AN APPLICATION OF MULTIPLE LINEAR REGRESSION ANALYSIS: THE IMPACT OF FDI AND DOMESTIC INVESTMENT ON ECONOMIC GROWTH

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ABSTRACT

According to the World Bank, Malaysia aspires to become a high-income country by 2028. Since Malaysia joined the upper-middle-income country group in 1992, Malaysia needs to be at the stage to accelerate its economic growth to achieve its target. However, it will become a significant problem for the country if it relies more on FDI than domestic investment since many foreign investors have halted most contracts signed due to lockdown restrictions during the coronavirus pandemic. As the significance of FDI and domestic investment towards economic growth are still debatable, this paper aims to examine the impact of FDI, domestic investment, trade, interest rate, exchange rate, savings, and consumption expenditure on Malaysian economic growth by using gathered time-series data from 1979 to 2019. Based on the applied multiple linear regression analysis, our findings suggest that domestic investment, interest rate, savings, and consumption have a significant positive relationship with economic growth. However, FDI and exchange rate negatively affect economic growth, while trade openness does not influence Malaysian economic growth. Thus, domestic investment is one of the primary sources in promoting Malaysian economic growth, but not in the case of FDI. Hence, government and policymakers should strengthen domestic investment to attain Malaysia's aspirations.

Keywords: Domestic Investment, Economic Growth, FDI, Multiple Linear Regression

1. INTRODUCTION

Since the early 1980s, FDI has been widely known as a primary source for country development, particularly among developing countries. FDI inflow is defined as when an investor based in a home country acquires to manage the asset in the recipient country that encompasses the equity capital, reinvested earnings, and other assets by foreign investors who owned at least 10% of equity capital directly or indirectly for their direct investment enterprise in Malaysia (Department of Statistics Malaysia, 2020). FDI could transfer positive spillover to the host country's economic growth since some studies support the FDI-led growth hypothesis (Gherghina et al., 2019). It was found that FDI would shrink the market share of domestic firms. Still, extensive studies discovered that multinational companies encourage domestic firms to be more competitive because of the diffusion of knowledge and technology (Mohamed et al., 2021). Besides, FDI establishes essential linkage between economies as an imperative channel in reinforcing international trade through access to a foreign market, and transferring advanced technology between countries, and can be a critical determinant in economic development (OECD, 2021). According to MIDA (2021a), the net FDI inflows of

Malaysia stood at RM13.9 billion, a decline from 2019 by RM31.7 billion, and has continuously declined since 2016.

Subsequently, domestic investment is one of the investments that act as a backbone of Malaysian economic development that encompasses private investment and public investment (MIDA, 2021a). It was reported that domestic investment is the second-largest component contributing to GDP with a share of 23.1% in 2019 of the overall Malaysian economy (Department of Statistics Malaysia, 2020). The highest peak of domestic investment in Malaysia was recorded in 1997 with 43.11%, but the 1997-98 Asian Financial Crisis cause a continuous decline to 22.96% in 2019. The negative growth of 2.1% in 2019 was due to a lower acquisition of fixed assets in the manufacturing, mining, and quarrying sector. Moreover, Malaysia's economic growth in 2020 was reported a contraction of 5.6% as compared to its previous year, which was the lowest since 1998 (Department of Statistics Malaysia, 2021). The disruption of economic activities happened when the government implemented the lockdown to curb coronavirus infections in 2020. Consequently, weakening in private and public investment, contraction in all economic sectors, higher unemployment rate, and lower inflows of FDI have shrunk the growth of the economy (BNM, 2021). Thus, Malaysia still has a long way to accelerate its GDP per capita to more than 12,696 USD since Malaysia is an upper-middle-income nation that aims to be a high-income economy status for the next five years (World Bank, 2021). The World Bank has forecasted that Malaysia will cross the threshold of a high-income country by 2028 as it explains GNI per capita income in Malaysia will increase nearly four-fold, although it will be slow progress of growth since 2015 due to the weakness of the Ringgit Malaysia relative to the U.S. dollar (World Bank, 2021).

