IMPACT OF OWNERSHIP CONCENTRATION, INSTITUTIONAL OWNERSHIP AND EARNINGS MANAGEMENT ON STOCK MARKET LIQUIDITY

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Abstract

Ownership structure plays a vital role in stock market liquidity. We analyze the impact of ownership concentration, institutional ownership and earnings management on stock market liquidity. We select 114 firms from manufacturing sector of Pakistan, India, Australia and Singapore. We extract data from DataStream from 2010 to 2018 of selected countries. We apply Generalized Method of Moments (GMM) to analyze the data. We find that ownership concentration, institutional ownership and earnings management significantly affect the stock market liquidity.

Keywords: Ownership Concentration, Institutional Ownership, Earnings Management, Stock Market Liquidity, Emerging Economies

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1. INTRODUCTION

Stock market liquidity has become an interesting area of research, and many studies have been conducted in different aspects. In developed and emerging markets, the liquidity of the stock market is essential because a liquid market allows the efficient allocation of financial resources, as efficient allocation is the prerequisite for the growth and development of the financial market. The greater liquidity of a financial market is, the greater the value of a firm is because a liquid market tends to reduce the cost of capital (Wang, 2013). A growing body of the literature suggests that liquidity foretells the stock returns at the firm and stock market levels (Brennan, Chordia, & Subrahmanyam, 1998). Most of the studies explore the relationship between corporate governance and stock market liquidity in developed economies, using data from the New York Stock Exchange. While, developed countries, other than the United States of America (USA), and emerging economies are relatively less explored. The literature based on South Asian countries is very scarce. Therefore, there is a need to explore how ownership concentration, institutional ownership and earnings management lead to stock market liquidity in the emerging economies and non-USA developed nations. Emerging markets are facing stock market liquidity issues as information asymmetry is high when compared to markets in developed countries. In emerging markets, information asymmetry exists between informed and uninformed stockholders and this reduces stock market liquidity (Rubin, 2007).

In emerging economies, high levels of ownership concentration result in creating the type II agency problem. However, in this situation, major stockholders are at the advantage of getting access to more private and valuable information about the firm's future earnings when compared to the minority stockholders. Therefore, in emerging economies, ownership concentration negatively affects the stock market liquidity (Lev, 1988; Bar-Yosef & Prencipe, 2013). In addition, the business environment of Asian countries is different from that of the developed countries. Asian companies have a heterogeneous business environment, and they have unique ownership concentration (Connelly, Limpaphayom, & Nagarajan, 2012).

We analyze the influence of ownership concentration, institutional ownership and earnings management on stock market liquidity in two developed countries (Australia and Singapore) and two emerging economies (Pakistan and India). The growth in the economy and financial market of Singapore has motivated us to analyze the stock market performance of Singapore. The importance of the economy of Singapore can be drawn from the fact that in 2013, the International Monetary Fund (IMF) considered Singapore to be the only country in Association of Southeast Asian Nations (ASEAN) as a developed nation (Goh, Annuar, & Zariyawati, 2014). Thus, the investors in Singapore have more concerns about the risk of their portfolio and they are keen for a wider market to diversify their risk. In addition, the reason for selecting Australia is that the Australian stock market is referred to one of the most established markets throughout the world. We emphasize the ownership concentration because firms and management are the same in family and concentrated ownership and they face different rules as compared to non-concentrated and non-family ownership firms in decision making and it helps to minimize business risk (Saleh, Halili, Zeitun, & Salim, 2017). Family-owned firms are operating for a longer time period than non-family owned firms and they have lasted for many years throughout the world and in Australia. Family businesses are found to be older than nonfamily businesses and they have survived over centuries worldwide and in Australia (Block, 2011). In Pakistan and India, corporate governance practices play an important part while managing matters of the firms. According to Ullah, Afgan, Hashim, and Khan (2016), corporate governance plays an important role towards the growth of Pakistan's economy. Pakistan represents an emerging economy as most of the firms in Pakistan have family ownership or concentrated ownership. In such situation, management does not play an active part in operating business matters (Yasser & Mamun, 2017). According to Javid and Iqbal (2008), firms in Pakistan have concentrated and family-oriented ownership because of the inefficient legal system. Further, firms in India are also based on family ownership.

Corporate governance has grabbed the attention of regulatory bodies after the disclosure of fraudulent practices followed by the world's renowned companies such as Enron, Xerox, and WorldCom. Claessens and Yurtoglu (2013) describe that an effective system of governance is useful for companies with access to finance, better financial output, and desired output for stakeholders. Corporate governance system helps companies to overcome agency issue as institutional and individual investors are keen to invest in those companies which are having good governance practices (Mehmood, Hunjra, & Chani, 2019). The manipulated financial reports of these companies affected the world economy adversely, and many users of financial statements lose confidence in the financial reporting process (Yoon, Miller, & Jiraporn, 2006). After the earnings management scandal, the US Securities and Exchange Commission investigate the matter and find that the bankruptcy of Enron is due to earnings management practices. Such events draw the attention of researchers and legislative bodies to examine earnings management practices (Mostafa, 2017). The implementation of corporate governance policies is relatively weak in the emerging markets, and result in reducing the liquidity of stock markets. Further, the comparison of developing countries with developed countries helps us to obtain insights about possible future strategies for emerging economies.

