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Comparing Leverage Policy of Multinational and Domestic Firms: Evidence from Pakistan

Muhammad Nasif [*a], Waseem Shahid[b]

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Abstract:
The purpose of this research is to compare the leverage policies of the multinational and the domestic firms after controlling firm specific factors. Our analysis include PSX (Pakistan Stock Exchange) listed MNEs and DCs for the period of 2005-2012. A panel pooled regression is used to compare the MNEs and DCs. It is found that debt financing of multinational firms is not different from domestic firms. Results further revealed that profitability, tangibility and market to book ratio as the key determinants of leverage in Pakistan. However, firm size, profitability and investment opportunities affect leverage with different intensities for multinational and domestic firms. These results provide useful insight to understand the leverage policy of multinational and domestic firms in developing countries like Pakistan.

Keywords: *Leverage, Multinationals, Firm size, Profitability, MTB.*

1. Introduction

Multinational enterprises (MNEs) play a key role to achieve desirable macroeconomic outcomes such as foreign direct investment and technology enhancement. With increasingly global climate, managers of MNEs face challenges to make efficient investing and financing decisions (Robert Joliet, 2013). MNEs are the main source of major innovation in high technology (Baumann & Kritikos, 2016). MNEs are different from domestic firms in terms of profitability, size, technology and access to the capital markets. However, an understanding of these differences between MNEs and domestic firms and their impact on financing policies can help managers to make their decision optimally.

[a]FAST School of Management, National University of Computer and Emerging Sciences, Faisalabad Campus Email: m.nasif@nu.edu.pk
[b]School of Economics, Quaid-i-Azam University, Islamabad

Financing decisions of a firm can affect its performance. Optimal leverage level is a question for the directors and managers of a firm. Failure of a leverage policy may result into low profitability, high bankruptcy, fail to invest in more profitable projects which results into decrease the performance of a firm. Past studies show that MNEs have different leverage level as compared to the DCs. So, it is important to know about the leverage policies of MNEs and DCs. The core objectives of the study are 'to compare the leverage level of MNEs and DCs' and 'to determine the relationship of firm size, profitability, tangibility and growth opportunities with firm leverage.

In general, firms finance their operations from debt or equity. Both the options have their own costs and benefits. It is important to use optimal mixture of both the sources that maximize firm value. The internationalization affects the financing behavior through debt and equity. MNEs are more expected to have high debt ratios, as across border activities may lower the firm's overall business risk, access to debt markets and low bankruptcy cost (Mittoo & Zhang, 2008). Furthermore, MNEs may find it difficult to manage local employees due to agency problem (Jensen & Posner, 1986). Therefore, debt financing could be used to overcome such agency issue.

Conversely, Burgman, (1996) and Chen, Cheng, He, and Kim, (1997) argued that MNEs take less debt to avoid the underinvestment hypothesis related to growth opportunities. However, Park, Suh, and Yeung, (2013) criticize above interpretation because underinvestment problem is related to the small and growing firms, not for large and well established firms. This indicates that different firm specific factors such as growth, firm size and profitability can affect financing behavior of MNEs and domestic firms.

Since, MNEs are different from domestic firms in term of profitability, technology and access to the capital markets; therefore it is much possible that these firm specific factors affect the financing behavior of both types of firms with varying intensities. If we look at the previous research regarding the leverage policies of multinational and domestic firms, there is lot of work done in this area. Our survey suggests that all the work done by researchers in past, compare the leverage policies among two groups of firms in developed economies (e.g. USA, UK and Australia). Therefore, this research tried to explore the leverage policies of MNEs and domestic firms after controlling firm size, profitability, tangibility and growth in case of Pakistani non-financial firms. Very few studies explored the comparative analysis of capital structure for domestic and multinational firms especially in Pakistan. So, this is a major contribution to the existing literature by adding the data of

multinational and domestic firms of a developing country like Pakistan. The outcome of this research would helpful to understand the discrepancies in leverage policies of domestic and multinational firms that will help managers to make their decisions accordingly.

