Impact of Export, Import, and Population on Economic Growth in Malaysia

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\textbf{ABSTRACT}

This study investigates the impact between export, import, and population on economic growth in Malaysia. This study examines the economic growth of Malaysia from 1960 to 2021 with a total of 62 observations. Exports (EX), imports (IM), and population (POP) are the independent variables used to determine economic growth. As the dependent variable, a proxy for Gross Domestic Product (GDP) growth represents economic growth. Using Eviews 12, descriptive, correlation, and multiple regression analyses were conducted on the data. The main finding indicates that population and imports positively affect Malaysia's economic growth. As a result, exports negatively impacted Malaysia's economic growth. This study is significant because it contributes new knowledge that population, not imports or exports, has had the most significant impact on Malaysia's economic growth over the past 62 years. This study recommends that future research investigate the population, policies and environmental factors that influence economic growth and expand the sample size.

\textbf{Keywords:} Export; import; population; economic growth; GDP growth

\section{1. Introduction}

Economic growth refers to an increase in the number of products and services generated per individual over time. In addition, it indicates an increase in the real gross domestic product (GDP), which increases the value of national output, income, and expenditures. The Department of Statistics of Malaysia (DOSM) \cite{1} reported that Malaysia's gross domestic product (GDP) increased by 8.9% in 2021 compared to the previous growth rate of 5%. If GDP shows a healthy increase, this indirectly reflects the overall economic growth in a particular country.

In previous studies, gross domestic product is a famous indicator to measure economic growth \cite{2-9}. Moreover, based on Ali \textit{et al.} \cite{10} and Thavarajah and Chin \cite{11}, the real gross domestic product became attention to measure the economic growth. In addition, Peterson \cite{12} used per capita GDP domestic as an indicator to determine economic growth. Thus, according to past and present research observations, it is interesting to explore economic growth by proxy of GDP growth rate. This study seizes the chance to produce significant results in the different dimensions of the existing studies by using the gross domestic product growth rate to gauge economic growth from 1960 to 2021 in Malaysia. In addition, World Bank \cite{13} indicated that Malaysia's GDP growth (figure 1) continued to increase annually from 2015 until 2021, except in 2020, due to the pandemic. With this
expansion, Malaysia directly supports the eighth Sustainable Development Goal (SDG) of decent work and economic growth by promoting sustainable and stable economic growth.

Fig. 1. GDP Growth in Malaysia from 2015 to 2021

Based on past studies, numerous micro and macro factors contribute to economic growth, including consumption, government expenditures, export, exchange rate, foreign direct investment, import, and inflation. For example, Kogid et al., [4] used the determinants factors of consumption expenditure, government expenditure, export, exchange rate, and foreign direct investment to measure the economic growth in Malaysia from 1970 to 2007.


Nonetheless, based on the data provided by the World Bank in figure 2 on exports and imports, this study aims to conduct additional research by determining the impact of exports and imports on economic growth with a proxy of the GDP growth rate from 1960 to 2021 in Malaysia. Therefore, this study utilizes exports as well as imports to measure economic growth as it replicates the research from Bakari and Krit [3], Noor and Ramli [7], Triyawan et al., [8], and Ali et al., [10]. Export and import activities are synonymous with international trade and records under the current account of the balance of payment (BOP). BOP is a summary of the transaction between domestic and foreign residents for a specific country over a particular period, generally yearly. Each international transaction must have two entries: one on the credit side (inflows) and one on the debit side (outflows). Furthermore, this BOP account will result in zero, surplus, or deficit at the end of the year. In addition, every country in the world aims for a BOP equal to zero, which is impossible due to several factors, one of which is an omission error.
A country aims for a surplus BOP because it indicates a healthy economy. However, if a country has a BOP deficit, the government should impose corrective measures to prevent the gap from worsening. Generally, the government would tighten all aspects linked to imports, such as imposing import bans, quotas, taxes, and increasing prices to diminish the demand for imported goods. In contrast, encouraging export is one of the solutions to overcome the deficit of BOP. The government will offer export subsidies to encourage the export of goods and discourage their sale on the local market via low-interest loans, tax relief for exporters, and government-funded foreign advertising from promoting exporting among businesses. These exports will be profitable for the country since they will generate government revenue through various taxes. Because of this, the governments of all countries provide significant support for businesses engaged in exporting.