This paper is structured into five sections. Section 2 reviews the relevant literature and develops hypotheses. Section 3 explains the methodology. Section 4 presents and discusses the empirical results. Section 5 summarizes and concludes the paper.

2. LITERATURE REVIEW

Ownership concentration can cause an agency problem between informed stockholders and uninformed stockholders. Informed stockholders have an advantage of more insider information. They can use insider information to protect their interest by using the corporate resources for their gain thereby infringing the rights of minority stockholders. Agency issues arising from the conflict of interest between minority stockholders and majority stockholders, in turn, lead to agency cost. Agency cost can affect the stock market valuation in the countries where governance mechanism is weak (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2002). When ownership is concentrated, then majority stockholders have the opportunity and power to influence, by their decisions and actions, the interest of minority stockholders. The majority stockholders strain to form coalitions in order to gain more control of the firm because in this way they can get many personal benefits (Shleifer & Vishny, 1997; Desoky & Mousa, 2013). Further, when controlling stockholders rule over an organization, they can monitor and direct the actions of the managers and in favor of the organization, thus to mitigate the agency problem between stockholders and managers (Grossman & Hart, 1988).

In emerging economies, the agency problem between minority and majority stockholders is more critical than the agency problem between managers and stockholders (Lei, Lin, & Wei, 2013). Therefore, for emerging markets, ownership dispersion is essential for the stock market liquidity because dispersed ownership tends to minimize the information asymmetry and will ultimately give rise to the number of market participants for the stock of a company, therefore, stock market liquidity will increase. The more diffused ownership, the higher will be the stock market liquidity as dispersed ownership leads to more potential market participants for the stock of a firm. Conversely, some studies also find the inverse impact of

ownership concentration on stock market liquidity (Yosra & Sioud, 2011; Yaghoobnezhad, Roodposhti, & Zabihi, 2011). Further, concentrated ownership restricts the stocks of a company to be traded among only a few market players which in turn reduces the stock market liquidity (Brockman & Oslen, 2013). Leano and Pedraza (2018), Sharif, Bino, and Tayeh (2015) find an inverse relationship between ownership concentration and stock liquidity. Therefore, we develop the first hypothesis:

H1: Ownership Concentration has a significant impact on stock market liquidity.

Globally, institutional owners are considered the most significant market players for stock market liquidity. Institutional investors are motivated to get a financial returns as well as social returns (Dyck, 2019). The importance of institutional investors is increasing in the developed economies, and it is also growing rapidly in the emerging economies as well (Khorana, Servaes, & Tufano, 2005). The ability of institutional investors to affect business decisions depends on the size of the stockholdings (Maug, 1998). If stockholdings of institutional investors are large, stocks will be less marketable and will be retained longer. Due to this, institutional stockholders have the motivation to monitor the activities of managers to avoid agency conflict and the overall performance of the stock. Whereas, if stock holdings are small and firm performance is low these investors can easily cash out their investment. Therefore, they have weaker incentives to monitor market performance. Some studies indicate that institutional investor's inclination towards maintaining liquidity of stockholdings and gaining short-term profits overrun the benefits of monitoring (Bhide, 1994; Coffee, 1991; Maug, 1998). Almutairi (2013) examines the impact of institutional ownership and corporate debt on audit quality and finds that the presence of institutional stockholders improves the quality of the audit. When audit quality is improved, it will discourage fraudulent earnings management practices, and as a result, stock market liquidity will improve. Dang (2018) documents a positive influence of institutional ownership on stock liquidity. Ali and Hashmi (2018) also signify that stock liquidity is led by institutions investment. The literature explains that institutional investors play a vital role to increase stock market liquidity. Institutions are motivated by both financial and social returns. Hence, we develop the second hypothesis as:

H2: Institutional Ownership has a significant impact on stock market liquidity.

Earnings management can either improve the firm's performance or liquidity depending on whether earnings management is opportunistic or discretionary. When managers intentionally manage the earnings with the aim to enhance the information content of their company's performance for the benefit of traders, this increases the disclosure and quality of financial reporting of a firm to give a better view of the firm's performance to the market traders (Jiraporn, Miller, Yoon, & Kim, 2008). On the other hand, managers may manipulate the earnings to disclose less information about the financial performance of the firm to the stakeholders with the intention to mask the poor financial performance; this is called opportunistic earnings management.

