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Does stock liquidity determine dividend policy? New evidence from an emerging market

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ABSTRACT

This paper aims to test the relationship between stock liquidity and dividend policy using a sample of UAE-listed firms during the period from 2013 to 2019. A panel regression model was applied on data from 42 firms listed on Dubai's financial market and the Abu Dhabi stock exchange. The findings, which show that dividend policy is positively related to stock liquidity, are robust across different stock liquidity measures. Furthermore, we found that the impact of stock liquidity on dividend policy is stronger in small firms where the level of information is low. This paper provides evidence that stock liquidity has a positive impact on dividend policy, which supports the argument that stock liquidity provides information to the market and therefore encourages insiders to pay out dividends. The findings of this study can help researchers, analysts and investors to better understand the implications of stock liquidity on corporate policies. The study also contributes to our understanding of whether managers use dividend policy as a corporate tool to deal with information asymmetry.

Contribution/Originality: This study contributes to the research on dividend policy determinants in the Gulf Cooperation Council (GCC) countries. To the best of the author's knowledge, this is the first study to investigate the impact of stock liquidity on the dividend policy in the GCC region.

1. INTRODUCTION

Since the seminal work of Miller and Modigliani (1961) on dividend policy has been at the center of the corporate finance literature. A significant amount of research has been done to identify the determinants of dividend policy (see e.g., (Al-Kuwari, 2009; Al-Malkawi, 2008; Denis & Osobov, 2008; Michaely & Roberts, 2012)). Only a few studies, however, have looked into the impact of stock liquidity on a firm's dividend policy. Stock liquidity is crucial to both investors and businesses because it determines the ease and speed with which they can trade security without significant price fluctuations.

Theoretically, the impact of stock liquidity on dividend policy is ambiguous: it can be either negative or positive (Jiang, Ma, & Shi, 2017). The negative relationship is attributed to the dividend irrelevance proposition of Miller and Modigliani (1961). One implication of Miller and Modigliani's proposition is that firms with more liquid stocks should pay fewer dividends, holding other things equal. This is because high stock liquidity can help investors who are in need of cash to generate homemade dividends at a low cost by selling part of their shareholdings. Banerjee, Gatchev, and Spindt (2007) found results that are consistent with this view using a sample of US firms; they show a

negative relationship between stock market liquidity and dividend policy. More specifically, they show that firms with lower stock liquidity are more likely to pay cash dividends.

In contrast to the above view, stock liquidity and dividend policy can also be positively related due to the informational impact of stock liquidity. Previous studies have largely documented that stock liquidity decreases information asymmetry between managers and shareholders. When the information environment is transparent, managers tend to keep less cash for personal purposes and pay more dividends as there is more chance to be detected (Petrasek, 2012). Accordingly, stock liquidity is expected to have a positive impact on dividend policy. Using Chinese firms, Jiang et al. (2017) tested the informational effect of stock liquidity on dividend policy and found a positive linkage between them.

The conflicting views in the literature require further research to be conducted on the relationship between stock market liquidity and dividend policy. This paper aims to fill in this research gap and to explain the crucial issue regarding if and how a firm's dividend policy is affected by stock liquidity.

Most of the previous literature focuses on examining the stock liquidity–dividend relationship in developed markets, with many studies conducted on developing markets. Market microstructure literature has found considerable differences among stock markets in terms of trading mechanisms, trading rules, and transparency (Comerton-Forde & Rydge, 2006), and therefore empirical evidence could be affected by these differences. These different characteristics along with the conflicting empirical findings have motivated us to conduct this research. In this paper, we aim to explore the effect of stock liquidity on a firm's dividend policy using listed firms in the UAE. Because developing markets, including the UAE, suffer from higher levels of insider trading, high market manipulation, and misleading disclosure (Cumming, Johan, & Li, 2011), investigating this empirical issue is even more crucial.

Using data of 42 non-financial listed firms during the 2013–2019 period, we found that dividend policy is positively related to stock liquidity. This result supports the argument that stock liquidity increases dividends by alleviating information asymmetry between insiders and outsiders (Jiang et al., 2017). High stock liquidity is associated with a more transparent environment. In such an environment, insiders are less likely to retain earnings as their expropriation can easily be detected (Petrasek, 2012).

