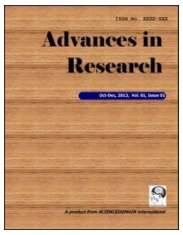

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# The Export Led-Growth and FDI Led-Growth Nexus in Malaysia: Evidence from ARDL Analysis

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***Authors' contributions***

*This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.*

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## ABSTRACT

This paper investigates the relationship between foreign direct investment (FDI) and export (X) towards Malaysia's economic growth over the period 1980 to 2011. Most past empirical studies observed that both FDI and export are the important sources of economic growth especially after the country's liberalization in 1986. The interest of this paper is to find out which determinant contributes higher for the growth by applying recent time series analysis known as Autoregressive Distributive Lag (ARDL) approach proposed by Pesaran (2001) by modifying the standard Cobb Douglas production function. The results confirmed that determinant; FDI and export are positively correlated with higher growth and will be converge in the long run. Based on the contribution, export is proven to contribute more than FDI for the growth of Malaysian economy. The outcome of this analysis can give important insight to the policymaker so that Malaysia will not lose track in competing with other rising Asian countries. The lack of FDI and income received from export activities may constrain to economic growth and vice versa.

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*Keywords: GDP; ARDL; Export; foreign direct investment.*

## 1. INTRODUCTION

In order to remain competitive in the world's economy, Malaysia is aiming towards the goals of becoming high income, sustainable and inclusive economy by 2020. Currently, Malaysia economic growth is known as an upper middle income economy with a gross national income of USD $8,770 percapita [1]. Although Malaysia is richly endowed in natural resources but its economy is too small to compete directly with other larger countries. Therefore, it is crucial for Malaysia to link with the global economy. Classical economist Adam Smith and David Ricardo emphasized the importance of international trade for a country's economic growth. They argued that a country could benefit if it specialized in a certain commodity of product and export it to foreign countries that lacked the commodity. In order to achieve high income country and enhance the quality of life, Malaysia must exploit her comparative advantage within the global production network. This can also be achieved through the open systems that encourage growth and innovation. Export and economic growth have been attributed to the potential positive externalities derived from the exposure to the foreign markets [2]. Malaysia has to create confidence to foreign investor by producing a labor force and enterprise that is innovative and constantly adjusting to the fast changing environment. Malaysia is known as a top host country for FDI from 2011-2013 [3]. In 2011, FDI inflow increases by 12.3% to RM32.9 billion compared with RM 29.3 billion in 2010 [4].FDI is important not only for the promotion of economic growth, it is also considered as a vibrant tool for employment generation, technological improvement, improving social welfare and poverty alleviation [5].

