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Sector-wise analysis for capital structures and managerial behavior in Shariah-compliant and conventional firms of Pakistan

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Abstract
The study provides the empirical analysis about the various business sectors in Pakistan based on conventional and Shariah-compliant approach. The objective of the study is to discover differences and similarities for the determinants of the capital structure and managerial behaviour of the two samples. This research is based on background theories of capital structure i.e. pecking order theory and trade-off theory as well as agency theory to explore the managerial behaviour among sectors. We applied regression analysis OLS, fixed and random effect techniques by using two models. In the first objective, model one represents the leverage model to check the variables/ determinants of capital structure. In the second objective, model two explores the managerial behaviour/ trustworthiness for the decisions about the capital structure of various sectors. The results show that there are some differences as well as similarities in different variables between the funding approach in the capital structure Shariah-compliant and conventional sectors. We observed the different behaviour in the managerial decisions for Shariah-compliant and conventional firms. Majority of Shariah-compliant sectors' managers seem trustworthy and the conventional sectors' mangers may tend to self-interest thus, proving our hypothesis. This study may guide different stakeholders as the investors, businesses and policymakers while deciding fund management. The stakeholders can judge the managerial behaviour in different sectors regarding financing according to their preference and level of debt and equity mix to decide accordingly.
Keywords: Sectors, Shariah-compliant firms, conventional firms, Capital structure, managerial behaviour, trustworthiness

1. Introduction

This study focuses on the sector-wise analysis for the firms regarding the two samples of Shariah-compliant and conventional firms. Though the sectors are different and they are not equally same in both samples, yet the analysis on the various sectors is conducted that were available and collected by secondary data. The different sectors we study in this research are cement, chemical, automobile, sugar, miscellaneous, oil and gas and textile. The sectors that are analyzed are taken both from the conventional business base and Shariah-compliant business base. As there are different screening criteria for the Shariah-compliant firms as compared to conventional firms. Therefore, it creates room for research to explore the two different categories of sectors. The conventional business method is very commonly known and the extent of literature is higher than that of

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Shariah-compliance approach by Islamic viewpoint and religious scholars. This research is emphasizing this side of business and investment uniqueness.

The Shariah service providers are profit-oriented companies that provide Shariah-compliance consulting and related services, and thus screen the global asset based on the clients demand. However, Firms screened as "Shariah-compliant" have certain characteristics which differ from other firms. The most striking feature of a Shariah-compliant firm is the limit on the maximum level of debt which it can include in its capital structure. In most of the cases, this limit is set nearly at 37 to 40 per cent.

Moreover, conventional interest and debt securities are not permissible in Shariah-compliant firms. Thus the Shariah-compliant firm is restricted (1) to optimize the objective function and minimize the cost. (2) The next constraint is to maintain debt-ratio, that it will not exceed a ratio of tangible assets to total assets. (3) The constraint that Shariah-Compliant firms' debt financing has to be asset-backed, thus, a real transaction. Therefore, any expansion of operations requires an extension of its tangible assets partly. (4) The internal funds (retain earnings) will only be used for investment when they are available after paying off debt and dividend dues. (5) Institutional debt barrier means that funds are not available in the form of loans from institutions (or banks) unless the firms have a good reputation, affiliation and financial status.(6) In the private equity constraint, institutional lenders will not be eligible for private equity finance if they do not have the potential to grow privately. Firms with the potential to increase the value of assets can obtain equity / debt funds from equity-based entities such as venture capital firms. (7) All firms are not able to issue IPO except established, and well-reputed firms can successfully participate in the stock market (Ahmed 2007). For the first objective of this research these principles are checked for the determinants of the capital structure while analyzing both sectors conventional and Shariah-based. For the second objective of the study is to check trustworthiness or self-interest in managerial behaviour. This objective is to highlight the importance and role of manager for firms' decision making.

Managerial Trustworthiness Trustworthiness gives the meaning of reliability or dependability on someone deserving the trust. In the business contract, there is a general element of trust after mutual agreement. After the agreement, if a controlling party is not trustworthy, it would deviate from the core objective of the contract made among the parties. Self-interest is used as the opposite term of trustworthiness in this study. Due to locating the particular objectives of the self-interested party, there develops a lack of trust among the contracting parties. It is easier to acknowledge trustworthy actions when there is a sacrifice of agents' self-interests. As it is possible that, individuals perform trustworthy actions and still they serve their fair self-interest not negative. Trustworthiness can still be the part of fair or positive self-interest rather unfair or negative intention. Thus, it does not mean that when people perform trustworthy actions, they will not achieve their interests at all; rather it will be fair and beneficial for all parties (Hausman (2002). Thus, it can be inferred to be trustworthy first, and acquire the benefits for all stakeholders including the manager.

