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Portfolio ownership in the excess return model at Indonesian stock exchange

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ABSTRACT

This research is intended to analyze and answer the phenomenon of decreasing market return trends which are inversely proportional to Foreign Portfolio Investment (FK), Global Risk (Rwf), Small minus Big (SmB), High minus Low (HmL), Win minus Lose (WmL) as determinant of Foreign Ownership (FO) which has implications for Excess Return (ER) and is the background for this research. This type of research is descriptive quantitative with multiple regression analysis method of panel data using 9 samples from 9 business sectors. This research formula is to maximize the Excess Return value through Portfolio Ownership as an intervening variable using research objects of companies on the Indonesia Stock Exchange. Two research models are integrated into one and each goes through model selection test stages, Chow Test, Hausman Test, and Lagrange Multiplier Test. First result; An increase in FK can explain the impact of an increase in FO, these results confirm the prevailing theory. Other results are not in line with existing theory, namely a decrease in SmB can explain the impact on a decrease in FO, while other exogenous variables Rwf, HmL, and WmL cannot explain the effect on FO. Second result; The increase in HmL, WmL and FO can explain the impact of the increase on ER and apart from that, FO can also explain its function as an intervening variable, while the other exogenous variable Rwf can explain the impact but is not in line with theory because it is negatively correlated. As for the other variables, FK cannot explain their impact on ER. It is hoped that these results can help as a guide for foreign investors on the Indonesia Stock Exchange to get maximum Excess Returns.

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Introduction

The movement of capital turnover between countries in financial markets not only provides a high level of profit, but will also face a level of risk that will always balance it (McLean and Shrestha, 2002). This will act as a stimulant for the inflow of foreign capital which can provide benefits in creating stability in domestic consumption levels and funding real sector activities. In general, capital flows will provide the potential in the form of increasing the amount of savings and investment into the real sector which is often referred to as foreign direct investment, including in Indonesia. The high growth of investment flows will theoretically produce a multiplier effect, especially in the economic sector, especially indirect investment.

The creation of financial globalization is defined by certain measures, one of which is having an impact on capital market liberalization as indirect investment. According to Bandiera, et al (2000), there are two dimensions of financial liberalization, namely the internal sector and the external sector. This can be seen in the banking side and the stock market side. The globalization dimension of the stock market is characterized by the presence of market openness to foreign investors who enter the trading system and securities transactions on the capital market in carrying out portfolio investments or foreign indirect investment. This increase in investment will result in an increase in market demand and have a positive impact on investment returns.

One of the studies on foreign capital flows, including by Michael J (2006), states that emerging market countries have a big role in increasing portfolio investment. The good performance of stock securities and the globalization of capital markets will greatly open up the expected flow of foreign capital and will have an impact on increasing liquidity which has implications for reducing the cost of capital (Bekaert & Harvey, 2000).

The implementation of open economy policies ultimately makes borders between countries seem to be non-existent (Friedman, 1962). One of them is shown with the openness of financial markets to foreign capital flows, as in the explanation of the paragraph above. The Indonesian capital market, as one of the emerging markets which is an investment destination for developed markets, is believed to provide a higher risk premium (Salomons and Grootveld, 2003) so that it will have an impact on the high expected return obtained by investors, but will also have a high level of risk. will face. The performance of stock securities as indicated by the movement of the Composite Stock Price Index (IHSG) since 2005 has shown positive performance, with the exception of 2008, which started with the external financial crisis of one of the European Union countries, Greece. This has a negative impact on index movements in the financial markets and capital markets. In the Indonesian capital market, the JCI again recorded a positive trend by reaching its highest value in 2015.

The improvement in capital market conditions as in the explanation of the paragraph above is closely related to the existence of three forms of investment that move in foreign capital traffic (Edwards, 1999), namely foreign direct investment (FDI), foreign portfolio investment (FPI), or other types of flows . However, there is an interesting phenomenon in 2015 (in the black circle) in Figure 1 (the red graph is market return and the blue is net foreign capital flow) showing that in that year there was a high increase in net foreign capital flow, but very low in market returns. In Figure 2, the relationship between net foreign capital flow (blue) and excess return (black) can be seen more clearly, that the sharp increase in net foreign capital flow was not followed by excess returns. What is actually logical is that a high increase in net foreign capital flow will be able to explain the direct and indirect influence through foreign ownership on excess returns. According to the author, the occurrence of the above phenomenon requires research. As in the previous explanation, Indonesia is an emerging market which will be accompanied by a high level of risk so that it will also be followed by a high expected return in portfolio formation, Markowitz, (1952) and (1991) also have the same results in Salvatore J's research. .Terregrossa and Veysel Eraslan (2016). This relationship between risk and return does not occur in Indonesia.

High foreign portfolio investment theoretically has a negative correlation with the US. Treasury so that it is in the position of figure 1 (black circle) and figure 2 and that will have an impact on high global risk. However, there is another phenomenon, that even though there is high global risk, net foreign capital flow remains high and market returns or excess returns do not change much. What should happen is that global risk will have a direct or indirect impact on excess returns.

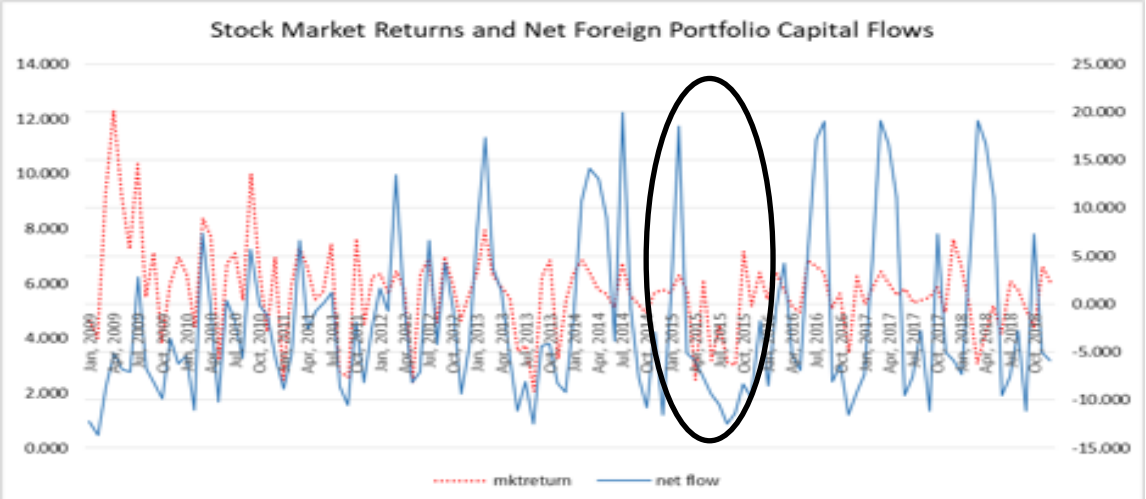

Figure 1. Movement of Market Return and Net Foreign Capital Flow over time
Source: https://finance.yahoo.com/ (data processed)

