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MODERATING ROLE OF FINANCIAL MARKET DEVELOPMENT ON THE RELATIONSHIP BETWEEN STOCK LIQUIDITY AND DIVIDEND

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ABSTRACT

This article aims to investigate the relationship between stock liquidity and dividend across emerging market countries as well as examined the moderating role of financial market development on the relationship between stock liquidity and dividend. Data were obtained from the World Bank and DataStream databases. The study examined 3,258 listed firms from 22 emerging markets to be extrapolated in the emerging market context. To analyse the data, this article used the panel data Tobit model and panel logistic regression, both with random effects. The analysis revealed that financial market development has a positive moderating effect on the relationship between stock liquidity and dividend by improving local market liquidity and mitigating information asymmetry. The study findings provide information for managers to devise investment strategy in the emerging markets. This article provides new insights into the financial market development moderating role on the relationship between stock liquidity and dividend.

Keywords: Financial market development, stock liquidity, dividend, information asymmetry, emerging market

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INTRODUCTION

Over the past decade, the investors use strategies to earn capital gain via stock buying or selling versus income from dividend, and this has been the primary concern by both investors and researchers. This issue has been addressed in the form of relationship between stock liquidity and dividend. One of the studies on the relationship suggests that stock liquidity and dividend are substitutable. This is derived from the Miller-Modigliani irrelevance theory of dividend. One of the assumptions highlighted by Banerjee, Gatchev and Spindt (2007) in this theory is regarding market frictionless. Frictionless allows homemade dividend to be created at no cost. Although frictionless does not exist in the real market, the rational investors will demand dividend over homemade dividend if the friction is high and vice versa. Based on the study results, they suggested that stock liquidity and dividend are substitutes.

However, a decade later, Jiang, Ma and Shi (2017) discovered that stock liquidity and dividend have a positive relationship. This finding is inconsistent with the earlier finding by Banerjee et al. (2007). Jiang et al. (2017) highlighted that the substitution effect argument neglects that stock liquidity has an informational effect that increases firm transparency. According to the market microstructure theory, as market liquidity increases, the information asymmetry decreases (Kanagaretnam, Lobo, & Whalen, 2007). The reduction in information asymmetry is equivalent to the increase in the firm transparency level. Under high transparency condition, tunnelling incentive tends to be more difficult and riskier (Li & Zhao, 2008; Petrasek, 2012).

Furthermore, keeping too much retained earnings will damage outsider's perception due to the lack of incentive to minimise tunnelling incentive, thus results in poor access to the external financial sources (Gomes, 2000). Therefore, such condition (higher transparency) renders the net benefit to pay a dividend to be positively associated with stock liquidity (Jiang et al., 2017). This is supported by the China stock market, where the country's market enables a positive relationship between stock liquidity and dividend, unlike in past studies.

The differences between past and recent findings suggest that there are moderating factors that may contribute to the mixed findings.This article suggests that financial market development is one of the factors that moderates the relationship between stock liquidity and dividend. According to Bokpin (2010), market imperfections such as lack of financial system development may restrict a firm's ability to finance or fund investment. Emerging markets rely more on the financial market development to enhance the local market and help

firms to finance their operation. This is because the equity market development catalyse sustainable development via an increase in financing options (Bokpin, 2010). In other words, the selection of fund variability helps a firm to have better sustainable growth. Since lack of financial development restricts a firm's ability to finance its investment, the firm will have higher financial constraints. Past studies found that dividend policy is affected by financial constraints. Aivazian, Booth and Cleary (2003) revealed that dividend payout in emerging and developed markets are affected by financial constraints. Although both markets are affected, the emerging markets are more sensitive to financial constraint, thus resulting in lower dividend payout.

