

DO FOREIGN FUNDS AFFECT INDONESIAN CAPITAL MARKET LIQUIDITY?

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Abstract: Trading Volume (Liquidity) is the perfect complement to returns. Therefore, research regarding volume becomes an essential thing in the capital market. Various factors influencing Liquidity (TV) are bid-ask spread, interest rates, exchange rates, and foreign funds. The study uses Amihud Illiquidity Ratio (AIR) as a proxy for liquidity. The data is the Indonesian Composite Index for liquidity and all variable, daily basis; 2016-2019 period, divided into odd and even semester, with the linear regression model. The results showed that the bid-ask spread decreases trading volume, exchange rate, and interest rates had a positive effect on AIR, where the greater the depreciation and the higher the interest rates, the lower the liquidity. For 2019, the foreign fund has a negative coefficient, which shows foreign funds increase capital market liquidity. In 2019, there will be a strengthening effect between foreign funds and the exchange rate

Keywords: *liquidity; trading volume; Amihud Illiquidity Ratio; bid ask spread; exchange rate; foreign fund*

INTRODUCTION

In 2019, the Indonesian Capital Market, which has a market capitalization of around Rp 7299 trillion or equivalent to \$ 523 billion, consists of 668 firms. The Composite Index at the end of 2019 was 6329, up around 2.4% compared to the beginning of the year. At the end of 2016, the Composite index was 5297, up around 17% compared to the beginning of the year. Some shares do not have trading transactions in Indonesia terminology 'gocapan' [the price Rp50/share]. This stock is very detrimental to investors because it becomes a pseudo record of the value of its investments. For this reason, liquidity is an integral part of the progress of the capital market, and especially for investors. Shares with high trading volume (HTV) are known in the LQ 45 group, contribute around 70% of the market, and become an indicator for the movement of Indonesian shares. This trading volume is a pair of prices. Even the amount of profits that can be obtained from investors can be shown by

changes in price (time weight) but more real return based on dollar weight, where the volume is a critical component.

The Indonesian Capital Market is an open capital market, where foreign investors are around 30% Investor. In addition, foreigners also enter the capital market as brokers (securities firms), where ownership is allowed up to 99% (Regulation No. 20 / POJK.04 / 2016). This situation has the opportunity to cause the position of 'foreign-foreign linkage' and 'domestic domestic linkage'. Although it is not forbidden, it seems to make two groups. In the bond sector, foreign ownership is even greater, at around 47%. Therefore, in Indonesia, retail investors are increasing, the situation of retail investors is easy to panic, so it tends to follow foreign investors. It why foreign domination becomes interesting to study. Dvořák (2005) shows that foreign investors prefer to use foreign securities. There is majority ownership by foreign such as HMSP (Tobacco Industries) by Philips Morris (98%); a leading firm-mineral water (Aqua) goes private

because Danone owns 100%. Unilever Tbk has purchased various the best local brand products (Sariwangi tea, Bango soy sauce, etc.). This situation shows foreign domination and makes the Indonesian-open economy. Naturally, foreign transactions can be a leading indicator for individual investor stock transactions.

As an open country with a managing floating exchange rate pattern, the rupiah exchange rate dynamically changes according to the market demand-supply. The depreciation of the Rupiah causes a decrease in the value of the investment needed. It also decreases the return obtained. In the International Financial Management literature, it is known as the Effective Financing Rate (EFR). EFR is an essential concept because it shows the real return obtained by investors. In this case, the determinant of return comes from two things: (i) the nominal return of assets and (ii) exchange rate changes. The second source is the dominant source, where the returns can change quickly. This second source can make nominal returns change sharply, either increase or decrease. However, if the currency changes (primarily depreciation) sharply, it causes psychological effects, creates panic, and creates panic selling in the capital market.