Since Malaysia joined the upper-middle-income country group in 1992, Malaysia needs to be at the stage where the government should put more effort to reinforce and sustain economic growth to achieve its transformation development targets as stated in the Shared Prosperity Vision 2030. Due to Great Lockdown in 2020, the investors in China were halted, stopped, and revised most of the contracts signed with Malaysia in the past years (MIDA, 2021b). These issues here are significant to be discussed whether FDI and domestic investment act as key drivers to enhance Malaysian economic growth since the contribution of these variables to GDP is still ambiguous (Meivitawanli, 2021; Mohamed et al., 2021). As Malaysia aspires to achieve high-income country status by 2030, this paper aims to examine the significance of FDI, domestic investment, trade, interest rate, exchange rate, savings, and consumption expenditure on Malaysia's economic growth. This can discern whether these variables are crucial in boosting economic growth and provide new literature by applying multiple linear regression analysis with current data for the Malaysia case.

2. LITERATURE REVIEW

Many researchers support that FDI has a significant positive impact on economic growth (Alzaidy et al., 2017; Awad, 2020; Azam et al., 2017; Lee & Huruta, 2020). Besides, it was revealed FDI exerts a weak positive impact on Singapore's economic growth (Abdul Rahim et al., 2017). Meanwhile, Mohamed et al. (2021) argued that FDI exhibits a significant positive impact on Egypt's economic growth in the long run, but FDI has no influence on economic growth in the short run. Although FDI is crucial markedly for developing countries' economic growth, the advantages of FDI to the host country are still ambiguous and may have a diverse effect on the host country's domestic investments. Sharma et al. (2020) argued that FDI is not significant and harms the economic growth of India. To offset the negative impact of FDI on economic growth, several studies suggest the country should stabilize its financial system development, manage to lower the inflation rate, and improve infrastructure provisional to reap the positive spillover of FDI (Hodrob, 2017). Also, FDI might not be a source of boosting economic growth in Asian developing countries since FDI has a significant negative impact on economic growth (Bakari & Tiba, 2019). Interestingly, Meivitawanli (2021) provides evidence that Indonesian economic growth becomes slower if the country aims to attract a high number

of foreign investors. The negative relationship between FDI and economic growth may exhibit that the positive externalities are more transferred to foreign countries than the recipient country, and this circumstance may lead to competition disruption (Sharma et al., 2020).

In connection to the Malaysia case, Awad (2020) investigates that Malaysian economic growth has a significant positive impact on FDI, which implies the positive progress of economic growth will attract more quality foreign investors to invest in the country. Also, Mustafa et al. (2021) ascertained that FDI has a significant positive relationship with Malaysian economic growth in which an increase in FDI by 1% will increase Malaysia's GDP by 2.55%. Also, some studies provide similar and consistent findings on the positive impact exerted between FDI and Malaysia's economic growth (Azam et al., 2017). In addition, ASEAN+3 countries were considered successful in attracting FDI as one of the integral parts of the global economy in augmenting the social and economic development process (Lee & Huruta, 2020). Besides, various studies support that domestic investment has a significant positive impact on economic growth (Hodrob, 2017; Kutasi et al., 2019; Mohamed et al., 2021). By applying the VECM method, domestic investment was found to have a positive impact on Malaysian economic growth in the long run, whilst domestic investment has no relationship with economic growth in the short run (Bakari, 2017a). That is due to excellent technological development and infrastructure designed as these factors signify the effectiveness of domestic investment in reinforcing the economic growth in Malaysia (Bakari, 2017a). Also, it was revealed domestic investment has a significant positive impact on Malaysian economic growth in the short and long run by using the ARDL approach (Alzaidy et al., 2017). Within the same timeline, Bakari (2017b) revealed contrary findings whereby domestic investment has a significantly negative effect on the economic growth of Egypt in the long run. Besides, Abdul Rahim et al. (2017) argued that domestic investment does not influence Singaporean economic growth since it is not affecting the country's economic performance.

