External Debts and Economic Growth in Malaysia

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Abstract
Previous researches on the relationship between external debt and economic growth in Malaysia have produced inconsistent results. Despite the intense debate on the link between external debt and economic growth, there is no research that takes the new definition of external debt into consideration. To address this issue, this study seeks to examine the effects of external debt on economic growth by allowing the external debt to be taken into consideration especially in terms of the non-residents holding of local-currency denominated debt securities. Using time series econometric approaches and quarterly data of Malaysia from 1997 Q1 to 2016 Q4, this study finds that there is a significant positive relationship between external debt and economic growth. In addition, the results of Granger causality test reveal the existence of short-run bilateral causality relationships between external debt and economic growth.
Keywords: External debt, Economic Growth, Foreign Holding of Local-Currency Debt, Malaysia

Introduction

In 2014, Malaysia's external debt was redefined to be consistent with International Monetary Fund (IMF) practices, causing a sharp increase in external debt. After the implementation of the new definition of external debt, Malaysia's external debt rose to RM908.7 billion (or 73.9% of GDP), compared to the previous definition, which was recorded at RM524.3 billion (or 42.7% of GDP) at the end of 2016 (Bank Negara Malaysia, 2016). Figure 1 shows that GDP growth has dropped since 2010, while Malaysia's external debt has increased over the years, especially after the Central Bank of Malaysia adopted the new measurement of external debt. Moreover, Moody's Investors Services Report also indicates that the country's external debt to GDP ratio is higher than other large economies in the Asia Pacific region, which stood at 66% of GDP in 2015 (Roscoe and Duggar, 2016).

As Malaysia slowly recovers from its financial crisis, the economic environment remains challenging throughout the years. The Government needs large capital to enhance the country's economic growth. Hence, external funds have become one of the funding alternatives for the government when domestic funds are insufficient to finance expenditure (Daud et al., 2013). However, external debt rescheduling and the insufficient use of these

resources might lead to a higher level of external debt and rise debt servicing, causing detrimental economic growth. Therefore, the dramatic increase in external debt led to an intense debate on whether it could help to improve economic performance, or become a burden to the country.