In the literature, financial market development is shown to influence stock liquidity besides affecting dividend policy. Financial market development enhances liquidity by promoting financial market openness (Barnor & Wiafe, 2015). The openness encourages investors to invest in the stock market, thus enhances the number of stocks being traded. As more stocks are traded, stock liquidity also increases. Also, financial liberalisation gives positive impact to the stock market liquidity (Lee & Wong, 2012). In short, the relationship between these three factors, namely stock liquidity, financial market development, and dividend payout suggest that there is an interrelationship between these three. The inconsistent relationships between stock liquidity and dividend suggest that a moderating factor may drive this issue. Therefore, it is necessary to focus on the relationship between these three variables. Thus, this paper aims to ascertain the moderating effect of financial market development on the relationship between stock liquidity and dividend relationship in emerging market countries as the main contribution.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Financial market development refers to the institution, factors and policies that lead to the effectiveness of financial markets and efficient financial intermediate (Alomari, Marashdeh, & Bashayreh, 2019). These elements are significant in influencing foreign direct investment (FDI), economic growth and financial literacy of a country's investors. In general, the countries with greater financial market development are associated with an active economy, which is categorised as high-income countries. Countries with a good financial market that meet the needs and requirements are often categorised as a developed market. To meet the requirement, some of the highly recognised and reliable institutions have set a standard. One of the most recognised and widely used standards is developed by the World Bank. According to the World Bank, countries are categorised as

developed and emerging markets. Most of the developed markets are located at Central Europe, United States, and some Asian countries. On the other hand, countries with moderate financial market development known as emerging markets are located in Central Asia, South America and the Middle East. Countries categorised as emerging markets have active and financial system higher than average, however, they often lack in terms of size and efficiency. There is another category classified as a frontier market, which includes the third world countries such as Zimbabwe, Rwanda and Kenya. However, this study only focusses on the emerging markets. Besides reviewing the financial market development in the literature, the study will also review past studies on stock liquidity and dividend within the emerging markets.

Stock Liquidity and Dividend in Emerging Markets

The substitution effect and informational effect emphasised in the recent literature raise an issue of what condition these factors become more dominant. The negative relationship between stock liquidity and the dividend was known as substitute effects. This relationship derived by questioning the underlying assumption behind Miller and Modigliani (1961) seminal work on the frictionless market. Although frictionless does not exist in the real world, however, a rational investor would demand dividend over homemade dividend if the friction is high and vice versa. Thus, Banerjee et al. (2007) conclude that stock liquidity and dividend are substitutes. However, recent empirical evidence by Jiang et al. (2017) argues the substitute effect neglect that stock liquidity provides the informational effect that might mitigate the tunnelling incentive and increase firm incentives to pay a dividend. Additionally, Hu, Huang and Chen (2019) discover that stock liquidity and the dividend has a positive relationship which potential channels come from outcome hypothesis and creditors substitute hypothesis where stock liquidity could increase dividend payout. The earlier research recorded a positive relationship in the developed markets, the recent empirical evidence that focuses on China as the emerging market recorded negative a positive relationship. This may be attributed to the differences between emerging and developed markets. Glen, Karmokolias, Miller and Shah (1995) found that dividend policy in emerging and developed markets are significantly different. In their studies, the dividend paid in emerging markets is only two-third of the amount paid in the developed markets. This finding is consistent with Ramcharran (2001), in which low dividend is recorded in the emerging markets. The method to determine dividend policy in emerging market firms is different from the practice in developed markets (Glen et al., 1995). It was found that the dividend payout ratio is more important in emerging markets, whereas in developed markets, the level of dividend paid is the main concern. Thus, dividend payout tends to be more volatile in emerging markets than the

developed markets (Glen et al., 1995). Furthermore, less concern over dividend volatility causes dividend smoothing to be less important in emerging markets (Glen et al., 1995).

Aivazian et al. (2003) found that the U.S. and emerging markets rely on the profitability, which is proxied by return on earnings (ROE) in paying a dividend. In other words, the higher the ROE, the higher the dividend payout will be. On the contrary, the debt ratio has an inverse effect on both the U.S. and emerging markets. This shows that financial constraints affect the dividend policy of a firm. This supports the cash flow theory of dividend. They also found that the market-to-book ratio affects dividend payout. However, there is limited evidence in the study that shows the significance of risk and size towards dividend policy. In fact, they find that emerging markets have an inverse relationship with firm asset tangibility. This relationship is resulting from the corresponding decrease in short term assets available for short term bank debt collateral, which may reduce the borrowing capacity from the bank. In general, the same attribute is also important in the U.S. market. However, emerging markets are more sensitive towards some of the variables, suggesting that emerging markets have higher financial constraints than the developed market country such as the U.S., this tends to limit their resources to finance investment opportunities. According to Kumar and Testsekos (1999), emerging markets have higher financial constraints and volatility, lesser information efficiency and smaller size than those in developed countries. This leads to reliance on retained earnings to invest in their project, thus causing lower dividend payout.

