The Moderating Role of Information Asymmetry in the Relationship between Stock Market Liquidity and Institutional Investors:
A Case of Textile Sector in Pakistan Stock Exchange

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Abstract   *The study focused on the moderation role of information asymmetry (IA) that plays a vital role between Stock market liquidity (SML) and Institutional investors (I.I) in textile sector of Pakistan stock exchange (PSX). Among total population of 155 companies, a sample of 150 textile companies is chosen with the help of convenient sampling technique for a period of 10 years (2009-2018). The results of Pre-moderation panel data regression analysis show that there is insignificant effect of I.I on SML while size (SZ), leverage (LEV) and growth (GR) have significant effect on SML. Further, post-moderation effect of IA, which is the uniqueness of the study, indicates a stronger significant effect of SZ, LEV and GR on SML as compare to pre-moderation regression results, which evident that IA do has a significant role between explanatory variables and SML. The results of the study are supporting the signaling theory on the base of moderation of IA that increases the significance level between I.I and SML.*

Key Words: Moderation, Information Asymmetry, Size of Firm, Growth, Textile Sector

Introduction

Along with commodity markets, keeping in consideration the economic happenings, the equity markets today are earth-shattering constituent. The various corporations, irrespective of their size, take benefit of them by utilizing the funds required in different productive ventures for their capital succession and trade, by this means playing vital role in developing an economy's gross domestic product (GDP). In this context, the shareholders are the key characters of this drama while playing their role as the real owners of the funds and that is the reason behind their risk-taking behavior because they are uncertain about their future earnings. There are two types of stock market investors, one is individual investors who have small investment and the other is Institutional investors, who have usually a better understanding of the market and have superiority in terms of their stakes than other investors which prompts extended inspiring forces and capability to efficiently monitor administration in a way that will enhance firm performance (Shleifer and Vishny, 1986). Majority of the previously conducted studies on institutional ownership and liquidity has centered on the relationship between institutional ownership and share turnover, that is, the more shareholdings the institutional investors in a company the higher is the turnover because of considerable access to secret information and vice versa (Bennet, Sias and Starks, 2003). The special characteristics of institutional investors like investment outlook and the risk aversion can also affect the market liquidity. There is inverse relationship between the portion of long-term equity hold by the investors and the additional risk averters. (Aymen, 2015). The attraction of investors to the locations that can be attributed to those that have higher value in terms of quality information. So, this can be attached to the provision of financial information quality characterized by the level of a country's corporate transparency and comparability (Chipalkatti et al. 2007; Owusu et al. 2017).

The study of Fleming et al., 2005; Mcknight and Weir, 2009; Garanina and Kaikova, 2016 highlighted new contribution in one hand literature, by suggesting an effective occurrence of corporate governance quality proposed in order to get a very clean and fair management of the company, as a result affecting the agency cost by decreasing information asymmetry between insiders and the market. The less is the information regarding the firm, the more are managerial discretions and self-maximizing decisions ultimately leading to heightened external monitoring and agency cost. Similarly, the study has a contribution in extending the literature by empirically investigating the fundamental role of information asymmetry as a mediator between corporate governance and agency cost. Further, it is the discretion of firms to disclose the amount of information but it is disclosed with a higher rate which in turn creates an alarming situation, as a

result creates the problem of transparency specifically in developing nations of the world which build a valid reason to investigate this issue. Similarly, Najm-Ul-Sehar et al. (2013) further assert that due to poor implantation of laws about the disclosure of valued information by Pakistani corporation accompanied by lack of awareness and business ethics. It is concluded from the above discussion that the role of information asymmetry as a mediator cannot be as such implemented in developing nations parallel with developed economies. Due to various forces such as occurrence of leading shareholders, weak legal system and low level of investor protection, information asymmetry between insiders and outsiders raises. Javaira & Hassan, (2015) further concluded that due to the poor regulation of market structure, the information asymmetry is in imbalance position and therefore it is high for traders. Similarly, another study has been conducted by Maryam et.al (2018) and established the mediating role of information asymmetry while concluded that there is a considerable role of the information asymmetry between IFRS and FDI.

