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THE ROLE OF SAVINGS ON ECONOMIC GROWTH IN MALAYSIA: A VIEW FROM GENERALIZED VARIANCE DECOMPOSITION ANALYSIS

Abstract. *This study examines how much variance of economic growth can be explained by various categories of savings in Malaysia. Bounds testing approach to cointegration and generalised forecast error variance decomposition technique are used to achieve the objectives of this study. We find that the relationship between economic growth and savings in Malaysia are stable and coalescing in the long run. Moreover, the economic growth in Malaysia is dominated by the domestic savings and the impact of foreign savings is relatively insignificant.*

Keywords: *disaggregated savings, economic growth, generalised variance decomposition.*

JEL Classification Codes: C22; E21

1. Introduction

Lewis (1955) elucidated the relationship between savings and economic growth, in particular the importance of capital accumulation to a nation. An elevated savings rate would contribute to real income growth. The main premise underlying Lewis's assumption is higher savings rate will invariably increase the rate of investment and thus leading to economic development and growth. In an open economy, savings can be accumulated from two major sources: domestic savings and foreign savings.[1] Developing economies normally shortage of domestic savings to finance their investments in the country. As a result, foreign savings are needed to overcome the "saving-investment gap". An interesting

[1] Domestic savings refer to private savings and public savings while foreign savings refer to the inflows of capital into a country. This includes the official long term capital, private long term capital (also known as foreign direct investment) and private short term capital (also known as equity investment).

question addresses in this study is, whether foreign savings is a reliable source to overcome the saving-investment gap in a country?

Baharumshah and Thanoon (2006) noted that foreign savings is positively contribute to the economic growth. On the contrary, other studies (e.g. Rahman, 1968; Griffin and Enos, 1970) claimed that the influx of foreign savings is not a substitute of domestic savings to finance local investments because it leaves the host country more dependent on the foreign funds. Therefore, the effect of foreign savings on economic growth is debatable. Several studies (e.g. Agrawal, 2001; Baharumshah, et al., 2003; Tang, 2008; Tang and Chua, 2012) have investigated the relationship between savings and economic growth in Malaysia but the relationship remains a conundrum.

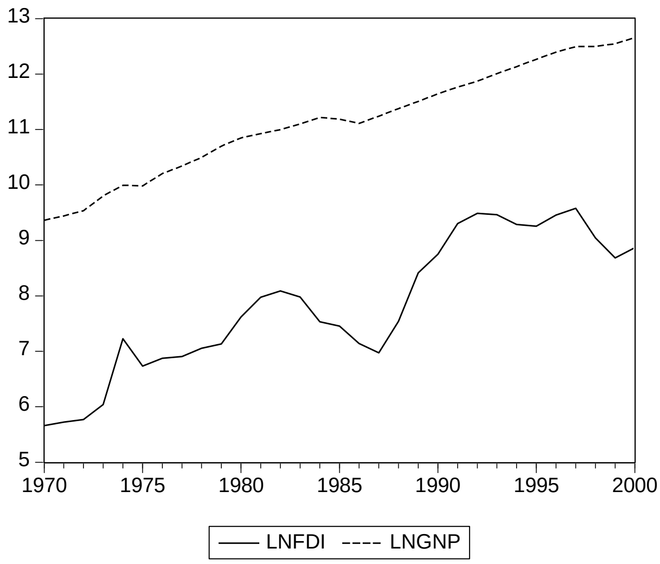

Figure 1: Plots of Foreign Capital Inflow (FDI) and GNP

Malaysia as one of a small open economy and developing country in the Asia-Pacific region is an attractive place for foreign funds. Since early 1990s, the foreign capital inflow became a prominent source of fund for Malaysia. By and large, Malaysia has experienced high economic growth and has received high foreign funds for the past twenty years. According to the United Nations Conference on Trade and Development (UNCTAD, 2002), Malaysia has been a preferable foreign fund inflow destination during 1991-1993, where the average FDI inflows are about USD5.8 billion per annum. Furthermore, Malaysia has been ranked as the second largest recipient of foreign direct investment (FDI) among the Asian developing economies. The influx of FDI steadily increased from USD2.3 billion in 1990 to USD5.1 billion in 1996. Such an increasing trend of foreign funds inflow may attribute to the policy shift and growing of export-orientation investment in the manufacturing sector. However, the depreciation of Ringgit during the 1997 Asian financial crisis has trigged a massive outflow of foreign funds. Consequently, the FDI dropped tremendously from USD3.7 billion in 1997 to USD1.8 billion in 2000. Similarly, the economic growth rate also dropped from 10.22 percent in 1996 to 7.37 percent in 1997 and subsequently –4.57 percent in 1998.