Opportunistic earnings management reduces the firm's information disclosure as well as the quality of a firm's financial reporting. Moreover, it decreases the transparency of the firm's information disclosure. Managers use this type of earnings management to pursue their interests by misleading the investors (Desai, Miller, Yoon, & Kim, 2004). Earnings quality is considered to be a significant source of information asymmetry which affects the stock market liquidity. A high level of earnings management tends to increase information asymmetry among informed and uninformed investors. The credibility of the financial reports is affected and uncertainty about the firm's future cash flows increases, and thus earnings management may reduce stock liquidity (Bar-Yosef & Prencipe, 2013). Earnings management practices result in unethical accounting practices. As a result, finance providers of the firms engage themselves in widening the bid-ask spreads to protect themselves from penalties. Therefore, firms with higher earnings management tend to suffer from low lower levels of stock liquidity (Chung, Sheu, & Wang, 2009). Ajina and Habib (2017) exhibit a negative relationship between earnings management and stock liquidity. In light of this, we develop the third hypothesis:

H3: Earnings management has a significant impact on stock market liquidity.

3. METHODOLOGY

The present study uses panel data of selected companies from 2010 to 2018, extracted from DataStream of the respective countries. Total 114 companies are from the manufacturing sector of Pakistan (25), India (30), Australia (30) and Singapore (29). The study uses different control variables (stock price, firm size, and volatility of the stock returns) which affect the stock liquidity, in the following model:

$$(ILLIQ)i,t = \beta_0 + \beta_1(OC)i,t + \beta_2(INST)i,t + \beta_3(EM)i,t + \beta_4(SP)i,t + \beta_5(SZ)i,t + \beta_6(VOL)i,t + \varepsilon_{i,t} \quad (1)$$

where, *ILLIQ* is stock market illiquidity, β_0 is constant, *OC* is ownership concentration, *INST* is institutional ownership, *EM* is earnings management, *SP* is stock price, *S* is firm size, *VOL* is volatility of stock returns, ε is error term, β_1 to β_6 are slopes, *i* represents the firm and *t* indicates the time period.

We calculate the ownership concentration by the percentage to total stocks held by the top five stockholders. Many previous studies have followed the same approach to capture ownership concentration (Al-Rassas & Kamardin, 2016; Al-Jaifi, 2017; Chalermchatvichien, Jumreornvong, Jiraporn, & Singh, 2014). Institutional ownership is explained as the degree of equity in the firm held by institutional investors. Institutional investors include banks, mutual funds, financial and insurance companies. Institutional ownership (INST) is measured by dividing the number of stocks held by the institutional investors by the total stocks outstanding for firm i at the year t. Many of the prior researchers have used the same approach for measuring institutional ownership (De Cesari, Espenlaub, Khurshed, & Simkovic, 2012; Rubin, 2007).

We use discretionary accruals (DA) as a proxy for earnings management. We estimate DA by using the cross-sectional modified Jones (1991) model. For this purpose, separate industry-wide regressions are run to estimate the parameters of the following model:

$$\frac{TAC_{it}}{TAS_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{TAS_{t-1}} + \alpha_2 \frac{(\Delta REV_{it} - \Delta REC_{it})}{TAS_{t-1}} + \alpha_3 \frac{PPE_{it}}{TAS_{t-1}} + \varepsilon_t \qquad (2)$$

where, TAC_{it} is the total accruals in year t (calculated by subtracting cash flow from operations from net income); TAS_{t-1} represents the total assets in year t-1; ΔREV_{it} is the change in revenue from year t-1 to year t; ΔREC_{it} is changing in receivables from year t-1 to year t. PPE_{it} in the equation denotes property, plant and equipment in a year; α_1, α_2 and α_3 are estimated coefficients; α_0 is constant and ε is error term. Values of the coefficients α_1, α_2 and α_3 are calculated by using the ordinary least square regression.

The non-discretionary accruals (NDA_{it}) for the sample firms are obtained by inserting the estimated parameters, in the above-mentioned equation by using the following formula:

$$\frac{NDA_{it}}{TAS_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{TAS_{t-1}} + \alpha_2 \frac{(\Delta REV_{it} - \Delta REC_{it})}{TAS_{t-1}} + \alpha_3 \frac{PPE_{it}}{TAS_{t-1}} \qquad (3)$$

Discretionary accruals (DA_{it}) are then obtained as $DA_{it} = TAC_{it} - NDA_{it}$

We use the absolute value of discretionary accruals as a proxy of earnings management, following Leuz, Nanda, and Wysocki (2003), Chung et al. (2009) and Al-Jaifi (2017).