The findings of this research are as follows. First, we determine the key factors of leverage in Pakistan. The results show positive and significant association among the leverage, tangibility and market to book ratio of a firm. While there is significant negative association among the leverage and profitability but the size of a firm has found positive but insignificant association with leverage. Secondly, compare the leverage level after controlling the key firm characteristics of leverage like profitability of firm, market to book ratio and tangibility. The coefficient of firm type has found positive but insignificant relationship with the leverage of a firm. These findings show that if we control the important firm characteristics of leverage then there is no significant difference in leverage of the multinational and domestic firms. Furthermore, we found positive relation among size of domestic firms and leverage but for MNEs, this association is negative. While the higher profitable domestic firms have low leverage and MNEs with high profits have high leverage level. Tangibility of both DCs and MNEs is positively correlated with leverage, but this relationship for foreign firms is much stronger. We also found that domestic firms with high growth use more debt to fulfill their investment needs. On the other hand, MNEs with high growth opportunities use less debt to avoid underinvestment problem.

This paper organized into five sections. Next Section covers the literature related to this emerging topic. Section 3 related to the data sources and methodology that will be used to analyze the results. Section 4 includes the explanation and discussion of results. And section 5 covers the conclusion, recommendations and limitations of the study.

2. Literature Review

Capital structure of a firm is the mix of overall source of financing to fulfill its financial needs. Determinants of capital structure are most studied area of corporate finance especially after seminal work of Modigliani and Miller (1958). Modigliani and Miller (1958) discussed that the value of firm is not affected through the choice of equity and debt financing. MM irrelevance theory is based on perfect capital that do not exist in practice. Later, by including the taxes in their research Modigliani and Miller (1963) suggested that if a firm uses debt as more as possible to take advantage of the

tax deductible interest expenses. Similarly, trade off theory discusses that firms consider the decisions of capital structure like a trade-off among the benefits of interest tax protections and drawbacks form the costs of possible financial distress (Lindner & Klein, 2018; Mansi & Reeb, 2002).

In addition, agency theory explains the effects of capital structure on managerial efficiencies. Agency cost theory is associated to the financial plan or financial procedures of a firm. Agency costs are related to cost incurred as results of interest conflicts. These costs are occurring in results of the associations among the manager and shareholders, and relation among debt holder and the managers (Jensen & Meckling, 1976). Conversely, Pecking Order Theory explains that firms prefer its own funds to fulfill their financial needs (Myers & Majluf, 1984). Asymmetric information is the basic idea of this theory between investors and the managers. Matemilola et al. (2018) argue that the ideal capital structure decision is made by high level managers. Because managers have superior information about the future risk level of the firm than investors. To avoid the underinvestment problem, firms take precautionary measures which influence the internal and external financing choice of the firms. Myers and Majluf (1984) also contended that firms are unwilling to issue shares because of an adverse selection problem. Firms are unwilling to issue shares because of costs related with equity issuance (Almazan, Suarez, & Titman, 2003).

These theories help in explaining the role of firm specific factors to select debt and equity as financing source. For example, Rajan and Zingales (1995) found that firms with large size have less chance of default because these firms are more diversified. These results are consistent by the trade-off theory that firms in large size should use more debt because large firms have relatively low chance of bankruptcy and are more diversified. Wald (1999) has explored that larger firm deploy more debt for firms in developed countries. After study the empirical literature, we expected a positive relation between size of firm and leverage.

Similarly, more profitability encourages firms to use more debt which facilitates firms to take advantage of tax shields on payments of interest. Therefore, in accordance with Trade-off theory, profitability is positively related with firm's leverage. Conversely, pecking order theory postulates negative association among profitability and leverage. It is because firms choose internal funds if obtainable and prefer debt over equity financing when they need outdoor financing. Several empirical studies suggest that there is a negative association among profitability and firm's leverage (Park

et al., 2013; Rajan & Zingales, 1995; Shah & Khan, 2007; Titman & Wessels, 1988; Van Hoang et al., 2018; Wald, 1999).

After review the empirical literature, we expect negative connection between profitability and firm's leverage. Myers et al. (1984) postulated a positive relation between tangibility and leverage. Firms having fixed assets can use these assets as collateral to finance at low cost. Many studies have showed positive association between tangibility and firm's leverage (Burgman, 1996; Park et al., 2013; Shah & Khan, 2007; Wald, 1999). After reviewing the empirical literature, we expect the positive association between tangibility and leverage. Similarly, Trade-off theory shows that firms with high growth opportunities and more intangible assets have a habit of to less leverage than the firms have more tangible assets. According to agency theory with high growth firms should maintain low leverage to avoid agency problems. Many studies have confirmed negative association among growth opportunities and leverage (Eriotis, Vasiliou, & Ventoura-Neokosmidi, 2007; Kayo & Kimura, 2011; Park et al., 2013; Sheikh & Wang, 2011).

