THE EFFECT OF INFLATION, INTEREST RATE, EXCHANGE RATE, CORRUPTION PERCEPTION INDEX, AND TRADE OPENNESS ON FOREIGN DIRECT INVESTMENT IN 6 ASEAN COUNTRIES

Fiona 1), Nasar Buntu Laulita 2)

1,2) Universitas Internasional Batam, Batam, Indonesia

Corresponding author: fionazhou15@gmail.com

Abstract

Every country faced economic instability during the COVID-19 pandemic. Despite the economic instability, some discovered that the number of foreign direct investment inflows increases in most of ASEAN countries. This phenomenon makes investors hard to predict the level of foreign direct investment within the region. The purpose of this research is to understand which are the variables that may have impact on the inflows of foreign direct investment, specifically in ASEAN countries. Therefore, the research is conducted in 6 ASEAN countries that contribute the most to the overall foreign direct inflows in ASEAN from the year 2002 to 2021. This research uses a quantitative approach with panel data regression analysis. This research is tested in both Evirews 12. The result shows that inflation and interest rates don't affect foreign direct investment inflows significantly in the 6 ASEAN countries, whereas exchange rate, corruption perception index, and trade openness have a significant effect on foreign direct investment.

Keywords: Foreign Direct Investment Inflows, Determinants, ASEAN Countries

Introduction

Economic growth is the main indicator of building prosperity in society (Rahmawati et al., 2021). Growth rates in an economy can provide insight for an investor regarding how good the prospects are for making investments. With a decrease in economic growth, investors will reduce their investment activities in an economy (Silvia et al., 2013).

The same measurement to assess the economic growth of each country can use Gross Domestic Product (GDP). According to the International Monetary Fund (2017), the calculation of GDP consists of several components, such as consumption expenditure (both from the public, non-profit organizations, and the government), Gross Fixed Capital Formation (GFCF), changes in inventories, and the difference from export-import of products and services. The increase or decline of GDP is influenced by those components.

However, economic growth in the world has been below expectations for the past three years (International Monetary Fund, 2022). The high cost of living, tightening financial conditions in many parts of the world, Russia's invasion of Ukraine, and the multi-year COVID-19 pandemic have made it difficult for the world economy to recover to previous levels. According to the International Monetary Fund, global growth is expected to slow for the next year: dropping from 6.0% for the year 2021, continued by 3.2% and 2.7% for 2022 and 2023 respectively. These global growth predictions will be the weakest economic growth since 2001, aside from the global financial crisis in the year 2008 and the peak of COVID-19 pandemic in the mid 2020. The ASEAN-5 countries (including 5 first countries who first established the union) also experienced a -2.1% drop in 2020’s GDP compared to the previous year (The Economic Research Institute for ASEAN and East Asia (ERIA), 2022).

ERIA in early 2022 also predicts that economic growth in ASEAN-5 will experience a surplus increase of 5.8%. However, most of the surplus experienced is contributed by investment. Investment can be split into two types, specifically government investment and private investment (from within and outside the country). Investment is the main contributor in the economic growth of a region, as it can maintain the country's Balance of Payment (BoP). A large portion of investment in a country's economic growth is foreign direct investment to maintain the country's BoP. Therefore, countries in ASEAN should prioritize foreign direct investment for shared economic growth over the next few years.

Instability in the economic world will increase the risk in investing, especially foreign direct investment. Investors will consider the level of risk by analyzing economic factors in a place before investing (Aksa and Wijayanti, 2022; Yuwono and Elmadiani, 2021). However, according to Alaydrus (2020), economic instability in the world has affected investors' intention to invest in foreign countries, with a 30% decrease in global foreign investment.

