**Paper Title (16 Bold)**

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***ABSTRACT:*** ***(10 Bold)*** *Malaysia is one of the fastest growing developing economies of the Asian countries with a GDP per capita of $9766 and Human Development Index of 0.78 and has been classified as an emerging economy by the World Bank. One of the major roles played in the growth process is the inflow of FDI that has largely contributed to the capital formation and technology development of the country. Inspired by it contribution, the paper tries to identify the factors affecting the inflow of FDI in Malaysia and the effect of FDI on the export concentration ratio of Malaysia.*

*The paper identifies the factors that affect directly or indirectly the inflow of FDI in Malaysia. By using Generalised Least Square Regression technique the paper found that time spend on governance has played a crucial role in attracting FDI in Malaysia. Further, the inflow of FDI has contributed significantly in increasing the export concentration ratio of the country.*

***KEY WORD****:* ***(10 Bold)*** *FDI, Malaysia, Growth, Export*

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# INTRODUCTION AND LITERATURE REVIEW (10 Bold)

Malaysia is one of the most fasted growing economies around the world. The most important factor that had played a crucial role in the development of the country is inflow of Foreign Direct Investment (FDI). It has helped the country with advancement of new technologies, innovations, development of managerial skills, creation of job and improvement in the working condition. An increasing trend of FDI inflow is also one of the clearest sign of globalization or openness of the country. International trade and FDI inflow together has stimulated the process of growth of the country. The average annual growth rate of FDI across the globe has been 23 percent since 1986, which is twice as much as that of trade. However, from 1990 onwards, and during the Asian financial crisis (1997), the share of FDI hosted by countries in the developing parts of world increased. The current statistical data from WTO suggests FDI flows to developing countries are generally greater than those to the developed world.

 From 1963 onwards the economic performance of Malaysia has been one of Asia's best. According to the State government of Malaysia, the real gross domestic product of the country grew by an average of 6.5% per year from 1957 to 2005. However, the economic performance of the country has peaked in the early 1980s through the mid-1990s, through adoption of liberalization policy. Since then to now, the economy has experienced sustained rapid growth around 8% annually. This is highly compared to other parts of developing nations across the globe. In accounting the high level of growth, the levels of foreign and domestic private investment played a significant role as the economy gradually diversified and modernized. Now, Malaysia is one of the world's largest exporters of [semi-conductor components](https://en.wikipedia.org/wiki/Semiconductor_component) and devices, [electrical goods](https://en.wikipedia.org/wiki/Electrical_industry), [solar panels](https://en.wikipedia.org/wiki/Solar_panel), and information and communication technology ([ICT](https://en.wikipedia.org/wiki/Information_and_communications_technology)) products.

The core of the Malaysian economic development comes through the growth of private enterprises. The government of the country has played an active role by structuring a balanced plan strategy. The country is also attributed largely to utilize and develop all its country's natural, mineral and human resources. In fact, Har (2008) also mentioned that, even though the1980’s onwards, the emphasis of public policy has been changed through relaxing the Government's role in the economy. The major objective of the government was to enhance the export promotion and import substitution. The growth of private sector activity has played a major role for the growth achieved by the country.

The Central Bank of Malaysia claims that Malaysian exports and imports of goods and services accounting on average 176 per cent of the Gross National Product (GNP) in the early 1990s. Export of goods and services played a dominant role in the Malaysian economy that helped to manage and achieve consistently high rates of real growth with relatively price stability. Among the major macroeconomic indicators, inflation and unemployment have been relatively stable for the country over the years while the balance of payments position has consistently in surplus.

However, Malaysia has been seriously affected by the Asian financial crisis of 1997 with falling GDP, output and employment from the construction, manufacturing and agricultural sectors. The crisis had cost more than US$50 billion. In order to overcome from such crisis the government of Malaysia has taken several mega-projects in order to implement the balanced growth recovery Plan. As a result of these measures, the economy has recover quickly and now become stable and registering positive signs. For instance, the Real GDP turned around from a -7.5 per cent to 5.4% in 1998-99 (Athukorala & Waglé, 2011).