We subjected our results to different robustness checks. One key concern in our study is that stock liquidity can be proxied by several measures which may impact the stock liquidity–dividend relationship. We account for this by testing the impact of two additional stock liquidity measures on dividend policy and the results remain consistent. We next examine whether the stock liquidity–dividend relationship differs across firms of different sizes. We found that the impact of stock liquidity on dividend policy tends to be more pronounced in small firms. Finally, the dividend policy entails two decisions: the amount of dividend and the tendency to pay dividends. The effect of stock liquidity on a firm's tendency to pay dividends was further tested and consistent results were achieved. Firms tend to pay more dividends when stock liquidity is higher.

This paper provides several contributions to the existing literature. First, this study adds to a broad literature that investigates the determinants of firms' dividend policy decisions (see e.g., (Denis & Osobov, 2008; Michaely & Roberts, 2012)). Second, this study contributes to a growing body of literature that explores the effect of stock liquidity on firms' corporate decisions and performance (see e.g., (Fang, Noe, & Tice, 2009; Fang, Tian, & Tice, 2014; Lipson & Mortal, 2009; Udomsirikul, Jumreornvong, & Jiraporn, 2011)). This paper identifies dividend policies as another important corporate policy that may change according to a firm's stock liquidity. Third, to our best knowledge, this study offers original evidence on the effect of stock liquidity on a firm's dividend policy in the Gulf Cooperation Council (GCC) countries (see e.g., (Al-Kuwari, 2009; Al-Ajmi & Hussain, 2011)). GCC countries, including the UAE, experience illiquidity, which might provide fresh insights to increase our understanding of dividend policy.

The rest of the paper is structured as follows: Section 2 reviews related literature; the hypotheses are developed in Section 3; the data and methodology are described in Section 4; Section 5 summarizes the descriptive statistics and reports the main empirical results as well as some robustness checks; and Section 6 concludes.

2. LITERATURE REVIEW

Many empirical studies examine the relationship between stock liquidity and dividend policy; however, there is no consensus on whether it is a positive or a negative relationship. Banerjee et al. (2007) studied the effects of stock liquidity on firms' dividend payouts using a sample of firms listed on the New York Stock Exchange (NYSE) and the American Stock Exchange (AMEX) from 1963 to 2003. They showed that owners of more (less) liquid stocks are less (more) willing to receive dividends. Furthermore, they argue that the decrease in the tendency of firms to pay dividends is attributable to the increase in the liquidity of the US market. Brockman, Howe, and Mortal (2008) found similar results by examining the impact of stock liquidity on both dividends and stock repurchases. They showed that stock liquidity is a strong determinant of the payout decisions of companies and that higher stock liquidity leads to more preference for stock repurchases than dividends. They also showed that with an increase in stock liquidity, both the amount of the dividends and the firm's tendency to pay dividends decreased.

The negative impact of stock liquidity on dividend policy has also been reported in markets other than the US market. Using a sample of listed firms in Warsaw from 2011–2016, Stereńczak (2016) found that firms are more (less) likely to pay dividends when their shares are less (more) liquid. Ben, Goaied, and Belanes (2006) used a sample of Tunisian listed firms during from 1996–2002 and found that the liquidity of stocks has a negative effect on a firm's dividend payout. Michaely and Qian (2017) provide evidence from the Chinese market that firms decrease their dividend payments when stock liquidity increases. In a recent study, Vo (2022) found evidence to support a negative relationship between stock liquidity and dividend policy. In an international context, Lai, Saffar, Zhu, and Liu (2020) and Griffin (2010) also provide evidence of a negative relationship between stock liquidity and dividend policy. More specifically, they found that firms are more (less) likely to pay dividends when their shares are less (more) liquid. Contrasting evidence was found by Jiang et al. (2017) using a sample of Chinese listed firms from 2000–2014. They found that dividend payouts are positively related to stock liquidity. The authors argue that the results can be explained by the informational impact of stock liquidity on dividends. They show that stock liquidity lowers information asymmetry between insiders and outsiders, which reduces agency problems and, therefore, stock liquidity can increase dividend payouts. A positive relationship between stock liquidity and dividend policy was also found by Nguyen (2020) using firms listed in the Australian market from 2000-2018, and by Hu, Huang, and Chen (2020) using firms listed on the NYSE, AMEX, and National Association of Securities Dealers Automated Quotations (NASDAQ) over the period from 1993 to 2013. In recent work, Stereńczak and Kubiak (2022) examined the relationship between stock liquidity and dividend policy in Central and Eastern European countries. Their findings show that dividend policy is positively affected by stock liquidity.

