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FDI, Exports and Economic Growth: Evidence from Mena Region

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Abstract: This paper examines the Granger causality relations among GDP, exports and FDI in Middle East and North Africa counties (MENA). After reviewing the current literature, three-variable panel VAR model is constructed for above countries 1970 - 2008. Using Hausman test we have estimated the fixed effects panel data model to estimate the mutual relation between GDP, exports and FDI. We used Panel VAR equations for Granger causality tests. Our findings indicate that there are bidirectional causality relations among all three variables for this group.

Key words:FDI · Exports and GDP · Panel data causality analysis · Granger causality · Middle East and North Africa (MENA)

INTRODUCTION

The role of trade policy on economic growth has been the focus of considerable academic effort. Openness, to Gross Domestic Product (GDP), has been considered one of the main determinants of economic growth. Export-led growth postulates that exports consist the principal channel through which the liberalization process can affect the output level and eventually the rate of economic growth. Export expansion can increase productivity offering greater economies of scale [1]. Moreover, exports are likely to alleviate foreign exchange constraints and can thereby provide greater access to international markets [2]. Endogenous growth theory emphasizes the role of exports on economic growth highlighting that exports can increase long-run growth by allowing innovations growth in sectors of research and development [3-5].

Nevertheless, the results obtained by empirical studies, which recently have applied causality tests to examine the nature of a causal relationship between exports and economic growths are also mixed. Although some studies have found a positive association, others resulted in reverse conclusions. It is not clear in the literature to what degree is the positive relation between trade and growth due to the fact that trade is stimulative of growth and to what degree does it reflect the fact that growth leads to trade. The rate of economic growth differs from country to country, technological advance increases slowly or rapidly relatively to the economic structure of each country, while when the monetary and the fiscal policy are not taking account of, they have a negative effect on economic growth.

Moreover, assuming that trade does induce economic growth, a question should arise if there are some other factors, which affect this relationship. Indeed, trade liberalization can cause not only trade expansion but also the increase of foreign direct investment in one country.

The best interpretation of the empirical relationship between openness and economic growth should contribute not only to the understanding of the role of foreign direct investments to economic growth but also should facilitate the interpretation of relationship between trade and foreign direct investments.

There is an increasing agreement both among developed and developing countries about the types of benefits, which are likely to accrue to the host economy from FDI. This is particularly the case for technology and management expertise as multinational enterprises seem to be one of the principal vehicles for the international transfer for technology.

Blomstoerm and Persson, [6] find evidence that foreign direct investments have led to significant positive spillover effects on the labor productivity of domestic firms and on the rate of productivity growth in Mexico [7].

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Kokko, [8] Kokko, [9] Argues that this effect may arise from a process of competitive interaction between foreign and domestic firms where the technological gap is quite great. However, the effect of foreign direct investments on economic growth is an empirical question as it seems to be dependent upon a set of conditions in the host country economy. The beneficial impact of foreign direct investment is enhanced in an environment characterized by an open trade regime and macroeconomic stability. In this environment foreign direct investments can play a key role in improving the capacity of the host country to respond to the opportunities offered by the global economic integration.

Blomstoerm, [10] examining the empirical relationship between economic growth and foreign direct investments, found that there is a unidirectional causal relationship between FDI inflows as a percentage of GDP and the growth of per capita GDP for all developed countries over the period 1960-1985.

Borenstein De Gegorio, [11] Highlight that a positive relationship between foreign direct investments flows and economic growth is dependent on the achievement of a minimum threshold of human capital. Generally, trade liberalization and exports growth consist the main target for economy restructuring. The abolition of tariff barriers allows foreign direct investments growth to the domestic market of a developed economy [12].

Aside from institutional and organizational factors, the most common economic factor mentioned in these studies is openness of the economy, namely, export promotion policy and active acceptance of inward FDI. The roles of trade and FDI have been extensively discussed in recent years both in theory and in practice. Generally speaking, exports, imports and inward FDI are sources of new ideas, new goods, new domestic competition and technology transfer from advanced countries. In addition, to attract FDI, the host governments must maintain stable macroeconomic environment and reduce market distortions. All these enhance economic efficiency and productivity of the economy. The positive relation between openness and economic growth seems overwhelming, at least in theory. However, empirical studies of causalities between openness (trade and FDI) and economic growth are mixed at best. Their relations are not as obvious and straightforward, as can be seen in the survey of literature in the following section.

