The Role of Macroeconomic Fundamentals in Malaysian Post Recession Growth

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Chapter 6
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1 Introduction

Before the currency crisis, Malaysia was considered the best "development success story" among the second-tier newly industrializing economies in East Asia. From 1987 to 1996, the Malaysian economy grew at an average annual rate of 9%, several times faster than the economies of the USA and many other Western industrialized nations. The economy was virtually at full employment for the last 6 years before the crisis, with modest inflation, rapid export growth, manageable external debt, and improvement in current account deficits. However, this impressive growth changed dramatically with the onset of the currency crisis. Economic growth contracted in 1998. Nevertheless, the economy showed some recovery, with an economic growth rate of 3–4% for 1999–2001. The Malaysian government has made much effort to help the economy recover, such as a monetary policy that aims to promote monetary stability and sufficient liquidity in the economy, keeping inflation rates low, and maintaining the exchange rate at a stable level owing to the pegging to the US dollar. The external sector also had a good surplus, and the stock market has performed steadily in the past several years. As a result, Malaysian real GDP grew at an accelerated pace of 6–8% from 2003 to 2010. It is the aim of this study to find out the role of macroeconomic fundamentals in Malaysian post recession growth. The macroeconomic variables selected are exports, imports, price level, money supply, interest rate, exchange rate, and government expenditure.

The remainder of this chapter is organized as follows. Some empirical studies on interrelationships between economic growth and macroeconomic variables are reviewed in Sect. 2. The methodology and data set used are described in Sect. 3. Empirical results are presented in Sect. 4. Finally, conclusion and some policy implications are provide in Sect. 5.

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2   Literature Review

This section will briefly review some related studies regarding dynamic causal interactions between economic growth and macroeconomic fundamentals, namely, exports, imports, price level, money supply, interest rate, exchange rate, and government expenditure.

2.1   *Export and Economic Growth*

In recent years, the role of international trade as an engine of growth has generally been accepted. Many studies have tried to establish the causal link between expansion of exports and economic growth. Ghirmay et al. (2001) used the co-integration test and the Granger-causality test to investigate the export-led and investment-led growth for 19 less-developed countries. They found the direction of causality behaves differently across countries. For Malaysia, they noticed a unidirectional causal relationship running from economic growth to exports. Ghatak et al. (1997) also provided evidence that exports Granger-cause real GDP growth in Malaysia. In addition, Tan and Lean (2010) analyzed the dynamic linkages between domestic investment, exports, and economic growth in Malaysia. The empirical findings suggest that domestic investment and economic growth Granger-cause each other, but that there is unilateral causality running from exports to economic growth and from exports to domestic investment.

In addition, Doraisami (1996) found a bidirectional relation between exports and national output and a positive long-run relationship between exports and growth. Khalafalla and Webb (2001) used vector autoregression (VAR) to analyze Malaysian trade and GDP growth from 1965 to 1996. Statistical tests confirmed export-led growth for the full period and for the period to 1980, but tests on the 1981–1996 period showed growth causing exports. In contrast, Liwan and Lau (2007) found the absence of a causal relationship between exports and economic growth in Malaysia. Similarly, Ahmad and Harnhirun (1996) also found no support for the export-led growth hypothesis for ASEAN countries.

2.2   *Import and Economic Growth*

Compared with the empirical studies on export-led growth, less attention had been devoted to test the import-led growth hypothesis. Awokuse (2007) examined the impact of export and import expansion on growth in three central and eastern European transition economies, namely, those of Bulgaria, the Czech Republic, and Poland. The empirical results suggest that trade stimulates economic growth. Overall, the Granger-causality test results suggest that imports play as much of a role as exports in stimulating economic growth in these countries. Marwah and

Tavakoli (2004) analyzed the impact of foreign direct investment (FDI) and imports on economic growth for Indonesia, Malaysia, the Philippines, and Thailand. The results show that both foreign capital and imports have a marked effect on the economic growth of these countries.

