Journal of Economics and Sustainable Development
ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online)
Vol.4, No.2, 2013

A Causal Relationship between FDI Inflows and Export: The Case of India

Zafar Ahmad Sultan[1]

Department of Management, College of Business Administration in Alkharj, Salman Bin Abdulaziz University, Alkharj, P.O. Box 165, Alkharj-11942, Kingdom of Saudi Arabia. Mobile No.- +966 590712229.

Email: zsultan.sultan@gmail.com

Abstract

Foreign Direct Investment (FDI) is considered as an important means of promoting export of the host countries. By training the local work force and upgrading the technical and managerial skills, it helps in raising the efficiency and productivity of the factors and hence competitive strength in the international market. In addition to this, by facilitating access to large international market, FDI makes a significant positive contribution to the host country's exports. However this is true if FDI comes for efficiency reason and not for domestic market. The present study examines the nature of relationship between export and FDI in India over the period 1980-2010. Using Johansen co-integration method, the paper finds a stable long run equilibrium relationship between FDI and export growth. The result of Granger causality based on vector error correction model (VECM) shows that causality runs from export to FDI inflow direction and not from FDI inflow to export direction. In the short run, however, neither export Granger cause FDI inflow nor FDI inflow Granger cause export from India.

Key words: Foreign Direct Investment, Export, cointegration, causality**.**

JEL Code: F21, F23.

1. Introduction

It has long been argued that Foreign Direct Investment (FDI) plays an important role in promoting export and economic growth of an economy. It is argued that FDI promotes exports of the host countries by increasing the productivity and productive capacity of the host country by increasing capital stock, transfer of technology, managerial skills and upgrading the skills of the local workforce through training. Further, FDI also increases the opportunity for the host countries to export by facilitating access to the new and large foreign markets. However, the role of FDI in promoting export is a controversial topic and basically depends upon the motive for such investment. If the motive for FDI is to bypass the trade barriers (high tariff) of the host countries, to gain access to large overseas market and to reap the benefits of economies of scale, this may not promote export. Such kind of market seeking investment is called horizontal FDI. However, if the motive for FDI is to reap the benefits of host country's comparative advantage so as to produce at relatively low cost, such investments are likely to promote trade and hence complement trade. Such FDI is called export oriented or vertical FDI.

India has also witnessed growth of FDI inflow since the eighties and particularly since the nineties with the liberalization of the economy. This period has also witnessed rapid growth of exports. However, despite these, there has not been much study on the relationship between FDI, export and economic growth. Kishor Sharma (2000) study covers only few years of the reform period i.e. up to 1997. In order to fill this gap, the present paper tries to examine the relationship between FDI inflow and exports.

The paper is organized as follows. Section 2 briefly presents the role of FDI in promoting exports. Section 3 gives a brief review of literature related to the subject. This is followed by econometric methodology used to examine the relationship between these variables. Section 4 discusses the empirical results. Concluding remarks are given in section 5.

2. The Role of FDI in Promoting Exports

FDI plays an important role in promoting exports of host countries. It promotes exports by facilitating the host countries access to customers in global, regional and home-country markets. In addition, host countries

[1] **Parent Institute:** Assistant Professor, P.G. Department of Economics, L.S. College, Muzaffarpur, B.R.A.Bihar University, Muzaffarpur, Bihar, India

sometimes also get benefits of lobbying activities of the MNCs in their home countries for favorable treatment of exports from their affiliates abroad as happened in case of US, China etc.

FDI also helps in improving productivity of labour force by providing training to the local workforce and upgrading technical and managerial skills. These activities benefit the country's exports through improvement in productivity of the labor force. This is especially true for export-oriented investments in advanced technological capabilities.

FDI has both direct and indirect effect on host country's exports. The direct effects refer to exports by foreign affiliates themselves. The indirect effect includes spillover effect of MNCs on local firms' export activities (UNCTAD, 2002).

The export of a country is directly affected by FI in following ways:

(a) Exports through processing and assembling: Many of the developing countries increase its exports of labour intensive and technology intensive products by assembling and processing of intermediate and unfinished products imported from home country. For example, China became a dominant exporter of labor intensive products (toys, shoes, clothes, and sporting goods) and some technology-intensive products (machinery and equipments, including electronic circuits, automatic data-processing machines, and mobile phones) (UNCTAD, 2002). Generally, these exports are organized by MNCs within vertically integrated international production network (Zhang and Markusen, 1999).

