Information Asymmetry as Moderator between Capital Structure and Stock Market Liquidity in Pakistan

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Abstract

The purpose of this endeavor is to analyze pre and post moderation effect of information asymmetry (I.A) between capital structure (C.S) and stock market liquidity (M.L) in the top populous textile & food sectors of Pakistan stock exchange during 2008-2019. The available data of 160 sample companies through convenient sampling have been picked among the total 210 firms of the sample sectors while analysis was done via Gretel. There is clear distinction between the pre-& post-moderation results applying I.A as a moderator. Both t-values and p-values show highly significant results of post-moderation effect of I.A as compare to pre-moderation effect of the I.A between C.S and M.L. The findings of the study are in line with agency theory while adding some fruitful literature to the existing literature in the relevant field of studies.

Keywords: capita structure, moderation, information asymmetry, debt to assets, growth.

Introduction

The amalgamation of the resources of the firm which is the financing venues for these firms are simply called the capital structure. Among other significant decisions, C.S is the primary one of them as it is closely related to the risk and reward of the firm's stakeholders. More simply, the non-current obligations plus the shareholders equity or in other terms, financial structure of a business entity less its short-term obligations refer to C.S (Yung-Chieh, 2013). Furthermore, as per Pais (2017), C.S is made up of the blend of equity and debt which are the major two sources for the financing of a firm. So, it is a mirror for the financial managers where they can see from time to time the rationality or irrationality of their decisions to get funds for their operations via debts or equity financing because it may be dangerous for the firm to raise huge funds through debts while mismanagement of these funds takes place that will increase the cost of capital and decrease the stock prices of the firms and so does the liquidity of the financial market.

According to the study of Ibrahim and Lau (2019), where financial leverage's determinants has been taken while the study suggested that their significant positive association of the considerable variables to debt ratio and on the other end liquidity is witnessed as a significant inverse association with the capital structure. The traditional well-known

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commodity markets are very popular in the developing economies but keeping in reflection the economic activities in such economies, the most attractive as well as earth-shattering constituent is the equity markets. Similarly, various firms, regardless of the volume/size, enjoy huge profits via putting the required cash (funds) in diverse productive businesses to get their capital sequence and do business, in other words, means the center and important brighter role in the developing economy's gross domestic product (GDP).Further, as per the Modigliani and Miller (1963) of trade-off theory of capital structure, most of the companies' pickup their capital structure through equalizing the marginal benefit with the cost of debt financing. Similarly, added that the core purpose of debt financing is the interest tax shield while, on the other end, financial distress cost, debt overhang as well as agency problems between the two major parties (equity and debt-holders) is considered the key costs associated to the debt financing. It is worth mention that a lot of already conducted studies on capital structure and market liquidity has focused their attention on the linkage of institutional ownership and share turnover, which in other words means, the more shares the institutional investors have of a company, the higher is the turnover will be higher due to more easy access to the top secret information and the contra as well (Bennet, Sias and Starks , 2003;Ajina et al., 2015 and Hussain et al., 2020).

As per the highlights of the studies of Fleming et al., 2005; McKnight and Weir, 2009; Garanina and Kaikova, 2016, a rich contribution in the already available literature, while these studies suggested the key role as well as the applicability of corporate governance quality for the ultimate purpose of a considerable fair management of any company, which has a parallel effect on the agency cost via lowering information asymmetry among the stakeholders specially the insiders with that of the market. Additionally, in another study of Arif et al., (2018), declares that stock Market liquidity, keeping its importance in the developing economy like Pakistan, has more susceptibility especially to the secret information that is circled with numerous elements that causes information asymmetry leads to the market liquidity as a whole in an economy.

The crux of the above discussion pointed out the role of information asymmetry as a moderator has not been handled or implemented in developing nations along with that of advanced economies. It is because of majority of factors like foremost shareholders occurrence, poor legal system as well as lower investor shield, the IA between insiders and outsiders maximizes. In the study of Yousefinijad et.al (2018), there is establishment of the moderating role of IA whereas declared the visible role of IA between IFRS and FDI. Similarly, according to Javaira & Hassan, (2015), the weaker regulation of market structure, the traders face a higher IA due to the disparity situation of it to have more threats to the traders.

Previously different studies have been addressed the relationship between information asymmetry and stock market liquidity. For instance, Ajina, A., Lakhal, F., & Sougné, D. (2015); Arif et al., (2018) and Hussain et al., (2020) have declared in their findings the role of information asymmetry in response to that of market liquidity in order to judge their influence for the shareholders in the non-financial sectors of the financial markets. In another study of Arif (2019) on the moderation of IA in between Institutional investors and M.L, it is suggested that future study can be conducted by adding other sectors of Pakistan stock exchange. Further, the study also suggested to considering other independent variable in future studies. So, based on the above gap of the previous studies, the current study intended to have a unique area of interest, that is, the applicability of information asymmetry as a moderator of capital structure and stock market liquidity. Due to the fact that in management sciences researches, the role of moderators is in full swing in today's modern era. The validity of the current study is clear from the above literature of the previous studies which shows that little work has been conducted on the role of I.A as a moderator between C.S and Market liquidity in the sample sectors of the developing economy of Pakistan.