However, sometimes trustworthy acts seriously clash with self-interest. Despite that the trustworthy person, for the sake of maintaining what he is trusted to do, he will avoid going for such profit which harms reputation and trustworthiness. If he does otherwise, he would be ashamed of himself and humiliated by the thought of what will his concerned people think of him who have trusted him. An honest and trustworthy person feels a moral obligation, and decency thus acts accordingly because he has strong reason to do what he is trusted for. Otherwise, he will lose regards, self- respect and social recognition,

so his identity and reputation are endangered. And also intrinsic benefits of trustworthiness vanish if no one trusts. Therefore, well-socialized people are realized to perform the acts for what they are trusted and enjoy the pragmatic package of benefits in the shape of integrity, intimacy, good reputation, self-respect and social recognition.

Motivation, importance and contribution of the study

According to the knowledge of authors, this study is the first attempt to add valuable literature for Islamic investors and businesses especially. The sector-wise comparative analysis for the Shariah-compliant firms and conventional firms can also motivate and create the room for other interested researchers in this area. Therefore, this quantitative research, based on secondary data is rare in this regard to view the differences in the sectors for determinants of capital structures and managerial behaviour. Our study contributes in several ways. The study can contribute to examining the managerial behaviour and highlighting the trustworthy role of the manager in Shariah-compliant and conventional sectors. So, the study will contribute to better understand the capital structure, and ownership structure altogether in Shariah-compliant in comparison with conventional sectors. By this, the research would open new doors for future attention and interest through Islamic thinking by applying Islamic principles for corporate financing decision making.

The paper is further structured as follows: Section 2 discusses the literature review, section 3 is all about methodology, and section 4 provides a discussion on the sector-wise analysis for Shariah and Non-Shariah sectors. The last and 5th section concludes the study.

2. Literature Review

Modigliani & Miller in (1958) proposed the concept of irrelevance, which nullifies the impact of capital structure on the value of firm and cost of the capital, the argument was developed that there is no use of choice in debt and equity proportion in the firm's financial structure. However, M&M's propositions were ideal and do not exist in the real world. There are at least four theories that can explain why capital structure is relevant namely trade-off theory, agency cost theory, asymmetric information theory and pecking order theory. Capital structure is a mix of equity and debt, thus the proportion of two securities is the outcome of the decision by financial management. However, the separation of ownership and management causes substantial problems of interest between the shareholders and managers. These agency-related problems are inherent in all forms of corporate financing decisions unless effective mechanisms of aligning the interests of managers and shareholders are in place. Considering the managerial ownership, Michael C. Jensen and Meckling (1976) developed the theory on agency conflicts among stakeholders of the firm. Thus, capital structure identifies the critical issues when managers follow their interests instead of owners showing self-serving behaviour. The tendency of manager has been widely studied and it has been concluded that managers often behave opportunistically for their interests.

Various studies on Shariah-compliant-firms are available on different topics in the literature.

However, the research on ownership structure and capital structure in the non-financial sector is scant (Ahmed, 2007; Gunn, 2014). Despite the studies by various researchers such as Haron and Ibrahim (2012); Hassan, Shafi, and Mohamed (2012). In the Islamic banking sector agency theory related studies by different authors such as Archer, Karim, and Al-Deehani (1998), Sarker (1999), Aggarwal and Yousef (2000), Chapra and Ahmed