Interest rates are substitute products for the capital market. Bank Indonesia (Central Bank of Indonesia) has JIBOR products as a market benchmark rate, which can be an investment benchmark. With a linkage financial system, it will be easy to move funds from the capital market to the money market, vice versa, so that investors have attractive investment choices. On a daily, the strength of JIBOR is the small, 'certain-positive' return; it can be as a compensation for the risk of fluctuations in the capital market. If the situation is high-interest

rates and the market is bearish, it can increase transactions through selling transactions.

On the Indonesian stock exchange, the tick size is set based on price intervals. This tick size produces a bid-ask spread, which investors consider as one of their investment decisions. The width of the bid-ask spread shows the width of the disparity or expectations of investors. If the bid-ask spread wide, it will not cause transactions because the two parties are waiting for each other. In contrast, (Karpoff, 1987), which states disagreement among investors as the cause of transactions, the situation of widening bid-ask spreads, although show disparity, but it shows as asymmetric information, thereby reducing investment actions and subsequently reducing transactions. Research instead shows the opposite situation, namely the effect of trading volume on the bid-ask spread. The results showed the negative effect of trading volume on a bid-ask spread (Chung & Charoenwong, 1998) (Ahn et al., 1996 (Frank & Garcia, 2011)). The bid-ask variable is rarely used as an explanatory factor, and in the research, trading volume being the explanatory variable for the bid-ask spread. Actually, in fact, and theoretically are reverse, the existence of a bid-ask is the driving factor for the transaction. Firstly, The bid-ask spread factor can explain two different things, namely: (i) the wider the bid-ask spread indicates disagreement between investors (heterogeneous in belief), which further encourages transactions; (ii) it shows asymmetry information so that both parties carry out the transaction.

The above data summary shows exciting facts on the Indonesian Capital Market and several variables. It is essential to research trading volume because the volume has a significant contribution to the market. The second, an interesting factor about foreign phenomenon and exchange rate, an

interrelation among the variable. I propose the interaction between foreign currency and exchange rates as an important variable for explaining trading volume. The impact of interrelation factors explains what should be done by stakeholder, especially Self Regulatory Organization (SRO) and Central Bank. The interest rate variable, a specific variable, is controlled by Central Bank. As a Central Bank instrument, Central Bank can take this research result, for additional information, to take monetary policy. The last but not the least, the bid-ask spread give us information about investor bargaining, wider of as bid-ask spread, broader asymmetry information among investor.

LITERATURE REVIEW

The phenomenon of foreign investors in the capital market is a global phenomenon. Rhee & Wang (2009), Ding et al., (2013), Lee & Chung, (2015); Nguyen et al., (2017); Thanatawee (2019) researching regarding foreign investors and liquidity stock market in Indonesia, China, 20 emerging markets; Vietnamese; Thailand. Rhee & Wang (RW) shows that foreign investors negatively affect 'future liquidity. One proxy for liquidity in RW is the ratio of change in bid-ask. Ding et al. show that foreign institutional investors encourage liquidity both in SOE (State-Owned Enterprises) and non SOEs. Lee & Chung, found that foreign investors had a positive effect on Amihud Illiquidity, but had a negative effect on bid-ask spreads. Nguyen et al. (2017) show that foreign investors negatively affect liquidity on the Vietnamese Stock Market. Thanatawee also found that foreign investors negatively affected liquidity. These findings indicate that foreign investors are not catalysts for the capital market, as expected. Pavabutr & Yan (2007) examined the effect of

foreigners on trading volatility, where foreign influences positively affect the volume; in this case, if a local investor sells, the foreigner will buy. Vo, (2016); also examines the effect of foreign on Trading Volume; Agudelo (2010) examined the effect of Foreign Investment ownership on liquidity (bid-ask) and found negative results. Dvorak (2005) had researched concerning foreign investors in Indonesia, where local investors better understood the situation in the short term, but foreign brokers were better at picking long term winners. Thus, local investors who choose foreign brokers will get a higher return than foreign investors. In this case, the foreign influencing can be explained through two events. First, (through trading activity) where foreign carry out transaction activities than are followed by domestic; second through the information channel, where foreigners have information potential and serve as a reference for investing.