Dependent variable stock liquidity refers to the extent to which stock can be traded in the market without altering its price (Umar & Sun, 2016). We use Amihud's (2002) illiquidity measure (ILLIQ), defined as the ratio of the absolute stock return to trading volume of the stock, to calculate its inverse the stock market liquidity. It is considered the best measure for capturing liquidity, and it has a strong theoretical appeal in the literature (Marcelo & Quiros, 2006). According to Amihud (2002), ILLIQ is calculated by using the following formula:

$$ILLIQ_{iy} = \frac{1}{D_{iy}} \sum_{t=o}^{D_{iy}} \frac{|R_{iyd}|}{VOLD_{iyd}} \qquad (4)$$

where, $ILLIQ_{iy}$ = Illiquidity for the stock of firm i in year y; D_{iy} = Number of the days for the stock of firm i in year y; R_{iyd} = Stock return for the firm i on day d in year y; and $VOLD_{iyd}$ = Daily trading volume, higher value of $ILLIQ$ depicts the lower stock liquidity and vice versa.

Control variable stock price is calculated by applying the same approach used by Riahi, Lamiri, and Arab (2013), Chung and Zhang (2011), and Al-Jaifi (2017). The stock price is calculated by taking reciprocal of the average daily closing price over the year, i.e., *Price = 1/μ* (Daily closing price). Firm size is measured by taking the natural logarithm of its total assets – following Pouraghajan, Tabari, Ramezani, Mansourinia, Emamgholipour, and Majd (2012), i.e., *Size = Ln* (Total Assets). The volatility of the stock returns measures the risk associated with stock prices that arise due to an unfavorable event (Riahi et al., 2013). We calculate the volatility of stock returns by using the following formula: *VOL = σ* (Returns). Table 1 summarizes the variables used in our study. It contains the description of all the variables and their proxies, with the references to studies that have used these variables.

Table 1. Proxies of the study variables

Variables	Abbreviation	Proxies	References
Illiquidity Measure	ILLIQ	$ILLIQ = \frac{1}{D_{iy}} \frac{\sum |R_{iyd}|}{VOLD_{iyd}}$	Marcelo & Quiros (2006); Shin & Kim (2015); Al-Jaifi (2017).
Ownership Concentration	OC	Calculated by percentage to total stocks outstanding held by the top five stockholders.	Al-Rassas & Kamardin (2016); Al-Jaifi (2017); Chalermchatvichien et al. (2014)
Institutional Ownership	IO	Number of stocks held by the institutional investors/total stocks outstanding	Rubin (2007); Rehmwati De Cesari et al. (2012)
Earnings Management	EM	Modified Jones model 1991	Al-Jaifi (2017)
Stock Price	Price	*Price = μ* (1/Daily closing price)	Stoll (1978); Riahi et al. (2013)
Firm Size	Size	*Size = Ln* (Total Assets)	Pouraghajan et al. (2012);
Volatility of the stock returns	VOL	*VOL = σ* (Returns)	Jacoby & Zheng (2010); Al-Jaifi (2017)

4. EMPIRICAL

Table 2 sets out the descriptive statistics and correlation matrix. It sets out the mean, standard deviation and a correlation matrix to check the outlier and multicollinearity. The current study also applies the Generalized Method of Moments (GMM) to handle the issue of endogeneity as developed by Arellano and Bond (1991), Arellano and Bover (1995). González (2013) describes that the GMM model is used to deal with autoregressive properties of the dependent variable and to handle the endogeneity problem existing in dependent variables as well as unobserved firm related characteristics.

Outcomes of descriptive statistics reveal that ownership is highly concentrated in both developing and developed countries. Most of the shares are held by the top five owners of the companies. The average value of institutional ownership shows that although institutions buy shares of companies but their share is less than half of the total shares of the companies in this study. The high value of standard deviation suggests that there is a very large variation in the values of ownership concentration and

institutional ownership. The standard deviation value of earnings management shows that there exists a large variation in the values of earning management, but overall there is generally a consistent pattern of earning management.

Table 2. Descriptive statistics and correlation matrix (overall)

Variables	Mean	SD	ILLIQ	OC	IO	EM	SZ	PRICE	VOL
ILLIQ	-5.801	6.453	1.000						
OC	67.278	23.578	0.467	1.000					
IO	40.261	30.782	-0.070	-0.035	1.000				
EM	1.243	1.507	-0.745	-0.364	0.064	1.000			
SZ	20.729	2.913	0.373	0.608	-0.166	-0.293	1.000		
PRICE	4.952	16.054	-0.087	-0.402	0.012	0.129	-0.430	1.000	
VOL	0.007	0.005	-0.074	-0.157	-0.134	0.007	-0.253	0.172	1.000

Note: SD = Standard deviation, ILLIQ = Illiquidity, OC = Ownership Concentration, IO = Institutional Ownership, EM = Earning Management, SZ = Size, PRICE = Stock Price, VOL= Volatility of Stock Returns

Firm size measured as the natural log of total assets shows that there is more variation in the values of total assets. This indicates that companies invest in their total assets depending on the needs and available financial sources. This further explains that there is no consistency in the investment of total assets. Further, there is a large variation in share prices of the companies across developed and developing countries.