There are numerous studies, from time to time, have been conducted on the relationship between institutional investors, information asymmetry and stock market liquidity. The study of Ajina, A., Lakhal, F., & Sougné, D. (2015) concluded that there are two types of institutional investors prevailing in the stock markets, that is, the informed or active institutional investors and the passive or less informed investors. Further, this heterogeneity is explained in their research and connected it to the role of institutional investors in information asymmetry and their effect on the stock market liquidity. This research endeavor is attempted to find a unique angle of information asymmetry as a moderator between stock market liquidity and institutional investors. Because of the emerging role of the use of moderators in the research studies of management sciences, this study focuses on the role of moderator variable as well which will give better results as compare to the traditional role of repressor or regressed variables. This study is valid because there is very little research work conducted in developing countries and in Pakistani context, this study is rare. Further, this study will provide its rich contribution in the literature and this will be a pioneering study in Pakistan which will beneficial to various stakeholders like the academicians, research scholars, institutional as well as the individual investors, fund managers, brokerage firms, and general public. Similarly, the policy makers will also be benefited from the findings of this study while preparing their policies that is based on fair and transparent market information.

Literature Review

Before World War-II, from 1900 to 1945, there was only five percent of the proportion of equities managed by institutional investors. But post World War-II era showed a considerable increase in the institutional ownership while reaching 67 percent by the end of 2010.According to the studies of Gompers and Metrick (2001), it is found that, as compare to individuals, institutions have a preference for "bigger, more liquid stocks," and these preferences have remained stable over a long period of years 1980 to 1996. On the basis of this finding along with the increasing trend of institutional share of stock ownership mentioned above, Gompers and Metrick concluded that there was increasing demand for large stocks during their sample period and argue that, at the same time, this contributed to the termination of the small-stock premium. In the studies of Ajina et al. (2013) and Elbadry et al. (2015); it is proposed that quality of corporate governance that is gauged in terms of size, independence and meeting frequency of board supports and encourages managers in order to better monitor and causes a decrease in information asymmetry. Similarly, information asymmetry can also be reduced by effective boards in firms provide an administrative mechanism to check management activities and distribute quality information among the stakeholders. Similarly, Attig et al. (2006); Byun et al. (2011) and Farooq & Zarouali, (2016) examined and concluded that large shareholders make their trade decisions on the insider information and worsen information asymmetry.

The conflict of interest always exists between directors (as agents) and shareholder (as principal), caused by the concern of the shareholders, that is, the agents are taking more benefits for themselves instead for the company. Similarly, Farooq & Zarouali, (2016) found in their study that the lower the information asymmetry the minimum is the ability of controlling shareholders to confiscate firms' resources. Further, it is expected that agency cost grows with increasing information asymmetry, as supplementary decision-making device adopted by the principal provokes additional costs. According to Pellicani and Kalatzis, (2019), overinvestment problems take place because of managerial discretions in Brazilian perspective. Therefore, it is difficult for the agents to perform in favor of the principals which cannot reduce agency cost and therefore the execution of suitable system of corporate governance in order to mitigate information asymmetry cannot be maintained. Another study in the relevant area is conducted by Welker (1995), the study concluded that there is an existence of relationship among the corporate disclosure policy and stock market liquidity while the study found an inverse relationship between the market liquidity

and disclosure policy. Which means that the due to the high information disclosure of firms, the spreads among the bid-ask will increase and vice versa. As per the findings of the study of Gillan and Starks (2007), "without any delay the institutional investors can help in governance to adjust the changes and resultantly it gives better discipline to the firm management by the process of trading of shares. Similarly, in another study analyses of 23 counties were made by Aggarwal *et al,* (2011), found that the high institutional ownership, based on their influential decision-making powers, can have a dominant chance to remove or terminate the poor performers CEO, which ultimately increases the firm value in short as well as in long run. Further, added that institutional ownership also can help in controlling the earning of the firm while utilizing these earnings in profitable ventures.