Chkili & Nguyen (2014) examined the exchange rate fluctuations and stock market return in BRICS countries (Brazil, Russia, India, China, and South Africa) by dividing two periods (low volatility regime, high volatility regime) and using a model VAR. The results show that the stock market return affects the exchange rate more in both periods. Theoretically, in my opinion, this is not appropriate, where the flow of foreign funds, through the exchange, enters the stock market. Theoretically, changes in the stock markets in developing countries cannot create significant changes in exchange rates. Gong & Dai (2017) examines the exchange rate fluctuations and the behaviour of foreign investors (herding) on the Chinese Capital Market. His research shows that interest rates rise, and the yuan depreciates, causing herding, especially in the bearish market—Li et al. (2020) research about the RMB Index and stock market liquidity in China. The results show that both have a strong

positive correlation, especially during the tightening monetary policy period. Ng et al. (2016) examined the effect of Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI) on Trading Volume (TV) in 39 countries. They Obtain FDI to affect TV negatively, while FPI affects positively. Research do not show a moderating relation between the exchange rate and foreign. Even though the exchange rate and foreign are very close, where one changes sharply, it will be followed by a sharp change in the other variables.

A little research about the effect of bid-ask on trading volume. Research instead shows the opposite situation, namely the effect of trading volume on the bid-ask spread. The results showed the negative effect of trading volume on a bid-ask spread Chung & Charoenwong, (1998) Ahn et al., (1996), Frank & Garcia, (2011). This means that the High trading volume (HTV), the smaller the information asymmetry, then the smaller the bid-ask spread. While research regarding the effect of interest rates on the stock market find: (i) negative results on the Jordanian Capital Market; Colombo; Pakistan, (ii) positive results in the short term and negative results in the long-term in China, and (iii) there is no relationship between interest rates and stock returns in Malaysia Ali Khrawish et al., 2010), (Amarasinghe, 2015) (Ahmad et al., 2012) (Ye & Huang, 2018) (Murthy et al., 2016). (Callen & Fang, 2015) examines the interest rate (short term) as an estimate of stock prices in the next year. In this case, no literature examines the relationship between interest rates and trading volume. It is due, theoretically, interest rates are substituting products for the 'price' of the stock as an investment instrument.

Various concepts regarding Liquidity has been summarized by (Kumar & Misra, 2015). Liquidity is an

interesting study because of the Liquidity is a measure of a stock exchange activity. If time weight returns refer to price changes, then dollar weight returns refer to the rupiah's value, which refers to two components: price and transaction volume. Thus, price and volume are a pair. Amihud (2002) shows this relationship with the concept of illiquidity. The concept of illiquidity is the ratio of absolute return to trading volume.

METHOD

Data relating to liquidity uses the Indonesian Composite Index (CI). Data were obtained from IDX in the 2016-2019 study period. The research divided the analysis into two-semester for an economic considering-time phrase so that the result can be compared. This study uses the Amihud-Illiquidity Ratio (AIR). There are three proxies of transactions (liquidity), namely: volume (number of shares traded), value (rupiah transaction value), and trading frequency. This study uses all of these proxies. Returns are used as absolute values. AIR uses the ratio of return and trade transactions. Thus, the higher the liquidity, the AIR will go down. I use AIR as a proxy for liquidity, because: (i) as a ratio, AIR scale or reduce the impact of trading volume fluctuation; (ii) a couple of return-trading volume, instead of trading volume solely.

