enterprises' bondholders. The agency cost is likely to be higher for growing companies having more flexibility in their choice of future investment. This conclusion is evident by empirical studies by Jensen and Meckling (1976), Kim and Sorensen (1986), Titman and Wessels (1988), Stulz, 1990.

4. Research Methodology

This empirical study attempts to investigate the firm-specific factors influencing the debt level of publicly traded manufacturing enterprises operating under the Textile industry of Bangladesh. The firm-specific factors being examined are profitability, asset tangibility, firm size and growth rate. The main source of data for this study is the annual report of sample enterprises for the year 2008 to 2012. A sample of 9 publicly traded enterprises under Textile industry are selected applying random sampling technique. Several methods are employed in measuring capital structure as it is evident from the past literatures. To measure capital structure total debt to total asset ratio has been used in many studies including Rajan and Zingales (1995), Mitton (2007), Gracia and Mira (2008), Ramllal (2009), Sheikh and Wang (2010) and Janbaz (2010). According to Fama and French (2002) most past literature considered the book value of debt as better way to define the capital structure. As a measurement of capital structure, current study uses book value and the debt ratio - total debt to total asset. Following Titman and

Wessels (1988), this study uses the ratio of operating income over total assets (ROA) as measure of profitability. In accordance with the study of Rajan and Zingales (1995), asset tangibility is defined as the ratio of fixed asset to total assets. Following Abor (2008) and Janbaz (2010) the measure of size used in this study is the natural logarithm of total assets. In this study growth is measured by compound growth rate in total gross assets in accordance with the study of Baral (2004) and Shanmugasundaram (2008). The proxies for independent variables are carefully chosen in order to reduce the effect of multicollinearity among the variables. This study attempts to test for the existence of multicollinearity problem using Variance Inflation Factor or VIF method. Panel Regression analysis is used to investigate the determinants of capital structure since the sample contains longitudinal data (Appendix). In this study each of 9 manufacturing enterprises from the Textile industry is surveyed over the period of 2008 to 2012. For panel data analysis the study uses the statistical software ‘Stata’. This study employs fixed-effect model to examine the association between dependent and independent variables since most commonly employed model for panel data is the fixed effects estimator. Fixed-effects model is used as the study is interested in analyzing the impact of explanatory variables that vary over time. The hypothesis tested in this study is total debt ratio can be seen as a function of the profitability, asset tangibility, growth and size of the firm.

The equation for the fixed-effects model is as follows:

$$Y_{it} = \beta_1 X_{it} + \alpha_i + U_{it}$$

Where, i = denotes companies and t denotes time period with $i = 1, 2, \dots, N$ (Here, $N = 9$ and $t = 5$ years)

α_i = the unknown intercept for time

Y_{it} = the dependent variable.

X_{it} represents independent variable,

β_1 is the coefficient for independent variable ,

U_{it} is the normal error term

5. Research Findings

5.1 Descriptive Statistics of Panel Data

Table 1 reports panel data of 45 company-years and based on this panel database descriptive statistics are generated which are shown in Table 2. Table 2 reports that the number of observations are 45 company-years, reflecting $N=9$ companies, each observed for an average of 5 years. Descriptive statistics includes the mean, maximum, minimum and standard deviation from the year 2008 to 2012.

Table 1. Panel Data of Listed Enterprises in Dhaka Stock Exchange (DSE) under Textile Sector

Total Debt Ratio	Profit.	Size	Tang.	Growth	Year	ID	Textile Name
0.470169	0.022512	8.71204	0.640654	0.14276	2008	1	Saiham
0.374981	0.029711	8.64013	0.631877	-0.1642	2009	1	Saiham
0.378073	0.038464	8.65372	0.574696	-0.0616	2010	1	Saiham
429118	0.039516	8.69245	0.490689	-0.06652	2011	1	Saiham
0.487825	0.031654	8.67811	0.557854	0.099937	2012	1	Saiham
0.756851	0.078085	9.02846	0.399244	0.11682	2008	2	Tallu Spinning
0.770623	0.11893	9.06422	0.404413	0.09988	2009	2	Tallu Spinning
0.783564	0.130356	9.03402	0.408183	-0.05847	2010	2	Tallu Spinning
0.800899	0.118388	9.03933	0.423531	0.050356	2011	2	Tallu Spinning
0.623656	0.08923	9.02933	0.435097	0.003934	2012	2	Tallu Spinning
0.958808	0.072951	9.79016	0.665844	0.1336	2008	3	Bextex
0.802065	0.118641	10.1748	0.487636	0.775856	2009	3	Bextex
0.869077	0.067578	10.1685	0.461741	-0.06691	2010	3	Bextex
0.82435	-0.03189	10.2807	0.621143	0.742003	2011	3	Bextex
0.519867	0.118053	10.3455	0.608357	0.13693	2012	3	Bextex
0.865601	0.015354	8.53953	0.37061	0.086897	2008	4	Mithun Kniit
0.754666	0.020991	8.55106	0.307549	-0.14782	2009	4	Mithun Kniit
0.78272	0.015369	8.58324	0.241127	-0.15568	2010	4	Mithun Kniit
0.75815	0.026325	8.54906	0.233041	-0.10668	2011	4	Mithun Kniit