Numerous research papers examine the impact of exports on economic growth to justify the export-led growth hypothesis (Lee & Huruta, 2020). Numerous recent studies support the trade-induced growth hypothesis that signifies trade openness led to positive economic growth in the long run by employing cointegration analysis (Su et al., 2019). For instance, Joshua et al. (2020) revealed that trade openness exhibits a significant positive relationship with GDP which implies economy expanded in South Africa has positive forces on trade openness. Besides, Malaysia has a positive relationship with the horizontal form of FDI since MNCs prefer to export to Malaysia rather than invest (Awad, 2020). In Singapore, an increase in trade openness by 1% led to a rise in GDP by 0.57% in the long run based on the economic growth model, however, trade does not have a significant impact on economic growth in the short run (Abdul Rahim et al., 2017). Surprisingly, trade openness in Indonesia was also insignificant and negatively related to its economic growth (Meivitawanli, 2021). Thus, the impact of trade openness on economic growth is still ambiguous.

Multiple studies ascertained that interest rate has an adverse relationship with economic growth whereby a country will grow faster with a multiplier effect towards its steady-state rate of growth as the interest rate become lower (Shaukat et al., 2019). A higher interest rate would impede economic growth as it was suggested that the interest rate should be closer to zero to attain faster economic growth, particularly for upper-middle-income countries (Shaukat et al., 2019). Furthermore, some studies include exchange rate as it measures the adjusted nominal exchange rate based on the price levels, while some uses nominal exchange rate for their estimation which enables the researchers to measure the appreciation or depreciation of the host country's currency (Awad, 2020). Most recent studies revealed a positive relationship between exchange rates and economic growth which implies higher exchange rates will increase the level of output in a country. However, a lower exchange rate will cause lower investment and savings which due to corruption, high cost of capital, and volatility of the exchange rate, thereby policymakers should never consider devaluation as a choice in pursuing the exchange rate stability for the country's economy (Joshua et al., 2020).

Moreover, numerous studies support that savings have a positive relationship with economic growth which is consistent with growth theories (Alper, 2018; Patra et al., 2017). Moreover, higher aggregate savings will increase investments and the amount of capital which will indirectly boost economic growth (Ribaj & Mexhuani, 2021). However, some studies argue that gross domestic saving is insignificant and harms economic growth (Wyk & Kapingura, 2021). The steady effects of savings on economic growth exhibit a need to accelerate domestic savings to finance domestic savings since it will augment economic growth (Patra et al., 2017). Furthermore, numerous studies ascertained that consumption expenditure has a positive impact on economic growth, likewise, Alper (2018) revealed a rise in consumption expenditures by 1% would enhance economic growth by 0.41% in BRIS-T countries. The country should increase the production sectors to meet higher demand in the market that can generate consumption, and eventually would reinforce economic growth. In contrast, final consumption expenditure was found insignificant although it positively influences Asian developing countries' economic growth (Bakari & Tiba, 2019). Due to many contradictory findings, this paper is devoted to examining the impact of FDI, domestic investment, trade, interest rate, exchange rate, savings, and consumption expenditure on Malaysian economic growth.

3. RESEARCH METHODOLOGY

3.1 Data Descriptions

Annual time series data of Malaysia were gathered from 1979 to 2019 (a total of 41 years) for eight variables. The gross domestic product (GDP), gross fixed capital formation (GFCF), trade openness (TO), interest rate (IR), real effective exchange rate (REER), gross savings (GS), and final consumption expenditure (FCE) data were obtained from the World Bank Development Indicator (WDI). Meanwhile, FDI inflows data were gathered from the UNCTAD database. FDI is defined as the net inflows of investment from the reporting economy to another economy and is measured as the balance of payments in current U.S. dollars. The indicator used for GDP is GDP per capita data measured as GDP divided by midyear population in constant 2010 U.S. dollars. Variable GFCF is a proxy for domestic investment measured in constant 2010 U.S. dollars, whereas variable TO is a sum of exports and imports of goods and services divided by GDP. Besides, variable IR is gathered from the data of lending interest rates which is the rates that the bank gives to the private sector that meets their short- and medium-term financing based on some criteria. The variable REER is measured as the nominal effective exchange rate divided by a price deflator or index of costs. Moreover, variable GS is defined as the gross national income plus the net transfers minus total consumption, and variable FCE or total consumption is measured as a sum of household final consumption expenditure and general government final consumption expenditure. In this study, economic growth or GDP is the dependent variable, while other variables such as FDI, GFCF, TO, IR, REER, GS, and FCE are the independent variables.