This is due to the different economic and business environment in developed and developing countries. Stock return volatility does not vary which means that stock returns volatility remains constant. From the correlation matrix, it is clear that correlation is weak among all the independent and control variables for all countries which indicate there is no issue of multicollinearity.

Table 3 represents the Variance Inflation Factor (VIF) test to verify the issue of multicollinearity. We find no issue of multicollinearity. To deal with endogeneity in the data, we apply the GMM technique because there is a chance of overlapping ownership concentration with institutional ownership.

Table 3. Test of Multicollinearity

Variable	VIF	1/VIF
SZ	2.32	0.430
OC	2.21	0.453
PRICE	1.27	0.789
EM	1.16	0.859
VOL	1.12	0.894
IO	1.08	0.922

Note: VIF is Variance Inflation Factor

Overlapping can occur when institutional owners hold a large number of stocks so they fall in the categories of block holders at the same time. To avoid this problem and to get robust results, we run the model three times, first with all the study variables excluding institutional ownership in Model 1, while in the second time, ownership concentration is dropped in the Model 2 and in the third time all variables are regressed together in the Model 3 which is also an overall model. The results in Table 4 explain that ownership concentration has a significant effect on the ILLIQ in Model 3, whereas, Model 1 shows the insignificant effect of institutional ownership on ILLIQ.

Table 4. Two-step system dynamic panel regression estimation (overall)

	Model 1	Model 2	Model 3
L1	0.723*** (18.840)	0.736*** (19.430)	0.463*** (8.990)
L2	0.264*** (8.110)	0.251*** (6.880)	0.245*** (6.850)
OC	---	0.008 (0.790)	0.036*** (5.850)
IO	0.010 (1.490)	---	0.043*** (5.600)
EM	-0.151* (-1.860)	-0.182** (-2.290)	-0.284*** (-3.180)
SZ	-0.034 (-0.440)	-0.034 (-0.380)	-0.173*** (-2.880)
Price	0.047*** (7.230)	0.052*** (7.460)	7.434 (1.020)
VOL	34.346** (2.420)	35.164* (2.570)	51.345* (1.960)
C	-0.194 (-0.120)	-0.277 (-0.150)	-3.691*** (-2.800)

*Note: L1 = First lag of dependent variable, L2 = Second lag of dependent variable, OC = Ownership Concentration, IO = Institutional Ownership, EM = Earning Management, SZ = Size, PRICE = Stock Price, VOL= Volatility of Stock Returns, C = Constant; ***, **, and * represents significant level at 1%, 5%, and 10%.*

These results show that ownership concentration is positively related to stock market liquidity. Ownership concentration increases stock liquidity. This increase in stock liquidity is due to active institutional investors like mutual funds or independent advisors having more information and more trading volume as compared to passive investors like insurance companies and banks trust departments. This ultimately puts a significant and positive effect on stock liquidity (Liu, 2013). However, in Model 1 where we take only ownership concentration as the independent variable and exclude institutional ownership, concentration has an insignificant impact on stock market liquidity. The reason for this relationship is that ownership of countries under study is mostly held by family

members. However, family members who do not play any major role in the decisions and actions of a company and consequently the relationship between ownership concentration and stock market liquidity is insignificant.

We find institutional ownership has a significant and positive impact on stock market liquidity in Model 3. Institutional investors increase stock market liquidity due to having more inside information (Ali & Hashmi, 2018). Institutional investors have more information as compared to other investors, their information quickly reflects in stock prices, which increases stock liquidity (Liu, 2013). This further signifies that institutional investors have better governance and can monitor the activities of managers and this characteristic indicates a positive signal to potential market participants thus liquidity is enhanced. Almutairi (2013), Rubin (2007), and Khorana et al. (2005) report the same findings. In addition, Almutairi (2013) explains that auditors prefer institutional investors because they can increase the reliability and quality of financial reporting. However, when we take institutional ownership alone as the independent variable and exclude ownership concentration, findings of our study reveal an insignificant effect because ownership of institutional investors is low as compared to concentrated ownership, as found by Boehmer and Kelley (2009). We ascertain that earnings management has a significant adverse impact on stock market liquidity. The reason for

this negative relationship is that earnings management practices lead to decreasing the reliability of financial reports of the company. It also creates information asymmetry between inside and outside stockholders of the company which results in enhancing the uncertainty about the future cash flows of the company; all these factors discourage the stockholders from investing in the stock of the company, so the stock market liquidity decreases (Bar-Yosef & Prencipe, 2013). We take firm size as a control variable. Outcomes of size reveal a significant and inverse impact on stock market liquidity in Model 3 only. Negative impact shows that smaller firms are able to control earnings and evade reporting losses in their financial reporting, while larger firms do not have this advantage because their information exposure to the stockholders is greater. We also take stock price as a control variable that has a significant positive impact on stock market liquidity. This is because a higher stock price gives the signal to the investor that a company's stock is performing well in the market. Amihud, Mendelson, and Lauterbach (1997) find the same results. The impact of stock return volatility on the stock market liquidity is significant and positive which shows that with an increase in stock return volatility, there is the increase in stock market liquidity due to chances of earning more returns. We find that all models provide mixed results but Model 3 predicts more significant results concerning all variables.