After studying the empirical literature, we assume a negative association between firm growth and leverage. However, firm type (such as MNEs vs domestic firms) can also be an important reason of debt financing. For instance, the OLI model (Dunning, 1977), an earlier theory describes the reason of FDI occurrence and contend that MNEs have low leverage level. The logic on which the above theory based is that MNEs have respected intangible assets (technology, patents and brand names, heavy R&D investment activities). These intangible assets enforce the multinational enterprises to enter in other countries through direct investments instead of licensing or exports. According to the literature of capital structure of multinational enterprises, the availability of respectable intangible assets results in a low level of leverage than domestic enterprises (Buckley & Casson, 1976; Dunning, 1977). All this because of intangible assets are positively related to the high growth and profitability ratios for foreign enterprises. Akhtar (2017) also found that MNEs have less leverage than DCs in case of US firms while high leverage level for Malaysian MNEs. He founds that risk of foreign exchange, collateral value and size of firms are the important determinants of capital structure. Aabo et al., (2015) argues that opaqueness of a firm effect by multinationality. This study proposes that culture diversity frustrates the issues between principal and agent which may be the reason of less leverage of MNEs.

In contrast, literature showed that MNEs have better access to the capital markets. Therefore, MNEs can raise capital at a lower cost than domestic

firms. This argument supports to the high leverage of MNEs than their domestic counterparts (Mittoo & Zhang, 2008). Park et al., (2013) argued that multinational firms don't have high or low leverage levels than domestic firms if we control the key firm features such as high profitability, low tangibility of assets and high market to book ratios which are related to the ownership of intangible assets.

Our motivation for this type of analysis is the hypothesis that if MNEs are more able to utilizing capital market imperfection and have the access to the international capital markets, then they would be able to keep high leverage than domestic enterprises. Past studies show that subsidiary level financial strategy of MNEs is affected by market deficiencies i.e. regulations and taxes (Foley, Hartzell, Titman, & Twite, 2007; Desai, Foley, & Hines, 2004). One of the benefits of MNEs is the ability to utilize market deficiencies by their subsidiaries in other countries. However, there is evidence that such imperfections increase in a different leverage policy of MNEs (Park et al., 2013).

3. Research Methodology

3.1 Data and Variables

Data is extracted using financial statements of the multinational enterprises and domestic enterprises listed in Pakistan. These statements are available at PSX (Pakistan Stock Exchange) website **(www.psx.com.pk)** and also on the websites of related companies. Firstly, we decide to include all the listed MNEs and DCs for the period of 2005-2012. Due to the unavailability of data, we exclude firms which do not fulfill the requirement of our variables of the study. Finally, we limit our sample include 30 firms from both groups (15 MNEs and 15 DCs) for the period of eight years (2005-2012). The main reason behind my data selection is the unavailability of data related to multinational firms. MNEs are foreign owned firms which operate in Pakistan. Literature shows that MNEs are large in size than DCs. So, the firms are selected which have minimum total book assets of Rs. 1000 million.

This section will define the study variables. Debt ratio is used to measure leverage (dependent variable). Similarly, independent variables includes firm type and control variables as used by the prior studies (Park et al., 2013). We take four control variables like Profitability, Assets Tangibility, Market to Book and Size (Park et al., 2013; Rajan & Zingales, 1995). Details of these variables are provided below.

Most of studies used debt with respect to book value of assets to explore leverage (LEV) policies (Rajan & Zingales, 1995; Park et al., 2013). Therefore, this research also used debt ratio where total assets are calculated using book value of total assets. The key advantage of leverage is cash savings produced as of the debt-tax protection. This tax protection advantages are not transformed by the market value of debt when it is give out (Banerjee et al., 2000). This is why the market worth of debt turn into irrelevant. Survey results also purpose that managers used book leverage to set optimal target leverage (Graham & Harvey, 2001). Firms with large value of fixed assets could easily increase debt at low-cost because of the security value of these fixed assets. This variable i.e. Assets Tangibility (TAN) is measured through fixed assets divided by total assets ratio (Park et al., 2013; Rajan & Zingales, 1995).

