

The Impact of Investor Types on the Stock Return Volatility During the Covid-19 Pandemic in Indonesia

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ABSTRACT

This study investigates the impact of foreign and domestic investors on the stock return volatility during the Covid-19 pandemic in the Indonesian capital market. Using a panel data regression method, we find that foreign institutional and individual investors cannot be proven to affect stock return volatility during the Covid-19 pandemic. This study finds that domestic investors, both institutional and individual investors, play a significant role in reducing the stock return volatility during the Covid-19 pandemic. The government's strategic role, which is expected to reduce stock return volatility, is not supported. These findings suggest that broadening the local investor base is needed to strengthen the Indonesian capital market.

Keywords: Covid-19 pandemic, volatility, Indonesian capital market, foreign ownership, domestic ownership.

1. INTRODUCTION

Globalization has resulted in cross-border capital flow, encouraging an increase in foreign ownership in the domestic capital market due to portfolio diversification. Capital market in emerging countries provides a higher return, in line with a higher risk level than developed countries. [1] revealed that stock return volatility, which reflects investment risk, is higher in emerging countries than in developed countries. Volatility is closely related to the cost of capital, international risk sharing, and expected return, so it is an important aspect that cannot be ignored in the financial economy [2]. It also represents the financial risk, stress, or uncertainty in financial investments and should be noticed by the investors, fund managers, and policymakers [3].

The globalization of capital markets in emerging countries reduces volatility [1], [4], but other studies conclude otherwise [5], [6]. Further research emphasizes the impact of foreign investor ownership (foreign ownership) on the stock return volatility in the capital market, with mixed conclusions. [7]–[11] conclude that foreign ownership has a negative effect on the stock return volatility. Other studies find conflicting results [2], [12], [13].

Theoretically, foreign ownership in the domestic capital market can increase exposure to the global risk

premium, partly due to the increased integration of the domestic capital market with the global capital market [13]. [6] explains that when there are shocks in the capital market, foreign capital might quickly exit from the domestic capital market and result in more significant losses than the benefits of foreign capital inflows. Foreign investors are often blamed for destabilizing the capital market every time a crisis occurs [14], caused by capital flight from the domestic capital market. Thus, it is important to emphasize the research period's heterogeneity because it may have different conclusions.

[15]–[17] show that higher volatility clusters arise during crisis periods. It is a reflection of higher market risk. Under these conditions, investors tend to expect a higher risk premium. This condition ultimately encourages investors to transfer their assets to safer financial instruments (flight to quality). Therefore, [9], [11] examine the effect of foreign ownership on the stock return volatility by considering the crisis period. [11] uses the period of the Asian crisis in 1997-1998, while [9] uses the global financial crisis period in 2008-2009.

The recent crisis due to the Covid-19 pandemic also proves the phenomenon of capital outflows from emerging countries. [18] conclude that emerging countries experience a more severe impact from capital outflows than developed countries. Capital outflows from emerging countries reached USD100 billion from

February to March 2020. The OECD report also states that capital outflows from emerging countries in mid-January to May 2020 are estimated at USD103 billion, preceded by capital outflows from the equity portfolio. This amount is equivalent to three times the capital outflow in emerging countries during the global financial crisis.

Several studies show that the Covid-19 pandemic causes higher volatility in the capital market [19], [20]. Further research attempts to explain other factors that amplify the stock return volatility during the pandemic. Government intervention in campaigning for the dangers of Covid-19 and limiting public activities [3], an increase in the number of cases of infection and death [21], and an increase in the number of word searches related to the Covid-19 pandemic in Google Search Volume [22], positively affects volatility. Capital outflows from the capital market as represented by foreign ownership may also affect the emergence of higher volatility during the pandemic. However, there has been rarely researched on this.

Figure 1 shows the decline in foreign ownership in the Jakarta Composite Index (JCI) as evidence of capital outflows from equity portfolios during the pandemic. The decline in foreign ownership is in line with the stock return volatility. Therefore, the stock return volatility during a pandemic may be affected by a decrease in foreign ownership in the capital market due to the foreign capital outflow.