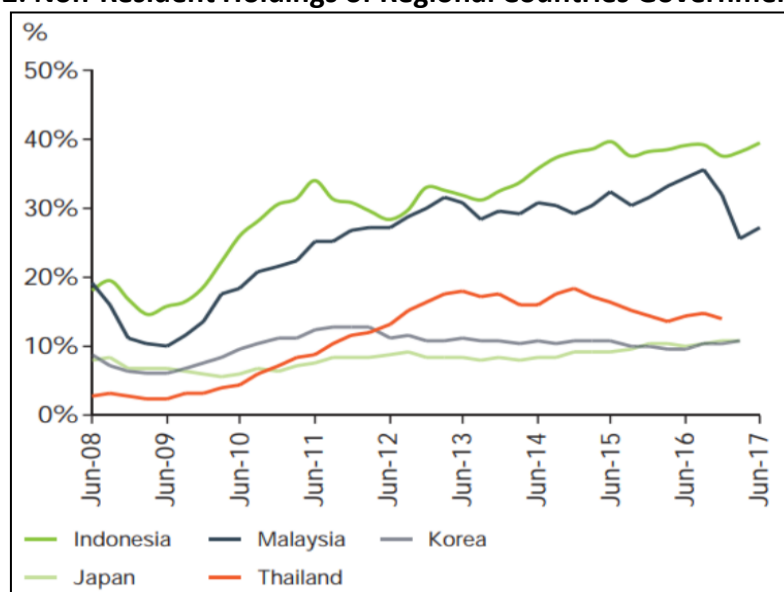**Figure 1: Malaysia's External Debt and GDP Growth**
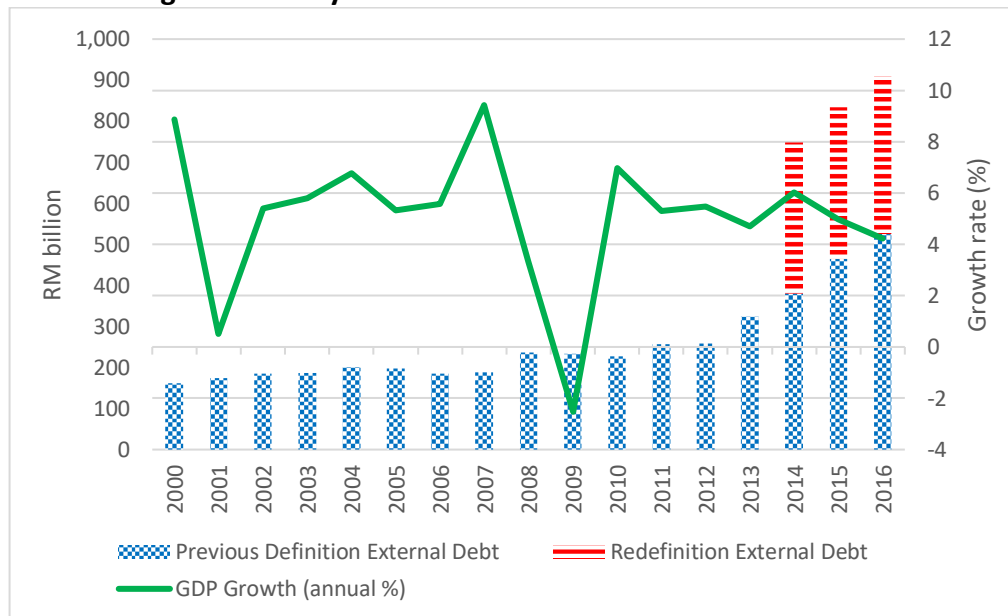
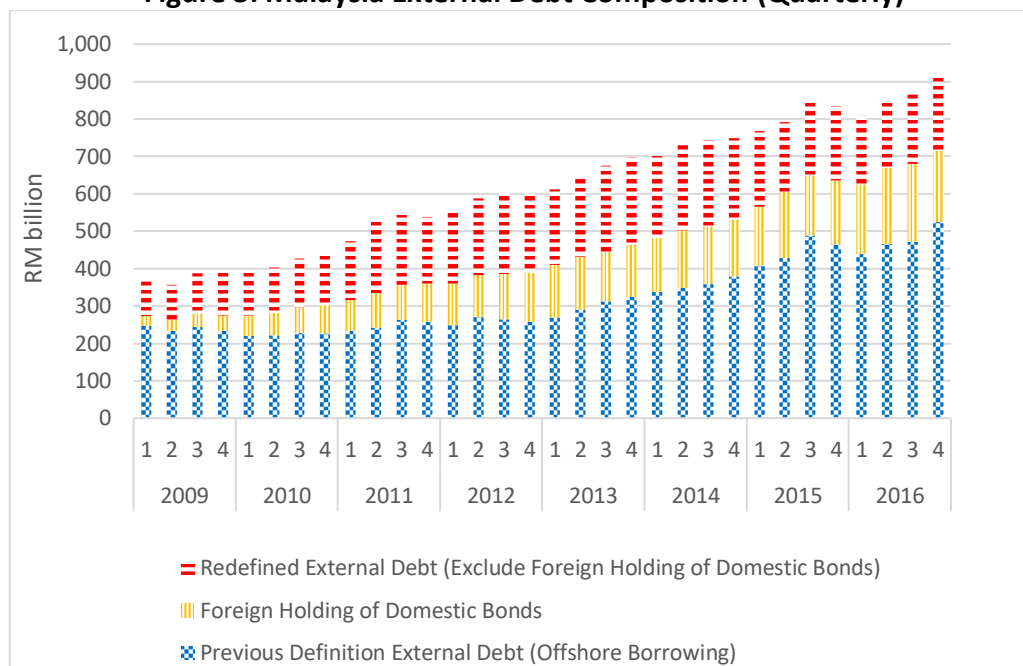Source: Central Bank of Malaysia

Non-resident Holdings of Domestic Debt Securities

According to the Central Bank of Malaysia, the redefinition of external debt includes non-resident domestic debt securities, trade credits, currency and deposits, as well as other loans and liabilities. In contrast, non-resident holdings of domestic debt securities contribute to about two-thirds of the increase in redefined external debt (Bank Negara Malaysia, 2014).

Figure 2: Non-Resident Holdings of Regional Countries Government Bonds

Source. Asian Bonds Online

Figure 3: Malaysia External Debt Composition (Quarterly)

Source: Central Bank of Malaysia

Non-resident investors are interested to invest in the Malaysian bond market due to its liquid and investor-friendly market. Figure 2 indicates that Malaysia has among the highest non-resident investors participation in the region, after Indonesia. Despite the reduction of non-resident holdings of Malaysia Government Securities (MGS) in November, 2016, Malaysia is still higher compared to Thailand, Japan and Korea. Figure 3 shows that non-resident holdings of domestic bonds contribute to almost half of the redefined external debt. Additionally, Abdullah and Razali (2017) report that non-resident holdings of medium- and long-term Malaysian government bonds are more than 65.0%. They also explain that foreign investors' demand for the Malaysian bond market has brought significant benefits by enhanced liquidity, and additional demand has also helped to reduce government borrowing costs when raising funds from the bond market.

