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Investigating the non-linear relationship between capital structure and firm value: A focus on the family firms of textile sector in Pakistan

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Abstract- This study is focused to investigate the capital structure-firm value relationship in family firms of textile sector in Pakistan. The study also researches if capital structure-firm value relationship is linear or non-linear in nature? Three measures of capital structure have been employed including Leverage $_1$, Leverage $_2$ & Leverage $_3$. The Generalized Method of Moments is used to examine the relationships. The findings indicate mixed results. Both Leverage $_1$ & Leverage $_2$ show negative effect whereas Leverage $_3$ reveals positive link with firms' value. Further, when examining the non-linearity of the relationships, the findings suggest that at lower of leverage, it negatively affects the firms' value whereas at higher levels it shows strongly positive relationships. Both positive and negative performance implications are consistent. Family firms have easy access to debts due to internal networks of resource sharing and however, severe agency conflicts are well pronounced in these firms. The debt financing brings the family firms under the additional monitoring of the lending institutions that is helpful in mitigating agency conflicts among the controlling family shareholders and minority shareholders and thus affects positively the firm value.

Key Words: Capital Structure; Firm Value; Agency Conflicts; Family Firms; Pecking Order Theory; Firm Monitoring

I. INTRODUCTION

Financial performance of a firm is based on the capital structure decision. Firms raise funds either from debt, equity or both. Firms normally use both sources of fund raising to maximize performance and to minimize cost of capital. The equity source of finance may include the issuance of common and preferred stock to general public whereas the other source to raise funds is external debt. The debt financing refers to issuance debentures, bonds or from any financial institution for short term and long term basis. The choice of capital structure is most important financial decision done by the management, however finance managers make an effort to accomplish best objectives to get an optimal capital structure [Salim & Yadav, 2012].

Therefore, the debate on how to choose the proportion of debt and equity in the making of capital structure has put forward a great deal of attention in the literature. Particularly, it plays a vital role in corporate decision and the managers' decision is maximizing the wealth of shareholders. At the time of promotion, capital structure is planned by firm and subsequently the decision of capital structure is involved when the firm wants to acquire projects or expand its investment. Hence, capital structure decision plays a significant impact on owner's equity return, risk, and the market value of shares [Kraus & Litzenberger, 1973; Mardones & Cuneo, 2020; Al-Nsour & Muhtadi, 2019].

Family firms are privileged regarding the availability of finance due to the internal mechanism of resource sharing among the member firms. These firms can provide loans each other on non-armed length interest rates and may also help each other in getting loans from lending institutions by sharing political connections. Further, debt financing brings the family firms under the additional monitoring of the banks and other lending institutions. These banks and lending institutions are concerned with the assurance of interest payments and safeguard of their principal investment. Therefore, these are motivated in the monitoring of the firms. Family firms' monitoring by these institutions improves the quality of internal

governance and reporting system that ensure effective utilization of firms' resources and ultimately results in increased firms' value. On the other hand, the ultimate controllers of the family firms are fully entrenched, they usually occupy key executive position with their closer family members and relatives even those may be incompetent. Therefore, family firms suffer from sever agency conflicts among the controlling shareholders and minority shareholders. Keeping in view of the above arguments, two sided explanations are possible for capital structure-performance relationship. The relation between capital structure and firm value may be positive due to additional monitoring of lending institutions and timely and easily availability of debts or it may be negative due to over burden of debts and interest payments and under-utilization of debt finance due to incompetent management of the family firms [Waseemullah & Hasan, 2018].

This study is focused to investigate the effect of capital structure on firm value on a data set of textile sector firms listed on PSX in Pakistan. Further, it is examined that if capital structure-performance relationship is linear or non-linear in nature? Tobin's Q is taken as firm performance measure that is superior than accounting performance measure in this context. Family firms are prone to managerial entrenchment and earnings management practices are widely used in these firms. Agency conflicts are severe in family firms [Waseemullah et al., 2015; Waseemullah & Hasan, 2016, 2017 & 2018] and choice of capital structure that enhances firm value should be key objective of the family firms to minimize agency conflicts.