Foreign transaction data (in Billion Indonesian Rupiah) are shown in net foreign transactions, where the positive value indicates the purchase value is greater than the selling, and vice versa. The higher the foreign transaction, the more impact on the capital market is, so the transaction volume is higher, but not necessarily to changes in return. Thus, the AIR will be smaller. Thus, Foreign negatively affects the Illiquidity Ratio (AIR)

Exchange rates are indicated by Rp/\$, where an increase in the exchange

rate shows the rupiah's depreciation. The higher the exchange rate, the greater the weakening of the rupiah. The impact of the stock market is not only (changes in negative-large returns) but also followed by transactions, although it is expected that changes in returns are greater than a change in transactions, thus the higher AIR. Thus, the exchange rate has a positive effect on the Illiquidity Ratio (AIR)

The Jakarta Interbank Offer Rate (JIBOR) is proxy for the interest rate. Interest rate is substituted for stock prices. Thus, the higher the interest rate, the lower the stock price, which indicates the change in absolute return to be higher. It means that interest rates have a positive effect on the Illiquidity Ratio (AIR)

Bid-ask spread is obtained from IDX; shows the difference between the purchase price (bid) and the stock price (ask) on average. The higher the bid-ask, the greater the 'information asymmetry' that occurs. Conceptually, the greater the 'bid-ask spread' will reduce trading transactions so that the illiquidity ratio will be even greater. Thus, the effect of bid-ask spreads will be positive on the illiquidity ratio (AIR).

Does the exchange rate has a driving factor for foreign transactions, and then it is measured by a multiplicative factor. If the exchange rate (rupiah depreciation) will encourage foreign transactions, the effect on liquidity will be even greater. Thus, the expected coefficient of this variable is negative and significant. However, if the exchange rate does not encourage foreign transactions, then the coefficient of this variable is positive or negative but not significant. The contribution of this research is to introduce this interactive factor as an explanation of the transaction. The analysis is divided per semester to compare the effect of

these variables. Thus, the model can be given as follows:

$$Lit = a_0 + b_1 bidask + b_2 excrate + b_3 int + b_4 for + b_5 (kurs * forg) \quad (1)$$

Where:

Liq = Amihud Illiquidity Ratio (AIR)

AIR = $\frac{Abs - Expected\ Return}{Trading\ Volume}$, daily basis

bid - ask = average bid - ask spread, daily basis

excrate = $\frac{Rp}{\$}$ exchange rates, daily basis = natural logarithm

foreign = net - foreign fund, daily basis = Rp billion

Int = interest rate (JIBOR, daily basis)

RESULT AND DISCUSSION

As stated in part method, research compare Semester I & II to know (analyze) data change. Secondly, Research use regression result to answer whether the chosen variables affect trading volume, especially the interrelation among foreign fund and exchange rates.

The influence of chosen variables on trading volume stated both in table 1 (odd semester) and table 2 (even semester). The Bid-ask spread coefficients are positive, and most are significant, except for 2017 (odd semester, all proxy liquidity, value, volume, frequency), the coefficient is negative and significant. The positive coefficient indicates that the bid-ask spread increases, AIR increases, or trading activity decreases. This situation does not reflect heterogeneous in beliefs (Karpoff), but rather show the 'costs' of trading. This cost of trading causes both parties to postpone the transaction, waiting for the other party to increase their reaction. Psychologically, the attitude of waiting indicates the expectation of a reaction, where this is common in transactions with speculative motives; or have expectations of a gain.

The wider the bid-ask spread shows the asymmetric information of both parties. Unlike Karpoff's assumption, this situation shows that both parties are waiting, so they tend to reduce transactions, both regarding value, volume, and frequency. It shows that information flow is not yet smooth, and further shows inefficient market situation. What can be done is to supply information throughout the trade transaction time so that the accumulation of information (both bid and ask side) is adequate and equal so that

the price of equilibrium is faster achieved. I can't compare this result with the previous study because they use bid-ask spread as inverse, to be dependent variable Chung & Charoenwong, (1998), Ahn et al., (1996), Frank & Garcia, (2011).