2.3   Inflation and Economic Growth

The relationship between economic growth and inflation is one of the most important macroeconomic problems. The relationship between inflation and economic growth in Turkey was examined by Erbaykal and Okuyan (2008). Using the bound test developed by Pesaran et al. (2001), they found no statistically significant long-term relationship. Whereas with the causality test developed by Toda and Yamamoto (1995), a causality relationship was found between inflation and economic growth.

Gomme (1993) conducted research in this area which covered 100 countries between 1960 and 1990, and found that a negative relationship between inflation and economic growth. Barro (1995), Kormandi and Meguire (1985), Fischer (1993), DeGregorio (1993), Gylfason and Herbertsson (2001), Valdovinoz (2003), and Guerrero (2006) detected a similar relationship, that is, inflation has negative effects on economic growth. Generally, most of the studies found that an increase in inflation reduces economic growth.

However, Mallik and Chowdhury (2001), who examined the relationship between inflation and growth in short term and the long term for four Asian countries using time series analysis, stated the positive effect of inflation on growth. Generally, the views stating that the effect of inflation on economic growth is positive are based on the idea that inflation increases compulsory savings.

2.4   Output Growth and Money Supply

In the empirical literature, the relationship between money and output has been investigated by researchers for different countries over different sample periods, and conflicting findings have been provided. Das (2003) examined the long-run relationship between prices and output in India and provided evidence that (1) both money and price affect each other and there exists bidirectional causality, (2) output affects price and there is feedback causation between price and output, and (3) money unidirectionally affects output. In addition, Okpara and Nwaoha (2010) examined the relationship between government expenditure, money supply, prices, and output in Nigeria. Their results show that money supply is positively and significantly related to real GDP, whereas real GDP is a negative and significant function of the consumer price index (CPI). Total government expenditure was found to exert no significant influence on the growth of real GDP. Similarly, Omoke and Ugwuanyi (2010) in their study of money, price, and output in Nigeria found that money supply Granger-causes both output and inflation.

However, Khan and Siddiqui (1990) showed there is a unidirectional causality from income to money and bidirectional causality between money and prices in Pakistan. Nevertheless, some studies detected there was bidirectional causality between money supply and output. For instance, Mishra et al. (2010) investigated the relationship between money, price, and output for India. The estimation of the vector error-correction model (VECM) indicates the existence of long-run bidirectional causality between money supply and output and unidirectional causality from price level to money supply and output. But, in the short run a bidirectional causality exists between money supply and price level and unidirectional causality exists from output to price level. Similarly, Bengali et al. (1999) demonstrated a bidirectional causality between money and income and unidirectional causality from money to prices in Pakistan. In addition, Tan and Cheng (1995), using Geweke's approach to Wiener–Granger causality, found a bidirectional causation between money supply and nominal output for Malaysia.

2.5 *Output Growth and Interest Rate*

As the interest rate is one of the crucial monetary policy instruments, with the liberalization of financial markets in most of the developing economies in upswing, the last two decades have witnessed a surge of empirical literature examining the real effects of changes in short-term interest rates. Warman and Thirlwall (1994) analyzed the interrelationship between real interest rates, savings, investment, and growth in Mexico over the period from 1960 to 1990, and concluded that there is no evidence that high real interest rates lead to higher total savings, investment, and economic growth. Similarly, Craigwell (1990) found that interest rate policies had little effect on financial and economic growth in Barbados. Using the autoregressive distributed lag approach, Mallick and Agarwal (2007) found that the short-term real interest rate does not have a direct impact on the growth rate in India. In addition, Taylor (1999) found a mixed link between real interest rates and the growth rate.

2.6 *Output Growth and Exchange Rate*

The relationship between output growth and exchange rate has been a matter of considerable interest. Wang et al. (2007) found that China's productivity has a positive relationship with the real equilibrium exchange rate. On the other hand, Chen and Hsing (2005) found that the exchange rate reacts negatively to a shock to output in Korea. Contrary to the findings of previous studies, the results of Miles (2008) indicate that exchange rates themselves exert no significant impact on inflation or output. Koccat (2008) studied the relationship between economic growth, exchange rate movements, and Turkey's exports based on the Johansen method. The basic finding of this study is that there is no long-run equilibrium relationship between real income per capita, real exchange rates, and real exports of goods and services in

Turkey. Lee et al. (2010) investigated the relationship between FDI inflows, exchange rate, and economic growth for Kazakhstan. The results indicate that FDI has no significant impact on GDP growth and FDI has a minimal effect on improving economic growth.