3. HYPOTHESIS DEVELOPMENT

The current literature suggests that the impact of stock liquidity on dividend policy is based on two arguments. First, according to the proposition of Miller and Modigliani (1961), a negative relationship is expected. Miller and Modigliani argue that dividend policy is irrelevant, given the assumption of perfect capital markets, as investors may generate homemade dividends by simply selling part of their stockholdings at no cost. In the real world, however, markets are not flawless, or more precisely, not completely liquid. Therefore, if stock liquidity is low, it becomes harder to obtain homemade dividends at no cost, and hence the call for dividends appears to be high. This indicates a negative relationship between the liquidity of the stock and the level of dividends paid by the firm. Accordingly, the first hypothesis is as follows:

H1: There is a significant negative impact of stock liquidity on dividend policy.

The second argument suggests a positive relationship between stock liquidity and dividend policy. Easterbrook (1984) and Jensen (1986) claim that dividends decrease agency problems, as dividend payments decrease the retained earnings of firms which can be used by managers for private use or they could be used in projects with negative net present values. From previous research, it is well known that stock liquidity reduces the information asymmetry between insiders (managers) and outsiders (investors). When the market is illiquid and suffers from informational asymmetry, managers tend to retain the cash in the firm and use it for their own interests. This is because managers are less likely to be detected when the environment is not transparent (Leuz, Nanda, & Wysocki, 2003). However, high stock liquidity allows for more information to be generated, which puts pressure on managers and means that they could be easily detected (Petrasek, 2012). Hence, as the level of stock liquidity increases, managers tend to distribute dividends instead of retaining cash (La Porta, Lopez-De-Silanes, Shleifer, & Vishny, 2000). Following this argument, the second hypothesis is as follows:

H2: There is a significant positive impact of stock liquidity on dividend policy.

4. DATA AND METHODOLOGY

4.1 Data

We used a sample of firms listed on the Abu Dhabi stock exchange and Dubai financial market from 2013–2019. Following most of the previous literature, financial firms were excluded since their financial ratios are different from those of firms in other industries and they also have a unique set of regulations. There are 76 listed firms on Dubai's financial market, and after the elimination of 24 financial firms and 35 firms with missing data, only 17 firms remain. The Abu Dhabi stock exchange consists of 67 listed firms, and after the elimination of 17 financial firms and 25 firms with missing data, only 25 firms remain. Accordingly, our total sample consists of 42 firms. All the financial variables were retrieved from the Thomson Reuters database.

4.2 Model

To study the impact of stock liquidity on dividend policy, we apply the following baseline regression model:

$$DPS_{i,t} = \beta_0 + \beta_1 Liquidity_{i,t} + \beta_2 Size_{i,t} + \beta_3 Profit_{i,t} + \beta_4 Growth_{i,t} + \beta_5 Leverage_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where $DPS_{i,t}$ is the dependent variable that reflects dividend policy. $Liquidity_{i,t}$ is the stock liquidity measure. The control variables are firm size ($Size_{i,t}$), firm profitability ($Profit_{i,t}$), firm growth opportunities ($Growth_{i,t}$) and firm leverage ratio ($Leverage_{i,t}$). The definitions and measurements of the variables are detailed in the following sub-sections. We use the lagged values of the independent variables to address the issue of simultaneity (Bellemare, Masaki, & Pepinsky, 2017). We also add year and industry fixed effects to address the effects of time and industry unobserved heterogeneity. To ensure that outliers do not drive the results, all the financial variables were winsorized at the 1st and 99th tails.

4.2.1. Dividend Policy Measure

In line with previous studies, such as Leary and Michaely (2011); Basiddiq and Hussainey (2012) and Firth, Gao, Shen, and Zhang (2016), firms' dividend policy is measured using dividend per share (DPS).