The objectives of this paper are to 1) revisit the relationship between savings and economic growth in Malaysia and 2) estimate how much variance of the national income growth that can be explained by different categories of savings. To the best of our knowledge, most of the earlier studies used aggregate savings. Researches on the effect of disaggregated savings on economic growth are relatively few. However, Griffin and Enos (1970) pointed out that not all categories of savings promote economic growth. Different categories of savings will affect the economic growth differently. Therefore, study of relationship between savings and economic growth from the disaggregated savings perspective is utmost important. A further step from the previous studies, we employ the disaggregated savings data such as private savings, public savings, foreign direct investment, official long term capital and private short term capital in this paper. The advantage of using disaggregated savings data is that it offers a better explanation of the position of each category of savings on the economic growth.

This study uses the bounds testing approach to cointegration, within an autoregressive distributed lag (ARDL) framework, developed by Pesaran et al. (2001) to examine a potential long run equilibrium relationship between savings and economic growth in Malaysia. Furthermore, this study also adopts the generalised forecast error variance decomposition method developed by Koop et al. (1996) and Pesaran and Shin (1998) to assess the effect of shock in savings on the economic growth. This approach has an advantage over the orthogonalised forecast error variance decomposition method because it is invariant to the ordering of the variables entering to the vector autoregression (VAR) system, it is uniquely determined.

The rest of this paper is structured as follows. In Section 2, we express some relevant empirical studies. In Section 3, we discuss the model specification, data and econometric techniques used in this study. The empirical results and conclusion will be presented in Section 4 and Section 5 respectively.

2. Review of empirical literature

It is well documented that the relationship between domestic savings and economic growth is positive (e.g. Baharumshah et al., 2003; Agrawal and Sahoo, 2009). In particular, for developing countries like Malaysia, Tang (2008) found that the effect of domestic savings on economic growth is positively. Moreover, the causality evidence reveals that domestic savings and economic growth in Malaysia is bi-directional in nature. Nevertheless, the empirical literature examining the effect of foreign savings on economic growth does not yield conclusive evidence. On one hand, foreign savings play an important role in financing domestic investments that will eventually lead to substantial economic growth. On the other hand, influx of foreign savings will make the host country depend too much on the foreign funds.

Hamid and Kanbur (1993) investigated the savings behaviour in Malaysia over the period of 1971 to 1990. They found that foreign savings is positively related to the domestic saving, implying that foreign savings is an effective source to overcome the savings-investment gap in Malaysia. Giles (1994) examined the foreign aid lead growth hypothesis in Cameroon. The study differentiates the impact of foreign aid into two groups: foreign grants and foreign loans. The study found that economic growth and foreign aid are not cointegrated. Moreover, the author found that the foreign loans Granger causes economic growth, but the foreign grants does not Granger causes economic growth in Cameroon. This implies that foreign loans may be a source for economic growth in Cameroon. Fayissa and El-Kaissy (1999) investigated the role of foreign aid and domestic savings on economic growth in the Asian economies over the period of 1981 to 1990. They found that domestic savings, export, foreign aid and human capital are positively affected economic growth. Alguacil et al. (2004) articulated that domestic investment in Mexico can be financed by both domestic and also foreign savings via influx of international capital.

Nevertheless, some studies showed that foreign savings in terms of aids or direct investment (FDI) may not benefit the host country's economy. Singer (1950) investigated the effect of FDI inflow in the undeveloped economies. The study found that the host countries receive less benefit embodied FDI and eventually lower the economic growth rate because of the price distortion and misallocation of resources.

