

The importance of exports and domestic demand to Malaysia



Abstract

This study examines the importance of exports and domestic demand to economic growth in Malaysia after the Asian financial crisis, 1997-1998. The empirical results of Toda and Yamamoto (1995) causality test reveal that government expenditure is an exogenous factor that can influence economic growth during the past recovery. Moreover, the causality test also shows evidences of economic growth Granger-cause exports and household consumption. It is evident that the government has managed to rejuvenate economic growth through domestic demand: government expenditure, in the past financial recession. Therefore, we believe that the government plays an important role in supporting its economic recovery.

Keywords: Exports; Domestic demand; Economic growth; Causality

JEL classification: F14, F43, O11

Introduction

Export-led growth (ELG) hypothesis briefly explains that exports cause productivity growth. There have been several studies assessing how effective is the export-led growth strategy. Many empirical studies found that most high growth episodes are usually characterized by high export growth, which leads researchers to the conclusion that the export sector has played a leading role in the growth process (Balassa, 1978; Heller and Porter, 1978; Krueger, 1978; Ram, 1987). According to Feder (1983), exports contribute directly to the growth of export sector in a variety of ways. Exports promote greater utilization of idle human and capital resources, thereby stimulating increases in investment. Exports permit firms to take advantage of

<https://assignbuster.com/the-importance-of-exports-and-domestic-demand-to-malaysia/>

economies of scale by promoting further increases in production.

Subsequently, production for export in the world markets allows improvement of technical progress. Finally, exporters face the pressures of foreign competition and these forces induce management to be more efficient. The multiplier effects of foreign trade are generally high and this can lead to tremendously growth in efficient economic.

Empirical support for the theory of export-led growth has been rather mixed. Previously, evidences of the export-led growth hypothesis in developed countries were documented, such as studies by Paul and Chowdhury (1995) and Thornton (1996, 1997). Besides that, bi-directional relationship between these variables is demonstrated by Shan and Sun (1998a), Baharumshah and Rashid (1999), and Hatemi-J (2002). However, the export-led growth strategy seems to have weakened and failed as not all the developing countries can pursue it simultaneously. For example, some researchers found contradict results in which support the alternative growth-led export hypothesis (Mookerjee, 1997; Shan and Sun, 1998b; Dhawan and Biswal, 1999), while some found no significant causal impacts between exports and output (Jin and Yu, 1996; Abhayaratne , 1996; Yamada , 1998).

In the case of Malaysia, it is evident from the studies of Baharumshah and Rashid (1999), Khalafalla and Webb (2001) and Mahadevan (2007) that exports have played a leading role in the growth process. Baharumshah and Rashid (1999) and Mahadevan (2007) included the variable of import and a multivariate estimation methodology is employed. Overall, the result of the multivariate cointegration indicated the present of long-run relationship

between exports, imports and GDP. The Granger causality test also showed <https://assignbuster.com/the-importance-of-exports-and-domestic-demand-to-malaysia/>

two-way relationship between exports and economic growth. Khalafalla and Webb (2001) recognized that industrialization transform have changed the sources of growth and affected the export-growth relationship. The results of their study confirmed export-led growth for the full period and for the period to 1980, but tests on the 1981-1996 period show growth causing exports. Khalafalla and Webb (2001) explained the weakening support for export-led growth is associated with the transformation of industrialization in Malaysian economy.

Parts from the advantages of the export-led growth hypothesis, a few problems of the ELG hypothesis are raised. The core theoretical criticism of the simplistic export-led growth is that it suffers from a fallacy of composition whereby it assumes that all countries can grow by relying on demand growth in other countries (Blecker, 2001). According to Palley (2002), firstly, the ELG strategy has skewed the focus away from development rooted in domestic market growth that, in turn, might distort and retard development of the countries. Second, it has placed developing countries in race to the bottom competition with each other. Third, the ELG hypothesis is said to contribute to financial instability. Over-investment boom may occur in ELG countries. The unintended creation of excess capacity in the manufacturing export sector could lead to undermining financial soundness of these investments. And fourth, it may also make the export prices more volatile. When ELG strategy is pursued globally, there is a danger of global excess supply and fluctuation of export prices. Hence, economic growth of the export-oriented countries could be affected very much by this problem.