However, the high demand of non-resident holdings of domestic bonds also brings with it challenges, where non-resident holdings of domestic bonds contribute to a high level of external debt. The IMF also indicates that Malaysia suffers uncertainty external risks due to significant capital outflows where foreign investors still hold fairly large positions in MGS; and Malaysia remains exposed to further outflow (International Monetary Fund, 2016). The sudden capital outflows may create volatility in the domestic financial markets. Therefore, this study attempts to address this gap in the related body of literature by taking the redefinition of external debt into account. However, this study only includes the long-term non-resident holdings of domestic debt securities into the old definition of external debt, due to data unavailability.

This paper is organised as follows. Section 2 reviews the literature on the theories related to linkage between external debt and economic growth. Section 3 explains the methodology and data collection procedures, while Section 4 presents the results. Section 5 concludes.

Literature Review

The debt overhang theory implies that a high level of external debt reduces economic growth through crowding out investments, although the theory does not explicitly consider economic growth (Krugman, 1988). The literature that investigates the link between external debt and economic performance was initiated by Griffin and Enos (1970), who claim that there exists a negative effect of foreign assistance on economic growth. Later, a growing number of empirical studies have found a negative relationship between external debt and economic growth. Using panel data for 35 Sub-Saharan African countries, Fosu (1999) demonstrated a significant negative link between external debt and economic growth. Elbadawi, Ndulu, and Ndung'u (1997) conducted one of the earlier studies that directly consider the nonlinear effects of external debt on economic growth, using fixed and random effect panel estimation for 99 developing countries including sub-Saharan Africa. The authors found that debt to GDP ratio affects growth positively up to the peak of 97 percent. Were (2001) investigated time series data for the period of 1970-1995 and revealed that the accumulation of external debt appears to discourage Kenya's economic growth. Furthermore, Pattillo, Poirson, and Ricci, (2002) as well as Clements, Bhattacharya, and Nguyen (2003), employed a large country sample and found that a high level of external debt accumulation has a negative impact on overall economic growth. By investigating the role of external debt on economic growth, Schclarek (2004) as well as Schclarek and Ramon-Ballester (2005), found a negative effect of public external debt on economic growth rather than private external debt. Reinhart and Rogoff (2010), after examining a cross section sample of 44 countries covering about two hundred years, confirmed a strong negative link between debt and economic growth, particularly when debt rises above 60% of GDP. Using an unbalanced panel of 79 developing countries over the period 1970-2002, Cordella, Ricci, and Ruiz-Arranz (2010) found that external debt hinders economic performance when debt is at an intermediate level, while at very high and very low levels of debt, they did not find any significant relationship. Covering the period of 1976-2011, Shabbir (2013) indicate that there exists a negative effect of external debt on economic growth by using a panel sample of 70 developing countries, including Malaysia. By studying Malaysia, Thailand and the Philippines over 50 years, Lau, Lee, and Baharumshah (2015) found a significant long-run relationship between external debt and economic productivity.

However, several empirical studies have shown a positive effect of external debt on economic growth. By examining panel data for six Pacific Island Countries (PIC) over the 1988-2004 period, Jayaraman and Lau (2009) reveal positive linkage between external debt and economic performance. Abdelhadi (2013) show that the relationship between foreign debt and Jordan's economic growth is positive. In their time series analysis, Jilenga, Xu, and Gondje-Dacka (2016) examine Tanzania for the sample period of 1971-2011, and found a positive long-run correlation between external debt and economic growth. Ahmed, Butt, and Alam (2000) indicate no evidence of a joint feedback affect between export revenue, foreign debt service and economic growth by using a time series sample of eight selected Asian countries, including Malaysia, for the period 1970-1977.

Foreign debt has become among the important sources of domestic capital to finance a country's economic development, especially for a small open economy country such as Malaysia. Therefore, some studies focus on the relationship between external debt and economic growth, in the context of Malaysia. By using Vector Autoregression (VAR) estimation for the period of 1970-2005, Bakar and Hassan (2008) indicate that external debt in Malaysia affects economic growth positively at the aggregate level. Their empirical results

indicate that after a 1% rise in total external debt, the economic growth will increase by 1.29%. On the other hand, using Autoregressive Distributed Lag (ARDL) estimation for the period of 1991-2009, Daud, Ahmad, and Azman-Saini (2013) suggest a significant positive relationship between external debt and economic growth in the country. However, by examining the existence of a threshold effect, they claim that the accumulation of external debt increases economic growth up to a maximum threshold level, and the continuous increase of external debt beyond this level will hurt Malaysia's economic growth. In contrast, Choong, Lau, Liew, and Puah (2010) investigate the impact of various types of debt (including external debt) on economic growth for the period of 1970-2006. Their results imply that all debt types have long-run negative effects on economic growth. In the short-run, they also found that economic growth using Granger causes external debt.