Amidst this economic instability, some foreign direct investments in ASEAN have increased. According to the statistics by ASEAN Statistics Division (2022) in Figure 1, foreign direct investment inflows in Brunei, Myanmar, and Lao PDR increased from 2020 to 2021. Several other countries such as Singapore, Indonesia, Malaysia, and the Philippines experienced an increase from 2020 to 2021. This is related to foreign investors' interest in the ASEAN region as a region with many developing countries that offer more economic growth than developed countries (Rahmawati and Makalawe, 2021). With this phenomenon, it can be said that
ASEAN has a different case of foreign direct investment movement from countries in other regions (United Nations Conference on Trade and Development, 2022).

![Figure 1. Foreign Direct Investment Inflows in ASEAN Countries in 2020-2021 (in million USD), Source: ASEAN Statistics Division (2022)](image)

The uniqueness of the phenomenon makes the level of foreign direct investment in ASEAN countries difficult to be predict by investors. Foreign direct investment is one of the many unit in GDP that will affect the country's economy. Not only that, investment is one of the components that is key to economic recovery and towards a higher economy, as written in the ASEAN Statistics Division report (Wee and Paulino, 2022).

Foreign direct investment in ASEAN countries in 2021 was led by several major countries, namely Singapore, Indonesia, Malaysia, Vietnam, Thailand, and the Philippines, which took 96.67% of the total foreign direct investment in ASEAN. The rest of the countries only account for 3.33% from the overall foreign direct investment inflows in ASEAN. Therefore, there are 6 countries who contributed the most or significantly to the foreign direct investment inflows in ASEAN.

Based on previous research conducted by Bitar et al. (2020), foreign direct investment was not significantly affected by inflation in Lebanon in 2008-2018. On the other hand, Chamisa (2020) found that inflation has a significant influence on foreign direct investment in 15 countries included in The Southern African Development Community (SADC). Both studies were conducted in developing countries but showed different results.

In the research of Putri et al. (2021) in Indonesia, foreign direct investment was also significantly affected by interest rates from 1994-2019. However, according to Astuty and Siregar's research (2018) in Indonesia, interest rates in Indonesia significantly affected foreign direct investment in the 1998-2015 period. Although the time researched is not much different, the research results from both parties are different.

Latief and Lefen (2018) researched 7 countries in South Asia on how foreign direct investment is affected by exchange rates in some of these countries. The results found were that the exchange rate has a significant influence towards foreign direct investment in the seven countries, with different positive and negative effects. Meanwhile, in Adebayo and Gambiyo’s (2020) research in Nigeria, foreign direct investment was not significantly affected by the exchange rate.

In Chamisa’s research (2020), it was found that the Corruption Perception Index (CPI) value had a significant influence towards foreign direct investment in 15 SADC countries. However, in a study conducted by Drajat (2022), corruption has no significant effect on foreign direct investment in 10 countries in the Southeast Asian region. Drajat mentioned in his research that although the level of corruption is often considered a negative action in the economy, corruption can make it easier for investors to avoid delays in their business processes.

In a study by Razak et al. (2018), trade openness did not have a significant impact towards foreign direct investment in 6 ASEAN countries from 2001 to 2016. However, according to research by Chandra and Handoyo (2020) in 31 Asian countries from 2002 to 2017, trade openness do have significant and positive impact on foreign direct investment. The two studies in the ASEAN region produce different opinions.

**Literature Review**

Foreign direct investment is the act of investors investing capital to another country, either into private capital or state capital (Astuty, 2017). In developing the economy in a country, foreign direct investment is an important component because it can help in the transfer of capital between countries, increase job vacancies, and transfer technology from one country to the destination country (Dewi, 2016). Therefore, foreign direct investment is a major role, especially in developing countries and many countries see foreign direct
investment as an essential in economic growth (Rafat and Farahani, 2019). By developing foreign direct investment in a country, it can increase the domestic market share’s attractiveness (Sahiti et al., 2020).

