

# Market Size, Exchange Rate and Trade as a Determinant of FDI the Case of Malaysia

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## Abstract

The main function of this research is to observe the special effects of determinant, like exchange rate, market size and trade on the emerging economy of Malaysia with regard to foreign direct investment (FDI). Analyzing time series data for the period 1980-2010, simple OLS regression technique is used for estimating the results with two diagnostic tests, which are the Breusch-Pagan and the Durbin-Watson tests. The findings of our study show that, in Malaysia market size is positively correlated to foreign direct investment whereas trade and exchange rate are negatively correlated with foreign direct investment. The implication of this study is expedient for emerging economies like Malaysia which realize the importance of FDI and continuously strive upon making and renewing policies in order to attract it. The main aim of this study is to investigate the impact of key determinants of foreign direct investment (FDI) which are market size, exchange rate and trade on the economy of Malaysia and also examine the extent to which these determinants influence policies for foreign direct investment (FDI) in Malaysian economy. This study also contributes towards determination of appropriate policies for foreign direct investment (FDI).

## Keywords

Foreign Direct Investment, Exchange Rate, Trade, Market Size, Malaysia

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## 1. Introduction

One of the key features of globalized economy is foreign direct investment (FDI). For the country's economic globalization, FDI is considered to be an important ingredient. FDI greatly impacts the host country economically in such a way that it increases employment opportunities, research and development support, technological benefits, increased income level. Reason to do FDI in any country is to take advantage of low labor cost, tariff free access to markets and exemption of tax offered by host country as an outcome of investment. Many determinants are used to determine FDI such as labor cost, infrastructure, market size, openness, inflation and economic growth. Apart of above determinants market size, trade and exchange rate play an important role in decision of FDI in

any specific country. In short FDI doesn't only provide benefits to host country economy but also provide benefits to the home country. Recep & Bernur (2009) argued that in order to create international economy, Trade has been principal mechanism in linking national economies. Similarly FDI also works as a mechanism linking national economies, thus both mechanisms reinforce each other.

When it comes to attracting foreign direct investment, Malaysia has been the most successful Southeast Asian country. The Malaysian government has been adamant on improving many policies in order to attract FDI in country. The basic purpose of Malaysia's government is to attract FDI to attain foreign technology, labor force, foreign skills as well as capital of foreign countries. Recently, Malaysia has become an emerging economy for foreign investors. Many investment opportunities in various sectors like electronics,

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rubber and palm oil etc. Meanwhile, Malaysia is currently hosting 5000 multinational companies, including foreign companies, out of which many manufacturers have expanded and diversified their operations after setting up new facilities and outsourcing channels in Malaysian economy. The survey shows that FDI in Malaysia constantly growing since 2000.

Many studies regarding FDI in developing countries have been conducted; however, few have focused upon the developing nations. Moreover, no one have ever emphasized upon market size, exchange rate and trade as a separate block of determinants. Among the authors who have worked on market size as a determinant of FDI includes, Asiedu (2006), Wheeler & Mody (1992), Mugal & Akram (2011). Asiedu, Mlanbo (2006) states that market size greatly attracts FDI inflow. These authors argued that increase in market size will increase the investment by foreign investors. Authors who have worked particularly on exchange rate are Dorantes & pozo (2001), Linda (2006) Froot & Stein (1991).

The main intention of this study is to check the effect of specific determinant of FDI like market size, exchange rate and trade on the economy of Malaysia. Further, analyze that how these factors have impact on Malaysian economy. In 1999, according to Malaysian statistics, U.S ranked 1<sup>st</sup> among all countries which have carried FDI in Malaysian manufacturing sector with a total investment of 1.37 billion US\$.