Given the weaknesses of the ELG strategy, Palley (2002) mentioned that developing countries need a new model of development. In view of the shallow and exploitative characteristics of the export-led growth model, developing countries must look to growth based on internal market development. Palley (2002) also proposed that domestic demand-led growth (DDLG) strategy as an alternative to export-led growth strategy. Moreover, the study of IMF (2009) also pointed out that Asia should strive to rebalance growth toward domestic demand and should not depend only on exports to rebound rapidly. Thus, it is noticeable that domestic-led growth is a viable alternative as a development strategy. By the way, it should be emphasized that exporting will remain essential in developing countries as international trade contribute to economic growth as well. The challenge is not to foregone domestic development for the sake of international competitive advantage. Therefore, it is important to determine the long term relationship, or in economic terms as static equilibrium relationship which implies that exports, domestic demand and economic growth will not drift apart from each other.

However, not as much of attention is focused on the domestic demand-led growth strategy. The study of Lai (2004) and Wong (2008) showed that domestic demand expansion played an important role in economic growth of Malaysia. Lai (2004) used Johansen (1988) cointegration methodology to examine the importance of exports and domestic demand to economic. He found support of the export-led growth and domestic demand-led growth hypotheses, where there exists short run bidirectional Granger causality among exports, domestic demand and economic growth. Wong (2008)

examined the importance of exports and domestic demand to economic growth in ASEAN-5, namely Indonesia, Malaysia, the Philippines, Singapore and Thailand. For Malaysia, Wong (2008) found some evidences of bidirectional Granger causality between exports and GDP per capita and between private consumption and GDP per capita. Government consumption is found to Granger-cause GDP per capita but the relationship between investment and GDP per capita is less conclusive.

The study of Lai (2004) is conducted over the period from 1961 to 2000 while Wong (2008) focused on the period before the Asian financial crisis, 1997-1998. Both of the studies did not focus on the importance of exports and domestic demand to economic growth after the crisis. The Asian financial crisis, 1997-1998, is classified as the financial stress recession by IMF (2009). IMF (2009) also mentioned that recessions accompanied by financial stress (stress in domestic banking sectors) are substantially longer and deeper than the norm. The Asian financial crisis surfaced on 2 July 1997 when the Bank of Thailand abandoned its policy of pegging the baht against the dollar. Consequently, Malaysian exchange rate and the stock market index went on a downward spiral. From then on, Malaysia experienced a hard and long enduring financial stress recession.

In response to the crisis, IMF offered packages of financial aid and structural reforms. However, Malaysian government refused the economic aid from IMF which came with austere lending conditions. The government imposed capital controls and pegged the Malaysian Ringgit at 3.80 to a US dollar to stabilize its currency (Poon, 1999). In the following years, Malaysia

continuously recorded budget deficits. However, a higher export growth of <https://assignbuster.com/the-importance-of-exports-and-domestic-demand-to-malaysia/>

14. 1% per annum was achieved during the 1999-2000 period largely due to the growth in world demand for electronic products and the recovery of the regional economies (Eighth Malaysia Plan, 2001). From the Eighth Malaysia Plan (2001-2005), it is observable that massive government spending was made in order to rejuvenate the economy after the financial crisis. Therefore, there is a high possibility that development process by government leads to a growing economic activity that, subsequently, leads household consumption and exports.

After a long period of growth since the last Asian Financial Crisis, Malaysia economy was hit by the global economic downturn in the second half of 2008 and caused the Malaysia economy in major downturn. The spillovers from the global crisis have impacted Malaysia, as well as other Asian countries with unexpected speed and force. As a result, Malaysia GDP growth decreased sharply, exports and industrial output declined, and the momentum in services growth eased. Strong growth in the first half of 2008 resulted in an expansion of 4.64% for the year as a whole, below the average 6.06% rate in the previous 4 years (ADB, 2009). In response to this current global crisis hit, IMF studied on past recessions and recoveries in Asia to look for pertinent solutions for the present. The historical experience of past recessions reveals that recoveries in Asia have been weak, because export is their single engine in driving economic growth (IMF, 2009).