Concerning foreign influence, there is a change in the coefficient sign; in 2016-2017, positive coefficient in 2018, especially 2019, becomes negative. It means that in the last year (2019), the foreign inflow followed by an increase in transactions. This different pattern has several strategic implications, namely: (i) an increase in foreign transactions, indicating a more liquid market situation; (ii) if foreigners are considered as 'market leaders', then domestic transactions are followed; (iii) transactions are carried out in a more frequent amount (frequency); with more shares (volume) and a higher value (Value). It causes capital market oil to become more liquid. This situation can be interpreted as good news, but it can also be interpreted as bad news. It is good news because it shows the high trading volume (HTV), bad news because foreign is a 'signal' market. It makes the capital market more vulnerable to global issues. Its result is contrasted with Rhee & Wang (2009) research over ten years ago. Compared to Rhee & Wang's situation, Indonesia's current situation is different as shown by (i) a more global economy, (ii) a smaller transaction size (a lot containing 100 shares instead of 500 shares), (iii) more investors. If its result is compared to the ASEAN Capital Market, this result is also contrasted with the Vietnam Capital Market (Nguyen et.al (2017) and the Thailand Capital Market (Thanatawee, 2019). Further research is needed to find out the differences in these results, including the difference in investment scale. Regression results 2019, for foreign variable, is negative significant (table 1 & 2, for all trading volume proxies). It means foreign influence

trading volume linearly. The results can be taken into consideration for investors, especially SRO. We hope, Indonesian Stock Market, not broken easily because of the negative foreign fund, although foreign fund as oil for transactions.

Exchange rates have positive and significant coefficients, except for 2019 (odd semester) for the proxy of value (AIR). While for the even semester, there were also more positive coefficients, but they were not significant. The negative coefficient of the exchange rate was found in several years, but it was not significant. Thus, in general, the exchange rate has a positive effect on AIR. Generally depreciation will cause trade transactions to decrease. This situation means that the rupiah depreciation does not encourage foreigners to conduct transactions. Some explanations that can be given are ; (1) The absence of additional foreign as hot money, due to the depreciation of the rupiah; (2) Existing foreign investors, being irrelevant with the exchange rate, which as rational investors will conduct transactions, based on rational considerations; (3) Depreciation of the rupiah is not an incentive for foreign funds, which means foreign parties, instead it considers the expectation of the future exchange rate, when it will return funds outside, according to the concept of the Effective Financing Rate.

For this result, uncontrolled depreciation has a negative impact not only on the economy but also on the capital market. The absence of hot money in the depreciation situation indicates future concern that there will be even more significant depreciation. In financial markets, expectations have an important role. Depreciation situations tend to be poorly perceived, so as undesirable situations. For foreign investors with high depreciation, the real return obtained decreases. There is a possibility of the negative net foreign, and pushed stock prices down. Thus AIR goes down. In this case, depreciation is more appropriate to

refer to large (negative returns) than changes in the volume of transactions themselves. With this argument, to maintain about the exchange rate, it is not only 'a necessary condition' but also 'a sufficient condition' because the exchange rate got worse has the catastrophic impact. This research result accordance with Gong & Dai (2017), Li et al., (2020)

The interest coefficient is primarily positive and significant, except in 2018 & 2019 in the even semester. It shows that an increase in interest rates will reduce transactions on the capital market. This situation shows that interest rates are the 'substitute product' for the capital market. Several arguments can be given: (i) JIBOR interest rates are quite high and specific, so it becomes an attraction for investors; (ii) the smooth flow of money and capital markets, causing funds to move quickly. The influence of interest rates can be a concern for the Central Bank. This result similar to Ali Khrawish et al. (2010), Amarasinghe (2015), Ye & Huang (2018).

In the capital market, some stocks have high volatility, but others are 'sleep' stocks. The existence of a risk-free rate can be a reference as a comparison of investment returns. This situation can serve as a guideline for SRO to better coordinate with Central Bank and better understand investor behaviour in the context of investment asset selection. Because interest rates and shares are substitutes, SRO can view interest rates as a competitor to stocks. For this reason, high stock volatility must be informed as a good thing, namely the potential for higher profits. On the other hand, sleep stocks can be a handicap for the capital market, as a disincentive for investors, so considers investing in the money market (interest rates). The interest rate has a pretty high rate, risk-free rate, as sweeter, to tease investor, move (i) a part of the fund, (ii) temporarily, (iii) especially the lousy economy, like now.