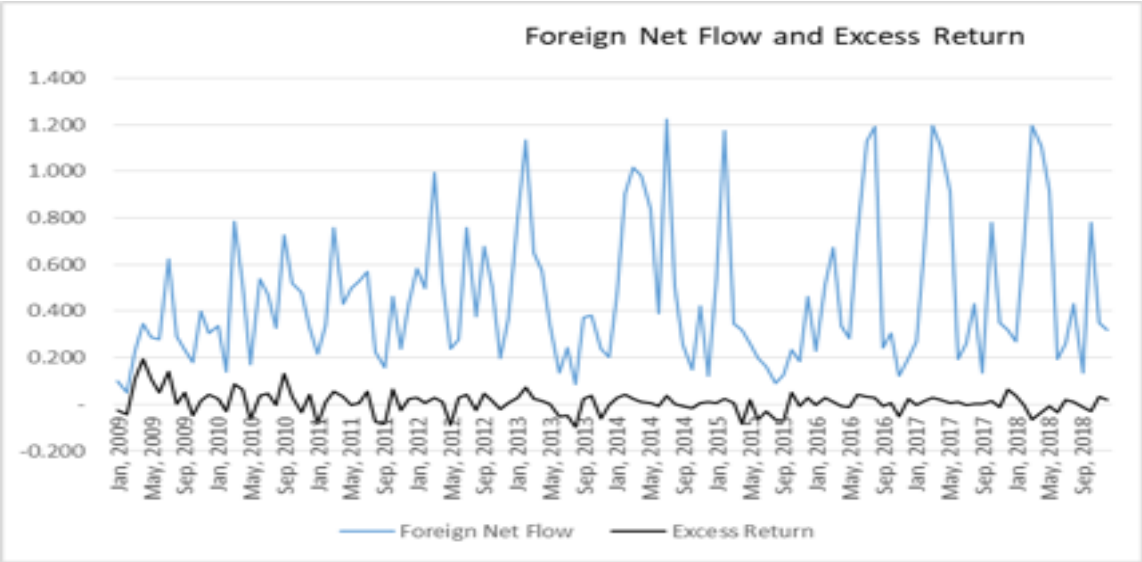

Figure 2. Movement of Foreign Net Flow and Excess Return against time
Source: https://finance.yahoo.com/ (data processed)

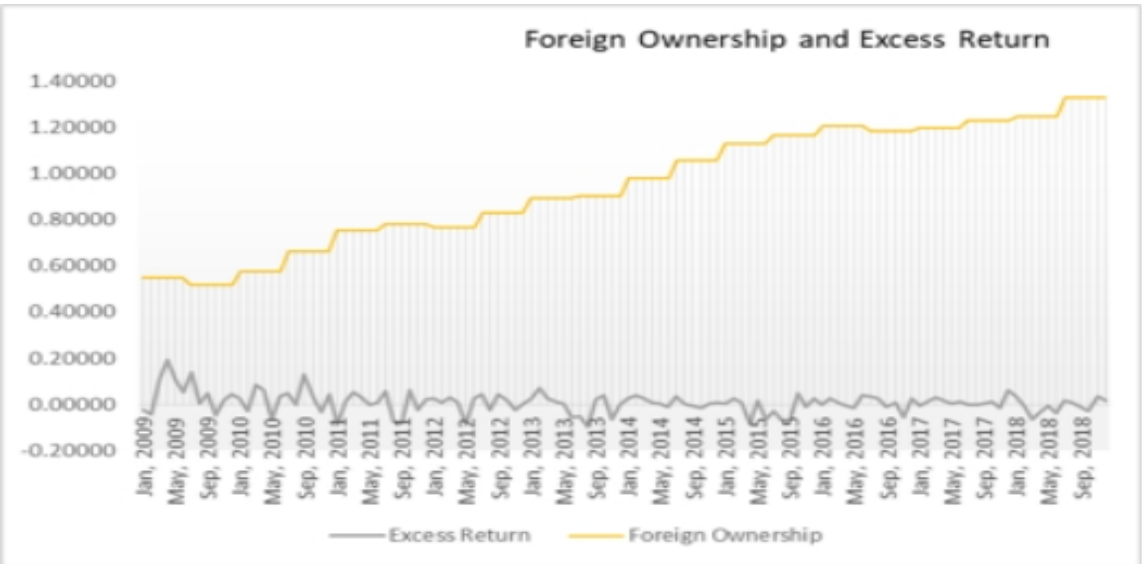

Figure 3. Movement of Foreign Ownership and Excess Return against time
Source: https://finance.yahoo.com/ (data processed)

In Anh Phong Nguyen, et., al (2019), the results of his research show that the higher foreign ownership in a portfolio will have an impact on increasing excess returns and reducing risk in the portfolio. Similar results by Yi-Chein Chiang, and Ming-Han Chan (2017). However, different results were obtained by Jonathan A. Batten, and Xuan Vinh Vo (2015) and these results are similar to what happened in Indonesia as seen in Figure 3 which can be explained that the high level of foreign ownership is not commensurate with the increase in excess returns.

Hardianto and Suherman (2009), Global risk, Foreign capital flows, Foreign ownership and Winner minus Loser (WmL) have an impact on excess returns on shares listed on the Indonesia Stock Exchange. Different results by Yen-Hsien Lee, Tung-Yueh Pai, Ya-Ling Huang, and Yu-Shan Lin (2015).

In Irawan and Murhadi (2012), explained the results that Small minus Big (SMB), High minus Low (HML) can explain the effect on Foreign Ownership (FO) and also on excess returns (ER). But different results were shown by Ozurumba Benedict Anayochukwu (2012), B. Hariprasad (2016).

