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**THE RELATIONSHIP BETWEEN IMPORT TAX LIBERALIZATION  
AND ECONOMIC GROWTH: EVIDENCE FROM MALAYSIA**

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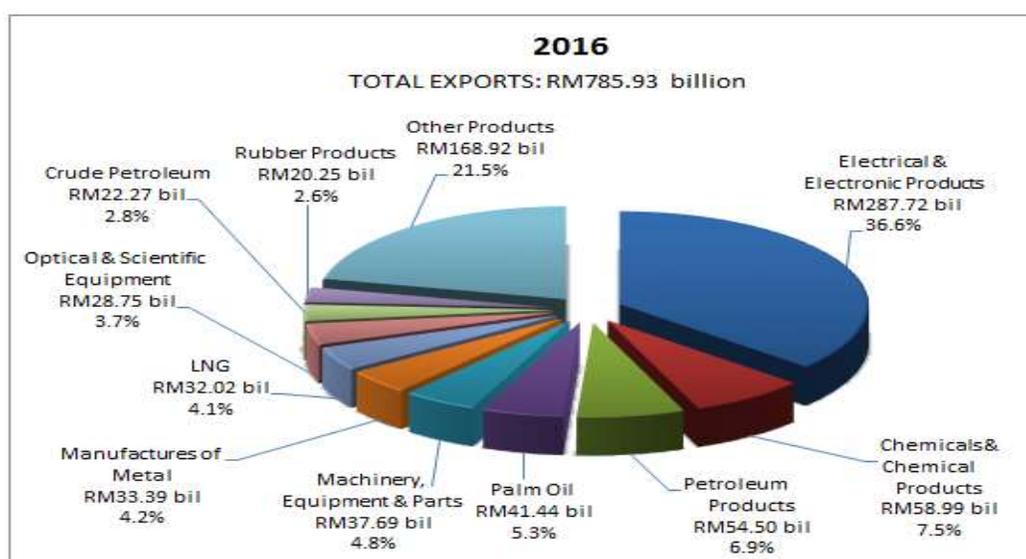
**ABSTRACT**

This study examined the impact of import tax liberalization towards the economic growth of Malaysia from 1980 to 2013. Since Malaysia is a developing nation and aimed to achieve the vision 2020, the government intended to exempt import taxes in manufacturing sector. The import tax liberalization used as main independent variable proxied by import duties and the dependant variable economic growth was proxied by Gross Domestic Product (GDP) in line with other contributing factors like human capital investment, external debt, exchange rate, government spending on trade, and government policy. The study employed empirical methods like Ordinary Least Square estimates, Unit Root Test, Johansen Co-integration test, Granger Causality Test, ARCH test and others. Therefore, the result obtained from empirical test revealed that the import tax liberalization supported the economic growth in both long run and short run. Thus, it was recommended to increase the degree of import tax liberalization in order to enhance the economic growth of Malaysia.

**Keywords:** Import tax liberalization, economic growth, Malaysia.

**1.0 Introduction**

Trade liberalization or trade barriers removal was proven to be supportive to the economic growth theoretically and empirically by Baharom, Habibullah and Royfaizal (2008), Hasvenda and Fadhlin (2014) and others. Based on the classical theory of absolute advantage in trade by Smith (1776), free trade was believed to reduce the market power and increase the productivity level and income of a nation. Milton and Friedman (1980) believed that free trade system would increase the economic growth, standard of living and job opportunities in a country since free environment without barriers lead to higher specialization and trade based on own production capabilities. Bhagwati and Srinivasan (2002), stated that high protectionism constrained the marginal efficiency of capital in a nation and high openness led to integrated world economy.