Moderation Variable, otherwise the exchange rate moderates foreign if find the negative and significant coefficients. Results show only in 2018 (for all AIR proxies) and semester II; 2018-2019 for all proxies. It shows that in the last year (2019), it tends to be an interaction between foreign and the exchange rate. If foreign inflows and the rupiah depreciates, the amount of trading volume will increase. In the early part, it was stated that the foreign inflow tended to increase transactions, but the expectation of depreciation encouraged selling panic transactions. In this case, depreciation will only increase foreign transactions if the foreign funds are already in Indonesia. Thus, there is no evidence of exchange rates moderating foreign investors.

As expected, that depreciation is a consideration for foreign investors to conduct transactions in the capital market. Depreciation will increase transactions but in the form of net selling-foreign transactions. With many retail investors, less information, this situation can be the worst to be panic selling. For this matter, it is necessary to provide education to retail investors. Some things that can be referred to: (i) if foreigners sell, it's time to become the owner; (ii) the capital market phenomenon is the fundamental of the company, (iii) the perspective of investment is long-term, instead of short-term investment. A communication strategy is needed by the SRO so that retail investors are not easily swayed. The fact is, foreign investors, become, a 'signal' that should not be doubted, but needs to be dealt with so that the adverse effects can be eliminated/reduced.

Regression Analysis Result; Odd Semester (first line: coefficient; second line: p-value)

Var iabl e	Dependent variable: LiquidValue										2016-2019	
	2016		2017		2018		2019				I	II
	I	II	I	II	I	II	I	II				
Bid	0.3	0.3	0.23	0.23	0.26	0.26	-	-	0.38	0.42		
-	0	0	0	1	8	8	0	0.1	<0.	<0.		
Ask	<0.	<0.	0.00	0.00	<0.	<0.	0.08	0	0	0	0.01	
	01	01	4	4	001	001	0.	0.1	20	3		
For	0.2	0.2	0.06	-	-	-	-	0.1	0.18	0.15		
eign	4	4	8	0.05	0.16	0.15	0	0	0.02	0.04		
	<0.	<0.	0.22	1	4	3	16	0.1	0.04	0.04		
	01	01	0	0.28	0.02	0.03	0.	4	2	9	0.04	7