4.2.2. Stock Liquidity Measure

The main independent variable is stock liquidity ($Liquidity_{i,t}$). Following Nguyen (2020) and Jiang et al. (2017), we use the illiquidity ratio of Amihud (2002) to measure stock liquidity because theories suggest that the impact of stock liquidity on dividend policy mainly entails price impact, which was highly detected by this illiquidity ratio (Goyenko, Holden, & Trzcinka, 2009). We calculate the Amihud ratio as follows:

$$Liquidity_{i,t} = -\left(\frac{1}{N_{i,t}} \sum_{t=1}^{N_t} \left[\frac{|R_i|}{VOL_i}\right]\right) \quad (2)$$

Where R is the daily stock returns, VOL is the trading volume in millions of United Arab Emirates Dirham (AED) for firm i on day d, and N is the number of trading days for firm i in year t. A higher value of this Amihud ratio implies a lower level of liquidity; therefore, we multiply it by −1.

4.2.3. Control Variables

Following previous literature, we use different control variables that have been strongly reported to impact dividend policy, such as leverage, profitability, firm size, and growth opportunities (see (Banerjee et al., 2007; Denis & Osobov, 2008; Michaely & Roberts, 2012)). Firm leverage (Leverage) is measured as the ratio of total debt to total assets. We measure firm profitability (Profit) as the ratio of earnings before interest and taxes to total assets. Firm size (Size) is calculated as the natural logarithm of total assets for a given year. Finally, we control for the firms' growth opportunities (Growth) using the percentage change in total assets.

5. RESULTS

In this section, we first report the descriptive statistics and correlation matrix, then we discuss the main regression results, followed by robustness checks.

5.1. Descriptive Statistics

Table 1 reports the descriptive statistics of all variables included in the analysis. The mean value of dividend per share (DPS) implies that, on average, firms pay a dividend of AED 0.051 per share. The average for liquidity is 0.004, indicating that for each AED of trading volume, the stock price moves by 0.4%. For the control variables, the descriptive statistics show that, on average, firm size is 11.68, and the percentage change in total assets is 1.97%. Total debt represents 14.02% of total assets and the profitability ratio is -0.3%, suggesting that, on average, Emirati firms are unprofitable.

Table 1. Descriptive statistics of the variables.

Variable	Mean	SD	Median	Min.	Max.
DPS	0.0514	0.0621	0.0300	0.0000	0.2760
Liquidity	0.0039	0.0109	0.0004	0.0000	0.0794
Leverage	0.1402	0.1356	0.1038	0.0000	0.5448
Profit	-0.0028	0.2623	0.0612	-1.4525	0.4104
Size	11.6825	1.4736	11.4494	8.4229	15.2241
Growth	0.0197	0.3125	0.0282	-1.4522	0.8319

The Pearson correlation coefficients between the variables are reported in Table 2. In line with our prediction, the stock liquidity measure is significantly and positively correlated with DPS at the 1% level. The positive correlation between liquidity and dividends shows that companies pay more dividends if stock liquidity is high, implying that high stock liquidity may remove the information asymmetry between managers and shareholders. As a result, managers cannot retain cash within the firm which could be utilized for their personal use, thus they pay more dividends.

Table 2. Pearson pairwise correlation matrix.

Variable	DPS	Liquidity	Leverage	Profit	Size	Growth
DPS	1					
Liquidity	0.1579***	1				
Leverage	-0.0326*	0.0134	1			
Profit	0.2962***	0.1203**	0.2027***	1		
Size	0.2090***	0.2494***	0.4027***	0.3952***	1	
Growth	-0.0327*	0.1102*	0.0943	0.3429***	0.1992***	1

Note: ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

In line with previous research, DPS is positively and significantly correlated with firm size and profitability at the 1% level, implying that large and highly profitable firms pay more dividends. On the other hand, DPS is negatively and significantly correlated with leverage and growth opportunities. In general, low correlation coefficients are reported between the stock liquidity measure and the control variables, indicating that multicollinearity is not an issue.