**Figure 1.1: Exports of Malaysia 2016**

Source: Department of Statistics, Malaysia

Figure 1.1 shows the components of total exports of Malaysia worth Rm785.93 billion in 2016. It also shows that the electrical and electronic products (semiconductor, LED and solar) from the manufacturing sector was the largest export of Malaysia, which was about 33 per cent in 2016. Therefore, Malaysian government reduced the import taxes in the manufacturing sectors in order to cut the production cost and enjoy more profit since the demand of manufactured goods in the global market has increased. Malaysia also reduced most of its trade barriers after engaged in many trade agreements like General Agreement on Tariff and Trade (GATT) in 1957, Bilateral Trade Agreement, ASEAN free trade area, Global System of Trade Preferences among Developing countries (GSTP) and others as well.

Since Malaysia had engaged in many free trade policies of the World Trade Organization and the ASEAN Economic Community, all forms of trade barriers had been gradually removed. This means, Malaysia ought to be able to sustain the growth in the world market without the protection. Thus, this study highlighted the impact of import tax liberalization towards the economic growth of Malaysia together with other contributing factors.

## 1.1 Problem Statement

The Federal Manufacturers Association of Malaysia found that the percentage of profit from manufacturing sector could be increased if the cost of doing business in Malaysia can be reduced. Manufacturing sector contributed about 30 to 40 per cent of the GDP of Malaysia and one of the major contributor to the nation. Therefore, the Malaysian government exempted the tax for wide range of raw material or direct inputs of manufacturing sectors for the materials that were not locally produced, the semiconductor material used for fabrication of completed semiconductors for exports, packaging materials of manufacturing sectors, and also the machinery and equipment directly used in manufacturing sectors.

Moreover, Malaysia had already liberalized the import duties for 2123 products through CEPT scheme for various industrial products. Since tax revenue are one of the major source revenue for Malaysian government and injection to the economic system, the question whether to the wide range of import taxes

liberalization would help to increase the economic growth arised. Thus, an empirical analysis had to be conducted to examine the impact of import tax liberalization towards the economic growth of Malaysia in the short run and long run. The direction of causality also ought to be clarified together with other independent variables employed in this study such as the human capital investment, exchange rate, external debt, government's spending and government policy.

## **1.2 Research Objectives**

- i. To ascertain the direction of causality from independant variables (import tax liberalization, external debt, human capital investment, exchange rate, government spending on trade, and government policy) to dependant variables (economic growth) in Malaysia.
- ii. To estimate the degree of influence of import tax liberalization, external debt, human capital investment, exchange rate, government spending on trade, and government policy towards the economic growth in the short run and long run.

## **2.0 Literature Review**

Hasvenda and Fadhlina (2014) studied the relationship between the trade liberalization, financial development and growth in Malaysia from 1970 to 2011. There was an unidirectional causality between the variables tested and it was concluded that trade liberalization supported financial development, and financial development supports growth. Lucas Nigel (2014) examined the relationship between trade openness, population, exchange rate, government spending and economic growth of Malaysia from 1970 to 2012. The study employed economic growth as the dependant variables, meanwhile trade openness as the main independent variable together with the government expenditure, population, and exchange rate. The empirical results revealed that trade openness and government expenditure has a positive long run relationship, meanwhile government expenditure has a negative long and short run relationship with the economic growth.

Norazrul Mat (2012) examined the relationship between trade openness and economic growth of Malaysia from 1970 to 2010. The study employed economic growth as dependant, meanwhile trade openness, Foreign Direct Investment, government development expenditure, gross fixed capital formation as independent variables. The results of empirical test revealed that trade openness led to the expansion of GDP, government development expenditure and gross fixed capital formation. Jamal Othman and Jafari Yaghoob (2009) examined the benefits of import tariff exemption and export subsidy elimination among intra-ASEAN countries through ASEAN Free Trade Agreement (AFTA) towards Malaysia. The study considered on the full elimination of regional import tariffs and export subsidies due to the AFTA implementation and its impact on ASEAN countries and special focus on Malaysia. This study employed Global Trade Analysis Project (GTAP) model using general equilibrium framework for 13 countries like Japan, Malaysia, Indonesia, Thailand, Cambodia, Vietnam, Singapore, Philippines, Myanmar, Laos with United States (US), China and Rest of World (ROW). The simulation results obtained showed that the elimination of import taxes and export subsidies can increase only seventeen per cent of the GDP (independent variable) of Malaysia. Only few countries like Malaysia, Indonesia, Laos, and Philippines had positive impact through AFTA, meanwhile countries like Cambodia, Myanmar, Thailand, and Vietnam had negative impacts on GDP.

