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## Determinants Foreign Direct Investment (FDI) Inflow in ASEAN-8

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### ABSTRACT

Foreign Direct Investment (FDI) is the foreign investment which has more advantages than portfolio investment, because there are transfer of technology and transfer of knowledge. The purpose of this research is to analyze the effect of exchange rate, human capital, and economic growth on FDI inflows in ASEAN-8 period 2010-2019. By using panel data regression (FEM), the results showed that economic growth, human capital, and the exchange rate has a significant effect on FDI flows in ASEAN-8 countries.

**Keywords:** Foreign Direct Investment (FDI), Exchange Rate, Human Capital, Growth  
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## INTRODUCTION

Globalization in an economic sense indicates the opening of a country's economy to international trade and foreign investment. One form of foreign investment is Foreign Direct Investment. FDI is an international flow of capital in the form of direct investment, such as factory construction, purchases of capital goods, land, raw materials, and so on, which are carried out by other countries in the investment recipient country (Tiwari & Mutascu, 2011). Therefore, FDI is not only a transfer of resources, but also the imposition of control over companies abroad.

Southeast Asia, with a large population and low production costs, is one of the factors that attract foreign investors to invest in the region. The flow of FDI in ASEAN member countries which provides the largest contribution to FDI flows in Asia. However, the dominant contributor to the value of FDI in ASEAN is Singapore (above 50%) (Erfani & Berger, 2020). Therefore, there is a gap between the amount of FDI entering Singapore and ASEAN-8 countries (Indonesia, Malaysia, Philippines, Thailand, Vietnam, Laos, Cambodia, and Brunei Darussalam) which only contribute around 1-15%. This makes each ASEAN-8 country create a conducive investment climate policy to attract more foreign investors to have FDI equivalent to that of Singapore.

To assist the government in formulating policies to attract investors, it is necessary to take a deeper look at the development of FDI inflows in ASEAN-8, by knowing several factors that influence it, both from internal (human capital, economic growth) and external (exchange rate stability). The increasing flow of FDI in ASEAN countries cannot be separated from the high rate of economic growth in each country. This occurs when the higher the economic growth of a country, the greater the people's income which can increase the demand for goods and services,

the increase in demand which in turn attracts foreign investors.

FDI and human capital have a complex relationship, where FDI inflows are able to provide a spillover of knowledge to local labor, and on the other hand, the level of human capital of the host country determines how much FDI is inflow. On the other hand, exchange rate fluctuations that occur in developing countries in ASEAN are able to have a negative effect on multinational companies due to the uncertainty of profits, thus reducing investor interest (Ali, 2020).

The purpose of Karimi et al., (2013) study is to assess whether and to what extent HC contributes to national economies, and the influence it has on subsequent FDI flowing into those economies. A systematic empirical study based on the Generalized Method of Moments (GMM) for 50 developed and developing countries has been undertaken by this study; in order to evaluate the role of HC on FDI inflows using all indicators previously used as a HC proxy in previous studies. We have utilized a newly developed index that is focused on weighted HC stock to examine the effects of HC on FDI inflows. The results clearly indicate that HC is important for attracting FDI in developing and developed countries. It demonstrates that the general educational attainment of a country is of importance in the FDI context. It would appear that HC formation should be emphasized in developing countries if FDI attraction is to be considered as a valid policy objective.

Study of Sadeghi et al., (2018) about evaluates the causality relationship between human capital and foreign direct investment inflow in twenty-six OIC (the Organization of Islamic Cooperation) countries over the period 1970–2014. We employed the panel Granger non-causality testing approach of Konya (2006) that is based on seemingly unrelated regression (SUR) systems, and Wald tests with country specific bootstrap critical val-

ues. The approach allows one to test for Granger non-causality on each member of panel, separately by taking into account the cross-sectional dependency and slope heterogeneity among countries investigated simultaneously. We found that the hypothesis of Granger non-causality from human capital to foreign direct investment (FDI) was rejected for more than half of the sample countries, mainly among African states. In addition, the effect magnitude of human capital on FDI varies among the states significantly.