### 1.1 Trend of Foreign Direct Investment, Export and Gross Domestic Product

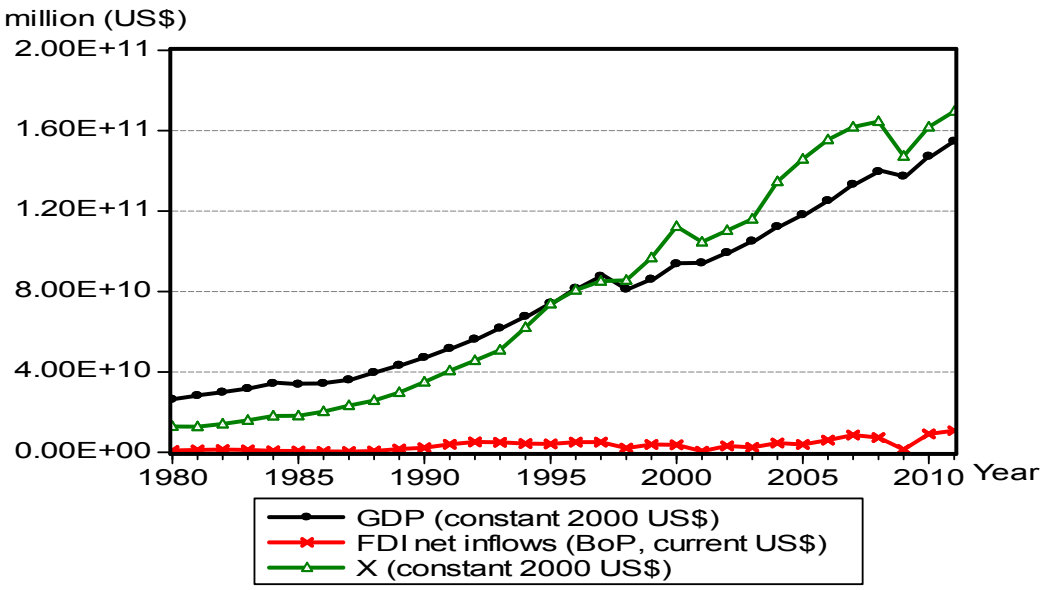


**Fig. 1. Malaysia FDI, Export and GDP (1980 – 2011)**

| Year | GDP | X | FDI |
|---|---|---|---|
| 1980 | 26414956134 | 12900233328 | 933903976 |
| 1985 | 33880956357 | 18179182800 | 694712466 |
| 1990 | 47206007492 | 35039429204 | 2332455289 |
| 1995 | 74220828751 | 73886001955 | 4178239335 |
| 2000 | 93789736842 | 112369210526 | 3787631579 |
| 2005 | 118223684211 | 145858157895 | 3966012726 |
| 2010 | 147250929612 | 161839000984 | 9167201907 |

*Source: Data from WDI and IMF, 2011*

Fig. 1 above shows the trend of FDI, Export and GDP for Malaysia economy from 1980 up to 2011. Malaysia economy has shown a progressive growth during this period except during Asian Financial crisis 1997-1998 and global recession 2008-2009. This higher growth in GDP is supported with the export activities which also have shown a significant improvement during that period [6].The diversification policy is believed to be one of the best policies for boosting up export activity and through this policy, the country is also able to reduce the negative impact of the world recession as the country is not relying only on one sector economy but also focusing on the development of other sector of economy especially services industries. Besides export, FDI inflow also shows steady improvement but almost stagnant overtime. The growth seems so slow and it shows that Malaysia is not competitive enough to attract more potential investor to invest in the economy as the competition is lost with the rising of the developing countries in Asian region such as China, Vietnam, and Myanmar.FDI inflow has been rapidly increased in Malaysia starting from 1980 as Malaysia has embarked upon extensive trade and investment liberalization [7].Besides, the steady growth of FDI in Malaysia is due to a possessed localization advantages that included low cost of inputs, large domestic markets, high growth rates, and flexible labor markets and rich with natural resources such as oil and minerals.

## 2. LITERATURE REVIEW

A number of empirical studies have proven the theory of export led growth (ELG) nexus across countries around the world. Earlier studies on ELG nexus [8,9,10,11,12] in Malaysia are limited. For example, [13] used quarterly data up to 1987 to examine the export-led growth hypothesis by adopting single equation technique. They found that export growth simulates gross national product growth and therefore supporting an export-led growth strategy. On the other hand, [14] covered the Malaysian case over the period from 1963 to 1993, using a multivariate estimation methodology with annual data. This author's findings provide strong support for a bidirectional relation between exports and national output and a positive long-run relationship between exports and growth.More recent studies such as [15,16,17,18] used the multivariate error correction model to prove ELG nexus. While [19] have looked at the relationship between exports and imports on Malaysian labor productivity, studies such as [20,21,22] focused on trade relations with GDP using total, manufacturing and agricultural exports or traditional or non-traditional exports. For example, [23] investigated the export-led growth hypothesis for Malaysia for the period 1955-1990, using cointegration and causality testing with annual data based on Hsiao's synthesis of the Granger test. They found that aggregate exports Granger caused real GDP and non export GDP while for the disaggregated exports; they found that manufactured exports contributed significantly to the existing exports and GDP. Meanwhile, they found a significant negative causal relationship between traditional exports (nonfuel primary exports) and both GDP and non export GDP.

There are few amount of recent studies done on investigating the relationship between the FDI and economic growth in Malaysia [24,25,26,27,28] and other countries including Malaysia [29,30]. The findings based on previous authors mention above showed that FDI has a positive impact on economic growth. While some studies across countries focused on the relationship between FDI and economic growth [31,32,33,34,35,36,37,38,39], There are limited amount of studies that added additional variables such as human capital or labor [40,41,42,43] and exports [44,45,46]. The huge amount of past studies regarding X and FDI contribution towards growth across countries is to prove that both of this variables are very important as a driver of economic growth of the nation.