Malaysia is one of the developing countries that belief that inflow of FDI will increase their growth and makes the country developed. The government of the country has a positive attitude towards the inflow of FDI since 1980 and have kept an open policy towards inflow of foreign investment in the country. It has made FDI to play an important role in the capital formation of the country and in taking the economy in the trajectory of development. The net FDI inflow in Malaysia in the year 1990 was close to a quarter of the Gross Fixed Capital Formation and contributed to 8% of the GDP. According to global records of ASEAN economics, it has been stated that Malaysia has one of the member countries of ASEAN that have attracted maximum amount of FDI in the country. Since independence of Malaysia in the year 1957, the country has taken advantages of its tangible and intangible assets to bring FDI in the country. The tangible assets refers to the resources and abundant labour force and intangible assets refers to the benefits it provides to the foreign multinationals by maintaining stable macroeconomic conditions, liberalised trade regime and a resourceful legal structure. Karim (2011) have shown that bi-directional casual link between the economic growth and FDI in Malaysia which implied that FDI inflow has contributed to the growth of Malaysia (Gee and Karim, 2011).

Malaysia is a growing economy with relatively much open economic policy towards global trade and investment. The country has a consistent record of growing GDP rate from 1970 to 2005 of around 7%. In 2007, the GDP was calculated to be $357.9 billion and was recorded by the World Bank as 29th largest economy in the globe with respect to the purchasing power parity. However, the country has also faced several crises situation due to its openness to the world, for example, the 1970 oil crisis, the 1980s downturn in the electronic industry and the 1997 Asian financial crises. The impact of these crises were felt in a large scale , however, the country could still maintain a consistent growth rate due to continuous flow of FDI in the country, especially in the manufacturing sector that contributed to 31.4% of GDP share in 2005 (Iamsiraroj and Ulubaşoğlu, 2015).

The flow of FDI has been the main driver of growth in Malaysia. The Investment Incentives Act 1968 was introduced in Malaysia to increase the flow of FDI. Further, the policy reforms, the setting of free trade economic zones in 1970, the export incentives provided in the open policy 1980, all have increased the flow of FDI enormously. Furthermore, the government has provided liberal incentives in form of giving permission for having a larger share of ownership in foreign equity under the Promotion of Investment Act (PIA), 1986. As a result of such liberal policies, the flow of FDI has grown at a rate of 38.7% during the period 1986 and 1996. The major area of investment by the foreign companies was in electronic, chemicals, metal, minerals, food products, plastic and scientific equipments (Lall,2013).

The flow of FDI has slowed down in the year 2007 as shown by the table below where the country’s rank has reduced from 67 to 71 in the inward FDI performance index. However, the inward FDI potential index has improved from 41 to 40.

**Table 1: FDI Index**

|  |  |  |
| --- | --- | --- |
| Economy | Inward FDI performance index | Inward FDI potential Index |
| 2005 2007 | 2005 2007 |
| Malaysia | 67 71 | 41 40 |

 *Source: UNCTAD, 2008*

**Figure 1:Net Inflow of FDI as a %of GDP in Malaysia from 1976 to 2016**

*Source: World Bank*

According to the World Bank data, the FDI net inflows as a percentage of GDP was 3.14 in 2014 in Malaysia. There has been several up and down in the inflow of FDI but overall there has been a steady flow besides few global crises situations like that of 2008 United States recession which is shown by the trend line across the data set. The highest inflow was in 1982 and 1994 and the lowest was in 2008 and 2001 (Blonigen and Piger, 2014).