Dutta et al., (2017) of paper explores the interactive impact of corruption and human capital on FDI. In particular, we investigate whether countries with higher or lower corruption levels benefit differently in terms of FDI inflow following an equal improvement in the level of human capital. Employing an extensive panel data and robust identification strategies, our results suggest that if the corruption score of a highly corrupt country becomes comparable to that of a low corruption country, FDI inflow will rise by almost 40 percent for an equivalent rise in human capital stock. The results remain robust for various measures of human capital.

Kheng et al., (2017) of study about investigate this relationship simultaneously. Using country level panel data from 55 developing countries over the 1980–2011 period, this paper examines the interrelationship between FDI and human capital. Statistical analysis, based on simultaneous equations fixed effect estimation, reveals significant bi-directional causality between human capital and FDI, which suggests that FDI and human capital development policies need to be coordinated. FDI-led economic growth models may not be entirely suitable for all developing countries aiming to replicate the economic success of countries such as Brazil and China unless attention is also paid to human capital development through increased spending on education and training.

The purpose of Jannat, (2020) paper is to empirically assess the impact of exchange rate volatility on foreign direct investment (FDI) inflows in Bangladesh, India, Pakistan, Nepal and Sri Lanka. To this day, neither empirical nor theoretical research has managed to reach any consensus on the nature of this impact. The paper uses panel data from the aforementioned developing South Asian countries over the period 1980-2017. Since volatility is not directly observable, a GARCH (1,1) model is used to generate data on exchange rate volatility. The exchange rate volatility variable is then used along with other control variables to analyze the impact on FDI. The study further proceeds by estimating fixed-effect models on the panel of countries using Driscoll and Kraay (1998) standard errors. Results suggest that exchange rate volatility has a significant negative impact on FDI inflows in South Asian countries, which are in much need of greater inflow to accelerate their economic growth. However, the negative impact of volatility may be offset via greater trade openness.

This study aims to examine and analyze the exchange rate, economic growth, and human capital which partially have a significant effect on FDI inflows in ASEAN-8 in 2010-2019 .

## METHODOLOGY

Regression analysis using panel data is called a panel data regression model. The panel data regression method has several advantages including panel data which is a combination of two time series data and the cross section is able to provide more data so that it will produce a greater degree of freedom. Combining information from time series and cross section data can solve problems that arise when there is a problem of omitting a variable (omitted variable) (Farazmand & Moradi, 2015).

There are 3 panel data regression models, namely estimation, namely

partial least square (PLS), Fixed Effect Model (FEM) and Random Effect Model (REM). PLS is an estimation that combines (pooled) all time series and cross section data and uses the Ordinary Least Square (OLS) approach to estimate its parameters. The OLS method is one of the popular methods for estimating parameter values in linear regression equations. FEM is the estimation of panel regression parameters using the technique of adding dummy variables so that this method is often called the Least Square Dummy Variable, while in REM, individual effects are assumed to be random. REM is more precisely estimated by the generalized least square (GLS) method because of the potential for correlation between the disturbance variables in the equation.

The models used in this study to estimate the variables that affect FDI are:

$$FDI_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 HC_{it} + \beta_3 ER_{it} + \mu_{it}$$

Some of the variables used in equation (1) include FDI is defined as FDI, GDP for economic growth of each country on the basis of 2000 (%), HC is the ratio of secondary schooling is used as a proxy of human capital, and ER is the real exchange rate of each country in Local Currency Unit / US \$ .The approach used in this research is a quantitative approach which is carried out with the panel data regression method, which is a combination of time series data (2010-2019) and cross section (ASEAN-8, including Indonesia, Malaysia, Philippines, Thailand, Vietnam, Laos, Cambodia and Brunei Darussalam).

## RESULTS AND DISCUSSION

Panel data regression method can be estimated using three methods , namely Pooled Least Square (PLS), Fixed Effect Model (FEM), and Random Effect Model (REM). To select the third model should be tested models. There are three model tests carried out in this study. First, the

Chow-test is used to select a PLS or FEM model. Table 1 shows the prob> F (FEM) value of 0.0000, then the prob> F (FEM) value is less than  $\alpha$  (0.01) so that H 0 is rejected and H 1 is accepted, meaning that the more appropriate estimation model to use is FEM.