Excess Return is closely related to the concept of an efficient capital market by Fama (1970) with the explanation that the capital market is said to be efficient if no one, whether individual investors or institutional investors, will be able to obtain abnormal returns after adjusting for risk and using existing trading strategies. .

It can also be said that the prices formed in the market are a reflection of existing information or stock prices reflect all available information.

Another expression states that in an efficient market asset or security prices quickly and completely reflect the available information about the asset or security. There are several forms of efficient capital markets which can be grouped into three, which are often referred to as the efficient market hypothesis (EMH), namely Weak Form, Semi Strong Form, and Strong Form. The development of EMH theory by Fama (1991) was that from the beginning EMH Weak Form developed into Tests for Return Predictability, EMH Semi Strong Form developed into event studies, EMH Strong Form developed into Tests for Private Information.

Bekaert and Harvey (2000), stated that dividend yield is a function of the process of financial market liberalization, and found a relationship that foreign capital flows have an impact on the cost of equity and excess return. Errunza (2001), Proposed results that foreign portfolio investment has an impact on market development, degree of capital market integration, cost of capital, market volatility, market return, Anayochukwu (2012) Foreign portfolio investment has a positive impact on stock market returns on the Nigerian stock market , Tabak (2003) The influx of Foreign Capital Flows into Brazil had a major impact on increasing stock returns and helped increase the efficiency of the country's stock market. Bambang Sutrisno and Rifzaldi Nasri (2018) Research results show that the Fama-French Three Factor Model is a better model compared to CAPM in describing excess returns from stock portfolios in Indonesia. Ozurumba Benedict Anayochukwu (2012) Research results show, among other things, that Foreign Portfolio has a positive and significant impact on stock market returns.

Loncan and Caldeira (2015), Foreign Portfolio has a positive impact on excess returns. The marginal effect of foreign capital has a positive and significant impact on the cyclical consumption, basic materials, industrial goods, public utilities and oil and gas sectors. Yen-Hsien Lee, Tung-Yueh Pai, Ya-Ling Huang, and Yu-Shan Lin (2015) Empirical research results found a positive relationship between volatility-return relations and foreign shareholding with return relations using the concept of the Fama and MacBeth's (1973) model , Fiskara Indawan, Sri Fitriani, Meily Ika Permata, and Indriani Karlina (2013) The test results of this research show that push factors play a role in the behavior of foreign investors.

Patro and Wald (2005), The development of liberalization in the capital market has an impact on returns with conditions such as smaller firms, high book to market value firms, low local beta firms, low foreign exchange beta firms, non manufacturing firms, B. Hariprasad (2016) Research results shows that foreign investors will invest their capital in large firms, high book to market and based on asymmetric information.

Ully Rakhmawati (2015) Of the 4 variables in the model (market risk, SMB, HML, DER), only HML from the Fama and French models influences stock return movements. The Fama and French 3-Factor models provide a good level of stock return for the case of Indonesia, Hardianto and Suherman (2009) Market return, firm size, and book to market ratio have an impact on excess returns on shares listed on the Indonesia Stock Exchange, Irawan and Murhadi (2012) market risk premium, SMB returns, HML returns, and FO on excess returns,

Anh Phong Nguyen, Hoang Anh Nguyen, Thi Hong Minh Ho, and Phu Thanh Ngo (2019) Research results show that higher foreign ownership in one portfolio will have an impact on increasing returns and reducing risk in other portfolios, Nildag Basak Ceylan, Burak Dogan and M. Hakan (2015) Using the three factor model of Fama and French, the resulting research is that there is an influence of market, size and book-to-market factors on excess returns and foreign ownership has a negative effect on variations in excess returns.

One way that foreign capital flows bring benefits to the real sector of the economy is through portfolio investment. The development of capital inflow will encourage stock markets and liquidity (Rasyidi, 2010). Research developed by Poshakwale and Thapa (2010), testing foreign portfolio investment inflows originating from the United States with stock index movements in India, obtained study results using VAR-impulse response function analysis, an increase of 16% of the total incoming foreign portfolio investment. to the Indian stock market and carried out by American investors. This proves that the stock market will respond positively to the influx of foreign investors, which will not only occur in the short term but also in the long term (Indrawati, 2012). Different results by Yen-Hsien Lee, Tung-Yueh Pai, Ya-Ling Huang, and Yu-Shan Lin (2015).

In another study, Chai and Corrine (2008) applied VAR analysis and the Granger Causality test, and used daily data on foreign investor transactions in six Asian capital markets, namely India, Indonesia, Korea, the Philippines, Taiwan and Thailand with the result that there was a causal relationship. between liquidity in the capital market and foreign investors. In simple terms, it can also be stated that although the role of domestic investors is increasing, the role of foreign investors in the capital market has become very interesting to look at. The description above can be reduced to a hypothesis:

(H_1): There is an influence of Foreign Net Capital Flows on Foreign Ownership.

The interpretation of the parameter coefficient β1 which describes the global risk variable will have a partial effect and will have a negative impact on the movement of the percentage of foreign ownership. It can be said that with the condition of the difference between the US treasury bill and international interest rates being greater, it will encourage weakening of domestic portfolio purchases by foreign investors.

In Katti (2014), macroeconomic factors, one of which is pressure on world oil prices as a global risk and foreign investor share ownership will have an impact on the stock market in Indonesia. These external conditions indicate instability in the 2019 time period where the effects of the United States economic conditions could cause pressure on market players including foreign investors. Kim et.al (2010) stated that foreign investors have a strong role in developing countries, but the behavior of foreign investors really pays attention to the power of information and evaluation of global networks (publications). Another researcher, Chynthia Afriani Utama (2012) with the results of her research that the capital market reaction due to the impact of the terrorist attack did not have an influence in H+1 on the proportion of foreign ownership of securities in the Indonesian capital market.

Loncan and Caldeira (2015), Foreign Portfolio has a positive impact on excess returns. Marginal effects from foreign capital have a positive and significant impact on the cyclical consumption, basic materials, industrial goods, public utilities, and oil and gas sectors. Different results in Yen-Hsien Lee, Tung-Yueh Pai, Ya-Ling Huang, and Yu-Shan Lin (2015), empirical research results show positive relationship results but cannot explain the volatility-return relationship and foreign shareholding with returns. relaion which uses the model concept of Fama and MacBeth's (1973), Fiskara Indawan, Sri Fitriani, Meily Ika Permata, and Indriani Karlina (2013), the results of their research show that push factors play a role in the behavior of foreign investors. Some of the descriptions above can enable a hypothesis to be formulated:

(H_2): There is an influence between Global Risk and Foreign Ownership.