According to the DOSM [1], a surplus of RM4.4 billion contributes by net exports of goods, lower primary income, and services deficits. Interestingly, net exports of goods made the most significant contribution to the current account balance of Malaysia during the second quarter of 2022. This presented evidence makes it abundantly clear that exports of goods are a significant contributor to economic growth in Malaysia during the second quarter of 2022. Furthermore, data from the World Bank [13] reported that exports of goods and exports of goods and services (figure 2) increased slightly between 2020 to 2021. World bank also indicates that exports are a reliable indicator of economic growth in Malaysia from 2020 until 2021. Thus, DOSM [1] and World Bank [13] data support that exports contribute significantly to Malaysia’s economic growth from 2020 to the second quarter of 2022.

Real data from authorities such as DOSM and the World Bank make it impossible to doubt the contribution of exports as a primary source of economic growth. In academic research, however, the relationship between exports and economic growth yields contradictory results due to differences in the study period and the country as a study sample, as agreed by Bakari and Krit [3].

For example, a study from Acaravci and Ozturk [14] used quarterly data from 1994 to 2008 to consider ten transition European countries: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, and Slovenia. In addition, Imsar et al., [5] covered the country of Indonesia in their study for the year 2011 until 2020. These two studies indicate that export significantly contributes to economic growth, as evidenced by comparing Europe and Indonesia over different periods.

In contrast, three previous studies that used Malaysia as a study sample and analyzed data from different periods also found that export significantly contributes to economic growth. These studies
were conducted by Kogid et al., [4], who analyzed data from 1997 to 2007; Abdullah et al., [6] analyzed data from 1984 to 2014; Thavarajah and Chin [11] analyzed data from 1987 to 2017. In addition, a study by Triyawan et al., [8] concluded that export and import values had no impact on the GDP of the United States from 2010 to 2019. Based on the past works of literature, exports significantly impact economic growth and vice versa, depending on the sample size and duration of the study. Furthermore, the question of whether exports can contribute to economic growth is a prevalent topic among economists and researchers. As the first research gap, this study addresses whether export significantly impacts economic growth by considering Malaysia and the time frame of 62 years from 1960 until 2021. Hence, the first hypothesis is that exports will influence the economic growth of Malaysia from 1960 to 2021.

Export and import are synonymous terms for recording the credit and debit sides of the balance of payments (BOP) or country account. Export is recorded on the credit side, denoting cash inflows, whereas import is recorded on the debit side, denoting cash outflows. The credit (export) side should be surplus rather than debit (import) to produce the surplus BOP. Therefore, it is insufficient to concentrate solely on export if an import is ignored. Figure 3 represents the performance of Malaysia’s export and import of goods from 2015 until 2019. In the preceding years, the export and import of goods indicated an increasing performance, even though they slightly decreased in 2019. The graph indicates that export and import consistently move in tandem, neither increasing nor decreasing from 2015 to 2019. Thus, this study aims to reveal the significance of exporting and importing to ensure that no research findings are neglected.

In the past, a study based on observation conducted a separate study regarding import-export as the independent variable to determine economic growth to be more specific and comprehensive. For example, Kogid et al., [2] and Humpage [15] examine the impact of imports on economic growth. While, Imsar et al., [5], Abdullah et al., [6] and Thavarajah and Chin [11] study the relationship between export and economic growth.

This study aims to include export and import as independent variables to determine economic growth, such as studies from Bakari and Krit [3], Noor and Ramli [7], Triyawan et al., [8] and Ali et al., [10]. Therefore, this study pondered whether export and import evaluations should be combined for more precise results. The second gap raises the intriguing question of whether imports will contribute to economic growth after the first gap of this study is discussed. Hence, the second hypothesis is that imports will influence the economic growth of Malaysia from 1960 to 2021.

![Exports and Imports in Goods (in RM million)](chart.png)
Besides export and import, the population is vital in determining economic growth because it indirectly measures demand for domestic and foreign goods and services. Peterson [12] strongly believed in the controversial relationship between population growth and economic growth. He concluded that low population growth in countries with high incomes is likely to cause social and economic problems, whereas high population growth in countries with low incomes is likely to impede the countries' overall development. Based on his finding, this study relates how Malaysia's position as a developing country with an upper middle-income level and a population of 37,776,195 in 2021, as reported by the World Bank, will affect economic growth. What level of impact is on economic growth in Malaysia, with a population of 37,776,195, compared to a study from Mahtta et al., [9] that considers a population of over one million? Does a population of 37,776,195 significantly impact economic growth in Malaysia for the 62 years of study? The answers are still inconclusive; therefore, the last gap for this study is fascinating to ponder and contribute to the new knowledge. Hence, the third hypothesis is that the population will influence the economic growth of Malaysia between 1960 and 2021.

The following are the organizational components of this paper: The methodology is examined and discussed in greater detail in Section 2. The findings and results are discussed in Section 3, while the research's conclusions are discussed in Section 4.

