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# Foreign Investment and Stock Market Development in Indonesia

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## Abstract

The Indonesian capital market is growing and is significantly influenced by domestic and international macroeconomic factors. Foreign investment is one of the worldwide factors considered to affect the growth of Indonesia's capital markets. The objective of this study is to investigate the impact of foreign investor in term of Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI) on the value of Indonesian stock market capitalization (MarCap). This study utilized a quantitative-descriptive research approach. Annual time series for 21 years starting from 2000 to 2020 of FDI, FPI, and MarCap data utilized. Data processing uses SPSS-25 which includes Classical Assumption Test, Multiple Linear Regression, Coefficient of Determination Test, and t-test. The findings of current study prove that both FDI and FPI have a favorable and statistically significant influence on the development of stock market capitalization in Indonesia. The study implies that the government must formulate regulation which encourages macroeconomic stability and appropriate policies to attract more foreign investors to participate in Indonesia and contribute to the development of the stock market.

**Keywords:** Foreign Investment, FDI, FPI, Capital Market, Stock Market Capitalization.

## Introduction

A robust financial system is one of the key drivers of a country's economic development. Capital markets serve as an essential catalyst for producing long-term financial resources and directing them into profitable ventures (Shahbaz et al., 2013). The stock market is an essential part of the financial system. Its plays an important role in the development of any economy's financial system, and it acts as a platform for funding projects and investments capable of creating jobs, reducing poverty, and driving economic growth (Musa & Ibrahim, 2014). Empirical studies confirmed the positive impact of stock market developments on

economic growth a country (Nieuwerburgh et al., 2006; Uddin et al., 2013; Masoud, 2013; Nyanaro & Elly, 2017; Nordin & Nordin, 2016).

Foreign investment has been the primary source of capital in most developing nations during the globalization era, It has bridged the gap in money, technology, management competence, and a more competitive business climate. Foreign investment is classified into two types: foreign direct investment (FDI) and foreign portfolio investment (FPI). Foreign direct investment (FDI) refers to investment made by foreign parties. FDI is sometimes referred to as direct investment in the form of purchasing or building assets in a linked nation, such as land, products, or a factory. Meanwhile, FPI refers to foreign investor ownership through the purchase of securities on the capital market.

The Indonesian capital market is a growing market that is heavily impacted by domestic and international macroeconomic trends. Foreign investment is one of the global factors believed to impact the growth of Indonesia's capital markets. Several studies have focused on examining the influence of FDI on capital market growth in various nations, including Shahbaz et al., (2013) in Pakistan; Acheampong & Wiafe (2013) in Ghana; Musa & Ibrahim (2014) in Nigeria; Rezagholizadeh et al., (2020) in Iran; Al Samman & Jamil (2018) in GCC Countries; and Chhimwal & Bapat (2020) in India. Meanwhile, research on the impact of PDI and PFI on capital market development in Indonesia remains scarce. This research gap inspired the author to perform the current investigation. The main objective of this study is to investigate the impact of foreign investor in term of FDI and FPI on the development of the Indonesia stock market by applying a multiple linear regression approach.

## Literature Review

### *Foreign Direct Investment (FDI)*

Most developing countries experience a trade balance deficit because the amount of imports is greater than the amount of exports. Financing sources used to meet investment needs, especially domestic savings, will decrease to cover the large deficit. Therefore, to accelerate economic growth, developing countries are needed to explore other sources of development funding. With the influx of foreign capital, especially through Foreign Direct Investment (FDI) activities, it is a very important part of their long-term development strategy. Developing countries utilize FDI to finance development in order to catch up with developed countries, both regionally and globally.

FDI) has a significant impact on national productivity. This is due to the transfer of technology, management, and experience brought by the investing country. This rise in productivity will influence the national economy. High economic growth might entice investors to participate in both the real and capital markets.

The literature has extensive study on the influence of foreign direct investment on stock market development. Shahbaz et al., (2013) concluded their study that the link between FDI and stock market capitalization to GDP ratio in Pakistan is complimentary. The study of (Rezagholizadeh et al., 2020) claimed that FDI and the stock market price and foreign direct

investment have a causal relationship. Another study by (Acheampong & Wiafe, 2013) conclude that the impact of FDI on stock market capitalization in Ghana is positive. Similar study by (Al Samman & Jamil, 2018) reported that FDI affects stock market development positively in GCC countries.