Previous studies provide mixed results on the relationship between external debt and economic growth. Therefore, this study investigates whether external debt helps to boost or hinder economic growth in Malaysia, over the period of 1997 Q1 to 2016 Q4.

Methodology
Model Specification
In this study, the growth model to be estimated is defined as follows:

$$GDP_t = \beta_0 + \beta_1 DEBT^{OLD}{}_t + \beta_2 GREV_t + \beta_3 INVS_t + \beta_4 INF_t + \varepsilon_t \tag{1}$$

$$GDP_t = \beta_0 + \beta_1 DEBT^{NEW}{}_t + \beta_2 GREV_t + \beta_3 INVS_t + \beta_4 INF_t + \varepsilon_t \tag{2}$$

where β_0 is a constant, GDP is the real gross domestic product, DEBT[OLD] is the previous definition external debt as a ratio of GDP, DEBT[NEW] is the redefinition external debt as a ratio of GDP, GREV is government revenues as a ratio of GDP, INVS is the gross fixed capital formation (investment) as a ratio of GDP, INF is inflation (measured based on Consumer Price Index) and ε is an error term. The sample period considered in this study covers the period of 1997 Q1 to 2016 Q4. All data were collected from the Central Bank of Malaysia, Monthly Statistical Bulletin.

Cointegration
An Autoregressive Distributed Lag (ARDL) bound test, developed by Pesaran, Shin, and Smith, (2001), was employed in this study to examine the existence of the long-run relationship. The ARDL approach allows various orders of integration for the variables to be determined in the long-run cointegration relationship. Under this approach, the variables that can be integrated are of $I(0)$, $I(1)$ or mixed order of integration. The ADRL model used in this study is expressed as follows:

$$\Delta lnGDP_t = y_0 + \theta_1 lnDEBT^{OLD}{}_{t-1} + \theta_2 lnGREV_{t-1} + \theta_3 lnINVS_{t-1} + \theta_4 INF_{t-1}$$
$$+ \sum_{i=1}^{P} \beta_{1i}\Delta lnDEBT^{OLD}{}_{t-1} + \sum_{i=1}^{q} \beta_{2i}\Delta lnGREV_{t-1} + \sum_{i=1}^{r} \beta_{3i}\Delta lnINVS_{t-1}$$
$$+ \sum_{i=1}^{s} \beta_{4i}\Delta INF_{t-1} + \varepsilon_t \tag{3}$$

$$\Delta lnGDP_t = y_0 + \theta_1 lnDEBT^{NEW}_{t-1} + \theta_2 lnGREV_{t-1} + \theta_3 lnINVS_{t-1} + \theta_4 INF_{t-1}$$
$$+ \sum_{i=1}^{P} \beta_{1i} \Delta lnDEBT^{NEW}_{t-1} + \sum_{i=1}^{q} \beta_{2i} \Delta lnGREV_{t-1} + \sum_{i=1}^{r} \beta_{3i} \Delta lnINVS_{t-1}$$
$$+ \sum_{i=1}^{S} \beta_{4i} \Delta INF_{t-1} + \varepsilon_t$$

where y_0 is a constant, lnGDP is the logarithm of real gross domestic product, lnDEBT^{OLD} is the logarithm of the previous definition external debt as a ratio of GDP, lnDEBT^{NEW} is the logarithm of redefinition external debt as a ratio of GDP, lnGREV is the logarithm of government revenues as a ratio of GDP, lnINVS is the logarithm of gross fixed capital formation (investment) as a ratio of GDP, INF is inflation (measured based on Consumer Price Index) and ε is an error termequation (3) indicates the relationship between the old definition of external debt and gross domestic product, while equation (4) indicates the relationship between the new definition of external debt and gross domestic product. In the ARDL bound test, the F-statistic value was used to examine the null hypotheses of no cointegration among the variables. The null hypotheses of no cointegration is rejected if the estimated F-statistic is higher than the upper bound critical values. If the F-statistic falls in between the critical values, the relationship among the variables is inconclusive. The null hypotheses of no cointegration cannot be rejected if the F-statistic is lower than the lower bound critical value.