Not only dividend in emerging and developed markets show significance difference, but this pattern is also recorded in terms of stock. Stock in emerging markets is characterised by higher trading cost and greater volatility (Domowitz, Glen, & Madhavan, 2001). The stock in emerging markets is also thinly traded (Annuar, Ariff, & Shamsher, 1994; Yilmaz & Gulay, 2006). In contrast to the stock in developed markets, stock in emerging markets is less liquid due to the lack of volume being traded annually. Therefore, the emerging market is characterised by higher information asymmetry due to higher volatility and lesser information efficiency. Thus, under such condition of high information asymmetry in the emerging markets, investors tend to rely on other attributes to mitigate the information asymmetry level. In the case of stock liquidity and dividend relationship, investors tend to rely on stock liquidity specific attributes to mitigate information asymmetry. According to Kanagaretnam et al. (2007), microstructure literature posits that greater liquidity reduces information asymmetry. Furthermore, Jiang et al. (2017) posit that stock liquidity has an informational effect that improves firm transparency and mitigates information

stock market liquidity and mitigates information asymmetry, this study posits that financial market development positively moderates the relationship between stock liquidity and dividend by enhancing informational effect of stock liquidity, thus improves stock liquidity. Thus, this study hypothesises that:

H2: There is a positive moderating effect of financial market development on the relationship between stock liquidity and dividend.

METHODOLOGY

Data

The analysis was conducted on emerging markets such as Argentina, Bulgaria, Brazil, Bangladesh, Colombia, Chile, Hungary, Indonesia, India, Mexico, Malaysia, Peru, Poland, Pakistan, Philippines, Romania, Russia, South Africa, Thailand, Turkey, Ukraine and Venezuela. This study includes a 10-year observation between 2006 and 2015. All firms in these countries were included except firms with incomplete financial data or firms with less than 30 trading days. Following the literature, this article excludes the firms with incomplete financial data and firms within the financial sector. In addition, Jiang et al. (2017) also exclude firms with a negative dividend to earnings and cash flow ratio. In this case, firms that pay a dividend, although the earnings and cash flow are negative. Since negative dividend does not exist in the real world, the study excludes negative dividend as a proxy for the dividend. The data were extracted from DataStream and World Bank databases. The independent variable and control variables were obtained from DataStream. Meanwhile, the data for moderating factors were obtained from the World Bank database.

Variables

Dependent variable

The study uses three dependent variables following Jiang et al. (2017) to proxy for the dividend payout. The first dependent variable is dividend scales by cash flow (DC), whereas the second proxy for the dividend is dividend scales by earning (DE). Both variables are examined using the Tobit model. The third variable is a propensity to pay a dividend (DP), that takes the value of one if the firm pays a dividend and zero if the firm does not pay any dividend. The third dependent variable is examined using logistic regression.

stock liquidity and dividend, panel data Tobit model with random effects was used to examine the first and second dependent variables, namely DC and DE. This is because the dependent variables in this study are left censored. Therefore, the linear method will not be appropriated for data analysis. Furthermore, the use of ordinary least squares (OLS) to estimate the left censoring data will result in estimated bias due to violation of the linearity assumption (Buck, Liu, Wei, & Liu, 2007; D'Angelo, 2012). As for the third dependent variable, DP, this variable is in binary form, which takes the value of one if the firm pays out dividend and zero if the firm does not pay any dividend. Thus, the random effects panel logistic regression was used to investigate the moderating role of financial market development on the relationship between stock liquidity and dividend. In addition, the log transformation (one plus) of Amihud and dividend used by Jiang et al. (2017) as well as Edmans, Fang and Zur (2013) was adopted due to high data skewness.