***Foreign Portfolio Investment (FPI)***

Portfolio investment involves investing funds in the capital market in form financial asset or securities such as stocks, corporate bonds, government bonds, derivative, treasurer bills, etc. The International Monetary Fund defined Foreign Portfolio Investments (FPIs) as equities and debt instruments, including country funds, depository receipts, and direct acquisitions by foreign investors with less than 10% control (IMF, 1993). Foreign portfolio investment is one of the components of foreign investment that involves the commitment of funds to domestic securities by a foreign nation or the purchase of foreign securities by a resident (Ezeanyeji & Maureen, 2019).

Foreign portfolio investment may not involve positive transfers, just being a change in ownership. FPI investors often make short-term investments in a foreign country's domestic security with the goal of receiving a return after considering the estimated risk. FPI inflows and outflows occur at the stock exchange. Unlike foreign FDI, FPI is more volatile to the economy since it is easier to sell shares and withdraw funds.

FPI is a significant source of investment inflows for an economy. FPI strengthens the economies of many developing nations. However, the numerous avenues via which investors enter host nations are heavily reliant on location-specific features, which are frequently within the control of host governments and policymakers.

***Stock Market Development***

Various indicators of the stock market's development include the number of firms listed on the stock exchange, the number of investors, the stock market index, market volatility, trading value, and market capitalization. The conventional measure to assess the worth of the company is market capitalization or, more broadly, the wealth generated by a corporation (Almumani, 2018). In the context of stock exchange, market capitalization is defined as the total value of a company's outstanding shares. It is determined by multiplying the current share price by the number of shares outstanding (Haris et al., 2020).

Market capitalization is an essential factor in assessing the size of a corporation. It provides an investor with insight into the company's future potential and whether or not to invest. It also tells us how much an investor is willing to pay for the company's shares (Kumar & Kumara, 2020). Market capitalization is a function of share price, so market capitalization values can vary greatly from month to month, or even from day to day. The higher the share price, the higher the value of market capitalization. Large market capitalization is typically one of the draws for investors when selecting stocks. The higher a stock's market capitalization, the longer investors will retain their shares, since investors believe that large firms are more stable financially, have less risk, and have solid long-term prospects with the potential for substantial gains (Almumani, 2018).

### *Research Framework*

Research framework illustrated in Figure 1.

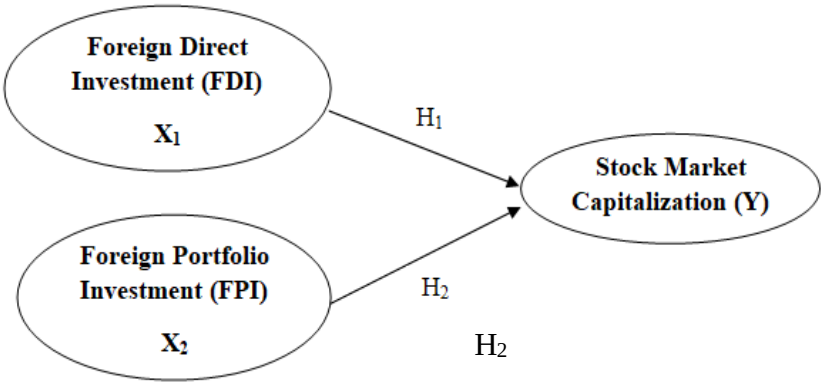


**Figure 1. Research Framework**

### *Hypothesis*

Based on the literature that has been reviewed, the following hypothesis can be developed:

$H_1$ : Foreign Direct Investment (FDI) has a significant effect on Indonesian stock market development (MarCap)

H2 : Foreign Portfolio Investment (FPI) has a significant effect on Indonesian stock market development (MarCap)

## Research Method

### *Research design*

Numerous investigations on the stock market have shown that quantitative statistical methodologies are effective in achieving research objectives. To ensure accuracy and reliability, the factors listed in the study's main purpose are evaluated hypothetically using quantitative analytical methods. We used multiple regression analysis to investigate the correlations between variables. The study's statistical computations were carried out using SPPS-25 software.

### *Data Collection*

This study uses an annual time series for 21 years starting from 2000 to 2020 for FDI, FPI, and MarCap data. Data for FDI is taken from The Global Economy data base through the website https://www.theglobaleconomy.com/Indonesia/fdi_dollars/. Meanwhile, data for FPI and MarCap was taken from the Financial Services Authority report through the website https://ojk.go.id/en/kanal/pasar-modal/data-dan-statistik/statistik-pasar-modal/Default.aspx.