Hypothesis 1: There is a positive association between tangibility and leverage.

According to Static Trade-off approach, as size of the firm is large, the possibility of its issuing debt is also greater. The reason is that as large the size of firm, the risk of its bankruptcy is also lower (Park et al., 2013; Rajan & Zingales, 1995). To measure firm's Size (FS), we used total assets' natural log as proxy (Park et al., 2013).

Hypothesis 2: There is a positive relation between size of firm and leverage.

This variable i.e. Market to Book (MTB) is used to measure investment opportunities by many authors such as Burgman (1996). If a firm has high market to book ratio results in high market value or growth opportunities depends less on leverage. So, it has negatively related to the dependent variable (leverage). This variable is calculated as total assets minus book value of equity plus market value of equity divided by total assets.

Hypothesis 3: There is a negative association between firm growth and leverage.

In accordance with pecking order theory profitable firms has sufficient internal funds to invest instead of external funds or debts. To conclude this postulation, profitability (PROF) is calculated as EBIT to Total Assets (Rajan & Zingales, 1995).

Hypothesis 4: There is a negative connection between profitability and firm's leverage.

Firm Type (FT) is the explanatory variable in this study which takes value 1 for multinational firms and 0 for domestic firms. This variable differentiates between two groups of firms in this study.

4. Results and Discussion

To find the association among level of leverage and its important determinants, we use a theoretical model develop by Kayo et al. (2011). Four determinants are included in this research: profitability, firm size, market to book ratio and tangibility. The model is specified as under:

$$\boldsymbol{LEV}it = \boldsymbol{\beta 0} + \boldsymbol{\beta 1}(\boldsymbol{FS})it + \boldsymbol{\beta 2}(\boldsymbol{PROF})it + \boldsymbol{\beta 3}(\boldsymbol{TAN})it + \boldsymbol{\beta 4}(\boldsymbol{MTB})it + \boldsymbol{\varepsilon} it$$

In the above model, LEVit denotes for leverage of a firm i at time t which is dependent variable of this study. While independent variables are denoted as FSit for the Firm Size, PROFit for Profitability, TANit for Tangibility and MTBit for Market to Book Ratio of a firm i at time t. β is the coefficient for the variable. To find out the answer of the second question, do multinational firms have low leverage level than the domestic firms? We follow a similar theoretical framework used by Park et al. (2013). We used four control variables which are the key determinants of leverage and an explanatory variable in this study. The model is as under:

$$\boldsymbol{LEV}it = \boldsymbol{\beta 0} + \boldsymbol{\beta 1}(\boldsymbol{FT})i + \boldsymbol{\beta 2}(\boldsymbol{FS})it + \boldsymbol{\beta 3}(\boldsymbol{PROF})it + \boldsymbol{\beta 4}(\boldsymbol{TAN})it + \boldsymbol{\beta 5}(\boldsymbol{MTB})it + \boldsymbol{\varepsilon} it$$

In the above model, *LEVit* denotes for leverage of firm *i* at time *t* which is the dependent variable in this study. While the independent variables are denoted as *FTi* for Firm Type which is the key explanatory dummy variable which takes value 1 if a firm is multinational and otherwise zero, *FSit* for the Firm Size, *PROFit* for Profitability, *TANit* for Tangibility and *MTBit* for Market to Book Ratio of firm *i* at time *t*. *β* is the coefficient for the variable. Furthermore, we check whether the firm type has any significant positive or negative impact on the relationship of Profitability, Assets Tangibility, Market to Book and Size of the firm with firm leverage. For this purpose, we use firm type dummy variable interaction term in the following regression.

$$\begin{aligned}\boldsymbol{LEV}it = {} & \boldsymbol{\beta 0} + \boldsymbol{\beta 1}(\boldsymbol{FS})it + \boldsymbol{\beta 2}(\boldsymbol{PROF})it + \boldsymbol{\beta 3}(\boldsymbol{TAN})it + \boldsymbol{\beta 4}(\boldsymbol{MTB})it \\ & + \boldsymbol{\beta 5}(\boldsymbol{FS})it * (\boldsymbol{FT})i + \boldsymbol{\beta 6}(\boldsymbol{PROF})it * (\boldsymbol{FT})i \\ & + \boldsymbol{\beta 7}(\boldsymbol{TAN})\, it * (\boldsymbol{FT})i + \boldsymbol{\beta 8}(\boldsymbol{MTB})it * (\boldsymbol{FT})i + \boldsymbol{\varepsilon} it\end{aligned}$$