II. LITERATURE REVIEW

Mardones and Cuneo [2020] examine the capital structure-performance relationship by taking data of firms from Latin American countries e.g., Brazil, Mexico, Peru & Chile. Instrument variable approach is used to address the issue of endogeneity problem. The results from GMM & random effect models reveal mixed results. The researcher is unable to find strong evidence in support of performance effects of short term debt ratio & long term debt ratio in these countries. However, they find evidence for the non-linear relationships for short term & long term debts ratios and firm performance. Al-Nsour and Muhtadi [2019] attempt to find out the impact of leverage on firm performance in Jordan by taking sample of 63 listed firms for 2014-2018 period. The results reveal a positive link with Tobin' Q.

Kraus and Litzenberger [1973] find support for the non-linearity of the capital structure-performance relationships. They suggest that a firm after reaching at the optimal level of leverage achieves maximum value and it has no additional benefit in further increasing the leverage because firm value started to decrease beyond that level [Vargas, 2014]. Gill et al. [2011] observe mixed results for ROA & ROE. The relation was inverse for ROA and however, it was positive for ROE. Taking oil firms' data from Nigeria, similar findings were reported by Olorunfemi and David [2010]. In the same line Nawaz et al. [2011] confirm these findings in textile sector of Pakistan. Martis [2013] investigated the relationship between capital structure and firm success in the United States. For the years 2003 to 2011, he used a sample size of 500 leading industries. ROA and Tobin's Q are used to assess a company's performance, while the leverage ratio and equity ratio are used to assess its capital structure. The findings show that long-term debt and total debt ratio have a negative impact on ROA and Tobin's Q.

The effect of capital structure on firm efficiency is investigated by Pouraghajan et al. [2012]. For the period 2006 to 2010, they used a sample size of 400 companies listed on the Tehran Stock Exchange (TSE). The debt ratio has a negative effect on firm output as calculated by ROA and ROE, according to the findings. The effect of capital structure on firm success was investigated by Iavorskyi [2013]. The research was focused on a survey of 16.5 thousand Ukrainian businesses from 2001 to 2010. The findings show that leverage has a negative impact on firm output as assessed by various proxies such as ROA and EBIT. Mohamad and Abdullah [2012] find inverse relation of leverage in Malaysia. Seetanah et al. [2014] also find evidence for inverse performance impacts for firms in emerging countries. In the study of Zeitun and Tian [2007], they observe that leverage is positively related with Tobin's Q in Jordan.

Hassan et al. (2014) unable to observe a considerable relationship of financial leverage and ROE. Similarly, Khan [2012] measure leverage through two proxies including debt to total assets & short term debt to total assets and firm performance is measured by ROE. They findings indicate an insignificantly negative relationship. Agrawal and knoeber [1996] find an inverse link of leverage with firms' value. Soumadi and hayajneh [2015] also document negative association of leverage with firms' value. Kontesa [2015] and Al-Najjar & Al-Najjar [2017] suggest positive relation between leverage and firms' value.

Memon, Bhutto and Abbas [2012] examine capital structure-performance association in textile sector firms covering a period of 2004-2009. The results indicate an inverse relationship. Manu, et al. [2019] also confirm that leverage is significantly positive related with firms' value.

, et al., 2019) found that capital structure has a positive and significant effect on firm's value.
(Al-Najjar and Al-Najjar, 2017) provide evidence of a positive relationship between external financing and firm's value. (Kontesa, 2015) documented that there is a positive effect of capital structure on firm's value. (Soumadi and hayajneh, 2015) found that capital structure associated negatively and statistically with firm's value. (Agrawal and knoeber, 1996) found that there is a negative association between leverage and firm's value.
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Hypothesis 1_A: There is a significantly positive relationship between capital structure and firms' value.
Hypothesis 1_B: There is a significantly negative relationship between capital structure and firms' value.
Hypothesis 2_A: There is a significantly non-linear relationship between leverage and family firms' value.
Hypothesis 2_B: There is a significantly linear relationship between leverage and family firms' value.