2.7   Government Expenditure and Economic Growth

Fischer (1991) stated that macroeconomic policy preferences such as budget deficits and foreign exchange systems are important for economic growth. Fischer (1993) also showed that a negative relationship exists between economic growth and inflation and budget deficits. He found the direction of causality was from macroeconomic policies (such as inflation and budget deficits) to economic growth. According to the study of Fischer (1993), inflation reduces growth, and public deficits reduce both capital accumulation and productivity. Sulaiman et al. (2009) in their study of money supply, government expenditure, output, and prices in Pakistan found that government expenditure and inflation are negatively related to economic growth in the long run, whereas M2 positively impacts on economic growth.

On the other hand, Wu et al. (2010) reexamined the causal relationship between government expenditure and economic growth by conducting the panel Granger-causality test recently developed by Hurlin (2004) and by utilizing a richer panel data set which includes 182 countries that cover the period from 1950 to 2004. Their results strongly support the hypothesis that government spending is helpful to economic growth regardless of how we measure the size of government spending and economic growth.

However, a few recent studies found no significant relationship between government expenditure and output. Okpara and Nwaoha (2010) examined the relationship between government expenditure, money supply, prices, and output in Nigeria, and showed that money supply is positively and significantly related to real GDP, whereas real GDP is a negative and significant function of the CPI. Total government expenditure was found to exert no significant influence on the growth of real GDP, corroborating with the findings of Olukayode and Onabanjo (2009) and Olayeni (2009). Kogid et al. (2010) investigated the factors that stimulate and maintain economic growth in Malaysia using co-integration analysis. Using annual data from 1970 to 2007, they found that only consumption expenditure and export cause economic growth, whereas this is not so for government expenditure, the exchange rate, and FDI.

Previous studies generally found mixed empirical evidence for a relationship between government spending and economic growth. For example, Kneller et al. (1998), Cooray (2009), Wu et al. (2010) concluded that increased in government spending can improve economic growth, however, Fischer (1993), Folster and Henrekson (2001) and Suleman et al. (2009) found otherwise. There is, however, no unanimous verdict on the productivity of government spending even though unproductive spending generally impacts negatively on growth whereas productive spending impacts positively (Barro and Martin 1992).

3   Methodology and Data

A standard procedure of time series analyses will be conducted accordingly. First, the unit root test is used to determine whether each data series is nonstationary (unit root exists) or stationary (unit root does not exist) by taking into consideration both with and without a trend variable in the regression. The augmented Dickey–Fuller (ADF) unit root test is used to discern whether the series are nonstationary and are integrated of the same order.[1]

The next step in the analysis is to test for the presence of co-integration among the variables. In this study, the popular Johansen and Juselius procedure of testing for a multivariate is employed.[2] The tests used are the trace statistic, which tests for at most r co-integrating vectors among a system of n time series (where $r = 0, 1, 2, \ldots,$ $n - 2, n - 1$) and the maximum eigenvalue statistic, which tests for exactly r co-integrating vectors against the alternative hypothesis of $r + 1$ co-integrating vectors (Johansen 1988). If we are able to reject the null hypothesis of no co-integrating vectors based on the maximum eigenvalue and trace statistics, this indicates these variables have a long-run relationship.

According to the Granger representation theorem, if a co-integrating relationship exists between a series of $I(1)$ variables, then an error-correction model also exists. The presence of co-integration also rules out noncausality among the variables. In other words, there must be at least a unidirectional causality from one variable to the other variables. The Granger-causality test must be conducted in the environment of the VECM where the relevant error-correction terms are included in the model to avoid misspecification and omission of the important variables. Granger causality tests the null hypothesis that the lagged values of the independent variables are jointly significant in the equation of the dependent variable. This can be done by running a VECM on the system of equations and testing for zero restrictions on the lagged values of the independent variables' coefficients.