In various studies conducted by Barclay and Smith (1988) and Brennan and Thakor (1990) indicated an unfavorable choice theory which states that investors who have larger proportion of shares in a firm accompanied by higher education in terms of up to date information will incline toward repurchases in order to earn profits. The theory further elaborates that larger financial investors have a superior motivator to wash out plainly educated investors and highly informed or educated investors find out about a repurchasing organization's true value as compare to the different investors. So, this information can be utilized to benefit to the harm of less educated investors. Further, the transfer of U.S. institutional ownership from larger to smaller stocks, accompanied by the high pace in institutional trading volume over recent decades has considerable implications for the liquidity of U.S. equity markets. In this context, Bennet, Sias and Starks (2003) text a direct relationship between the percentage of a stock owned by institutions and turnover. This test has twofold motivations that are: higher institutional ownership means to have a greater stake or volume; and this greater volume is linked with lower trading costs and, thereby, decreased illiquidity or it can increase liquidity (Demsetz (1968), Schwartz and Shapiro (1992). In the same regard, a more specific direct test is that of Rubin (2007), who declared an inverse relationship between institutional ownership and liquidity with the help of measures like bid-ask spreads and price impact. According to Khan et al. (2017) the research in the field of corporate governance in Pakistan in relation with information asymmetry is still in introductory stage which is motivating the researchers to conduct further studies in this area of interest in order to get more reliable findings for future managerial implications. Further, it is very interesting to note that Grinstein and Michaely (2005), after their immense hard work, fails to remove stocks that has issued by the firm from stock repurchase and ultimately, they didn't bid a clarification for this definition. So, it is likely that their reasoning follows that communicated by Grullon and Michaely (2002) who argue that the purpose of the new value issuance and investment opportunities is the utilization in order to have payment to work have not be incorporated into repurchase estimations. According to the argument of Hope and Thomas (2008), when there is high information asymmetry in organization, then it results in managerial involvement in non-productive investments that cannot increase the long-term value maximization of the investors which is, indeed, damage to the principals of the firm. Therefore, a positive relationship is expected between the degree of information asymmetry between informed and uninformed traders and the agency cost. Lin, (2017) showed that the voluntary claw back provisions reduces information asymmetry and thus the agency cost of overinvestment. Information asymmetry takes place in a situation when there is disparity of information between the two parties of a similar transaction. Further, it has two angles, that is, companies transact with liquidity-motivated investors or uninformed investors and with illiquidity-motivated or informed investors. As a result, the companies get profit from transactions with uninformed investors because they do not have the sufficient information about these stock's future potentials as well as they are trading against the companies' spread. On the other side of the picture, informed investors are dominant over companies and they lose profit from transactions with informed investors because they have collected significant secret information about firm value before trading, therefore existing information asymmetry and illiquidity in the pricing process (Nagar et al. 2019). On the bases of the above literature, it is clear that various studies have been conducted on the relationship among institutional investors, information asymmetry and stock market liquidity. But the role of information asymmetry as a moderator is not yet addressed on considerable level; therefore, this study is an attempt to explore the said gap which will be a rich contribution in this regard. The hypotheses in light of the above discussion are as follows:

H1: Institutional investors have significant effect on stock market liquidity.

H2: Information asymmetry mediates the association between SML and Institutional investors.

Methodology of the Study

This portion of the study comprises of the nature of the study, types of variables, population and sample size of the study, conceptual frame work and the econometric model.

Nature of the Study

The study is based on quantitative data of the sampled firms from the textile sector of Pakistan stock
 exchange. For the said purpose, data have been collected from the official web sites of the sample firms, official web sites of PSX and state Bank of Pakistan, business recorder and yahoo finance.

Variables of the Study

The study on the bases of past literature has considered the following independent, dependent and moderator variables

Independent Variables

Institutional Investors

As the name signifies, institutional investors are purchasing the shares in other firms in order to get maximum profits or to take the decision-making control over the key affairs of the company. Due to their financial strength, the Institutional investors have an easy access to the valuable secret information of the firms in the market and are therefore, the most efficient and educated agents who can be ultimately influential on liquidity. In this study the proxy is used that can be the best expression of firm's shareholders' interests (ajina et.al, 2015)