III. RESEARCH METHODOLOGY

In this study, textile sector family firms that are listed on PSX are chosen. Textile sector is the largest sector of Pakistani corporate sector. The dependent variable is firm value that is measured by Tobinq and independent variable is capital structure that is measured by three proxies. GMM is used for the estimation of the relationship.

There is the presence of correlations between the explanatory variables and error term that is referred as endogeneity problem being worst for the estimation. The data is also subject to omitted variable biases, reverse causality and self-selection biases. Besides the leverage, the dependent variable 'firm value' in this case may also be affected by some other variables like firm's managerial competence, governance level, etc. but these variable may not have been added among the regressors. Further, both regressors and regressand tend to have causal relationships. The existence of such econometric issues makes OLS as inappropriate [Labra & Torrecillas, 2014] and appropriate methods is essentially be employed [Margaritis & Psillaki, 2010; Phuong & Bich, 2017]. GMM is preferable than fixed and/or random effect models to address such econometric issues associated with the data [Mardones & Cuneo, 2020].

Econometric model

The estimation is done using the following regression model:

$$Tobinq_{it} = B_0 + \beta_1 Leverage\ 1_{it} + \beta_2 Size_{it} + \beta_3 Growth_{it} + \beta_4 Risk_{it} + \varepsilon_{it}$$ *Model 1*

$$Tobinq_{it} = B_0 + \beta_1 Leverage\ 2_{it} + \beta_2 Size_{it} + \beta_3 Growth_{it} + \beta_4 Risk_{it} + \varepsilon_{it}$$ *Model 2*

$$Tobinq_{it} = B_0 + \beta_1 Leverage\ 3_{it} + \beta_2 Size_{it} + \beta_3 Growth_{it} + \beta_4 Risk_{it} + \varepsilon_{it}$$ *Model 3*

$$Tobinq_{it} = B_0 + \beta_1 Leverage\ 1_{it} + \beta_2 Leverage\ 1\ square_{it} + \beta_3 Leverage\ 1\ cube_{it} + \beta_4 Size_{it} + \beta_5 Growth_{it} + \beta_6 Risk_{it} + \varepsilon_{it}$$ *Model 4*

$$Tobinq_{it} = B_0 + \beta_1 Leverage\ 2_{it} + \beta_2 Leverage\ 2\ square_{it} + \beta_3 Leverage\ 2\ cube_{it} + \beta_4 Size_{it} + \beta_5 Growth_{it} + \beta_6 Risk_{it} + \varepsilon_{it}$$ *Model 5*

$$Tobinq_{it} = B_0 + \beta_1 Leverage\ 3_{it} + \beta_2 Leverage\ 3\ square_{it} + \beta_3 Leverage\ 3\ cube_{it} + \beta_4 Size_{it} + \beta_5 Growth_{it} + \beta_6 Risk_{it} + \varepsilon_{it}$$ *Model 6*

Figure 1. Variables and measurement

Variable	Measurement
Dependent variable:	
Tobin's q	Market value of equity plus book value of debts/book value of total assets
Independent variable:	
$Leverage_1$	Long term debt/long term fund
$Leverage_1$ square	(Long term debt/long term fund)^2
$Leverage_1$ cube	(Long term debt/long term fund)^3
$Leverage_2$	Total debts/shareholders' equity
$Leverage_2$ square	(Total debts/shareholders' equity)^2
$Leverage_2$ cube	(Total debts/shareholders' equity)^3
$Leverage_3$	Total debt/total assets
$Leverage_3$ square	(Total debt/total assets)^2
$Leverage_3$ cube	(Total debt/total assets)^3
Size	Ln (total assets)
Growth	$(Sales_t - Sales_{t-1})/Sales_{t-1}$
Risk	Standard deviation of return on capital employed