Table 5. Two-step system dynamic panel regression estimation (developing and developed countries)

Variables	Developing Countries			Developed Countries		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
L1	0.663*** (21.310)	0.663*** (17.720)	0.656*** (19.130)	0.746*** (36.800)	0.752*** (36.090)	0.749*** (37.330)
L2	0.281*** (10.730)	0.348*** (10.110)	0.280*** (10.490)	0.190*** (7.690)	0.191*** (7.750)	0.190*** (7.730)
OC	0.041*** (14.330)	---	0.046*** (8.430)	-0.001 (-0.140)	---	0.001 (0.230)
IO	---	0.015*** (3.810)	-0.007 (-0.880)	---	-0.002 (-0.390)	-0.002 (-0.290)
EM	-0.342*** (-5.240)	-0.378*** (-5.000)	-0.297*** (-5.410)	-0.027 (-0.560)	-0.015 (-0.300)	-0.025 (-0.510)
SZ	0.029* (1.810)	0.094** (2.290)	0.044** (1.990)	-0.106* (-1.690)	-0.078 (-1.380)	-00089 (-1.550)
Price	5.535*** (3.370)	3.818* (1.750)	4.098* (1.810)	0.029*** (7.690)	0.030*** (8.120)	0.029*** (7.640)
VOL	6.645 (0.630)	13.472 (1.240)	7.887 (0.790)	7.935 (0.950)	6.822 (0.870)	7.429 (0.930)
C	-4.345 (-10.590)	-2.500*** (-2.700)	-4.991*** (-6.790)	1.509 (1.260)	1.106 (0.910)	1.254 (0.990)

This study explains the analysis of developed and developing countries in Table 5. Analysis reveals varying outcomes based on the nature of business and different economic conditions of each county. Ownership concentration in developing countries has a significant positive impact on stock return liquidity. This is because in developing countries, there is an increased number of concentrated owners like large individual investors and family owners, whereas institutional owners do not own a large amount of shares. May, Fah, and Hassan (2018) also document that developing countries are dominated by concentrated owners. Pakistani firms also have concentrated ownership with the dominance of family owners (Javeed & Lefen, 2019). As a result, stock market liquidity increases because

dominant concentrated owners increase trading of stocks to get more benefits. However, in developed countries, ownership concentration does not have any significant impact on stock market liquidity which confirms the finding of Comerton-Forde and Rydge (2006).

Institutional investors have generally an insignificant impact on stock market liquidity in both developing and developed countries. However, in Model 2, institutional ownership has a significant positive impact on stock market liquidity. Earnings management has a significant inverse impact on stock market liquidity which ensures that it leads to discouraging the reliance on financial reports of the firm which causes decreasing in the liquidity of the stock market. Negative impact is also due to the

weak practices of corporate governance in developing countries which open rooms for the managers to manipulate financial outputs for their own benefits which creates liquidity issues. There is implementation of strong corporate governance practices and high stockholders' rights protection in developed countries. All of these factors add up to make the earnings management practices weaker, and insignificant in affecting stock market liquidity. According to Lin, Liu, and Noronha (2016), informative earnings management is advantageous for outside investors because they do not have direct access to the company's private information. The size has a significant positive impact on stock market liquidity in developing countries. The positive impact of size shows that larger the size of the firm is, the greater the stock market liquidity is. In addition, larger firms are generally older and more efficient than smaller firms (Lundvall & Battese, 2000). These results are supported by the results of Al-Jaifi (2017), Chordia, Roll, and Subrahmanyam (2000). In case of developed countries, firm size has significant and negative impact on stock market liquidity in Model 1 only. Stock price shows a significant positive impact on stock market liquidity for developing and developed countries. This shows that when stock prices are increased, investors are more prone to invest in stocks in anticipation of capital gains. Stock return volatility is another control variable of our study which shows an insignificant impact on stock market liquidity for developed and developing countries.

We also use two step system dynamic panel regression for the analysis of individual countries in Table 6. The results show that ownership concentration is significantly negatively associated with stock market liquidity in Australia and Singapore. From these two countries, if the ownership concentration is high, then stock market liquidity will be low. This is because the proxy used for liquidity is reversed in this study, so all the relationships also go in opposite direction (Al-Jaifi, 2017; Marcelo & Quiros, 2006; Shin & Kim, 2015; Staglianò, 2018). This relationship exists because when the ownership concentration is high, the stock of the company is held by a few stockholders and not traded in the stock market, causing decreasing of the liquidity (Brockman & Oslen, 2013). These results are supported by the studies conducted by Brockman and Oslen (2013), La Porta et al. (2002). In Pakistan, ownership concentration has a significant and positive impact on stock market liquidity. This signifies that in Pakistan, shares of firms are mostly owned by concentrated owners, thus they increase liquidity of stocks. However, in India, ownership concentration has an insignificant impact on stock market liquidity. The reason for this relationship is that India is an emerging economy and ownership is mostly held by family members. However, family members who do not play any major role in the decisions and actions of a company and consequently the relationship between ownership concentration and stock market liquidity is insignificant.