The dependent variables in this study were examined separately. In other words, the DC, DE and DP proxies have different analysis to be presented. In fact, the article specifies the model as follows:

$$\text{Dividend Payout}_{i,t} = \alpha_{i,t} + \beta_2 \text{Liquidity}_{i,t} + \beta_3 \text{Size}_{i,t} + \beta_4 \text{ROA}_{i,t} + \beta_5 \text{Growth}_{i,t} + \beta_6 \text{Leverage}_{i,t} + \theta i_{i,t} + \delta i_{i,t} + \lambda t_{i,t} + \varepsilon_{i,t} \quad (1)$$

where dividend payout is denoted as the firm's cash dividend over cash flow (DC), cash dividend over earnings (DE), and the firm propensity to pay a dividend (DP). β_2 represents liquidity ratio while β_3, β_4, β_5 and β_6 are the coefficients for control variables, namely firm size, profitability, growth opportunities (Tobin's Q), and leverage. Meanwhile, θi represents the country fixed effect, δi represents the industry fixed effect, λt represent the year fixed effects, whereas $\varepsilon_{i,t}$ represents the error term.

The second hypothesis will be examined using two models. The first Model (2a) is used to examine the main analysis, whereas the second Model (2b) is used to examine the alternative analysis. The models are presented as follows:

$$\text{Dividend Payout}_{i,t} = \alpha_{i,t} + \beta_2 \text{Liquidity}_{i,t} + \beta_3 \text{Liquidity}_{i,t} \times \text{SMT}_{i,t} + \beta_4 \text{Size}_{i,t} + \beta_5 \text{ROA}_{i,t} + \beta_6 \text{Growth}_{i,t} + \beta_7 \text{Leverage}_{i,t} + \theta_{i,t} + \delta_{i,t} + \lambda_{i,t} + \varepsilon_{i,t} \quad (2a)$$

H2a: SMT moderates the relationship between stock liquidity and dividend policy.

Table 3
Variance inflation factor

Variables	VIF	1/VIF
Liquidity	2.14	0.466888
SMC	1.49	0.669332
SMT	1.32	0.759502
Log (Size)	1.25	0.802689
Leverage	1.18	0.845282
ROA	1.18	0.850151
Growth	1.05	0.954313

Stock Liquidity and Dividend

Since the dependent variables were left-censored, the study applies the random effect panel Tobit regression (DC and DE) in data analysis (Hu, Li, & Jin, 2018; Duso, Pennings, & Seldeslachts, 2010; 2006) and panel logistic regression for dummy dependent variable (DP). Based on Table 4, the findings support H1, in which there is a positive relationship between stock liquidity and dividend, where all *p*-value is smaller than 0.05. However, in Table 5, where the study control for industry, country and year fixed effect, the findings do not support H1, except when DC as the dependent variable and the SMC as the proxy of financial market development. This indicates that although the results are positive, the relationship between stock liquidity and the dividend is not significant.

Moderating Effect of Financial Market Development – Stock Market Turnover and Stock Market Capitalisation

Although the result for H1 is not consistent when including and excluding industry, country and year fixed effect, however, H2a, in which there is the positive moderating effect of financial market development on the relationship between stock liquidity and dividend are supported and consistent using both types estimation. Based on Tables 4 and 5, the findings suggest that the financial market development proxied by SMT positively moderates the relationship between stock liquidity and dividend.

This is because, unlike banking sector development, stock market development directly affects stock liquidity via promoting financial market openness and increase number stock traded in the markets. Therefore, the main independent variables, which is stock liquidity, may less be affected by proxy that represents financial institution (banking sector development).

Table 6
Additional analysis via robustness tests (private credit over GDP as the alternative of financial development measure)

	Private credit/GDP					
Models:	DC (1) *p*-value	*z*-value	DE (2) *p*-value	*z*-value	DP (3) *p*-value	*z*-value
Liquidity	0.014	2.46	0.104	1.63	0.833	0.21
CGDP	0.000	11.16	0.000	11.27	0.000	10.85
Liquidity*CGDP	0.950	–0.06	0.447	–0.76	0.133	–1.50
Log (Size)	0.000	24.70	0.000	25.57	0.000	24.27
ROA	0.000	32.97	0.000	22.43	0.000	27.41
Growth	0.419	0.81	0.355	0.93	0.001	3.43
Leverage	0.000	–18.09	0.000	–17.84	0.000	–14.93
Constant	0.000	–18.34	0.000	–18.39	0.000	–22.34