### *Variables of the Research*

The dependent variable in this study is stock market capitalization (MarCap). While the independent variables are Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI). Table 1 summarizes the variables and its measurement.

**Table 1.** Research Variables

| Variables | Definitions | Unit | Scale |
|---|---|---|---|
| Dependent (Y):<br>Stock Market Capitalization (MarCap). | Total value of a company's outstanding shares in Stock exchange | USD Billion | Ratio |
| Independent (X): | | USD Billion | Ratio |
| X1: FDI | Total value of Foreign Direct Investment to Indonesia in | | |
| X2: FPI | Value of shares purchased by foreign investors on the Indonesian stock exchange | USD Billion | Ratio |

### *Research Model*

To examine the association between a dependent variable and one or more independent, the multiple linear regression models is applied in this study. The regression model equation is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \quad \ldots\ldots(1)$$

Where, Y is stock market capitalization (MarCap). $\beta_0, \beta_1, \beta_2$ are respectively the constant and the slope of the independent variables. $X_1$ is Foreign Direct Investment (FDI) and $X_2$ is Foreign Portfolio Investment (FPI).

### *Analysis Techniques*

#### Classical Assumption Test

Before using regression to analyze the data, the classical assumption test must be conducted to ensure that the data used is free of econometric problems. The classical assumption test consists of the normality test, multicollinearity test, autocorrelation test, and heteroscedasticity test.

The normality test is used to determine if the dependent and independent variables follow a normal distribution. In this study, normality was determined by examining the Normal P-P Plot of Regression Standardized Residual. The regression model passes the normality

condition if the normal graph pattern displays point dispersion around the diagonal line and follows its direction.

The multicollinearity test determines if a correlation exists between the independent variables in a regression model. A decent regression model should have no connection between the independent variables. VIF < 10 are often used values to indicate a degree of multicollinearity.

The autocorrelation test is used to determine whether there is a relationship between the confounding error in period t and the confounding error in period t-1 in a linear regression model. When a correlation exists, an autocorrelation problem arises. The Durbin-Watson test was employed in this investigation to detect autocorrelation. The categorization table for d values is used to demonstrate autocorrelation as follows.

**Tabel 2.** Autocorrelation Indicatior

| d value | Interpretation |
|---|---|
| < 1,10 | Autocorrelation exist |
| 1,10 – 1,54 | No conclution |
| 1,55 – 2,46 | No autocorrelation exist |
| 2,46 – 2,90 | No conclution |
| > 2,91 | Autocorrelation exist |

Source: Wijaya (2009)

The heteroscedasticity test determines if there is an inequality in variance between the residuals of one observation and the residuals of another in a regression model. Homoscedasticity occurs when the variance between the residuals of one observation and the residuals of another observation is constant, but heteroscedasticity occurs when the variance is different. A regression model with homoscedasticity or no heteroscedasticity is considered desirable. The plot graph was employed in this investigation to identify heteroscedasticity. There is no heteroscedasticity if there is no discernible pattern and the points on the Y-axis are uniformly distributed above and below zero.

**Multiple Linear Regression**

Multiple linear regression equation describes the relationship between $X_1$ is Foreign Direct Investment (FDI), $X_2$ is Foreign Portfolio Investment (FPI), and stock market capitalization (MarCap) or (Y).

**Hypothesis Test (t-Test)**

A partial t-test was used to examine the hypothesis. The independent variable has a significant influence on the dependent variable when the t statistic is > the t table or the sig value is < 0.05. Otherwise, t statistic < t table or sig > 0.05 indicates that the independent variable has no significant effect on the dependent variable.

**Coefficient of Determination Test**

The coefficient determination (R2) is a measure of the degree of relationship between independent factors and the dependent variable as a whole. The coefficient of determination

ranges from 0 to 1. A low R2 value suggests that the independent variables' capacity to explain the variations of the dependent variable is severely restricted.

## Findings and Discussion

### *The Normality Test*

Figure 2 illustrated the dispersion of points around the diagonal line and follows its direction. Thus, the regression model follows the normality assumption.