In Rhee and Wang (2009), foreign investors are more attractive than domestic investors in terms of price adjustments. Irawan and Murhadi (2012) The dominance of foreign ownership in the Indonesian capital market can be explained by several important points, namely the relatively high preference of foreign investors in the performance of stock portfolios with high capitalization levels being an indicator of increasing foreign portfolio ownership compared to domestic. Research by developing how the impact of proxy size on the proportion of foreign ownership is very limited so it will still refer to the Fama-French approach where the level of capitalization of an issuer with a proxy size as a measure of the level of risk used to see how it impacts the proportion of foreign ownership of securities in Indonesia.

Patro and Wald (2005), Developments in capital market liberalization have an impact on returns with smaller firms, high book to market value firms, low local beta firms, low foreign exchange beta firms, non manufacturing firms, B. Hariprasad (2016) Research results shows that foreign investors will invest in large firms, high book to market and based on asymmetric information. On the basis of the above so that the hypothesis can be formulated:

(H_3): There is an influence between Small Minus Big on Foreign Ownership.

In Fama and French (1996). Companies that have low profits tend to have high book-to-market ratios or can be said to be undervalued, while companies that have high profits tend to have low or overvalued book-to-market ratios. In undervalued conditions, investors consider the company's value to be low, so companies with undervalued conditions have a high risk because investors, both domestic and foreign, will pay attention to the level of stock returns in it. Based on this idea and by constructing the High Minus Low formula with the proxy book to market ratio, the researcher constructs the construction of the impact of High Minus Low on the percentage of foreign ownership, so that the hypothesis can be formulated as follows:

(H_4): There is an influence between High Minus Low on Foreign Ownership.

Jagadesh and Titman (1993) explained that there is an association between momentum and stock performance in the past. Further explanation that stocks that perform well (winners) or badly (losers) will tend to experience significant changes in the next period. Investors will tend to respond positively to stocks that have shown good performance in the past as indicated by buying activity in these stocks. Meanwhile, investors will tend to respond negatively to stocks with poor performance (losers).

To test the momentum factor on the percentage of foreign ownership, the researcher uses the Up Minus Down formulation approach in describing the winner minus loser portfolio performance so that it will be seen whether foreign investors will pay attention or respond significantly to stock portfolios with up momentum or vice versa. On the basis of the explanation above, the hypothesis can be formulated as follows:

(H_5): There is an influence between Winner Minus Loser on Foreign Ownership.

In Irawan and Murhadi (2012), Loncan and Caldeira (2015), Hendra, Murhadi, and Wijaya (2015), the interpretation of the coefficient parameter β6 which describes the net capital flows variable as a partial effect will have a positive effect on portfolio returns.

Rasyidin (2015), Indonesia's economic growth during the 1998 monetary crisis which was getting better, provided opportunities for investors and had an impact on increasing the liquidity of capital inflows. However, on the other hand this will lead to market instability when there is a passive and sudden outflow of capital. Stimulating the movement of foreign net capital flows in the domestic capital market will drive the demand side, where the selection of securities and assets accompanied by risks that may arise will provide a multiplier effect on excess returns.

Referring to Loncan and Caldeira's research (2015), and Errunza and Miller (2000), the results obtained a positive relationship between foreign capital flow and IBOVESPA's (Brazilian's Stock Market) returns. These results are consistent with research by Meurer (2006) which suggests that an increase in foreign portfolio capital flows will encourage an increase in stock market returns and create a long-term balance relationship (cointegration) as well as the results of Tabak's (2003) study. They describe the hypothesis formed between the two variables as the revaluation effect hypothesis which is then formulated as follows:

(H_6): There is an influence between Foreign Net Capital Flows on Excess Return.

In Loncan and Caldeira (2015), the interpretation of the coefficient parameter β7 which describes the global risk variable as an external factor, will have a partial effect on the positive impact on portfolio returns, and if the β7 value is close to one-to-one it indicates an indication of integration. perfect relationship between the stock market and the global stock market. The liberalization of the capital market, the influx of foreign capital will generalize risk sharing between the domestic capital market and foreign capital markets. Several studies that examine foreign capital flows have included additional risk factors in the Arbitrage Pricing Theory model, however, in aggregate, foreign portfolio capital flows cannot be separated from macroeconomic shocks.

Researchers Loncan and Caldera (2015) discuss how the impact of global pressure or global risk that enters through macroeconomic indicators has on excess returns. Christoffersen, Chung, and Errunza (2006) discuss the results of increased returns due to pressure from foreign capital markets. Furthermore, by Franzen et al (2009) by including indicators of exchange rate variation, basic interest rate and country risk in looking at their impact on excess returns. The description above strengthens the formulation of the research hypothesis as follows:

(H_7): There is an influence between Global Risk and Excess Return.

Loncan and Caldeira (2015), Wijaya, Murhadi, and Utami (2017), Interpretation of the coefficient parameter β8 which describes the variable Small Minus Big, then partially will have a negative impact on portfolio returns.

In the Arbitrage Pricing Theory put forward by Ross (1976), it has been discussed that the rate of return of a security is not only influenced by factors in the economy, but also influenced by factors from the industry. Firm size is measured using a proxy market value of a company which can be obtained from calculating the share price multiplied by the number of outstanding shares. This market value is usually known as market capitalization. Market capitalization describes the current value of wealth, or it can be stated that the market capitalization value is the total value of the existing outstanding shares.

Candika (2017) as well as Loncan and Caldeira (2015), that company size has an influence on the rate of return, also by Banz (1981). Companies with small market capitalization will provide greater returns compared to companies with large capitalization. This is because small companies tend to use their profits to expand their business. Small companies will have a higher stock risk. For this reason, in this study using the Carhart (1997) model approach, the size factor for the price of a security uses the small minus big (SMB) value, namely the return of small companies minus the return of big companies. If the SMB value is positive, it will indicate that companies with small firm sizes generate higher returns, as shown by some of the previous researchers. Thus the hypothesis can be formulated as follows:

(H_8): There is an influence between Small Minus Big on Excess Return.

The interpretation of the coefficient parameter β9 is to describe the High Minus Low variable partially having a positive correlation with portfolio returns as shown by Loncan and Caldeira (2015), Wijaya, Murhadi, and Utami, (2017).