The sample period covers quarterly data from the third quarter of 1998 to the third quarter of 2010.[3] The data were obtained from *International Financial Statistics* published by the International Monetary Fund. For the primary variable of interest, economic growth is represented by GDP. The data for exports (EX) and imports (IM) of goods and services are used to gauge the trade effect. The CPI is used as a proxy for inflation in the country, where the base year for the CPI is 2000 (2000 = 100). The exchange rate is measured as the real effective exchange rate (REER). As proxies for monetary and fiscal policy, monetary policy tools (i.e., money supply and domestic interest rate) and a fiscal policy tool (i.e., government expenditure) are used. The money supply variable used is M2 and is measured in local currency units, whereas the money market rate (MRATE) is used to represent the domestic interest rate.

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[1] Dickey and Fuller (1979, 1981)

[2] Johansen and Juselius (1990, 1992)

[3] The sample period was chosen as such for two reasons. First, Malaysia had pegged its exchange rate at RM 3.80 to the US dollar from 1 September 1998. Second, the Malaysian economy experienced contraction in 1998 and the economy had shown some recovery in 1999. Therefore, the third quarter of 1998 is an appropriate date to consider as a starting period for the post recession period.

The government expenditure (GOV) is measured in local currency units. To compress the scale, all the series (except for the domestic interest rate) are transformed into natural logarithmic form and are used in all cases.

4   Empirical Results

The order of integration of the series was determined using the standard ADF unit root test. It is generally known that the results of this test often depend on the number of lags included. For this purpose, we adopted the minimum Akaike information criterion to determine the optimal lag structure. The results of the ADF tests are presented in Table 6.1. The t statistic suggested that most of the series (except for MRATE) are statistically insignificant in the level form. Hence, the null hypothesis of nonstationarity cannot be rejected at even the 10% significance level except for the interest rate. Therefore, on the basis of the t statistics, one can conclude that most of the series are nonstationary in their level form except for the interest rate. However, in the first difference, the null hypothesis of the unit root for all the series can be rejected at the 5% level of significance. This result is consistent with the results of previous studies that have shown most macroeconomic series contain a unit root and thus are integrated of order one, $I(1)$.

After ascertaining that all the variables are stationary after the first difference, one can proceed to the co-integration test. A related issue regarding co-integration tests is the determination of appropriate lag lengths. Long lag lengths quickly consume a degree of freedom; therefore, the optimal lag length can be very critical. On the basis of VAR lag order selection criteria, all four criteria, namely, final prediction error, Akaike information criterion, Schwartz information criterion, and Hannan–Quinn information criterion, suggested an appropriate lag length of 3.

Table 6.1   Augmented Dickey–Fuller unit root tests

Series	Level		First difference	
	Constant	Constant with trend	Constant	Constant with trend
LGDP	−0.15 (10)	−2.14 (9)	−3.02[a] (9)	−4.11[b] (6)
LCPI	0.09 (2)	−2.31 (1)	−5.93[a] (1)	−5.86[a] (1)
LEX	−1.53 (5)	−2.31 (8)	−4.25[a] (4)	−4.41[a] (4)
MRATE	−8.04[a] (9)	−7.21[a] (9)	−2.94[b] (9)	−3.91[b] (10)
LIM	−1.29 (9)	−2.67 (8)	−3.65[a] (6)	−3.66[b] (6)
LGOV	−0.48 (8)	−2.79 (8)	−3.95[a] (6)	−3.84[b] (6)
LM2	0.21 (1)	−1.52 (1)	−5.63[a] (0)	−5.57[a] (0)
LREER	−2.05 (1)	−1.97 (1)	−5.23[a] (0)	−5.20[a] (0)

The numbers in *parentheses* are the lag length. The tests employ a null hypothesis of a unit root. For constant without trend, the critical values for rejection are −3.57 and −2.92 at 1% and 5%. For constant with trend, the critical values for rejection are −4.15 and −3.50 at 1% and 5%. All series (except for the money market rate, *MRATE*) are log-transformed.