Following the steps taken by IMF, there is a need to empirically examine the historical crisis episode of Malaysian economy. Refer to previous economic plans of Malaysian government; we observed that exports and domestic demand played important role in rejuvenation of economic growth. However,

empirical study on the relationship of exports, domestic demand and economic growth are relatively limited in the case of Malaysia, especially in times of recovery after an economic downturn. Therefore, a better understanding of the nexus between economic growth, exports and domestic demand for the period of economic recovery is required.

Thus, this study focuses on the period of recovery and the main objective of this study is to investigate if the export-led growth strategy or domestic demand-led growth strategy contributes to the recovery after the financial stress recession. The finding of this study is significant to derive implications of the current global crisis for the country. The measures of domestic demand used in this study are household consumption and government expenditures[1]. The Toda and Yamamoto (1995) Granger causality test is used to examine the causal direction of exports, domestic demand and economic growth.

The remainder of this study is organized as follows. Section 2 presents the data and describes the methodology used in this study. Section 3 presents the empirical results, while the final section concludes this paper.

Data and Methodology

This study employs quarterly data of Malaysia and the samples are over the period from 1999: 1 to 2008: 4. The required nominal GDP, exports, household consumption and government expenditures (in national currency), consumer price index and GDP deflator (2005 = 100) were obtained from International Financial Statistics, International Monetary Fund (IMF). Note that GDP and exports are deflated with GDP deflator, while household

consumption and government expenditures are deflated with consumer price index. More specifically, this study estimates two models:

Model 1 (1)

Model 2 (2)

where \ln is logarithm; Y is GDP; X is exports; C is household consumption; G is government expenditures; and ϵ_i ($i = 1$ and 2) is a disturbance term.

As usual we start with examine the time series properties of each series. An advantage of using unit root test is to ensure that the order of integration of the examined series in the augmented VAR testing Model is uniform. This study employed the augmented Dickey-Fuller (ADF), Phillips-Perron (PP) and Kwiatkowski et al. (1992) – KPSS stationarity tests. Refer to the results presented in Table 1, the KPSS test shows that all the variables are integrated of order $I(1)$ process. However, it is interesting to report here that the results of ADF and PP stationarity tests are not consistent. Campbell and Perron (1991) and DeJong et al. (1992) documented that ADF and PP tests failed to distinguish between a unit root and a near unit root stationary process, hence these tests is considered low power. Therefore, the KPSS test is employed to affirm the order of integration of each series. The KPSS results indicate that all the variables rejected the null hypothesis of stationary at level, but cannot reject the hypothesis of stationarity when the variables are in first different. This finding is consistent with the notion that most of the macroeconomic series are stationary after first differencing (Nelson and Plosser, 1982). With this finding, we can proceed with the cointegration test and the causality test.

<https://assignbuster.com/the-importance-of-exports-and-domestic-demand-to-malaysia/>

Table 1 Unit root and stationarity tests

Variables

ADF

PP

KPSS

0.596 (4)

-0.921 (15)

0.787 (5)*

-1.054 (0)

-0.967 (5)

0.698 (5)**

-0.661 (4)

-3.620 (13)*

0.896 (4)*

0.457 (6)

-1.544 (17)

0.782 (5)*

-3. 800 (3)*

-8. 895 (24)*

0. 269 (15)

-2. 235 (9)

-7. 239 (7)*

0. 092 (9)

-3. 957 (3)*

-15. 391 (10)*

0. 133 (10)

-2. 316 (4)

-10. 299 (11)*

0. 319 (14)

Notes: * and ** denotes the significance level at 1 and 5 percent. The optimal lag length for ADF test is selected using the AIC while the bandwidth for PP and KPSS tests is selected using the Newey-West Bartlett kernel. Figure in parentheses denotes the optimal lag length and bandwidth. The critical values for ADF and PP tests are obtained from MacKinnon (1996) while the asymptotic critical values for KPSS test are obtained from

Kwiatkowski et al. (1992). The null hypothesis for ADF and PP tests is : a unit root, while the null hypothesis for KPSS test is : trend stationary.