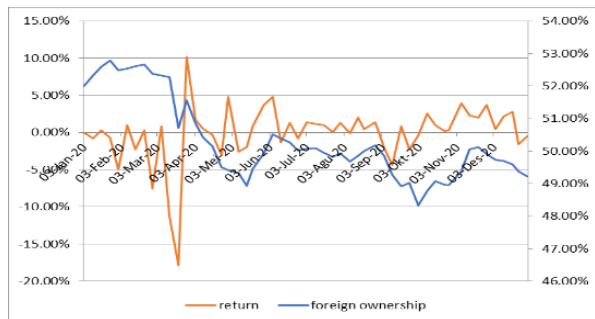


Figure 1. Stock return and foreign ownership fluctuations during the pandemic. The left side shows the percentage of return, while the right side shows the percentage of foreign ownership in the JCI.

Indonesia presents an interesting case study of the impact of investor types on the stock return volatility. First, the ASEAN capital market, include Indonesia, provides higher return and becomes the location for portfolio diversification [23]. Second, foreign ownership in the Indonesian capital market is quite significant, accounting for about 50% of the total share value in the Indonesian capital market. Therefore, it makes the Indonesian capital market is vulnerable to capital outflows during a crisis. Third, Indonesia is progressing on strengthening its domestic investor base. Since 2015 the "Yuk Nabung Saham" program has been initiated to

attract domestic investors to invest in the capital market. The program is considered successfully increasing investor participation almost four times compared to 2016. However, no study has explored the impact of increasing domestic investor participation in the Indonesian capital market.

Research with similar topics in Indonesia has been conducted by [2], [10], [11] with different results. The novelty of this study is it offers new empirical evidence by investigating the period of shocks not analyzed by [2], [10] and the effect of domestic investors ownership not carried out in the study of [11]. This study will explore the investor types into foreign institutional and individual investors, domestic institutional and individual investors, and the government to complement the previous study. The Covid-19 pandemic period also becomes an interesting study period because it is different from the previous crisis due to serious health problems and the implementation of social restrictions to lockdown. It impacted the economy's stagnation, so research about the impact of Covid-19 is needed to overcome similar effects in the future [24].

This study applies panel data regression using a random effect model. The empirical results show that domestic investors negatively influence stock return volatility, which indicates that the strengthening of the domestic investor base has succeeded in reducing volatility in turbulent periods. However, government ownership has a positive impact on the stock return volatility. This finding indicates that the government's political interests in Indonesian state-owned enterprises may increase stock return volatility. In contrast, foreign ownership shows a negative coefficient, but it is not statistically proven.

The remainder of this paper is organized as follows: Section 2 reviews the literature and hypothesis development; Section 3 elaborates the data and method; Section 4 presents dan discusses the empirical findings; and Section 5 states the conclusions.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The impact of foreign ownership on capital market stability in emerging countries still an interesting topic to be explored. Several studies conclude that foreign ownership can stabilize capital markets in emerging countries because it reduces stock return volatility [7]–[11]. Other studies find conflicting results [2], [12], [13].

To further clarify the effect of foreign ownership, further analysis tries to categorize foreign investors into foreign institutional investors [2], [7], [10], [13] and foreign individual investors [10], [13]. The categorization cannot produce a similar conclusion. [10], [13] find that foreign institutional investors have a positive effect on the stock return volatility, while [7],

[10] conclude the opposite. [13] also find that foreign individual investors harm stock return volatility, but [10] conclude the opposite.

Considering the studies of [10], [13] and the fact that foreign institutional is the second-largest investor but foreign individual is the lowest investor in JCI, the hypotheses about the effect of foreign ownership during the Covid-19 pandemic are as follows:

H1a: Foreign institutional positively affects stock return volatility.