5.2. Main Regression Results

Table 3 shows the main regression results. In Column (1), we regress the dividend per share on stock liquidity without controlling for firm characteristics. However, in this model, we add year and industry dummies to account for unobserved time and industry fixed effects. The results show a positive and significant relation between dividend per share and stock liquidity. Column (2) reports the regression estimates after controlling for firm-specific characteristics that can impact DPS, while preserving the industry and year fixed effects. The findings show that the coefficient of liquidity ratio remains significantly positive, which is consistent with our hypothesis (H2). We conclude that stock liquidity has a statistically significant positive impact on dividend policy. Our results are in line with prior studies, such as Jiang et al. (2017) and Nguyen (2020), who found a positive relationship between stock liquidity and dividend policy. Because high liquidity is associated with more information, which puts pressure on managers, they could be easily detected if they use the retained earnings for their own interest (Petrasek, 2012). In this case, the cost of retaining cash is higher than the benefit of distributing dividends and hence managers tend to pay more dividends (La Porta et al., 2000). In developing markets, firms tend to have high information asymmetry and hence low stock liquidity, indicating that managers are more likely to retain cash for their personal use instead of paying dividends.

Table 3. Main regression results.

Variable	(1)	(2)
Liquidity	1.0418***	0.6962***
	(5.17)	(3.65)
Leverage	-	-0.0359**
		(-2.17)
Profit	-	0.0625***
		(4.95)
Size	-	0.0061**
		(2.20)
Growth	-	-0.0166*
		(-1.87)
Intercept	0.0672***	0.026**
	(4.88)	(2.27)
Year effects	Yes	Yes
Industry effects	Yes	Yes
N	294	294
F-stat	4.91***	7.15***
Adj. R^2	0.1187	0.2106

Note: Column (1) reports the results of model without control variables, while in Column (2), we add the control variables. T-statistics are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

In line with the prior literature, it was found that large firms tend to pay more dividends as they have easier access to capital markets, and hence they are less reliant on internally generated funds compared to small firms (see (Brockman & Unlu, 2009; Denis & Osobov, 2008)). This finding also supports the argument that large firms use high dividends as a valuable tool to send costly signals about a firm's future prospectus (Bhattacharya, 1979; Michael & William, 1976). The leverage ratio shows a negative coefficient, suggesting that leverage and cash dividends are used as substitutes in decreasing agency problems and information asymmetry (Jensen, 1986), and

this is confirmed by many studies including Fama and French (2001) and Al-Malkawi (2008). High-growth firms are more likely to pay fewer dividends because they have more growth opportunities and need the cash to finance these opportunities instead of paying dividends (Brockman & Unlu, 2009; Fama & French, 2001). More profitable firms tend to pay a higher level of dividend in line with the signaling theory, which claims that paying more dividends signals the firm's future profitability to investors (Bhattacharya, 1979; Miller & Rock, 1985). This result also supports the argument that more profitable firms tend to pay more dividends to reduce the agency costs of free cash flow (Easterbrook, 1984; Firth et al., 2016; Labhane, 2019).

5.3. Robustness Checks

In this sub-section, we conduct a series of robustness checks. First, we employ alternative proxies for stock liquidity. Second, we divide our sample based on size and growth opportunities to test whether our results are specific to a particular type of firm or can be generalized to all types. Third, we test the impact of stock liquidity on a firm's likelihood of paying dividends.

5.3.1. Alternative Proxies for Stock Liquidity

Here, we analyze the robustness of our results using different proxies for stock liquidity. To verify that our results are not affected by our choice of liquidity measure, we re-estimate our main regression model using another two estimates of stock liquidity: share turnover and spread. A higher (lower) value of share turnover (spread) entails a higher level of liquidity. Therefore, to make interpretation easier, we multiply spread by −1. The results are presented in Table 4. For each liquidity measure, the coefficient is positive and significant, indicating the robustness of our earlier findings across different stock liquidity proxies.

Table 4. Alternative liquidity measures.