Rahman (1968), Griffin and Enos (1970) and Griffin (1970) reached a similar conclusion. Rahman (1968) employed 31 cross-country data for the year 1962 to examine the relationship between foreign capital inflows and domestic savings. His finding suggests that foreign capital cannot be a substitute of domestic savings to finance local investments. Consistently, Griffin and Enos (1970) noted that there is no charity sentiment in foreign aid. They argued that powerful economy provides assistance to the relatively low power economies is to exploit the host country's resources. Thus, they stated that not all foreign help is helpful and not all foreign aid is actually assisted. Following this, they concluded that foreign capital inflows or aids do not encourage economic growth but will detriment the host country's economy because it lowers the domestic savings rate. Griffin (1970) employed the Harrod-Domar model to empirically analyse why foreign aid does not accelerate economic growth. The study showed that the foreign aid appeared to have an inimical effect on domestic savings. This is because the substantial foreign capital inflows will lead to a decline in the marginal productivity of capital and real interest rates (see also Leontief, 1958). This reduces the willingness to save.

Moreover, Weisskopf (1972) and Viovodas (1973) showed that foreign resources inflows is negatively related to economic growth because foreign resources inflows may cause the problem of misallocation of resources and the introduction of inappropriate technology. De Mello (1999) added that in an open economy, the foreign inflows might be detrimental to economic growth through its impact on foreign exchange remittance. Vissak and Roolaht (2005) reached a similar conclusion. Furthermore, Görg (2005) argued that although the influx of foreign resources such as direct investment may help the host country's economic growth, but a very high cost is incurred should the foreign resources pull out.

3. Model specification, data and econometric methods

3.1 Model Specification

The role of savings in promoting economic growth has been widely analysed in the Harrod-Damor growth model:

$$y_t = f\ \ s_t \tag{1}$$

The growth model (1) shows that the growth of national income, y_t in a nation over a time period depends on the changes of savings rate, s_t. This study attempts to extend the conventional growth model by disaggregating the savings data into five categories of savings which are private savings Sp, public savings Sg, foreign direct investment FDI, official long term capital $OLTC$ and private short term capital $PSTC$. Hence, the following model is estimated:

$$Y_t = \alpha_0 + \alpha_1 Sp_t + \alpha_2 Sg_t + \alpha_3 FDI_t + \alpha_4 OLTC_t + \alpha_5 PSTC_t + \varepsilon_t \tag{2}$$

where *Y* is the gross national income, α_i is the parameters and the residuals ε_t are assumed to be spherically distributed and white noise. Besides building our VAR model, this study will also pay particular attention to the time series issues such as unit root and cointegration properties to avoid spurious regression. To conserve space the testing procedure for unit root tests and the cointegration test will not be presented here.

3.2 Data collection

We examine the gross national product (GNP) and disaggregated domestic and foreign savings of Malaysia with the annual data from 1961 to 2000. We would like to point out here that, after the year 2000, the balance of payment statements reported in the Malaysian Economic Report has been reclassified in accordance with the *Balance of Payment Manual* (BPM 5) of the International Monetary Fund. Thus, our analysis period is limited to year 2000. The Consumer Price Index, CPI (2000 = 100) is used to derive the real terms. The data are extracted from the *International Financial Statistics* (IFS), Asian Development Bank, *Key Indicator* (KI), Bank Negara Malaysia Annual Reports and the

Malaysian Economic Reports. All estimated variables are in the natural logarithm form.

3.3 Generalised forecast error variance decomposition analysis

In this sub-section, we describe the generalised forecast error variance decomposition analysis proposed by Koop et al. (1996) and Pesaran and Shin (1998). The forecast error variance decompositions measure the proportion of contribution in one variable caused by the innovations / shocks in other variables in the VAR system. Thus, by employing the forecast error variance decomposition method, we can identify the relative importance of a set of variables that affect a variance of another variable.