Literature Review

According to the well-known agency theory the basic reason behind the principal-agent problem is information asymmetry. It occurs there is imbalance in information between the two pillars of the company that causes conflict of interest between the two parties. Therefore, debts of the company are obligations of the owners while superior information of the agents is playing a vital role between the capital structure and the market liquidity because with the higher market liquidity the agents are fulfilling their targets at the cost of their principals/owners.

According to the Pais (2017), C.S is made up of the blend of equity and debt which are the major two sources for the financing of a firm. So, it is a mirror for the financial managers where they can see from time to time the rationality or irrationality of their decisions to get funds for their operations via debts or equity financing because it may be dangerous for the firm to raise huge funds through debts while mismanagement of these funds takes place that will increase the cost of capital and decrease the stock prices of the firms and so does the liquidity of the financial market.

The well-known study of Modigliani and Miller (1958) declared that value of C.S while the effectiveness of the assumption is only associated where the market is perfect, means where all the shareholders can easily and freely get the financial data for their decision making. Similarly, the parallel treatment in terms of no tax for zero transaction cost & profits as well as for capital appreciations. Further, the study of Sari and Sedana (2020) has clearly mentioned the effect of profitability and capital structure and exposed direct link between the selected variables and the capital structure of the given samples picked up for the said study.

The amalgamation of the resources of the firm which is the financing venues for these firms are simply called the capital structure. Among other significant decisions, C.S is the primary one of them as it is closely related to the risk and reward of the firm's stakeholders. More simply, the non-current obligations plus the shareholders equity or in other terms, financial structure of a business entity less its short-term obligations refer to C. S (Yung-Chieh, 2013). Similarly, Gompers and Metrick (2001) suggested that due to the higher demand for huge stocks in the sample time frame, this added to the extinction of the small-stock premium of the sample firms in terms of capital structure.

According to the study of Arif (2019), it is concluded that I.A has a key and visible role in between Institutional Investors (I.I) and M.L in Pakistan. Furthermore, the same study found that I.A has a more significant connection between the I.I & M.L as compare to the pre-moderation association between these variables of the study which shows the authenticity of the usage of I.A as a moderator between the dependent and explanatory variables in any study. Other endeavors regarding the I.A also suggested that corporate governance can be improved by considering the size of the firm which not only help out in mitigating the diminishing role of I.A but can also boost up the monitoring activity of the management.

In another study of Shah and Khan (2017), it is noted that there is inverse association between leverage ratio and current ratio and so does the profitability which ultimately affect the M.L of the financial market. While the leverage ratio is reasonably affected by size of the firm and Debt-free tax shield. The effect of profitability is considerably weaker but the effect of size and liquidity is more strongly significant. Further, Farooq & Zarouali, (2016) found that I.A is worsening due to the access of big shareholders who take their trade decisions on the basis of insider information. They further added that lower information asymmetry result in the lower ability of controlling shareholders to seize resources of the firms which on the other hand expect the growth in the agency cost along with growing information asymmetry.

As per Mirza (2015) found size of firm directly affects leverage of the firm. Similarly, in another study of Muigai and Muriithi (2017), it is noted that for the study of capital structure the size has to be taken as a key variable for the purpose to achieve better results. Pellicani and Kalatzis (2019) concluded that due to the managerial discretions in the firms at Brazil, the problems of overinvestment have occurred. Which is further creating problems for the agents in terms of their role to play for the real owners and resultantly agency cost cannot be minimized. So, it is hard to execute fair corporate governance where I.A can be controlled or maintained.

In another study of Submitter et al., (2019) it is noted that capital structure efficiency can be influenced by the use of firm size because of the reason that large firms have more access to the secret information of the financial market which ultimately affect the market liquidity. Similarly, according to Arif (2019), the I.A can play a very fruitful and meaningful role as a moderator because of the fact that stock markets are mainly run on the basis of the information while the intensity of the flow of the information in the hands of the various companies' shareholders are quite different from each other. Therefore, it is key to consider the vital role of this moderator while judging the stock market liquidity in particularly the developing economies like Pakistan.