LGDP log-transformed GDP, *LCPI* log-transformed consumer prices index, *LEX* log-transformed exports, *LIM* log-transformed imports, *LGOV* log-transformed government expenditure, *LM2* log-transformed M2, *LREER* log-transformed real effective exchange rate

[a]Significance at the 1% level

[b]Significance at the 5% level

The Johansen–Juselius likelihood co-integration tests are reported in Table 6.2. The series were tested using the co-integrating VAR with intercepts and no trend. Since the sample size is small in this study, thus following Reinsel and Ahn (1992), the trace and maximal eigenvalue statistics have been adjusted by a factor of $(T - np)/T$, where T is the effective number of observations, n is the number of variables, and p is the lag order.[4] From Table 6.2, the trace statistics indicate that the null hypothesis of no co-integrating vector can be rejected using a critical value of 5%. This suggests the presence of a unique co-integrating vector. Similarly, the maximal eigenvalue statistic also indicates the presence of one co-integrating vector. In sum, both the maximum eigenvalue statistic and the trace statistic indicate that there exists one unique co-integration vector. Accordingly, economic growth, exports, imports, price level, money supply, interest rate, exchange rate, and government expenditure are tied together in the long run and their deviations from the long-run equilibrium path will be corrected.

The presence of co-integration also rules out noncausality among the variables. In other words, there must be at least a unidirectional causality from one variable to the other variables. Before we proceed to the Granger-causality test, it would be interesting to look at the long-run relationship between Malaysian output growth and the macroeconomics variables selected. The estimated co-integrating vector is as follows:

$$
\begin{array}{cccccccc}
GDP_t = -20.65 & -8.29CPI_t & +7.08EX_t & -0.31MRATE_t & -3.98IM_t & +0.72GOV_t & -0.24M2_t & +6.49REER_t \\
& (-7.35) & (12.77) & (-17.13) & (-7.96) & (8.39) & (-1.09) & (14.06)
\end{array} \tag{6.1}
$$

where t statistics are reported in parentheses. The t statistics suggested that all the variables, except for money supply, are statistically significant at the 1% level; hence, all these economic fundamentals (except for money supply) are important determinants for long-term economic growth. The results tend to suggest that money supply is not an effective tool in promoting long-run economic growth. The signs of the long-run coefficients for all variables are reasonable and acceptable from the theoretical point of view. As shown in Eq. 6.1, a positive long-run relationship is detected for the coefficients of output growth and export, output growth and government expenditure, and output growth and exchange rate. This means that increases in exports and government expenditure or a depreciation of the exchange rate promotes economic growth. However, there is a negative long-run relationship between output growth and price level, interest rate, imports, and money supply. This demonstrates that increases in inflation, the interest rate, and imports temper Malaysian economic growth.[5]

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[4] This is to correct for bias toward finding evidence for co-integration in a finite or small sample.

[5] The negative coefficient between money supply and economic growth tends to suggest that an increase in money supply would depress economic growth, which is contradictory to the theory; however, it is not statistically significant.

Table 6.2 Johansen–Juselius co-integration tests

Null hypotheses	Eigenvalue	Trace statistic	Critical value of 5%	Critical value of 1%	Maximum eigenvalue statistic	Critical value of 5%	Critical value of 1%
$(r = 0)$	0.95	156.85[b]	156.00	168.36	61.28[a]	51.42	57.69
$(r \leq 1)$	0.79	95.57	124.24	133.57	32.55	45.28	51.57
$(r \leq 2)$	0.65	63.02	94.15	103.18	22.24	39.37	45.10
$(r \leq 3)$	0.53	40.78	68.52	76.07	15.80	33.46	38.77
$(r \leq 4)$	0.46	24.98	47.21	54.46	12.88	27.07	32.24
$(r \leq 5)$	0.28	12.10	29.68	35.65	6.83	20.97	25.52
$(r \leq 6)$	0.22	5.27	15.41	20.04	5.25	14.07	18.63
$(r \leq 7)$	0.00	0.01	3.76	6.65	0.01	3.76	6.65

r indicates the number of co-integrating vectors. Trace and maximum eigenvalue statistics have been adjusted by multiplying them by the factor $(T\text{-}np)/T$, where T is the effective number of observations, n is the number of variables, and p is the lag order, which is suggested by Reinsel and Ahn (1992). The effective number of observations is 45, the lag order is 3, and number of variables is 8