Baharom, Habibullah and Royfaizal (2008) studied the relationship between the trade openness, foreign direct investment, exchange rate and economic growth of Malaysia from 1975 to 2005. The results from empirical analysis proved that trade openness and exchange rate had positive relationship, but foreign direct investment was negatively related to the economic growth of Malaysia. Ali Khalid (2016) studied

the relationship between the trade openness and economic growth in Turkey from 1960 to 2014. The empirical test results show that trade openness and gross capital has significant positive results in the short run and long run.

Yusoff (2005) studied the impact of bilateral trade agreements towards the economic growth of Malaysia (special focus) and other countries from 1974 to 2001. The dependant variables of the study was economic growth (proxied by industrial production indices) of United States, Malaysia, and Singapore, meanwhile the independent variables Malaysia's real export and real import of Japan, United States, and Singapore. The empirical tests revealed that there was no direction of causality between the exports and economic growth of Malaysia and bilateral trade agreement has significant impact on the economic growth of Malaysia. Jeevita, Jay and Boopen (2011) studied the relationship between the trade openness and economic growth of Mauritius from 1989 to 2009. In both long run and short run, all the variables had positive significant relationship with the dependant variable. Thus, it was concluded that trade openness is an engine to the economic growth of Mauritius.

Silva and Chidmi (2013) attempted to study the relationship between the trade liberalization and economic growth of Sri Lanka between the period of 1960 until 2010. The variables used in this study were economic growth used as dependant variable, while total agricultural production, trade openness, investment, and Free trade agreement (dummy) used as independent variables. The study showed that the trade openness had significant contribution towards the high growth or acceleration of economic growth and investment of Sri Lanka. Githanga (2014) attempted to investigate the relationship between the trade intensity and barriers towards the economic growth in Kenya in the period of 1975 to 2013. Empirical results of the test showed that trade openness had negative effect towards the economic growth of Kenya. Sachin (2014) has attempted to investigate the causal relationship between the trade openness, financial development and economic growth in India from the period of 1971 until 2013. The study employed Gross Domestic Product (GDP) growth rate as dependant, meanwhile the ratio of M3 money to GDP, trade openness, M1 money and M3 money used as independent variables. The empirical test proved the existence of long run relationship between the GDP, trade openness, and financial development and indicated that trade openness supports the economic growth.

### **3.0 Research Methodology**

The study employed time series data from the period 1980 to 2013 in order to study the relationship between the import tax liberalization and economic growth of Malaysia. The data on economic growth (proxied by GDP), import tax liberalization (proxied by import duties), human capital investment (proxied by secondary school enrolment rate), exchange rate (proxied by USD/MYR), external debt (proxied by external debt value of Malaysia), government spending on trade (proxied by government spending on trade and industry) and government policy (proxied by dummy variable) was obtained from various sources like World Bank, Economic Planning Unit of Malaysia (based on Statistic Yearbook of Malaysia), World Bank Data, and United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics. All the data collected was converted into logarithmic form to ensure that the difference in unit do not influence the results obtained. This study used econometric softwares, namely Eviews 9.5 to analyse the data collected.

$$\mathbf{LOG(Y)_t = \beta_0 + \beta_1 LOG(ITL)_t + \beta_2 LOG(HCI)_t + \beta_3 LOG(EXR)_t + \beta_4 LOG(ED)_t + \beta_5 LOG(GS)_t + \beta_6 LOG(GP)_t + \epsilon}$$

Where:

Y : economic growth  
 ITL : import tax liberalization  
 ED : external debt  
 EXR : exchange rate  
 HCI : human capital investment  
 GS : government spending on trade  
 GP : government policy  
 $\beta_0$  was the constant term,  $\varepsilon$  was an error term,  
 t represented time or trend.