The major purpose of this paper follows the current literature and investigates the relation between openness, namely, exports and FDI and economic growth by using panel data analysis, taking the data from MENA countries. The structure of the paper is as follows. Sections 2 and 3 review some recent theoretical and empirical literature on the causality relations among the three variables in a country or a group of countries. Section 4 presents briefly the analytical framework of the interdependence of the three variables in an economy using the mini-general equilibrium Keynesian-type demand oriented open economy model. This is the basis of the panel vector auto regression (VAR) analysis in sections 5. In section 5, the panel data from 1970 to 2008 for this group is constructed. Then apply the fixed effects model to estimate the panel data VAR and perform the Ganger causality test[1]. The last section concludes by summarizing this findings and discussing the policy implications

Review of Theoretical Literature: In the neoclassical growth model, technological progress and labor growth the investment rate, leading to a transitional increase in per capita income growth but has no long-run growth effect. The new growth theory in the 1980s endogenizes technological progress and FDI has been considered to have permanent growth effect in the host country through technology transfer and spillover. As the world FDI inflows increased steadily and tremendously from mere US$ 69 billion in 1981 to US$ 202 billion in 1990 and then to almost US$ 1,410 billion in 2000, although it decreased to afterward, but still had 915 billion in 2005 [13,14], there is ongoing discussions on the impact of FDI on a host country economy, as can be seen from recent surveys of the literature [15-18]. Most of the studies find positive effects of FDI on transitional and long run economic growth through capital accumulation and technical or knowledge transfers, especially under open trade regime [19].

However, some studies show that these positive effects may be insignificant or the effects may even be negative [20,21], possibly due to crowding out of domestic capital or development of enclave economies. Some also point out that the multinational corporations (MNC) tend to locate in more productive, fast growing countries or regions, thus FDI inflows could be attracted to the growing economies and markets. In short, the

[1]Note that Granger causality tests focus on time-precedence rather than causality in the usual sense. Therefore, the results of the tests should be interpreted with caution. for the usefulness and the shortcomings of the tests.

causality of FDI and economic growth can run bidirectionally and may pose simultaneity problems to single-equation regression analysis.

In an open economy, technology and knowledge may also be transferred through exports and imports and thus promote economic growth [22-24]. However, growth also has effects on trade [25,26]. In the development literature, this is known as the relation between trade regime/outward orientation and growth [27]. In empirical analysis, the policy of outward orientation is generally measured by exports [28]. As such, the topic of exports-growth nexus has been a subject of extensive debate since the 1960s, as can be seen from a recent comprehensive survey of more than 150 papers by [29]. They found surprisingly that there is no obvious agreement to whether the causality dictates export-led-growth or growth-led-exports, although the early cross-section studies favor the former [30].

The observations on the FDI-growth nexus and the exports-growth nexus lead us to examine the closely related third side of a triangular relation: the FDI-exports nexus. Perhaps, because the FDI-exports relation affects economic growth indirectly, the FDI-exports nexus has received less attention in academic discussions and a comprehensive survey of the topic does not seem to exist. Like the other nexuses, the direction whether "FDI causes exports" or "exports cause FDI" is also a matter of dispute [31]. Trade and FDI are related positively (complement) between asymmetric countries and negatively (substitute) between symmetric countries [32]. They also depend on whether FDI is market-seeking (substitutes) or efficiency-seeking (complements) [33], "trade-oriented" or "anti-trade-oriented" [34,35], or at the early product life-cycle stage (substitute) or at the mature stage (complement) [36]. Thus, the relation may be positive or negative, if there is a relation at all. On the other hand, exports increase FDI by paving the way for FDI by reducing the investors' transaction costs through the knowledge of host country's market structure. FDI may reduce exports by manufacturing goods directly in the host countries to save transportation costs.

The above three kinds of nexus have been studied separately using methods of correlation, regression, or Granger's bivariate causality tests. Few studies have taken all three variables together, nor have used panel data causality analysis. In terms of econometric methods, this paper finds the causality relations among FDI, exports and GDP (a proxy for economic growth). Instead of conventional time-series analysis for individual economy, panel data causality analysis is used, that is available only in recent years, for group causality test.

Review of Recent Empirical Literature: In the current literature, most of the published works examine bivariate relations, either theoretically or empirically, between the pairs of GDP and exports, GDP and FDI, or exports and FDI, as it is reviewed in the previous section. Despite their interrelationships, as it is seen in the literature review below, relatively few published empirical works deal with causality relations among these three variables simultaneously in a group of countries and fewer papers use panel data VAR causality analysis.