(b) Exports through converting import-substituting industries: In many of the import substituting products like home appliances and automobiles products, FDI combines its advanced technology with the available cheap labour of the developing countries and produces and exports the products at internationally competitive prices.

(c) Exports of new labor-intensive final products: By providing links to final buyers in different countries including the home country, FDI helps in increasing exports of labour and technology intensive final products of the host countries (Zhang,2005).

(d) Exports of locally processed raw materials: Because of the business contacts abroad, marketing skills, and superior technology, both in product and in processes, and greater general know-how, MNCs may have better export potential than indigenous firms in the processing of locally produced raw materials and exporting the same. This is especially true in the early stage of development when the country lacked the assets. (Zhang, 2005)

FDI also enhances the developing countries (host country's) manufacturing exports through spillover effects on local firms' exporting activities. (Zhang (2005)

(a) Learning and imitating of domestic firms from foreign firms: Local firms benefit themselves by watching, learning and imitating the export activities of the foreign affiliates and by making use of the infrastructure of transport, communications and financial activities.

(b) Instilling competition and efficiency: The second spillover effect involves the influence of FDI on the competitiveness of domestic firm's exports and the diffusion of new technologies. By bringing their advanced product-process technology, management, and marketing competence, MNCs may increase competition in the markets and force local firms to adopt more efficient methods.

(c) Linkage between foreign and local firms: The third spillovers are related to the linkage between foreign and local firms. If export-oriented foreign subsidiaries increase their purchase of inputs from local firms as the subsidiary matures, the exports of the country increases (UNCTAD, 2001 and 2002).

3. Review of Literature

The relationship between FDI and exports has been examined by the theories of international trade and FDI. Two divergent views have come up to establish the relationship between FDI and international trade. One regards FDI and exports as substitutes of each other; and the other treats the two as complements. R. Mundell (1957) on the base of H-O-S (Heckscher-Ohlin-Samuelson) model (two countries, two products and two factors) model demonstrated that the difference in comparative advantage is the basis of trade. In the absence of factor mobility, trade between two countries takes place to a level at which factor price tends to equalize in both countries, in absolute as well as in relative terms. However, once capital is allowed to move freely across the countries, i.e., from the abundant to a country where it is scarce, the difference in factor prices are reduced, the difference in comparative cost will diminish and eventually will vanish. Hence trade will decline and will be substituted completely by FDI. This view assumes that FDI comes only in those sectors in which the host country has comparative disadvantage. Such FDIs come only to supply domestic market of host countries and hence plays no role in increasing exports. So FDI replace imports with domestic production.

The conclusion that both trade in goods and factors work as substitutes is derived from the H-O factor endowment theory based on allocative efficiency in a static framework characterized with perfectly competitive markets, identical constant returns to scale production function and in the absence of transportation cost. However, the generality of this proposition has been questioned in an imperfectly competitive international market, based on economies of scale, imperfect competition, and differences in technological changes that explains the possibility of intra-industry trade (Grossman and Helpman, 1991; Krugman, 1979) and is compatible to explain vertical FDI (intra-firm transfers).

An important theory that establishes a complementary relationship between FDI and trade is Flying Geese model, a term, which was for the first time coined by Akamatsu in the 1930s and introduced into academia in the early 1960s. According to his model, in order to reduce the cost of production and retain its competitiveness, the MNEs shift its location of production from high labour cost home country to low labour cost host country. Using the host country's abundant factor, the MNEs increase the export supply capacity of the host country. Furthermore, the transfer of FDI also brings with them new technology, capital equipments, and managerial expertise into the host countries and improve the productivity and competitiveness of the indigenous firms thereby increase in competitiveness and exports of the host countries.

Vernon (1966) in its Product Life Cycle (PLC) theory also explained a positive role of FDI in promoting exports from host countries. He argued that technology passes through four stages of production. Theses stages are innovation, growth, maturity and decline. In the third stage of maturity, innovating firms, in order to reduce cost and protect themselves from imitating competitors, start production in foreign countries and export a part of production to home country. In the last phase, product and technology becomes mature and standardized, and becomes accessible to local imitators that thanks to the low labour cost become international competitors. This leads to increase in export of the host countries. In this case flow of trade may be reversed. The original innovating may relocate production further into host countries and reimport the product to the home country.