Measurement of the Variable

Institutional investors can be measured through shares, held with other firms divided by total shares outstanding of the firm

$$\text{INV} \quad = \quad \frac{Shares\ held\ with\ other\ Firms}{Total\ Shares\ of\ current\ Firm}$$

Size of the Firm (SZ)

The firm size is considered as another independent variable of the study. This variable can be attributed with multiple proxies while in present study firm size is used to measure the variable in the following manner

$$\text{SZ} \quad = \quad \log\ (Total\ Assets)$$

Leverage

Third independent variable of this study is leverage of the firm. It is the proportion of debts in the capital structure of the company to finance their operational expenditures. In order to measure the leverage in the present study, the ratio of total debts to total equity is adopted due to the fact that majority of the small firms in Pakistan are using short term financing (Shah and Hijazi 2004).

$$\text{LEV} \quad = \quad \frac{Total\ Debts}{Total\ Equity}$$

Expected Growth (EG)

The last independent variable of this study is growth. The effect of growth on liquidity were not very clear in previously conducted studies while expected growth is a measure for companies' performance, that is, the current year performance against the preceding year. The Following measure has been used by Shah and Hijaze, (2004), that is, the percentage change in the firm's total assets to measure the growth of the sample firms.

$$\text{EG} \quad = \quad \ln\frac{current\ year\ Assets}{preceeding\ year\ Assets}$$

Dependent Variable

The study has the following dependent variable

Stock Market Liquidity

The stock market liquidity is considered the basic point of attraction for the stakeholders in financial markets and therefore, it is taken as dependent variable of the study. According to the expert financial theory presented by (Demsetz, 1968), investors always take keen interest in the efficient market, that is, backed by frequently quoted bid and ask prices, a low bid-ask spread and small orders. Therefore, current study is based on the proxy of liquidity: the trading volume.

Measurement

The stock market liquidity is measured through the commonly adopted financial model, that is, the volume of closing index of KSE-100 index while the official website of PSX is used to extract the data.

SML = Volume index KSE 100 index

Moderator Variable of the Study

This study is based on the following moderator variable of Information Asymmetry which is taken to analyze its role between institutional investors and stock market liquidity.

Information Asymmetry

In this study, the information asymmetry is taken as moderator variable. Due to information disparity, because of various reasons, among the various investors, and it has a significant effect on the decision making of the shareholders as well as the stock market liquidity of any financial market. Therefore, the study has adopted the information asymmetry to check its role in between the institutional investors and stock market liquidity while the bid-ask spread has taken as a measurement tool and is taken from the financial models suggested by Amihud and Mendelson (1986), Kyle (1985) andGlosten and Harris (1988).

The Bid-Ask Spread

it is the proxy in order to gauge information asymmetry, that is the higher the information asymmetry the lower the market liquidity and vice versa. For that very purpose the current study has taken best bid and ask prices from PSX to measure information asymmetry from both angles, that is, quoted spread and effective relative spread. Where Quoted spread is the simple ratio of Ask less Bid prices with respect to the mean average of the Ask and Bid prices. Furthermore, for more authentic analysis, the study also includes the effective relative spread (ERS), that is, the absolute average difference of Bid-ask less Price divided by simple mean average of Bid and Ask prices in PSX.

$$Quoted\ spreads = \frac{Ask_t - Bid_t}{\frac{Ask_t + Bid_t}{2}}$$

$$Effective\ Relative\ Spread = 2\frac{\left|\frac{Ask_t + Bid_t}{2} - P_t\right|}{\frac{Ask_t + Bid_t}{2}}$$

Population and Sampling

The study is purely quantitative and therefore the data have gathered from textile sector that is the non-financial sector of PSX. The population of the study is 155 textile firms while through convenient sampling, based on availability of data of 10 years (2009-2018), there are 150 sample firms has taken for the current study.