2. Methodology

Most previous research has measured economic growth specifically during a financial crisis or when the economy is robust enough to warrant further study. Nonetheless, this study endeavours to extend as much as possible the time required to measure economic growth in Malaysia using the available data. Thus, this study utilizes secondary data from World Development Indicators (WDI) from 1960 to 2021 to determine the relationship between exports, imports and population towards economic growth in Malaysia. The variables used in this study are detailed in Table 1, and measurements are based on previous research. The collected data are then analyzed using the software Eviews 12, including descriptive, correlation, and multiple regression analyses.

The majority of studies use GDP as a proxy for economic growth, including those by Kogid et al., [2], Bakari and Krit [3], Kogid et al., [4], Imsar et al., [5], Abdullah et al., [6], Noor and Ramli [7], Triyawan et al., [8], and Mahtta et al., [9]. However, the dependent variable of this study is economic growth proxied by the gross domestic product growth rate (GDPG) to gain a deeper understanding of the factors that influence economic growth in addition to GDP.

Export is the first independent variable employed in this study to determine its effect on Malaysia's economic growth, as suggested by Kogid et al., [4] on his recommendation for further study. In addition, this paper includes import as the second independent variable to measure economic growth in Malaysia, similar to Bakari and Krit [3], Triyawan et al., [8], Noor and Ramli [7], and Ali et al., [10], whose study utilized export and import as independent variables to predict economic growth for their study in past time. The last independent variable is population, as suggested by Mahtta et al., [9] and Peterson [12] to determine the economic growth in Malaysia. This study improved the earlier study by including population as a third variable in addition to export and import when analyzing economic growth.
Table 1
Measurement of Study Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Particular</th>
<th>Proxy</th>
<th>Measurement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable</td>
<td>Economic</td>
<td>Gross Domestic</td>
<td>%</td>
<td>The annual percentage growth rate of GDP at market prices is based on constant local currency.</td>
</tr>
<tr>
<td></td>
<td>Growth</td>
<td>Product Growth Rate (GDPG)</td>
<td></td>
<td>Exports of goods and services represent the value of all goods and other market services provided to the rest of the world.</td>
</tr>
<tr>
<td>Independent Variable</td>
<td>Export</td>
<td>EX</td>
<td>%</td>
<td>Imports of goods and services represent the value of all goods and other market services received from the rest of the world.</td>
</tr>
<tr>
<td>Independent Variable</td>
<td>Import</td>
<td>IM</td>
<td>%</td>
<td>Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship.</td>
</tr>
<tr>
<td>Independent Variable</td>
<td>Population</td>
<td>POP</td>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

This study’s model estimation aims to determine the relationship between export and import towards the economic growth in Malaysia as measured by the Gross Domestic Product Growth rate (GDPG). Following Triyawan et al., [8], this study employs descriptive data analysis and quantitative analysis, namely multiple regression analysis, to answer the research questions by considering the p-value at a 5% significance level. Hence, the estimation model for economic growth in Malaysia has the following structure:

$$GDPG_{it} = \beta_0 + \beta_1 EX_{it} + \beta_2 IM_{it} + \beta_3 POP_{it} + \varepsilon_{it}$$  \hspace{1cm} (1)

$GDPG_{it}$: Gross Domestic Product (Annual growth of GDP) for Malaysia time $i$;

$EX_{it}$: Export for Malaysia time $i$;

$IM_{it}$: Import for Malaysia time $i$;

$POP_{it}$: Population for Malaysia time $i$;

$\beta$: The Coefficient represents the Independent Variables.

$\varepsilon_{it}$: Error Terms for Malaysia time $i$.

3. Results

3.1 Descriptive Analysis

A descriptive analysis that provides basic information about the variables in the dataset and highlights potential relationships between variables includes 62 annual observations in Malaysia from 1960 to 2021. Table 2 summarises the data for Malaysia compiled by the World Development Indicator (WDI). The mean or average value of the growth of the gross domestic product (GDPG) is 24.38%, indicating economic growth. A similar result demonstrated by the export rate of 23.97% indicates that from 1960 to 2021, Malaysia's exports of goods and other market services will have contributed to the global economy's value. In addition, 23.87% of imports comprise goods or services purchased from the country of origin.