3.2 Econometrics Model

This study applies the endogenous growth model which has introduced by Barro and Sala-i-Martin (1995) to examine the claim of whether FDI could boost economic growth. This model extends the Cobb-Douglas production function by introducing the standard augmented Cobb-Douglas production function with FDI as an additional variable in the extended production function along with capital and labour as specified in Eq. (1).

$$Y_t = \alpha_0 K^{\alpha_1} L^{\alpha_2} FDI^{\alpha_3} e^{\mu_t} \tag{1}$$

where Y_t is the output, K is capital, L is labour, and FDI is the foreign direct investment. $\alpha_0, \alpha_1, \alpha_2$, and α_3 are the coefficients, μ_t is the stochastic error term, and e is the base of

natural logarithm. This study applies endogenous growth theories since the efficiency of utilizing the investment influenced the growth of a country rather than focusing on the volume of physical investment as it allows for the three determinants of growth in the production function to be endogenously determined by including the relevant macroeconomic variables in the regression model (Abdul Rahim et al., 2017; Azam et al., 2017). From equation (1), the model can be log-transform and extended by including the selected economic variables as expressed in Eq. (2).

$$LGDP_t = \beta_0 + \beta_1 LFDI_t + \beta_2 LGFCF_t + \beta_3 LTO_t + \beta_4 LIR_t + \beta_5 LREER_t + \beta_6 LGS_t + \beta_7 LFCE_t + \mu_t$$

(2)

where β_0 is an intercept coefficient, $LGDP_t$ is natural logarithm of GDP at time t, $LFDI_t$ is natural logarithm of FDI at time t, $LGFCF_t$ is natural logarithm of GFCF at time t, LTO_t is natural logarithm of trade openness at time t, LIR_t is natural logarithm of IR at time t, $LREER_t$ is natural logarithm of REER at time t, LGS_t is natural logarithm of GS at time t, and $LFCE_t$ is natural logarithm of FCE at time t. $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$, and β_7 are slope coefficients of $LFDI_t$, $LGFCF_t$, LTO_t, LIR_t, $LREER_t$, LGS_t, and $LFCE_t$, respectively. μ_t is a stochastic error term. The transformation of the regression model into a double log-linear model can standardize the gap values between the variables since the variables have different units of measurement.

3.3 Estimation Procedures

The multiple linear regression analysis is applied to examine the significant impact of FDI, domestic investment, trade openness, interest rate, exchange rate, savings, and consumption expenditure on economic growth. The Ordinary Least Square (OLS) method is the statistical technique used that can minimize the sum of residuals to obtain the precise OLS estimators in a multiple linear regression model. Moreover, the relationship between $LFDI_t$, $LGFCF_t$, LTO_t, LIR_t, $LREER_t$, LGS_t, and $LFCE_t$ on $LGDP_t$ will be examined based on the t-test results. The null hypothesis will be rejected if the probability value of the t-statistic of the variable is less than 5% level of significance which explains the explanatory variable has a significant impact on economic growth. Otherwise, the regressor has no significant impact on the $LGDP_t$. Moreover, $LFDI_t$, $LGFCF_t$, LTO_t, $LREER_t$, LGS_t, and $LFCE_t$ are expected to have a positive relationship with $LGDP_t$. Meanwhile, LIR_t is expected to have an inverse association with $LGDP_t$. However, the findings may not consistent with the prior expectation signs since most recent studies also obtained ambiguous and contradictory empirical results. Besides, the overall significance of the multiple linear regression model will be determined based on the F-test results. The null hypothesis of theestimated regression model has no significant overall fit and can be rejected if the probability value of F-statistic is less than 5% level of significance. This implies the estimated regression model has a significant overall fit and at least one of the explanatory variables has an influence on economic growth. Also, the adjusted R^2 is applied to measure the goodness of the fit of the regression model since it elucidates the percentage of the total variation in $LGDP_t$ explained by the variation in $LFDI_t$, $LGFCF_t$, LTO_t, LIR_t, $LREER_t$, LGS_t, and $LFCE_t$, after adjusting for the degrees of freedom.