The advantage of using generalised approach over the orthogonalised forecast error variance decomposition is that it is invariant to the ordering of the variables entering to VAR system, hence it is uniquely determined. Furthermore, the generalised forecast error variance decomposition method allows us to evaluate the contemporaneous shocks effects. A VAR(p) model is typically written as $w_t = A'z_t + \varepsilon_t$, where $t = 1,2,3,...,n$, $z_t = (1, z_{t-1}, z_{t-2}, \dots, z_{t-p})$ and w_t is an $m \times 1$ vector. The residuals ε_t are assumed to be spherically distributed and white noise process with the covariance matrix Σ, and finally there is no perfect multicollinearity problem among the explanatory variables. As a result, the VAR can be re-written in the form of infinite moving average (MA) representation as follows:

$$w_t = \sum_{j=0}^{\infty} A_j \varepsilon_{t-j} \tag{3}$$

where $A_j = \Phi_1 A_{j-1} + \Phi_2 A_{j-2} + \cdots + \Phi_p A_{j-p}$, $j = 1,2,3,\dots$, with $A_0 = I_m$ and $A_j = 0$ for $j < 0$. The forecast error of predicting w_{t+N} conditional on information given at $t-1$ is given by $\xi_t(N) = \sum_{k=0}^{N} A_k \varepsilon_{t+N-k}$, where $\xi_t(N)$ is $m \times 1$ vector, and the total forecast error covariance matrix is given by $\mathrm{Cov}\left[\xi_t(N)\right] = \sum_{k=0}^{N} A_k \Sigma A_k'$. Next, we consider the forecast error covariance matrix of predicting w_{t+N} conditional on information at time $t-1$ is $\xi_t^{(i)}(N) = \sum_{k=0}^{N} A_k\left(\varepsilon_{t+N-k} - E\left(\varepsilon_{t+N-k} \middle| \varepsilon_{i,t+N-k}\right)\right)$ assuming that the given values of the shocks to the ith equation are $(\varepsilon_{i,t}, \varepsilon_{i,t+1}, \dots, \varepsilon_{i,t+N})$. Assume $\varepsilon_t \sim N(0,\Sigma)$ and $E\left(\varepsilon_t \middle| \mu_{i,t} = \delta_i\right) = (\sigma_{1,i}, \sigma_{2,i}, \dots, \sigma_{mi})' \sigma_{ii}^{-1}\delta_i$, where $\delta_i = (\sigma_{ii})^{-1/2}$ denotes a unit standard deviation shock. The results in

$E\ \ \varepsilon_{t+N-k} \left| \varepsilon_{i,t+N-k} \right. \ = \ \sigma_{ii}^{-1}\Sigma\mu_i \ \ \varepsilon_{i,t+N-k}$ for $i = 1, 2, 3, \ldots, m$ and $k = 1, 2, 3, \ldots, N$, with μ_i being $m \times 1$ vector with all elements equal to zero, but the i^{th} element will be equal to one. Substitution and taking conditional expectations yields the following expression.

$$\text{Cov}\left[\xi_t^{(i)} \ \ N \ \ \right] = \sum_{k=0}^{N} A_k \sum A_k' - \sigma_{ii}^{-1}\left(\sum_{k=0}^{N} A_k \sum \mu_i \mu_i' \sum A_k' \right) \tag{4}$$

Next, the conditioning on the future shocks to the *i*th equation will show the decline in the *N*-step forecast error variance of w_t is given by:

$$\Delta_{iN} = \text{Cov}\left[\xi_t \ \ N \ \ \right] - \text{Cov}\left[\xi_t^{(i)} \ \ N \ \ \right] = \sigma_{ii}^{-1} \sum_{k=0}^{N} A_k \sum \mu_i \mu_i' \sum A_k' \tag{5}$$

Then, we re-scaling the *j*th element by the N-step ahead forecast error variance of the *i*th variables in w_t would give the generalised forecast error variance decomposition as below:

$$\Psi_{ij,N} = \left[\sigma_{ii}^{-1} \sum_{k=0}^{N} \ \ \mu_j' A_k \sum \mu_i \ \ ^2 \right] \Bigg/ \left[\sum_{k=0}^{N} \mu_i' A_k \sum A_k' \mu_i \right] \tag{6}$$

From equation (6), the results of generalised decompositions are invariant to the ordering of variables in the VAR system and also measure the effect of variables on forecast variance at zero time horizons.

4. Empirical results

4.1 Unit root tests results

In this study, we employ the Augmented Dickey-Fuller (ADF) and the Phillips-Perron (PP) unit root tests to determine the order of integration of each series. We include a constant and deterministic trend term in these unit root tests. Table 1 reports the results of unit root tests in the level as well as in the first difference for all variables.