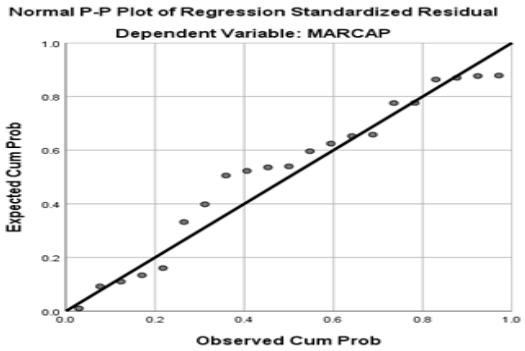


**Figure 2.** Outcome of normality test

### *The Multicollinearity Test*

The outcome of the autocorrelation test which is displayed in Table 3 show that VIF value is 2.580 for FDI and FPI, which is small than 10. It may be inferred that the model has no multicollinearity.

**Tabel 3.** Outcome of Autocorrelation Test

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. | Tolerance | VIF |
| 1 | (Constant | 31.269 | 24.474 | | 1.278 | .218 | | |
| | FDI | 5.799 | 2.238 | .278 | 2.591 | .008 | .388 | 2.580 |
| | FPI | .023 | .003 | .726 | 6.759 | .000 | .388 | 2.580 |

a. Dependent Variable: MarCap

### *Autocorrelation test*

Outcome of the autocorrelation test which is dsiplayed in Table 3 shows that the DW value is 1,985, which is within the range of 1,55 to 2,46. Therefore, the model does not have any autocorrelation.

**Tabel 4.** Outcome of Autocorrelation Test

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .959[a] | .920 | .911 | 55.40234 | 1.985 |

a. Predictors: (Constant), FPI, FDI

b. Dependent Variable: MarCap

### *Heteroscedasticity test*

The scatter plot in Figure 3 shows that the pattern and dots are distributed above and below zero on the Y-axis. As a result, the data does not indicate heteroscedasticity.

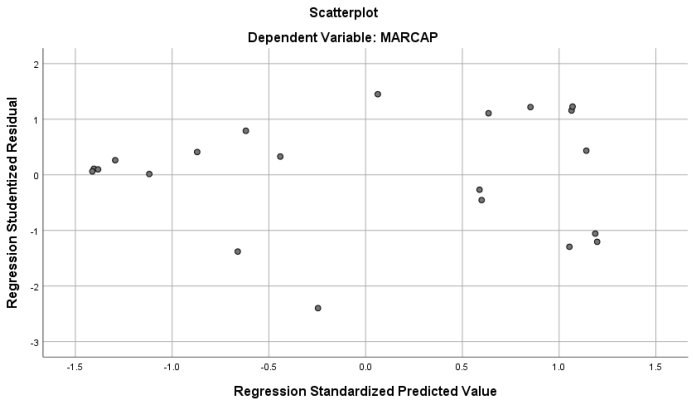


**Figure 3.** Heteroscedasticity Test Results

### *Multiple Linear Regressions and Coefficient of Determination Test*

**Tabel 5.** Outcome of Multiples Linear Regression

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. | Tolerance | VIF |
| 1 | (Constant | 31.269 | 24.474 | | 1.278 | .218 | | |
| | FDI | 5.799 | 2.238 | .278 | 2.591 | .008 | .388 | 2.580 |
| | FPI | .023 | .003 | .726 | 6.759 | .000 | .388 | 2.580 |

a. Dependent Variable: MarCap

Based on result the multiples linear regression displayed in Table 5, the model in this study is is: $Y = 31.26 + 0.79X_1 + 0.023X_2$, This means that if the independent variable of FDI and FPI remains constant, value of Indonesia stock market capitalization is USD 31.2 billion. If the FDI increases USD 1 billion, value of Indonesia stock market capitalization will be

increase as of USD 5.79 billion. If the FPI increases USD 1 billion, value of Indonesia stock market capitalization will be 0.23 billion higher.

Results of the coefficient of determination as presented in Table 6, the value of adjusted $R^2$ is 0.91 or 91 percent. This means that the variable of FDI and FPI explains approximately 91% of the variances or changes in the value of Indonesia stock market capitalization from 2000 to 2022. Other variables outside of this model account for the remaining 9%. Coefficient of determination as of 91% is high. This evidence indicates that correlation between FDI, FPI and value of Indonesia stock market capitalization is strong.