For the diagnostic test, the variance inflation factor (VIF) is used to detect a degree of multicollinearity. Since this study has a sample size of 41 years, then there will be severe multicollinearity between two independent variables if the VIF value is more than 10 (Hair et al., 1998). Some remedial measures that can be used to overcome the severity problem of multicollinearity, however, some changes made to the regression model might cause a specification bias. Also, this study applies Breusch-Godfrey (BG) test to examine the problem of serial correlation by detecting the presence of pth order of serial correlation. The null hypothesis of no p^{th} order of serial correlation can be rejected if the probability value of the test statistic is less than a 5% level of significance. Time series data is always associated with the issue of autocorrelation since the stochastic error term of the time series may have a

dependence on the event that took place in the previous year. However, the heteroscedasticity test was not included in the estimation since time series data usually do not have any severe heteroscedasticity problem.

4. FINDINGS AND DISCUSSIONS

A descriptive analysis was conducted as a preliminary analysis for all variables. Based on Table 1, the mean for all variables was close to their respective median which implies no outliers in the data since the median is less sensitive to the outliers than the mean. For instance, the mean of $LGDP_t$ was 8.7666 and the median was 8.8379 which shows the mean close to the median since the $LGDP_t$ has a minimum value of 8.0599 and a maximum value of 9.4325. Thus, this depicts that the data not only for variable $LGDP_t$, but all variables $LFDI_t$, $LGFCF_t$, LTO_t, LIR_t, $LREER_t$, LGS_t, and $LFCE_t$ do not have any outliers. Also, the null hypothesis of the normality test failed to be rejected for all variables as the probability values of Jarque-Bera statistics were greater than the 5% level of significance. This exhibits that the data for all variables approximately follows the normal distribution.

Table 1. Descriptive statistics results

	$LGDP_t$	$LFDI_t$	$LGFCF_t$	LTO_t	LIR_t	$LREER_t$	LGS_t	$LFCE_t$
Mean	8.7666	21.9013	24.2766	5.0169	2.0246	4.7359	3.4538	25.1242
Median	8.8379	22.1258	24.4192	5.0147	2.1475	4.6379	3.4562	25.0528
Maximum	9.4324	23.2245	25.2634	5.3955	2.5299	5.2141	3.6851	26.3499
Minimum	8.0599	19.8621	22.8914	4.6362	1.5110	4.4443	3.1749	23.9926
Std. Dev.	0.4148	1.0327	0.7058	0.2429	0.3530	0.2246	0.1403	0.7069
Skewness	-0.1642	-0.5386	-0.4061	-0.0446	-0.1170	0.7245	-0.2356	0.1336
Kurtosis	1.7853	1.9857	1.9657	1.6776	1.5647	2.3222	2.1068	1.7679
Jarque-Bera	2.7050	3.7402	2.9545	3.0008	3.6129	4.3715	1.7424	2.7152
Probability	0.2586	0.1541	0.2283	0.2230	0.1642	0.1124	0.4185	0.2573

Besides, Table 2 shows the results of multiple linear regression analysis indicating the coefficients sign for variable $LGFCF_t$, LTO_t, LGS_t, and $LFCE_t$ were consistent with our prior expectations. However, the signs of coefficients for variable LIR_t and $LREER_t$ were not consistent with our prior expectation, while the sign of the coefficient of $LFDI_t$ was found to be negative. The coefficient of $LFDI_t$ was -0.0177 and the null hypothesis was rejected since its probability value of t-statistic of 0.0132 was less than 5% level of significance. This implies that FDI has a significant negative impact on GDP in which an increase in FDI by 1% will cause a decline in GDP by 0.0177%. It exhibits attracting more foreign investment to Malaysia will cause the economic growth to become slower. This is similar to the findings of some studies, such as for the case of Indonesia (Meivitawanli, 2021), India (Sharma et al., 2020), and Vietnam (Su et al., 2019) ascertained FDI influenced negatively on GDP.

