



FOREIGN DIRECT INVESTMENT SPILLOVER EFFECTS ON MALAYSIA'S ECONOMIC GROWTH

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Abstract: This paper examines the relationship between macroeconomic activity variables of foreign direct investment (FDI) inflows, gross domestic product (GDP), human capital, labour force, absorptive capacity which showing the interaction between human capital and FDI technology that is called spillover effects and physical capital as a control variable. A time series quarterly data from the period of 1999 to 2008 was used. The methodology involved in investigating the effects of FDI spillover effects on Malaysian economic growth, was through conducting the unit root test, and the Ordinary Least Squares (OLS) regression was applied to estimate the data. Moreover, the Granger Causality test was used to test the causality between FDI and economic growth. The result indicates that FDI plays a significant role in achieving economic growth as input driven. In This regard, a significant positive relationship between human capital, labour force and absorptive capacity which to know the spill over effects on Malaysian economic growth (GDP) was found. On the other hand, the physical capital has shown negative relationship. Furthermore, the Granger Causality test result indicates that FDI causes Malaysian economic growth in terms of GDP and not the other way.

Keywords: *FDI inflows, economic growth, Malaysia*

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INTRODUCTION

As has been defined by International Monetary Fund (IMF), FDI is classified as an international investment that includes the objective of the investor's desire which is a resident in one economy to have a lasting interest and a significant amount of influence in the organization of an enterprise resident in another economy other than the investor's home country. The two sides of direct investment relationship between a parent business enterprise and its foreign affiliate was said to be established when the direct investors (parent enterprise) has obtained an ownership over 10 percent or more of the ordinary shares or voting authority of an enterprise abroad (IMF, 1993).

Moreover, FDI may be categorized as inward and outward. Foreign direct investment which is inward, is usually called as inward investment which means investment of foreign capital happen to be occurred in local resources. The factors that drives the growth of the inward FDI normally consists of tax breaks, liberalization of current policy, low rates of interest on loans and any specific funding. This inward FDI is mainly focuses on the aspect

of long run gains from such a funding which will eventually cover the loss of income which incurred in the short run. Restrictions may occur in the flow of the inward FDI in terms of restraint on ownership and difference in the performance standard. Furthermore, foreign direct investment which is outward is basically referred to as direct investment abroad which means that it is the local capital have been invested in some foreign resources. Outward FDI can also be find use in the import and export when dealings with a foreign country. Hence, Outward FDI will increase under government backed insurance at risk coverage (Economy Watch, 2007).

Furthermore, FDI is used to be called as a source of growth in which it contributes in the expansion of the economic condition in certain countries. The relationship between foreign direct investment and economic growth has been a crucial issue for several decades in terms of the effects of it on development of a country economic situation. Some of the policymakers in a large number of countries assumed that by engaging in creating every kind of incentives (e.g. export processing zones

and tax incentives) to attract FDI would eventually positively affect the local economic development (OECD, 2002).

Additionally, FDI plays an important role in the Malaysian economy. Hence, the most crucial role was to generate economic growth by increasing domestic capital formation. According to (Krugman and Obstfeld, 1994), FDI functions as a way to bridge the gap between capital demand and supply or other inflows of capital, stimulates the production frontier of a country that usually experience capital shortage. (Ishak and Rahmah, 2002) also repeat this sentiment that FDI provided an additional source of capital and expanded host country production activities. The inflows of capital in the form of FDI allow host economies to invest in production activities beyond what could be achieved by investing domestic savings alone. Also, FDI plays a role as a source in stimulating the economic growth for Malaysia since the 1990s, which build up benefits towards the growth of the country besides the capital. Furthermore, a benefit that is vital for a developing country like Malaysia is that FDI could create more employment

opportunities and also technology transfers which also benefit for the host countries. For an instance, when the foreign factories have been start up in their countries, they will be exposed to higher technology production and efficiency in management, therefore in the future they will be able to produce goods and services as competitive as foreigners do (Har 2008).

However, the difficulties of insufficient funds for investment will be an important reason to seek for FDI. As we can see that, many less-developed countries are lack of fund for investment. Moreover, foreign direct investment can improve their standard of living by creating more employment and eventually will help them to develop their country (Har *et al* 2008).

According to Mohd (2001), he finds that foreign direct investment play a significant role in the Malaysian economy mainly in the electronic industry. On top of that, the creation of jobs and increase in export, the foreign multinationals has been characterized in contributing to the expansion of the technical capabilities of the locals, which is through the process of technology transfer.