Granger Causality
The bound test can only suggest if there exists a cointegration relationship among the variables, but it does not indicate the direction of causality. Therefore, this study constructs the standard Granger causality test augmented with a lagged period error-correction term when the variables are cointegrated. The estimation models are as follows:

$$(1-L)\begin{bmatrix} \Delta lnGDP \\ \Delta lnDEBT^{OLD} \\ \Delta lnGREV \\ \Delta lnINVS \\ \Delta INF \end{bmatrix}$$
$$= \begin{bmatrix} \alpha_1 \\ \alpha_2 \\ \alpha_3 \\ \alpha_4 \\ \alpha_5 \end{bmatrix} + \sum_{i=1}^{p}(1-L)\begin{bmatrix} \beta 1_{1i} & \beta 1_{2i} & \beta 1_{3i} & \beta 1_{4i} & \beta 1_{5i} \\ \beta 2_{1i} & \beta 2_{2i} & \beta 2_{3i} & \beta 2_{4i} & \beta 2_{5i} \\ \beta 3_{1i} & \beta 3_{2i} & \beta 3_{3i} & \beta 3_{4i} & \beta 3_{5i} \\ \beta 4_{1i} & \beta 4_{2i} & \beta 4_{3i} & \beta 4_{4i} & \beta 4_{5i} \\ \beta 5_{1i} & \beta 5_{2i} & \beta 5_{3i} & \beta 5_{4i} & \beta 5_{5i} \end{bmatrix}\begin{bmatrix} \Delta lnGDP_{t-i} \\ \Delta lnDEBT^{OLD}_{t-i} \\ \Delta lnGREV_{t-i} \\ \Delta lnINVS_{t-i} \\ \Delta INF_{t-i} \end{bmatrix}$$
$$+ \begin{bmatrix} \theta \\ \vartheta \\ \psi \\ \omega \\ \delta \end{bmatrix}\begin{bmatrix} ECT_{t-i} \\ ECT_{t-i} \\ ECT_{t-i} \\ ECT_{t-i} \\ ECT_{t-i} \end{bmatrix} + \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \varepsilon_{3t} \\ \varepsilon_{4t} \\ \varepsilon_{5t} \end{bmatrix}$$

(5)

$$(1-L)\begin{bmatrix} \Delta lnGDP \\ \Delta lnDEBT^{NEW} \\ \Delta lnGREV \\ \Delta lnINVS \\ \Delta INF \end{bmatrix}$$

$$= \begin{bmatrix} \alpha_1 \\ \alpha_2 \\ \alpha_3 \\ \alpha_4 \\ \alpha_5 \end{bmatrix} + \sum_{i=1}^{p}(1-L)\begin{bmatrix} \beta1_{1i} & \beta1_{2i} & \beta1_{3i} & \beta1_{4i} & \beta1_{5i} \\ \beta2_{1i} & \beta2_{2i} & \beta2_{3i} & \beta2_{4i} & \beta2_{5i} \\ \beta3_{1i} & \beta3_{2i} & \beta3_{3i} & \beta3_{4i} & \beta3_{5i} \\ \beta4_{1i} & \beta4_{2i} & \beta4_{3i} & \beta4_{4i} & \beta4_{5i} \\ \beta5_{1i} & \beta5_{2i} & \beta5_{3i} & \beta5_{4i} & \beta5_{5i} \end{bmatrix}\begin{bmatrix} \Delta lnGDP_{t-i} \\ \Delta lnDEBT^{NEW}_{t-i} \\ \Delta lnGREV_{t-i} \\ \Delta lnINVS_{t-i} \\ \Delta INF_{t-i} \end{bmatrix}$$

$$+ \begin{bmatrix} \theta \\ \vartheta \\ \psi \\ \omega \\ \delta \end{bmatrix}\begin{bmatrix} ECT_{t-i} \\ ECT_{t-i} \\ ECT_{t-i} \\ ECT_{t-i} \\ ECT_{t-i} \end{bmatrix} + \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \varepsilon_{3t} \\ \varepsilon_{4t} \\ \varepsilon_{5t} \end{bmatrix}$$

(6)

where $(1-L)$ represents the lag operator, ECT_{t-1} is the lagged error-correction term derived from the long-run cointegrating relationship, ε_{1t}, ε_{2t}, ε_{3t}, ε_{4t}, and ε_{5t} are serially independent random errors with mean zero and finite covariance matrix, p is the optimal lag length and the lag selection is based on the Schwarz Bayesian Criterion (SBC).

Findings and Discussion
In Table 2, the Augmented Dickey-Fuller (ADF) test shows that GREV, INVS and INF are stationary at level or $I(0)$, while other variables are stationary at first difference or $I(1)$. The ADF test results show that the variables used in this study have a mix of stationarities of $I(0)$ and $I(1)$. Therefore, this study proceeds with an ARDL estimation for the cointegration test.

Table 1: Unit Root Test

Variable	Augmented Dickey-Fuller			
	Level		First Difference	
	Intercept	Trend & Intercept	Intercept	Trend & Intercept
GDP	-1.2890(0)	-2.3028(0)	-8.5449(0)***	-8.5384(0)***
DEBT^OLD	-1.3542(0)	-1.0924(0)	-7.2791(0)***	-7.3078(0)***
DEBT^NEW	-1.3670(0)	-1.0770(0)	-7.3744(0)***	-7.4207(0)***
GREV	-3.4313(4)**	-3.4531(4)*	-5.0394(3)***	-5.0556(3)***
INVS	-2.7252(4)*	-4.0343(2)**	-3.6251(3)***	-3.6081(3)**
INF	-0.4164(0)	-3.2685(1)*	-7.3310(0)***	-7.2899(0)***

Note: Asterisks *, ** and *** denote significance levels 10%, 5% and 1% respectively. The number in brackets ( ) indicates lag length; Automatic lag selection by Schwarz Bayesian Criterion (SBC) for ADF test.