We find institutional ownership has a significant and negative impact on stock market liquidity for Singapore. This shows that in Singapore, institutional ownership leads to decreas stock market liquidity. In Pakistan, institutional ownership has significant positive impact on stock market liquidity. This finding shows that along with concentrated ownership, institutional ownership in Pakistan also helps to enhance liquidity of stock. We ascertain that earnings management has a significant adverse impact on stock market liquidity in Pakistan and Singapore. This is because it creates information asymmetry between inside and outside stockholders of the company which results in enhancing the uncertainty about the future cash flows of the company. It discourages the stockholders from investing in the stock of the company, so the stock market liquidity decreases (Bar-Yosef & Prencipe, 2013). Moreover, in Pakistan, the corporate governance mechanism is not very strong; managers have an incentive to manipulate earnings to protect their self-interest which in turn creates the liquidity problem. Our results are aligned with the findings of Ascioglu et al. (2012), Chung et al. (2009), Bar-Yosef and Prencipe (2013) and Al-Jaifi (2017).

For India and Australia, the relationship between earnings management and stock market liquidity is generally insignificant. This signifies that investors in India are more reluctant to invest in those stocks whose prices tend to increase. Morse and Ushman (1983) also report the insignificant relationship between earnings management and stock market liquidity. In the Indian market, and emerging economy, the highly concentrated ownership keeps a check on managers more actively and does not give them the opportunity to indulge in earnings management practices (Cascino et al., 2010; Wang, 2006). However, in Australia, earnings management does not affect stock market liquidity. Australia is a developed country with a strong corporate governance mechanism, so earnings management practices are discouraged.

Firm size shows a significant negative impact on stock market liquidity in Pakistan and Australia, whereas, it reveals significant but negative impact on stock market liquidity in Singapore in all three models. These significant results are supported by the results of Chordia et al. (2000), Al-Jaifi (2017). Larger firms have easier access to finance and face lower levels of legal and corruption issues as compared to smaller firms (Beck, Demirgüç-Kunt, & Maksimovic, 2005). In addition, larger firms are generally older and more efficient than smaller firms (Lundvall & Battese, 2000). Whereas, in India the firm size has insignificant impact on the stock market liquidity.

The stock price is found insignificant for Pakistan in Model 3 but in Model 1 and Model 2, results are significant. This is because a higher stock price gives the signal to the investor that a company's stock is performing well in the market. Amihud et al. (1997) find the same results. For India, the stock price has an insignificant impact on stock market liquidity. However, for Australia and Singapore, the stock price has a significant positive impact on the liquidity of the stock market in all three models which shows that investors are keener to invest in stocks with increasing prices. The impact of stock return volatility on the stock market liquidity is significant and positive in Australia and Singapore. Greater volatility attracts the investors hoping to earn more return. However, in Pakistan, stock return volatility shows a significant and positive impact on stock market liquidity in Model 3 only, whereas in India, it shows a significant and positive impact on stock market liquidity in Model 2.

Table 6. Two step system dynamic panel regression estimation (separate analysis)