IV. RESULTS AND DISCUSSION

The descriptive statistics of the variables are reported in Table 1. Mean (median) values of Tobinq is 0.968518 (0.853113) with standard deviation of 0.537083. Three proxies for capital structure have been used in this study including $Leverage_1$, $Leverage_2$ & $Leverage_3$. The reported figures of mean (median) are 1.180506 (1.280800), 1.962640 (1.882593) & 0.769198 (0.710334) for $Leverage_1$, $Leverage_2$ & $Leverage_3$ respectively. These statistics suggest that family firms of textile sector finance larger part of their assets through debt financing. The average values of Size, Growth & Risk are 7.086177, 0.129913 & 0.287341 respectively with standard deviation of 1.275234, 0.429400 & 1.564728 respectively.

Table 1 Descriptive statistics

Variable	Tobinq	Leverage 1	Leverage 2	Leverage 3	Size	Growth	Risk
Mean	0.968518	1.180506	1.962640	0.769198	7.086177	0.129913	0.287341
Median	0.853113	1.280800	1.882593	0.710334	7.057807	0.078061	0.052098
Std. Dev.	0.537083	4.091065	5.691362	0.403820	1.275234	0.429400	1.564728
Observations	892	892	892	892	892	892	892

The correlations among the dependent and independent variables are presented in the Table 2. $Leverage_1$ & $Leverage_2$ are significantly negatively correlated whereas $Leverage_3$ is significantly positively correlated with Tobinq. It is observed that correlations among the explanatory variables of the regression models are not very high. This implies that multicollinearity problems are not very problematic.

Table 2 Correlation

Variable	Tobinq	Leverage 1	Leverage 2	Leverage 3	Size	Growth	Risk
Tobinq	1						

Leverage 1	-0.144725	1					
	0.000000	-----					
Leverage 2	-0.134191	0.262630	1				
	0.000100	*0.000000*	-----				
Leverage 3	0.600184	-0.128115	-0.128293	1			
	0.000000	*0.000100*	*0.000100*	-----			
Size	-0.329009	0.137572	0.081248	-0.337428	1		
	0.000000	*0.000000*	*0.015200*	*0.000000*	-----		
Growth	-0.025931	0.008467	0.041472	-0.149388	0.067464	1	
	0.439200	*0.800600*	*0.215900*	*0.000000*	*0.044000*	-----	
Risk	0.110383	-0.004188	-0.186383	0.172246	-0.160448	-0.043542	1
	0.001000	*0.900600*	*0.000000*	*0.000000*	*0.000000*	*0.193900*	-----

The GMM regression results indicating the association between capital structure and firm value are shown in Table 3. Both Leverage 1 & Leverage 2 are negatively related whereas Leverage 3 is positively related with Tobinq. The negative performance implications may include poor utilization of finance and easy access of finance due to internal resource sharing system in family firms that restrict them from external market monitoring. The positive effects of debt financing on firm value may be due to additional monitoring of the lending institutions to the firms that reduces agency conflicts among the controlling family shareholders and minority shareholders.

Table 3 GMM regression results: Relationship between capital structure and firm value

Variable	**Model 2**	**Model 3**	**Model 1**
Leverage 1	-0.012344***		
	0.003200		
Leverage 2		-0.010133***	
		0.000000	
Leverage 3			0.869084***
			0.000000
Size	-0.143201***	-0.144266***	-0.028929*
	0.000000	*0.000000*	*0.088800*
Growth	0.062391*	0.051494	0.041894
	0.073500	*0.132200*	*0.371200*
Risk	0.023060***	0.012831***	-0.001426
	0.000600	*0.052000*	*0.646300*
Intercept	1.980549***	1.993804***	0.462044***
	0.000000	*0.000000*	*0.005900*
Adjusted R-squared	*0.112395*	*0.114070*	*0.359302*
J-statistic	*9.034795*	*8.090896*	*9.042056*
Prob. (J-statistic)	*0.107684*	*0.151297*	*0.107398*

***, ** & * represent significance at 1, 5 & 10% levels.

In order to examine if the capital structure-performance relationship is linear or non-linear in nature, the square & cube terms are also included in the regression models as depicted in the GMM regression results presented in Table 4. Leverage 1 & Leverage 2 are significantly negative whereas Leverage 1 square & Leverage 2 square as well as Leverage 1 cube & Leverage 2 cube are significantly positively related with Tobinq. Leveage 3 is negatively related and further Leverage 3 cube is positively related with Tobinq. The results are highly significant and also consistent with the above results of other two capital structure proxies of Leverage 1 & Leverage 2. However, the results of Leverage 3 are little inconsistent.