FDI SPILLOVER EFFECTS

This subsection reviewing the studies addressed the FDI spillover effects, in this respect, Kneller and Stevens (2002) investigate whether differences in absorptive capacity (spillover effect) help to explain cross country differences in the level of productivity. Absorptive capacity, as discussed in the literature by Arrow (1969), captures the idea that countries may differ in their effort and ability to adopt new technologies even if knowledge is global (Eaton and Kortum, 1999; Griffith *et al* 2000; Papageorgiou, 2000; Xu, 2000). Two formal approaches have been developed to model this mechanism: Abromovitz (1986) and Cohen and Levinthal (1989) model technical adoption as depending on the level of human capital, whereas Fagerberg (1994) and Verspagen (1991) develop models in which innovation improves the capacity to absorb foreign country technology. The most important factor in technology transfer is the human factor which is explaining the differences in the level and concept of the productivity by accessing to the same technology brought by FDI. Meanwhile, the benefit from absorptive capacity (spillover effect) is accordingly.

Moreover, Alfaro *et al* (2009) had state that in the macroeconomics empirical literature weak support for an exogenous positive effect of FDI on economic growth were originated. Moreover, the findings in this literature indicate that a country's capacity to take advantage of FDI externalities might be limited by local conditions, such as the development of local financial markets or the education level of the country, i.e., *absorptive capacities*. Borenstein *et al* (1998) show that the FDI investment brings technology transfer and translated it into higher economic growth only when the host country has a minimum threshold of stock of human capital. Further, Alfaro *et al* (2004) provide evidence that only countries with well-developed financial markets gain significantly from FDI in terms of their growth rates. These findings are consistent with the reality of East Asian nations as Japan and South Korea were benefited from foreign technology investment through technology transfer and human capital skills development.

In terms of the microeconomics, empirical evidence of spillover effects of FDI, Alfaro *et al* (2009) demonstrate that most of the studies using firm level panel

data find that there is no effect of foreign presence or resulted in a negative productivity spillover effect from multinational enterprises (MNEs) to the developing countries' firms. Meanwhile, the positive spillover effects are found only for developed countries including those from East Asian nations. Based on these negative results, a new generation of studies argues that subsequently multinationals would like to prevent information leakage to potential local competitors. Nevertheless, benefit from knowledge spillover to their local suppliers, FDI spillover ought to be between different industries. Hence, one must look for vertical (inter-industry) externalities instead of horizontal (intra-industry) externalities. In this regard, the externalities from FDI will patent themselves through forward or backward linkages, i.e., acquaintances among domestic suppliers of intermediate inputs and their multinational clients in downstream sectors (backward linkage) or between foreign suppliers of intermediate inputs and their domestic clients in upstream sectors (forward linkage). Evidence is provided from the studies undertaken by Javorcik (2004) and Alfaro *et al* (2004); for instance, those studies bargain evidence for

the existence of backward linkages between the downstream suppliers and MNEs in Lithuania; and Venezuela, Chile, and Brazil, respectively. Moreover, paralleling the macroeconomic evidence, the study under taken by Villegas-Sanchez (2009), has used firm level data from Mexico, shows that domestic firms only experience productivity increases from FDI if they are situated in financially developed regions. Meanwhile, the author additionally shows that domestic firms located in regions where access to the credit is more problematic will experience a negative spillover effect from FDI.

The purpose of this paper is to analyse the spillover effects of FDI on Malaysian economic growth in terms of GDP as an input driven economy and based on FDI investment. for an available period of time, Q11999-Q42008 based on the variables used in the Malaysian economy such as GDP, physical capital, labour force (number of employed persons) enrolment in school that is proxies for human capital, FDI*Human capital to show the interaction between human capital and FDI technology or what so named spillover effects. Such an analysis should provide useful information to guide future

policies formulation with respect to human capital development and technology transfer. The following section of the paper contains descriptions of the estimation methods employed in the study, after which details of the data are demonstrated. The results of the empirical analysis are then explained, and the conclusion and policy implications are presented in the final section.

METHODOLOGIES AND ESTIMATION

Based on the theoretical framework below, focuses on how FDI inflows have an effect on Malaysia's economic growth. The variables of capital and labour are introduced in order to observe the effects on economic growth by taking into account the stocks of physical capital and labour. As the data for stocks of physical capital is said to be difficult to put up, gross capital formation as a share of GDP for the quarterly period of 1999 to 2008 is being employ as a proxy for the influence of physical capital in which also similarly being done by (Olofsdotter, 1998). Labour is measured as the labour force during the quarterly period of 1999 to 2008. The variable GDP would be the dependent variable in which to observe

the economic growth in Malaysia.