Meanwhile, [47] examines the impact of trade openness on economic growth in the long run, using ARDL bounds testing approach to test for a long run relationship and the augmented production function by incorporating financial development as an additional determinant of economic growth. His findings confirm cointegration among the series. In the long run, trade openness promotes economic growth. The study justified by VECM Granger causality test and causality is also checked by using the innovative accounting approach (IAA).

Moreover, [48] test the relationship between foreign direct investment and economic growth in the presence of financial market development. The unrestricted error correction model (ECM) estimator advanced and ARDL bounds testing approach to cointegration were employed and their results had showmen long run relationship between the variables. In this regard, the paper empirical evidence shows that financial development stimulates economic growth in case of Portugal. Foreign direct investment is also a good promoter of economic growth while investment in public capital stock is contributing more as compared to financial development and foreign direct investment. On the contrary, inflation declines economic growth.

## 3. METHODOLOGY AND SOURCES OF DATA

In this study, the short and long-run dynamic relationships between economic growth and capital, labor, export and foreign direct investment are estimated by using the newly proposed ARDL bound testing approach which was initially introduced by [49]. Following the lead of trade and development theory, and the aggregate Cobb Douglas production function, we developed a conceptual model that incorporated different channels via different variables that affect the relationship between exports and growth. The function proposed as follow:-

$$GDP = \beta_0 + \beta_1 CP_t + \beta_2 L_t + \varepsilon_t \quad (1)$$

From the standard Cobb Douglas production function, two more variables were added: Export (X) and Foreign Direct Investment (FDI) as illustrated below.

$$GDP = \beta_0 + \beta_1 CP_t + \beta_2 L_t + \beta_3 X_t + \beta_4 FDI_t + \varepsilon_t \quad (2)$$

| | |
|---|---|
| $GDP_t$ =Gross Domestic Product (constant 2000 USD)<br>$CP_t$ = Gross fixed capital formation (constant 2000 US$)<br>$L_t$ = Labor force, total<br>$X_t$ = Exports of goods and services (constant 2000 US$)<br>$FDI_t$ = Foreign direct investment, net inflows (BoP, current US$) | We expect that:-<br>$\beta_1, \beta_2, \beta_3, \beta_4 > 0$ |

The error correction version of ARDL framework pertaining to the variables in the equation 2 can be reproduced as follows:

Let the long run relationship between the four variables in log linear form is given as follows:

$$LnGDP_t = \alpha + \beta_1 LnCP_{t-1} + \beta_2 LnL_{t-1} + \beta_3 LnX_{t-1} + \beta_4 LnFDI_{t-1} + \varepsilon \quad (3)$$

Equation 4 below basically incorporates the short run dynamics into the adjustment process.

$$\Delta LnGDP_t = \alpha + \sum_{i=1}^{v} \sigma_i \Delta LnGDP_{t-i} + \sum_{i=0}^{s} \beta_i \Delta LnCP_{t-i} + \sum_{i=0}^{r} \epsilon_i \Delta LnL_{t-i} + \sum_{i=0}^{q} \in_i \Delta LnX_{t-i} + \sum_{i=0}^{p} \in_i \Delta LnFDI_{t-i} + d\varepsilon_{t-i} + u_t \quad (4)$$

Finally, we transform the model into Bound testing approach.

$$\Delta LnGDP_t = \alpha + \sum_{i=1}^{v} \sigma_i \Delta LnGDP_{t-i} + \sum_{i=0}^{s} \beta_i \Delta LnCP_{t-i} + \sum_{i=0}^{r} \epsilon_i \Delta LnL_{t-i} + \sum_{i=0}^{q} \in_i \Delta LnX_{t-i} + \sum_{i=0}^{p} \in_i \Delta LnFDI_{t-i} + \beta_0 LnGDP_{t-1} + \beta_1 LnCP_{t-1} + \beta_2 LnL_{t-1} + \beta_3 LnX_{t-1} + \beta_4 LnFDI_{t-1} + u_t \quad (5)$$

Where $\Delta$ is the first-difference operator, $u_t$ is a white-noise disturbance term and all variables are expressed in natural logarithms. The above final model also can be viewed as an ARDL of order, (v s r q p). The model indicates that economic growth in terms of GDP (constant 2000 USD) tends to be influenced and explained by its past values, so it involves other disturbances or shocks. Equation 3 exhibits the long run relationship while the term with the summation signs, ∑in the equation 4 represents the error correction dynamic.