Pasaribu (2009) has also conducted tests to compare the Three Factor Model Fama and French with the CAPM in explaining returns. The results of his research are that the Three Factor Model is superior in explaining stock returns compared to the CAPM. Other results also by Irawan and Murhadi (2012), Loncan and Caldeira

(2015) stated the results of the study that the book to market ratio has a positive effect on returns. The results of these explanations can be formulated hypotheses:

(H_9): There is an influence between High Minus Low on Excess Return.

In Candika (2017), the Winner minus Loser variable partially has a positive correlation with portfolio returns. It can be explained that investors will tend to respond positively to stocks that have shown good performance in the past and tend to respond negatively to stocks that have negative returns.

The model developed by Carhart (1997), Winner Minus Loser is the stock portfolio return with winner stocks minus the stock portfolio return with loser stocks. Other researchers also formulate Winner Minus Loser the difference between return winner and return looser. Against this can be formulated the hypothesis as follows:

(H_{10}): There is an influence between Winner Minus Loser on Excess Return.

Wijaya, Murhadi, and Utami (2017), gave the result that the foreign ownership variable partially has a positive correlation with portfolio returns. The value of foreign share ownership is the value obtained from the total shares owned by foreign investors multiplied by the price of each share. Meanwhile, the total value of share ownership is the sum of the value of foreign capital ownership starting after investors are allowed to own shares listed on the IDX (Katti, 2014).

Irawan and Murhadi (2012), explained in their research that it is interesting to know how the tendency of foreign investors with high technological superiority and large availability of funds will be able to influence the stock market in Indonesia. The tendency of foreign investors to transact through large institutions such as hedge funds or investment banks has analytical skills so that every transaction made, both buying and selling, is believed to have the ability to do so. This explanation forms the basis for the following hypotheses:

(H_{11}): There is an influence between Foreign Ownership on Excess Return.

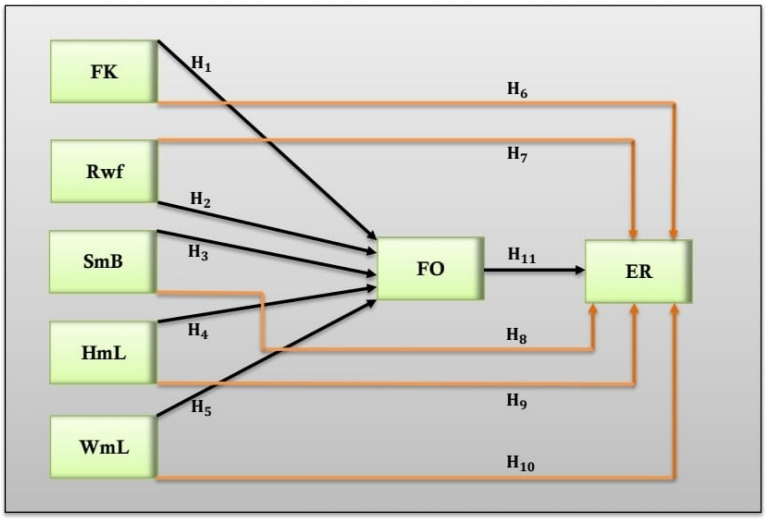

Figure 4. Research Conceptual Framework
Source: Researcher

Method

The approach in this research is descriptive qualitative with a panel data multiple regression analysis method that uses a combination of time series data. The objects in this research are companies listed on the Indonesia Stock Exchange with a population of 613. From this population, researchers used purposive sampling from nine business sectors, namely the various industrial sectors; financial sector; consumer goods industrial sector; basic industrial and chemical sectors; infrastructure, utilities and transportation sectors; trade, services and investment sectors; in the mining sector; agricultural sector; property, real estate and construction sectors. Of the nine business sectors, 9 samples were selected as cross sections with the time series used in the research during the period 2009 - 2018 or 10 years. The sources for obtaining data in this research are as shown in table 1 below.

Table 1. Data Source

No	Data Type	Data Source	Characteristic
1	Composite Stock Index	IDX	Public Access
2	Spread on the interbank deposit rate	Bank Indonesia	Public Access
3	Returns on index S&P 500 minus US Risk Free Rate (Three Treasury Bill)	Bloomberg Yahoo Finance	Public Access
4	foreign capital flows (inflows minus outflows)	Bloomberg & IDX	Public Access
5	Firm Size	Bloomberg & IDX	Public Access
6	Book to Market Ratio	Bloomberg & IDX	Public Access
7	Momentum Up and Down	Bloomberg & IDX	Public Access
8	Foreign Ownership	Bloomberg & IDX	Public Access

Conceptual Variables

Foreign Ownership (FO)

Foreign ownership is the percentage of company share ownership by foreign investors. According to Law no. 25 of 2007 in article 1 number 6, foreign ownership means individual foreign citizens, foreign business entities and foreign governments who invest in the territory of the Republic of Indonesia. Multinational or foreign-owned companies see the benefits of legitimacy as coming from their stakeholders, which are typically based on the home market (the market in which they operate) which can provide a high level of existence in the long term (Barkemeyer, 2007).

Foreign ownership in the company will potentially result in better performance. Besides foreign investors having a level of intelligence in investing, they also have a high level of experience between countries and the various risks they face so that monitoring actions will be more effective, as stated in Porta et al. (1999). Another thing is that large or dominant foreign ownership will encourage a wider level of information disclosure so that it can result in a reduction in agency costs.

Excess Return

Excess return is an important metric and helps investors to measure the performance of their investments when compared to other investment alternatives. In general, all investors hope to get positive excess returns because they provide more returns from the investments they make. Excess stock return is the difference in the average expected return of shares after deducting the risk free rate, where the risk free rate uses the Bank Indonesia (SBI) interest rate.

Foreign Net Capital Flow (Fk)

Foreign capital flow is the flow of capital entering various domestic companies with the aim of strengthening business capital (Todaro & Smith, 2004), and in this research the formula is used as Net Foreign Capital Flow.

Global Risk (excess S&P 500 composite returns) (RwF)

In this study, the variable used to describe external shocks in the difference between the international stock market return value is the S&P 500 Index and the US Treasury Bills interest rate. Briefly, it can be explained that the S&P 500 Index is an index compiled based on the share value of 500 companies with the largest market capitalization on the United States stock exchange and the most widely traded on the US stock exchange, resulting in pressure from the global financial market where the S&P 500 returns are against the US Treasury Bill Rate. A high one will cause fluctuations in returns on the domestic portfolio.