Moreover, referring to the approach used by (Sala-i-Martin et al, 2004), the effects of FDI in determining the economic growth in which the powerful indication that was found is the primary schooling, the price of investment and the initial level of GDP per capita. By following those indicators, this includes the average years of schooling enrollment in which it can be for the purpose both in measuring the human capital and a rough proxy for the absorptive capacity of Malaysia. According to the earlier research (Borensztein et al., 1998), in order to discover the joint effect of FDI and schooling enrollment, the interaction variable is introduced which is the FDI*SCHOOL. The particular interaction is introduced to examine the effect of the absorptive capacity in Malaysia on the potential of FDI to have an effect on economic growth.

Further, the independent variables such as FDI and capital must have shown a positive effect on economic growth. The level of GDP is used in growth regressions to examine the existence of convergence in GDP levels which is the dependent variable. FDI*SCHOOL is projected to have a significant effect on

economic growth since a higher absorptive capacity would imply that technology spillovers become more important. Since the schooling enrollment variable act as a proxy for human capital, it is predicted to have a positive effect on economic growth (Andreas, 2005). Based on the study done by (Andreas, 2005), for the baseline specification, capital, labour and FDI, schooling enrollment and the interaction variable of FDI*SCHOOL are used as explanatory variables. The study attempts

to fill the gaps by developing this equation:

$$GDP = \alpha + \beta_1 \text{ PHYCAPITAL} + \beta_2 \text{ LABOUR} + \beta_3 \text{ FDI} + \beta_4 \text{ SCHOOL} + \beta_5 \text{ FDI*SCH} + \varepsilon$$

Where for Malaysia in quarterly period of 1999 to 2008, the output is quarterly real GDP and the inputs are gross capital formation as a share of GDP CAPITAL, number of labour force LABOUR (number of employed persons), FDI and the

GDP:	Real GDP
PHYCAPITAL:	Gross capital formation as a share of GDP
FDI:	Foreign Direct Investment in Malaysia
SCHOOL:	Schooling enrollment (human capital)
FDI*SCH:	Interaction variable between FDI and human capital (Absorptive capacity)
LABOUR FORCE:	Number of employed persons

school enrollment, SCHOOL represent as the proxies of human capital and absorptive capacity.

HYPOTHESIS DEVELOPMENT

Though, there are four effects of foreign direct investment (FDI) that influence Malaysian economic growth (GDP). Hypothesis is a statement that explains the association between various variables, which concerned in the study. The statements that have been made are based on the finding from previous research. By testing the hypothesis and confirming the conjectured relationships, it is expected that the solutions can be found to correct the problem encountered. Therefore, the hypotheses that will be tested are as below:

H1: Human capital is positively associated with economic growth

H2: Absorptive capacity which determine the spillover effect is positively associated with economic growth

H3: Physical Capital accumulation is positively associated with economic growth

H4: Labour force is positively associated with economic growth

H5: Foreign direct investment (FDI) is positively associated with economic growth

Single Equation-Based Unit Root Tests

In carrying out the cointegration analysis between the variables, the first step is required to implement the unit root test for each variable using the testing principle of Augmented (Dickey and Fuller, 1979) on the following regression:

$$\Delta X_t = \delta_0 + \delta_1 t + \delta_2 X_{t-1} + \sum_{i=1}^k \alpha_i \Delta X_{t-i} + u_t \quad (1)$$

The ADF regression tests for the existence of unit root of X_t , namely in the logarithm of all model variables at time t . The variable ΔX_{t-k} expresses the first differences with k lags and finally it is the variable that alters the errors of autocorrelation. The coefficients $\delta_0, \delta_1, \delta_2$ and α_i are being estimated. The null and the alternative hypothesis for the existence of unit root in variable X_t is:

$$H_0: \delta_2 = 0 \qquad H_a: \delta_2 < 0$$

The minimum values of the Akaike (Akaike, 1973) (AIC) and Schwartz (SC) statistics have provided the better structure of ADF equations as well as the relative numbers of time lags, under the indication "Lag". As far as the autocorrelation disturbance term test is concerned, the Lagrange Multiplier (LM) test has been used.