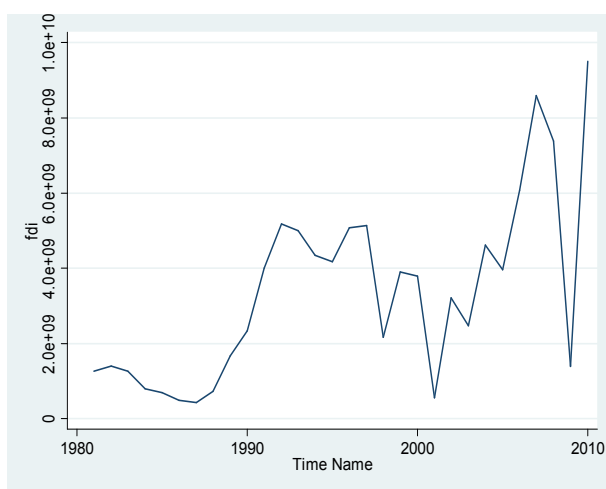


Figure 1. FDI in Malaysian Economy During 1980-2010.

SOURCE: world development indicators, (WDI-WB)

This research attempts to supplement contribution in literature by imposing special-focus on exchange rate, market size and trade with view to Malaysian economy.

## 2. Literature Review

Following are the various studies conducted with regard to FDI determinants (Kok & Ersoy, 2009; Chakrabarti, 2001;

Ting & Tang, 2009). Since the last decade, FDI became one of the important areas of international business and economy (Pan, 2002). Malaysia received large amounts of FDI in every sector of economy. Many countries try to create new opportunities for MNC's for attracting foreign direct investment in country. Dunning (1993, 1988) well recognized the importance of internationalization. This is defined as process of increasing involvement and investment of organizations in international markets. Andreas (2013) observed FDI positively relate with income distribution of the host country as well as trade. Thus, indicate that market size is measured by aggregate income.

Many theories well define the concept of internationalization, and between these theories production life cycle theory is itself another theory. (Vernon, 1966) developed this theory to define the foreign investment by U.S. Companies. Vernon suggested that there are four stages of production life cycle: first innovation, second growth, third maturity and fourth is decline. Another exchange rate theory tries to explain the relation among exchange rate and FDI. In this theory, as the Itagui (1981) & Cushman (1985) examine the depreciation of currency effect on FDI. As the Cushman stimulated the exchange rate with FDI and concluded that because of the appreciation of currency the FDI decreases by 25%.

Therefore, In FDI exchange rate is considered as the most critical determinant, the currency area hypothesized that weaker the currency of country could be less attract the FDI in economy. The assumption of this theory is that biasness occurs in capital markets and that biasness arises because exchange rate risk is attached with weaker currency of an income stream of the country. So investors pay more money when they exchange weaker currency (Caliber, 1970). Further theoretical theory on capital market imperfection was developed by caves (1988), Boliden (1995), Boliden & fenestrata (1996), Foot & Stein (1991) examined strongly negative relation among exchange rate and FDI. Similarly Ricci (2006) argued that exchange rate has long run negative relationship in weaker currencies areas.

While, Edward (1990) examined the positive relationship among exchange rate and FDI. Kozo & Shujiro (2004) state that depreciation of the currency attract FDI on the other hand appreciation of the currency discourages FDI. Lui et al. (2006) argued that exchange rate volatility has strong negative effects because the weaker domestic currency reduces the funding costs in host country as well as it also provides FDI inflows to the country. Although, Sader (1991) and Tuman & Emmert (1999) concluded insignificant relationship with regards to FDI.

In relation to trade the export and imports have relation with FDI. Singh & Jun (1995) concluded that Singapore is a type

of country in which trade policy has an effect on FDI inflows. Moreover Jorge (1985) argued that FDI is substitute of export. But these results depend upon cost of different sectors. Sectors that have high production cost increase imports on the other hand the lower production costs increase exports. Another determinant of FDI which has significant impact on it is Market size, market size hypothesis state that FDI will tend to increase when the economy ensures efficient utilization of resources Scaperlanda and Mauer (1969). Schmitz and Bieri (1972) stated in their study that market size is an important determinant. Many studies were conducted to analyze the impact of market size on international economy. For example, Neubauss (2006) and Clegg and Scott-Green (1999) concluded that growth and market size have positive impact on FDI.