Applying Vernon model at industry level, Kojima (1973, 1985) found when FDI is made in the sector in which the country of origin has comparative disadvantage and the host country has comparative advantage, then this kind of investment has trade creating effect implying that the host country's export will increase.

According to New Trade Theory, the separation of different stages of production in different countries (vertical FDI) would most likely to cause trade creation effect. Helpman (1984) and Helpman and Krugman (1985), assuming no transaction cost, argues if choice of location of production facilities is based on relative factor prices and resource endowments, then, vertical FDI would cause trade creation effect in the form of export of finished product from affiliate company to parent company and intra firm transfer of intangible services from parent company to affiliate company. Brainard (1993), on the ground of proximity advantage, also postulated a positive relationship between FDI and trade.

Just as the there are differences of opinion about the relationship between the FDI inflow and amount of exports, the empirical studies also provide mixed results for different countries.

Khan and Leng (1997) while examining the interactions among inward – FDI, exports and economic growth for Singapore, Taiwan and South Korea, did not find any evidence of causal relation between FDI and export in the case of Taiwan and South Korea. In the case of Singapore, a one – way causal relationship from exports to inward FDI was found.

Liu et al (2002) investigated the causal relationship between inward FDI, trade and economic growth in China using quarterly data at aggregate level for the period 1981 to 1997 and found two – way causal relationship between inward FDI and exports. Similar result was also found by Baliamoune – Lutz (2004) for Morocco for the period 1973 to 1999.

Soliman, M. (2003) examined the role of FDI in export promotion of four MENA countries (Egypt, Tunisia, Morocco and Turkey) for the period of 1970-1995. Applying gravity model, he found a positive relationship between FDI inflow and export; however, an insignificant relationship has been found in the case FDI and share of manufacturing export in total merchandise exports.

Metwally (2004) tests the relationship between FDI, exports and economic growth in three countries, viz., Egypt, Jordan and Omen, during the period from 1981 to 2000 by using a simultaneous equation model. The result suggests that the export of goods and services is strongly influenced by the inward FDI in these three countries.

K.H. Zhang (2005) on the basis of cross section studies of 186 industries concluded a positive relationship between FDI and export growth in China and this effect is larger in labour intensive industries than that in capital intensive industries. Further, he also found that the FDI has more export promoting effect than that of domestic capital.

Pacheco – Lopez (2005) demonstrated the causal relationship between inward FDI and Export performance on Mexico by using the Granger causality test. The result indicates that there is a bi – directional causality between inward FDI and export performance.

A.M.M. Abdel Rahman (2007) using causality test found that FDI does not Granger cause export growth in Kingdom of Saudi Arabia but export growth Granger cause FDI growth. Alici and Ucal (2003) investigated the causal links among inward FDI, exports and economic growth in Turkish economy during the period of 1987 to 2002 on a quarter bases. The linkage of FDI – led export growth is not found in Turkey.

A.M. Njong (2008) examined the association between FDI and export in the case of Cameroon. Using the data for the period 1980-2003, he found positive impact of FDI on export through increase in supply capacity and spillover effects.

Won et al (2008), using panel data Granger causality test for nine Asian newly industrialized countries, found bi directional causality between inward FDI and export growth.

The empirical studies done so far in the case of India however do not show any significant impact of FDI in promoting India's exports. For example, Lall and Mohammad (1983) found that FDI inflows have not played any significant role in promoting export from India. Similarly, firm level analysis of the determinants of exports by Aggarwal (2001) found no significant contribution of FDI inflows as compared to the domestic counterpart on export performance of high tech industries in India during the 1990s. Kishor Sharma (2000), applying simultaneous equation model on annual data for the period 1970-1998, found no significant contribution of FDI inflow on export performance of India. There are other studies (Pant 1993, Lall 1986, Kumar and Siddharthan 1994, Agarwal 1997, Kumar 1998) also that did not find any significant role played by FDI in India's export growth. All these studies show that FDIs in India are mainly market seeking and not export oriented in nature. Most of these studies, however, cover only a short span of post reform era. Present study, therefore, tries to re examine the role of FDI in promoting India's export by covering a relatively longer period of post reform era.