**Tabel 6.** Outcome of the Determination Test

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .959[a] | .920 | .911 | 55.40234 |

a. Predictors: (Constant), FPI, FDI
b. Dependent Variable: MarCap

***Hypothesis Test (t-Test)***

To determine the how is impact of FDI and FPI on the value of stock market capitalization in Indonesia, the value of the t statistic must be compared to the value of the t table. The following formula is used to calculate the t table:

T table = t(a / 2: n-k-1) = t (0.025: 21-2-1) = t (0.025: 18) = 2.101.

**Tabel 7.** Outcome of t-Test

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | 31.269 | 24.474 | | 1.278 | .218 |
| | FDI | 5.799 | 2.238 | .278 | 2.591 | .008 |
| | FPI | .023 | .003 | .726 | 6.759 | .000 |

Table 5 show that the value of variable FDI is 0.008 < 0.05 and t statistic 2.591 is more than t table 2,101. Therefore, we conclude that Foreign Direct Investment (FDI), has significant impact on value of stock market capitalization (MarCap) in Indonesia. Hence, $H_1$ can be accepted. Then, the value of variable FPI is 0.005 is smaller than 0.05 and t statistic 6.759 is more than t table 2,101. Therefore, we conclude that Foreign Portfolio Investment (FDI) has significant impact on value of stock market capitalization (MarCap) in Indonesia. Hence, $H_1$ can be accepted.

***Impact of Foreign Investment on value of Indonesian Stock Market Capitalization***

The Indonesian stock market has experienced significant growth in the last 2 decades. The Jakarta Composite Index (JCI) has reached the level of 6,299 at the end of December 2020

(an increase of 1.413% percent from the position at the end of December 2000, namely 416). Positive achievements are also reflected in the increase in the number of issuers in the Indonesian capital market. The total number of companies that listed their shares on the Indonesian capital market at the end of December 2020 had increased 392% percent to 714 issuers and 145 issuers at the end of December 2000. Meanwhile, according to data from (Indonesia Stock Exchange, 2020), market capitalization at the end of December 2020 reached IDR 6,969 trillion (USD 496.09 billion) or an increase of more than 1,750% percent compared to the position at the end of 2000, namely IDR 259 billion (USD 26.7 billion). The development of Indonesian stock market capitalization is presented in Figure 4.

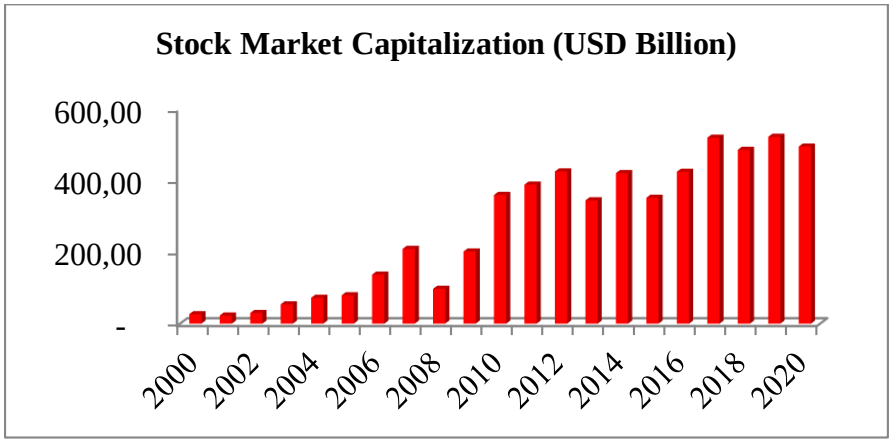


**Figure 4.** Indonesian Stock Market Capitalization 2000-2020

One of the factors that influence the development of the stock market in Indonesia is the entry of foreign investment into Indonesia, both in the form of Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FDI). The research results presented in Table 5 reveal that FDI has a significant impact on the value of stock market capitalization (MarCap) in Indonesia. The results of this research are in line with research conducted by (Acheampong & Wiafe (2013); Topaloglu et al., (2019); Rezagholizadeh et al., (2020); Al Samman & Jamil (2018) who confirmed that FDI had a strong positive impact on stock market development. The entry of foreign capital into the real sector will be able to increase economic growth. Improving economic conditions will increase the level of prosperity of the population, marked by an increase in the income level of the people. Excess funds for consumption purposes can be used to save in the form of savings or invested in securities traded on the capital market. This will provide a positive signal to investors regarding Indonesia, so that investment in the stock market will continue to increase.

Indonesia's improving economic growth has become a driving force for increasing the realization of foreign investment from major countries in the world. In general, the realization of foreign investment in the form of FDI to Indonesia experienced an increasing trend every year during the research period with an average increase of 15%. FDI flows to Indonesia over 21 years are presented in the Figure 5.