In this study, we used panel data which has many benefits than cross sectional as well as time series data. Brooks (2008) suggested that panel data allows focusing a wide range of issues and attempting more difficult situation which would not be imaginable with pure cross sectional and time series data alone. Purpose of comparing leverage policy of multinational and domestic firms in Pakistan, we use panel data ordinary least square technique.

4.1 Descriptive Statistics

We define and evaluate summary statistics of panel regression model. Descriptive statistics of the leverage level with the determinants and correlation between these are presented. Then, at last results and discussion of pooled regression model are described.

Table 4.1: Descriptive Statistics

	MNCs					DCs				
	LEV	**FS**	**PROF**	**TAN**	**MTB**	**LEV**	**FS**	**PROF**	**TAN**	**MTB**
Mean	0.577	9.069	0.215	0.286	1.903	0.577	9.714	0.187	0.312	1.512
Median	0.602	9.006	0.209	0.248	1.376	0.597	9.848	0.170	0.320	1.149
St. Devi	0.210	0.819	0.116	0.171	1.486	0.228	1.162	0.140	0.197	0.912
Min	0.159	7.547	-0.004	0.058	0.545	0.203	7.454	-0.127	0.041	0.705
Max	1.382	10.837	0.774	1.321	8.945	1.138	12.063	0.537	0.712	5.512

Table 4.1: Descriptive stats, where MNEs (Multinational firms), DCs (Domestic firms) and dependent variable is LEV (Leverage) and independent variables are FS (Firm Size), PROF (Profitability), TAN (Tangibility) and MTB (Growth) are used.

As we see in table 4.1 that multinational and domestic firms have same mean value in terms of leverage that is 0.577 for both. And in terms of median values the leverage of multinational and domestic firms has no significant difference showing values 0.602 and 0.597 respectively. The above results show that MNEs are to be high profitable, high market to book ratios as compared DCs. The difference in market to book ratio has great attention. The median values of MTB for MNEs are 1.376 which is higher

than the median value of 1.149 for DCs. While the MNEs have low asset tangibility ratios as compared to DCs which shows that MNEs don't focused on building tangible assets in foreign countries, this indicate they always invest to build intangible assets through heavy R & D activities.

Overall the above summary statistics confirms that multinational firms have high ratio of profit, higher market to book ratio and have low ratio of asset tangibility than their domestic counterparts. These results are in line with the result of Kim and Lyn (1986) and Morck and Yeung (1991). After the above results there is no surprise that the MNEs have low leverage level than the DCs. Previous literature show that the above firm features are associated with lower leverage level (Rajan & Zingales, 1995; Titman & Wessels, 1988).

4.2 Regression Analysis

A panel common effect regression has been estimated to check the significant determinants of leverage.

Table 4.2: Leverage Regression with Common Effect

	Coeff.	Prob.
Constant	0.543419	0.0000
FS	0.007355	0.5240
PROF	-1.198818	0.0000
TAN	0.232177	0.0006
MTB	0.079609	0.0000
Durbin Watson	0.632016	
Adjusted R^2	0.307143	
F-statistic	27.48715	

Table 4.2: Regression to find the determinants of leverage. Where dependent variable is LEV (Leverage) and independent variables are FS (Firm Size), PROF (Profitability), TAN (Tangibility) and MTB (Growth) are used. Constant is for intercept, Coeff. For regression coefficients and Prob. for probability.

Table 4.2 shows that profitability, tangibility and market to book ratio are significant determinants of leverage at 1% level of significance. Firm size is positively associated with leverage but it is statistically insignificant. We find that size of firm is positively associated with leverage as expected. It means that large sized firms have high leverage levels. This relationship of size is consistent with the results of Mittoo and Zhang (2008), Park et al.

(2013), and Singh and Nejadmalayeri (2004). But variable of size is statistically insignificant which is also in line with the results of Shah and Khan (2007). They also found that size of firm is not an appropriate determinant of leverage. In the given picture, size of firm will not matter. Facing very low or no bankruptcy costs because the proceedings of court are very slow in Pakistan. So, Firms will hire debt unrelatedly to its size.