4. Econometric Methodology

4.1. Model Specification and data sources

FDI, as said earlier, increases the supply capacity of the country through increase in the factor supply of the country in the form of more amount of capital. Further, it also increases the competitiveness of the country's exports by increasing total factor productivity. However, the actual increase in exports would also depend upon the intention of the investors and the allocation of FDI, whether to exploit the comparative advantage of the host country or take the advantage of the host country's local market. If the intention of the FDI is to benefit from comparative advantage of the country, then we may expect a positive relationship between FDI and export of the country. However, if the investment is made to bypass trade barriers and to exploit the large size of the market, FDI may not lead to export growth. To examine the causal relationship between FDI and export growth in India, the present study has selected bivariate model of following form;

$X_t = f(FDI_t)$ -------- (1)

In an explicit and econometric form, equation (1) can be stated as

$$lX_t = \alpha_0 + \alpha_1 lFDI_t + \varepsilon_t \quad -----(2)$$

Where,

Xt is Real export

FDIt is Foreign Direct Investment.

l is natural log of the variables concerned.

't' refers to time period

The data used in the study is annual data for the period 1980 to 2010 sourced from the UNCTADSTAT 2011.

4.2. Estimation Technique

The study employs a three step procedure in order to examine the presence of cointegration and direction of causality between export and Foreign Direct Investment. First, the Augmented Dickey Fuller (ADF) tests (Dickey and Fuller, 1979, 1981) and Phillips-Perron (PP) tests (Philips and Perron, 1988) have been used to check whether each data series has a unit root in order to avoid spurious regression. The test of integration is followed by cointegration test. In literature, the existence of long run equilibrium (stationary) relationship among

the economic variables is known as cointegration. To examine the existence of cointegration (long run relationship) among the variables, Johansen approach (Johansen 1988; Johansen and Juselius 1990) to co-integration has been applied. Lastly, the direction of causality between FDI inflow and export has been examined. If there is at least one cointegration relationship among the variables of interest, there must be some causal relationship among the variables (Maddala and Kim, 1998). According to Engle and Granger (1987), if the variables are cointegrated, Granger causality test on the basis of multivariate vector error correction model (VECM) will be more appropriate than the causality within the first difference VAR model. The VECM for export and FDI can be formulated as

$$\Delta lX_t = \alpha_0 + \sum_{i=1}^{k} \beta_{1i} \Delta lX_{t-i} + \sum_{i=1}^{k} \beta_{2i} \Delta lFDI_{t-i} + \varphi_1 ECT_{t-1} + \varepsilon_{1t} \quad -----(5)$$

$$\Delta lFDI_t = \alpha_2 + \sum_{i=1}^{k} \gamma_{1i} \Delta lFDI_{t-i} + \sum_{i=1}^{k} \gamma_{2i} \Delta lX_{t-i} + \varphi_2 ECT_{t-1} + \varepsilon_{2t} \quad -----(6)$$

Where Δ represents first difference operator, ECT_{t-1} is the one period lagged error correction term derived from the long term cointegration equations and ε_{it} is residual term which is assumed to be normally distributed and white noise. If the coefficient of error correction term is negative and significant we may infer that there is causal relationship between the variables in the long run. The short run causality is determined on the basis of joint F-test of the coefficient of the first differenced explanatory variables. Number of lag period to estimate the VECM is selected on the basis of AIC criteria. The appropriateness of the model is examined on the basis of various diagnostic tests.

5. Empirical Results

The result of ADF and PP test for unit root is shown in table-1a and 1b respectively. The result of both the tests suggest that the absolute values of test statistics for both the variables on the level are smaller than that of the critical values which implies that these variables on their levels are non-stationary. When the first differences of these variables are considered, the test statistics exceed the critical values at 1%. Thus, we may conclude that all the variables of the model are non stationary at level but stationary at first difference, i.e. they are integrated of first order I (1).

Since both the variables are non stationary and are integrated of same order i.e. I(1), Johansen co-integration test is conducted to examine the existence of long run equilibrium relationship among them. The result of co-integration test is presented in table no. 3a and 3b.

The tables show two statistical results. First is based on trace statistics, and another is based on maximum Eigen values. Based on Pantula principle, the researcher has selected the Intercept and no trend in CE and no trend in VEC model. Since the Johansen test is based on Vector Auto Regressive model (VAR), selected one period lag has been for the model on the basis of Akaike Information Criteria and Schwarz Baysian Criteria (table-2). Starting with the null hypothesis of no co-integration among the variables, trace statistics is 16.50950 which is above the 5 percent critical value of 15.49471 (shown in table 3a). Thus we reject the hypothesis of no co-integration among these variables at 5 percent. Now considering the null hypothesis of at most one co-integrating relation, trace statistics is 1.017567 which is less than 5 percent critical value of 3.841466. Thus we accept the null hypothesis of at most one co-integrating equation at 5 percent significance level. We find similar result from maximum Eigen statistics table (shown in table 3b). In this table we again find that maximum Eigen value is more than the critical value for no co-integration and less than the critical value for at most one cointegration. Hence we may conclude that the there is one co-integrating equation among these variables.