H1b: Foreign individual ownership negatively affects stock return volatility.

Given the effect of foreign investors ownership on the stock return volatility, it is a natural question whether domestic investors ownership also influences the stock return volatility. [2], [7], [12], [13] also analyze the effect of domestic investors ownership (domestic ownership), but the result is still in dispute. [2], [7], [13] find that domestic institutional investors have a positive effect on the stock return volatility, while [12] conclude the opposite. [13] also find that individual domestic investors positively affect stock return volatility, but [12] conclude the opposite.

However, previous studies by [11] and [2] have not yet analyzed domestic investors' role during a crisis. Therefore, the hypotheses about the effect of domestic investor ownership during the Covid-19 pandemic are as follows:

H2a: Domestic institutional ownership has a negative effect on the stock return volatility.

H2b: Individual domestic ownership has a negative effect on the stock return volatility.

Regardless of the impact of foreign and domestic investors, government ownership has received considerable attention because of an increase in government ownership in several countries since the global financial crisis [25], government guarantees (bailout) in several companies during a crisis [26], and lower cost of debt during a crisis [27]. [25] find that government ownership reduces stock return volatility, even though [13] find conflicting results. During a pandemic, [28] conclude that companies controlled by the family or the government experienced lower price reductions than other companies. Therefore, the hypothesis about the effect of government ownership on the stock return volatility during the Covid-19 pandemic is as follows:

H3: Government ownership has a negative effect on the stock return volatility.

3. DATA AND METHOD

3.1. Data and Sample

This study uses monthly stock ownership data from the Indonesian Central Securities Depository and Thomson Reuters DataStream for stock price, company size, trading turnover, and Book to Market ratios data. The study period is from December 2017-2020.

The samples consist of the companies listed on the Indonesia Stock Exchange (IDX) from December 2017-2020 and did not get a suspension (trading of its shares has been suspended) for a year or more.

3.2. Variables

The dependent variable is volatility (Volat), measured by using natural logarithm of monthly standard deviation of daily stock return [2], [10], [12], [13] with the following formula:

$$Volat = \sqrt{\frac{1}{n-1} \sum_{t=1}^n (return_{i,t} - MEAN_{i,t})^2} \quad (1)$$

The independent variable is the ownership of each type of investor [2], [10], [13] with the following formula:

$$stock\ ownership = \frac{outstanding\ shares\ owned}{total\ outstanding\ shares} * 100\% \quad (2)$$

The control variables are the lagged stock return volatility, the lagged trading turnover, the lagged company size, the lagged book to market ratio, and the lagged free float ratio [12], measured by using the following formulas:

$$Return = \ln (Price_{i,t} / Price_{i,t-1}) \quad (3)$$

$$Trading\ turnover\ (TO) = \frac{average\ trading\ volume}{outstanding\ shares} \quad (4)$$

$$Size = \ln (Price \times outstanding\ shares) \quad (5)$$

$$B/M\ ratio = \frac{book\ value\ of\ equity}{market\ value\ of\ equity} \quad (6)$$

$$Free\ float\ ratio = \frac{stocks\ traded\ in\ market}{outstanding\ shares} \quad (7)$$

3.3. Empirical Model

This study applies a random-effect regression to the panel data follows [13] with an empirical model conducted by [10]–[12] as follows:

$$Volat_{i,t} = \beta_0 + \beta_1 \cdot stock\ ownership_{i,t-1} + \beta_2 \cdot Volat_{i,t-1} + \beta_3 \cdot Size_{i,t-1} + \beta_4 \cdot Return_{i,t-1} + \beta_5 \cdot TO_{i,t-1} + \beta_6 \cdot B/M_{i,t-1} + \beta_7 \cdot FreeFloatRatio_{i,t-1} + e_{i,t} \quad (8)$$

The data is divided into three periods: (1) full sample period on December 2017-2019 by controlling for Covid-19 dummy; (2) before the Covid-19 pandemic on December 2017-2019; and (3) during the Covid-19 pandemic on January-December 2020.