[a]Rejection of the hypothesis at a critical value of 1%
[b]Rejection of the hypothesis at a critical value of 5%

Since the Johansen–Juselius co-integration test shows that there is one co-integrating relationship, one can proceed to test the VECM. Table 6.3 reports the results of the Granger-causality test in the environment of the VECM. From Table 6.3, the χ^2 statistics of the Granger-causality test clearly indicate that the domestic money supply (M2) and the exchange rate (REER) are weakly exogenous. This finding is consistent with the fact that the money supply and exchange rates of Malaysia are mainly determined outside this system. The results show the economic growth (GDP) is Granger-caused by the price level (CPI) and government spending (GOV). This indicates that in the short run Malaysian post recession growth is highly dependent on government spending. In addition, inflation also significantly affects short-run economic growth. The results also show that besides economic growth (GDP), government expenditure (GOV) also Granger-causes Malaysian exports (EX), imports (IM), and the domestic interest rate (MRATE). This suggests that government expenditure is the main force of many economic activities during the post recession period in the short run. The χ^2 statistics indicate that money supply (M2) and domestic interest rate (MRATE) Granger-cause the CPI only. These findings revealed that the monetary policy tools of money supply and domestic interest rate are not effective in stimulating short-run economic growth and other economic activities. On the other hand, the expansionary monetary policy may create inflationary pressure on the economy in the short run. The results also show that economic growth (GDP), exports (EX), the interest rate (MRATE), and money supply (M2) Granger-cause the Malaysian price level (CPI). This suggests that the general price level is very sensitive and responds quickly to changes in the economy. Granger-causality tests showed that there is a unidirectional causal effect running from economic growth (GDP) and government expenditure (GOV) to exports (EX), whereas there is a bidirectional relationship between exports (EX) and the price level (CPI). For imports, it is shown that Malaysia imports (IM) are determined by the general price level (CPI) and government spending (GOV) in the short run. In addition, the Granger-causality results showed that both exports (EX) and imports (IM) together with government expenditure Granger-cause the interest rate (MRATE). This finding seems to imply that the external sector (exports and imports) as well as fiscal policy influenced the country's short-run interest rate behavior. Finally, the exchange rate system (REER) does not seem to affect the other macroeconomic variables in this study. This may be consistent with the fact that the pegged exchange rate is mainly designated to prevent short-run massive capital outflows. The Granger-causality relationships among Malaysian economic growth and the macroeconomic variables during the post recession period are summarized in Fig. 6.1.

5   Conclusions

This study adopted a series of statistical tests to assess the relationship among macroeconomic variables and post recession growth for Malaysia. The technique of co-integration was employed to assess the long-run equilibrium relationships among

Table 6.3   Granger-causality results

Dependent variable	Independent variable							
	D(LGDP)	D(LCPI)	D(LEX)	D(MRATE)	D(LIM)	D(LGOV)	D(LM2)	D(LREER)
D(LGDP)	–	6.53[a]	2.89	2.13	0.12	17.39[b]	1.72	0.004
D(LCPI)	6.36[a]	–	15.78[b]	9.57[b]	5.09	1.78	13.35[b]	0.41
D(LEX)	10.49[b]	10.22[b]	–	1.34	3.06	13.64[b]	5.71	0.41
D(MRATE)	4.36	2.49	10.02[b]	–	15.96[b]	29.64[b]	0.37	3.17
D(LIM)	4.64	12.91[b]	2.69	1.56	–	14.45[b]	0.90	0.03
D(LGOV)	8.07	0.59	1.02	1.67	1.26	–	3.45	4.84
D(LM2)	1.94	4.51	3.65	3.36	3.07	3.59	–	0.35
D(LREER)	0.48	2.37	3.30	2.76	2.91	0.94	0.87	–