From the estimation of ECMs, the long-run elasticities are the coefficient of the one lagged explanatory variable (multiplied by a negative sign) divided by the coefficient of the one lagged dependent variable. The short-run effects are captured by the coefficients of the first-differenced variables. The null of no cointegration in the long run relationship is defined by: $H_0$: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$ is tested against the alternative of $H_1$: $\beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq 0$, by means of familiar F-test.

The main objective of this research paper is to investigate the validity of ELG nexus as well as FDI-Led Growth nexus in Malaysia by using Cobb Douglas production function. The contribution of each variables used in the model will be able to give highlight for the policymakers to generate suitable policy for the country based on the most prominent driver of growth based on the model tested in this research paper. This paper is able to fill in the gap of literature review given that there are limited number of studies that combined both FDI and X by using Cobb Douglas production function in Malaysia.

## 3.1Sources of Data

The data for the variables used in this paper is obtained from World Development Indicator 2011 and International Monetary Fund statistical database. This paper used annual data starting from 1980up to 2011 with 32 number of observation.

## 4. EMPIRICAL RESULT

The analysis begins by detecting the stationarity of the data by using Unit Root Test. All variables were transformed into log form. Based on DF/ADF and PP test in Table 1 below, it proved that the model suited to proceed with the ARDL approach given that the dependent

variable, GDP is only significant at first difference for both ADF and PP test while export is found to be not significance for both test even at first difference reflecting that this data is non stationary data at all time. Prior to this evidence, the analysis continued with detecting the long run relationship in the model based on Table 2.

**Table 1. Unit root test**

| Country | DF/ADF Unit Root Test | | | |
|---|---|---|---|---|
| **Malaysia** | **Level** | | **First Difference** | |
| | **No Trend** | **With Trend** | **No Trend** | **With Trend** |
| LGDP | -1.019 (0) | -1.136 (0) | -4.463 (0)*** | -4.473 (0)*** |
| LCP | -1.233 (0) | -1.582 (0) | -3.934 (0)*** | -3.855 (0)** |
| LL | 0.136 (0) | -2.854 (0) | -4.731 (0)*** | -4.621 (0)*** |
| LX | -1.007 (2) | 3.297 (1) | 1.798 (1) | 0.8801 (1) |
| LFDI | -2.254 (0) | -3.371 (0)* | -7.738 (0)*** | -7.629 (0)*** |
| | **PP Unit Root Test** | | | |
| LGDP | -0.977 (1) | -1.343 (2) | -4.722 (1)*** | -4.482 (1)*** |
| LCP | -1.233 (0) | -1.819 (1) | -3.869 (3)*** | -3.740 (4)** |
| LL | 0.090 (2) | -3.139 (4) | -4.693 (1)*** | -4.569 (1)*** |
| LX | -1.280 (0) | 9.382 (2) | -0.219 (0) | -0.845 (0) |
| LFDI | -2.078 (2) | -3.370 (2)* | -7.829 (1)*** | -7.718 (1)*** |

*Note: (*), (**), (***) indicate significant at 10%, 5% and 1% significant level respectively. Number in bracket represents number of lag. The test used Schwarz Info Criterion due to small sample of observation*

Following restricted intercept and for both cases of no trend and with trend from Table 2, Malaysia F-statistic, 4.795 is larger for both I(0) and I(1) at 5% significance level. This implies that the null hypothesis of no cointegration is rejected and therefore proving that there is a relationship between the variables in the long run.

Before proceed with the analysis, the robustness of the model was checked which can be viewed in Table 3 below. The tests show that the model is free from serial correlation, functional form, normality and heteroscedasticity since their probability value is larger than 5% significant level.