Inflation is an overall rise in prices and a continuous decline in the purchasing value of money (Anindita et al., 2021; Curatman, 2010; O’Neill et al., 2017). The inflation rate is generally seen through the consumer price index (CPI) and the value will be compared to the difference from year to year. When there is a rapid increase in the inflation rate in a country, it can be said that the economy in that country is experiencing instability and the government is considered unable to balance the economy in Indonesia (Putri et al., 2021). Investors will also be hesitant to invest their money in a country that has macroeconomic instability (Syarkani, 2021). Inflation in a country can trigger an increase in the price of raw materials which will affect production costs in a business process, so that companies will have difficulty in determining product costs and prices (Silvia et al., 2013). Not only that, the value of money invested in the country will experience erosion of investors’ money (Batubara et al., 2022).

According to Andrianto et al. (2019), interest rates are additional costs that must be paid from borrowed funds. Sartika et al. (2019) state that interest rates function to attract the attention of individual and organizational savers to invest, as a tool to regulate direct funds in the economic sector, control the supply and demand for money circulating in society, and regulate the inflation rate in a country. Interest rates are an important factor in determining savings decisions in the future (Chandra and Handoyo, 2020; Putri et al., 2021). When interest rates in a country increase, there is a high probability that investors will put their business funds into savings or deposits rather than other investment instruments (Fatia et al., 2021). Synchronously, the interest rate will influence the amount of interest costs that must be paid when investors borrow money from banks (Chandra and Handoyo, 2020).

According to Arifin and Wagiana (2009), the exchange rate is the comparative value of a currency against another currency. The exchange rate can be divided into two, namely the buying rate and the selling rate. The buying rate is the rate requested by the currency buyer, while the selling rate is the rate offered by the seller to the buyer of the currency. The exchange rate is a fluctuating value, so in general the exchange rate data taken is the average exchange rate. Just like inflation, exchange rates can also make it difficult for investors to estimate the costs to be incurred and the return on capital to be obtained when investing in other countries (Putri et al., 2021). In the past few decades, the volatility of exchange rates has affected investment decisions and profits in various companies due to the uncertain cost of raw materials if the raw materials are imported from other countries (Latief and Lefen, 2018). When the local currency depreciates, production costs will decrease and foreign investors will wait for the opportunity to put in more funds to increase production at that time (Setyadharma and Fadhilah, 2021).

According to Drajat (2022), many people have the perception that corruption may harm economic activity and this is shown from the results of data analysis, where countries that have a high CPI have increased investment and a weak economy. Corruption is an additional expense that must be paid by companies or investors for income tax and other costs (Chamisa, 2020). Previous studies by Nairobi and Afif (2022) and Setyadharma and Fadhilah (2021) found that foreign direct investment is impacted significantly and positive by CPI. However, Chamisa found that not all countries with low CPIs have greater foreign direct investment. Instead, certain countries with high CPIs also have high foreign direct investment, such as Russia. Karim et al. (2019) and Drajat (2022) also have the same thought, where corruption can make it easier for foreign investors to do things smoothly in business. This makes foreign direct investment significantly and positively impacted by CPI.

Trade openness is how active an economy is in maintaining the outflow and inflow of trade (Fujii, 2019). Generally, trade openness can add value to products produced in a country, because they can import good raw materials and exported products get additional value from this (Lien, 2021). According to Chandra and Handoyo (2020), the value of trade openness in a country can give an idea of how open the country’s economy is to outside countries. An investor not only considers the ease of exporting products but also importing quality products to improve the quality of products that may not be found domestically (Setyadharma and Fadhilah, 2021). By looking for countries with good trade openness, it can also improve business efficiency and attract foreign investors. Trade openness is the result of the calculation of a country’s exports, imports, and GDP. The calculation of trade openness can be done using the following formula: Trade Openness = (Export + Import)/GDP

Methods
This research uses quantitative approach, where quantitative approach is the type of data collected in a form that can be calculated and processed using statistical calculations (Yusuf, 2014). This study analyzes the effect of inflation, interest rates, exchange rates, Corruption Perception Index (CPI), and trade openness on foreign direct investment in ASEAN member countries. With cross-sectional and time series data analysis, the research method of this study uses panel data regression analysis. The software to be used is Eviews 12.