4. EMPIRICAL FINDINGS

4.1 Preliminary Analysis

Table 1 presents the descriptive statistics of the variables. Volat is stock return volatility, FINST is foreign institutional investors, FID is foreign individual investors, LINST is domestic institutional investors, LID is domestic individual investors, GOV is government, Return is stock return, Size is market capitalization, TO is trading turnover, Free Float is the ratio of shares traded on the stock exchange, B/M is the ratio of Book to Market.

Table 1 shows that stock return volatility during the pandemic was higher than the previous period, with the highest volatility occurring in March 2020, coinciding with the pandemic announcement by WHO. Based on the proportion of publicly stock traded, domestic institutional investors dominate the ownership structure, accounting for $\pm 45\%$, followed by foreign institutional investors ($\pm 23\%$), domestic individual investors ($\pm 23\%$), and foreign individual investors ($\pm 1\%$). Domestic institutional and individual ownership increased, while foreign institutional and individual ownership decreased during the pandemic. It reflects the capital outflow from the JCI during the pandemic. The government owns about 2% of the outstanding shares. Due to the restructuring of SOEs, government ownership has been diluted. During the pandemic, stocks return declined, but the decline was smaller than in the previous period. The size dan trading turnover decreased during the pandemic, while the book to market ratio increased.

Table 2 presents the correlations between variables. It shows that volatility positively correlates with domestic institutional and individual ownership and foreign individual ownership but negatively correlates with foreign institutional ownership and the government. Stock return volatility in the previous period, trading turnover, free float ratio, book to market ratio, and the Covid dummy variable have a positive correlation with volatility. Meanwhile, stock return and firm size have a negative correlation with volatility.

4.2 Main Results

Table 3 presents the result from model estimation for the whole sample period (column 1), before the Covid-19 pandemic (column 2), and during the pandemic (column 3). We find that foreign institutional ownership can reduce the stock return volatility. However, the effect is

not significant in the period before (Column 2) and during the pandemic (Column 3), so hypothesis 1a that foreign institutional ownership positively affects stock return volatility during the Covid-19 pandemic is not empirically supported. During the Covid-19 pandemic, the decline of foreign institutional ownership is not too large, accounting for about 0.12%.

As shown in Figure 1, massive foreign capital outflows occurred from March to June 2020 and began to increase until the end of 2020. This situation strengthens the argument of [6] that foreign investment in the capital market tends to fluctuate and can move quickly, especially in the period of shocks. Outside the crisis period, [2] concludes that foreign institutional ownership has a positive effect on volatility, while [10] conclude the opposite. Theoretically, foreign investors will increase exposure to global risks so that the domestic capital market becomes more vulnerable [13]. However, other studies argue that better supervision and long-term commitment from foreign investors can strengthen the domestic capital market and reduce volatility [8].

The effect of foreign individual investors (FID) is not significant throughout the study period. It means that Hypothesis 1b is not supported empirically. The result aligns with [13], who conclude that foreign individual ownership has no impact on the stock return volatility. In Indonesia, foreign individual ownership is small, around 0.4% of the total outstanding shares. During the Covid-19 pandemic, the decline in foreign individual ownership was also not too significant, approximately 0.1%, so we cannot prove the effect throughout the observation period. Thus, foreign ownership fluctuation is likely to have no impact, even though [10] reveal that foreign ownership positively affects stock return volatility.

The empirical test shows that foreign institutional and individual ownership do not affect stock return volatility during the Covid-19 pandemic. In the whole sample period, foreign institutional ownership statistically significantly affects stock return volatility by reducing volatility, but this effect is not statistically proven during the pandemic. This finding is similar to [9] that in Indonesia, the coefficient of foreign ownership is negative but not statistically significant. The results imply that the effect of capital outflows from equity portfolios only occurred in a relatively short period. This condition might occur because foreign capital flows began to increase again towards the end of 2020 (Figure.1).