(2002), Grais and Pellegrini (2006), Hagendorff, Collins, & Keasey, (2007), Safieddine (2009), Aljifri and Kumar Khandelwal (2013); Pratomo and Ismail (2006). Other studies by Gunn and Shackman (2014); Baxamusa and Jalal (2014); Farooq, AbdelBari, and Haniffa (2015); Farooq and Tbeur (2013); Omran and Pointon (2004) and Skinner and Soltes (2011); Sadeghi (2011); Othman, Thani, and Ghani (2009); Ousama and Fatima (2010); Zainal, Zulkifli, and Saleh (2013). Moreover, recent studies on Shariah-compliant and conventional firms are conducted by Katper et al., (2015), they studied to check if the Shariah- compliance becomes a reason for managerial trustworthiness and analysed the capital structure of shariah and non-shariah firms in Pakistan. In continuation of the concept Katper et al., in (2017) evaluated the characteristics or determinants of debt maturity structures in Shariah and conventional firms. Katper et al, (2018) also worked on analysing the "Impact of Managerial Ownership on the Performance of Shariah-compliant firms in Pakistan". Katper et al., (2019) explore the managerial behaviour and role according to the principles of Islam. Also, many other studies are conducted in this regard yet this sector-wise analysis for Shariah-compliant and a conventional firm is the different study in this area. Conclusively, despite the good number of studies in the literature on Shariah-compliant business concept, this research would contribute differently.

3. Methodology

In this research, the quantitative empirical study is conducted for analyzing the various sectors of Pakistan. The data for the research are collected from Pakistan stock exchange as a secondary source. This research is based on the two different samples from Shariah-compliant firms and conventional firms according to the availability of information.

Sample:

The sample is based on Shariah-compliant and conventional firms listed on Pakistan Stock Exchange, for five years from 2013. Two regressions are estimated for all firms and conventional firms.

Hypothesis development

A. H0: There is no difference in the determinants of capital structure in the sectors of Shariah-compliant and conventional firms of Pakistan

H1: There is a difference in the determinants of capital structure in the sectors of Shariah-compliant and conventional firms of Pakistan

B. H0: There is no difference in the managerial behaviour while capital structure decision making in the sectors of Shariah-compliant and conventional firms of Pakistan

H1: There is a difference in the managerial behaviour while capital structure decision making in the sectors of Shariah-compliant and conventional firms of Pakistan.

Model and variable explanation

Objective 1: Sector-wise analysis is made for determinants of capital structure in the Shariah-compliant and conventional firms. Model one that is leverage model is used for measuring this first objective of determinants of the capital structure of each sector given below.

A. Objective one: Model 1: $Leverage_{it} = \alpha_o + \beta_1 Size_{it} + \beta_2 Tangibility_{it} + \beta_3 Profitability_{it} + \beta_4 Risk_{it} + \beta_5 Liquidity_{it} + \beta_6 Growth_{it} + \beta_7 Non\text{-}Debt\ Tax\ Shield_{it} + \varepsilon_i$

Variables defined: *Dependent variable Leverage* (D/A_{it}) is the book value of debt over book value of assets.

***Objective 2*:** The second objective is probing trustworthiness in the managerial decisions for capital structures in the sector-wise analysis is made for the Shariah-compliant and conventional firms. Model 2 is given below.

B. Objective Two: Model 2: $Leverage_{it} = \alpha_o + \beta_1\ Managerial\ Ownership_{it} + \beta_2 Size_{it} + \beta_3 Tangibility_{it} + \beta_4 Profitability_{it} + \beta_5 Risk_{it} + \beta_6 Liquidity_{it} + \beta_7 Growth_{it} + \beta_8\ Tax\ Shield_{it} + \varepsilon_i$

Variables defined*:* $Ln(D/A)_{it}$ natural logarithm of the book value of debt over book value of assets.

Technique

For this sector-wise analysis, we apply OLS regression as well as a fixed effect and random effect approach to compare the similarities and dissimilarities among Shariah-compliant and non-shariah firms sector-wise.

4. Results and analysis

A. Sector-wise analysis for determinants of capital structure in the Shariah-compliant and conventional firms

4.1 Shariah-compliant firms (Chemical)

For the analysis of Shariah-compliant firms in the chemical sector, the fixed and random approach tests were applied. Thus, the Hausman test suggests a fixed effect as a better choice for the chemical sector. Accordingly we observed that in the chemical sector, size is negatively correlated with the dependent variable leverage defining that larger Shariah-compliant firms depend lesser on the debt. However, tangibility is insignificant showing no much effect on leverage/debt in the capital structure of Shariah-compliant firms in this sector. For Shariah chemical firms, profitability is negatively and significantly correlated with leverage viewing that profitable firms obtain lesser debt. This result is consistent with the basic argument of pecking order theory regarding priorities in the usage of funds for profitable firms. However, liquidity is positively and significantly related to the dependent variable leverage displaying that the liquid firms may avail more debt because they are not having the risk of illiquid position to pay off the expenses or debt that is in a current position or maturing within a year. The firms of the chemical sector seem safer to get debt with better liquidity position.