Table 2. Multiple linear regression results

Dependent Variable: $LGDP_t$				
Variable	**Coefficient**	**Standard error**	**t-statistic**	**p-value**
Constant	-6.4206	0.6807	-9.4323	0.0000***
$LFDI_t$	-0.0177	0.0068	-2.6202	0.0132**
$LGFCF_t$	0.1330	0.0256	5.1846	0.0000***
LTO_t	0.0567	0.0358	1.5831	0.1229
LIR_t	0.0867	0.0284	3.0545	0.0044***
$LREER_t$	-0.1052	0.0472	-2.2289	0.0327**
LGS_t	0.1159	0.0422	2.7470	0.0097**

$LFCE_t$	0.4771	0.0324	14.7438	0.0000***
R²	0.9981	**Sum squared residuals**		0.0127
Adjusted R²	0.9978	**Durbin-Watson statistic**		1.4923
F-statistic	2541.807	**Probability (F-statistic)**		0.0000

Note: ** and *** indicates the t-test is statistically significant at 5% and 1% level of significance, respectively.

Besides, variable GFCF was statistically significant at a 5% level of significance with p-value of t-statistic for $LGFCF_t$ of 0.0000. The positive coefficient of $LGFCF_t$ suggests that an increase in GFCF by 1% will lead to an increase in GDP by 0.133%. These findings are in line with most studies for the case of Egypt (Mohamed et al., 2021), Pakistan (Shabbir et al., 2020), and Malaysia (Bakari, 2017a). However, trade openness does not have any influence on economic growth since it was not statistically significant at a 5% level of significance which supports the findings of Abdul Rahim et al. (2017) for Singapore case. Eq. (3) expressed the estimated regression model based on the results in Table 2.

$$\widehat{LGDP}_t = -6.4206 - 0.0177LFDI_t + 0.1330LGFCF_t + 0.0567LTO_t + 0.0867LIR_t - 0.1052LREER_t + 0.1159LGS_t + 0.4771LFCE_t$$

(3)

Moreover, the p-value of t-statistic for LIR_t was 0.0044 which is statistically significant at a 5% level of significance. However, its positive coefficient explains that an increase in interest rate by 1% will increase the GDP by 0.0867%. In this case, a higher interest rate would impede economic growth as the interest rate should close to zero to boost economic growth (Shaukat et al., 2019). Also, the real effective exchange rate has a significant negative impact on economic growth whereby an increase in REER by 1% will lead to a decline in GDP by 0.1052%. Rapetti (2020) ascertained the positive association of exchange rate on economic growth was due to overvaluation and undervaluation in promoting growth. Besides, gross savings and consumption expenditure have a significant positive impact on economic growth which is consistent with most studies such as Ribaj and Mexhuani (2021), Alper (2018), and Patra et al. (2017). An increase in gross savings and final consumption expenditure by 1% will increase the GDP by 0.1159% and 0.4771%, respectively. Alper (2018) ascertained that savings rate and consumption expenditure are crucial in boosting economic growth which is also in accordance with the Keynesian theory.

Besides, the estimated regression in Eq. (3) has a significant overall fit since the null hypothesis of F-test was rejected at a 5% level of significance based on Table 2. Also, the value of R² was 0.9981 which indicates that 99.81% of the variation in GDP is explained by the variation in all regressors of variable FDI, GFCF, TO, IR, REER, GS, and FCE. However, the adjusted R² was 0.9978 slightly lower than R² which implies that 99.78% of the variation in GDP is explained by the variation in all the explanatory variables of FDI, GFCF, TO, IR, REER, GS, and FCE, after adjusting the degrees of freedom. Therefore, it can be concluded that the estimated regression model has a goodness of fit based on the F-test, R², and the adjusted R² results.

Moreover, Table 3 shows the variance inflation factor results. It indicates the value of VIF for variable $LFDI_t$, LTO_t, and LGS_t was less than 10 which implies no severe multicollinearity problem between these variables with other independent variables. However, variables $LGFCF_t$, LIR_t, $LREER_t$, and $LFCE_t$ have severe multicollinearity problems since their respective VIF values were more than 10.

Table 3. VIF results for multicollinearity

Variable	$LFDI_t$	$LGFCF_t$	LTO_t	LIR_t	$LREER_t$	LGS_t	$LFCE_t$
VIF Value	5.06396	33.93503	7.83115	10.39158	11.63729	3.62501	54.19889

Based on Table 4, BG test results indicate that the null hypothesis cannot be rejected since the test was not statistically significant at a 5% level of significance due to the greater probability value of chi-square with a degree of freedom 2 (p-value = 0.2067). Therefore, there is no second-order serial correlation problem in the regression model.