Based on the earlier literature discussed, it is concluded that studies on I.A and stock market liquidity have been conducted earlier. But to the best of our knowledge role of information asymmetry as a moderator between C. S and M. L on the sample frame of the study is not addressed in the literature. Consequently, the current study will bridge the gap that will be beneficial for the stakeholders of the area of interest. The following hypotheses have been derived of the discussion above:

H1: Capital structure significantly affects stock market liquidity.
H2*: Information asymmetry significantly moderates between C.S and SML*

Methodology

The study investigates impact of capital structure on market liquidity by taking information asymmetry as a link between it. The study is adopting the methodology of Arif, (2019) to test the empirical nexus of the study.

Variables and Measurement

The study has the following variables with their measurement proxies.

Name of variable	Measurement	Reference
Capital Structure	(a) Debt to Equity	Yung-Chieh, (2013)
Capital Structure	(b) Debt to Assets	Yung-Chieh, (2013)
Firm Size	$SZ = \log \ (total\ Assets)$	Ajina et al., (2015)
Expected Growth	$\mathrm{EG} = log \frac{Current\ year\ Assets}{Preceeding\ year\ Assets}$	Shah, Hijazi& Javed, (2004)
Stock Market Liquidity	$SML \ = Volume\ index\ KSE - 100\ index$	Ajina et al., (2015)
Information Asymmetry	$\mathrm{ROS}\tau = a\tau - \frac{b\tau}{Q\tau}$	Vankatsh and Chiang (1986)

Population and Sample size

The study is conducted with view to analyze the impact of capital structure on market liquidity testing information asymmetry as moderating effect. The study has collected secondary data of 160 firms from textile and food sectors out of total 210 registered firms with PSX.

Econometric Model

$$M.L = a + \beta 1DEi + \beta 2DAi + \beta 3SZi + \beta 4LVi + \beta 5GRi + \varepsilon \dots\dots\dots \quad (A)$$

$$M.L = a + \beta 1(DEi * IA) + \beta 2(DAi * IA) + \beta 3(SZi * IA) + \beta 4(LVi * IA) + \beta 5(GRi * IA + \varepsilon \dots \quad (B)$$

In the above equations (A) and (B), M.L is dependent variable of the study and denotes stock market liquidity. Similarly, the independent variables are DE that is Debt to equity and DA is Debt to Assets. Further, the control variables of the study are size of the firm (SZ), leverage (LV), growth (GR). Similarly, a denotes intercept of the model and the remaining βs show the slope of the model while lastly "ei" indicates error term of the study. The above model is appropriate because the study has one dependent, two independent variables and three control variables therefore; multiple linear regression model is used to found the estimates. (Ajina et al., (2015).

Results and Discussion

Table 1. Regression Results

OLS, using observation (n = 160)
Explained variable: M.L

	Coefficient	*t-ratio*	*p-value*
const	23.28	0.987	0.080
DE	0.027	3.581	0.033
DA	0.071	4.967	0.005
Sz	12.061	3.879	0.031
LV	10.420	4.176	0.010
GR	-5.589	3.978	0.024

Mean dependent var	6.259	S.D. dependent var	11.309
Sum squared resid	16.207	S.E. of regression	0.412
R^2	0.588		
F-Value	4.953	P-value(F)	0.022
Log-likelihood	−15.298	Akaike criterion	14.596
Schwarz criterion	12.614	Hannan-Quinn	16.698

The results of the regression analysis pre-moderation effects are portrayed in Table No. 01 of the study which evidenced that, significant relationship between the C.S and the M.L due to its values that is t-value exceeds 2 (i.e. DE is 3.581 & DA is 4.967) and p-value is less than 0.05 (DE is 0.033 & DA is 0.005). This shows the pre-moderation effect between the two variables. Furthermore, the p-values of the SZ, LV and GR (i.e. 0.031, 0.010 & 0.024 respectively) are also significant in relation to the explained variable of M.L. Further, R-square is also significant because its value exceeds than 5 and stood at 0.588. While at the same scene the model is good fit with a value exceeding 4 and stood at 4. 953.These results are matching with the findings of Submitter et al., (2019) and Pellicani and Kalatzis (2019) due the closer arguments regarding the M.L in light of the SZ, LV and GR of the sample firms of their studies. In light of the above results it is interpreted that significant market liquidity in PSX can be attached during the sample period of the study a democratic government has been in power since the termination of dictatorship in 2008 till 2020. Similarly, the second factor of this significant M.L is attached to the Pakistan stock Exchange constituted in 2016 formerly known as KSE, which also built the confidence of the management as well as the stakeholders of the firms to trade fearlessly.

Last and not the least reason is the increase in demand of debts by the sample sectors of this study in order to upgrade their manufacturing layout to meet the local as well as the global competitiveness. So, in this way the firms from both sectors have used leverage in their C.S to restructure their operations and to increase their output that resultantly increases the M.L of the PSX. The results of the study are in line with line with the findings of Yung-Chieh, (2013), Ajina et al., (2015); and Arif et al., (2018) because they also concluded that the use of debts can increase the capacity of the production of the firms and so does the M.L of the financial markets. Similarly, the results of the study are also following the agency theory of the relevant area of interest.