These findings strongly suggest negative-positive-positive relationship between capital structure and firm value in Pakistan. The financial leverage at lower level negatively affects family firms' performance and however, financial leverage both at moderate level and higher level are positively related with firms' value. The findings support to agency theory. The increased level of debt financing brings the family firms under the additional monitoring of the banks and other lending institutions those are concerned with the safeguard of the principal investment as well as debt service. For that they claim higher standards of reporting and transparency and further increased level of assets utilization that helps in improving the confidence of minority shareholders upon the corporate reporting, governance ability and in turn controlling the agency conflicts among the controlling family shareholders and contribute to enhanced firm valuation.

Table 4 GMM regression results: Non-linearity of relationship between capital structure and firm value

Variable	Model 1	Model 2	Model 3
Leverage $_1$	-0.026833***		
	0.000000		
Leverage $_1$ square	0.001833***		
	0.000000		
Leverage $_1$ cube	0.000080***		
	0.000000		
Leverage $_2$		-0.057989**	
		0.025100	
Leverage $_2$ square		0.003849***	
		0.000000	
Leverage $_2$ cube		0.000206*	
		0.063500	
Leverage $_3$			-0.046731
			0.908300
Leverage $_3$ square			-0.126719**
			0.011600
Leverage $_3$ cube			0.701029***
			0.009800
Size	-0.050291***	-0.065336***	-0.001037
	0.006700	*0.001500*	*0.925200*
Growth	-0.025481	-0.026726	0.020195
	0.616000	*0.630800*	*0.393900*
Risk	0.003281	-0.012458	-0.001277
	0.530600	*0.276100*	*0.545000*
Intercept	1.281887***	1.431601***	0.585127***
	0.000000	*0.000000*	*0.005200*
Adjusted R-squared	*0.097462*	*0.088881*	*0.421076*
J-statistic	*20.523760*	*16.553550*	*10.105860*
Prob. (J-statistic)	*0.100454*	*0.102051*	*0.182654*

***, ** & * represent significance at 1, 5 & 10% levels.

For checking the robustness of the results, OLS regression analyses are also done. The OLS results presented in Table 5 confirm the above GMM regression results. Both Leverage $_1$ & Leverage $_2$ are showing negative effect of capital structure on family firms' value and however, Leverage $_3$ positively relating to firms' value. The positive or negative relationships are consistent with the expectations as explained above.

Robustness check:

Table 5 OLS regression results: Relationship between capital structure and firm value

Variable	Model 2	Model 3	Model 1
Leverage $_1$	-0.013456***		
	0.001300		
Leverage $_2$		-0.009534***	
		0.001700	
Leverage $_3$			0.748241***
			0.000000
Size	-0.128459***	-0.132363***	-0.060997***
	0.000000	*0.000000*	*0.000000*
Growth	-0.002293	0.001569	0.084535**
	0.953700	*0.968300*	*0.011500*
Risk	0.020916**	0.014135	-0.002339
	0.056400	*0.204100*	*0.800400*
Intercept	1.888971***	1.920910***	0.814900***
	0.000000	*0.000000*	*0.000000*
Adjusted R-squared	*0.117998*	*0.117509*	*0.380017*
F-statistic	*30.800500***	*30.660600***	*137.534100****
Prob. (F-statistic)	*0.000000*	*0.000000*	*0.000000*

***, ** & * represent significance at 1, 5 & 10% levels.

The investigation of the linearity of the relationship between capital structure and family firms' value is further is carried out by OLS regression analyses as reported in Table 6. Both Leverage $_1$ & Leverage $_2$ show results in alignment of above GMM results. At initial level of leverage, it reduces firms' values and however, with increase in leverage, it started to affect firms' value positively at moderate level and a further increase in leverage at higher levels also enhances firms' value. These results support the agency theory. The enhanced monitoring ability of the family firms due to increased level of debt financing contribute to increased firms' value.