ORDINARY LEAST SQUARES (OLS) REGRESSION

The method of Ordinary Least Square (OLS) is a method generally used for regressions analysis, which is developed by Carl (1821). It is concerned in the study of the relationship between one variable called the

explained or dependable variable and one or more other variables called independent or explanatory variables. This is to observe whether one variable is dependent on another or a combination of other variables. It involves in establishing the coefficients of regression for a sample and then making a conclusion on the population (Oscar 2007). The linear regression equation for this model is:

$$GDP = \alpha + \beta_1 \text{ PHYCAPITAL} + \beta_2 \text{ LABOUR} + \beta_3 \text{ FDI} + \beta_4 \text{ SCHOOL} + \beta_5 \text{ FDI*SCH} + \varepsilon \tag{2}$$

Where, GDP represent the dependent variable at a particular time respectively while the coefficients of regression, $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 explain how a unit change in the independent variable affects the dependent variable. The α and β_i indicate the slope and coefficient of regression. The ε represents the error term in which it included in the equation to provide for other factors that may influence the dependent variable. Furthermore, the coefficient of determination (R square) measures the proportion of the dependent variable that is explained by the regression model.

GRANGER CAUSALITY TEST

In determining the test for direct causality between FDI and economic growth, Granger causality

test using equations (3) and (4) was performed:

$$GDP_t = \gamma + \sum_{i=1}^k \alpha_i \cdot GDP_{t-i} + \sum_{i=1}^k \beta_i \cdot FDI_{t-i} + \mu_t \quad (1)$$

$$FDI_t = \phi + \sum_{i=1}^k \delta_i \cdot GDP_{t-i} + \sum_{i=1}^k \lambda_i \cdot FDI_{t-i} + \eta_t \quad (2)$$

in which GDP_t and FDI_t are stationary time series sequences,

γ and ϕ are the intercepts re-

spectively, μ_t and η_t are white noise error terms, and k is the maximum lag length which will be used in each time series. By using the (Hsiao's, 1981) sequential procedure, the most possible lag length can be identified which according to Granger's definition of causality and Akaike's (1969, 1970) minimum final prediction error criterion. If in equation

(3) $\sum_{i=1}^k \beta_i$ is significantly different from zero, then the conclusion is that FDI granger causes GDP. On

the other hand, if $\sum_{i=1}^k \delta_i$ in equation (4) is significantly different from zero, then the conclusion is that GDP Granger causes FDI. There is a definite possibility that Granger causality can be in both directions (Dharmendra *et al*, 2007).

ESTIMATION PROCEDURE

First model

Identify the potential effects of foreign direct investment (FDI) which is physical capital, labour force, human capital and absorptive capacity that influence economic growth (GDP) of Malaysia.

Second model

Determine the causal direction between foreign direct investment (FDI) and economic growth (GDP) of Malaysia.

DATA COLLECTION

The data used in this paper is secondary data. In this respect, the secondary data is data that is neither collected directly by the user nor specifically for the user, often under conditions not known to the user. It may be available from internal sources, or may have been collected and published by another organization. The advantages of secondary data are that it is cheap and inexpensive. It is easily accessible and already available. Furthermore, it saves time and efforts and totally unobtrusive. It avoids data collection problems and it provides a basis for comparison. Secondary data is normally can be found in various government statistic websites. This secondary data is assumed to be reliable because it was published from the Department of Statistic in Malaysia. On the other hand, the disadvantages of secondary data are related to the credibility of the source who has published this information and the small

nuances that may not fit into our research objectives. Another disadvantage can be that the data might be outdated. Similarly, we have no control over the quality of the data and would not know how authentic the measures used for data collection have been.

RESULTS AND DISCUSSION

This section demonstrates the results of the unit roots test conducted in this study. In this regard, based on table 1, the result of the unit root test indicates that almost all of the variables are non-stationary in their respective levels. In the first differencing on the variables, the null hypotheses of a unit root in the Augmented Dickey Fuller tests were rejected at the 1% significance level for both series. Therefore, since all the variables have to be difference once to obtain stationarity, it is integrated of order 1 which enables us to proceed with the rest of the economic model. Referring to (Engle and Granger, 2003), if the variables had occurred in first differences instead of levels, the difficulties of non-stationary variables could be avoided since the differenced variables are normally stationary even if the original variables are not.