There are several papers on individual country study examining Granger causality of these three variables. [37] found bidirectional causality[2] between each pair of real GDP, real exports and real FDI for China using seasonally adjusted quarterly data from 1981:1 to 1997:4; [38] found that, under export promotion (EP) regime, there is a unidirectional causality from FDI to GDP for Thailand using annual data[3] from 1970 to 1999; [39] found only unidirectional causality from exports to output for Turkey using seasonally unadjusted quarterly data from 1987.1 to 2002.4; [40] found a bidirectional causality between real GDP and real exports, unidirectional causalities from[4] FDI to real exports and FDI to real GDP for Greece, using annual IMF data from 1960 to 2002; in addition, [41] found unidirectional causalities from exports to GDP and FDI to GDP for Pakistan using non deflated annual data from 1972 to 2001. [42] found unidirectional causalities from real FDI and real exports to real GDP in Mexico and Argentina and unidirectional causality from real GDP to real exports in Brazil using seasonally adjusted quarterly data of Mexico, Brazil and Argentina from late 1970s to 2000; [43] find unidirectional causality from GDP to FDI for Chile and bidirectional causality between GDP and FDI in the case of Malaysia and Thailand using data from 1969 to 2000.

For studies of a group of countries, [44] found a positive impact of exports and FDI on GDP using 66 developing countries data averaged over ten-year periods, 1971-1980, 1981-1990 and 1991-2000 and

[2]In their paper China's quarterly inward FDI and exports were deflated by the GDP deflator (1990=1), monthly GDP was approximated by monthly gross industrial output, and quarterly exports are taken from IMF.

[3]There is no indication that the data were deflated.

[4]There is no indication that FDI data were deflated in their paper.

the instrumental variable method; [45] use panel data analysis on 79 countries from 1970-1998 and find that "FDI is relatively more beneficial to high-income countries, while international trade is more important for low-income countries." But they did not examine the stationarity of the variables to avoid spurious conclusion and did not apply the panel data causality analysis. Note that, as Basu, Chakraborty and Reagle have pointed out, the above two papers and like some other papers not included here, only look at the one-way determinants of FDI in regression analyses rather than at the two-way causality linkages among GDP, exports and FDI and so they are not strictly comparable with the causality analysis in this paper.

There are a few examples using causality analysis. [46] found that the Holtz-Eakin causality tests show FDI, not exports, causes GDP using data[5] from 24 developing countries from 1971 to 1995 applying mixed fixed and random (MFR) effects model; [47] using data for 31 countries from 1970-2000 and the neoclassical growth model, found that there is a strong bidirectional causality between FDI ratio (FDI/GDP) and GDP. However, they did not take into account of exports. The problem of the above two papers on panel data analysis is that they included too many countries with different stages of development and thus obscure the results.

In general, recent empirical literature shows that the causality relations vary with the period studied, the econometric methods used, treatment of variables (nominal or real), one-way regression or two-way causality and the presence of other related variables or inclusion of interaction variables in the estimation equation. The results may be bidirectional, unidirectional, or no causality relations. Thus, it is very important that the assumptions, the treatment of variables, the sample period, estimation models and methods should be clearly indicated in the analysis. In any case, the general results appear to show the positive relation from FDI and exports (or trade) to GDP and that the above brief survey also seems to indicate that there may be some interesting causality relations among exports, FDI and GDP.

Analytical Framework: While it is rather intuitively clear that FDI and exports may promote growth of GDP and that exports and FDI are somehow related, when all three variables are combined, it is rather obscure how they are related in the context of an economic model. The general practice in the literature routinely takes the relations as given in an ad hoc manner,[6] or expands a production function linearly to make connections. However, here it is show that the theoretical underpinning of the econometric model can be derived from the national income model.

For simplicity, it is assumed that equilibrium in the money sector and the government sector. Then, the equilibrium condition[7] of the Keynesian model of aggregate demand and aggregate supply is

$$Y = C(Y) + I(Y,r) + F + X - M(Y,r) \quad (1)$$

where Y, C, I, F, X, M, r and e are real GDP, real consumption, real domestic investment, real FDI inflows, real exports, real imports, interest rate and exchange rate of foreign currency in term of the domestic currency, respectively. $X - M(Y, e)$ is the current account surplus in domestic currency of the host country.