2. 1 Cointegration Analysis

As shown in Engle and Granger (1987), if two series are integrated of order one, $I(1)$, there is a need to test for the possibility of a long-run cointegration relationship among the variables. The cointegration and error correction methodology of Johansen's framework is well documented elsewhere (Engle and Granger, 1987; Johansen, 1988; Johansen and Juselius, 1990). The multivariate cointegration model is based on the error correction representation given by:

(3)

where α is an $(n-1)$ column vector of p variables, β is an $(n-1)$ vector of constant terms, and γ represent coefficient matrices, Δ is a difference operator, the error term, is assumed to be Gaussian. The coefficient matrix is known as the impact matrix, and it contains information about the long-run relationships between the variables.

Johansen (1988) and Johansen and Juselius (1990) proposed the likelihood ratio (LR) test for the hypothesis of r cointegrating vectors. The cointegrating rank, r , can be tested with two statistics, namely trace and maximal eigenvalue. However, Cheung and Lai (1993) suggested that the trace test shows more robustness to both skewness and excess kurtosis in the residuals than the maximal eigenvalue test. Hence, we are guided by the trace statistic.

The limiting distributions of cointegration tests depend on the deterministic function in the dynamic model. The choice of the appropriate specification was based on the Pantula principle (Johansen, 1992, 1995). The Pantula principle chooses both the correct rank order and the deterministic component. This principle can be summarized as follows. Three realistic cases are estimated: Case 2 which includes intercept in the cointegration relation; Case 3 which allows deterministic trends in level; and Case 4 which allows for trend in the cointegration space. The test procedure then is to move through from the most restrictive case to less and at each stage and compare the trace test statistic to its critical value. The selection process only stops at the first time where the null hypothesis is not rejected.

2.2 Causality Analysis

Toda and Yamamoto (1995) developed a procedure to determine the causality direction between a set of variables through the augmented VAR (k) model, where k is the optimal lag length in the VAR system and d is the maximum order of integration in the system. This procedure uses a modified-Wald (MWALD) test for restrictions on the parameters of the VAR (k) model. This test has an asymptotic chi-squared distribution with k degrees of freedom in the limit when a VAR (k) is estimated.

The advantage of using this procedure is that it allows for causal inference based on an augmented level VAR with integrated and cointegrated processes. Using a Monte Carlo experiment, He and Maekawa (2001) showed that the traditional F-test of Granger causality test is not valid when one or both of the variables are non-stationary. In addition, the study of Granger (1988) indicated that causality test with first different VAR maybe bias due to <https://assignbuster.com/the-importance-of-exports-and-domestic-demand-to-malaysia/>

loss of long-run causal information. Therefore, the MWALD test is preferred in this study because of its simplicity and the ability to overcome the shortcomings of alternative econometric procedures.

We follow Rambaldi and Doran (1996) in formulating the Toda Yamamoto test of Granger causality. Two steps are involved with implementing the procedure. The first step involves the determination of the lag length, k , in the VAR system of Model 1 and Model 2. The optimal lag length k , for Model 1 and Model 2, is determined to be three by using Akaike's Information Criterion (AIC)[3]. Given that VAR (3) is selected, and the order of integration is determined to be one by the KPSS stationarity test, the following VAR (3+1) systems are built in a seemingly unrelated regression (SUR) form:

Model 1: (4)

Model 2:

(5)

The second step is to apply MWALD tests to the first k VAR coefficient matrix to make Granger causal inference. However, it should be pointed out that the extra lagged explanatory variables, is unrestricted because the inclusion of extra lag is to ensure that the asymptotic chi-squared distribution critical values can be applied when the test for causality between the integrated variables is conducted. To examine that exports do not Granger-cause GDP, the null hypothesis will be , where are the coefficients of exports for 1, 2, 3. The other null hypotheses are similarly defined.