Table (1): Augmented Dickey-Fuller

Variable	Level		First Difference	
	Trend and intercept	Intercept	Trend and intercept	Intercept
PhyCapital	-1.851 (2)	-0.977 (2)	-9.056 (1)***	-9.178 (1)***
FDI	-3.974 (4)**	-2.239 (4)	-13.447 (0)***	-13.447 (0)***
FDIhumancapital	-3.940 (4)**	-2.867 (1)*	-13.330 (0)***	-12.911 (0)***
GDP	-10.831(5)***	-0.516 (6)	-4.585 (4)***	-4.744 (4)***
Humancapital	-6.877 (0)***	-0.372 (2)	-10.120 (0)***	-6.900 (1)***
Labourforce	-4.914 (0)***	-1.838 (1)	-11.525 (0)***	-11.393 (0)***

Note: Figures in Table 1 were estimated by using equation 1.

Notes: Asterisk ***, **, and * denote 1%, 5%, 10% respectively. Figures in parentheses are the lag lengths. The asymptotic and finite sample critical values for ADF are obtained from MacKinnon (1996). ADF test examine the null hypothesis of a unit root against the stationary alternative.

FIRST MODEL: THE EFFECTS OF FDI ON ECONOMIC GROWTH (GDP)

Moreover, based on table 2, the result implies that, the coefficients of the effects of foreign direct investment (FDI) as both variable and as proxy which is showed the interaction variable (FDI*SCHOOL) that is use as a proxy for absorptive capacity in order to know the degree of spillover effect, school enrolment to take into account human capital and labour force, indicates a positive effect on Malaysian economic growth. However, from the result, physical capital shows a negative relationship on Malaysian

economic growth. The R^2 in this model is 0.85366, which explain that 85% of the total differences in the amount of gross domestic product (GDP) can be explained by the changes of the independent variables, which are human capital, physical capital, absorptive capacity and labour force. Furthermore, the adjusted R^2 0.83693 takes into account the sample size and the number of independent variables included in the regression equation.

SECOND MODEL: THE RELATIONSHIP BETWEEN FDI AND ECONOMIC GROWTH (GDP)

In this respect, for quarterly

Table 2: Estimated Coefficients Of Malaysian Economy, Q1 1999-Q42008,

	Coefficient	Std. Error	t-Statistic	Prob.
C	-31.95784	4.794822	-6.665074	0.0000
LABSORPTIVE	0.049329	0.040164	1.228194	0.2276
LPHYCAPITAL	-0.194723	0.108132	-1.800798	0.0804
FDI	0.193961	0.060086	3.228078	0.0026
LHUMANCAPITAL	0.797493	0.956259	0.833973	0.4100
LLABOURFORCE	4.132359	1.173990	3.519926	0.0012
R-squared	0.853656			
Adjusted R-squared	0.836930			
F-statistic	51.04044			
Prob(F-statistic)	0.000000			

Note: Figures in Table 1 were estimated by using equation 2.

Dependent Variable: LGDP

Method: Least Squares

Sample: 1999Q1 2008Q4

Included observations: 40

data, the reasonable lag term should be range from 1 to 4, 8 or 12 (Bill 2000). From the table above, the granger causality test indicates that the null hypothesis of gross domestic product (GDP) does not granger cause foreign direct investment (FDI) cannot be rejected in lag 2, 3 and 4 which indicates that GDP does not granger cause FDI, meaning that FDI could not be explained by any changes in GDP. FDI does not granger cause GDP has been rejected in all lags which is lag 2

and 3 at 5% and 4 at 1%. This shows that, FDI does granger cause GDP meaning that GDP can be explained by the changes of FDI. On overall, based on the Granger Causality test that has been done, it shows that there is a unidirectional causality meaning that there is only one-way direction which is from FDI to GDP in lags 2, 3 and 4. Referring to table 6, it shows that, foreign direct investment (FDI) and economic growth (GDP) indicates a positive relationship.

Table (3): Granger Causality Test: Lag 2

Null Hypothesis:	F-Statistic	Prob.	Conclusion
LGDP does not Granger Cause LFDI	0.08428	0.9194	Do not reject H0
LFDI does not Granger Cause LGDP	5.09178	0.0118**	Reject H0

Notes: *, ** and ***denote rejection of the null hypothesis at 10%, 5 % and 1% significant level respect

Table (4): Granger Causality Test: Lag 3

Null Hypothesis:	F-Statistic	Prob.	Conclusion
LGDP does not Granger Cause LFDI	0.08869	0.9657	Do not reject H0
LFDI does not Granger Cause LGDP	3.35265	0.0319**	Reject H0

Notes: *, ** and ***denote rejection of the null hypothesis at 10%, 5 % and 1% significant level respect

