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An Investigation of Stock Price Predictions on The Holdings of Local and Foreign Investors

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ABSTRACT

This study aims to compare the performance of local versus foreign investors in predicting stock prices. The population of this study includes all stocks listed on the Indonesia Stock Exchange (IDX) by selecting the monthly observation period from August 2019 to August 2022. The sample of this study was shares of companies owned by local and foreign investors obtained by 789 companies. The findings suggest that the increasing ownership of local investors, the share price becomes falling in the future. On the other hand, increased ownership by foreign investors, stock price in the future will increase. The influence of company share ownership by local investors is more dominant than foreign investors in predicting future stock prices.

Keywords: Predicting, Stock Prices, Local and Foreign Investors

1. Introduction

Stock price prediction is a topic that has long been of concern to practitioners and academics. They are trying to forecast future stock price movements. There are two main techniques in predicting stock prices in the future, namely fundamental analysis and technical analysis. The direction of stock price movement in the future is one thing that can be used as a direction for investors to invest in stocks.

There are two groupings of investors in the capital market. First, the grouping of investors based on local and foreign statutes. The second grouping, stock investors are divided into institutional and individual investors. The impact of the presence of local and foreign investors on the stock market has shown that it is important to understand how the relationship arises from the existence of investment activities carried out by local and foreign investors. However, there is still very little research, especially in the Indonesian capital market, regarding how there is share ownership by local and foreign investors, especially the impact on stock prices in the future.

Foreign investors on the stock exchange generally have better stock analysis skills. For this reason, efforts are needed to continue to encourage an increase in the number of domestic investors. The number of Indonesian capital market investors continues to increase, especially during the Covid-19 pandemic. Referring to data from the Indonesia Stock Exchange (IDX), until the end of 2020, capital market investors have increased by 56% from 2019 to 3.88 million investors. In terms of daily active investors, it has also reached 94.7 thousand or an increase of 73% compared to the

previous year. Stock trading in 2020 was also dominated by retail domestic investors, which amounted to up to 48 percent of the total daily trading value. This trend continues until 2021.

According to data from the Indonesian Central Securities Depository (KSEI), as of July 2021, the number of Indonesian capital market investors reached 5,822,870 SIDs (Single Investor Identification), an increase of 50.4% compared to 2020. Meanwhile, when referring to July 2021 data, the number of stock investors recorded in C-BEST increased by 52.77% to 2,589,880 the number of Single Investor Identification (SID) in July 2021 compared to the position at the end of 2020 of 1,695,268 investors. The question is, what is the strength of local investors compared to foreign investors when predicting future stock prices? Looking at the total trades based on the type of investor, domestic investors always record a higher percentage of trades than foreign investors. However, the shares owned by foreign investors are actually in blue chip stocks aka big cap (stocks with a market cap value above Rp 100 trillion). Data on the top 10 big cap scripless stocks from KSEI, 7 non-blue chip stocks are majority controlled by foreign investors. For example, foreign investors own 80.23% of BBCA's scripless shares, while local investors only 19.77%. Likewise with state-owned stocks such as BBRI banking stocks, where foreign investors hold 79.05% of scripless bank shares, while domestic investors own 20.95%. In Bank Mandiri's shares, foreign investors hold 75.35% of scripless bank shares, while domestic investors own 24.65%. Meanwhile, TLKM's telecommunications shares, among foreign investors, hold 72.86% of scripless bank shares, while domestic investors own 27.14%.
Looking at the superior foreign composition, it certainly indicates the magnitude of foreign influence on stock price movements on the Indonesia Stock Exchange (IDX). IDX recorded the contribution of domestic investors to the transaction value on the Indonesian stock exchange almost touching 70% or was in the position of 69.1% as of July 2021. IDX recorded that during the period from January to July 2022, local investors contributed 69.1% of the transaction value on the IDX. Meanwhile, the contribution from foreign investors was 30.9%.
With the increasing number of investors, it is increasingly important for us to understand the investment decisions of investors. This is the basis for the author to classify the types of investors in the Indonesian capital market. The author wants to know how share ownership by local and foreign investors in the Indonesian capital market. Whether their decision to hold shares can predict an increase in stock prices.

2. Literature Review

When making decisions about an investment, investors are faced with a condition to determine which investment choices can provide the return as desired by the investor. Determining an investor's investment choice is influenced by the way investors process the information they have (Sumani et al., 2013). Investment theory states that investors take into account returns and risks in the investment decision-making process (Markowitz, 1959). One of the assumptions underlying this theory states that investors are rational and have homogeneous expectations, or a homogeneous way of thinking in analyzing information. In addition, the stock market is efficient (Efficient Market Hypothesis / EMH). The implication of the EMH is that the price of a security has reflected all the information available to investors in the market and the price of the security in the market is already "fair", so that there is no abnormal return for investors.
In reality there are anomalies that occur in the capital market where there are abnormal returns for some investors. This proves that the price of securities in the market is not "fair". Therefore,

another theory emerged that refutes the supremacy of CAPM theory, namely Behavioral Finance proposed by Shleifer and Summers (1998). This theory states that investors may be irrational, and also have different information processing processes between people, so there is a possibility that investors are wrong in making investment decisions and even tend to be emotional. This indicates the presence of psychological factors that influence the decision-making process in investing.