The numbers are the χ^2 statistics for testing the null hypothesis that there is joint significance of the lagged values of the independent variables in the equation of the dependent variable. All series (except for the domestic interest rate) are log transformed and in the first difference

[a]Significance at the 5% level

[b]Significance at the 1% level

Fig. 6.1 Short-run
relationship among economic
growth and macroeconomic
variables. *CPI* consumer
prices index, *EX* exports,
GOV government
expenditure, *IM* imports,
MRATE money market rate
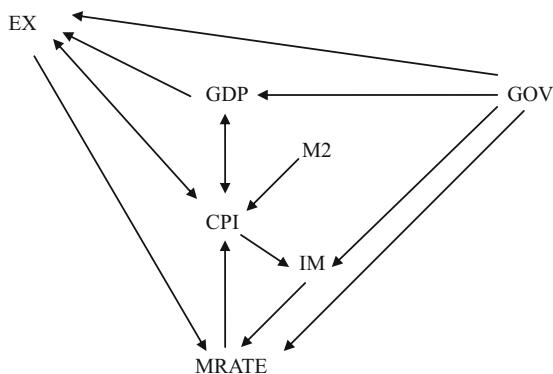
the variables, namely, economic growth, exports, imports, price level, money supply, interest rate, exchange rate, and government expenditure. Then, this study estimated a VECM and performed the Granger-causality tests based on the VECM to establish the long-run and short-run causality among the variables. The evidence of co-integration among the variables tends to suggest that these economic fundamentals are bound together by common trends or long-run equilibrium relationships. This implies that although these co-integrated variables will have short-run or transitory deviations from their long-run equilibrium, the forces will eventually drive them together again. This finding of co-integration or a long-run equilibrium relationship among all the variables is very important for policy makers.

The long-run co-integrating relationship shows that an increase in exports and government expenditure or a depreciation of the exchange rate will promote long-term economic growth, while an increase in the rate of inflation, the interest rate, and imports will temper Malaysian economic growth. A few policy implications can be drawn from this finding. First, the Malaysian government should support export-oriented industry by providing updated market information, export incentives, as well as zero-interest loans to encourage small and medium-sized enterprises to venture into foreign markets. Second, since the exchange rate seems to play a crucial role in long-term economic growth in Malaysia, the government needs to maintain a low and stable exchange rate to ensure exports are competitive in foreign markets. Third, in a time of recession, the government should start the ball rolling in stimulating economic activities by implementing an expansionary fiscal policy. It is believed that the increase in government spending will increase business confidence as well as spill over to the private sector, and then it will have a multiplier effect in the economy. Fourth, the Malaysian government needs to watch out for inflation, which may harm the economy. The inflation rate needs to be kept low to promote economic growth. Fifth, since imports may weaken economic growth, the policy makers should consider formulating rules and regulations that may reduce imports or lead to a shift in consumption from imports to domestic output. For example, they could stipulate the minimum percentage of a product's total value to be produced domestically to qualify for zero tariff rates. Finally, an expansionary monetary policy of lowering the interest rate is more effective than increasing the money supply in the economy to combat recession.

The results of short-run Granger causality indicated that the price level and government spending Granger-caused economic growth in the short run. On the basis of these findings, it seems that fiscal policy is an appropriate way to stimulate Malaysian short-term economic growth after a recession. Besides, efforts to strengthen economic growth also rested on the controllable and low inflation rate. The findings also revealed that the monetary policy tools of money supply and domestic interest rate are not effective in stimulating short-run economic growth and other economic activities. On the other hand, an expansionary monetary policy may create inflationary pressure on the economy in the short run.

In conclusion, on the basis of the results of long-run and short-run analysis, fiscal policy is probably the most appropriate tool in promoting economic growth in Malaysia during the post recession period. The role of the government in the process of economic growth for a developing country such as Malaysia is very important. The government not only needs to provide basic services such as electricity power supply and roads, it also needs to provide better telecommunications services such as broadband Internet access as well as well-trained skilled workers to attract investment and act as a catalyst for the establishment of a high-tech industry.

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