Small Minus Big (SmB)

Company size is a symbol related to the company's opportunities and ability to enter the capital market and other types of financing that indicate the ability to borrow. In Mirawati (2014), company size is a scale where the size of the company can be classified according to various ways, including total assets, share market price, and others. According to Suryanita (2014), company size is a measure that describes the size of a company as shown by the company's total assets. The size of a company will affect the company's ability to bear risks that may arise from various situations faced by the company.

Trisnadewi (2012), believes that large companies have lower risks than small companies, this is because large companies have better control over market conditions, so they are able to face economic competition. In addition, large companies have more resources to increase company value because they have better access to external information sources compared to small companies.

To include the size factor in estimating expected returns, Fama and French (1993) formed a portfolio that represents the influence of the size risk factor which is called the SmB (small minus big) portfolio. SmB is the return on a portfolio strategy that takes a long position on stocks with small market capitalization and takes a

short position on stocks with large capitalization with other factors. The SmB portfolio is designed to measure the additional return that investors receive by investing in small cap stocks.

This additional return is often referred to as a "size premium". SmB is calculated by subtracting the return of small capitalization shares and the return of large capitalization shares from the weighted average book to market so that it is free from the influence of these other factors. Positive SmB calculation results indicate that small cap stocks are better than large cap stocks. The research results of Effendy, M., I, show that the SmB (small minus big) portfolio can explain excess returns.

High Minus Low (HmL)

The book to market ratio is a comparison between the current book value of equity per share and the market value per share. This ratio shows how far a company is able to create company value relative to the amount of capital invested. Trisnadewi (2012), stated that the book to market ratio can be an indicator that the company is undervalued or overvalued. If the book value of a security is smaller than the market value (book to market ratio < 1), then the company's shares are overvalued. Conversely, if the security's book value is greater than the market value (book to market ratio > 1), then the company's shares are undervalued. Sudiyatno (2011), strengthens the evidence that book to market is positively correlated with security returns.

The market views companies with a high book to market ratio as undervalued stocks which are riskier than companies with a low book to market ratio so that investors expect higher returns to compensate for the greater risk. To include book to market factors in estimating expected returns, Fama and French (1993) formed a portfolio that represents the influence of book to market risk factors which is called the HmL (high minus low) portfolio.

HmL is the return on a portfolio strategy that takes a long position on stocks with a high book to market and takes a short position on stocks with a low book to market with other factors. The HmL portfolio is designed to measure the additional return investors receive by investing in shares of companies with high book to market values. This additional return is often referred to as a "value premium". HmL is calculated by subtracting the returns of shares that have a high book to market and the returns of shares that have a low book to market with a weighted average factor size free from the influence of these other factors. Positive HmL calculation results indicate that stocks with high book to market produce better returns than stocks with low book to market.

Winner Minus Loser (WmL)

In Jagadesh and Titman (1993) show that there is an association between momentum and past stock performance. Stocks that perform well (winner) or bad (loser) for three months to one year tend not to experience significant changes over the next period. Investors will tend to respond positively to shares that have been proven to show good performance in the past, as indicated by buying activity on shares that show positive returns, with the hope that these positive returns will continue. Conversely, investors will tend to give a negative response to stocks that have had negative returns in the past.

To test the momentum factor on the price of a security, the Carhart (1997) model uses the WmL or Winner Minus Loser formula. WmL is the return of a stock portfolio with winner shares minus the return of a stock portfolio with loser shares. If the WmL value is positive, it will be in accordance with the momentum phenomenon which states that stock performance that is good or bad for one to three years tends not to experience significant changes (remains good or bad) for the next period.

Operational Variables

Table 2. Operational Variables

No	Variables	Notation	Formulas
1	Net Foreign Capital Flow	FK	Inflow-Outflow
2	Global Risk	R_{wf}	S&P 500 Composite Return – US Treasury Bill Rate
3	Small Minus Big	SmB	$\frac{(\frac{S}{L}+\frac{S}{M}+\frac{S}{H}) - (\frac{B}{L}+\frac{B}{M}+\frac{B}{H})}{3}$
4	High minus Low	HmL	$\frac{(\frac{S}{H}+\frac{B}{H}) - (\frac{S}{L}+\frac{B}{L})}{2}$
5	Winners minus Losers	WmL	Return Winners – Return Looser
6	Foreign Ownership	FO	$\frac{\text{Number of Foreign Investors' Share Purchases}}{\text{Number of shares traded}}$
7	Excess Return	ER	Rata-rata Return Market (R_m) – Suku bunga Bank Sentral (R_f)

Model Selection Test

Formally, there are three model suitability testing procedures that will be used to select the best panel data regression model:

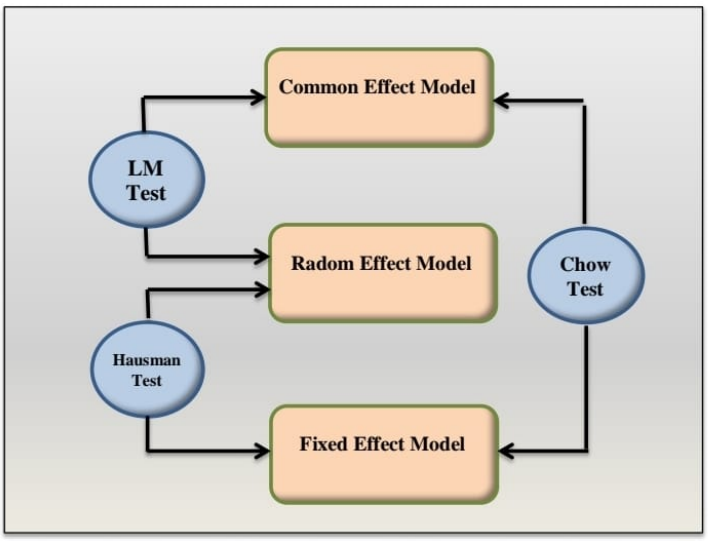

Figure 5. Model Fit Test
Source: Researcher

Panel Data Regression Model

Structural Equation of Research Model 1,

$$FO_{it} = \alpha + \beta_1 FK_{it} + \beta_2 Rwf_{it} + \beta_3 SmB_{it} + \beta_4 HmL_{it} + \beta_5 WmL_{it} + \varepsilon_{it}; \quad \ldots\ldots\ldots\ldots(4)$$
$$i = 1,2,.,.,.,.N ; \quad t = 1,2,.,.,.,.T$$