While one of the important literatures analyzed the relationship between FDI and economic growth of the country, ( Chowdhury and Mavrotas ;2006); (Büthe and Milner;2014) (Borensztein et al., 1998 for details), some others were concerned about identifying the factors that affects the inflow of FDI of the country. For instance, a paper by Athukorala (2011) found that the era of 1990’s also witnessed a sustained economic growth through increase in productivity, industrial upgrading, improvement in information technology, since more emphasis was given on the government policies which in turn helps to vibrant small and medium-scale industrial sectors. Further, Busse & Hefeker (2007), discusses the other important determinants of the inflow foreign direct investment like the stable government, absence of conflict in the internal system or environment of the host country and basic rights of democracy. It was concluded by them that inflow of FDI increases if the institute of the country support it. The quality of the institution increases the flows of the FDI in the country and bad quality institute reduces the inflow of the FDI. Further, stability in the macroeconomic indicators of the country is an important factor that determines the affect of FDI on the economic growth of the country.

With this, the primary objective of the paper is to identify the factors that can either directly or indirectly affects inflow of FDI in Malaysia. Also how such inflow of FDI can affect the export concentration index (represented as HHI index) of the country. That is, whether such inflows of FDI are concentrated within a set of industries that dominates Malaysian export or not. Therefore, structure of the paper is organized as follows. Section 1.1 of the paper introduces the concept and tried to justify the possible reasons behind the study through a brief review of literature. Section 1.2 clearly mentioned the basic research objectives of the paper. Section 1.3 clarifies the data and methodology of the paper. Finally, section 1.4 interprets the result and concludes

# Research Objectives

The objective of the research is to identify the factors that directly or indirectly affect the inflow of FDI in Malaysia. Further to examine whether FDI inflow has lead to export diversification in Malaysia or not.

# 1.3 Research Methodology and Data Analysis

 In order to observe the factors that affect the inflow of FDI of the country, the paper is going to use the factors that can directly or indirectly affects the inflow of FDI of the country. The variables taken to represent the factors are GDP growth rate, volume of tax calculated, time spend on governance and amount of inflation. The variables are first defined and then how they can directly or indirectly affect FDI is discussed.

**GDP growth rate**: According to World Bank, “*Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2010 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources*.” With increase in GDP growth rate, the rate of FDI in also going to increase. Therefore, GDP and FDI are expected to be positively related with each other.

**Inflation consumer prices**: According to World Bank “*Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly.” The Laspeyres formula is generally used to construct the index*”. Inflation is also expected to be positively related to inflow of FDI. In fact, FDI inflow will be high when there is high inflation.

**Tax revenue (% of GDP)**: According to World Bank, “*The Tax revenue refers to compulsor transfers to the central government for public purposes. Certain compulsory transfers such as fines, penalties, and most social security contributions are excluded. Refunds and corrections of erroneously collected tax revenue are treated as negative revenue*”. If tax rate is high then FDI inflow will be low, as because foreign firms will be less interested to invest in a country with high level of tax rate.

**Time spent on dealing with the requirements of government regulations (% of senior management time)**: According to World Bank “*Time spent dealing with the requirements of government regulations is the proportion of senior management's time, in a typical week, that is spent dealing with the requirements imposed by government regulations (e.g., taxes, customs, labor regulations, licensing and registration, including dealings with officials, and completing forms).*” The more time spend on government regulation will also allow a country to attract FDI. Therefore, government regulation is also expected to be positively related with FDI.

The data for the above variables are collected from the World Bank website from the period 2005 to 2015. The analysis to find the most significant factor that affect the inflow of FDI is done by using generalised least square techniques[[1]](#footnote-2). See papers by Cascetta (1984), Griffith(1998), Heckman (1976) for details.

The regression is based on the following model

$$FDI\_{t}=α+β\_{1}GDP\_{t}+β\_{2}INF\_{t}+ β\_{3}Tax\_{t}+β\_{4}Time\_{t}+€\_{t}$$

Where,

 $FDI\_{t}=Inflow of Foreign Direct Investment in Malaysia over 2001-2015$

$$GDP\_{t}=Growth Rate of GDP over 2000-2015$$

$$INF\_{t}=Overall Inflation in Malaysia 2001-2015$$

$$Tax\_{t}=Overall Tax rate in Malaysia from 2001-2015$$

$$Time\_{t}=Overall time spend on the governance of the country between 2001-2015$$

$$β\_{1}-β\_{5}=Coeffeicents for the respective variables.$$

$$€\_{t}=Error term$$

The second part of the research to examine the affect of FDI on export diversification is done by using Herfindahl–Hirschman Index.