Table 6 OLS regression results: Non-linearity of relationship between capital structure and firm value

Variable	Model 1	Model 2	Model 3
Leverage $_1$	-0.029963***		
	0.000400		
Leverage $_1$ square	0.001619***		
	0.000000		
Leverage $_1$ cube	0.000082***		
	0.001800		
Leverage $_2$		-0.033793***	
		0.000000	
Leverage $_2$ square		0.000268***	
		0.101000	
Leverage $_2$ cube		0.000058***	
		0.000000	
Leverage $_3$			-1.423985***
			0.000000
Leverage $_3$ square			1.489098***
			0.000000
Leverage $_3$ cube			-0.253651***
			0.000000
Size	-0.118072***	-0.119849***	-0.036393***
	0.000000	*0.000000*	*0.001100*
Growth	0.016053	0.013788	0.075438**
	0.683800	*0.725900*	*0.013600*

Risk	0.004613	0.010050	-0.000483
	0.692400	*0.365700*	*0.954700*
Intercept	1.816310***	1.863256***	1.449779***
	0.000000	0.000000	0.000000
Adjusted R-squared	*0.132912*	*0.137329*	*0.483047*
F-statistic	*23.762960****	*24.639750****	*139.760400****
Prob. (F-statistic)	*0.000000*	*0.000000*	*0.000000*

***, ** & * represent significance at 1, 5 & 10% levels.

V. CONCLUSION

The research is conducted to examine the effect of leverage on family firms' value. Further, it is investigated that if the leverage-firm value relationship is linear or non-linear in nature in Pakistan. To find out the role of family firms in the leverage-firm value relationship, sample of textile sector family firms listed on PSX are selected. Tobinq is taken as a measure of firm's value and three proxies for leverage are taken including Leverage $_1$, Leverage $_2$ & Leverage $_3$. The findings show mixed results for the leverage-firm value relationship. Leverage $_1$ & Leverage $_2$ are negatively related whereas Leverage $_3$ is positively linked with firm's value. There are strong arguments for both positive and/or negative relationship between capital structure and firm's value in family firms. Firstly, the relationship may be positive due to the additional monitoring of the family firms by banks due to debt financing. It reduces agency conflicts among the dominant family shareholders and external shareholders and thus improves firms' value. Further, debts are easily available and further these are available at favorable terms to family firms from the member family firms and other financial institutions due to strong political alliances of family members. It enables the firms to grasp potential of investment opportunities. Secondly, the relationship between capital structure and firm value may be negative. The easy access to finance may increase the level of debt financing. The increased debts and burden of interest payments may lead to decreased firm value. Moreover, incompetent management in family firms may cause under-utilization of firms' resources that may result in decrease firm value.

Moreover, the research finds strong evidence for non-linear relationship between leverage and firms' value in Pakistan. All of the three measures of leverage are significantly negatively related with firm's value that clearly suggest that firms' value reduces if a firms opts to choose lower level of debt financing in the capital structure. Further, Leverage $_2$ square & Leverage $_3$ square along the Leverage $_2$ cube & Leverage $_3$ cube are significantly positively related strongly suggesting that leverage at moderate level & higher level improves firms' value. The increased level of debt financing in the capital structure is favorable and contribute to enhanced firms' value in Pakistan. The findings strong support to both agency theory and pecking order theory.