4.2 Shariah-compliant firms (Miscellaneous)

For the Shariah-compliant firms in the miscellaneous sector, the fixed effect test suggests that the size is negatively and significantly related to the dependent variable. The result signposts that big firms tend to get lesser leverage which is consistent with previous studies (Gupta, 1969). Similar to the chemical sector, the tangibility in this sector is also insignificant having no such impact on the debt in the capital structure. Tangibility and profitability show consistency with Haron et al (2012) study on Shariah-compliant firms of Malaysia. Our result suggests that these factors are inconsistent for Shariah-compliant firms determining the capital structure of public listed firms in this sector in Pakistan too. However, the risk is positively and significantly correlated with leverage which is consistent with the idea that high levered firms are riskier. It specifies that with increasing

debt ratio, firms will increase the risk of bankruptcy and other hazards of managing funds and credibility. Like Shariah-compliant firms in other sectors, liquidity is also positive and significant with debt indicating that liquidity increases with the increase in debt and vice versa.

However, non-debt tax shield is positive and significant presenting that non-debt tax shield (i.e. depreciation, depletion allowances, and investment tax credits) will increase with the increase of debt in firms and decrease otherwise. Thus it seems that firms in this sector may have invested heavily on borrowing. As it is argued that if a firm invests heavily and borrows to invest, a positive relation between such proxies for non-debt tax shield and debt may occur (Graham, 2003). A positive mechanical relationship of this type overwhelms and renders unobservable any substitution effects between debt and non-debt tax shields (NDTS). The findings are similar to Bradley, et al. (1984) they found a positive relationship between debt and non-debt tax shields. Hence, there are mix results about the non-debt tax shield. They explore that non-debt tax shield is not a significant determinant factor of leverage in the Saudi case; the non-debt tax shields do not exert impact on the capital structure choice of the taxpaying listed Jordanian firms.

4.3 Conventional firms (Miscellaneous)

In contrast to Shariah-compliant miscellaneous sector, for conventional sector fixed effect approach suggests that size, liquidity, and growth are negative but insignificant with the relation of dependent variable leverage. Converse to the Shariah-compliant firms the profitability is negatively and significantly correlated with the leverage in the miscellaneous sector in Pakistan. It poses that profitable firms prefer retained earnings over debt and thus following pecking order arrangements. Similar to Shariah-compliant firms in the same sector of miscellaneous and consistent with Bradley et al. (1984), NDTS is positively and significantly related to the dependent variable showing the same behaviour. It seems the firms borrow heavily for the investment (Graham, 2003). Tangibility also behaves differently in the same sector for conventional firms from Shariah-compliant firms and showing inverse and significant relation with leverage, which is insignificant in the Shariah-compliant firms. The negative relationship designates the lesser impact of liquidity on leverage. The risk is negatively and significantly correlated with the leverage.

4.4 Shariah-compliant firms (Oil & Gas)

According to the chosen random effects size has a positive and significant relationship with leverage. It points out that in Shariah-compliant firms of the oil and gas sector, larger firms tend to obtained more debt. This variable behaves differently from Shariah-compliant firms in the miscellaneous sector. This positive relationship between size and leverage is consistent with (Ferri & Jones 1979; Berger et. al 1997; Rajan & Zingales 1995), argues that "large firms are more diverse and often fail, so size may prove to be the reverse proxy for the possibility of bankruptcy. Larger firms are expected to incur lower costs in issuing loans or equity." Therefore, these companies are expected to borrow more in their capital structure than their smaller companies. However, profitability has a negative and significant relation with leverage, similar to the findings of conventional firms in the miscellaneous sector. Thus it poses that profitable firms prefer retained earnings over debt and thus following pecking order arrangements. Liquidity is positive and significant in the companies in this sector. Nonetheless, tangibility, risk, growth, and NDTS are negative but insignificant to the leverage.

4.5 Shariah-compliant firms (Automobile)

According to random effect method size, tangibility, profitability, risk and non-debt tax shield for the automobile sector are insignificant presenting no effective impact on the Shariah-compliant firms in this sector. However, for the growth in the firms in the automobile sector, it is positive and significant to leverage indicating that the growing firms need more finance thus they avail more debt to satisfy their needs.