The data used in this study is secondary data, and the data can be obtained from Transparency International and the World Bank’s website from the year 2002 to 2021. The criteria for sample selection in this research are that the country’s inward FDI need to have significant effect to overall inward FDI for ASEAN. The sample selection process in this study is detailed in the table below:
Table 1. Research Sample Selection

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countries registered in ASEAN until 2022</td>
<td>10 countries</td>
</tr>
<tr>
<td>Countries that do not meet the criteria</td>
<td>4 countries</td>
</tr>
<tr>
<td>Countries that are sampled</td>
<td>6 countries</td>
</tr>
<tr>
<td>Year of research</td>
<td>20 years</td>
</tr>
<tr>
<td>Total data used as research sample</td>
<td>120 data</td>
</tr>
<tr>
<td>Total data not available in the source</td>
<td>4 data</td>
</tr>
<tr>
<td>Total data used as research observation</td>
<td>116 data</td>
</tr>
</tbody>
</table>

From Table 1, it can be seen that the total data in this study is 120 data. However, there are some independent variable data that are not recorded by the World Bank, so the final observation data used is 116 data. Therefore, this study then uses unbalanced panel data.

Conceptual Framework

Hypotheses

Hypothesis 1: Inflation affects foreign direct investment significantly.
Hypothesis 2: Interest rate affects foreign direct investment significantly.
Hypothesis 3: Exchange rate affects foreign direct investment significantly.
Hypothesis 4: Corruption Perception Index (CPI) affects foreign direct investment significantly.
Hypothesis 5: Trade openness affects foreign direct investment significantly.

Result and Discussion

In this study, the Chow test and Hausman test are needed to ascertain whether research model used is the common effect model, fixed effect model, and random effect model. The results obtained in the Chow test and Hausman test both show that the appropriate model to use in this study is the fixed effect model.

Table 2. Goodness of Fit Test Result

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>R-squared</th>
<th>Adjusted R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Direct Investment</td>
<td>0.740957</td>
<td>0.716286</td>
</tr>
</tbody>
</table>

The adjusted R-squared value of this model is 0.716286, where it means that the 5 independent variables can explain the dependent variable (foreign direct investment) by 71.63%, and other variables that are not included in this research model may explain the remaining 28.37% that is missing.

Table 3. F Test Result

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Prob(F-statistic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Direct Investment</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

Table 3 shows F test result, where Prob(F-statistics) is 0.000000. Therefore, it can be concluded that all the 5 independent variables in this research simultaneously affects foreign direct investment significantly. Hence, this model can be used to predict foreign direct investment.
The results of t-test are shown in Table 4. The results concluded that H1 and H2 are not supported, whereas H3, H4, and H5 are supported. Each of the hypothesis’s explanation will be elaborated by the following.

It is found that the inflation variable has P-value of 0.7203 and a coefficient of -1.66E+08. Since P-value for inflation shows a number more than 0.05, hence it concludes that inflation does not affect foreign direct investment in a significant way. Therefore, H1 is rejected in this study. In other words, the increase or decrease of inflation in 6 ASEAN countries will not affect the amount of foreign direct investment. This can happen because the increase or decrease in inflation in the sample countries is not drastic, so foreign investors do not care much about inflation. Not only that, foreign direct investment is a long-term investment, so reducing their business activities in a short period of time to avoid inflation is not realistic for investors. Moreover, inflation rates in ASEAN countries are at a normal level, so investors do not need to worry about it. The results of this test are in line with research conducted by Adebayo and Gambiyo (2020), Chamisa (2020), Moustafa (2021), and Karim et al. (2019) previously, which stated that inflation has no significant effect on foreign direct investment.