2.3 Parameter Stability Test

In this study, since the GDP regression model involves time series data after the 1997 Asian financial crisis, it is considered necessary to check the stability of the model and make sure that it does not capture any effect of the crisis. Therefore, the CUSUM and CUSUM of squares test are used to detect the period when parameter instability may occur. Generally, CUSUM refers to cumulative sum of the recursive residuals. Both the stability tests provide a plot of the cumulative sum with the pair of 5% critical lines. Movement of the CUSUM value outside the critical lines is suggestive of parameter instability. Based on a Monte Carlo experiment, the CUSUM of squares test is to be preferred, as it is powerful to detect changes in the conditional model parameters, as well as very robust to the presence of endogenous regressors in both a stationary and a cointegration environment (Caporale and Pittis, 2004).

Empirical Results

3.1 Johansen Cointegration Test Results

Table 2 presents the results of the Johansen cointegration test. For Model 1, the trace test statistics suggests that case 2 with rank equal to 1 is the most appropriate case, which shows that there is a cointegrating vector. This result suggests that GDP growth and exports growth are cointegrated in the long-run. Surprisingly, for Model 2, case 4 with rank equal to 0 is chosen with its trace statistic is very near to the critical value of 5%. This indicates that the three variables: , and are not cointegrated with weak evidence from the trace value.

Table 2 Cointegration Rank and Case Selection: Trace Statistic

Case 2**Case 3****Case 4****Model 1****(,)**

VAR Lag Order Selection Criteria : AIC (Lag 2)

r

0

41. 15 (19. 96)

40. 63 (15. 41)

42. 46 (25. 32)

1

5. 12 (9. 24)

4. 80 (3. 76)

6. 39 (12. 25)

Model 2**(,,)**

VAR Lag Order Selection Criteria : AIC (Lag 3)

r

0

43.64 (34.91)

41.85 (29.68)

42.31 (42.44)

1

2

18.64 (19.96)

6.08 (9.24)

18.51 (15.41)

5.95 (3.76)

18.75 (25.32)

6.19 (12.25)

Notes: Figures in parenthesis are the 5% critical values of the respective test statistics. The testing strategy begins with moving from the most restrictive case (rank 0 Case 2) and comparing the trace test statistic with the critical value given in parenthesis. If the case is rejected, we continue to Case 3 with the rank being kept fixed. This procedure is continued till the null is accepted for the first time.

3. 2 Toda and Yamamoto Granger causality, Modified Wald Test results

In the earlier section, we found that GDP growth and exports growth are cointegrated, while no cointegrating vector between the variables of GDP, household consumption and government expenditures. However, the Johansen cointegration test results do not imply causation and policy effectiveness. Therefore, Toda and Yamamoto Granger causality test is employed in this study to determine the causality direction between the variables.

Table 3 reports the results of the MWALD test. For the first Model, the result reveals that the null hypothesis of GDP does not Granger-cause exports can be rejected at the 10% significance level. For Model 2, the null hypothesis of GDP does not Granger-cause household consumption also can be rejected at 1% significance level. Government expenditure is found to Granger-cause GDP and this result accords with the study of Wong (2008). In another word, Malaysia government expenditure plays an important role in the economic system and it is able to stimulate the growth of GDP before and after the financial stress recession. More specifically, after the end of recession, GDP growth is led by government expenditures, and then the economic growth led both exports and household consumption. Supported by evidence from past history, policies that encourage government expenditures should be implemented to stimulate Malaysia's economic growth in this current global crisis.