Coefficient sign of profitability is negative as expected. This result is in line with results of various researchers as all of them have found the negative relation between profitability and leverage (e.g. Avarmaa, Hazak, & Männasoo, 2011; Mittoo & Zhang, 2008; Singh & Nejadmalayeri, 2004). According to our hypothesis of Tangibility, we reject null hypothesis because the p-value < 0.01. This result shows that firms with large amount of fixed assets have high leverage. This result is in line with the results of Mittoo and Zhang (2008), Singh and Nejadmalayeri (2004) and Park et al. (2013) and they all had found the positive relation among leverage and tangibility. Coefficient sign of market to book ratio is also positive but inconsistent with expected negative sign. These results are in line with the extended pecking order theory that own funds may not be sufficient to fulfill the needs of a firm with high growth and rely on using more debt. This Result is line with the results of Bradley et al. (1984). R-square tells the explanatory power of a regression model. In the above table, we find value of R-square that is 0.3187 which shows that the independent variables explain 32% variation in dependent variable.

4.3 Leverage Regression with Firm Dummy

A panel pooled regression has been estimated to compare the leverage level of multinational and domestic firms (see table 4.3). The table 4.3 shows the results of leverage regression which indicate that the control variable in our regression technique have similar relationship with leverage except market to book ratio. The above results show that coefficient for dummy variable is positive at 0.015 and not statistically significant. This result is same with the results of Mansi & Reeb (2002) and Park et al. (2013). They also found positive and insignificant coefficients for firm type dummy. In summary, the above results show that multinational firms don't have high or low leverage levels than domestic firms if we control the key firm features such as high profitability, low tangibility of assets and high market to book ratios which are related to the ownership of intangible assets. This argument is confirmed in our regression results. In the above table, we find value of R-square that is 0.3198 which shows that the independent variables explain 32% variation in dependent variable.

Table 4.3: Leverage regression with firm dummy

	Coeff.	Prob.
Constant	0.511585	0.0001
FT	0.015208	0.5522
FS	0.009881	0.4225
PROF	-1.194032	0.0000
TAN	0.239300	0.0005
MTB	0.078095	0.0000
Durbin Watson	0.630661	
Adjusted R^2	0.305234	
F-statistic	22.00019	

Table 4.3: Regression to compare the leverage level between MNEs and DCs. Where dependent variable is LEV (Leverage) and independent variables are FS (Firm Size), PROF (Profitability), TAN (Tangibility) and MTB (Growth) are used. Constant is for intercept, Coeff. For regression coefficients and Prob. for probability. We carry on regression analyses to compare the leverage level of multinational and domestic corporations after controlling the key determinants of leverage.

4.4 Hausman Test

Table 4.4: Hausman Test

Chi^2	Prob.
20.8	0.01

Table 4.4: Hausman test where Chi2 stands for Chi-square and prob. is the probability. Hausman test is used to check whether random effect model or fixed effect model is suitable for the data. Table 4.4 shows the Hausman test results. As shown in table 4, the P-value < 0.05 which is significant at 5% level of significance so we reject the null hypothesis. So, fixed effect estimator should be used instead of random effect estimator.

4.5 Leverage Regression with Firm Interaction Term

To check the relationship of explanatory variables with leverage whether these are positive or negatively related with respect to firm type. We use the following regression with interaction term. Here, Hausman specification fixed effect model is applied. Consistent with the results

obtained from the previous table, which show that the firm size, probability, market to book ratio and tangibility have significant relationship with leverage. However, the results of that table does not show which type of firm's characteristics whether domestic or foreign has a significant relation with leverage. To address this issue, we take type of firm (FT) as a dummy variable and check the FT interaction effect on size, profitability, tangibility and market to book ratio.