In contrast, 16.69% of Malaysia's population contributes to the country's economic growth. During the period covered by this study, these three independent variables exhibited a positive indication of economic growth. Lastly, the export has exhibited the most significant standard deviation by 1.9576, indicating that it is highly dispersed or spread from the mean, followed by import (1.9380) and GDP growth (1.6864). In contrast, the population has a spread of less than 1.000.
### Table 2

**Descriptive Analysis**

<table>
<thead>
<tr>
<th>Stats</th>
<th>Obs.</th>
<th>GDPG</th>
<th>EX</th>
<th>IM</th>
<th>POP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>62</td>
<td>21.3661</td>
<td>20.6416</td>
<td>20.4387</td>
<td>15.9143</td>
</tr>
<tr>
<td>Mean</td>
<td>62</td>
<td>24.3822</td>
<td>23.9736</td>
<td>23.8671</td>
<td>16.6870</td>
</tr>
<tr>
<td>Std. dev</td>
<td>62</td>
<td>1.6864</td>
<td>1.9576</td>
<td>1.9380</td>
<td>0.4260</td>
</tr>
</tbody>
</table>

### 3.2 Correlation Analysis

Import, export and population positively impact Malaysia's economic growth by 0.9942, 0.9935 and 0.9906, respectively. According to the Pearson correlation coefficient, all variables exhibit a strong positive correlation close to 1. Generally, this study implies that all three independent variables will increase the economic growth of Malaysia.

Specifically, the higher the import, the higher the economic growth for Malaysia. Imports promote economic growth by providing consumers with lower prices or more options, increasing their living standards. When a country imports goods, it purchases them from foreign manufacturers. The money spent on imports leaves the economy, which reduces the GDP of the importing country. Imports, therefore, directly impact economic growth and should be managed effectively. Second, increasing a country's exports will encourage economic growth because these activities result in financial gains for the country. Because of this, the government of any country will encourage its local businesses to engage in exporting-related activities. At the same time, a population presents an opportunity for accelerated per capita economic growth if countries with rapid population growth achieve a substantial and sustained decline in fertility. Thus, an increase in population will increase the economic growth of Malaysia.

This study continued without eliminating any independent variables for extensive analysis, even though they all have a strong positive correlation. The significant reasons why this study did not eliminate the independent variable are as follows: firstly, this study replicated the prior research that used export and import as independent variables to predict economic growth by Bakari and Krit [3], Triyawan et al., [8], Noor and Ramli [7], and Ali et al., [10]. Secondly, to improve previous studies, the population was added to the analysis of economic growth alongside export and import.

### Table 3

**Correlation Analysis**

<table>
<thead>
<tr>
<th></th>
<th>GDPG</th>
<th>EX</th>
<th>IM</th>
<th>POP</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDPG</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX</td>
<td>0.9935</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IM</td>
<td>0.9942</td>
<td>0.9988</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>POP</td>
<td>0.9906</td>
<td>0.9882</td>
<td>0.9860</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

### 3.3 Regression Analysis

The results of Table 4 on multiple regression indicate that exports have a negative effect on Malaysia's economic growth, while imports and population have a positive effect. The findings on EX support studies by Noor and Ramli [7] and Triyawan et al., [8] but contradict Bakari and Krit [3], Kogid et al., [4], Imsar et al., [5] and Abdullah et al., [6]. This result indicates that Malaysia has a trade deficit due to imports exceeding exports. Malaysia should begin limiting imports and promoting exports to transform its trade deficit into a surplus, thereby indirectly boosting economic growth.
In the meantime, the results for IM agree with Noor and Ramli [7] and Triyawan et al., [8], but disagree with Bakari and Krit [3] and Kogid et al., [4]. It indicates that Malaysia's economy is expanding due to its ability to offer consumers lower prices or more options for imported goods and services. Moreover, import activities should be monitored to control the local demand for foreign goods and services and safeguard our economy. Lastly, our finding on population is similar to Mahtta et al., [9], which is that population have a positive relationship with economic growth in Malaysia.

Table 4
Multiple Regression - Pooled Ordinary Least Square (POLS) Regression

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-stat</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDPG</td>
<td>-15.3553</td>
<td>3.4227</td>
<td>-4.4862</td>
<td>0.0000</td>
</tr>
<tr>
<td>EX</td>
<td>-0.3065</td>
<td>0.2174</td>
<td>-1.4100</td>
<td>0.1639</td>
</tr>
<tr>
<td>IM</td>
<td>0.8156</td>
<td>0.2016</td>
<td>4.0453</td>
<td>0.0002**</td>
</tr>
<tr>
<td>POP</td>
<td>1.6552</td>
<td>0.2957</td>
<td>5.5973</td>
<td>0.0000*</td>
</tr>
</tbody>
</table>

R-squared 0.9925
Adjusted R-squared 0.9921
Prob (F-statistic) 0.0000

Note: p-values in parentheses; * p < 0.1, ** p < 0.05, *** p < 0.01

The significance of the p-value was discussed further in the analysis of this study to answer the hypotheses. Only two variables, POP and IM, are significant at 1% and 5%, respectively, in determining the impact on economic growth in Malaysia. In contrast, export results are negatively insignificant to economic growth.