Since researchers are interested in the real aspect of the economy, ignoring the financial variables and writing in more general implicit function form,[8] the formula is:

$$H(Y,X,F)=0 \quad (2)$$

Thus, the three variables, GDP, exports and FDI are closely related to each other according to the Keynesian macroeconomic theory. It is examined econometrically the causality relations among the real variables Y, X and F. If certain regularity conditions are satisfied, the non-linear functions $C(Y)$, $I(Y, r)$ and $M(Y, e)$, or more directly, equation (2), can be expanded logarithmically around the origin by the Taylor expansion. Taking the linear part of the variables, regressing each of three variables on the other two variables and taking the lags of each variable for the purpose of econometric analysis, the prototype of a vector auto regression (VAR) form for the Granger causality test was used. Equation (3) in section 5.2 below shows the final form of the panel VAR model, which may be written either in levels or differenced series.

[5]The paper does not specify the sources of data, whether the data were deflated, and does not check stationarity.

[6]An ad hoc argument is that when testing the effects of "openness" on growth, both exports (or trade) and FDI should be considered for the true sense of "openness." Omitting one will commit the omission of variable error, rendering the causality relations ambiguous.

[7]Not national income identity.

[8]With theoretical underpinning points out that interest rates and exchange rates are not controlled in the VAR model, and thus points to a shortcoming of this VAR analysis in the literature as a whole. Note that, to be consistent in this formulation, there is no room for product terms and other physical variables.

The data on GDP and merchandise exports from 1970 to 2008, all in current US$ million for the Middle East and North Africa countries considered and their GDP deflators (2000=1), are taken from the World Bank's World Development Indicators dataset.. The current values of GDP and merchandise exports are deflated by GDP deflator of each country to convert to the real values. The inward FDI data are obtained from UNCTAD's World Investment Report dataset and deflated by GDP deflator to get real FDI values. Note that all variables are in logarithms.

Panel Data Granger Causality Test: A panel data analysis has the merit of using information concerning cross-section and time-series analyses. It can also take heterogeneity of each cross-sectional unit explicitly into account by allowing for individual-specific effects [48] and give "more variability, less collinearity among variables, more degrees of freedom and more efficiency" [49]. Furthermore, the repeated cross-section of observations over time is better suited to study the dynamic of changes of variables like exports, FDI inflows and GDP.

Propose to pool their sixteen cross-sectional data over the 39-year period (1970 to 2008) into a panel data set and then use panel data regressions to examine the causality relations for MENA[9] .

Panel Data Unit Root Tests: First the stationarity of the three panel level series, ex, fdi and gdp (for simplicity, the notations for real exports is used, real FDI and real GDP, respectively). Recent econometric literature has proposed several methods for testing the presence of a unit root under panel data setting. Since different panel data unit root tests may yield different testing results, [50] W-test (IPS) and ADF-Fisher Chi-square test (ADF-Fisher) [51] to perform the panel data unit root test and compare their results [51].

Tables 1 show the panel unit root test results for MENA countries. Both IPS and ADF-Fisher tests indicate that the panel level series of the three variables are not stationary, but the three panel first-difference series are all stationary. Thus, use the first-difference series of the three variables panel to study the Granger causalities for this group was used.

Panel Data Var and Granger Causality Test: When panel data regression models estimated, the assumptions about the intercept, the slope coefficients and the error term was used. In practice, the estimation procedure is either the fixed effects model or the random effects model [52]. Since the random effects model requires the number of cross-section units greater than the number of coefficients, with fifteen cross-section units, VAR(p) with lag order p = 1 or 2 can estimated. More importantly, too much information will be lost if there is more than 2 lags, for that, only over 39-year period data were used. The optimal lag lengths are then selected by the minimum AIC method. As will be shown, the random effects model is rejected for all equations and briefly the estimation of panel VAR in the context of the fixed effects model was explained.

The Fixed Effects Approach: The fixed effects model (FEM) assumes that the slope coefficients are constant for all cross-section units and the intercept varies over individual cross-section units but does not vary over time. For this application, the FEM can be written as follows

$$y_{it} = \alpha_i + x_{it}\,\beta + u_{it} \qquad (3)$$

where y_{it} can be one of the three endogenous variables, i is the ith cross-section unit and t is the time of observation. The intercept, α_i, takes into account of the heterogeneity influence from unobserved variables which may differ across the cross-section units. The x_{it} is a row vector of all lag endogenous variables. The β is a column vector of the common slope coefficients for the group of economies. The error term follows the classical assumptions that $u_{it} \sim N(0, \sigma^2_u)$.