2.1 Stock price prediction

Prediction is a process of systematically estimating something that is most likely to happen in the future based on past and present information that is owned. This is done so that the error (the difference between something that happened and the estimated result) can be minimized. The share price in the capital market is a consensus among investors. In simple terms, changes in investors' interest in a company's shares are reflected in changes in the price of its shares in the capital market. Before deciding to buy shares, investors need to analyze the shares they will buy. An alternative analysis that is quite widely used is analysis to predict stock prices which investors use to make decisions whether to sell shares or buy shares. Stock price prediction is a process of analyzing and determining the future price of a stock. Stock investors will want high returns. However, investing in stocks in addition to providing high profits also provides high risks also in accordance with the principle of high risk high return.

2.2 Impacts of local and foreign investor on stock prices

Chandra (2010) suggests that the existence of foreign investors on the one hand does have a positive influence because it makes the stock exchange more liquid. On the other hand, the dominance of shareholdings by foreign investors makes the performance of the capital market can be very volatile because there is a potential for withdrawal of funds at any time so that is when the role of local investors is needed. When a foreign investor withdraws his portfolio, then the local investor can also replace his position. However, the reality is that local investors tend to still imitate what foreign investors do. This causes local investors to lose momentum, if foreign investors have bought a type of stock, then it is followed by local investors. Which causes the profits earned by foreign investors to be greater than those of local investors. Ideally local investors who first collect a type of stock rather than foreign investors so that local investors can earn greater profits. When knowing the type of stock chosen by foreign investors, it is expected that local investors can take steps first before being preceded by foreign investors.

The results of previous empirical literature studies conducted by Sumani et al. (2013) found evidence that typical of local investors on the Indonesia Stock Exchange are irrational. They have high self-confidence and tend to have confidence in their ability to predict stock movements through the information they obtain. The results of research conducted by Surasni et al. (2019) found evidence that the presence of foreign investors on the Indonesia Stock Exchange caused price pressure on stock. They explained that foreign investment flows can affect domestic stock prices even if the foreign investors do not have information. Such flows can be driven by foreign investor sentiment that has nothing to do with fundamental factors. This sentiment will cause movements in domestic stock prices, both up and down. The price will reverse after the pressure subsides. Therefore, this price pressure is called a temporary impact.

Contrary to the hypothesis of local information superiority, Albuquerque et al. (2009) developed a theory of equity trading in international markets that is consistent with the idea that foreign

investors have personal information valuable for trading in many countries simultaneously. Foreign investors such as those from America may have a particular advantage in overseas markets over local investors through the global personal information they have obtained in the US market. This is supported by research conducted by Ferreira et al. (2017) which found evidence that foreign investors perform better than local investors.

Foreign investors do have some advantages over local investors. Foreign investors have strong characteristics in funding. Thus, they often act as market leaders because they are able to carry out large amounts of trading transactions. Another characteristic, namely that they are also more aggressive in conducting trade transactions (Agarwal dkk., 2008). On the other hand, the foreign investor may have local private information valuable for trading in many countries (Albuquerque et al., 2009; Liew et al., 2018).

Base-broadening theory reveals that an increase in foreign investors in a country's capital market can have a positive impact which increases demand and liquidity in a capital market (Surasni et al., 2019). This theory reveals that stock prices tend to increase when international investors make stock purchases. The theory behind the base-broadening hypothesis, states that the expansion of the investor base by incorporating foreign investors into the domestic market will cause diversification to increase. This increase in diversification will be accompanied by a decrease in risk because now the risk is not only borne by domestic investors, but also borne jointly with foreign investors (risk sharing). This increase in risk sharing, called the base broadening effect, is a very important theoretical foundation of the advantages of capital market liberalization. Several studies have found evidence of a base-broadening hypothesis, that international investor transactions have a positive impact on stock prices in the country, including research conducted by Warther (1995), Froot et al., (2001) and Naufa et al. (2019).

3. Research Methodology

The research was conducted on all companies listed on the Indonesia Stock Exchange (IDX). Sample selection using purposive sampling method. The study used secondary data including stock price data and data on the company's share ownership by local and foreign investors during August 2019 to July 2022 by accessing on the www.ksei.co.id. Meanwhile, the Jakarta Composite Index (JCI) list were obtained from www.finance.yahoo.com.

The purpose of this study is to analyze the difference in performance between shareholding by local and foreign investors. Furthermore, in studying the difference in predictive power between domestic and foreign ownership using multiple regression. This study runs a regression of stock prices one month ahead (P_(i.t+1)) at the current level of local and foreign ownership:

$$P_{i.t+1} = \beta_1 LOC_{i.t} + \beta_2 FOR_{i.t} + y_1 JCI_{i.t} + \varepsilon_{i.t}$$

Where, $LOC_{i.t}$ is the ownership of shares by local investors, $FOR_{i.t}$ is for the shareholding of foreign investors and $JCI_{i.t}$ is a control variable.