0.54062	0.01529	8.65434	0.198938	0.087831	2012	4	Mithun Knit
0.077979	0.002186	9.98174	0.069587	0.024101	2008	5	Delta Spinning
0.797988	0.01987	9.02643	0.687409	0.094899	2009	5	Delta Spinning
0.689492	0.018028	9.2201	0.792587	0.80092	2010	5	Delta Spinning
0.682928	0.019496	9.22516	0.732497	-0.06497	2011	5	Delta Spinning
0.643455	0.014364	9.19587	0.735718	-0.06112	2012	5	Delta Spinning
0.764337	0.085618	8.95127	0.725688	0.01433	2008	6	Sonargaon
0.731022	0.0895	8.96744	0.65834	-0.0584	2009	6	Sonargaon
0.705701	-0.00072	8.9678	0.619313	-0.05849	2010	6	Sonargaon
0.783117	-0.00697	9.02551	0.485758	-0.10419	2011	6	Sonargaon
0.774816	0.012155	9.01615	0.462943	-0.06729	2012	6	Sonargaon
1.04431	0.011692	9.38068	0.73735	0.011987	2008	7	Prim.Tex
1.12953	0.017815	9.40136	0.692964	-0.01437	2009	7	Prim.Tex
0.529629	0.02693	9.37664	0.698878	-0.04727	2010	7	Prim.Tex
0.560863	0.033293	9.41995	0.600197	-0.05113	2011	7	Prim.Tex
0.349155	0.013123	9.56984	0.744172	0.750937	2012	7	Prim.Tex
1.30559	0.153729	8.4911	1.08793	-0.14	2008	8	Apex Spinning
1.28255	0.16168	8.55731	0.905581	-0.03052	2009	8	Apex Spinning
1.16338	0.117494	8.6346	0.9832	0.297185	2010	8	Apex Spinning
1.28505	0.125235	8.65383	0.870334	-0.07472	2011	8	Apex Spinning
0.961571	0.075486	8.66825	0.815478	-0.03139	2012	8	Apex Spinning
0.569307	0.030107	8.76472	0.626367	0.2786	2008	9	H R Tex
0.679998	0.025782	8.88581	0.587579	0.239706	2009	9	H R Tex
0.712562	0.027513	8.93215	0.545557	0.033043	2010	9	H R Tex
0.731075	0.029924	8.96661	0.492196	-0.02331	2011	9	H R Tex
0.075886	0.002951	10.0169	0.046362	0.057587	2012	9	H R Tex

Table 2. Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Total Debt Ratio	45	0.7240659	0.2712553	0.075886	1.30559
Profitability	45	0.0498176	0.0479634	-0.031889	0.16168
Size	45	9.100132	0.5178925	8.491097	10.3455
Tangibility	45	0.568138	0.2202972	0.0463623	1.08793
Growth	45	0.0761123	0.2434025	-0.164202	0.80092

5.2 Results of Multicollinearity Statistics

Multicollinearity statistics is presented in Table 3. The statistical problem that is addressed in this study is multicollinearity among the independent variables. Variance Inflation Factor or VIF method is used to test for the existence of multicollinearity among the determinants of capital structure choice. Multicollinearity would exist when Tolerance is below 0.1 and VIF is greater than 10. If VIF of any independent variable exceed the value of 10, then the variable is said to be highly collinear. This table reports that the selected independent variables of this study does not contain multicollinearity problem.