Table 1: Sector-wise analysis for determinants of capital structure in the Shariah-compliant and conventional firms

Objective one: Model 1: $Leverage_{it} = \alpha_o + \beta_1 Size_{it} + \beta_2 Tangibility_{it} + \beta_3 Profitability_{it} + \beta_4 Risk_{it} + \beta_5 Liquidity_{it} + \beta_6 Growth_{it} + \beta_7 Non\text{-}Debt\ Tax\ Shield_{it} + \varepsilon_i$

Variables defined: Dependent variable Leverage (D/A_{it}) of the book value of debt over book value of assets. Size is the natural log of total assets, *Tangibility* is a ratio of net property, plant, and equipment to book assets, *Profitability* is mean returns on assets for 5 years, Risk is the standard deviation of return on assets, *Growth* is the annual percentage change in sales.

The sample is based on Shariah-compliant and conventional firms as listed on Karachi Stock Exchange, Pakistan for the period 2009 to 2013.

*** p<0.01; ** p<0.05; * p<0.1

Sector	Firms	SIZE	TANG	PROF	RISK	LIQ	GROW	NDTS	Const	R-squared	Hausman test
Chemical	SH	-0.206**	0.306	-0.017*	0.002	0.731***	-0.000	0.356	3.547	0.793	(F.E) 16.681**
		(-2.08)	(1.422)	(-2.015)	(0.295)	(2.706)	(-1.141)	(0.145)	(2.215)		(0.019)
Miscellaneous	SH	-0.113**	0.221	-0.003	0.008***	0.664***	0.000	1.905***	1.6778**	0.907	(F.E)22.641***
		(-2.517)	(1.474)	(-1.37)	(3.452)	(4.152)	(1.155)	(7.804)	(2.278)		(0.002)
Miscellaneous	C	-0.000	-0.258**	-0.005**	-0.01***	-0.156	-0.0003	0.061***	0.875	0.931	(F.E)22.728***
		(-0.010)	(-1.956)	(-2.490)	(-2.941)	(-0.998)	(-0.479)	(3.544)	(1.421)		(0.001)
Oil and gas	SH	0.037**	0.242	-0.010***	-0.004	0.375**	-0.001	-0.299	-0.115	0.752	(R.E) 13.009**
		(2.555)	(1.488)	(-9.135)	(-1.482)	(3.513)	(-1.551)	(-0.355)	(-0.427)		(0.071)
Cement	SH	-0.034	0.216	-0.000	0.002	-0.298	-0.0007	2.624	0.894*	0.301	(R.E) 4.550
		(-0.909)	(1.113)	(-0.009)	(0.495)	(-1.104)	(-0.525)	(1.132)	(1.331)		(0.714)
Automobile	SH	0.017	-0.063	-0.006**	0.004	0.408*	0.000**	0.507	-0.027	0.290	(R.E) 6.109
		(0.456)	(-0.271)	(-2.305)	(0.968)	(1.654)	(2.021)	(0.562)	(-0.044)		(0.527)
Sugar	C	-0.305	0.316	-0.041**	0.040	0.240	-0.000	0.038***	5.092	0.979	(F.E) 29.102***
		(-1.243)	(0.792)	(-2.246)	(1.487)	(0.417)	(-0.398)	(4.481)	(1.332)		(0.000)
Textile	C	-0.116*	-0.188	-0.022***	0.009*	-0.088	0.000**	0.054***	2.630**	0.918	(F.E) 49.375***
		(-1.639)	(-1.206)	(-4.044)	(1.602)	(-0.422)	(2.850)	(21.737)	(2.544)		(0.000)

Note: SH= Shariah-Compliant, C = Conventional, F.E= Fixed effect is selected, R.E= Random effect is selected.

4.6 Conventional firms (Sugar)

The fixed effect suggests that profitability has a negative and significant relationship with leverage. The result is similar to other sectors mentioned above and follows pecking order theory prioritizing the internal finance and obtained lesser debt when firms earn more profit. Results demonstrate that NDTS has a positive and significant relationship with leverage. However, size, tangibility, risk, liquidity, and growth are insignificant and thus direct no effect on the dependent variable in the capital structure.