Based on the opinion of Ferreira et al. (2017) mentioned that a higher coefficient for this type of investor indicates the flow of this group of investors better predicts stock returns. They explained that there are two explanations for why a group of investor flows can predict stock returns. The first, known in the literature as an explanation of price pressures, is that investors can generate movements in equity returns that are not related to the underlying fundamentals. The second, which is known as an explanation of the information, is that one group of investors is more informed than the other investors. This group of investors perceives the relevant fundamentals

better than other investors, and engages in buying or selling when they anticipate a movement in these fundamentals. When fundamentals are later revealed, equity prices adjust to their new levels.

4. Results

The research sample consisted of 789 companies with a total of 25,579 data obtained from predetermined purposive sampling. Model feasibility testing uses classical assumption tests, which include heteroskedasticity tests and multicholinearity tests. The test results of both stated that the research model passed both tests.

4.1 Descriptive statistics

Table 1 provides summary statistics on future stock prices local ($P_{.t+1}$), total local and foreign investors (TOT), local investors (LOC), foreign investors (FOR) and Jakarta Composite Index control (JCI) variables. We find that the mean local and foreign investors is 6.400.000.000 billion, with a median of 1.940.000.000 billion. The mean foreign investors is small compared to the mean local investors, 2.200.000.000 billion versus 4.200.000.000 billion. The mean future stock price is 1.448 thousand Rupiah. The mean (median) JCI is 6.040 (6.070).

Table 1. Summary statistics

	Mean	Median	Standard Deviation	Minimum	Maximum	Observation
$P_{.t+1}$	1.448	340	3.795	27	77.950	25.579
TOT	6.400.000.00	1.940.000.00	12.300.000.00	280.893	147.000.000.00	25.579
LOC	0	0	0	5.264	0	25.579
FOR	4.200.000.00	1.280.000.00	8.260.000.000	100	113.000.000.00	25.579
JCI	0	0	6.070.000.000	4.539	0	25.579
	2.200.000.00	233.000.000	722.7639		86.900.000.000	
	0	6.070			7.229	
	6.040					

4.2 Predictive power of domestic and foreign investors

In this section, we examine how future stock prices are related to total, local, and foreign investors using a multiple regression framework. The analysis was conducted on shareholdings by local and foreign investors on the Indonesia Stock Exchange into a panel with 789 companies. Table 2 presents the results of the regression of the stock price one month ahead on the company's share ownership, and JCI as a control variable.

Table 2. Regression of future prices on levels of local and foreign investors

	(1)	(2)	(3)	(4)
TOT	-0.196***			
	(-35.103)			
LOC		-0.253***		-0.311***
		(-52.493)		(-61.855)
FOR			0.030***	0.086***
			(11.513)	(33.226)
JCI	0.696***	0.760***	0.670***	0.820***

	(9.321)	(10.451)	(8.778)	(11.519)
Number of observations	25.579	25.579	25.579	25.579
R-squared	0.049	0.100	0.008	0.1371

We find that the level of total investors predicts negatively one-month-ahead stock prices (column (1)). Next, we compare how local and foreign holdings of investors forecast future stock prices. The result in column (2) and (3) show that local and foreign holdings independently have a negative (positive) relation with future stock prices.

The results in column (2) show that the coefficient on local investor is significantly negative. This suggests that the flow of local investors predicts future stock prices negatively due to the explanation of irrationality, causing local investors to lose momentum, which is in line with the results in Sumani et al. (2013).

The results in column (3) show that the coefficient on foreign investor is significantly positive. This suggests that the flow of foreign investors predicts future stock prices positively due to the explanation of the foreign investor may have local private information valuable for trading in many countries, which is in line with the results in Liew et al. (2017) and Naufa et al. (2019).

When we include both holdings in the same regression (column 4), the coefficient shows that a 1 percentage point increase in the ownership of local investors will lowers the share price one-month-ahead by 31.1%, while the effect for foreign investor ownership will increase the share price one-month-ahead by 8.6%. The coefficient of the control variable shows positive relationship on all models. This proves that the average local investor causes price pressure, while foreign investors have certain trading strategies, such as the base broadening effect.

5. Conclusion

We contribute to the literature by comparing the performance of domestic versus foreign investors holdings during the August 2019-July 2022 period. We found that, on average, foreign investors performed better than local investors. The ownership of local and foreign investors is differently associated with the future stock prices. This research proves the existence of price pressures caused by the trading of local investors. In other words, local investors cause the stock price to move away from its fundamental value. This price pressure will cause the price to reverse back towards the previous equilibrium or also called price reversal. This situation will be favorable for investors who use contrarian trading strategies by looking at transactions made by local and foreign investors. When many local investors transact, the price goes down and when foreign investors start buying because they have local private information then the price will go up.

The suggestion for further research that it's possible to add control variables to the model, with the addition of control variables because the R-squared value is still low. In addition, future research is also expected to increase the period of research and break down investor variables into institutional and individual investor variables. This will be more useful in explaining the strategies used by these investors.

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