Conceptual Framework
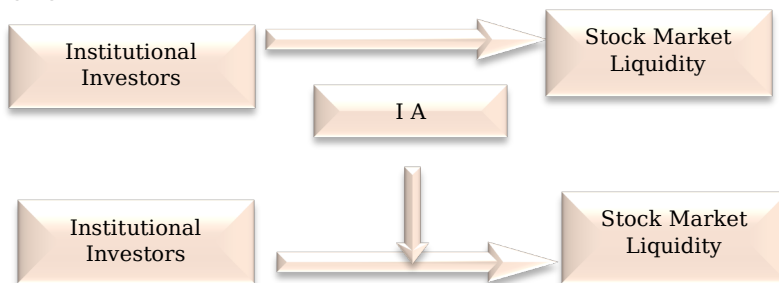
Econometric Model

The study includes following econometric models, that is, panel data regression model as equation 1 and equation 2 is about the moderation of IA between Institutional investors and stock market liquidity.

$$SML_i = \alpha + \beta_1 IINST_i + \beta_2 SZ_i + \beta_3 LEV_i + \beta_4 GR_i + e_i \ldots\ldots (1)$$

$$\text{SML}_i \quad = \quad \alpha + \beta_1 (\text{IINST}_i * \text{IA}) + \beta_2 (\text{SZ}_i * \text{IA}) + \beta_3 (\text{LEV}_i * \text{IA}) + \beta_4 (\text{GR}_i * \text{IA}) + e_i \dots \dots (2)$$

Where SML denotes the stock market liquidity, IINST is institutional investors, SZ is size of the firm, LEV is leverage, GR denotes growth, and e_i is the error term.

Results and Discussion

This section includes results and discussion on the bases of analysis through panel data regression models in order to examine the relationship between independent and dependent variables. Similarly, this section also shows the role of moderator variable between independent and dependent variables.

Table 1. Regression Results

	Coefficient	T-Ratio	P-Value
const	−8020.28	2.267	0.0403
Ins	1.04264e-05	0.929	0.3541
Size	2859.06	2.694	0.0325
LEV	7295.42	2.707	0.0100
Grwth	−2015.58	2.478	0.0241
Mean dependent var	14693.25	S.D. dependent var	7744.309
Sum squared resid	8.20e+09	S.E. of regression	7547.614
R-squared	0.505824		
F (4, 144)	4.953610	P-value(F)	0.022107
Log-likelihood	−1539.298	Akaike criterion	3088.596
Schwarz criterion	3103.616	Hannan-Quinn	3094.698

Model 3: OLS, using Observations 2-150 (n = 149) Dependent Variable: Mkt Liqudity

Table 2. Moderation

	Coefficient	t-ratio	p-value
const	13702.4	16.21	<0.0001
InstIA	5.77015e-07	1.554	0.1225
SizeIA	−9.10806	2.940	0.0543
LevIA	236.741	3.117	0.0022
GrIA	−14.5087	2.418	0.0582
Mean dependent var	14659.00	S.D. dependent var	7729.667
Sum squared resid	7.95e+09	S.E. of regression	7404.937
R-squared	0.606894		
F(4, 145)	4.338690	P-value(F)	0.002412
Log-likelihood	−1546.784	Akaike criterion	3103.567
Schwarz criterion	3118.620	Hannan-Quinn	3109.683

Model 4: OLS, using Observations 1-150 Dependent Variable: Mkt Liqudity

Table 1. Results and Discussion

Table 1 shows the results of regression analysis that is done through Gretel. The analysis clearly shows that the relationship between institutional investors and market liquidity is insignificant because t-value is less than 2 (i.e 0.929) and p-value is greater than 0.05 (i.e 0.3541) with 95% confidence interval. It proofs that institutional investors have a minor role in the stock market liquidity and there are some other factors that are responsible for the SML. Similarly, the results show that size of the firm, Leverage and Growth have significant effect on market liquidity. The figures indicate that size, leverage and growth have t-ratio of 2.694, 2.707, and 2.478 respectively while p-value of the same independent variables is 0.0325, 0.0100, and 0.0241 respectively. The results show that these three variables have significant effect on the SML because size of the firm