Export diversification can be measured in several ways. The first diversification index is simple count of export commodities (CountP) and export destinations (CountM) at the Harmonized System 1998 six-digit level. But the simple count does not tell how the total export is divided among different products. One country may have more export products than another but can heavily rely on a few commodities so that its export structure is highly concentrated. A better index for export concentration is Herfindahl–Hirschman Index which shows how much the export is concentrated using the sum of squared share of each commodity, commodity i. Having only one export product will result in HHI of 1 and having equally divided export value among its export commodities will result in low number close to (1/number of product). Then HHI is normalized so that all HHI ranges from 0 to 1 regardless of each country’s number of export products. HHI of country j is calculated using the following formula:

$$HHI\_{j}=∑(\frac{X\_{ij}}{X\_{j}})^{2}$$

The econometric model suggested is Genaralised Linear regression model where the relationship between the variables can be explained as follows

$$HHI=α+β\_{1}FDI\_{t}+β\_{2}GDP\_{t}+ β\_{3}Tax\_{t}+β\_{4}Time\_{t}+€\_{t}$$

The value of HHI lies between 0and 1. The export concentration ratio is high with HHI closer to 1 and low with HHI closer to zero. High export concentration implies low export diversification and vice-versa.

**1.3.1 Data Analysis to identify the factors that directly or indirectly affect the inflow of FDI in Malaysia**

Let us observe the following trend of the parameters graphically.

**Figure 2: Inflow of FDI over years in Malaysia**



From figure 2 we can observe that FDI in flow in Malaysia follows an increasing trend from 2000 to 2008. However, in the year 2008 there was a sharp fall in inflow of FDI in the country. Probably, this is due to the global financial crisis that affects the entire world adversely. However, after 2008 onwards the country has experienced an increasing trend of FDI inflow with some minor fluctuations in 2013-14.

**Figure 3: Growth rate of GDP in Malaysia over years**



Figure 3 shows the growth rate of GDP in Malaysia over years. From the figure we can see that GDP growth rate was following an increasing trend till 2008. However, in 2007-08 there was a sharp fall in GDP growth rate. From 2010 onwards again there was an increasing trend in GDP growth rate.

## Figure 4: Trend in tax rate in Malaysia over years

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Figure 4 shows the trend in tax rate in Malaysia. From the line diagram we can see that, tax rate was very high during 2000-2005. However, in 2006 and 2010, there was a fall in tax rate in the country. Similarly, from 2014 onwards tax rate was very low compared to the previous years.

## Figure 5: Trend in inflation rate over years

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**Figure 5** shows the trend in inflation rate in the country over years. From the line diagram we can see that the trend inflation in the country is fluctuating over years. However, the fluctuation is highest in the year 2008-09.

**Table 2: GLS Regression result**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables**  | **Coefficient**  | **Interval** **(minimum)**  | **Interval** **(maximum)**  |
| **GDP**  | 8.73e+07\*(4.48e+08)  | -7.91e+08  | 9.66e+08  |
| **INF**  | 3.86e+08(2.36e+08)  | -7.61e+07  | 8.48e+08  |
| **Time**  | 1.02e+09\*\*\*(1.98e+08)  | 6.30e+08  | 1.41e+09  |
| **Tax**  | -2.65e+08\*(2.09e+08)  | -6.74e+08  | 1.44e+08  |

*Data Source: World Bank*

The regression result shows expected way of relationship among the variables. From the above table we can see that GDP and FDI and positively related with each other. This also indicates the fact that, an increasing trend in GDP actually helps to capture more FDI inflow in the country.