Variables	Pakistan			India			Australia			Singapore		
	Model 1	*Model 2*	*Model 3*	*Model 1*	*Model 2*	*Model 3*	*Model 1*	*Model 2*	*Model 3*	*Model 1*	*Model 2*	*Model 3*
L1	0.520*** (13.770)	0.489*** (12.080)	0.463*** (8.990)	-1.359** (-2.360)	-0.230 (-0.850)	-1.359** (-2.370)	0.282*** (8.600)	0.300*** (7.780)	0.283*** (7.300)	-0.482*** (-77.600)	-0.431*** (-37.070)	-0.477*** (-57.760)
L2	0.246*** (11.950)	0.252*** (7.600)	0.245*** (6.850)	-0.852*** (-2.680)	0.848** (2.510)	-0.852*** (-2.690)	-0.091* (-1.960)	-0.079* (-1.850)	-0.093** (-2.160)	1.357*** (6.180)	2.114*** (5.350)	1.370*** (2.890)
OC	0.052*** (23.690)		0.036*** (5.850)	0.000 (-0.290)		0.000 (-0.290)	-0.022** (-2.580)		-0.025*** (-3.380)	-0.00001*** (-6.650)		-0.00001** (-2.400)
IO		0.055*** (21.150)	0.043*** (5.600)		0.000 (0.310)	0.000 (0.050)		-0.012 (-1.050)	0.004 (0.470)		-0.00001*** (-3.060)	-0.00001* (-1.760)
EM	-0.241*** (-4.340)	-0.249*** (-2.600)	-0.284*** (-3.180)	0.000 (-1.620)	-0.00002* (-1.700)	0.000 (-1.620)	0.052 (1.450)	0.064 (1.630)	0.052 (1.410)	-0.0004*** (-6.630)	-0.0004*** (-8.150)	-0.0004*** (-6.520)
SZ	-0.143*** (-5.210)	-0.151*** (-3.250)	-0.173*** (-2.880)	0.000 (-0.890)	0.000 (1.250)	0.000 (-0.930)	-0.931*** (-10.100)	-0.888*** (-9.790)	-0.939*** (-9.230)	0.0003*** (25.190)	0.0003*** (23.750)	0.0003*** (13.570)
Price	8.352*** (3.320)	7.781*** (2.460)	7.434 (1.020)	0.000 (-0.470)	0.000 (1.360)	0.000 (-0.470)	0.040*** (21.240)	0.042*** (22.860)	0.040*** (19.630)	0.00005*** (49.780)	0.00004*** (64.380)	0.00005*** (42.790)
VOL	7.924 (0.230)	46.580 (1.630)	51.345* (1.960)	0.001 (0.850)	0.005*** (3.020)	0.001 (0.860)	60.134*** (6.700)	60.541*** (8.810)	60.405*** (7.320)	0.011*** (2.770)	0.013*** (4.590)	0.009** (2.330)
C	-3.609*** (-4.970)	-1.689* (-1.760)	-3.691*** (-2.800)	0.000 (0.640)	-0.0001* (-1.650)	0.000 (0.650)	5.160*** (2.760)	4.551*** (2.750)	5.192*** (2.820)	-0.005*** (-21.420)	-0.005*** (-20.470)	-0.005*** (-9.250)

5. CONCLUSION

The implementation of corporate governance policies is relatively weak in the emerging markets, and result in reducing the liquidity of stock markets. Consequently, we analyze how the ownership concentration, institutional ownership, and earnings management in developed and emerging countries influence stock market liquidity. We examine 114 listed companies from manufacturing sectors in Pakistan, India, Australia, and Singapore over the years 2010 to 2018. Previous studies have mainly focused on the New York Stock Exchange and the countries included in this study are neglected in the literature. Furthermore, all the variables used in our research model have not previously been jointly studied. Our analysis provides mixed results based on corporate governance rules and practices within companies of developed and developing countries; there is no consistency of results for the developed or emerging economies.

The significant and positive impact of ownership concentration on stock market liquidity in Model 3 of overall analysis suggests that concentrated owners have more power and incentive to ensure the liquidity of the stock market. Further, in Model 3, we find institutional ownership has a significant positive impact on the stock market liquidity that is in favor of signaling theory as institutional owners can monitor the managers in a firm.

Further, the study finds that earnings management negatively affects the stock market liquidity, it means earnings management practices lead to a decrease in the reliability of financial reports of a company. It also creates information asymmetry between inside and outside stockholders of the company which results in enhancing the uncertainty about the future cash flows. These factors discourage the stockholders to invest in the stock of the company due to which stock market liquidity decreases. The signaling theory supports these results according to which information reveals in the financial reports serves as a signal of the future financial position of the company.

The present study also incorporates analysis of developed and developing countries to evaluate the outputs of ownership and earnings management on stock market liquidity. Outputs reveal that these identified factors significantly affect stock market liquidity in developing countries but for developed countries, they have insignificant results. This is due to the reason that in developed countries, there is a robust corporate governance mechanism and block-holders cannot use private information to infringe on the rights of other stockholders. Moreover, in developed countries, strong practices of corporate governance do not allow managers to indulge in manipulating financial records which is the reason of the insignificant impact of earnings management on stock market liquidity. Companies in developing countries have also started following corporate governance practices which discourage management to involve in the manipulation of earnings. In addition to the overall and separate analysis of developed and developing countries, the present study evaluates the results based on the individual country analysis. Findings reveal that individual country differences exist, that appear to relate to the business and economic environment of that particular country.

Based on findings, we recommend that the regulators of the stock market protect the rights of all stockholders equally. They need to ensure that there are no infringements on the rights of minority stockholders. We suggest that future research should examine ownership structure in more depth with the other types of owners such as managerial and government, within other industry groups, and across more emerging economies. In light of the results of our study, the company policymakers could gain a clear idea of what type of ownership could enhance the liquidity of their stock in the market. We suggest ownership concentration and institutional ownership lead to increasing stock market liquidity. Therefore, firm directors should put their efforts to attract more concentrated and institutional stockholders. We focus on concentrated and institutional ownership, however, family ownership, public ownership, private ownership or foreign ownership along with other dimensions of corporate governance such as a board of directors, CEO duality may be a good future study. We cover two developing and two developed countries, more countries may be considered for a comprehensive analysis.

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