matters the key decisions of the company regarding investment, reinvestment and financing. Likewise, leverage and growth prospects are also the significant variables to affect the stock market liquidity that is clear from their respective figures. Further, R-square is also significant because its value is greater than 5, which is 0.505824. Similarly, fitness of the model that is F-value is greater than 4 while it stood at 4.953610 which mean that the model is good fit for the analysis. Likewise, p-value (F) is also significant with its value 0.022107 that is less than 0.05. Summarizing table 1, it can be concluded that the analysis as well as the results of this study is in line with the study of Demsetz, (1968), who were of the view that investors always take keen interest in the efficient market, that is, backed by frequently quoted bid and ask prices, a low bid-ask spread and small orders. Another study is also parallel with the results of the present study, that is, the study of Brennan and Thakor (1990), which indicated an unfavorable choice theory which states that investors who have larger proportion of shares in a firm accompanied by higher education in terms of up to date information will incline toward repurchases in order to earn profits. In other words, it can be interpreted that some factors are responsible to compel the financial markets to provide ease, quickness and cost effectiveness in transactions while this combination is known as market liquidity.

Table 2. Results and Discussion

Table 2 is about the moderator role of IA between ML and Institutional investors. In order to get more reliable results multiplies each independent variable is multiplied with IA that is the moderator variable of this study. The analysis clearly shows that despite the existence of IA as a moderator between ML and I.I, relationship between institutional investors and market liquidity is insignificant because t-value is less than 2 (i.e 1.554) and p-value is greater than 0.05 (i.e 0.1225) with 95% confidence interval. It proofs that with or without moderator variable of IA, institutional investors have a minor role in the stock market liquidity and there are some other factors that are responsible for the SML. Similarly, in the presence of the moderator, the results show that size of the firm, Leverage and Growth have significant effect on market liquidity. The figures indicate that size, leverage and growth have t-ratio of 2.940, 3.117, and 2.418 respectively while p-value of the same independent variables is 0.0543, 0.0022, and 0.0582 respectively. The results show that these three variables have significant effect on the SML because IA is very important variable between the dependent and independent variables and therefore, size of the firm matters the key decisions of the company regarding investment, reinvestment and financing. Likewise, leverage and growth prospects are also the significant variables to affect the stock market liquidity that is clear from their respective figures. Further, R-square is also significant because its value is greater than 5, which is 0.606894. It also shows that R-square with moderator has greater value than the R-square without moderator, which is indeed a sign of the significance of the moderator of this study. Similarly, fitness of the model that is F-value is greater than 4 while it stood at 4.338690 which mean that the model is good fit for the analysis. Likewise, p-value (F) is also significant with its value 0.002412 that is less than 0.05. This value is also less than the value of p-value (F) of the value given in table 1 for regression without moderator. This is a sign of significance of the moderator in the current study.

The results of the current study are matching with that of the results of Aggarwal *et al,* (2011), who found that the high institutional ownership, based on their influential decision-making powers, can have a dominant chance to remove or terminate the poor performers CEO, which ultimately increases the firm value in short as well as in ling run. Further, added that institutional ownership also can help in controlling the earning of the firm while utilizing these earnings in profitable ventures. Further, Attig et al. (2006); Byun et al. (2011) and Farooq & Zarouali, (2016) examined and concluded that large shareholders make their trade decisions on insider information and worsen information asymmetry.

Conclusion

The study focused on the moderation role of information asymmetry (IA) that plays a vital role between Stock market liquidity (SML) and Institutional investors (I.I) in textile sector of Pakistan stock exchange (PSX). Among total population of 155 companies, a sample of 150 textile companies is chosen with the help of convenient sampling technique for a period of 10 years (2009-2018). The results of Pre-moderation panel data regression analysis show that there is insignificant effect of I.I on SML while size (SZ), leverage (LEV) and growth (GR) have significant effect on SML. Further, post-moderation effect of IA, which is the uniqueness of the study, indicates a stronger significant effect of SZ, LEV and GR on SML as compare to pre-moderation regression results, which evident that IA do has a significant role between I.I and SML. The results of the study are supporting the signaling theory on the base of moderation of IA that

increases the significance level between I.I and SML. The study recommends that Government through its regulatory bodies should ensure transparency in the stock market in order to provide uniform opportunities to all the players irrespective of their size or financial influence. This study is limited to textile sector while future studies can be conducted including other sectors of PSX. Similarly, based on literature, other variables can also be included in other studies.

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