Table (5): Granger Causality Test: Lag 4

Null Hypothesis:	F-Statistic	Prob.	Conclusion
LGDP does not Granger Cause LFDI	0.02254	0.9989	Do not reject H0
LFDI does not Granger Cause LGDP	5.43898	0.0024***	Reject H0

Notes: *, ** and ***denote rejection of the null hypothesis at 10%, 5 % and 1% significant level respect

Table (6): Ordinary Least Square Regression Result

Dependent Variable: GDP
 Method: Least Squares
 Sample: 1999Q1 2008Q4
 Included observations: 40

	Coefficient	Std. Error	t-Statistic	Prob.
C	9.922481	0.489439	20.27315	0.0000
FDI	0.193961	0.060086	3.228078	0.0026

CONCLUSION AND POLICY IMPLICATIONS

Foreign direct investment (FDI) plays an important role in the Malaysia's economic development. This paper analyses the effects of foreign direct investment (FDI) on Malaysian economic growth (GDP). The result explains that there is a positive relationship between human capital, labour force and absorptive capacity which tested to know the level of spillover effects on GDP, whereas negative relationship was found on physical capital to influence the Malaysian economic growth. There is a unidirectional runs from foreign direct investment (FDI) to economic growth (GDP). Moreover, the result of this paper shows that human capital, technology spillover and labour force provide the potential effects of FDI to enhance Malaysian economic growth in terms of input driven. The contribution of labour force and human capital provides the strongest evidence in influencing the Malaysian economic growth. The MNEs have played a major role in bringing economic development and employment to East Asia and many parts of the world (Lipsey 2000). The inflows of FDI generate the possible for spillovers

of technology and knowledge (which determine by the level of absorptive capacity) to the labour force while creating opportunities for the labour and simultaneously can increase the level of a country's human capital (Andreas, 2005). Furthermore, it might be able to improve the Malaysian firms in terms of their level of technology and become more productive which will contribute to Malaysian economic growth. Furthermore, the production which supported by advance technology will educate the skilled labour more and it will eventually improve the productivity and enhance economic growth. By reviewing on the determinants of FDI inflows to Malaysia, it shows that, market size, trade openness and exchange rate were the major determinants of FDI in Malaysia, beside the political stability and cheap cost of production. However, Malaysia is not considered to be cheap in the production compare with newly East Asian growing economies, this is resulted in FDI to move from Malaysia to these economies.

It should be noted, that the productivity indicators should be addressed to show the spillover effects through the technological progress (total factor productivity)

which is indicating the combined contribution of the quality of the factors of production and considered to be good indicator to show the spillover effects of FDI. Moreover, what we have addressed considered being input driven growth without addressing the productivity of the Malaysian economy. Moreover, this paper focuses on the four effects of FDI on Malaysian economic growth as the available data matched. Other relevant variables should be included whereby the additional variables would create more hypotheses and testing therefore it might give better and precise results or outcome. From this, it will give better understanding on the potential effects of FDI on GDP. Moreover, some of the variables are used as the best available proxies of them, thus, future studies should explore a more specific data in order to establish a precise results.

Additionally, there is a need to take into account the relevant policies which impose by the government in the area of FDI into the country which is important for the stability of the economic growth. Moreover, the future study should also consider on testing the granger causality test between FDI and GDP in Malaysia as there is a mixed results

in which some researchers found that there is no relationship between FDI and GDP, vice versa and others found that there is a bidirectional relationship between FDI and GDP. However, by including more literature would give better understanding and accuracy of the research and also would ensure that the researchers are well familiar on the topic that have been studied by identifying the gaps in the exiting studies and provide solution to fill these gaps. Therefore, it will expose the researchers to be more specific in determining the variables which to be tested and also direct them to be on the right track with the research topic. Another limitation of this study is concerning on the data. The data for the variables included in this study have been collected from the Department of Statistics (DOS), Malaysia. However, it somehow has a slight different from other sources such as IMF and the world development indicators, which they don't have some of the detail data provided by DOS. This will somehow lead to a different result, if other studies decided to use the same period of time. This led to an inconsistency of data which may cause by the varying data collection and there also might be difficulties in reporting and recording the data.

For an instance, regarding the FDI data, it has been said that, some of the private organizations did not want to volunteer any information concerning their foreign business transactions. This can be considered as there might be no accurateness on the analysis that has been done in this study, although this is the available best data of FDI.

BIOGRAPHY

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