	Exc	0.2	0.2	0.02	0.01	-	-	-	0.1	0.13	0.11
Rat	1	1	9	6	0.00	0.01	0.	5	0.09	2	
e	<0.	<0.	0.37	0.42	1	2	0.1	0.0		0.11	
	01	01	2	9	0.49	0.44	0.	4		6	
JIB	0.2	0.2	0.27	0.28	-	-	-	0.19	0.19		
OR	0	0	6	0	0.23	0.24	0.	0.1	0.02	5	
	<0.	0.0	<0.	<0.	3	0	15	1		0.01	
01	1	001	001	0.00	0.00	0.	0.1		7		
F*E		0.0		0.13		-	-	-			
xRa		5		5		0.09		0.3		0.17	
te		0.3		0.06		6		6		0.03	
	0	1		0.13		<0.		1			
R ²	0.1	0.1	0.14	0.15	0.19	0.19	0.	0.1	0.11	0.15	
	0	0				0.04		0.04			
Dependent variable: LiquidVolume											
Var		2016	2017	2018	2019					2016-2019	
iable		I	II	I	II	I	II	I	II	I	II
Bid	0.3	0.3	0.21	0.21	0.28	0.28	0.	0.1	0.34	0.35	
-	2	2	3	1	4	0	10	1	<0.	8	
Ask	<0.	<0.	0.00	0.00	<0.	<0.	0.	0.1	001	<0.	
	01	01	7	7	001	001	13	1		001	
For	0.2	0.2	0.04	-	-	-	-	0.23	0.22		
eign	5	5	2	0.03	0.16	0.15	0.	0.0	0.00	2	
	<0.	<0.	0.31	2	0	6	22	3	6	0.00	
01	01	7	7	0.36	0.03	0.03	<	0.3	8		
				0	3	7	0.	7			
Exc	0.1	0.1	0.0	-	-	-	-	0.0	0.08	0.05	
Rat	4	4	14	0.00	0.04	0.04	0.	4	0.19	6	
e	0.0	0.0	0.43	2	0	0	07	0.3	1	0.27	
	5	6	8	0.49	0.32	0.32	0.	4		7	
JIB	0.2	0.2	0.31	0.32	-	-	-	0.26	0.25		
OR	2	2	6	1	0.22	0.22	0.	0.2	0.00	9	
	<0.	<0.	<0.	<0.	7	7	24	0	2	0.00	
01	01	001	001	0.00	0.00	<	0.0		2		
				4	4	0.	1				
F*E		0.0		-		-		-			
xRa		1		0.10		0.05		0.2		0.09	
te		0.4		5		1		5		1	
	7			0.11		0.28		<0.		0.16	
R ²	0.2	0.2	0.16	0.17	0.17	0.18	0.	0.1	0.24	0.23	
	4	4				12		5			
Dependent variable: LiquidFreq											
Var		2016	2017	2018	2019					2016-2019	
iable		I	II	I	II	I	II	I	II	I	II
Bid	0.3	0.3	0.25	0.25	0.27	0.27	-	-	0.39	0.42	
-	6	6	6	3	7	8	0.	0.0	<0.	4	
Ask	<0.	<0.	0.00	0.00	<0.	<0.	0.06	4	00	<0.	
	01	01	1	2	001	001	0.	0.3		001	
For	0.2	0.2	0.09	0.05	-	-	-	0.26	-		
eign	8	8	6	8	0.18	0.16	0.	0.0	0.00	0.22	
	<0.	<0.	0.13	0.25	0	0	20	2	2	8	
01	01	8	6	0.01	0.03	0.	0.4	0	0	6	
				9	4	01	0				
Exc	0.1	0.1	0.10	0.11	-	-	0.	0.0	0.07	0.06	
Rat	6	6	8	0	0.03	0.04	02	2	0.24	9	
e	0.0	0.0	0.11	0.10	3	3	0.	0.4		0.23	
	4	4	0	6	0.35	0.31	40	1		2	
JIB	0.2	0.2	0.19	0.18	-	-	-	0.25	0.24		
OR	3	3	3	9	0.20	0.21	0.	0.1	0.00	9	
	<0.	<0.	0.01	0.01	9	4	15	3	3	0.00	
01	01	3	4	0.00	0.00	0.	0.0		3		
				8	7	05	7				
F*E		0.0		0.05		-		-			
xRa		2		4		0.08		0.2		0.14	
te		0.4		0.27		6		9		5	
	3		3		0.16	<0.		01		0.05	
R ²	0.0	0.0	0.13	0.13	0.17	0.18	0.	0.1	0.09	0.28	

Regression Analysis Result; Even Semester(first line: coefficient; second line: p-value)

		Dependent variable: LiquidValue										2016-2019
Var		2016	2017	2018	2019							
Bid	0.3	0.3	0.2	0.2	0.2	-	-	0.3	0.4			
-	0	0	30	31	68	68	0.	0.1	8	2		
As	<0.	<0.	0.0	0.0	<0.	<0.	0.08	0.	<0.	<0.		
	01	01	04	04	001	001	0.	0.1	00	001		
For	0.2	0.2	0.0	-	-	-	-	0.1	0.1	0.1		
eign	4	4	68	0	0.1	0.1	0.	0	8	54		
	<0.	<0.	0.2	51	64	53	16	0.1	0.0	0.0		
01	01	20	0.2	0.0	0.0	0.	4	2	4	47		
				82	29	39	04					
Ex	0.2	0.2	0.0	0.0	-	-	-	0.1	0.1	0.1		
cR	1	1	29	16	0.0	0.0	0.	5	3	12		
ate	<0.	<0.	0.3	0.4	01	12	01	0.0	0.0	0.1		
	01	01	72	29	0.4	0.4	0.	4	9	16		
JIB	0.2	0.2	0.2	0.2	-	-	-	0.1	0.1	0.1		
OR	0	0	76	80	0.2	0.2	0.	0.1	9	95		