Table 4.5: Fixed Effect Leverage Regression with Firm type Interaction

	Coeff.	Prob.
Constant	0.119297	0.5498
FS	0.070112	0.0026
PROF	-0.392576	0.0066
TAN	0.263336	0.0672
MTB	0.074382	0.0006
FS*FT	-0.079644	0.0403
PROF*FT	0.425718	0.0476
TAN*FT	0.100645	0.5551
MTB*FT	-0.027923	0.2947
Durbin Watson	1.528742	
Adjusted R^2	0.805935	
F-statistic	27.82560	

Table 4.5: Regression to check whether the determinants of leverage are positively or negatively related with respect to firm type. Where dependent variable is LEV (Leverage) and independent variables are FS (Firm Size), PROF (Profitability), TAN (Tangibility) and MTB (Growth) are used. Constant is for intercept, Coeff. For regression coefficients and Prob. for probability.

Table 4.5 shows that size of domestic firms have positive and statistically significant association with leverage. While in case of MNEs, the

firm size is negative and significant relationship with leverage. Empirical studies also show the both positive and negative relation of firm size with leverage of a firm. According to pecking order theory, the reason of negative relation is that for large firms, there is less information asymmetry because the problem of undervaluation of the issuing new equity which inspire the large firms to issue new equity shares. Rajan & Zingales (1995) have also found a negative relation between firm size and leverage. While the reason of positive relation among leverage and firm size is lower costs of bankruptcy. According the trade-off-theory, large firms face low cost of bankruptcy and have lower chance of default. That's why, these firms obtain more debt than small firms. The results of the Titman & Wessels (1988) also confirm this relationship.

Above results also show that profitability of domestic firms has negative and statistically significant relation with leverage. While for foreign firms has positive and significant relation with leverage. Literature shows that pecking order theory explains negative association among leverage and profitability. Although trade-off theory describes positive relation between the leverage and profitability of a firm. In the above table, we find value of R-square that is 0.8359 which shows that the independent variables explain 84% variation in dependent variable. However, an understanding of these differences between MNEs and domestic firms and their impact on financing policies can help managers to make their decision optimally.

5. Conclusion and Recommendations

By studying the empirical literature, we used some of the theoretical models like pecking order, agency cost theory and static trade-off theory to clarify the association among the leverage and its key factors. The pecking order theory determines the relationship among the leverage and profitability, tangibility, market to book ratio and size. Although static trade-off theory determines the association among leverage, size of firm and tangibility.

The research findings show the positive and significant association among the leverage, tangibility and market to book ratio of a firm. While there is significant negative association among the leverage and profitability but the size of a firm has found positive but insignificant association with leverage. The reason is that in Pakistan the court proceedings are very slow and in given circumstances, size of firm will not consider. Firms face very low or no costs of bankruptcy, firms will issue debt without considering their size. So, size would not be the considerable determinant of a firm's leverage.

In the second regression, we also compared the leverage level after controlling the key firm characteristics of leverage like profitability of firm, market to book ratio and tangibility. The coefficient of firm type has found positive but insignificant relationship with the leverage of a firm. These findings show that if we control the important firm characteristics of leverage then there is no difference in leverage of the multinational and domestic firms.

Furthermore, we also found positive relation among size of domestic firms and leverage but for MNEs, this association is negative. While the higher profitable domestic firms have low leverage and MNEs with high profits have high leverage level. Tangibility of both DCs and MNEs is positively correlated with leverage, but this relationship for foreign firms is much stronger. We also found that DCs with high growth use more debt to fulfill their investment needs. On the other hand, MNEs with high growth opportunities use less debt to avoid underinvestment problem. Future research should be to check whether there is any difference in speed of leverage adjustment and preference to issue debt vs equity between multinational and domestic firms in Pakistan.

References:

2011 International Conference on Information and Finance

Aabo, T., Pantzalis, C., & Park, J. C. (2015). Multinationality and opaqueness. *Journal of Corporate Finance*, *30*, 65–84.

Ahmed Sheikh, N., & Wang, Z. (2011). Determinants of capital structure: An empirical study of firms in manufacturing industry of pakistan. *Managerial Finance*, *37*(2), 117– 133.

Akhtar, S. (2017). Capital structure of multinational and domestic corporations–a crosscountry comparison. *Accounting & Finance*, *57*(2), 319–349.

Andres, A., Javier, S., & Sheridan, T. (2003). Stakeholder, transparency and capital structure. *NBER Working Papers*.

Avarmaa, M., Hazak, A., & Mannasoo, K. (2011). Capital structure formation in multi-¨ national and local companies in the baltic states. *Baltic Journal of Economics*, *11*(1), 125–145.