4.7. Conventional firms (Textile)

The fixed effect maintains that size has a negative and significant relationship with debt representing lesser debt ratio in the capital structure as they grow larger. The behaviour of the size is identical to the size of Shariah-compliant firms in chemical, and miscellaneous sectors but the variable behaves differently in other sectors. Whereas, tangibility and liquidity exert no effect on the dependent variable as they appear insignificant. In conventional firms, the relationship between profitability and leverage is inverse and significant posing that whenever the firms earn more profits, they tend to avail lesser debt. This result is also similar to the Shariah-compliant firms in the chemical sector, conventional firms in the miscellaneous sector, Shariah-compliant firms in oil & gas sector and conventional firms in the sugar sector. Similar to these sectors, the conventional firms in the textile sector also follow the pecking order arrangement and prefer internal financing for their needs before going to external financing. Risk has a positive and significant relation with leverage displaying that risk level increases with the debt level. Hence, due to the increasing burden of debt risk of bankruptcy increases. Accordingly, the growth is also positively and significantly related to the leverage and this result is comparable with the result of Sharia firms in the automobile sector. The variable expresses that whenever firms grow, they need more financing to satisfy their needs and refer to different sources of funding, therefore, attaining more debt to satisfy their prerequisites. Equally, the non-debt tax shield also increases with surging the debt ratio.

B. Sector-wise analysis for managerial behaviour in the capital structure of Shariah-compliant and conventional firms

This section discusses sector-wise analysis for the second main objective by model 2. For the analysis, different approaches are applied such as OLS regression, fixed and random effect models. Hence, the results are analyzed according to the better-chosen model suggested by the Hausman test for the following model.

The following listed sectors on Pakistan Stock Exchange were available and the data were collected for this study, are discussed below.

4.8 Shariah-compliant firms (Chemical)

According to better-chosen fixed-effect model size in Shariah-compliant firms of the chemical sector is negatively and significantly related to leverage. Therefore, with the increase in assets and sales, firms decrease their dependency on the debt due to relying on internal financing (retained earnings). Tangibility has a positive and significant relation with debt showing that when firms need more debt for their need, they have to grow their fixed assets and tangibility to increase collateral and pledge their asset for secured borrowings. This is also suggested to Shariah-compliant firms to maintain their tangibility at a sufficient level in the case for availing secured debt. However, profitability like most of the firms in different sectors also builds negative and significant relation with

debt. Whereas, Risk and non-debt tax shield are insignificant. Moreover, the relationship between liquidity and debt is positive and significant showing that more liquid firms can avail more debt due to their safer position in paying off debt especially short term or when the long-term debt matures. In the Shariah-compliant firms of the chemical sector, the main explanatory variable 'managerial ownership' is shown insignificant that is consistent with the hypothesis. The results indicate that the managerial ownership is not adversely influencing the capital structure, thus, confirming the trustworthy managerial behaviour for the Shariah-compliant firms in this sector.

4.9 Shariah-Compliant Firms (Miscellaneous)

For the Shariah-compliant firms in the miscellaneous sector, fixed effect model maintains that size is negatively and significantly influencing on debt. Alike the majority of sectors mentioned above, the firms in this sector also avail lesser debt when they increase their assets and sales. That is also due to the self- sufficiency of the firms for satisfying the necessities arising. The non-debt tax shield is positive. However, tangibility, profitability, and growth are exerting no effect on the leverage of the firms in this sector. Prominently, in the Shariah-compliant firms of the miscellaneous sector, managers also seem trustworthy for they do not exploit the capital structure through the variation of debt level due to varying the proportion of ownership in the firms. They do not influence according to their position and shares in the majority or otherwise, thus, proving our hypothesis for Shariah-compliant firms similar to those of the chemical sector.

4.10 Conventional Firms (Miscellaneous)

According to random effects choice, the managerial ownership in conventional firms of the miscellaneous sector is significant and consistent with the hypothesis indicating that managers influence on the leverage in the capital structure using discretional power for their objectives.

4.11 Shariah-Compliant Firms (Oil & Gas)

Based on better-chosen fixed-effect model, the managerial ownership in Shariah-compliant firms of the oil and gas sector is also insignificant. Interestingly, the result is consistent with the hypothesis of study as well as with the previous study by Katper et al; (2015). The 'managerial ownership' exerts no effect on the capital structure of the firms. Thus, it verifies the proposed hypothesis of this study that the managers indifferently decide about the level of leverage signifying the trustworthiness in their behaviour.