**Table 2. F-statistics for testing the existence of long run relationship**

| Malaysia F Statistics | Significant Level | Bound Testing (restricted intercept and no trend) | | Bound Testing (restricted intercept ,with trend) | |
|---|---|---|---|---|---|
| 4.795** | | I (0) | I (1) | I (0) | I (1) |
| | 1% | 4.280 | 5.840 | 4.768 | 6.670 |
| | 5% | 3.058 | 4.223 | 3.354 | 4.774 |
| | 10% | 2.523 | 3.560 | 2.752 | 3.994 |
| | Lags=2, k=4 and n=30 (32-2). This bound test statistic based on Narayan (2004) given that n ≥30 | | | | |

The significant of ECT in Table 4 suggested that 0.167 of disequilibrium caused by previous years shock will be corrected in the current year and converge back to long run equilibrium for the Malaysia respectively. In the short run analysis, only GDP, CP and FDI are found to be significant between 1 to 10% significant levels. Based on the long run elasticities, all variables are found to be significant. The largest contribution towards the GDP growth are L

followed by X, CP and lastly, the FDI. The estimated coefficient imply that a 1% increase in labor, export, capital and foreign direct investment will increase the GDP growth by 0.46%, 0.32%, 0.15% and 0.07%. This result was consistent with the previous studies [50,51,52] which showed that FDI with human capital or laborinteraction has a strong positive effect on economic growth in developing countries. Based on the primary objectives in this paper, the contribution of export overwhelms the contribution of foreign direct investment towards increasing the growth of Malaysia economy.

**Table 3. Diagnostic checking**

| Test | Value |
|---|---|
| Serial Correlation[a] | 0.06 (0.936) |
| Functional Form[b] | 8.5865 (0.317) |
| Normality[c] | 0.875 (0.645) |
| Heteroscedasticity[d] | 3.201 (0.074) |

*Note: (*), (**), (***) indicate significant at 10%,5% and 1% significant level respectively. [a] Langrange multiplier test of residual; [b]Ramsey's RESET test using the square of the fitted values; [c]Based on a test of skewness and kurtosis of residuals; [d]Based on the regression of squared residuals on squared fitted values*

**Table 4. Short run analysis and long run elasticities**

| Short Run Analysis | | Long Run Elasticities | |
|---|---|---|---|
| **Dependent variable: D(LGDP)** | **ARDL (2,1,0,0,1)** | **Dependent variable: LGDP*** | **ARDL (2,1,0,0,1)** |
| Constant | 0.757 (0.078) | Constant | 4.559 (9.639) |
| $ECT_{t-1}$ | -0.166* (0.078) | LCP | 0.156* (0.112) |
| $D(LGDP)_{t-1}$ | -0.202** (0.076) | LL | 0.462* (1.0521) |
| D(CP) | 0.194*** (0.024) | LX | 0.321*** (0.329) |
| D(LL) | 0.076 (0.206) | LFDI | 0.076** (0.041) |
| D(LX) | 0.0534 (0.037) | | |
| D(LFDI) | 0.0126 (0.047)** | | |