Similar result continues to hold for inflation. Since with inflation price level increases which again increases the volumes of inflow of FDI in Malaysia. However, this does not indicate the fact that there will be real increase in FDI inflow. Real FDI will increase if and only if we can capture the level of inflation prevailing in the economy.

On a similar way, time spend on governing is also positive and significantly related with inflow of FDI of the country. More time spend is an indicator of good governance power. Good governance also helps a country to control the bureaucratic complexity of the country and thereby helps to attract more FDI in the country.

On the contrary, tax rate is expected to be negatively related with the level of inflow of FDI because less foreign firms will be attracted to invest in a country with high burden of tax.

**1.3.2 Data Analysis to examine whether FDI inflow has lead to export diversification in Malaysia**

The HHI is calculated by taking three sectors in Malaysia from the period 2005-2015. The sectors are, service, agriculture and manufacture

**Figure 6: HHI Index Value**

*Source: World Bank*

The HI index value line graph shows the export concentration ratio from 2005-2015. The export concentration ratio is highest in 2009 and lowest in 2013. However on average it is 0.92 for a period of 10 years. It implies that in Malaysia export concentration is high in service, manufacturing and agricultural sector and there is less diversification of export in other sectors.

**Table 3: GLS Regression Result**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Coefficient****(Standard Error)** | **Interval****(minimum)** | **Interval****(maximum)** |
| FDI | 5.18e+11\*\*(6.95e+10) | 3.26e+11 | 7.11e+11 |
| GDP | -6.37e+20\*\*(1.18e+20) | -9.65e+20 | -3.09e+20 |
| Time | -1.44e+18(1.50e+19) | -4.32e+19 | 4.03e+19 |
| Tax | 8.64e+19\*(3.25e+19) | -3.78e+18 | 1.77e+20 |

*Source: World Bank*

The regression result in table 3 shows expected relationship among the variables. It can be seen that HHI and FDI and positively related with each other and FDI is statistically significant. This indicates that an increasing trend in FDI leads to high HHI ie., high export concentration ratio and less export diversification.

GDP is also statistically significant and is negatively related with HHI. This indicates that with higher growth rate, export concentration ratio decreases which further increases the diversification of export.

# 1.4 Findings and Interpretation

The paper has identified the factors that lead to increasing flow of FDI in Malaysia. They are increasing trend of GDP, rising inflation, increasing time spend on governing by the government and reducing tax rate.

By applying a GLS technique of regression it has been found that an increasing trend in GDP actually helps to capture more FDI inflow in the country. Inflation is also positively related with FDI inflow. That is with inflation price level increases which again increases the volumes of inflow of FDI in Malaysia. Similarly, time spend on governing is also positive and significantly related with inflow of FDI of the country. More time spend is an indicator of good governance power. On the contrary, tax rate is expected to be negatively related with the level of inflow of FDI because less foreign firms will be attracted to invest in a country with high burden of tax.

The paper also conclude that the inflow of FDI has lead to fall in diversification of export and increases the export concentration ratio between the service, agriculture and manufacturing sector of Malaysia. This has been shown by the GLS technique of regression where the FDI and GDP has been identified as statistically significant with rising FDI leading to high export concentration ratio and rising GDP leading to high export diversification.

 The rising FDI leading to high export concentration ratio can be interpreted from the explanation given by Varela (2013) that a resource-rich country will have more concentrated export structure and the flow of FDI will be tilted more in the resource-rich sectors than the other sectors. As Malaysia is a resource-rich country in terms of minerals so the concentration of export is more in those sectors. However, the positive relation between rising GDP and export diversification can be further studied through an empirical work and thus pave the way for another research.

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1. The major difference between OLS and GLS model is based on the assumptions regarding the error term in the model. In case of OLS regression, we assume that  Var(u)=σ2IVar(u)=σ2I, Where, I is supposed to be the identity matrix. However, in case of GLS regression, we assume that Var(u)=σ2ΣVar(u)=σ2Σ, [↑](#footnote-ref-2)