The results of the ARDL bound test for cointegration are presented in Table 3. The null hypotheses of no cointegration are rejected for both equations (3) and (4). Thus, there exists a long-run relationship among the variables. Table 4 reports long-run coefficients for both equations. The results indicate a negative relationship between external debt and economic growth in Malaysia. A one percent increase in the old definition of external debt (DEBT^OLD)

reduces economic growth by 0.58%, which is lower than the effect of the new definition of external debt (DEBT^{NEW}) on economic growth. Other control variables in both equations (3) and (4), such as investment (INVS) and inflation (INF), are found to have a positive effect on Malaysia's economic growth. According to Munir, Mansur, and Furuoka (2009), a positive relationship between inflation and economic growth suggests that inflation may escalate economic growth in Malaysia when the threshold level is below 3.89% (Dotsey and Sarte, 2000). On the other hand, the government revenue (GREV) had a negative effect on economic growth. As tax revenue contributes to a large portion of government revenue, tax rate increment may distort future economic growth (Poulson and Kaplan, 2008).

Table 2: ARDL Bound Test

	Model (3)	Model (4)
F-Statistics	7.5731***	9.8935***
Lag order	(1,1,1,1,0)	(1,1,0,0,0)
Critical Value (k=4)	Lower Bound I(0)	Upper Bound I(1)
1%	3.29	4.37
5%	2.56	3.49
10%	2.20	3.09

Note: Asterisks *, ** and *** denote significance levels 10%, 5% and 1% respectively. The model is selected based on the Schwarz Bayesian Criterion (SBC). The critical values are based on (Pesaran et al., 2001).

Table 4: ARDL Long-Run

Dependent Variable: GDP			
Model (3)		**Model (4)**	
Variables	Coefficient	Variables	Coefficient
DEBT^{OLD}	-0.5755***	DEBT^{NEW}	-0.7281***
GREV	-0.4275***	GREV	-0.2067**
INVS	0.2616*	INVS	0.4940***
INF	2.9556***	INF	3.5857***
C	-1.4907*	C	-3.4706***
ECT$_{t-1}$	-0.2695***	ECT$_{t-1}$	-0.2381***
Diagnostic Test			
Serial Correlation, LM	2.3031	Serial Correlation, LM	2.8090
Heteroskedasticity, ARCH	8.7098	Heteroskedasticity, ARCH	9.1631

Note: Asterisks *, ** and *** denote significance levels 10%, 5% and 1% respectively. The model is selected based on the Schwarz Bayesian Criterion (SBC).

Table 5 shows that there exists no direct causal relationship between external debt (old definition) and economic growth. However, the bilateral causal relationship between external debt and economic growth can be linked through government revenue and investment (DEBT^{OLD} → GREV → INVS → GDP; DEBT^{OLD} → INF → INVS → GDP; GDP → GREV → INVS → DEBT^{OLD}; GDP → INF → INVS → DEBT^{OLD}).

On the other hand, when the new definition of external debt is introduced, there is a direct and indirect reversed causal relationship running from gross domestic product to external debt (GDP → DEBT^{NEW} and GDP → INF → DEBT^{NEW}). In addition, government revenue

granger cause external debt operates through investment and gross domestic product (GREV $\rightarrow$ INVS $\rightarrow$ DEBT^{NEW}; GREV $\rightarrow$ INVS $\rightarrow$ GDP $\rightarrow$ DEBT^{NEW}). These findings suggest that non-residents' holding of local-currency debt securities is highly driven by economic performance.

Table 5: Granger Causality

Previous Definition External Debt (Model 1)

Dependent Variable	Independent Variable					ECT$_{t-1}$
	ΔGDP	ΔDEBT^{OLD}	ΔGREV	ΔINVS	ΔINF	
ΔGDP	-	0.0424	0.2341	7.5737***	2.1324	-0.4715
ΔDEBT^{OLD}	2.4169	-	0.0285	3.2934*	2.0046	-0.6615
ΔGREV	5.7042**	7.8864***	-	3.3711*	1.1771	-2.0273*
ΔINVS	0.9881	1.9312	17.6388***	-	3.0288*	-0.1547
ΔINF	6.2302***	8.3228***	0.9894	0.002	-	-0.0522

Redefinition External Debt (Model 2)