## 5. POLICY RECOMMENDATION AND CONCLUSION

This paper re-examined the contribution of export and foreign direct investment trough the modification of standard Cobb Douglas production function. Using time series econometric techniques, ARDL approach, it is confirm that export plays the vital role towards increasing the Malaysian economy compared to foreign direct investment. Strong economic growth remains a necessary condition for Malaysia to attract higher FDI inflows [53] while economic instability such as high inflation and unstable exchange rate will probably discourage FDI and export [54]. Malaysia should diversify their economy so that there will be more export activities through the introduction of new goods and services. Considering the importance of domestic investment, the country should not focus too much on foreign direct investment to boost the economy growth but instead focusing more on the domestic direct investment that represent capital, CP in the model. Moreover, in order to sustain growth, Malaysia needs to continuously provide sufficient amount of labor supply in the market as this variable is found to be the highest GDP contribution. As a summary, this paper has proposed the most critical determinant of growth by modifying the standard Cobb Douglas production function to accelerate economic development and could be taken as one of the key factors to stimulate the economy and for the future development policy in Malaysia.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. World Bank Report; 2011.
2. Awokuse, Titus O, Dimitris K. Christopoulos. Nonlinear Dynamics and the Export-output growth nexus: A time-varying smooth transition autoregressive (star) modeling approach. Economic Modelling. 2009;26:184-190.
3. UNCTAD Report; 2013.
4. Akinlo A. Foreign Direct investment and growth in Nigeria: An empirical investigation. Journal of Policy Modeling. 2004;26:627-639.
5. Azam M. An empirical analysis of the impacts of exports and foreign direct investment on economic growth in South Asia. Interdisciplinary Journal of Contemporary Research in Business. 2010;2(7):249-257.
6. Reinhardt N. Back to basics in Malaysia and Thailand. The role of resources-based exports intheir export-led growth. World Development. 2000;28-57-77.
7. Chen, Edward, Peter Drysdale. Corporate links and foreign direct investment in Asia and the Pacific. NSW: Harper Educational; 1995.
8. Ahmad J, Harnhirun S, Yang J. Export and economic growth in the ASEAN Countries: Cointegration and causality tests. International Review of Business and Economics. 1997;44(2):419–30.
9. Dodaro S. Exports and growth: A reconsideration of causality. Journal of Developing Areas. 1993;27(2):227–44.
10. Doraisami A. Export growth and economic growth: Are-examination of sometime-series evidence of the Malaysian experience. The Journal of Developing Area. 1996;30:223-30.
11. Rahman M, Mustafa M. Dynamics and real exports and real economic growth in13 selected Asian Countries. Journal of Economic Development. 1997;22(2):81–95.
12. Shah M, Yusof MB. Export and economic growth: A case of Malaysia in trade and development in Malaysia (Ed.) Mohammed B. Yusof, University Pertanian Malaysia. 1990;83-92.
13. Shah M, Yusof MB. Export and economic growth: A case of Malaysia in trade and development in Malaysia (Ed.) Mohammed B. Yusof, University Pertanian Malaysia. 1990;83-92.
14. Doraisami, A. Export growth and Economic Growth: Are-examination of sometime-series evidence of the Malaysian experience. The Journal of Developing Area. 1996;30:223-30.
15. Ibrahim M. An empirical note on the export-led growth hypothesis: The case of Malaysia. Economic Analysis and Policy. 2002;32(2):221–32.
16. Islam MN. Export expansion and economic growth: Testing for cointegration and causality. Applied Economics. 1998;30(3):415–25.
17. Lai YW. The role of domestic demand in the economic growth of Malaysia: A cointegration analysis. International Economic Journal. 2004;18(3):337–52.

18. Yousif YK. On the role of exports in the economic growth of Malaysia: A multivariate analysis. International Economic Journal. 1999;13(3):67–75.
19. Thangavelu S, Rajaguru G. Is there an export or import-led productivity growth in rapidly developing Asian Countries? A multivariate VAR analysis. Applied Economics. 2004;36(10):1083–93.
20. Baharumshah AM, Rashid S. Exports, imports and economic growth in Malaysia: Empirical evidence based on multivariate time series. Asian Economic Journal. 1997;13(4):389–406.
21. Ghatak S, Milner C, Utkulu U. Exports, export composition and growth: Cointegration and causality evidence for Malaysia. Applied Economics. 1997;29:213-23.
22. Khalafalla KY, Webb AJ. Export-led growth and structural change: Evidence from Malaysia. Applied Economics. 2001;33:1703–1715.
23. Ghatak S, Milner C, Utkulu U. Exports, export composition and growth: Cointegration and causality evidence for Malaysia. Applied Economics. 1997;29:213-23.
24. Anwar S, Sun S. Financial development, foreign investment and economic growth in Malaysia. Journal of Asian Economics; 2010.
25. Duasa J. Malaysian foreign direct investment and growth: Does Stability Matter? The Journal of Economic Cooperation. 2007;28(2):83-98.
26. Kogid M, Mulok D, Beatrice LFY, Mansur K. Determinant factors of economic growth in Malaysia: Multivariate cointegration and causality analysis. European Journal of Economics, Finance and Administrative Sciences. 2010;24:123-137.
27. Wai-Mun H, Kai-Lin T, Kar-Man Y. FDI and economic growth relationship: An empirical study on Malaysia. International Business Research. 2008;1(2):11-18.
28. Narayan PK, et al. Export-led growth hypothesis from papua new guinea and fiji. Journal of Economic Studies. 2007;34(4):341-351.
29. Hsiao FST, Hsiao MCW. FDI, Exports and GDP in East and Southeast Asia –panel data versus time-series causality analysis. Journal of Asian Economics. 2006;17:1082-1106.
30. Mithani DAM, Ahmad S, Saifudin AM. Foreign direct investment in Malaysia: Trends and prospects. International Review of Business Research Papers. 2008;4(1):249-258.
31. Ang JB. Determinants of foreign direct investment in Malaysia. Journal of Policy Modeling. 2008;30:185-189.
32. Apergis N, Lyroudi K, Vamvakidis A. The relationship between foreign direct investment and economic growth: Evidence from transition countries. Transition Studies Review. 2008;15:37-51.
33. Baharumshah AZ, Thanoon MAM. Foreign capital flows and economic growth in East Asian countries. China Economic Review. 2006;17:70-83.
34. Duasa J. Malaysian foreign direct investment and growth: Does stability matter? The Journal of Economic Cooperation. 2007;28(2):83-98.
35. Magnus FJ, Fosu OAE. Bivariate causality analysis between FDI inflows and economic growth in Ghana. International Research Journal of Finance and Economics. 2008;15:103-112.
36. Mithani DAM, Ahmad S, Saifudin AM. Foreign direct investment in Malaysia: Trends and prospects. International Review of Business Research Papers. 2008;4(1):249-258.
37. Samimi AJ, Rezanejad Z, Ariani F. Growth and FDI in OIC Countries. Australian Journal of Basic and Applied Sciences. 2010;4(10):4883-4885.
38. Wai-Mun H, Kai-Lin T, Kar-Man Y. FDI and economic growth relationship: An Empirical Study on Malaysia; 2009.