Table 2: Sector-wise analysis for managerial behaviour in the capital structure of Shariah-compliant and conventional firms

Objective Two: Model 2: $Leverage_{it} = \alpha_o + \beta_1 Managerial\ Ownership_{it} + \beta_2 Size_{it} + \beta_3 Tangibility_{it} + \beta_4 Profitability_{it} + \beta_5 Risk_{it} + \beta_6 Liquidity_{it} + \beta_7 Growth_{it} + \beta_8 Tax\ Shield_{it} + \varepsilon_i$

Variables defined: $Ln(D/A)_{it}$ natural logarithm of the book value of debt over book value of assets. *Managerial Ownership* is a fraction of managerial ownership in firm i equity, Size is the natural log of total assets, *Tangibility* is a ratio of net property, plant, and equipment to book assets, *Profitability* is mean returns on assets for 5 years, Risk is the standard deviation of return on assets, *Growth* is the annual percentage change in sales. The sample is based on Shariah-compliant and conventional firms as listed on Karachi Stock Exchange, Pakistan for the period 2009 to 2013. Two regressions are estimated for all firms and conventional firms. Regression (1) includes all the firms regardless of the level of their debt ratio. To avoid sample selection bias, regression (2) restrict the sample to only those firms whose debt ratio is less than 37% to match firms with our Shariah-compliant sample, the debt ratio of which cannot exceed this limit *** $p<0.01$; ** $p<0.05$; * $p<0.1$

Sector	MO	SIZE	TANG	PROFIT	RISK	LIQ	GROW	NTSD	C	R-squared	Hausman
Chemical (SH)	-0.001	-0.251**	0.427*	-0.018**	0.005	0.630**	---	-0.428	4.278**	0.811	**(F.E)** 21.046***
	(-1.196)	(-2.500)	(1.928)	(-2.106)	(0.578)	(2.150)	---	(-0.171)	(2.640)		(0.007)
Miscel (SH)	-0.000	-0.115**	0.219	-0.003	0.008***	0.681***	0.000	1.949***	1.712	0.908	**(F.E)**28.970***
	(-0.780)	(-2.546)	(1.454)	(-1.389)	(3.526)	(4.209)	(1.105)	(7.760)	(2.316)		(0.000)
Miscel C	0.005***	0.120***	0.307	-0.008**	0.008	0.900***	0.000	0.098	-1.911**	0.152	(R.E)5.597
	(2.949)	(2.839)	(1.060)	(-2.312)	(0.783)	(2.840)	(0.470)	(1.545)	(-2.475)		(0.692)
Oil & gas (SH)	0.012	-0.103*	-0.086	-0.016**	-0.005	0.373**	-0.000	-0.018	2.526**	0.965	**(F.E)**36.847***
	(0.497)	(-1.811)	(-0.304)	(-3.447)	(-1.161)	(2.193)	(-0.783)	(-0.017)	(2.364)		(0.000)
Cement (SH)	0.000	-0.037	0.226	0.000	0.002	-0.304	-0.000	2.604	0.927	0.312	(**R.E**) 4.033
	(0.35)	(-0.91)	(1.132)	(0.490)	(0.490)	(-1.042)	(-0.527)	(1.080)	(1.266)		(0.854)
Automob (SH)	0.002	0.038	-0.033	-0.007**	0.005	0.420*	0.000**	0.609	-0.415	0.325	**(R.E**) 8.603
	(1.478)	(0.952)	(-0.146)	(-2.592)	(1.287)	(1.769)	(2.141)	(0.696)	(-0.620)		(0.376)
Sugar C	0.018***	-0.474**	0.368	-0.040**	0.025	-0.040	-0.001	0.022**	7.364**	0.985	**(F.E)**77.488***
	(3.375)	(-2.233)	(1.098)	(-2.600)	(1.093)	(-0.081)	(-1.104)	(2.724)	(2.244)		(0.000)
Textile C	0.005**	-0.117*	-0.475	-0.012	-0.005	---	0.005***	1.018**	2.346**	0.137	**(R.E**) 9.457
	(1.981)	(-1.840)	(-0.958)	(-1.369)	(-0.266)	---	(3.542)	(1.905)	(2.108)		(0.221)

Note: SH= Shariah-Compliant, C= Conventional, F.E= Fixed effect is selected, R.E= Random effect is selected

4.12. Shariah-compliant Firms (Cement)

Remarkably, the 'managerial ownership' in Shariah-compliant firms in the cement sector is insignificant suggested by a random effect. The results prove the hypothesis that Shariah-compliant firms are trustworthy and do not influence leverage. In this way, the ownership structure is indifferent to the capital structure of Shariah-compliant companies. The variation in managerial ownership does not affect or change the level of debt in the capital structure of the firms.