Table 3 Toda and Yamamoto Granger causality, Modified Wald Test

Model 1

Variables

Chi-square Statistics

p-value

Dependent

Explanatory

GDP

Exports

0.260

0.97

Exports

GDP

7.105

0.07

Model 2

Variables

Chi-square Statistics

p-value

<https://assignbuster.com/the-importance-of-exports-and-domestic-demand-to-malaysia/>

Dependent

Explanatory

GDP

Household Consumption

0. 923

0. 82

Household Consumption

GDP

59. 138

0. 01

GDP

Government Expenditure

7. 643

0. 05

Government Expenditure

GDP

5. 44

0. 14

Notes: The VAR () was estimated with for the order of integration equal 1. Lag length selection of was based on AIC.

3. 3 CUSUM test and CUSUM of squares test results.

The CUSUM test and CUSUM of squares test are carried out on the GDP models in order to capture any structural changes or breaks in the relationship. The plots of these two parameter stability test are illustrated as below. Figure 1 show the stability plots for the Model 1 which involves GDP and exports. For the Model 2 (GDP, household consumption and government expenditure), the plots are shown in Figure 2. Refer to Figure 1, parameter instability around year 2005-2008 is reported in the CUSUM test, but not in the CUSUM of squares test. For the Model 2, the plots stay within the 5% critical lines. Since the results from the CUSUM of squares test are preferable, there are no signs of structural changes in the economy and the parameters of the models are stable and well-explained.

Figure 1: Plots of CUSUM test and CUSUM of squares test for Model 1.

Figure 2: Plots of CUSUM test and CUSUM of squares test for Model 2.

Conclusion

This study has investigated the importance of exports and domestic demand on economic growth in Malaysia after Asian financial crisis. Generally, the results of the KPSS unit root test statistics show that all the variables in this study are said to be integrated of order one. However, the results of the Johansen cointegration test show that exports and economic growth are

cointegrated, but there is no long-run relationship between domestic demand and economic growth. Therefore, the findings suggest that export is moving together with economic growth to achieve their long-run equilibrium relationship. Moreover, the results of the Toda and Yamamoto causality test show evidence of government expenditure Granger-cause GDP. GDP is also found to Grange cause exports and household consumption. No parameters instability were illustrated by the plot of the CUSUM of squares test, which means that there is no any major structural change and the models are stable in this selected period of study, 1999: 1 to 2008: 4.

Thus, the results imply that government expenditure is an appropriate catalyst and it is an exogenous factor that can influence Malaysia growth after the Asian financial crisis. The result is consistent with the recommendations made in the National Economic Recovery Plan (NERP), where the government has implemented a fiscal stimulus to step up public spending to stimulate its economy and mitigate the impact of the crisis. For example, in year 2000, Malaysia government spending and investment contributed a large percentage, around 23% of GDP. This high ratio of government spending to GDP serves to illustrate that changes in government spending have a major impact on its economy.

The relationship of economic growth Granger-cause exports is similar to the economic development experience as found by Khalafalla and Webb (2001) in the case of Malaysia. In addition to the direct cause from economic growth to exports, there is a possibility of indirect causes from the government expenditure to exports, since the economy is found to be driven by government. Rejection of the exports-led growth hypothesis is explained by <https://assignbuster.com/the-importance-of-exports-and-domestic-demand-to-malaysia/>

Khalafalla and Webb (2001). As an exports-oriented economy, the initial development from the export industry itself leads to a growing complexity and variety of economic activity that, in turn, it changes the sources of economic growth and export is not longer the only engine of growth. They also mentioned that the weakening empirical support for the export-led growth hypothesis is entirely consistent with an increasingly diversified economy with rising incomes and expanding internally-generated sources of growth.

To conclude, domestic demand, especially government expenditure, is important to economic growth in Malaysia during recovery period. According to Palley (2002), a few conditions need to be fulfilled in order to foster domestic demand-led growth: (a) improved income distribution, (b) good governance and reduced corruption, (c) financial stability and space for counter cyclical stabilization policies. In the case of Malaysia, from the NERP, we can observe that the government has made considerable progress in these areas and the economy is well positioned to embark on domestic demand-led growth strategy. The results of this study are significant to the policy makers in the concern of forecasting economy growth, especially after an economy slowdown.