In interest rate variable, P-value showed the number 0.1501 and a coefficient of -5.00E+08. As the P-value exceeds 0.05, therefore it concludes that interest rate does not affect foreign direct investment in a significant way. Therefore, H2 is rejected in this study. This variable has a relationship with the inflation variable, where the real interest rate is a pure interest rate calculation by considering inflation in a certain period of time, and so the both variables will be interrelated. In addition, the trend of interest rates from year to year shows a constant number, in contrast to foreign direct investment which has significant changes. Therefore, this result is supported by research done by Chandra and Handoyo (2020), Latief and Lefen (2018), Astuty and Siregar (2018), and Sasana and Fathoni (2019). In their research, they found that foreign direct investment does not affected significantly by interest rate.

As for exchange rate variable, it had a P-value of 0.0002 and a coefficient of 3.68E+06. Since the P-value shown is less than 0.05, hence it concludes that exchange rate does affect foreign direct investment significantly. In other words, the rise and fall of a country's currency has a significant effect on foreign direct investment. It is affected in a positive way since the coefficient shows a positive value, which indicates that investors are more likely to invest in the country when the exchange rate weakens. When the exchange rate of a currency rises, foreign investors will benefit more when the currencies are exchanged into that currency will have more value than before. With more value, they are more likely to be able to obtain more products or services than when the exchange rate depreciates. Therefore, this result is in accordance with researches conducted by Batubara et al. (2022), Astuty and Siregar (2018), Polyxeni and Theodore (2019), and Razak et al. (2018), where foreign direct investment is affected significantly by exchange rate, and H3 is accepted in this study.

In the test results conducted, it is found that the CPI variable has a P-value of 0.0255 and a coefficient of -7.54E+08. The test results indicates that CPI variable has a negative significant effect on foreign direct investment because the P-value is less than 0.05 and the coefficient has a negative value. In other words, the CPI value in a country will significantly affect foreign direct investment. The coefficient in this test result is negative, which indicates that if the CPI of a country is lower, then the investor's desire to invest in that country is higher. Investors who want to run a business in a new country will face various problems, ranging from licensing, payment, and other bureaucracy. When these problems are not resolved promptly, they face the risk of greater losses. Taking such actions allows them to streamline their business processes. Therefore, this result is supported by previous studies conducted by Chamisa (2020) and Fazira and Cahyadin (2018), where foreign direct investment is affected negatively and significant by CPI. In other means, H4 is accepted in this study.

Lastly, it was found that the trade openness variable had a Prob. 0.0000 and a coefficient of -2.65E+10. The numbers indicate that trade openness variable has a significant effect on the foreign direct investment variable because P-value is smaller than 0.05. In other words, the value of trade openness in a country will significantly affect foreign direct investment. The coefficient on the test result is negative, which shows that the lower the trade openness in a country, the more foreign direct investment inflows are likely to happen in that country. Foreign direct investment and export activities have one identical characteristic, where both activities enter a new country to start business activities. If a company has difficulty exporting its goods to the country, then another option that can be done by investors is to make foreign direct investment, either alone or in collaboration with local companies with joint-ventures or alliances. The results of this study show that foreign direct investment can be a substitute for import and export activities. Therefore, the results of this
test are in accordance with researches conducted by Hintošová et al. (2018) and Thanh et al. (2019) where trade openness has a negative significant effect on foreign direct investment, and H5 is accepted in this study.

Conclusion
The results obtained in this study are as follows: inflation and interest rates do not affect foreign direct investment significantly in 6 ASEAN countries; whereas exchange rate, corruption perception index, and trade openness do affect foreign direct investment significantly in 6 ASEAN countries. Inflation and interest rates are two variables that relate closely in the economy, hence one result with another will be similar. Investors can keep a close eye on the decline and incline of exchange rates, corruption perception index, and trade openness throughout the year to decide on whether they want to do foreign direct investment within a specific country of the ASEAN region. However, there are still other factors aside from the variables in this study to be taken into consideration and could be taken into another study in the future.

References