Thus, both trace and the maximum Eigen value statistics find that there is stable long run equilibrium relationship of exports with foreign direct investment. Estimate of long run co-integrating vectors are given in table-4. The result shows that the variables have positive and significant relationship with each other.

Granger causality result is shown in table-5. The table gives result for, both, short run and long run causal relation between the variables. As the table shows, the coefficient of one period lagged error correction term (ECTt-1) is negative but it is not significant when export is taken as dependent variable. This implies that FDI does not Granger cause export in the long run in India. However, when FDI is taken as dependent variable, coefficient of one period lagged error correction term (ECT_{t-1}) is negative and statistically significant too. This implies that growth in export does Granger cause inflow of FDI in the long run. Thus we find a unidirectional

causal relationship between FDI and export in India in the long run from export to FDI direction. In the short run, however, we do not find any causal relation between the variables in either direction.

6. Conclusion

FDI has long been considered as an engine of economic growth of the host countries. One of the channels of accelerating economic growth is through promoting exports. Because of its advantageous position in terms of technology, managerial skills and access to international markets, FDI inflow may accelerate host country's exports. Since there is debate about the intention of FDI, whether market seeking or efficiency seeking, the paper tries to examine the kind of relation found in the case of India using VECM technique of determining causality. The study finds that there is one cointegration relation between the variables implying that FDI and export has long run relationship. The VECM result shows that there is unidirectional causal relation from export to FDI direction and not from FDI to export direction. This implies that inflow of FDI in India is mostly not for efficiency seeking (vertical FDI). This may be coming to take advantage of growing market size determined by large population with high population and economic growth (horizontal FDI).

References

Aggarwal, Aradhana (2001). "Liberalization, Multinational Enterprises and Export Performance: Evidence from Indian Manufacturing", Indian Council for Research on International Economic Relations (ICRIER) Working Paper No. 69, New Delhi, India. [Online] Available: http://www.esocialsciences.org/Download/repecDownload.aspx?fname=Document1762007530.294552.pdf&fcategory=Articles&AId=993&fref=repec

Aggarwal Aradhana (1997). "Liberalization, internationalization advantages and foreign direct investment: the Indian experience in the 1980s", Transnational Corporations, Volume 6, Number 3, 33-57.

Akamatsu,K. (1961). "A Theory of Unbalanced Growthin the World Economy", *Welwirchaftliches Archiv, No.86.*

Alici, A.A. and Ucal, M.S. (2003), "Foreign direct investment, exports and output growth of Turkey: Causality Analysis", Paper presented at the European Trade Study Group (ETSG) fifth annual conference, Madrid, 11-13, Sept.

URL: http://www.etsg.org/ETSG2003/papers/alici.pdf

Baliamoune-Lutz, M.N. (2004), "Doest FDI contributes to economic growth? Knowledge about the effects of FDI improves negotiating positions and reduces risk for firms investing in developing countries", Business Economics, 39(2), pp. 49-56.

Brainard, S.L. (1993), "An Empirical Assessment of the Factor Proportions Explanation of Multinational Sales", NBER Working Paper No. 4583.

Dickey, D. A., and W. A. Fuller (1979), "Distribution of the Estimator for Autoregressive Time Series with Unit Root", Journal of the American Statistical Association, vol.74, 427-431.

Dickey, D. A., and W. A. Fuller (1981), "Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root", Econometrica, vol. 49, 1057-1072.

Engle, R. F. and C. W. J. Granger (1987), "Co-integration and Error Correction: Representation, Estimation and Testing", Econometrica, vol. 55, 251-276.

Grossman, Gene and Helpman, Elhannan (1991): Innovation and Growth in the Global Economy, MIT Press, Cambridge.

Helpman, E. (1984), 'A simple theory of international trade with multinational corporations', Journal of Political Economy 92.

Helpman, E., Krugman P. (1985), Market Structure and Foreign Trade, The MIT Press, Cambridge, Massachusetts.

Johansen S. (1988) "Statistical analysis of Co-integration vectors", Journal of Economic Dynamics and Control, vol. 12, 231-54.