REFERENCES

1. Gill, A., Biger, N., & Mathur, N. (2011). The effect of capital structure on profitability: Evidence from the United States. International Journal of Management, 28(4), 3–15.
2. Kraus, A., & Litzenberger, R. H. (1973). A state-preference model of optimal financial leverage. The Journal of Finance, 28(4), 911–922. doi:10.2307/2978343
3. Labra, R., & Torrecillas, C. (2014). Estimating dynamic panel data. A practical approach to perform long panels. *Revista Colombiana de Estad_ıstica*, 41, 31–52. doi:10.15446/rce.v41n1. 61885
4. Mardones, J. G., & Cuneo, G. R. (2020). Capital structure and performance in Latin American companies, *Economic Research-Ekonomska Istraživanja*, 33:1, 2171-218.
5. DOI: 10.1080/1331677X.2019.1697720
6. Margaritis, D., & Psillaki, M. (2010). Capital structure, equity ownership and firm performance. *Journal of Banking & Finance*, 34(3), 621–632. doi:10.1016/j.jbankfin.2009.08.023
7. Memon, F., Bhutto, N. A., & Abbas, G. (2012). Capital structure and firm performance: A case of textile sector of Pakistan. *Asian Journal of Business and Management Sciences,* 1(9), 9-12.
8. Modigliani, F., & Miller, M. (1958). The cost of capital, corporation finance and the theory of investment. *American Economic Review*, 48, 655–669.

9. Modigliani, F., & Miller, M. (1963). Corporate income taxes and the cost of capital: A correction. *American Economic Review*, 53, 433–443.
10. Mohamad, N. E. A. B., & Abdullah, F. N. B. A. (2012). Reviewing relationship between capital structure and firm's performance in Malaysia. *International Journal of Advances in Management and Economics,* 1(4), 151–156.
11. Myers, S. (1984). The capital structure puzzle. *The Journal of Finance*, 39(3), 575–592. doi:10. 2307/2327916
12. Myers, S., & Majluf, N. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187–221. doi: 10.1016/0304-405X(84)90023-0
13. Nawaz, A., Ali, R., & Naseem, M. A. (2011). Relationship between capital structure and firms performance: A case of textile sector in Pakistan. *Global Business and Management Research: An International Journal*, 3(3–4), 270–275.
14. Olorunfemi, S., & David, D. F. (2010). Capital structure and corporate performance in the Nigeria petroleum industry. *Journal of Mathematics and Statistics*, 6(2), 168–173.
15. Phuong, T., & Bich, T. (2017). Capital structure and firm performance: Empirical evidence from
16. a small transition country. *Research in International Business and Finance*, 42, 710–726.
17. Seetanah, B., Seetah, K., Appadu, K., & Padachi, K. (2014). Capital structure and firm performance: Evidence from an emerging economy. *The Business & Management Review*, 4(4), 185–196.
18. Vargas, A. (2014). Estructura de capital _optima en presencia de costos de dificultades financieras. Investigaci_on & Desarrollo, 1(14), 44–65.
19. Waseemullah & Hasan, A. (2016). Investigating the group diversification premium and discount in Pakistan. *The Pakistan Development Review,* 289-308. Retrieved April 10, 2021, from http://www.jstor.org/stable/44986489
20. Waseemullah (2017). Understanding the dynamics of business groups in Pakistan-A focus on the financial performance and dividend policy. Ph. D dissertation, Capital University of Science, Arts and Technology.
21. Waseemullah & Hasan, A. (2018). Business group affiliation and firm performance-Evidence from Pakistani listed firm. *The Pakistan Development Review*, 57(3), 351-371.
22. Waseemullah, Ali, S., & Mehmood, S. (2017). Impact of excess control, ownership structure and corporate governance of firm performance of diversified group firms in Pakistan. *Business & Economic Review*, 9(2), 49-72. DOI: dx.doi.org/10.22547/BER/9.2.3
23. Waseemullah & Hasan, A. (2017). Ownership structure, excess control and firm performance: A focus on the internal corporate governance system of the family firms in Pakistan. *Paradigms*, 11(2).
24. Zeitun, R., & Tian, G. (2007). Capital structure and corporate performance: Evidence from Jordan. *Australasian Accounting, Business and Finance Journal*, 1(4), 40–53. doi:10.14453/
25. aabfj.v1i4.3