Similarly, Ang (2008) and Hasan (2007) concluded in their research related to determinants of FDI. In Malaysia that FDI tends to increase as market size increase in the country. Charis, Aminul, & Rosni (2015) examined FDI impact on Malaysian economy with many determinants of FDI. They conclude that Malaysian economy should take proper measure to increase market development and market size. But on the other side should reduce taxes to encourage FDI in country.

Billington (1999), Shamsuddin (1994), Pistorosi (2000), Tsai (1994), Sader (1993) report that market size has a positive effect on FDI. Kok and Ersoy (2009) suggest that there is a positive relation among FDI and market size after examining panel data for 24 developing countries. Similarly Aqeel & Nishat (2004) also deduced that FDI has a positive impact on FDI. Sasi & Hristos (2015) conclude that FDI put positive impact on developing countries economy in order to enhance growth of country.

The above literature concludes that exchange rate, market size and trade attract FDI inflows. Malaysian economy is already striving hard to fill the gap between FDI inflows in their economy but the above three determinants provide better criterion to attract more inflows.

### 3. Methodology

The data for this research is taken from the World Development Indicators. Data set covers the period of 1981-2010, and this data set contains 30 observations regarding

Malaysian economy. The data is also analyzed without the dependent variable which is foreign direct investment in order to check the correlation between independent variables. Ordinary least square is used to inspect the regression line of independent and dependent variables.

#### 3.1. Variables

Four variables are used for this study, between these four variables one dependent variable is foreign direct investment (FDI), and the other three independent variables are Market size (MR), Exchange rate (ER), and trade (T). The empirical definitions of above four variables are as follows:

##### 3.1.1. Foreign Direct Investment (FDI)

FDI is a key determinant for the success of rapid economic growth of any country. It is a process of acquiring long lasting effective investments for operating activities through foreign channels. The proxy used for foreign direct investment is Net inflows (current US\$). For this variable, data taken from world development indicators. The expected sign for foreign direct investment is negative.

##### 3.1.2. Market Size (MR)

Market size can be explained as "It is a sum of the gross values added by any producer in an economy". The proxy used for this variable is Gross Domestic Product (current US\$). The data is taken from world development indicators. The expected sign for market size is positive.

##### 3.1.3. Exchange Rate (ER)

It is the rate, which is determined by government authorities of an economy. The proxy used for this currency variable is Official Exchange Rate of local (current US\$). The expected sign for exchange rate is negative. Data taken from world development indicators for exchange rate.

##### 3.1.4. Trade (T)

Buying and selling or exchange of commodity is referred as trade. The proxy for this variable is the sum of exported of goods and services (% of GDP) and imports of goods and services (% of GDP). Exports refer to the goods sold to other economies. On the other hand, the imports represent the goods which an economy takes from other countries. The expected sign for trade is negative.

**Table 1.** Explanatory Variables And Theirs Expected Sign With Regard To Dependent Variable.

	Variables	Expected sign	Proxy	Data source
Dependent Variable	Foreign direct investment	-	net inflows (BoP, current US\$)	World development indicators
Independent variables	Market size	+	Gross domestic product Current US(\$)	World development indicators
	Exchange rate	-	Official exchange rate (LCU per US\$, period average)	World development indicators
	Trade	-	Sum of imports and export of government	World development indicators

### 3.2. Econometrics Model

The simple OLS technique is used to estimate the regression. It is the most commonly used technique for data analyze. Many researchers (Tsai, 1994) used OLS regression technique for their findings. In this model FDI is regress on market size, exchange rate and trade the variables and model as follows:

$$FDI = \beta_0 + \beta_1 (MR) - \beta_2 (ER) - \beta_3 (T) + \epsilon_t$$

**Table 2.** Descriptive Statistics.

Variables	Observations	Means	Standard deviation	Minimum value	Maximum value
FDI	30	3.39e+09	2.45e+09	4.23e+08	9.51e+09
Market size (MR)	30	8.92e+10	6.01e+10	2.55e+10	2.38e+11
Exchange rate (ER)	30	3.16666667	.6989319	2	4
Trade (T)	30	165.5667	40.61483	103	221