In addition, an ordinary dummy variable, zero for 1970 to 2002 was added and one for 2003 to 2008, into the model to take into account the effect of US military participation in Iraq if significant at 10% level. The FEM is estimated by the method of the least squares dummy variable (LSDV). Note that the Hausman test rejects the null hypothesis of random effect model at 5% level in the estimations of the panel VAR for MENA as a group [10]. On the other hand, the first and the second generation models have smaller number of cross section units than

[9]Middle East and North Africa countries that be used are Algeria, Libya, Morocco, Tunisia, Egypt , Iran, Turkey, Iraq, Saudi Arabia, Syria, Jordan , United Arab Emirates , Lebanon , Kuwait , Qatar and Bahrain.

[10]For dex, dfdi, and dgdp equations, Hausman test's chi-square statistics (p-value) are 14.8 (.02), 20.8 (.00), and 14.4 (.03), respectively, all rejecting random effects model at 5% level of significance

Table 1: Panel Data Unit Root Tests for MENA

			EX	FDI	GDP
Panel Level Series	IPS W-stat	Individual Effects	2.135(0.98)	-0.81(0.21)	0.411(0.64)
		Individual Effects & Individual Linear Trends	-0.842(0.18)	-2.621***(0.00)	1.523(0.95)
	ADF-Fisher Chi-square	Individual Effects	0.786(0.99)	8.23(0.23)	3.52(0.75)
		Individual Effects & Individual Linear Trends	8.213(0.22)	16.325**(0.01)	1.452(0.97)
Panel First-Difference Series	IPS W-stat	Individual Effects	-4.564(0.00)	-4.534***(0.00)	-3.823***(0.00)
		Individual Effects & Individual Linear Trends	-3.392***(0.00)	-3.863***(0.00)	-2.897***(0.00)
	ADF-Fisher Chi-square	Individual Effects	30.29***(0.00)	30.99***(0.00)	24.201***(0.00)
		Individual Effects & Individual Linear Trends	21.563***(0.00)	24.623***(0.00)	18.523***(0.01)

Notes: a) Panel data include MENA. b) The optimal lag length is selected by the minimum AIC with maximum lag 3. c) The numbers in parentheses denote p-values. d) *** (**, *) denotes rejection of null hypothesis at the 1% (5%, 10%) level of significance, respectively.

Table 2: Panel Data Granger Causality Tests for MENA

Coefficient Estimates	Dep. var.	dex	dfdi	dgdp
	constant (c1)	0.126 (0.00)	0.283 (0.03)	0.06 (0.00)
	dex (-1) (c2)	0.236 (0.09)	2.37 (0.01)	0.412 (0.06)
	dex (-2) (c3)	0.152 (0.32)	0.742 (0.09)	0.398 (0.02)
	dfdi (-1) (c4)	-0.035 (0.21)	-0.391 (0.00)	-0.024 (0.16)
	dfdi (-2) (c5)	-0.052 (0.00)	-0.288 (0.02)	-0.031 (0.04)
	dgdp (-1) (c6)	-0.062 (0.65)	-2.631 (0.02)	-0.122 (0.56)
	dgdp (-2) (c7)	-0.452 (0.00)	-2.003 (0.07)	-0.569 (0.01)
	dummy (c8)	-0.071 (0.04)	-0.325 (0.02)	-0.91 (0.00)
Wald test of Coefficients		B 4.652 (0.01)	A 4.502 (0.02)	A 4.211 (0.02)
Causality Direction (1)	H0 F-stat	fdi→ex**	ex→fdi**	ex→gdp**
Wald test of Coefficients		C 5.422 (0.01)	C 4.512 (0.02)	B 2.651 (0.09)
Causality Direction (2)	H0 F-stat	gdp→ex***	gdp→fdi**	fdi→gdp*

Notes: a) The numbers in parentheses denote p-values. b) *** (**, *) denotes rejection of null hypothesis at the 1% (5%, 10%) level of significance, respectively. c) Ho=null hypothesis, F-stat=F-statistic. d) In Wald test of coefficients, the null hypothesis A is c2=c3=0, B is c4=c5=0, C is c6=c7=0, respectively

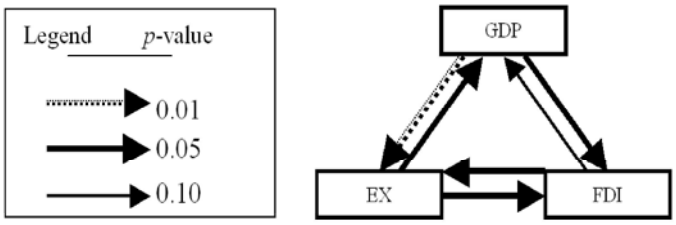

Fig. 1: panel Data Grager Casusality Relations for MENA Countries

the number of the coefficients. Therefore, the random effects model can't be used. Thus, only the fixed effects model is presented in this paper.