The ADF test results show that $Sp_t, Sg_t, OLTC_t$ are integrated of order zero, *I*(0), whereas Y_t and FDI_t are integrated of order one, *I*(1). Ironically, the ADF test fails to reject the null hypothesis of unit root for $PSTC_t$ at the level as well as at the first differenced form. Thus, $PSTC_t$ may be integrated of order two, *I*(2). However, the PP test results suggest that all the estimated variables are integrated of order one, $I(1)$ except Sp_t, Sg_t are stationary at level, i.e. $I(0)$. The ADF and the PP tests results are not consistent. According to Hallam and Zanoli (1993), and Obben (1998) when there is inconsistency between ADF and PP results, the conclusion from the PP test is preferred because the PP test is more powerful than the ADF test especially for finite sample study. Therefore, the estimated variables are either $I(0)$ or $I(1)$ process. As the order of integration for the estimated variables are non-uniform,(i.e. either $I(0)$ or $I(1)$), the conventional cointegration tests cannot be used in this study. Thus, the bounds testing approach to cointegration is very suitable to the present study as the degree of integration for the estimated variables are mix.

Table 1: The results of stationarity tests

Variables	ADF	PP
Y_t	–3.154 (3)	–2.829 (1)
ΔY_t	–5.243 (1)***	–5.363 (2)***
Sp_t	–3.596 (0)**	–3.533 (1)**
ΔSp_t	–8.450 (0)***	–9.867 (6)***
Sg_t	–3.509 (0)*	–3.509 (0)*
ΔSg_t	–7.402 (0)***	–7.472 (3)***
FDI_t	–2.956 (1)	–2.399 (1)
ΔFDI_t	–5.248 (0)***	–5.253 (1)***
$OLTC_t$	–3.230 (4)*	–2.674 (1)
$\Delta OLTC_t$	–3.799 (2)**	–7.815 (2)***
$PSTC_t$	–2.289 (9)	–1.409 (4)
$\Delta PSTC_t$	–1.597 (8)	–8.359 (3)***

Note: The asterisks ***, **, * denotes the significance level at 1, 5 and 10 percents, respectively. The optimal lag length for ADF test is selected using the AIC while the bandwidth for PP test is selected using the Newey-West Bartlett kernel. Figure in parentheses denotes the optimal lag length and bandwidth.

4.2 Cointegration test results

According to Enders (2004), the maximum lag order of 3 years is sufficiently long to capture the dynamics behaviours of annual data. Thus, the ARDL model is estimated with the maximum lag order of 3 years. Then the AIC statistic is used to choose the optimal lag order for the ARDL model. The AIC statistics suggest that ARDL(3, 3, 2, 3, 2, 3) is the best combination of lag order and the selected model also passed a number of diagnostic tests, except for serial correlations. According to Pindyck and Rubinfeld (1998), serial correlation problem will not affect the unbiasedness and consistency of the Ordinary Least Squares (OLS) regression estimators, but does affect the efficiency, and the standard error is no longer valid. Thus, the Newey and West (1987) procedure is used to correct the invalid standard error. The estimation results and diagnostic tests are reported in Table 2 and Figure 2. In terms of cointegration, we find that the calculated F-statistics for cointegration is greater than the 1 percent upper bounds critical values.[2] Hence, economic growth and disaggregated savings $Sp_t, Sg_t, FDI_t, OLTC_t, PSTC_t$ in Malaysia are co-move in the long run.

Table 2: The results of bounds test for cointegration

Calculated F-statistic		
$F_Y \; Y \mid Sp, Sg, FDI, OLTC, PSTC$	6.213***	
# Critical values (F-test):		
Significance Level	Lower *I*(0)	Upper *I*(1)
1 percent	4.257	6.040
5 percent	3.037	4.443
10 percent	2.508	3.763
Conclusion:	Cointegrated	

Note: ***, **, * denote significance at 1, 5 and 10 percent level, respectively.
Unrestricted intercept and no trend (k = 5 and *T* = 35) critical values are obtained from Narayan (2005).
R-squared: 0.965; Adjusted R-squared: 0.846; F-Statistic: 8.131 (0.002);
Jarque-Bera: 0.057 (0.971); Ramsey RESET [1]: 1.578 (0.209);
Breusch-Godfrey LM test [1]: 22.230 (0.000), [2]: 27.060 (0.000);
ARCH test [1]: 0.798 (0.372).
[ ] refer to the diagnostics tests order; ( ) refer to the p-values.