Table 1. Descriptive Statistics

	Volat	FINST	FID	LINST	LID	GOV	Return	Size	TO	Free Float	B/M
Full sample											
Mean	0.0304	0.2318	0.0102	0.4580	0.2305	0.0228	-0.0003	28.1462	0.0266	0.7019	1.0253
Median	0.0248	0.1301	0.0005	0.4557	0.1517	0.0000	0.0000	28.1260	0.0023	0.9426	0.8929
Maximum	0.7656	0.9996	0.4308	0.9995	1.0000	0.9003	0.1767	34.3579	5.0911	1.0000	12.50
Minimum	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	-0.1293	23.0731	0.0000	0.0028	-100.00
Std. Dev.	0.0243	0.2586	0.0395	0.3065	0.2347	0.1194	0.0081	1.9154	0.0984	0.3408	3.8914
Skewness	3.0384	1.1908	6.7696	0.0688	1.3992	5.3084	0.6616	0.2336	18.5559	-0.5527	-19.4375
Kurtosis	52.22	3.50	55.64	1.76	4.42	30.28	41.38	2.88	683.78	1.63	482.75
Observations	18501	18501	18501	18501	18501	18501	18501	18501	18501	18501	18501
Before pandemic											
Mean	0.0295	0.2322	0.0105	0.4573	0.2295	0.0237	-0.0003	28.2193	0.0276	0.6975	0.9229
Median	0.0234	0.1301	0.0006	0.4545	0.1493	0.0000	-0.0002	28.2191	0.0027	0.9358	0.8264
Maximum	0.7656	0.9996	0.4308	0.9995	1.0000	0.9003	0.1767	34.3453	5.0911	1.0000	10.00
Minimum	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	-0.1293	23.3148	0.0000	0.0028	-100.00
Std. Dev.	0.0245	0.2568	0.0397	0.3068	0.2368	0.1227	0.0077	1.9042	0.1101	0.3424	3.1614
Skewness	3.8590	1.1788	6.6464	0.0756	1.4158	5.2393	1.2771	0.2069	18.8745	-0.5290	-21.39
Kurtosis	72.37	3.50	54.14	1.75	4.43	29.57	63.96	2.85	639.04	1.59	623.55
Observations	12581	12581	12581	12581	12581	12581	12581	12581	12581	12581	12581
During pandemic											
Mean	0.0323	0.2310	0.0095	0.4594	0.2326	0.0208	-0.0002	27.9909	0.0245	0.7113	1.2430
Median	0.0282	0.1288	0.0005	0.4567	0.1606	0.0000	0.0000	27.9211	0.0016	0.9644	1.0989
Maximum	0.2087	0.9993	0.4301	0.9974	1.0000	0.8060	0.0733	34.3579	0.8681	1.0000	12.50
Minimum	0.0000	0.0000	0.0000	0.0000	0.0004	0.0000	-0.0760	23.0731	0.0000	0.0054	-100.00
Std. Dev.	0.0237	0.2624	0.0391	0.3058	0.2303	0.1120	0.0089	1.9300	0.0672	0.3371	5.1007
Skewness	1.1844	1.2147	7.0458	0.0544	1.3615	5.4435	-0.2097	0.2982	5.7441	-0.6036	-16.2305
Kurtosis	5.69	3.51	59.06	1.76	4.41	31.56	12.47	2.94	46.68	1.70	317.49
Observations	5920	5920	5920	5920	5920	5920	5920	5920	5920	5920	5920