Above Table describes the descriptive analysis of this study. Means shows the average value of variables and standard deviation shows the variation of error among variables. In this study, took the data set of 30 observations, in the data set the average of dependent variable i.e. FDI mean is 3.39e+09, and the standard deviation of FDI is 2.45e+09. The minimum and maximum value of FDI is 4.23e+08 and 9.51e+09. Above observations shows the average of market size is 8.92e+10 with which market size has a standard error of 6.01e+10. The maximum value of market size is 2.38e+11 and minimum value is 2.55e+10. The other independent variables in this study, the exchange rate have an average of 3.16666667 with standard deviation of 6989319. The maximum and minimum value of exchange rate is 2 and 4. The last independent variable is trade has an average of 165.5667 with a standard deviation of 40.61483. The maximum value is 221 and minimum value of trade variable is 103.

**Table 3.** Findings of Study.

Variables	Coefficients	Standard errors	p-value
Intercept	1.46e+09	1.14e+09	0.214
Market size	.0233886	.0051652	0.000
Exchange rate	-2.71e+09	6.26e+08	0.000
Trade	5.09e+07	1.23e+07	0.000
FDI	-----	-----	-----
R- square			
Within	0.7526		
Between	0.7241		
Overall	1.3e+09		
Durbin-Watson	1.392568		
Breusch-Pagan	0.7630		

\*\*\* Significant at 1%

So, from above findings of table regression line of the study is

$$FDI = (1.46e) + (.023389) - (-2.71e) - (5.09e)$$

In above model FDI is abbreviation of foreign direct investment, market size abbreviated with MR, exchange rate is abbreviated with ER, trade is with T and  $\epsilon$  represents the standard error in model. The  $\beta$  (1 to 3) present the coefficient of dependent variable.

## 4. Results and Interpretation

The results of this study are below:

The above table summarizes the findings of this study. The variable which used in this study is significant at all level of confidence. Different diagnostic test was used to determine the heteroskedasticity and autocorrelation. The test which applied for this purpose is Durbin-Watson and Breusch-Pagan. The result from these tests shows that data is free from heteroskedasticity and autocorrelation. The first variable of this study is market size which is significant and positively correlates with FDI, shows that when market size increases FDI will also increase in Malaysia. So, result of market size variable is according to expectation. Bandera and white (1968) also show positive impact of market size in their own study. Further, result shows that second variable which is exchange rate is negatively correlates with independent variable FDI. Negatively correlation means that when exchange rate increases in some countries than FDI in that country would decrease the sign of exchange rate is also according to expectations.

The last determinant of FDI in this study, the trade is positively correlated with FDI. It means that when trade increases in any country then FDI increase in that country. This data set suggested that Malaysian government makes policies for attracting FDI. Due to trade environment in Malaysia investors will be encourage in investment and thus it puts a positive impact on FDI. Lunn (1980), Bieri (1972) also shows positive impact of trade on FDI in their study. These results lead that market size and trade are positively correlated with FDI whereas exchange rate is negatively correlated. Moreover, R- square shows that model is fit and states that dependent variables (market size, exchange rate, trade) effects with independent variable FDI.

## 5. Discussion and Conclusion

In short, the developing countries need FDI inflows in order

to foster the economy and access to the international economy. Many governments try to attract FDI inflows but due to various restrictions on trade, FDI may be reduced in country. The country may solve many problems through special incentives which may be specially offered to the foreign investors. Malaysia being a member of ASEAN free trade agreement. Malaysia is always on a search for free trade agreements with other countries.

Above results shows that three determinants have significant impact in determination of FDI in any country. However, currency rest theory does not explain the relationship that FDI have with different currencies of different countries. Above results are almost exactly according to previous literature. The positive signs of market size with FDI strongly support literature. Similarly negative sign of exchange rate with FDI is also in accordance to the previous studies. However, third variable trade shows positive relation with FDI which is in accordance with previous literature. The above findings is free from heteroscedasticity and autocorrelation

This study is not directed towards developed countries as it particularly focuses the developing country. This study may only be applied on developing countries. This study will be useful for further researches. These determinants can be studied with regard to under-developed countries as well.

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