4.13 Shariah-compliant Firms (Automobile)

Captivatingly, in the Shariah-compliant firms of the automobile sector, the main explanatory variable 'managerial ownership' is insignificant based on the random effect approach. Thus similar to Shariah-compliant firms of other sectors mentioned above, the managerial ownership structure is not affecting the leverage of the firm. The managers seem trustworthy and do not exploit the capital structure by their changing proportion in ownership holdings or increasing voting power and position. Therefore, it proves and verifies the hypothesis about Shariah-compliant firms.

4.14 Conventional Firms (Sugar)

Through the fixed effect choice, the results of conventional firms of the sugar sector also prove the hypothesis true by showing managerial ownership as a significant variable. The changing number of shares affects the level of leverage thus the managers seem self-serving in their behaviour and less trustworthy comparatively.

4.15 Conventional firms (Textile)

According to the better choice random effect model, the conventional firms of the textile sector also demonstrate the significant relationship between the managerial ownership and dependent variable. That means the ownership structure influences the capital structure. The managerial ownership exerts the effect on debt levels thus; they may be said that their behaviour is less trustworthy. The result also proves our hypothesis true as managers follow their objectives by influencing the decision about the level of debt in the firm.

5. Conclusion

This study builds on the assumption that Shariah-compliance should be reflected in the overall range of managerial decision making in Shariah-compliant compliance firms. The study carried out a detailed analysis of issues relating to the capital structure of Shariah-compliant and conventional sectors in Pakistan.

Sector-wise analysis for determinants of capital structure

Awe observed that in the Shariah-compliant **chemical sector**, **miscellaneous sector, and** conventional textile sector **size is** negatively correlated with the dependent variable leverage defining that larger Shariah-compliant firms depend lesser on the debt. **Conversely,** size is positive and significant with leverage in Shariah-compliant **oil and gas sector** implying that large firms tend to get more debt. **Tangibility** in Shariah chemical and miscellaneous sectors is insignificant having no such impact on the debt in the capital structure. Whereas it is positive in Shariah-compliant Oil & Gas sector consistent to the pecking order theory, In Shariah-compliant chemical and Oil & gas, conventional miscellaneous and sugar sector **profitability** is negatively and significantly

correlated with leverage viewing that profitable firms obtain lesser debt. **Liquidity** is positively and significantly with the dependent variable leverage in Shariah **chemical sector**, **miscellaneous sector, Oil& Gas sector** displaying that the liquid firms may avail more debt because they are not having the risk of illiquid position to pay off the expenses or debt that is in a current position or maturing within a year. The firms of these sectors seem safer to get debt with better liquidity position. However, the **risk** in **the miscellaneous sector** is positively and significantly correlated with leverage which is consistent with the idea that high levered firms are riskier. However, the risk is negatively and significantly correlated with the leverage in conventional miscellaneous sector. Aversely, in **Shariah-compliance and conventional miscellaneous sector,** Conventional Sugar sector the non-debt **tax shield is positive and significant which is consistent** with Bradley et al. (1984). Giving that **non-debt tax shield** will increase with the increase of debt in firms and decrease otherwise. Thus it seems that firms in this sector may have invested heavily on borrowing. In c**onventional miscellaneous** size, liquidity, and growth are negative but insignificant with the relation of dependent variable leverage. **In Shariah firm automobile size**, tangibility, profitability, risk and non-debt tax shield for the automobile sector are insignificant presenting no effective impact on the Shariah-compliant firms in this sector.

Sector-wise analysis for managerial behaviour

In the Shariah-compliant firms of the chemical sector, Miscellaneous, Oil & Gas, cement, automobile sector the main explanatory variable 'managerial ownership' is shown insignificant that is consistent with the hypothesis. The results indicate that the managerial ownership is not adversely influencing the capital structure, thus, confirming the trustworthy managerial behaviour for the Shariah-compliant firms in this sector. In conventional Miscellaneous, Sugar and Textile sectors the managerial ownership is significant and consistent with the hypothesis indicating that managers influence on the leverage in the capital structure using discretional power for their objectives, thus, proving the hypothesis of our study.

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