39. Yao S, Wei K. Economic growth in the presence of FDI: The perspective of newly industrializing economies. Journal of Comparative Economics. 2007;35:211-234.
40. Akinlo A. Foreign direct investment and growth in Nigeria: An empirical investigation. Journal of Policy Modeling. 2004;26:627-639.
41. Lean HH. The Impact of foreign direct investment on the growth of the manufacturing sector in Malaysia. International Applied Economics and Management Letters. 2008;1(1):41-45.
42. Li X, Liu X. Foreign direct investment and economic growth: An increasingly endogenous relationship. World Development. 2005;33(3):393-407.
43. Vu TB, Noy I. Sectoral analysis of foreign direct investment and growth in the developed countries. Journal of International Financial Markets, Institutions and Money. 2009;19:402-413.
44. Akinlo A. Foreign direct investment and growth in Nigeria: An empirical investigation. Journal of Policy Modeling. 2004;26:627-639.
45. Khalafalla KY, Webb AJ. Export-led growth and structural change: Evidence from Malaysia. Applied Economics. 2001;33:1703–1715.
46. Kogid M, Mulok D, Beatrice LFY, Mansur K. Determinant factors of economic growth in Malaysia: Multivariate cointegration and causality analysis. European Journal of Economics, Finance and Administrative Sciences. 2010;24:123-137.
47. Shahbaz M. Does trade openness affect long run growth? Cointegration, causality and forecast error variance decomposition tests for Pakistan. Economic Modelling. 2012;29:2325–2339.
48. Shahbaz M, Nuno CL, Summaira M. Foreign direct investment-economic growth nexus: The role of domestic financial development in Portugal. Economics Bulletin. 2011;31(4):2824-2838.
49. Pesaran HM, Shin Y, Smith RJ. Bound testing approaches to the analysis of long-run relationships. Journal of Applied Econometrics. 2001;16:289-326.
50. Lean HH. The impact of foreign direct investment on the growth of the manufacturing sector in Malaysia. International Applied Economics and Management Letters. 2008;1(1):41-45.
51. Li X, Liu X. Foreign direct investment and economic growth: An increasingly endogenous relationship. World Development. 2005;33(3):393-407.
52. Vu TB, Noy I. Sectoral analysis of foreign direct investment and growth in the developed countries. Journal of International Financial Markets, Institutions and Money. 2009;19:402-413.
53. Ang JB. Determinants of foreign direct investment in Malaysia. Journal of Policy Modeling. 2008;30:185-189.
54. Wai-Mun H, Kai-Lin T, Kar-Man Y. FDI and economic growth relationship: An empirical study on Malaysia. International Business Research. 2008;1(2):11-18.


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