[2] The critical values tabulated in Pesaran et al. (2001) are not suitable for finite sample analysis. We use the small sample critical values provided by Narayan (2005).

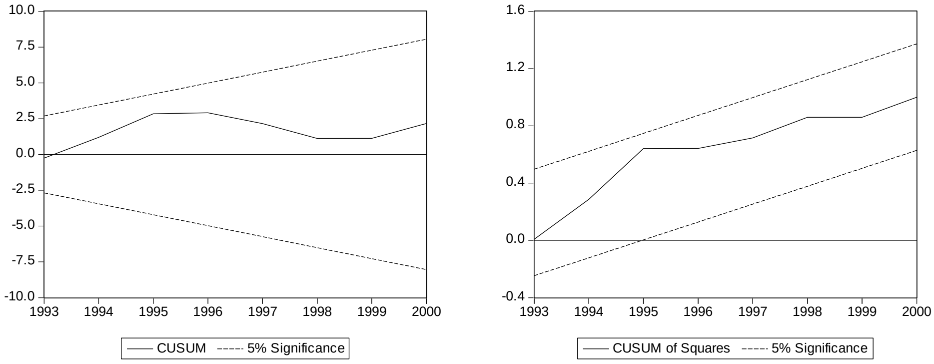

Figure 2: Plots of CUSUM and CUSUM of Squares Statistics

As the variables are cointegrated, we estimate the long run equilibrium relationship using Bardsen's (1989) procedure. The estimated long run elasticities are presented in Table 3.

Table 3: The estimated long run elasticities

Dependent Variable: Y_t	
Long Run Elasticities	
Independent Variable	Coefficients
Sp_t	0.232***
Sg_t	0.394***
FDI_t	–0.017
$OLTC_t$	25.088***
$PSTC_t$	–1.025

Note: The asterisks ***, ** and * denote significance at 1, 5 and 10 percent levels, respectively. The χ^2-statistics is used for the above statistical inference.

The estimation results suggest that the domestics savings (Sp_t and Sg_t) are statistically significant at the 1 percent level but their positive effects on the economic growth is inelastic (less than one). Among the three foreign savings, only OLTC is statistically significant foster the economic growth at 1 percent level. Nevertheless, the FDI and PSTC are negatively related to the economic growth. This infers that the influx of FDI and equity investment may deteriorate the Malaysian economy in the long run. Moreover, the short term capital inflows from overseas tend to take advantage of the favourable development in the domestic stock market. There are many uncertainties in the global economic environment as well as the domestic financial markets. For instance, the Asian financial crisis in 1997/1998 and the terrorist attack on September 11, 2001 in the United States shock the global economy and eventually triggered a massive outflow of foreign capital. The real GDP growth rate for Malaysia is –7.4 and 0.3 percents in 1998 and 2001 respectively. This result is corroborated to the finding of Griffin (1970), Weisskopf (1972) and Viovodas (1973). In addition, our result also supports Griffin and Enos (1970) that not all foreign capital inflow is helpful and not all foreign aid is actually assisted.

4.3 Variance decomposition analysis results

So far the analyses are restricted to in-sample tests and do not consider the dynamic interaction of the variables when the system exposes to shock. For this reason, it is worthwhile to further examine alternative explanations for savings shock on economic growth through the out-sample test. In order to evaluate the effects of domestic and foreign savings shocks on economic growth in Malaysia, we perform the generalised forecast error variance decomposition within the unrestricted VAR system in level rather than a vector error-correction model (VECM). Savings do not immediately affect the economic growth as it is a long run relationship (see Baharumshah et al., 2003, Tang, 2008). Thus, an unrestricted VAR system in level is preferred to a VECM in this study. In addition, many published papers (e.g., Faust and Leeper, 1997; Ramaswamy and Slok, 1998; Ibrahim, 2005) suggested using the unrestricted VAR system in level for impulse response function and variance decomposition analysis owing to its reliability and superior properties. Furthermore, Engle and Granger (1987) also noted that for the cointegrated variables, estimation with the unrestricted VAR system in level is valid.