Structural Equation of Research Model 2,

$$ER_{it} = \alpha + \beta_1 FK_{it} + \beta_2 Rwf_{it} + \beta_3 SmB_{it} + \beta_4 HmL_{it} + \beta_5 WmL_{it} + \beta_6 FO_{it} + \varepsilon_{it}; \quad \ldots\ldots.(5)$$
$$i = 1,2,.,.,.,.N ; \quad t = 1,2,.,.,.,.T$$

Results and Discussions

Descriptive statistics

Table 3. Statistics Description

	FK	Rwf	SmB	HmL	WmL	FO	ER
Mean	9.5609	0.0667	- 0.6902	- 1.8708	- 0.0507	5.88E-05	0.1155
Median	9.6160	0.1143	0.5443	- 1.7388	0.0792	3.40E-05	0.0618
Maximum	10.3770	0.2585	1.0444	- 0.4620	1.1055	0.000387	1.0688
Minimum	8.5683	- 0.2859	- 3.3825	- 5.1692	- 1.5311	4.00E-06	- 0.5739
Std. Dev.	0.3387	0.1452	0.9396	1.0788	0.4817	6.91E-05	0.2957
Observations	90	90	90	90	90	90	90
Cross Sec	9	9	9	9	9	9	9

Source: Data processed

The description of the statistical data shown in table 3 consists of the mean, median, maximum value, minimum value, standard deviation. Researchers perform several data transformations to avoid numerical differentiation between variables that have different units.

Testing the Appropriateness of the Research Model I Foreign Ownership as an Endogeneous Variable
Structural Equation (4) Research Model I

Table 4. Chow Test: Common Effect vs Fixed Effect- The Endogeneous Variable is Foreign Ownership

Effects Test	Statistic	d.f.	Prob.
Cross-section F	15.354242	(8,76)	0.0000

Source: Data processed

Table 5. Hausman Test: Fixed Effect vs Random Effect- The Endogeneous Variable is Foreign Ownership

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	11.592662	5	0.0408

Source: Data processed

Chow Test: Common Effect vs Fixed Effect

Chow-test is carried out using the F statistical test with chi-square test with statistical hypotheses: rejecting the null hypothesis (H_0) and accepting the alternative hypothesis (H_a) at the level of $\alpha = 5\%$, which means the Fixed Effect Model will be better used than the Common Effect Model, and vice versa.

The test results in table-4 will accept the alternative hypothesis (H_a) and reject the null hypothesis (H_0) so that in the Chow-Test it would be better to use the Fixed Effect Model to be used in estimating the panel data regression method.

Hausman Test: Fixed Effect vs Random Effect

The Hausman Test is carried out using a cross-section random effects test or chi-square test with statistical hypotheses: rejecting the null hypotheses (H_0) and accepting alternative hypotheses (H_a) at a level of $\alpha = 5\%$, which means that the **Fixed Effect Model** will be better used than the Random Effect Model, and vice versa.

The test results in table-5 will accept alternative hypotheses (H_a) and reject the null hypothesis (H_0) so that in the Hausman Test it would be better to use the **Fixed Effect Model** for use in estimating the panel data regression method.

Based on the results of the Chow Test and Hausman Test, both of which produced the Fixed Effect Model as the best model choice, so that the Lagrange Multiplier (LM-test) no longer needs to be tested. The conclusion of the best model test results is the Fixed Effect

Testing the Suitability of the Research Model II Excess Return as an Endogeneous Variable

Structural Equation (5) Research Model II

Table 6. Chow Test: Common Effect vs Fixed Effect- The Endogenous Variable is Excess Return

Effects Test	Statistic	d.f.	Prob.
Cross-section F	4.207658	(8,75)	0.0003

Source: Data processed

Table 7. Hausman Test: Fixed Effect vs Random Effect – The Endogenous Variable is Excess Return

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	6	1.0000

Source: Data processed

Table 8. LM Test: Common Effect vs Random Effect -The Endogenous Variable is Excess Return

Null (no rand. effect)	Cross-section	Period	Both
Alternative	One-sided	One-sided	
Breusch-Pagan	**167.8157**	0.000322	167.8161
	(0.0000)	(0.9857)	(0.0000)
***Mixed chi-square asymptotic critical values:**			
1%	7.289		
5%	4.321		
10%	2.952		

Source: Data processed

Chow Test: Common Effect vs Fixed Effect

The test results in table-6 above will accept the alternative hypothesis (H_a) and reject the null hypothesis (H_0) so that using the **Fixed Effect Model** for use in estimating the panel data regression method is better.

Hausman Test: Fixed Effect vs Random Effect

The test results in table-7 will accept alternative hypotheses (H_0) and reject the null hypothesis (H_a) so that in the Hausman Test it would be better to use the **Random Effect Model** for use in estimating the panel data regression method

Lagrange Multiplier (LM-Test) Breusch-Pagan:

Table-8 test results, the probability value of the LM-test Breusch-pagan (0.0000) is smaller than $\alpha = 0.05$ so that it rejects the null hypothesis (H_0) and accepts the alternative hypothesis (H_a), so that it can be interpreted that the **Random Effect Model** is better than the Common Effect Model in estimating the panel data regression method.

Table 9. Endogenous Variable: FO (Model I) - Fixed Effect: Total Panels (balanced) Observations:90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.421766	0.064821	37.36081	0.0000
FK	0.016744	0.006306	2.655176	0.0097
Rwf	0.014628	0.016839	0.868692	0.3878
SmB	-0.013867	0.006024	-2.302007	0.0241
HmL	0.002461	0.005089	0.483695	0.6300
WmL	-0.007248	0.007038	-1.029909	0.3063

Source: Data processed

Table 10. Endogenous Variable: ER (Model II) -Random Effect: Total Panels (balanced) Observations:90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.207119	0.112243	-1.845266	0.0286
FK	0.003354	0.002350	-1.426934	0.0573
Rwf	- 0.042901	0.008537	-5.025523	0.0000
SmB	0.001108	0.002541	0.436062	0.6639
HmL	0.004098	0.002126	1.927303	0.0054
WmL	0.011694	0.003183	3.673811	0.0004
FO	0.050883	0.047143	1.079345	0.0000

Source: Data processed

Research Results Model I and II

Net Foreign Capital Flow (FK) has a significant effect on Foreign Ownership (FO) at the probability level of 0.0097 <0.05, [Table 9].