Table 2. Correlation matrix

	VOLAT	VOLAT(-1)	FINST(-1)	FID(-1)	LINST(-1)	LID(-1)	GOV(-1)	RETURN(-1)	SIZE(-1)	TO(-1)	FF(-1)	BM(-1)	COVID
VOLAT	1.00000												
VOLAT(-1)	0.53040	1.00000											
FINST(-1)	-0.01731	-0.01786	1.00000										
FID(-1)	0.03163	0.03095	0.05496	1.00000									
LINST(-1)	0.01213	0.01104	-0.26012	-0.13984	1.00000								
LID(-1)	0.08145	0.08356	-0.14968	0.07573	-0.12339	1.00000							
GOV(-1)	-0.00954	-0.01099	-0.03935	-0.05027	-0.13362	-0.09702	1.00000						
RETURN(-1)	-0.03944	0.05716	-0.00102	-0.00959	-0.01000	-0.00110	-0.00390	1.00000					
SIZE(-1)	-0.21565	-0.21339	0.17373	-0.19321	-0.10344	-0.28262	0.26842	0.05237	1.00000				
TO(-1)	0.05166	0.10650	-0.04792	-0.01438	0.01014	0.16623	0.01550	0.08433	-0.02166	1.00000			
FF(-1)	0.04794	0.04782	0.33332	-0.02635	0.64648	0.27740	-0.19662	-0.01345	-0.10264	0.05650	1.00000		
BM(-1)	0.01769	0.01773	-0.09698	0.00273	0.02128	0.00119	-0.01055	-0.01747	-0.07468	-0.02007	-0.04919	1.00000	
COVID	0.12829	0.11767	0.00521	-0.01929	0.01467	-0.02302	-0.00527	-0.00993	-0.03638	-0.02772	0.00623	0.06231	1.00000

Thus, the positive influence of foreign ownership might not be possible seen by the regressions carried out throughout 2020.

Domestic institutional investors have a negative and significant coefficient throughout the study period. It means that domestic institutional ownership may reduce stock return volatility, especially during the Covid-19 pandemic. This finding supports Hypothesis 2a and is in line with the results of [12] in Norway. Referring to the fact that domestic institutional investors have an essential proportion in the JCI, domestic institutional investors are long-term investors. Therefore, they are not too active in transactions and control the company, as [8] disclosed in other emerging countries. [29] also reveal that the high proportion of domestic institutional ownership in Indonesia affects the asset utility more efficiently and the higher stock market value due to their supervision.

Domestic individual investors have a negative coefficient, but only significant during the Covid-19

pandemic period. It means that they may reduce stock return volatility, especially during the Covid-19 pandemic, so that Hypothesis 2b is supported. In addition, increased domestic retail investors' participation can prove the success of the Yuk Nabung Saham Program that was established in 2015. Low budget needs and sophisticated technology also encourage domestic retail investors to invest in the capital market.

Table 3. The result from model estimation

	Full sample period	Before pandemic	During pandemic
	Coefficient		
	(Standard error)		
C	-0.696136*** (0.081816)	-0.54113*** (0.097115)	-0.949127*** (0.134239)
VOLAT(-1)	0.506601*** (0.00673)	0.538058*** (0.00806)	0.408861*** (0.011749)
LINST(-1)	-0.120004*** (0.044204)	-0.097046* (0.056211)	-0.169707*** (0.07042)
FINST(-1)	-0.083073* (0.048412)	-0.064868 (0.061772)	-0.119299 (0.076649)
GOV(-1)	0.166312*** (0.039446)	0.146217*** (0.047704)	0.231447*** (0.069815)
LID(-1)	-0.065014 (0.050785)	-0.02025 (0.063456)	-0.186135** (0.084687)
FID(-1)	-0.379007 (0.356688)	-0.27817 (0.433587)	-0.577636 (0.62105)
FF(-1)	0.134376*** (0.044155)	0.115771** (0.056138)	0.172888** (0.070426)
BM(-1)	-0.00024 (0.001418)	-0.002088 (0.001824)	0.002722 (0.002215)
RETURN(-1)	-5.163964*** (0.592579)	-2.884665*** (0.751515)	-9.542868*** (0.881703)
SIZE(-1)	-0.041689*** (0.002765)	-0.043026*** (0.003392)	-0.041537*** (0.004756)
TO(-1)	0.001372 (0.04708)	-0.054032 (0.050651)	0.344559** (0.13559)
Covid dummy	0.099312** (0.039772)		