Johansen S. and Juselius K. (1990), "Maximum Likelihood Estimation and Inference on Cointegration with Applications to the Demand for Money", Oxford Bulletin of Economics and Statistics, 52, 169-210.

Khan, K. and Leng, K (1997), "Foreign Direct Investment, exports and Exonomic growth", Singapore

Economic Review, 42(2), 40-60.

Kojima, Kiyoshi (1973), A Macroeconomic Approach to Foreign Direct Investment, Hitotsubashi Journal of Economics, vol. 14, 1-21.

Kojima, Kiyoshi (1985). "Japanese and American Investment in Asia: A Comparative Analysis", Hitotsubashi Journal of Economics, vol. 26, 1-35/

Krugman P. (1979), "Increasing Returns, Monopolistic Competition, and International Trade", Journal of International Economics, vol. 9, 469-479.

Kumar, Nagesh and Siddharthan, N.S (1994), "Technology, Firm Size and Export Behaviour in Developing Countries: The Case of Indian Enterprises", The Journal of Development Studies, Volume 31, pp. 289 - 309.

Kumar, Nagesh (1998): "Multinational Enterprises, Regional Economic Integration, and Export-Platform Production in the Host Countries: An empirical Analysis for the US and Japanese Corporations", Weltwirtschaftliches Archiv, Volume 134 (3), 450-483.

Lall, Sanjaya and Sharif Mohammed (1983). "Foreign ownership and export performance in the large corporate sector in India", Journal of Development Studies, vol. 20, 56-67.

Lall, R.B. (1986) "Multinationals from the Third World: Indian Firms Investing Abroad", Delhi: Oxford University Press.

Liu, X. Burridge, P. and Sinclair, P.J.N. (2002), "Relationship between economic growth,

foreign direct investment and trade: evidence from China", Applied Economics, 34, pp. 1433- 1440.

Maddala and Kim (1998). Unit Root, Cointegartion and Structural Change, UK, Cambridge Press.

Metwally, M.M. (2004), "Impact of EU FDI on economic growth in Middle Eastern Countries", European Business Review, 16(4), pp. 381-389.

Mundell, R. A. (1957), "International Trade and Factor Mobility" American Economic Review, Vol.47 (3), 321-335.

Njong, A. M. (2008), "Investigating the Effect of Foreign Direct Investment on Export Growth in Cameroon", [Online] Available: http://www.uneca.org/tfed/documents/Macro_24nov08/FDI%20and%20Export%20Njong%201.pdf

Pacheco-Lopez, P. (2005), "Foreign Direct Investment, Exports and Imports in Mexico", the World Economy, 28(8), pp. 1157-1172.

Pant, Manoj (1993): "Export Performance, Transnational corporations and the Manufacturing sector: A case Study of India", Indian Economic Review, Volume 28, 41-54.

Phillips, P. C. B. and P. Perron (1988), "Testing for a Unit Root in Time Series Regression", Biometrica, vol. 75, 335-346.

Rahman, A. A. A. (2007), "Determinants of Foreign Direct Investment in the Kingdom of Saudi Arabia", [Online] Available: http://faculty.ksu.edu.sa/ammar/Publications/Determinants%20of%20Foreign%20Diredct%20Investment%20in%20KSA.pdf.

Sharma, Kishor (2000): "Export Growth in India: Has FDI Played a Role?", Economic Growth Center Discussion Paper Number 816, Yale University, USA [Online] Available: http://www.econ.yale.edu/growth_pdf/cdp816.pdf.

Soliman, M. (2003), "Foreign Direct Investment in LDCs Export: Evidence from MENA Region", [Online] Available: http://www.mafhoum.com/press6/173E14.pdf.

United Nations Conference on Trade and Development (UNCTAD) (2001), World Investment Report (2001), New York: United Nations, [Online] Available: http://www.unctad.org/en/docs/wir01full.en.pdf.

United Nations Conference on Trade and Development (UNCTAD) (2002), World Investment Report: Transnational corporations and Export Competitiveness (2002), New York: United Nations, [Online] Available: http://www.unctad.org/en/docs/wir2002_en.pdf.

United Nations Conference on Trade and Development (2012), UNCTADSTAT, [Online] Available: http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx

Vernon, R (1966) "International Investment and International Trade in the Product Cycle", Quarterly Journal of Economics, vol. 80, 190-207.