Table 2: Post Moderation Regression Results

OLS, using observations (n = 160) Explained variable: M.L

	Coefficient	*t-ratio*	*p-value*
const	28.982	1.143	0.107
DEIA	0.318	4.679	0.003
DAIA	0.761	5.784	0.000
SZIA	11.543	4.976	0.002
LVIA	13.890	5.106	0.000
GRIA	−2.761	5.987	0.005

Mean dependent var	7.009	S.D. dependent var	10.113
Sum squared resid	15.874	S.E. of regression	0.38
R^2	0.620		
F-Value	5.643	P-value(F)	0.000
Log-likelihood	−15.456	Akaike criterion	13.567
Schwarz criterion	12.760	Hannan-Quinn	17.693

The results given in Table No. 2 of the study indicating regression analysis post moderation effect that also indicates significant relationship between the C.S and the M.L that is highly significant than the pre-moderation effect. The values of moderation indicate that t-value of post-moderation is higher in significance (i.e. 4.679 & 5.784 for DE & DA respectively) than the pre-moderation t-values (i.e. DE is 3.581 & DA is 4.967) and p-value of post-moderation is also lesser than the pre-moderation, that shown the validity of the I.A as moderator. Furthermore, the p-values of the SZ, LV and GR of the post-moderation are also higher than the pre-moderation of the I.A. Further, R-square value is also significantly higher than the pre-moderation of I.A in the study. These results are matching with the findings of Ullah (2019) and Arif (2019) because of their findings that is I.A has a considerable moderator role in between the explanatory and the explained variable of their studies. Similarly, these findings can be attributed to the brighter role of I.A as a moderator between C.S and M.L due to various elements like the large size of the firms and more GR availing firms who are vigilant to take benefits from any relief of the government agencies and policy makers.

According to the well-known agency theory the basic reason behind the principal-agent problem is information asymmetry. It occurs there is imbalance in information between the two pillars of the company that causes conflict of interest between the two parties. Therefore, debts of the company are obligations of the owners while superior information of the agents is playing a vital role between the capital structure and the market liquidity because with the higher market liquidity the agents are fulfilling their targets at the cost of their principals/owners.

In light of the above results it is interpreted that significant market liquidity in PSX can be attached to the factor that firms who have reasonable C.S have more access to the secret information as compare to the irrational C.S where they do not get the right information of the market at the right time. Similarly, the second factor of this significant M.L due to the moderator role of I.A is attached to the Pakistan stock Exchange (PSX) constituted in 2016 formerly known as KSE, which also built the confidence of the management as well as the stakeholders of the firms to trade who were believing a more fair and transparent trade at the PSX. Lastly, the increase in demand of debts by the sample sectors of this study in order to upgrade their manufacturing layout to meet the local as well as the global competitiveness. So, in this way the firms from both sectors have used leverage in their C.S to restructure their operations and to increase their output that resultantly increases the M.L of the PSX.

The results of the study are in line with line with the findings of Yung-Chieh, (2013), Ajina et al., (2015); and Arif (2019) in the same nature. Similarly, the study found that the stocks of large size firms along with high trading volume have considerable association with I.A due to the reality that analyst have a vigilant eye on these firms which caused minimizing adverse selection effect while the results are matching with the similar findings of Salehi et al (2014) and Elbadry A, Gounopoulos D & Skinner F, (2015) study.

Conclusion

The purpose of this endeavor is to analyze pre and post moderation effect of information asymmetry (I.A) between capital structure (C.S) and stock market liquidity (M.L) in the top populous textile & food sectors of the non-financial sector in Pakistan stock exchange during 2008-2019. The available data of 160 sample companies through convenient sampling have been picked among total 210 firms of the sample sectors while analysis was done via Gretel. There is clear distinction between the pre- & post-moderation results applying I.A as a moderator. Both t-values and p-values show highly significant results of post-moderation effect of I.A as compare to pre-moderation effect of the I.A between C.S and M.L.

The findings of the study are in line with agency theory while adding some fruitful literature to the existing literature in the relevant field of studies. It is suggested that management of firms should utilize their debts in profitable ventures to benefit all the stakeholders instead of personal benefits that will decrease the agency problems as it is proved from the popular agency theory that agents are normally take benefits at the cost of their principals because the burden of debts in the capital structure of the company is the financial burden for the principals.

Due to time and data limitations, the study leaves a space for the upcoming research studies that may include financial sector as well as other variables in the relevant field of studies.

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