Table 4 summarises the results of the generalised forecast error variance decomposition analysis. As we focus on the variation in economic growth, we only report the variance decomposition for the economic growth and analyse the relative importance of different categories of savings that affect the economic growth movements in Malaysia. Nevertheless, it is necessary to point out that the generalised variance decompositions inevitably run into a problem that the total variance does not sum to 100 percents because the covariance between the original shocks is non-zero. For interpretation, we standardise the total variance to 100 percents when added the row values. Interested readers may refer to Wang (2002) for more details discussions.

Table 4
Generalised Forecast Error Variance Decomposition of Y_t in Malaysia

Horizons	Y_t	Sp_t	Sg_t	FDI_t	$OLTC_t$	$PSTC_t$
1	53.90	19.33	15.38	6.07	5.22	0.09
2	52.70	21.35	12.76	5.99	7.11	0.06
3	51.85	22.74	10.86	5.70	8.80	0.05
4	51.24	23.70	9.48	5.33	10.22	0.04
5	50.84	24.36	8.45	4.95	11.36	0.04

Note: The above estimations are computed by Microfit 4.1. The likelihood ratio (LR) statistics suggest that lag length 1 is the best.

Table 4 shows that the impact of savings on the forecast error variance of economic growth varies between 0.04 and 24.36 percent depending on the type of savings. One interesting finding is the economic growth in Malaysia is dominated by the domestic savings. A plausible explanation is the financial system in Malaysia has undergone a remarkable transformation. Moreover, the government set up Post Office Savings Bank and National Savings Bank to mobilise the domestic savings from the small depositors. The rapid development of Malaysian financial system has increased the role of domestic savings on the economic growth. Approximately, 53.90 percents of the one-step ahead forecast error variance of the economic growth are explained by its own innovations and 46.10 percents are attributed to the savings. In view of the domestic savings, changes in private savings explain approximately 19.33 percents of the variance in 1 year and increases to 24.36 percents in 5 years time. However, the public savings explain less than 10 percents of the variance in economic growth after 3 years.

Among the foreign savings, official long term capital $OLTC_t$ is the most influential factor on economic growth. It explains between 5.22 percent and 11.36 percents of the forecast error variance of economic growth up to 5 years horizon. It is a common thought that FDI is an engine for economic growth in Malaysia as well as other developing countries, however our finding reveals that changes in FDI explains only 5 to 6 percent of the forecast error variance of economic growth. This finding may shed some light that the FDI inflow is necessary, but insufficient to generate sustainable economic growth in Malaysia. Furthermore, the empirical result demonstrates that only a small portion of the variability in economic growth could be attributed to $PSTC_t$. Specifically, $PSTC_t$ explains only 0.09 percent of the one-step ahead forecast error variance of economic growth, and 0.04 percent in the 4 and 5 years horizon. Ultimately, the findings of variance decomposition are relatively coincident with the cointegration result that foreign savings may not help much in promoting the economic development in Malaysia. However, it may cause trouble when the foreign capital retrieves from the host country.

5. Conclusions and policy implication

This study investigates how much of the variance in the economic growth can be explained by various categories of savings in Malaysia using the bounds testing approach to cointegration and the generalised version of forecast error variance decomposition analysis. The annual data from 1961 to 2000 are used for the analysis. Our empirical findings lead to the following conclusions. First, the cointegration test results show that the economic growth and the disaggregated savings are cointegrated over our sample period. This indicates that the disaggregated savings are moving together with the economic growth to achieve their steady-state equilibrium in the long run, although deviations may occur in the short run. Second, the variance decomposition results demonstrate that a shock to the domestic savings explains a more substantial amount of movement in the economic growth of Malaysia than the foreign savings. Thus, foreign savings are not a good substitute for the domestic savings to finance the local investments.

A notable policy implication that may be drawn from this study is mobilising domestic savings in Malaysia will have more significant contribution on growth than promoting foreign savings. Correlated to the Ninth Malaysian Plan that to create a high productivity, intellectual and first class mentality society; it is suggested that the policymakers should channel and diversify the domestic resources such as savings into a more productive sectors such as export-orientated industries and education sectors. Besides that, these domestic resources could also be used to help more local entrepreneurs and to train human capital for promoting a sustainable economic development and growth in Malaysia.

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