Dependent Variable	Independent Variable					ECT$_{t-1}$
	ΔGDP	ΔDEBT^{NEW}	ΔGREV	ΔINVS	ΔINF	
ΔGDP	-	0.4649	0.3445	4.2030**	1.4736	-0.6935*
ΔDEBT^{NEW}	3.3885*	-	0.028	7.4092***	3.1988*	-0.6815
ΔGREV	1.4205	2.5628	-	1.2062	0.3237	-0.717
ΔINVS	1.7467	2.1702	18.7791***	-	2.2663	0.0954
ΔINF	8.0917***	11.6179***	1.1698	0.7259	-	-0.0427

Note: Asterisks *, ** and *** denote significance levels 10%, 5% and 1% respectively. Δ is the first difference operator.

Figure 4: Summary of Short-Run Causal Linkages (Previous Definition of External Debt)
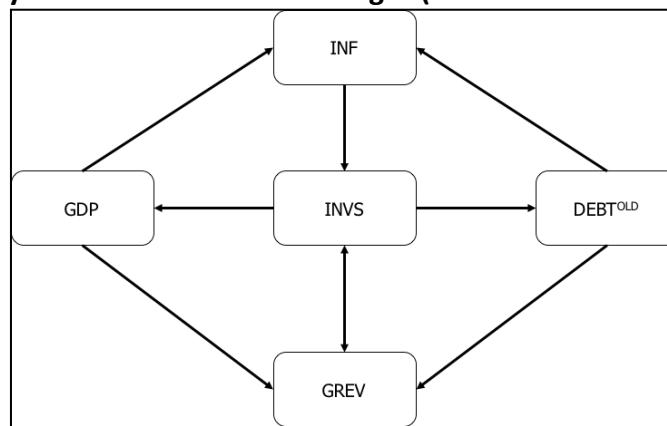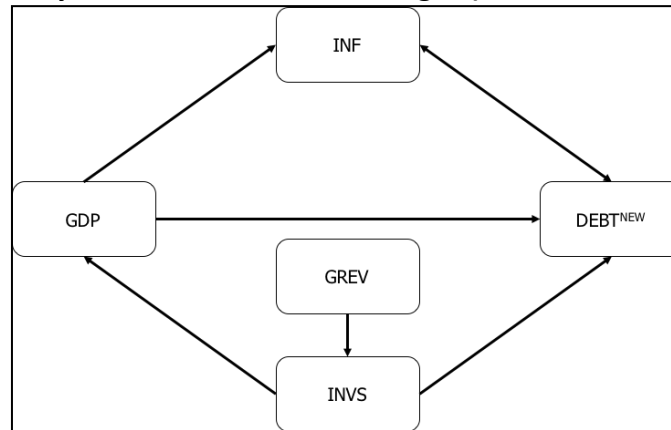
Figure 5: Summary of Short-Run Causal Linkages (Redefinition of External Debt)


Although the cointegration test shows that there are cointegration relationships among the variables, it does not provide the dynamic interactions and strength of causal relations between these variables. Therefore, this study employed variance decomposition and impulse response analyses to examine the effect of external debt on economic growth.

Variance decomposition analyses in Table 6 report the estimates of the fluctuations in economic growth caused by a shock in external debt. It shows that the total shocks in the new definition of external debt account for about 40%, a figure that is slightly higher than the total shocks in the old definition of external debt, in economic growth fluctuations. This implies that external debt is the most exogenous variable inherent in both models

Table 6. Variance Decomposition

Horizon (Quarters)	Forecast error variance attributed to the economic growth (Model 1)				
	GDP	DEBT^{OLD}	GREV	INVS	INF
1	25.3256	46.293	25.4555	0.4106	2.5155
4	23.7711	39.2996	24.2246	6.3868	6.3179
8	23.7525	39.2971	24.1887	6.4425	6.3192
12	23.7523	39.2969	24.1881	6.4437	6.3191
16	23.7523	39.2968	24.1881	6.4437	6.3191
20	23.7523	39.2968	24.1881	6.4437	6.3191
24	23.7523	39.2968	24.1881	6.4437	6.3191
Horizon (Quarters)	Forecast error variance attributed to the economic growth (Model 2)				
	GDP	DEBT^{NEW}	GREV	INVS	INF
1	24.6622	52.8514	19.4007	0.0748	3.0108
4	27.3729	43.3485	19.0297	3.513	6.736
8	29.3437	41.8114	18.7175	3.4021	6.7254
12	29.8743	41.4277	18.6078	3.3741	6.7162
16	30.011	41.3293	18.579	3.3669	6.7138
20	30.0464	41.3038	18.5715	3.3651	6.7132
24	30.0556	41.2972	18.5696	3.3646	6.7131