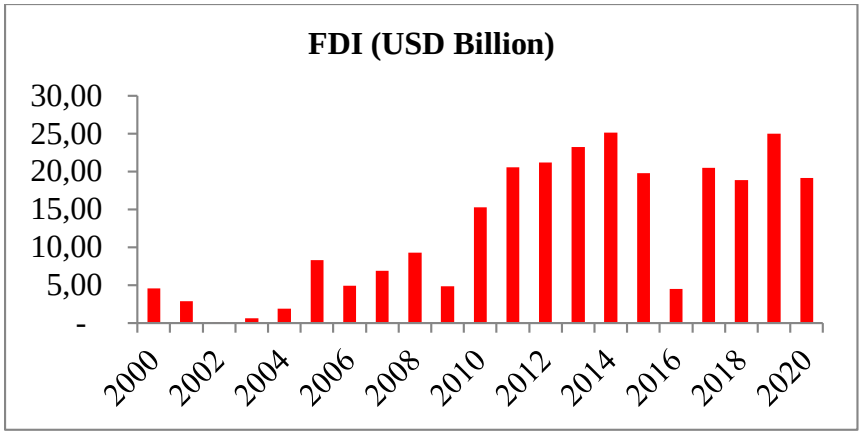


**Figure 5.** FDI Inflow to Indonesia 2000-2020

The study results shown in Table 5 demonstrate that FPI also has a considerable influence on the value of Indonesia's stock market capitalization (MarCap). This result in line with the study of Onyeisi et al., (2016) and Eniekezimene (2013) in Nigeria; Duasa & Kassim, (2009) in Malaysia and Makoni & Marozva (2018) in Mauritius. They argued that the inflow of foreign capital in the form of portfolio investment can increase capital market liquidity in the home country, thereby encouraging the development of the capital market in that country. This suggests that an increase in stock purchases by foreigners will raise the stock market capitalization (Siska et al., 2023). FPI flows to Indonesia over 21 years are presented in the Figure 6.

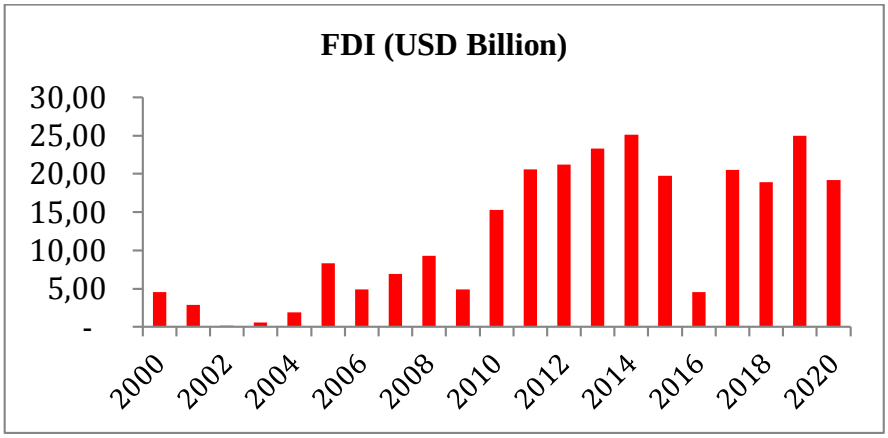


**Figure 6.** FPI Inflow to Indonesia 2000-2020

The impact of foreign investment on the development of capital markets in the form of FPI is greater than the impact of FPI. This is proven by the research results in Table 5, where an increase of USD 1 billion can increase stock market capitalization in Indonesia by USD 5.79 billion. Meanwhile, an increase in FPI of USD 1 billion will increase the value of Indonesia's stock market capitalization by USD 0.23 billion. FPI is one type of investment that has the potential to result in capital outflow. Because FPI investments are more flexible and may be made at any time, creating opportunities in the stock market (Siska & Arigawati, 2019).

## Conclusion

Based on research findings, it can be concluded that the two independent variables, namely Direct Investment (FDI) and Foreign Portfolio Investment (FPI) have a statistically significant positive impact on Indonesian stock market capitalization (MarCap). This study is limited to two independent variables which are thought to influence stock markets. It is recommended that further studies examine the impact of other variables on capital market developments such as trade balances, trade opens, etc.

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