Table 4. BG test results for serial correlation

Breusch-Godfrey Test Results			
F-statistic	1.2914	Prob. $F_{2,31}$	0.2893
$N \cdot R^2$	3.1532	Prob. χ^2_2	0.2067

This study proceeds to do nothing on the regression model even if some variables have severe multicollinearity problems because most independent variables were statistically significant, and their coefficient signs were mostly in line with our prior expectations. Although dropped variable(s) can reduce the degree of multicollinearity, dropped $LGFCF_t$, LIR_t, $LREER_t$, and $LFCE_t$ variable will result in very severe serial correlation problem. Having serial correlation problem depicts the violation of one of the classical assumptions of the Gauss-Markov theorem implies the OLS properties for the estimators no longer BLUE (Best Linear Unbiased Estimator) (Gujarati & Porter, 2009). Consequently, this will lead to unreliable hypothesis testing results since the estimates and their standard errors will be biased. However, OLS estimators are still BLUE for the case of multicollinearity problem. Thus, this study needs to focus on serial correlation problem as it will affect the reliability of our results. Besides, $LGFCF_t$ is one of the main variables to explain the impact of domestic investment on Malaysian economic growth, so it is necessary to include it in the model.

In this technical part, this study can discuss why serial correlation is fundamental for time-series data analysis, particularly in the application of multiple linear regression analysis. Hence, this study retains all variables in the regression model to avoid specification errors. Also, this exhibits that multiple linear regression analysis has some setbacks since it does not capture the stationarity of the time series data. It might contribute to a severe multicollinearity problem since we deal with economic variables as there must be some non-stationary variables to which this simple approach may not be an appropriate technique to be applied. Therefore, some sophisticated methods such as VECM and ARDL would be appropriate technique to be applied as they can determine the stationarity of the series that could yield precise and reliable results.

5. CONCLUSION

An application of multiple linear regression analysis suggests that domestic investment, savings, and consumption expenditure are vital to enhancing economic growth in Malaysia. Meanwhile, our findings revealed that FDI, trade, interest rate, and exchange rate were not consistent with our prior expectations. These might be due to the volatility or nature of FDI, interest rate, and the exchange rate that could be further studied in this area (Belloumi & Alshehry, 2018; Ibrahim & Okunade, 2015; Joshua et al., 2020). In terms of FDI, Malaysia may focus more on the outward FDI since previous studies revealed that outward FDI positively impact Malaysian economic growth, thus it might overshadow inward FDI since outward FDI becomes substance through internationalizing the local MNCs and industry revolution 4.0 (Hira et al., 2019). Hence, the government should be attentive to eradicating obstacles that may hinder attracting FDI, such as shortages in domestic workforces and low technological advances (Lee & Huruta, 2020). Besides, further studies could examine the relationship between FDI and domestic investment in Malaysia, whether they act as complementary or substitutes to provide crowding out or crowding in effect evidence. This can explain whether attracting FDI could jeopardize the domestic capital although this study ascertained domestic investment is crucial in boosting the economy. Moreover, the policymakers should impose a lawful framework regulated for FDI, domestic investment, trade,

interest rate, exchange rate, savings, and expenditure to reinforce economic growth since Malaysia aspires to become one of the high-income countries by 2030.

As this study focuses on the significant contribution of FDI and domestic investment on economic growth, further studies can include other relevant economic variables, such as human capital, technological progress, labor force, innovation index, and inflation. Moreover, it suggests examining the factors of FDI and domestic investments that might positively or negatively impact economic growth in Malaysia. As this study highlighted some setbacks of multiple linear regression analysis, it recommends future studies use other sophisticated methods or techniques to provide remarkable evidence through reliable and meticulous analysis. Due to some limitations of multiple linear regression, it also restrains this study to consider other relevant economic variables. Thus, it suggests for future studies apply different methods or techniques such as cointegration analysis, vector error correction model (VECM), or autoregressive distributed lag (ARDL) as they take into account the stationarity of the series that is crucial to obtain reliable results. Also, future studies can use advanced software applications, such as SAS, Stata, and Minitab statistical software for analysis. Hence, this study has discussed that domestic investment, savings, and expenditure act as the key drivers to sustain economic growth in Malaysia, as well as the application of multiple linear regression analysis.

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