Granger Causality Test: Table 2 presents the estimated panel data VAR for MENA by FEM and the Wald test of coefficients for Granger causality directions. The coefficients of dummy variable are all negative and statistically significant at the 5% level. Thus, the dummy variable was included in the regressions. Figure 2 summarizes the panel data Granger causality results of Table 2.

Interestingly enough, very strong bidirectional causality relations among GDP, exports and FDI inflows for MENA were used. Not only does the causality from GDP to FDI inflows newly emerge, but each causality relations are much more statistically significant than the previous panel VAR results for all seven Asian

economies. This indicates that GDP, exports and FDI inflows are mutually reinforcing each other, so that any policy aiming to stimulate one of the three variables is likely to have

Positive impact on the other two variables both directly and indirectly. This virtuous circle running through the three variables may explain the growth of the MENA for the past four decades with prudent

Government policies attracting FDI and promoting exports. Here, inward FDI has strong positive effects on GDP: FDI not only has strong direct impact on GDP, but also indirectly increases GDP through exports by interactive relations between exports and GDP.

A distinctive pattern emerges from the previous panel VAR analyses for MENA. FDI inflows strongly induce GDP and exports in this group. In addition, GDP, exports and FDI inflows are mutually reinforcing each other through a strong virtuous circle in MENA. It appears that large inflow of FDI can occur and its impact on the economy becomes effective only when the economy has advanced to a certain stage of development and proper institutions are put in place.

CONCLUSIONS

The openness of the economy, as manifested by exports and inward FDI, among others, is an economic factor attributed to growth of the MENA. Thus, the question how the openness variables, exports and FDI, interacted with GDP, the most important economic growth indicator, within each group and among each countries appear to be an important topic to study. Panel data analysis to the MENA was applied and, very interesting pattern has emerged. Statistically strong bidirectional causality among the three variables in these countries were used. More specifically, the contributions of this paper appear in several areas:

- Instead of the supply-side approach or ad hoc relations used in the general literature, a Keynesian demand-side model of open economies was presented to explain the interaction between inward FDI, exports and GDP and present a model which is the basis of using vector autoregression (VAR) procedure.
- For empirical studies, panel data causality analysis of inward FDI, exports and GDP was used simultaneously. This analysis is different from general conventional time-series analysis or cross-section analysis using bivariate models.
- There are many theoretical and empirical studies on the bivariate causality between trade (using exports or exports and imports) and growth, openness (as measured by the ratio of exports and imports over GDP) and growth, as well as between trade and FDI, whether FDI is complementary or substitute. However, as these three variables are closely related, instead of studying two variables separately at a time, it is natural and worthwhile, to examine multivariate causalities among these three variables.
- In terms of the data, these analyses are concentrated on the MENA. This selection of group and the period, in addition to various panel data analyses, are different from the existing literature, as most of the current publications do the cross-section analysis of a group of either developed countries and/or developing countries, without due considerations of heterogeneous economic characteristics and different stages of development within the group. .
- Also in this paper the reinforcing effects of inward FDI through exports was used and also corroborate their policy recommendation of attracting inward FDI was used, in addition to exports, as an important engine of growth.
- Another implication of this paper results is that, at the early stage of development, exports, rather than FDI, appear to be more important in promoting economic growth. This interpretation is consistent with the general fear, or Marxists concern, that FDI is the vanguard of imperialistic capitalism and may compete with, or even destroy, the burgeoning domestic infant industries.
- In this connection, considering a statistically strong unidirectional causality from GDP to FDI in this group (Figure 1), FDI is generally attracted to the high income countries. The implication is that economic policy of low income countries to attract FDI may not be effective or even futile. Rather, low income countries should promote exports at the beginning of its development. After export promotion policy has succeeded in lifting the national income, FDI will come and start to have positive reinforcing interrelated impacts on exports and GDP and enhance further growth.

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