Zhang, Kevin H. and James R. Markusen (1999), "Vertical Multinationals and Host-Country Characteristics", Journal of Development Economics, 59: 233-252.

Zhang, Honglin K. and Song, Shunfeng (2000). "Promoting Exports: the Role of Inward FDI in China", China Economic Review, 11, 385-396.

Zhang, Kevin H. (2005), "China's Export Competitiveness," in Kevin H. Zhang ed., China as An World Factory, Rutledge, London.

Zhang, Kevin H. (2005), "How Does FDI Affect a Host Country's Export Performance? The Case of China", [Online] Available: http//faculty.washington.edu./kariyu/cofer/xian05/paper/zhang.pdf.

Table-1a: Unit Root Test Result (ADF test)

Variables		Level	First Difference
lX		1.092299	-5.246833
lFDI		-0.549864	-4.911020
Critical Values	1%	-3.670170	-3.670170
	5%	-2.963972	-2.963972
	10%	-2.621007	-2.621007

Table-1b: Unit Root Test Result (PP test)

Variables		Level	First Difference
		C	C
*l*X		1.168201	-5.246833
*l*FDI		-0.001827	-7.381705
Critical Values	1%	-3.670170	-3.670170
	5%	-2.963972	-2.963972
	10%	-2.621007	-2.621007

Table- 2 Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-64.97345	NA	0.409886	4.783818	4.878975	4.812908
1	2.961756	121.3129*	0.004266*	0.217017*	0.502490*	0.304289*
2	5.561453	4.270929	0.004744	0.317039	0.792826	0.462492
3	6.667902	1.659675	0.005914	0.523721	1.189824	0.727355

* indicates lag order selected by the criterion

LR is sequential modified LR statistics

FPE denotes Final prediction error

AIC refers to Akaike Information criterion

SC is Schwarz information criterion

HQ denotes Hannan-Quinn information criterion

Table- 3a Result of Johansen's Cointegration Test

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigen Value	Trace Statistics	0.05 Critical Value	Prob.**
None *	0.413865	16.50950	15.49471	0.0351
At most 1	0.034480	1.017567	3.841466	0.3131

Trace test indicates 1 co-integrating eqn(s) at the 0.05 level

*denotes rejection of the hypothesis at 0.05 the level

**MacKinnon-Haug-Michelis(1999) p-values

Table- 3b Unrestricted Cointegration Rank Test (Maximum Eigen value)

Hypothesized No. of CE(s)	Eigen Value	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None*	0.413865	15.49194	14.26460	0.0318
At most 1	0.034480	1.017567	3.841466	0.3131

Max-eigen test indicates 1 co-integrating eqn(s) at the 0.05 level

*denotes rejection of the hypothesis at 0.05 the level

**MacKinnon-Haug-Michelis(1999) p-values

Table- 4 Estimate of Long Run Co-integrating Vector

Normalized Coefficients

lX	lFDI
1.00	-0.389320 (0.2520)

The figures in small parentheses indicate standard error of the coefficients.

Table-5 VEC Granger Causality/ Block Exogeneity Wald Test

Dependent Variable (ΔLM)

Dependent Variables	χ^2 Statistics (ρ)		ECT_{t-1}
	$\sum \Delta lX_{t-i}$	$\sum \Delta lFDI_{t-i}$	[t-statistics]
ΔlXt	_____	0.364066 (0.5463)	-0.074639 [-1.03804]
ΔlFDIt	0.881843 (0.3477)	_____	-0.683695 [-2.97492]
AR-square = 0.29 LM(1) = [0.9526], LM(2) = [0.9423], LM(3) = [0.9196], Hetroskedasticity = [0.9261] JB test = [0.56]			

This academic article was published by The International Institute for Science, Technology and Education (IISTE). The IISTE is a pioneer in the Open Access Publishing service based in the U.S. and Europe. The aim of the institute is Accelerating Global Knowledge Sharing.

More information about the publisher can be found in the IISTE's homepage: http://www.iiste.org

CALL FOR PAPERS

The IISTE is currently hosting more than 30 peer-reviewed academic journals and collaborating with academic institutions around the world. There's no deadline for submission. **Prospective authors of IISTE journals can find the submission instruction on the following page:** http://www.iiste.org/Journals/

The IISTE editorial team promises to the review and publish all the qualified submissions in a **fast** manner. All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Printed version of the journals is also available upon request of readers and authors.

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar