DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN MALAYSIA

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ABSTRACT

Foreign Direct Investment (FDI) occurs when one country invests in another. Multiple factors have contributed to fluctuations in FDI flows globally. This study investigates the impact of the macroeconomic variables on FDI in Malaysia. Data were collected for the period of 30 years from 1992-2021 and analysed using Multiple Linear Regression models. The study's findings concluded that gross domestic product (GDP), inflation (INF), real interest rate (RIR), trade openness (TRA), unemployment rate (UNE) and exchange rate (EXC) are six major macroeconomic variables impacting FDI inflows. Results of the study reveal that gross domestic product (GDP), inflation (INF) and exchange rate (EXC) are positively related to foreign direct investment (FDI). This suggests that a robust domestic economic output, moderate inflation rates, and favourable exchange rates serve to attract foreign investment. However, the study reveals that the real interest rate (RIR), trade openness (TRA) and unemployment rate (UNE) are negatively related to foreign direct investment (FDI). Overall, this study contributes valuable insights into the intricate relationship between macroeconomic variables and FDI inflows in Malaysia, shedding light on how different economic factors collectively shape the investment landscape of the nation.

Keywords: Foreign Direct Investment, Malaysia, macroeconomic variables, Multiple Linear Regression

1.0 INTRODUCTION

Malaysia is a compelling example of a nation that has used foreign direct investment (FDI) to power its transformation into a vibrant and competitive global economy. FDI is crucial to the economic growth and development of nations around the world. Malaysia, a country in Southeast Asia, has carefully positioned itself as a desirable location for foreign investors by using its wealth of resources, advanced infrastructure, and pro-business laws. A key component of Malaysia's economic strategy over the last few decades, FDI has made major

contributions to job growth, technology transfer, and general industrial advancement. FDI inflows and economic growth, particularly in emerging nations, have been linked favorably in numerous studies. FDI is an investment that entails the transfer of capital from the home country to the host country based on an individual's or a nation's economic interests abroad (Markusen & Maskus, 2002). FDI, which also refers to cross-broader investment that directly involves in everyday operations of enterprises, typically takes place when a developed country invests in a developing one. It consists of specific international business transactions and foreign monetary flows.

In undeveloped nations, technological advancements have had a significant impact on economic growth and development (Sikder et al., 2022). The amount of FDI that enters a nation is regarded as a crucial indicator of that nation's economic globalization and integration into the larger global economy. Malaysia must embrace economic development if it hopes to survive. The expansion of Malaysia's economy depends on foreign investment. According to Asiedu (2002), developing countries have low domestic savings rates for investment; hence foreign investment is essential. Inflows of foreign direct investment into Malaysia are at all-time highs. It is intuitive that FDI should flow into countries with relatively stable economic conditions and strong institutions, and that investors should be concerned about political instability, inflexible regulations, and poor development indicators among prospective workers (Walsh & Yu, 2010). FDI provides emerging nations with skills in addition to finance and technology. These ended up assisting countries in growing faster by meeting the country's needs. The strong growth performances experienced by Malaysia's economy greatly depend on the FDI. FDI generates economic growth by increasing capital formation through the expansion of production capacity, promotion of export growth and creation of employment in Malaysia (Awan et al., 2014).

Figure 1 shows that in the past four years before 2021, Malaysia's FDI attractiveness had been declining substantially, which was only further worsened during the COVID-19 pandemic. It was pointed out by the Malaysian Investment Development Authority (MIDA) that the severe drop in net FDI inflows was the result of unstable politics, and non-transparent and inconsistent policies, causing the foreign investors' confidence to diminish. Moreover, uncertainties caused by the pandemic and the global political situation created a gloomy investment landscape worldwide, including in Malaysia. Fortunately, those days might now be left behind, as Malaysia experienced a strong positive increase in FDI inflows in 2021. Malaysia's impressive achievement in reattracting foreign investment has stemmed from several factors. Malaysia has benefitted from the recovery of global FDI flows as countries started to reopen borders after months of lockdown. The Malaysian government's relief from pandemic containment measures at the beginning of 2021 also helped to bring FDI flow into the country. Furthermore, strong governmental support with clear investment promotion policies and implementations plays a vital role in FDI attraction (ARC Group, 2022).

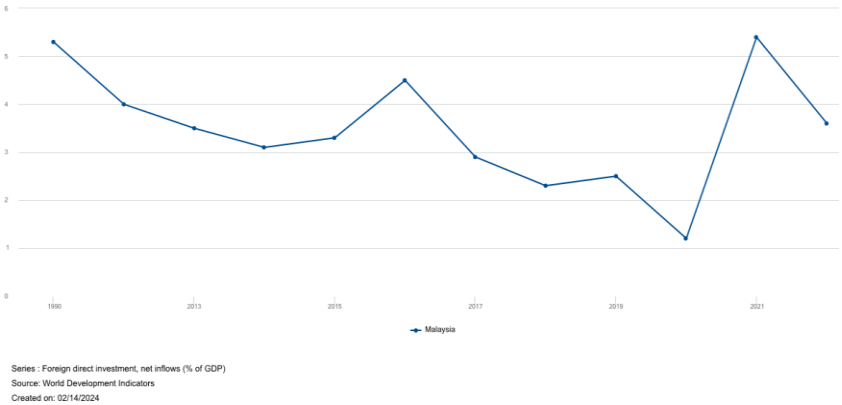

Fig. 1 *Foreign Direct Investment, net inflows (% of GDP)*

This study aims to investigate the effect of independent variables namely, gross domestic product (GDP), inflation (INF), real interest rate (RIR), trade openness (TRA), unemployment rate (UNE) and exchange rate (EXC) on the dependent variable which is foreign direct investment (FDI). The remainder of this study is arranged as follows; next section 2 reviews the previous related literature specific to the variables, followed by section 3 explains the conceptual framework and hypotheses, section 4 explains the data and methodology then section 5 discusses the empirical results and discussion, and lastly it concludes the study with recommendation in section 6.

2.0 LITERATURE REVIEW

2.1 Foreign Direct Investment (FDI)

FDI is one of the main instruments for worldwide economic integration. Firms view overseas expansion as a necessary step to achieve more effective access in the markets where they presently have low representation. FDI involves the inflow of real investments such as capital, technology, and expertise, which is typically done by multinational corporations (Rashid et al., 2023). FDI inflows impact employee income distribution in developing countries as it is very active in attracting multinational companies to invest in their country. FDI does not only create an expansion of capital, but it transfers the technology and skills to developing countries. Investments often lead to increased trade flows indicating that trade flows and investments are complementary (Hailu, 2010). FDI has always been the main source of financing a country's economic activities. National policies as well as global investment architecture influence the attraction of FDI to a larger number of developing countries and hence affect the ability of a country to get full FDI benefits for development. However, developing countries have been experiencing a decrease in FDI inflows over the years. For instance, between 2016 and 2020, FDI inflows in developing countries decreased by 42 percent (Gam et al., 2023). Therefore, developing countries are required to establish an effective, transparent and broad favourable policy environment for purposes of investment and to create institutional and human capacities to execute them. Therefore, macroeconomic factors play a key role in attracting FDI inflows. Various macroeconomic elements differ with time and impact practices, outputs as well as economic processes in an economy and hence they are key to investment decisions.

2.2 Gross Domestic Product (GDP)

Since economic indicators have policy implications, they have been widely researched across economies and rich literature is available to provide the right context to take the research in the field forward. The researchers have reviewed the related literature from the perspective of drivers of economic growth, the importance of FDI in economies of different types and the linkages between FDI and GDP growth rate. A study by Ang (2008), found that a positive role of GDP growth rates and a larger local market in Malaysia drew more investors, which in turn encouraged FDI into the country. Fan et al. (2020) examined the impact of the drivers of economic growth in developing countries and found that the growth rate of per capita GDP was linearly dependent on technological progress, gross capital formation, the initial level of output per capita, labour productivity growth and human capital formation. Hobbs et al. (2021) based on Albania, revealed a strong positive relationship between the FDI inflows and the GDP for a period from 1995 to 2012. The finding is also consistent with Irungu (2020) and Bosire (2020) who reported that GDP had a positive effect on FDI. Therefore, a high GDP and strong economic growth rate remain necessary conditions for Malaysia to attract FDI inflows. However, contrary to Zaharudin and Jalil (2022), discovered that FDI had a considerable negative influence on GDP, with an increase in FDI causing a decrease in GDP. It demonstrates that obtaining greater foreign investment will hinder Malaysia's economic growth.

2.3 Inflation Rate (INF)

There are several reasons why the dynamic interaction between FDI and inflation must be studied. Khan et al. (2023) stated that in both developed and developing countries, policymakers pay attention to achieving high sustainable economic growth with low inflation and it is also used as a poverty reduction strategy. The rate of low inflationary pressure is considered a symptom of economic stability found internally in the host country. Mustafa (2019) mentioned that the rate of low inflationary pressure in a country leads to an increase in the rate of return received from FDI. Asbullah et al. (2022) found that inflation can have negative results on FDI. Higher inflation may cause the return of FDI to be lower. The study by FoEh et al. (2020) revealed that the inflation rate has a significant effect on foreign direct investment. According to Abdul Rashid et al. (2017) the impact of inflation has a positive impact on FDI. Ramlan et al. (2021) study about the impact of economic growth, inflation rate and exchange rate on foreign direct investment in Malaysia. The study found that inflation has a positive strong relationship with FDI by 0.378 at a 1% significant level.

2.4 Real Interest Rate (RIR)

The interest rate is the rate that is charged or paid for the use of money or more precisely the cost of borrowing. Also, the real interest rate in the host economy which captures the host country's return on investment is an attractive factor for FDI. Ha and Choi (2019) investigate the determinants of FDI in OECD countries and find a positive relationship between interest rates and FDI. According to their empirical analysis, higher interest rates can draw in more FDI. This result lends credence to the notion that FDI flows can be impacted by real interest rates. The research of Faroh and Shen (2015) on the Sierra Leone economy using data between 1985 and 2012 found that the impact of high interest rates is not significant in explaining the variability of FDI flows. This means that a high-interest rate is not a key factor in attracting foreign firms and FDI in Sierra Leone.

2.5 Unemployment Rate (UNE)

The unemployment rate is defined as the percentage of the unemployed workforce. It's a lagging indicator, which means it increases or falls in response to economic changes rather than forecasting them. When a job is scarce, and the economy is under poor influence, unemployment increases. It is predicted to decline when the economy grows at a good pace and employment is plentiful. Further, the study by Gupta and Singh (2016) also shows a negative and significant relationship between the unemployment rate and FDI inflows in the case of Brazil, Russia, and India. This may mean that workers are putting more effort in to keep their jobs and thus willing to work for a lower wage rate which in turn is attracting more foreign players to invest in Russia and India. However, the study done by Paul et al. (2021) discovered that the unemployment rate had a significant and positive relationship with FDI in all models except the generalized method of moments (GMM) model.

2.6 Trade Openness (TRA)

The openness of an economy is a key factor that determines the extent of import and export relationships a nation will have with another (Asiedu et al., 2004). Openness is important not only for exports but also imports as many investors require intermediate inputs imported from other countries. It is generally accepted that greater openness in trade provides new investment opportunities and strengthens the link between domestic and international markets. Tintin (2013) stated that the ratio of trade (export + import)/GDP is often used as a proxy of trade openness and expected a positive relationship between trade openness and FDI inflow. Babatunde (2011) examines the role of the interaction between trade openness and infrastructural development in the attraction of FDI in SSA countries. The results indicate that trade openness and infrastructural development encourage the inflow of FDI in the sample

of countries and that there is a positive and statistically significant relationship between the interaction of trade openness with infrastructural development and FDI.

2.7 Exchange Rate (EXE)

Foreign direct investment (FDI) flows are heavily influenced by exchange rate fluctuations. When a country's currency depreciates or loses value to another country's currency; this could influence foreign direct investment (FDI) and discourage foreigners from making international investments. If a foreign investor's objective is to trade in the host country's market by supplying substitute products, in this case, the rise in the exchange rate will attract FDI because the exchange rate increase leads to the higher purchasing power of the host country, therefore foreign investors may take the opportunity to expand their business at the host country (Lily et al., 2014). Several studies have examined the relationship between exchange rates and FDI, focusing on factors such as exchange rate volatility, trade openness, GDP, and other macroeconomic variables. The study done by Mohamad et al. (2023) discovered that the exchange rate, exports, and political stability have a negative relationship with the level of FDI in developing countries. Kiyota and Urata (2004) found that exchange rate volatility has a positive impact on FDI. They analyzed FDI from the United States to various countries and observed that all estimated coefficients of exchange rate volatility were positive. Similarly, Lefen (2018) concluded that exchange rate volatility negatively affects FDI, using the GARCH model. They also identified a direct relationship between exchange rate, trade openness, and GDP with FDI.

3.0 CONCEPTUAL FRAMEWORK AND HYPOTHESES

Figure 2 displays the proposed research framework which consists of dependent variables (foreign direct investment) and six independent variables (gross domestic product, inflation, real interest rate, unemployment rate, trade openness, and exchange rate).

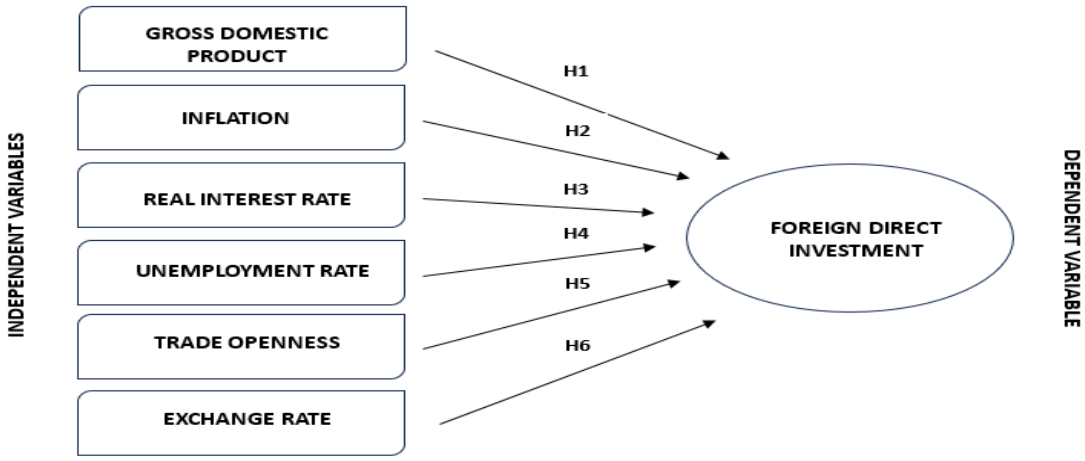

Fig. 2 *Research Framework*

Based on the framework, research hypotheses have been developed as follows:

H1: There is a significant relationship between gross domestic product and foreign direct investment.
H2: There is a significant relationship between inflation and foreign direct investment.
H3: There is a significant relationship between real interest rates and foreign direct investment.
H4: There is a significant relationship between the unemployment rate and foreign direct investment.

H5: There is a significant relationship between trade openness and foreign direct investment.
H6: There is a significant relationship between exchange rates and foreign direct investment.

4.0 DATA AND METHODOLOGY

The present study is based on the compilation of secondary data that was gathered from a variety of sources due to the variety of independent variables that were examined. The data used in this study are the annual data for the time series and the dependent dan independent variables were observed on an annual basis for 30 years, from 1992 to 2021. Time series data is a collect the value observations collected by variables over time (Gujarati & Porter, 2009). The collected data is used to identify significant determinants of FDI. The data of variables are collected from the United Nations Conference on Trade and Development (UNCTAD) Statistics, Department of Statistics, Ministry of Finance Malaysia, Economic Report, Bank Negara Malaysia, World Bank Indicator, and DataStream. The data is analyzed using EViews 10 software and methodologies such as descriptive statistics, Pearson correlation analysis, and multiple linear regression analysis. Descriptive analysis will be the first analysis used to describe the basic features of this study's data. It provides simple summaries of the sample and the measures. Next, the correlation test is also conducted to examine the correlation among the variables studied. Lastly, multiple regression analysis provides a means of objectively assessing the degree and the character of the relationship between the independent variables and the dependent variable. The regression coefficient indicates each independent variable's relative importance in predicting the dependent variable (Sekaran & Bougie, 2013). The multiple regression model used in this study to find the relationship between variables is shown in Eq. (1).

$$FDI_t = \alpha + \beta_1 GDP_t + \beta_2 INF_t + \beta_3 RIR_t + \beta_4 UNE_t + \beta_5 TRA_t + \beta_6 EXE_t + \varepsilon_t \quad (1)$$

Where FDI inflow is the dependent variable at time *t*; α is the constant represents the slope; β_1 to β_6 indicate the coefficients of each independent variable, measuring the changes in the dependent variable; GDP, INF, RIR, UNE, TRA, and EXE represent the independent variables at time *t*; Ɛ is the error term or residual value. The following section explains the results and discusses the implications of the findings.

5.0 EMPIRICAL RESULTS AND DISCUSSION

5.1 Descriptive Statistics Analysis

Table 1 shows the results of the descriptive statistics. The table summarizes the mean, maximum, and minimum data including the standard deviation, skewness, and kurtosis of each variable tested for the period from 1992 to 2021. Because of the outcomes appearing in Table 1, the mean for all variables is positive ranging from 2.4737 to 169.1667. This indicates that the distribution of data for all the variables appears to be skewed to the left. The dispersion of the data is reflected by the measure of standard deviation. All the variables are spread within the range of 0.4223 to 32.2758. The trade openness (TRA) variable recorded the highest at 32.2758 while the unemployment rate (UNE) was the lowest at 0.4223. In terms of skewness, gross domestic product (GDP), inflation (INF), trade openness (TRA), and exchange rate (EXC) are negatively skewed at 1.5967, 0.0136, 0.0316, and 0.4715 respectively while for the other variables, they are positively skewed. The Kurtosis results for the real interest rate (RIR), trade openness (TRA), and exchange rate (EXC) show that the variables are measured as a platykurtic distribution with a value of less than 3, at kurtosis values of 2.7663, 1.6043, and 2.3161 respectively. The platykurtic distribution is represented with less peak in the mean and thinner tails compared to the normal distribution. Meanwhile, the leptokurtic distribution was reflected in the foreign direct investment (FDI), gross domestic

product (GDP), inflation (INF), and unemployment rate (UNE) with the values of 3.2715, 5.6187, 3.1154, and 4.2113 respectively, which is more than 3. This indicates that the distribution of the data has fatter tails and sharper peaks compared to the normal distribution.

Table 1. Descriptive Statistics

	FDI	GDP	INF	RIR	TRA	UNE	EXC
Mean	6.9370	5.0952	2.4737	3.2366	169.1667	3.3707	3.5354
Median	5.1599	5.5291	2.2910	3.3500	170.0000	3.3550	3.7000
Maximum	18.5956	10.0027	5.4408	11.8000	220.0000	4.5400	4.4845
Minimum	0.1146	-7.3594	-1.1387	-3.9000	117.0000	2.4500	2.5265
Std. Dev.	4.2877	4.0304	1.4502	3.6614	32.2758	0.4223	0.5512
Skewness	0.7542	-1.5967	-0.0136	0.0486	-0.0316	0.3529	-0.4715
Kurtosis	3.2715	5.6187	3.1154	2.7663	1.6043	4.2113	2.3161
Observations	30	30	30	30	30	30	30

5.2 Correlation Analysis

Correlation may be defined as the linear relationship between two variables and the evaluation of the strength of the linear relationship using available statistical data. Table 2 shows that foreign direct investment (FDI) is positively correlated with the gross domestic product (GDP), inflation (INF) and exchange rate (EXC). Meanwhile, foreign direct investment (FDI) has negative correlations with the real interest rate (RIR), trade openness (TRA) and unemployment rate (UNE), respectively, where the correlation is seen as quite weak. From the observation, the probability value between real interest rate (RIR) and foreign direct investment (FDI) was 0.0025 means that there is a significance as the value was below 0.05. We also concluded that the probability value of 0.0000 indicates that there is a relationship between trade openness (TRA) and foreign direct investment (FDI) because the value is less than 0.05.

Table 2. Results of Pearson's Correlation Test

Variables	Correlation	Probability
FDI, GDP	0.1517	0.3037
FDI, INF	0.0582	0.4727
FDI,RIR	-0.5074	0.0025*
FDI,TRA	-0.6116	0.0000*
FDI,UNE	-0.0869	0.2069
FDI, EXC	0.2104	0.5009
*Denotes 5% significant level		

5.3 Multi-collinearity Analysis

The multi-collinearity test was conducted as robustness based on the variance inflation factor (VIF), which measures how much the variance of the estimated regression coefficient is inflated when the independent variables are correlated. However, there was no serious multicollinearity problem among predictor variables as shown in Table 3. The value of all Variance Inflationary Factor (VIF) is less than 10 and the tolerance values are greater than 0.1 for all variables (Hair et al., 1998).

Table 3. Variance Inflation Factors (VIF)

Variable	Centered VIF
C	NA
GDP	1.614253
INF	1.435820
RIR	1.322961
TRA	1.110570
UNE	1.234201
EXC	1.858269

5.4 Multiple Regression Analysis

In the current study, multiple regression analysis was performed to evaluate the relationship between the independent variables to justify the dependent variable. Based on the regression analysis result shown in Table 4, the real interest rate (RIR) has a negative and significant relationship with the foreign direct investment (FDI). In other words, a lower real interest rate (RIR) is associated with a higher likelihood of foreign direct investment (FDI. This finding supports Suhendra et al. (2022) who noted that real interest rate (RIR) also has a negative significant relationship with foreign direct investment (FDI). The results also reveal that trade openness (TRA) affects the foreign direct investment (FDI) inflow negatively as opposed to the theory, which suggests that the higher the level of openness, the less likely it is to attract foreign direct investment (FDI) in the long run. This finding is in line with a study done by Rathnayaka Mudiyanselage et al. (2021). As a result, the null hypothesis must be rejected and changes in the real interest rate (RIR) and trade openness (TRA) will affect foreign direct investment (FDI) significantly. However, the gross domestic product (GDP), inflation (INF), unemployment rate (UNE) and exchange rate (EXC) are found to be an insignificant determinant in influencing the foreign direct investment (FDI) as the p-value is more than 0.05. As a result, the null will not be rejected and changes in those variables will not influence the foreign direct investment (FDI).

The R^2 value is 0.703869 indicates that 70.3869 percent of the variation in the dependent variable, FDI, is jointly explained by the variability of the six independent variables whilst the remaining 29.6131 percent is explained by other factors that are not included in the study. Meanwhile, the *p*-value of the F-statistic, which is less than a 5 percent significance level, indicates that the six selected independent variables in the regression strongly fit the model and can be used to predict the FDI inflow.

Table 4. Results of Multiple Regressions

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	24.97217	8.351823	2.990027	0.0065
GDP	0.161358	0.153369	1.052087	0.3037
INF	0.293491	0.401978	0.730117	0.4727
RIR	-0.518234	0.152839	-3.390725	0.0025*
TRA	-0.089920	0.015886	-5.660463	0.0000*
UNE	-1.662470	1.279909	-1.298897	0.2069
EXC	0.822863	1.203140	0.683930	0.5009
R-squared	0.703869			
Prob. (F-statistic)	0.000037*			
*Denotes 5% significant level				

6.0 CONCLUSIONS

The findings of this study indicate that real interest rate (RIR) and trade openness (TRA) have a negative and significant effect on foreign direct investment (FDI). These results signify that an increase in the RIR and an increase in the TRA trigger a decline in foreign direct investment. A negative significant relationship between the RIR, TRA, and FDI in Malaysia could carry noteworthy and multifaceted implications for the country's economic landscape. These results have been consistent and support the results of previous studies (Suhendra et al., 2022 ; Rathnayaka Mudiyanselage et al., 2021).

A lower real interest rate usually signals a more favourable investment environment by reducing the cost of capital, which, in turn, could attract foreign investors seeking higher returns. However, a negative correlation may suggest that other factors, such as economic uncertainties, regulatory hurdles, or global market conditions, play a more dominant role in influencing foreign direct investment inflows than the interest rate alone. Policymakers may need to carefully assess the contributing factors, considering the country's economic context, to formulate targeted policies aimed at enhancing the overall investment climate and ensuring alignment with broader economic development goals.

If increased trade openness coincides with reduced foreign direct investment, policymakers may need to examine whether certain trade policies or regulatory environments deter foreign investors from establishing a physical presence. This scenario may prompt a re-evaluation of the coordination between trade and investment policies, ensuring that they complement rather than hinder each other. The findings may also underscore the importance of addressing sector-specific dynamics or mitigating barriers that hinder the synergy between trade and investment. Strategic adjustments in policy frameworks could be necessary to attract and sustain foreign direct investment inflows, contributing to Malaysia's overall economic development and global competitiveness.

In summary, the macroeconomic environment in Malaysia plays a crucial role in determining the level of foreign direct investment inflow. Stability, growth, and favourable government policies are key factors that can positively influence foreign investors' decisions to invest in the country.

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