The model showed the causal relationship between the economy growth (Y), import tax liberalization (ITL), the external debt (ED), exchange rate (EXR), human capital investment (HCI), government spending on trade (GS), and the government policy (GP). Before conduction the analysis, the stationarity of data was tested by applying Unit Root Test (Augmented Dickey Fuller). Johansen o-integration test was conducted to test the long run relationship, meanwhile the VECM modelling was used to test the short run relationship. While conducting an empirical study, the direction of causality of variables was determined based on Granger Causality Test suggested by Eagle Granger (1987). Finally, the diagnostic tests named Ramsey RESET test and ARCH test was conducted.

#### a. Unit Root Test

The Unit Root Test was used to test the stationarity because non-stationary variables would cause the spurious regression and the random walk of variables. Moreover, the coefficient of determinant (R-squared) would be too high and the beta ( $\beta$ ) will be significant even without the real result. This study would use the Unit Root Test associated with Augmented Dickey fuller suggested by Dickey and Fuller (1979) that relied upon rejecting null hypothesis if the series tested were not stationary and would accept alternative hypothesis.

$$\Delta X_t = \alpha \beta X_{t-1} + \varepsilon_t$$

Where, as per the assumption  $\Delta X_t (X_t - X_{t-1} - 1) \varepsilon_t$  was the random walk which better known as white noise disturbance. The differentiated lag will be included in ADF test to be conducted, if  $\varepsilon_t$  was correlated.

#### b. Johansen Co-integration Test

This study would test the presence of long run relationship between the variables tested using the Johansen (1988) co-integration test. The test determined the number of the co-integrating vectors present among the variables group based on Vector autoregressive system of  $N \times 1$  vector of X and the equation for the variables to perform was as follow. Where  $X_t$  indicates  $n \times 1$  vector on the non-stationary variables,  $\Pi$  and  $\Pi_i$  were the  $n \times n$  matrices of coefficients, while the  $n_t$  was vector of innovations. This test conducted both Max Eigen and Trace test, where the null hypothesis would be rejected when the trace value and Max Eigen value less than the critical value.

$$\Delta x_t = \Pi x_{t-1} + \sum_{i=1}^{p-1} \Pi_i \Delta x_{t-1} + n_t$$

### c. Vector Error Correction Model

The Vector Error Correction Model (VECM) was suggested by Eagle and Granger (1987) in order to test the short run relationship. Besides, the VECM allowed the short run adjustments dynamics since it had co-integration relations formed into specification, that restricting long run behaviour of endogenous variable at the same time converge with the co-integrating relationship.

$$\begin{aligned}\Delta X_{1,t} &= \alpha_1 (X_{2,t} - \beta X_{1,t-1}) + \varepsilon_{1,t} \\ \Delta X_{2,t} &= \alpha_2 (X_{1,t} - \beta X_{2,t-1}) + \varepsilon_{2,t}\end{aligned}$$

### d. Granger Causality Test

The causality test suggested by Eagle and Granger (1987) was used in this study to test the direction of causality between the variables tested. The bivariate Vector Autoregressive (VAR) method was used to perform this test and mainly focus on the dependent variable (economic growth) and the main independent variable (import tax liberalization) to determine the causality directions.

$$\begin{aligned}x(t) &= \sum_{i=1}^{\infty} \alpha_i x(t-i) + c_1 + u_1(t) \\ x(t) &= \sum_{i=1}^{\infty} \alpha_i x(t-i) + x(t) + \sum_{j=1}^{\infty} \beta_j y(t-j) + c_2 + u_2(t)\end{aligned}$$

### e. Ramsey Regression Specification Error Test (RESET)

According to Ramsey (1969), Regression Specification Error Test (RESET) is a general form of misspecification test. Where the combination (non-linear) of fitted values was tested in order to ascertain whether it help to explain the responding variables based on the following equation.