Global Risk (Rwf) has no significant effect on Foreign Ownership (FO) at the probability level of 0.3878 > 0.05, [Table 9].

Small Minus Big (SmB) has a significant effect on Foreign Ownership (FO) at the probability level of 0.0241 <0.05, [Table 9].

High minus Low (HmL) has no significant effect on Foreign Ownership (FO) at the probability level of 0.6300 > 0.05, [Table 9].

Winners minus Losers (WmL) has no significant effect on Foreign Ownership (FO) at the probability level of 0.3063 > 0.05, [Table 9].

Net Foreign Capital Flow (FK) has no significant effect on Excess Return (ER) at the probability level of 0.0573 > 0.05, [Table 10].

Global Risk (Rwf) has a significant effect on Excess Return (ER) at the probability level of 0.0000 < 0.05, [Table 10].

Small Minus Big (SmB) has no significant effect on Excess Return (ER) at the probability level 0.6639 > 0.05, [Table 10].

High minus Low (HmL) has a significant effect on Excess Return (ER) at the probability level of 0.0054 < 0.05, [Table 10].

Winners minus Losers (WmL) has a significant effect on Excess Return (ER) at the probability level of 0.0004 < 0.05, [Table 10].

Foreign Ownership (FO) has a significant effect on Excess Return (ER) at the probability level of 0.0000 < 0.05, [Table 10].

The test results for Net Foreign Capital Flow (FK) have a significant effect with a positive correlation with Foreign Ownership (FO). This supports the research results of (Rasyidi, 2010), Poshakwale and Thapa (2010) which can be explained that theoretically, the trend of increasing Net Foreign Capital Flow will have an impact

on increasing Foreign Ownership, but it is not certain that they will pursue stock returns as seen in figure 2 and figure 3. If so then they will expect income from dividends. This can be explained by its direct, insignificant influence on Excess Return (ER), so they focus on dividend income but not stock returns which are not optimal in the excess return variable. This result is opposite to the findings in Loncan and Caldeira (2015), as well as Errunza and Miller (2000), Meurer (2006) Tabak (2003). In conditions in Indonesia's emerging market, it turns out that foreign investors, to maximize excess return (ER), must enter through Foreign Ownership (FO), where FO functions within ER.

Global Risk (Rwf) in the results of hypothesis testing shows that this variable has no significant effect on Foreign Ownership (FO). Theoretically, these results are inconsistent with the results of Kim et.al (2010) but support the results of Chynthia Afriani Utama (2012). The capital market and money market theories are negatively correlated so that a decrease in interest rates in the US will have the potential for capital to fly to countries in the emerging market group including Indonesia, ignoring the high level of risk but having a high level of expected return as in Figure 2, high volatility. Foreign Net Flow is with an increasing trend and Figure 3 shows the increasing trend in Foreign Ownership. The results should show a significant effect with a negative correlation shown by Global Risk (Rwf) on Excess Return (ER). This theoretically contradicts the correlative which should be positive which is opposite to the results of Loncan and Caldera (2015), Christoffersen, Chung, and Errunza (2006), Franzen et al (2009). This result can be explained that Rwf cannot explain its influence through FO, but this variable can explain it only directly to ER without going through FO because their investment is in the short term without having to execute ownership.

The test results on the Small Minus Big (SmB) variable show that this variable has a significant effect with a negative correlation with Foreign Ownership (FO). This is theoretically the opposite correlative which should be positive (Fama and French, 1993). although these results are in accordance with the results in Patro and Wald (2005), Hariprasad (2016). The results of this research show that a negative correlation means that foreign ownership is more at the short-term level because, as in the results of Fama and French, one of the factors in the stock pricing model states that small companies will outperform large companies in the long term so that the time span of ownership is also long-term. long. In line with Fama and French, the results of the Small Minus Big (SmB) test show that this exogenous variable has an insignificant effect on Excess Return (ER) where the strategy used is to enter ownership of a group of small companies and this result is the opposite in Candika (2017), Loncan and Caldeira (2015), Banz (1981), Carhart (1997).

High minus Low (HmL) cannot explain its effect on Foreign Ownership (FO), this is theoretically contradictory as in Fama and French (1996). From the understanding of HmL, which is the difference in profits between companies with a high book-to-market value ratio and companies with a low book-to-market value ratio, foreign investors entering Indonesia's emerging markets appear to only focus on saving their investments from the decline in US Treasury interest rates. so that there is no significant execution of company ownership. On the other hand, what happens to the exogenous variable High minus Low (HmL) has a significant effect with a positive correlation to Excess Return (ER). These results support the findings in Pasaribu (2009), Irawan and Murhadi (2012), Loncan and Caldeira (2015). From the results of the two tests above, which are securities that have a high level of volatility, the foreign capital inflow that occurs is not for the long term by means of foreign investment but aims to maximize excess returns.

The results of the Winners minus Losers (WmL) test are unable to explain significantly Foreign Ownership (FO), but can explain excess return (ER). These results are not like the results of Hariprasad (2016), Candika (2017), Carhart (1997). The foreign capital inflow that occurs is using the Return to Buying Winners and Selling Losers strategy (Jegadeesh, N., and Titman, S (1993). Purchases of securities will be made when they have the potential to become winners and will be sold when they have the potential to become Losers.

This research data does not use a time lag between the US Treasury data and the data used from the Indonesia Stock Exchange, but rather at the same time, therefore future researchers are advised to use a time lag. Professional capital market practitioners should observe the strategies used in foreign capital inflow, whether they are dominant over foreign ownership or vice versa. This is very important in relation to portfolio risk so that you can assess whether foreign capital inflow is in the short-term or long-term category.

Conclusions

The results of this research conclude that the influence of Net Foreign Capital Flow and Small Minus Big on Excess Return must be through Foreign Ownership mediation, while Global Risk, High minus Low, and Winners minus Losers influence Excess Return without going through Foreign Ownership mediation. As an implication, Foreign Ownership is the dominant variable with the highest level of sensitivity. This is also a

suggestion for future researchers and especially for professional capital market practitioners regarding the importance of Foreign Ownership as a key variable.

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