Firstly, the population was positively significant at 1% to Malaysia's economic growth from 1960 to 2021. It indicates that demand for both imported goods and services and domestic goods and services is increasing. If population growth is higher, per capita GDP growth will lead to higher economic growth. Peterson [12] concludes that population is a significant factor in global economic expansion and may contribute to per capita economic growth. Thus, these findings accept the hypothesis that the population will influence the economic growth of Malaysia between 1960 and 2021.

Secondly, the relationship between imports and economic growth is positively significant at 5% over the 62 years from 1960 to 2021, consistent with Noor and Ramli [7], Triyawan et al., [8] and Lee et al., [16]. Generally, imports play a significant role in Malaysia’s economic growth. Previous research by Humpage [15] indicates that well-growing countries tend to have high imports and large trade openings, which inhibit faster economic growth. Kogid et al., [2] indicate that import may indirectly contribute to economic growth, while economic growth may directly contribute to import, as their study on causality research. Thus, this study accepts the hypothesis that the import will influence the economic growth of Malaysia between 1960 and 2021.

Theoretically, every country in the world will encourage exports and restrict imports to maintain a positive balance of payments. However, this study presents the negatively insignificant between export and economic growth in Malaysia from 1960 to 2021 consistent with Noor and Ramli [7] and Triyawan et al., [8]; but contradicts Kogid et al., [4], Imsar et al., [5], and Abdullah et al., [6]. Moreover, past studies on exports and economic growth have yielded contradictory results for different countries and timeframes, as agreed by Bakari and Krit [3]. Exports should be in excess because they are a source of revenue for the country. Based on this finding, Malaysia should implement more efficient export strategies, and the government should increase export subsidies to encourage more exports. Ali et al., [10] recommend that the government exercise export control when formulating policies to prevent unsustainable economic growth. Thus, after further discussion and
recommendation on this matter, this study fails to accept the hypothesis that exports will influence the economic growth of Malaysia between 1960 and 2021.

4. Conclusions

Export, import, and population are expected to have an impact on the economic growth of Malaysia, as predicted in an earlier section of this study. However, the actual finding is surprising given that the population is the most significant predictor of economic growth in Malaysia from 1960 to 2021, followed by imports. This study may provide an overview of the significant implications by validating that population and import are essential to future economic growth in Malaysia. And there is no doubt that exports also play a significant role in economic growth in Malaysia. Moreover, immediate corrective action must be taken whenever the BOP results decline, significantly when imports exceed exports.

As standard practice, countries will provide export subsidies through low-interest loans, tax breaks, and government-funded international advertising. In contrast, the government implemented tariffs, quotas and import bans to restrict import activities. Because implementing any policy would affect economic growth, it was suggested that policymakers structure and plan their strategy before implementing any policy. If the strategy of encouraging exports and restricting imports fails to reduce the BOP deficit, the policymaker should revise the fiscal and monetary policy before deciding to devalue the country's currency through the lender of last resort. If the economy grows faster than its capacity, inflation and balance of payments issues will likely arise. The government could either increase taxes or reduce government spending to slow down the economy. Moreover, if the Monetary Policy Committee considers inflation at risk of rising and potentially exceeding its inflation target, it may consider raising interest rates. Devaluation or lowering the domestic currency's value concerning other currencies are the final options for raising the BOP to surplus. This will affect import and export; the price of imported goods will increase, resulting in a decrease in demand for imports, while the price of exports will decrease, increasing the quantity exported.

This study differs from the previous study in that it used GDP growth as a proxy for economic growth rather than GDP, real GDP, and per capita GDP. In addition, the study encompasses all World Bank data for Malaysia accessible from 1960 to 2021. The limitation of this study is on yearly data available; it would be more interesting if monthly and quarterly data were available to obtain more precise results. The primary recommendation of this study to the government of Malaysia is that determining factors of import and population should have greater weight when drafting related economic policies for a country. Furthermore, future studies are advised to continue focusing on the population as one of the independent variables to determine economic growth. In addition, this study concurs with previous research and strongly recommends additional exploration of Malaysia's fiscal and monetary policy. Future research may consider inflation and interest rate variables to measure economic growth. In addition, future research could also investigate the impact of environmental factors such as carbon dioxide (CO2) on economic growth and identify its performance-influencing factors.

References