$$\begin{aligned}y &= \beta_0 + \beta_1 x^1 + \dots + \beta_k x_k + u, \\ y &= \beta_0 + \beta_1 x_1 + \dots + \beta_k x_k + \delta_1 y^2 + \delta_2 y^3 + e\end{aligned}$$

### f. AutoRegressive Conditional Heteroskedasticity (ARCH) Method

According to Eagle and Granger (1987), this method would use when the model were suspected to have heteroscedasticity (had inconstant variance) and autocorrelation problem. Besides, when the residuals had the pattern of volatility, the research had a justification to run ARCH test. This method would be used to solve both the problems of heteroscedasticity and autocorrelation.

#### 4.0 Interpretation of Data

**Table 4(a). Augmented Dickey Fuller (ADF) Unit Root Test Results**

Augmented Dickey Fuller				
	Level form		First difference	
	t-stat	p-value	t-stat	p-value
<b>Log(Y)</b>	-0.225	0.925	-5.714	0.000***
<b>Log(ITL)</b>	-1.923	0.318	-6.387	0.000***
<b>Log(HCI)</b>	-1.330	0.604	-5.769	0.000***
<b>Log(ED)</b>	-1.062	0.719	-7.570	0.000***
<b>Log(EXR)</b>	-1.679	0.432	-4.701	0.001**
<b>Log(GS)</b>	-1.504	0.519	-7.523	0.000***
<b>Log(GP)</b>	-1.339	0.600	-5.656	0.000***

Note: \*\*\*was significant at 1%, \*\*significant at 5%, \*significant at 10%

The ADF test results proved that all the variables were not stationary at level, since the p-value for all variables were greater at MacKinnon's one and five per cent critical values. If the variables are not stationary at level, it would lead to the spurious regressions and random walk of variables. Therefore, the variables need to be differentiated at first in order to solve unit root problem and to ensure it is stationary before proceed to next empirical tests. Table 4a shows that all the variables were stationary after differentiated at first difference.

**Table 4(b). VAR lag length selection criteria results**

Lag	AIC	SIC	HQ
0	-1.736	-1.416	-1.630
1	-9.609	-7.044*	-8.758*
2	-10.047*	-5.238	-8.453

\* indicates lag order selected by the criterion

In order to determine optimal lag length, Vector Autoregressive Model (VAR) was used. The lowest value of Akaike Information Criterion (AIC) would indicate the suitable lag length for VAR model. Based on the results in table b, the lag length of p=2 was chosen. However, the co-integration test indicated that there was a long run relationship between the dependent and independent variable, lag length (p) for the VECM was equals to (p-1) in VAR lag length. Thus, the optimal lag length of VECM was lag 1.

**Table 4(c). Unrestricted Cointegration Rank Test (Trace and Max Eigen)**

Lag interval (first difference) :1 to 1							
Hypothesized No. of CE(s)	Eigen value	Trace statistics	0.05 critical value	Prob ***	Max Eigen statistics	0.05 critical value	Prob ***
None *	0.848	153.727	125.615	0.000 ***	60.291	46.231	0.001 ***
At most 1	0.641	93.435	95.754	0.071	32.741	40.077	0.264
At most 2	0.522	60.693	69.819	0.215	23.610	33.876	0.484
At most 3	0.416	37.085	47.856	0.344	17.218	27.584	0.561
At most 4	0.370	19.864	29.797	0.432	14.793	21.131	0.303
At most 5	0.134	5.071	15.494	0.801	4.594	14.264	0.792
At most 6	0.015	0.477	3.841	0.490	0.476	3.841	0.490

Trace test indicated 1 co-integrating equation(s) at the 0.05 level

\* denoted rejection of the hypothesis at the 0.05 level \*\*MacKinnon-Haug-Michelis (1999) p-values(1999) p-values

Table 4(c) revealed the result of Maximum Eigen Value test results. The test indicated the presence of one co-integrating equations at 0.05 or five per cent significance level. Since there was at least one co-integrating equation, the null hypothesis was rejected. It can be concluded that there was a long run relationship between the dependent and independent variable.