Figure 6: Impulse Response of Economic Growth to External Debt
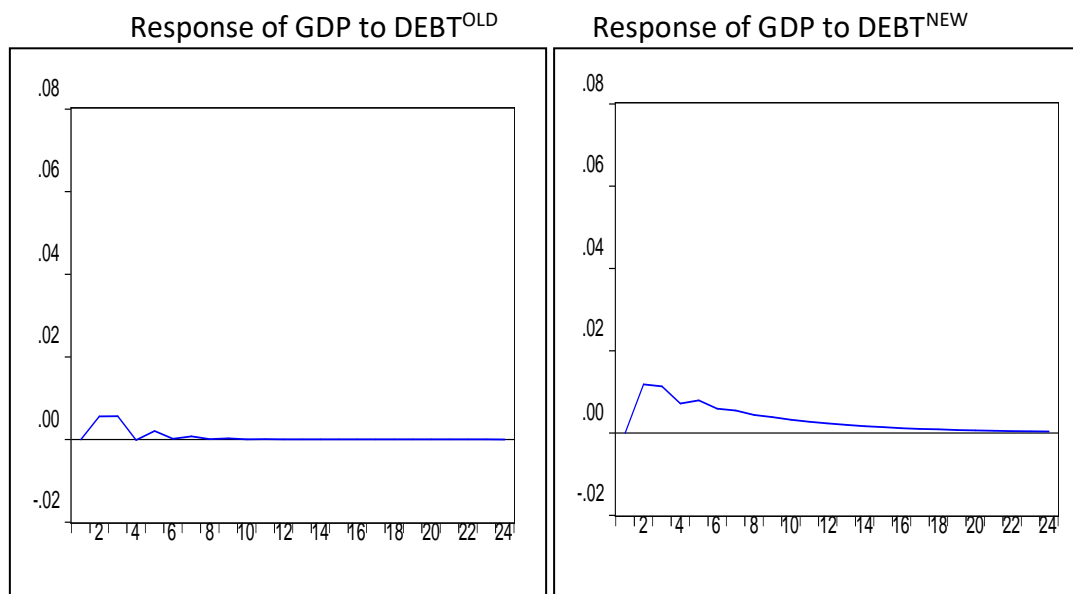
Note: Response to Cholesky One S.D. Innovations.

The estimates of the responses of economic growth to shocks in external debt are summarised in Figure 6. Economic growth responds positively to shocks in both definitions of external debt. However, the positive effect from the old definition of external debt dices out faster than the new definition. According to Daud et al. (2013), this indicates that there is an inverted U-shape relationship between accumulation external debt and economic growth in Malaysia. Therefore, economic growth responds negatively to external debt when the external debt has reached an optimal threshold level.

Conclusion

Previous studies were conducted to explore the linkage between external debt and economic growth, using various approaches and in different geographical regions. However, there seem to be a few studies relating to this topic that focused on a specific country level, and there is no study that takes into consideration the new definition of external debt. Hence, this study's primary aim is to address the gap in the literature by examining the effects of external debt on economic growth by allowing the external debt to be taken into consideration in terms of the non-residents' holding of domestic bonds.

Using time series econometric approaches and quarterly data of Malaysia from 1997 Q1 to 2016 Q4, this study demonstrated a positive effect of the previous defintion and redefinition of external debt on economic growth. The positive effect from the previous definition of external debt dices out more quickly than the new definition of external debt. In addition, the results of the Granger causality test reveal the existence of short-run bilateral causality relationships between external debt and economic growth. These findings could be explained by the fact that external borrowing was an important source for the government to finance all expenditures to stimulate economic development. However, the positive effect might fade in the long term if the external debt level reaches to a certain threshold point or when Malaysia suffers from capital outflows.

According to IMF, the uncertainty of external risk, where foreign investors hold large positions in Malaysia's debt securities will expose the country to further capital outflow

(International Monetary Fund, 2016). This uncertainty could bring real economic loss. Therefore, to avoid the risk of being caught in a debt overhang situation, policymakers should play an effective role in monitoring Malaysia's external debt position and allocate the funds effectively. Malaysia's funds allocation focus have to ensure the socio-economic well-being of Malaysian, implement institutional reforms and foster an entrepreneurial economy in order to restore to the competitive country (Ernst & Young, 2018). There is also the need for accountability in governance, good macroeconomic policy environment and the enhanced exportation of domestic products. As such, the ultimate goal of the economic policy should enable Malaysia to achieve a high level of economic growth by 2024 (OECD, 2019).

Future research may gather complete data of Malaysia's redefinition of external debt and expand the sample period to the present time. Moreover, it may access others country samples or larger samples that also adopt the new definition of external debt practices. This makes it possible for a more reliable picture on the role of the new definition of external debt on economic growth.

Acknowledgement

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