Banerjee, S., Heshmati, A., Wihlborg, C., et al. (1999). *The dynamics of capital structure*. Citeseer.

Bradley, M., Jarrell, G. A., & Kim, E. H. (1984). On the existence of an optimal capital structure: Theory and evidence. *The journal of Finance*, *39*(3), 857–878.

Brooks, C., et al. (2008). *Rats handbook to accompany introductory econometrics for finance*. Cambridge Books.

Buckley, P., & Casson, M. (1976). *The future of the multinational corporation.* London: Macmillan.

Burgman, T. A. (1996). An empirical examination of multinational corporate capital structure. *Journal of International Business Studies*, *27*(3), 553–570.

Chen, C. J., Cheng, C. A., He, J., & Kim, J. (1997). An investigation of the relationship between international activities and capital structure. *Journal of International Business Studies*, *28*(3), 563–577.

Desai, M. A., Foley, C. F., & Hines Jr, J. R. (2004). A multinational perspective on capital structure choice and internal capital markets. *The Journal of Finance*, *59*(6), 2451–2487.

Dunning, J. H. (1977). Trade, location of economic activity and the mne: A search for an eclectic approach. In *The international allocation of economic activity* (pp. 395–418). Springer.

Eriotis, N., Vasiliou, D., & Ventoura-Neokosmidi, Z. (2007). How firm characteristics affect capital structure: an empirical study. *Managerial Finance*, *33*(5), 321–331.

Foley, C. F., Hartzell, J. C., Titman, S., & Twite, G. (2007). Why do firms hold so much cash? a tax-based explanation. *Journal of Financial Economics*, *86*(3), 579–607.

Graham, J. R., & Harvey, C. R. (2001). The theory and practice of corporate finance: Evidence from the field. *Journal of Financial Economics*, *60*(2-3), 187–243.

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review*, *76*(2), 323–329.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360.

Joliet, R., & Muller, A. (2013). Capital structure effects of international expansion. *Journal of Multinational Financial Management*, *23*(5), 375–393.

Kayo, E. K., & Kimura, H. (2011). Hierarchical determinants of capital structure. *Journal of Banking & Finance*, *35*(2), 358–371.

Kim, W. S., & Lyn, E. O. (1986). Excess market value, the multinational corporation, and tobin's q-ratio. *Journal of International Business Studies*, *17*(1), 119–125.

Lindner, T., Klein, F., & Schmidt, S. (2018). The effect of internationalization on firm capital structure: A meta-analysis and

exploration of institutional contingencies. *International Business Review*.----

Mansi, S. A., & Reeb, D. M. (2002). Corporate international activity and debt financing. *Journal of International Business Studies*, *33*(1), 129–147.

Matemilola, B., Bany-Ariffin, A., Azman-Saini, W., & Nassir, A. M. (2018). Does top managers' experience affect firms' capital structure? *Research in International Business and Finance*, *45*, 488–498.

Mittoo, U. R., & Zhang, Z. (2008). The capital structure of multinational corporations: Canadian versus us evidence. *Journal of Corporate Finance*, *14*(5), 706–720.

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.

Morck, R., & Yeung, B. (1991). Why investors value multinationality. *Journal of Business*, 165–187.

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, *13*(2), 187–221.

Park, S. H., Suh, J., & Yeung, B. (2013). Do multinational and domestic corporations differ in their leverage policies? *Journal of Corporate Finance*, *20*, 115–139.

Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? some evidence from international data. *The Journal of Finance*, *50*(5), 1421–1460.

Shah, A., & Khan, S. (2007). Determinants of capital structure: Evidence from pakistani panel data. *International Review of Business Research Papers*, *3*(4), 265-282.

Singh, M., & Nejadmalayeri, A. (2004). Internationalization, capital structure, and cost of capital: evidence from french corporations. *Journal of Multinational Financial Management*, *14*(2), 153–169.

Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. *The Journal of Finance*, *43*(1), 1–19.

Van Hoang, T. H., Gurau, C., Lahiani, A., & Seran, T.-L. (2018). Do crises impact capital˘ structure? a study of french micro-enterprises. *Small Business Economics*, *50*(1), 181– 199.

Wald, J. K. (1999). How firm characteristics affect capital structure: an international comparison. *Journal of Financial research*, *22*(2), 161–187.