	<0.	0.0	<0.	0.01	33	40	15	1	0.0	0.0	
Var	I	II	I	II	03	03	05	1	2	17	
F*			0.0		0.1						
Ex		5		35		0.0		0.3		0.1	
Rat		0.3		61		96		6		7	
e		0				38		01		31	
R ²	0.1	0.1	0.1	0.1	0.1	0.1	0.	0.1	0.1	0.1	
	0	0	4	5	9	9	04	0	1	5	
Dependent variable: LiquidVolume											
Var		2016	2017	2018	2019					2016-2019	
iable		I	II	I	II	I	II	I	II	I	II
Bid	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.	0.1	0.3	0.3
-	2	2	13	11	84	80	10	1	4	58	
As	<0.	<0.	0.0	0.0	<0.	<0.	0.	0.1	<0.	<0.	
	01	01	07	07	001	001	13	1	001	001	
For	0.2	0.2	0.0	-	-	-	-	-	0.2	0.2	
eign	5	5	42	0.0	0.1	0.1	0.	0.0	3	22	
	<0.	<0.	0.3	32	60	56	22	3	0.0	0.0	
01	01	17	60	33	37	0.	7	01		08	
Exc	0.1	0.1	0.0	-	-	-	-	-	0.0	0.0	
Rat	4	4	14	0.0	0.0	0.0	0.	0.0	4	8	
e	0.0	0.0	0.4	0.0	40	40	07	0.3	0.1	0.2	
	5	6	38	0.4	0.3	0.3	0.	0.4	91	77	
JIB	0.2	0.2	0.3	0.3	-	-	-	-	0.2	0.2	
OR	2	2	16	21	0.2	0.2	0.	0.2	6	59	
	<0.	<0.	<0.	27	27	24	0	0.0	0.0	0.0	
01	01	001	001	0.0	0.0	0.	0	04	0.	02	
F*	0.0				-						
Ex	1				0.1				0.2		
Rat	0.4				05				5		
e	7				51				91		
					0.1				0.2		
R ²	0.2	0.2	0.1	0.1	0.1	0.	0.	0.1	0.2	0.2	
	4	4	6	7	7	8	12	5	4	3	
Dependent variable: LiquidFreq											
Var		2016	2017	2							

influenced by various factors, not merely bid-ask spreads. Second, the depreciating rupiah has a negative impact on stock trading transactions. Thus, it is of concern to the relevant stakeholders the importance of managing the exchange rate. For the capital market, it needs to be anticipated about the impact of changes in exchange rates, for example, applying the lower limit (auto rejection) so that no sharp decline occurs. Rising interest rates become a substitute for the capital market. Thus, the interest rate policy can be seen by investors as an alternative investment. Foreign is an indicator of transactions in the capital market; for that reason, it is necessary to watch out the flow of large amounts of foreign funds. Together with the exchange rate, the changes in the exchange rate and foreign funds greatly affect the capital market.

Illiquidity Ratio of Amihud, using the concept of absolute return. In this case, if both negative return and positive return cannot be distinguished. Also, if the value of the ratio is large, then is it caused by a large change in return and/or by a high trading volume? It can be a concern for further research.

From the description above, several policy implications can be taken, namely: (1) Bid-ask spreads need not be minimized, (2) Government needs to manage the exchange rate, (3) The interest rate is a policy that affects the capital market, (4) Foreign fund is an oil for the capital market, so it must be anticipated by regulators if there are changes in large numbers.

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