Variable	(1)	(2)
	Spread	Turnover
Liquidity	0.2885***	2.7477**
	(2.79)	(2.03)
Leverage	-0.0341	-0.0365
	(-1.42)	(-1.51)
Profit	0.0587***	0.0609***
	(4.75)	(4.76)
Size	0.0039	0.0090***
	(1.25)	(3.08)
Growth	-0.0166*	-0.0156*
	(-1.89)	(-1.79)
Intercept	0.0295	-0.0272
	(0.74)	(-0.81)
Year effects	Yes	Yes
Industry effects	Yes	Yes
N	294	293
F-stat	7.44***	7.18***
Adj. R^2	0.2159	0.2086

Note: Column (1) shows the regression results where liquidity is measured by the spread, while Column (2) shows the regression results where liquidity is measured by the turnover ratio. The other independent variables are leverage, profitability, size, and growth opportunities. T-statistics are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

5.3.2. The Effect of Firm Size on the Stock Liquidity–Dividend Relationship

We also test whether the impact of stock liquidity on dividend policy varies with the size of the firm. If stock liquidity increases dividend payments through alleviating information asymmetry between outsiders and insiders, then a stronger relationship should exist between stock liquidity and dividend policy in small firms. Small firms are

usually less known and thus face higher information asymmetry than large firms (Leary & Michaely, 2011). Therefore, we expect the impact of stock liquidity on dividend policy to be stronger in small firms.

Table 5 reports the results of the impact of firm size on the dividend–stock liquidity relationship. The results show that the impact of stock liquidity on dividend policy is more significant in small firms. This supports our prediction that small firms face a low level of information transparency and, therefore, the stock liquidity effect on dividends is more pronounced in these firms.

Table 5. Effect of firm size on the stock liquidity–dividend relationship.

Variable	Large	Small
	(1)	(2)
Liquidity	0.1399 (0.30)	0.6322*** (3.31)
Leverage	-0.0305 (-0.74)	-0.0390 (-1.30)
Profit	0.1165 (1.35)	0.0377*** (2.72)
Size	-0.0046 (-0.93)	0.0224*** (3.23)
Growth	-0.0201 (-1.01)	-0.0169* (-1.86)
Intercept	0.1340* (1.87)	(-0.1753)** (-2.40)
Year effects	Yes	Yes
Industry effects	Yes	Yes
N	147	147
F-stat	8.40***	11.18***
Adj. R^2	0.1251	0.3649

Note: We sub-divided the sample into large and small firms based on whether the firm size is above and below the median. T-statistics are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Table 6. The propensity to pay dividends.

Variable	Coefficient (T-Statistic)
Liquidity	16.1482* (1.83)
Leverage	-1.9932** (-2.14)
Profit	3.0193*** (4.33)
Size	0.5846*** (6.12)
Growth	-0.4139 (-1.19)
Intercept	-6.1130*** (-5.19)
Year effects	Yes
Industry effects	Yes
N	273
Wald chi^2	123.62***
Pseudo R^2	0.4330

Note: T-statistics are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

5.3.3. The Decision to Pay or Not Pay Dividends

Dividend policy involves two decisions: dividend payment and dividend level. In this section, we test the impact of stock liquidity on a firm's decision to pay or not pay dividends. For the dependent variable, we use a dummy variable that has a value of one if the dividend per share is more than zero for a given year, and zero otherwise.

Given that the dependent variable is a dummy variable, we apply a probit method to run the model. The findings are reported in Table 6. Our results remain unchanged; a firm with high stock liquidity is more likely to pay dividends.

6. CONCLUSIONS

We tested the impact of stock liquidity on dividend policy using a sample of listed firms in the UAE. The findings show that firms with high stock liquidity pay more dividends than firms with low stock liquidity. Similarly, firms with high stock liquidity have a higher tendency to pay dividends. The positive relationship impact of stock liquidity on dividends remains the same when we use different measures of liquidity. We also tested for the effect of firm size on the relationship between stock liquidity and dividends and found that this relationship tends to be stronger in small firms.

The above findings indicate that stock liquidity increases dividends as it can decrease information asymmetry between insiders and outsiders and hence eliminate agency problems. Therefore, our paper adds to the current literature by highlighting the role of stock liquidity in decreasing information asymmetry and how this affects dividend policy.

Future research can extend this study in several ways. The empirical analysis can be expanded to include other Gulf Cooperation Council countries. Moreover, this paper focuses on the relationship between stock liquidity and dividend policy at the firm level. Further research can be done to test the relationship between dividend policy and aggregate liquidity as new papers may find a common liquidity factor among firms (Chordia, Roll, & Subrahmanyam, 2000; Pastor & Stambaugh, 2003).

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