Table 3. Collinearity Statistic (VIF)

	Profitability	Size	Tangibility	Growth
Tolerance	0.858	0.755	0.794	0.748
VIF	1.166	1.324	1.259	1.337

Table 4. Results of Fixed-Effect Model

Fixed-effect Regression			
Number of observations =45			
Total Debt Ratio (dependent variable)	Coefficient	t-statistics	Probability
Profitability	1.797325	2.47	0.019**
Size	-0.047919	-0.67	0.504
Tangibility	0.5272617	3.24	0.003**
Growth	-0.073957	-0.49	0.629
Constant	0.776664	1.16	0.252
R-squared: 0.5065			
Adjusted R-squared: 0.3968			
F(4, 36) = 7.21 Probability =0.0002**			

Notes: ** means statistically significant at 5% level of significance

5.3 Results of Fixed-Effect Model

Fixed-effect regression analysis in Table 4 reports that there are 45 observations on company-years, reflecting N=9 companies, each observed for an average of 5 years. T values and two-tailed P-values reported in Table 4 are used to test the hypothesis whether each coefficient is different than zero. This table shows that beta coefficients of tangibility and profitability is positive and their association with Total Debt ratio is statistically significant since calculated value of 't' reported in Table 4 for both explanatory variable is higher than critical value of 't' which is 2.086 at 0.05 level of significance. Besides the P-value is also lower than 0.05, hence this also signifies tangibility and profitability has significant influence on dependent variable. However, the beta coefficients of size and growth rate are negative but their association with Total Debt ratio is statistically insignificant. Hence this suggests that tangibility and Profitability are significant explanatory variables of Total Debt ratio. R-squared indicate that 50.65% of the variance in Total Debt ratio can be explained by the explanatory variables. F statistics is used to test the fixed-effect model for overall goodness-of-fit. The calculated probability of F test which is 0.0002 is less than 0.05, hence fixed-effect model is reported to be significant at 5% level of significance. Therefore, this study rejects the null hypothesis at 5% significance level, indicating that there exists significant association between capital structure and firm specific determinants of selected textile manufacturing enterprises.

6. Conclusion

In this study panel data was also employed to estimate fixed-effect model which preserves the time series variation in leverage. The results of fixed-effect estimator reports that tangibility and profitability are statistically significant explanatory variables for Total Debt ratio. However, this model failed to establish any significant association of size and growth rate with the debt measure. The study reports F statistics to test the fixed effect model for overall goodness-of-fit. The null hypothesis of no significance is rejected at the 5% level of significance, hence fixed-effect model as a whole is found to be statistically significant. This result is consistent with the both trade-off model and agency cost theory which suggests a positive relationship of profitability and tangibility to leverage. According to trade-off theory, expected bankruptcy costs decline when profitability increases and deductibility of corporate interest payments induces more profitable firms to finance with debt (Kraus and Litzenberger, 1973). The agency model suggests leverage and profitability have positive relationship since higher leverage helps to control agency problems (Jensen and Meckling, 1976). To avoid agency problem, profitable firms would employ higher leverage in order to pay out more cash (Fama and French, 2002 and Gracia and Mira, 2008). Galali and Masulis (1976), Jensen and Meckling (1976), Myers (1977) and Bradely et al (1984) argue that firms that have high level of tangible assets also have higher financial leverage since they can borrow at lower interests if their debt is secured with such assets. Therefore, trade-off theory predicts a positive relationship between measures of leverage and the proportion of tangible assets. Agency cost theory also predicts positive relationship of tangibility with debt (Jensen and Meckling, 1976). Agency cost theory suggests issuing debt secured by tangible assets reduces these agency costs. Since this study focuses only on Textile industry, hence cross-sectional variation of determinants of capital structure of manufacturing enterprises in Bangladesh could not be examined. These suggest that future empirical studies should further explore the cross-sectional variations and external factors influencing capital structure choice of manufacturing enterprises of Bangladesh.

7. Policy Implications

This paper laid some ground work to explore the impact of firm-specific characteristics on capital structure of publicly traded manufacturing enterprises of Bangladesh. This study is considered to be an important addition and extension of academic efforts to assess the relative importance of the various firm-specific determinants in designing capital structure of manufacturing enterprises in Textile sector of Bangladesh. The present study hopes

to encourage further researches by expanding the spectrum of determinants having effect on debt ratio, corporate capital and financial structure. Future researches are required to develop new hypotheses and new variables for the capital structure decision of Bangladeshi enterprises.

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