Table 7
Robustness tests for endogeneity – omitted variables

DDP	*z*	*p* > *z*
Liquidity	–3.69	0.000
SMT	–0.99	0.322
Liquidity*SMT	3.18	0.001
Log (Size)	23.06	0.000
ROA	26.47	0.000
Growth	3.31	0.001
Leverage	–15.92	0.000

Robustness Tests for Endogeneity – Omitted Variables

To ensure the results are not influenced by the bias from the omitted variables, the study used the firm fixed-effect regression analysis. As mentioned before, the data has little variation over time. So, the firm fixed-effect analysis is inappropriate for data estimation. However, the inclusion of firm fixed-effect that controls the time-invariant attributes may eliminate the cross-sectional relationship between stock liquidity and dividend payout. This may be associated with the omitted explanatory variables (Jiang et al., 2017). Therefore, the use of firm fixed-effect regression should minimise the risk of omitted variable bias. Based on Table 7, the interaction between the Liquidity ratio and SMT has z-value of 3.18 and p-value of 0.001. The results are robust and statistically significant at 0.01% level using the fixed effect regression analysis.

CONCLUSION

This article investigates the moderating effect of financial market development on the relationship between stock liquidity and dividend in the emerging markets. Using the random effect panel Tobit model and random effect panel logistic regression among 3,258 firms in 10 years from 2006 to 2015, the results indicate that financial market development positively moderates the relationship between stock liquidity and dividend. The results for the direct relationship of stock liquidity and dividend (H1) are only accepted when the random effect is used without controlling industry, country and year fixed effect as well as when DC as the dependent variable and SMC as the moderator. Whereas, when SMT proxies as moderator, although the result is consistently positive, but the effect is not significant. Meanwhile, the results for moderating effects (H2a and H2b) are consistently positive and significant for all variables tested in this study except when using an alternate proxy of financial market development namely private credit over GDP. This indicates that financial market development has a positive moderating effect on the relationship between stock liquidity and dividend. This results also indicate that, financial market development through its mechanisms in enhancing local market liquidity and mitigate information asymmetry moderates the relationship between stock liquidity and dividend.

Stock liquidity and dividend relationship are not only important to investors, but also to managers. An investor earning through the relationship between stock liquidity and the dividend is forecasted based on the information available in the market. The existence of information asymmetry in a country with high information asymmetry level, such as in the emerging markets renders the investors to gain additional information to mitigate the concerns. The

informational effect of stock liquidity as per microstructure literature demonstrates the firm dividend policy. Realising that moderating factors can change the level of information, investors can better forecast the relationship to devise their investment strategy. Managers, on the other hand, rely on the informational effect from stock liquidity which is moderated by financial market development to convey information to the investors with regards to the firm's performance and expected investment return.

Based on the findings, this study contributes in terms of two aspects. First, it extends the literature in regards to stock liquidity and dividend in emerging markets. Prior research mostly concentrated on the developed markets instead of emerging markets. The study highlights the importance of stock liquidity and dividend relationship, especially to the managers who want to diversify their investment in the emerging markets.

Second, this study also considers the impact of financial market development in the relationship between stock liquidity and dividend. In fact, this study is the first to introduce financial market development as a moderating factor for the relationship between stock liquidity and dividend, adding to the existing body of knowledge. Thus, this article confirms the information provided in the literature regarding the link between stock liquidity and dividend besides adding the moderating effect of financial market development in emerging markets. This is helpful to explain the cause of mixed findings between past and recent literature with regards to the relationship between stock liquidity and dividend.

In conclusion, by looking insight into informational effect from financial market development, this study highlights the variable that could influence the relationship between stock liquidity and dividend. Despite the contribution, this study has some limitations. First, the data are only limited to emerging markets. Therefore, the results cannot be extrapolated in the developed markets. Second, the study only considers one moderating factor. For future research, the study recommends the interaction term to be evaluated using Brambor, Clark and Golder (2006), as this method can re-compute and evaluate the significance of the interaction term. Furthermore, future research may also combine stock market development and banking sector development under the same model and determine which variable have more significant influences on stock liquidity and dividend relationship.

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