Amid uncertainty during the Covid-19 pandemic, [30] revealed that in 37 countries, including Indonesia, there was a significant increase in the stock trading volume, which, among others, was caused by an increase in the participation of young individual investors as a result of working from home policy. It is in line with Tempo magazine's information (8-14 February 2021 edition), which states that millennial investors increase four times in 2020 compared to 2019. This increase in retail investor participation is likely to reduce the volatility that occurred during the Covid-19 pandemic.

Government ownership has a positive and significant coefficient at the 1% level, which means that government ownership may increase stock return volatility. It implies that Hypothesis 3 is not supported empirically. This finding aligns with [13], but contrary to [25] and [28]. SOEs often have special assignments so that the government has a high political interest in Indonesian SOEs, which may impact the increasing stock return volatility. With the Covid-19 pandemic, government budget allocations have begun to be transferred to

vulnerable economic sectors so that several SOEs projects have been delayed. Moreover, the existence of large-scale social restrictions resulted in the delaying of several projects. It has an impact on a higher regression coefficient in the Covid-19 period compared to the previous period.

The volatility (Volat) of stock return in the previous period had a positive coefficient with a significance level of 1%. It shows that the current stock return volatility is influenced by stock return volatility in the previous period. The free float ratio also shows a positive coefficient, which means that the higher traded stocks, the higher the stock return volatility will be. Trading turnover (TO) has a positive and significant coefficient at the level of 5% during the Covid-19 pandemic, which means that the higher volume of shares traded during the Covid-19 pandemic impacts the higher level of volatility. Company size (SIZE) and stock return (RETURN) have a negative and significant coefficient at the 1% level, which means that the larger (smaller) the size of the

company and the stock return, the smaller (greater) stock return volatility.

The findings during this pandemic period provide an additional contribution that the ownership of foreign investors and the government does not always play a positive role in the stability of the stock return. However, strengthening the local investor base is necessary to reduce the high volatility during the crisis due to foreign capital outflows.

5. CONCLUSIONS

Using a novel dataset from JCI, we explore the impact of the capital outflow from one of the most extensive emerging market equity portfolios during the Covid-19 pandemic. We find evidence that capital outflows from the JCI during the pandemic, as indicated by the decline in foreign ownership, were insignificant. Foreign institutional and individual ownership decreased by 0.12% and 0.1%, respectively. Based on empirical tests conducted, foreign institutional ownership reduced stock return volatility for the whole sample period, but this could not be proven empirically in the periods before and after the Covid-19 pandemic. Likewise, the role of foreign individual investors on the stock return volatility cannot be proven empirically.

On the other hand, domestic investors' negative effect (institutions and individuals) means domestic investors play a role in reducing stock return volatility during the Covid-19 pandemic. This finding supports the arguments of [18] that the domestic investor base needs to be strengthened to reduce volatility during times of shocks due to capital outflows from foreign investors. Although the number of domestic retail investors is increasing, the percentage from the population is still relatively low ($\pm 2\%$ of the total population). The implication is that policymakers need to continue expanding the domestic investor base to strengthen the Indonesian capital market.

The government's strategic role, which is expected to reduce stock return volatility, is not supported. The government has a high political interest in Indonesian SOEs, so SOEs' risk is higher than that of other companies. In the end, the stock return volatility on SOEs is higher. This finding also in line with China's condition [13].

The limitations of this study are it only uses data for three years and does not test for investor behavior that may affect the stock return volatility. Future research needs to consider the data with a more extended period, and the impact of the behavior of each investor on the stock return volatility.

AUTHORS' CONTRIBUTIONS

Wening Naraswari: conceptualization, writing-original draft, data curation, software.

Viverita: conceptualization, writing, analysis, editing.

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