Second, The Breusch-Pagan LM Test is used as a statistical consideration to select a PLS or REM model. It can be seen that prob> chi2 is 0.0000 smaller than  $\alpha$  (0.01) (Table 1), so the conclusion is that H 0 is rejected so that the REM model is chosen as the estimation model. Third, the Hausman test is conducted to select the FEM or REM model. In Table 1, the values for prob> chi2 (0.0111) and  $\alpha$  (0.05) are obtained . Because the value of prob> chi2 is less than  $\alpha$ , H 0 is rejected and the most appropriate estimation model to use is FEM.

Based on the conclusion from the model test results, the appropriate model to use is the Fixed Effect Model (FEM). The following are the estimation results using the FEM model.

Table 2 indicates that economic growth has had a positive effect on FDI flows. This is indicated by the increase in economic growth which is able to reflect the greater market potential of a country, so that foreign investors are increasingly interested in investing in that country. The rate of economic growth is positively correlated with FDI flows because it reflects the large size of the market which is able to attract investors to invest in a market-seeking motive (looking for new markets) (Kok & Ersoy, 2009). Most multinational companies are looking for productive locations, this is reflected in high levels of economic growth (Gursoy & Kalyoncu, 2012).

Furthermore, human capital and FDI have a positive relationship, which shows that an increase in human capital has an effect on an increase in FDI inflows. Higher human capital is able to increase the ability to adopt foreign technology,

**Table 1.**  
**Model Testing Results**

Type of Test	Hypothesis	Probability
Chow-test	H <sub>0</sub> : PLS	Prob>F (FEM)
	H <sub>1</sub> : FEM	0,0000*
BP-LM test	H <sub>0</sub> : PLS	Prob>chi2
	H <sub>1</sub> : REM	0,0000*
Hausman test	H <sub>0</sub> : REM	Prob>chi2
	H <sub>1</sub> : FEM	0,0111**
Number of Observations : 80		
Cross section : 8		
* significant 1%		
** significant 5%		

**Table 2.**  
**Estimation Results of Fixed Effect Model (FEM)**

Variable (Dependent: FDI)	Coef.	Std. Error	t-stat	Prob
Intercept	-18598.19	3651.608	-5.09	0,000
Growth (GDPg)	342.6004	114.3001	3,00	0,004
Human Capital (HC)	202.5776	44.1375	4,59	0,000
Exchange Rate (ER)	1.21696	0.4239411	2,87	0,005
R-square : 0,3482				
F-statistic : 17,17				
Prob (F-statistic) : 0,0000				
Total Observation : 80				

thus making investors invest in countries that have good human capital quality. The availability of human capital can increase the attractiveness of a country as a recipient of FDI projects. An increase in human resources makes the investment climate attractive to foreign investors (Hussain & Haque, 2016). The process of increasing FDI inflows is a direct effect of increasing the skill level of the workforce.

The results from the estimation of the FEM model in Table 2 show that there is a positive relationship between the exchange rate and FDI. This is indicated by the nominal increase in the exchange rate (said to be a depreciation process) which has a positive effect on increasing FDI

flows in ASEAN-8. If a country's exchange rate depreciates, then investment in that country becomes cheaper in the eyes of foreign investors and the investment benefits obtained by foreign investors are greater, triggering the desire to invest in the country.

### CONCLUSIONS

Based on the estimation results (t test), the variables of economic growth, human capital, and exchange rates partially or individually have a significant effect on foreign direct investment (FDI) inflows in ASEAN-8 during the period 2010-2019. In the end, it can be concluded that there is a relationship between human capi-

tal and FDI. When human resources are measured by the level of education, they show relatively high results, it means that investors are increasingly interested in engaging in FDI in countries that have good human resource potential. Coupled with interest in improving the quality of human capital, it can increase output productivity so that the economic growth that occurs is also higher. Apart from the internal factors that exist in the recipient country of investment, the external condition of a country is also a consideration for investors, one of which is the exchange rate, where a depreciating exchange rate will further increase the value of FDI inflow in that country.

Based on these results and conclusions, it is necessary to implement a strategy to increase economic growth in order to attract foreign investors. One of the strategies is to improve infrastructure conditions that are able to support output productivity, so that the economic growth achieved is also higher. In addition, investment in human capital is also needed in order to attract investors, in various ways, such as investing in early childhood education, improve educational facilities that have a direct effect on improving the quality of human capital that is formed, strengthening competence in the use of technology for students, students, teachers, and lecturers.

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