**Table 4(d). Vector Error Correction Model**

Variable	Coefficient	Standard error	t-statistic
Co-int Equation 1	-0.151	0.076	-1.963 ***
C	0.122	0.042	2.903
D(LOG(Y(-1)))	0.010	0.179	0.055
D(LOG(ITL(-1)))	-0.142	0.103	-1.380 *
D(LOG(HCI(-1)))	-1.386	0.849	-1.631 **
D(LOG(ED(-1)))	-0.016	0.177	-0.094
D(LOG(GS(-1)))	0.121	0.052	2.313**
D(LOG(EXR(-1)))	-0.148	0.504	-0.293
D(LOG(GP(-1)))	0.239	0.216	1.104

Note: \*\*\* significant at 1%, \*\*significant at 5%,\*significant at 10%

The coefficient of ECM (-151) explained the adjustment to current year equilibrium after the shock of past year, where 15.1 per cent of the disequilibrium from the previous year's shock coincided or converged to the long run equilibrium of current year. Therefore, human capital investment, import tax liberalization and government spending have short run relationship with the economic growth of Malaysia.

**Table 4(e). Granger Causality Test Results**

Independent Variable	Dependant Variable	P-value	Hypothesis
D(LOG(ITL))	D(LOG(Y))	0.103	H0 accepted
D(LOG(HCI))	D(LOG(Y))	0.167	H0 accepted
D(LOG(ED))	D(LOG(Y))	0.925	H0 accepted
D(LOG(GS))	D(LOG(Y))	0.021 **	H1 accepted
D(LOG(EXR))	D(LOG(Y))	0.769	H0 accepted
D(LOG(GP))	D(LOG(Y))	0.269	H0 accepted

Note: \*\*\* significant at 1%, \*\*significant at 5%, \*significant at 10%

It can be concluded that there was a causal relationship between the economic growth and government spending in the short run. However, the direction of causality was from government spending to economic growth, but not from economic growth to government spending.

**Table 4(f). Ramsey RESET results**

<b>Prob. F(1,26)</b>	0.114
<b>F-statistic</b>	2.682
<b>Prob. F(2,25)</b>	0.261
<b>F-statistic</b>	1.420

Table 4 (f) show the results of Ramsey RESET rest which was conducted to detect functional form misspecification in the model. The p-value of both fitted terms was greater than five per cent, therefore the null hypothesis was accepted that there was no functional form misspecification.

**Table 4(g). Heteroscedasticity test ARCH results**

<b>Prob. F(1,30)</b>	0.905
<b>Prob. Chi-Square(1)</b>	0.902

The table 4(g) shows that the variance of error term in variables was consistent or equal, and this state is called homoscedasticity. Therefore, it can be concluded that there was no ARCH effect and heteroscedasticity problem in the model, and there were no justification to run the ARCH model test.

## 5.0 Conclusion

The results obtained from empirical methods employed in this study, revealed that the import taxes would worsen off the economic growth of nation in both long run and short run. It was supported by the results obtained from Johansen Co-integration test and VECM test, which showed a negative relationship between the import tax and economic growth of Malaysia in the long run and short run. The import tax liberalization used import tax as the proxy, meanwhile economic growth used GDP as the proxy. When the import increased, the import liberalization decreased and led to the expansion of GDP. However, the direction of causality between the import tax liberalization was not identified. Therefore, it was highly recommended for the Malaysian government to increase the import tax liberalization in trade of goods and services related sectors in Malaysia, promote the exports, increase the government spending, and reduce the external debt of Malaysia. Hence, it was identified that import tax liberalization would increase the economic growth and wealth of Malaysia in both long run and short run. The conditions of variables like human capital investment, external debt, government spending and government policy ought to be considered before making future judgements too.

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