The Interactive Relationship between Regional Trade Integration and Foreign Direct Investment

Monireh Rafat[*1]

Abstract

Economic integration among countries has continued to deepen over the past decade. This is especially visible at the regional level, with the escalation of Regional Integration Agreements (RIAs) ranging from Free Trade Areas (FTAs) to Customs Unions (CUs). Nowadays, many developing countries have entered a new regional integration agreement with developed and developing countries. Since international trade and Foreign Direct Investment (FDI) are generally recognized as the two main channels of economic integration, the common question is whether international trade and FDI act as complements or substitutes. This paper tries to examine the interaction between trade integration and FDI in Iran, and provide an empirical assessment of the complementarity or substituting relationship between trade and FDI. We consider Iran bilateral trade as integration variable, with selected countries in EU, ASEAN+3, ECO and D_8, by using 2SLS estimators within the period 1994–2014. Results indicate that the bilateral manufacturing export and foreign direct investment have a significant direct relationship with each other in Iran. Also, economic similarities with ECO and D8 have higher effect on both export and FDI.

Keywords: Foreign Direct Investment, Regional Trade Integration, Economic Similarity, Bilateral Manufacturing Export.

JEL Classification: F13, F23, F30.

1. Introduction

As most developing countries experience a shortage of capital, this is reflected in their respective savings-investment and import-export gaps, which implies that developing countries have insufficient savings and/or foreign exchange to finance their investment needs. To

---

1. Department of Economics, University of Isfahan, Isfahan, Iran (Corresponding Author: m.rafat@ase.ui.ac.ir).

bridge this gap, they need an inflow of foreign capital and exports and trade growth (Majeed and Ahmed, 2007). On theoretical grounds, predictions concerning the relationship between FDI and trade, crucially depend on whether FDI is horizontal or vertical. Theories of horizontal FDI, which are based on production of homogenous goods in multiple countries, predict a negative relationship between FDI and trade; thus FDI and trade may be considered as substitutes for each other, whereas theories on vertical FDI which are based on a geographically fragmented production process by stages, predict a positive relationship between FDI and trade; so, FDI and trade may be considered as complements to each other (Dauti, 2016).

The purpose of this paper is to empirically investigate the relationship between FDI and bilateral international trade of Iran with selected countries in EU, ASEAN+3, ECO and D_8. There is a dual link between bilateral trade flows and FDI in the theory. On the one hand, it is assumed that investment by multinationals in other countries would substitute for their exports (international trade). On the other hand, trade and FDI are appointed in order to be complements to each other, and in turn boosting and having a positive relationship to each other. Thus, the theoretical arguments do not provide, a priori clear-cut relation between FDI and trade. Both substitution and complementary relationships are possible depending on various factors such as tariffs, type of goods, and type of FDI.

In this paper, the relationship between bilateral trade and foreign direct investment in Iran, and in the framework of the system of simultaneous equations is discussed. So, the study is organized as follows. In section 2 and 3, it will be conducted a literature review of both theoretical and empirical studies. The econometric methodology and the description of the data follow in section 4. The empirical results are shown in section 5. Finally, Section 6 concludes.

2. Theoretical Relationship between Foreign Direct Investment and International Trade

The trade–FDI nexus is examined both by the theories of international trade and by those of multinational companies. These theories, with an independent evolution, have emerged during the last years. For

example, relying on the trade theory, Markusen (2002) and Carr et al. (2001) admit the complementarity, as well as the substitution between FDI and trade. Based on the theory of firms' location, Pontes (2004), and Africano and Magalhaes (2005) show that the complementarity between trade and FDI is normally found when foreign investments are vertical. At the same time, FDI substitutes trade when investments are horizontal.

Historically, based on the theory of multinational firms, the horizontal FDI is considered as an alternative way for firms to internationalise. Therefore, the substitution effect between trade and FDI prevails over complementarity when countries are similar in size, technologies and factor endowments (Markusen, 1997, 1999; Turkcan, 2007). While focusing on vertical FDI linkages, the literature documents in general prove a complementarity effect between them (Clausing, 2000).

Below we provide a brief overview of different theoretical and empirical studies to explain the relations between FDI and trade.

1.2 Substitution Relationship
Substitution relationship between these two variables often is known with Heckscher-Ohlin model. In Heckscher-Ohlin model, trade arises because of differences in the inventory of production factors and capital mobility can be a substitute for commodity trading. Vernon sees foreign investment as a result of the production cycle. According to this theory, even if technical knowledge is the same between countries, the application and use of technical knowledge for production of goods is not the same in all countries (Vernon, 1966). Primary production is first done in the innovative and creative country. After the product is supplied in the domestic market of the innovative country, production of new products is gradually increased and exported to other countries. With the increase of exports in some countries, production is more cost-efficient than export for the producer.

Many of the theories that consider a substitution relationship between trade flows and FDI are not able to explain the business model of the modern world. Many theories have shown that if

unrealistic assumptions of Heckscher-Ohlin theory are put aside, a complementary relationship arises between trade flows and capital flows (Shukurov, 2016).

2.2 Complementary Relationship

The traditional theory of FDI tries to explain why firms produce abroad instead of simply servicing the markets via exports. multinational companies (MNCs) experience additional costs in producing abroad: higher costs in placing personnel abroad, communication costs, language and cultural differences, informational costs on local tax laws and regulations, costs of being outside domestic networks; they also incur higher risks, such as the risks of exchange rate changes or even of expropriation by the host country. One theoretical approach, introduced by Dunning (1977), the "OLI framework", considers FDI as determined by Ownership, Location and Internalization advantages . when these advantages outweigh the above costs, FDI arises. The main problem of this framework is that although it does explain the existence of MNCs, it has had difficulty explaining the recent trends in FDI, namely their surge among similar countries .

The "New Theory of FDI" refers mainly to the ownership and location advantage and introduces MNCs in general equilibrium models, where they arise endogenously. Markusen (1997) have studied the case in which the country A uses the capital factor more efficiently to produce the capital-intensive good X, but the production technology of labor-intensive good Y is the same in the two country. In this case, the maximum production of good Y is equal in both countries, but the country A produces the maximum amount of X because of superior technology in the production of capital-intensive good. In this case, the price of production factors in country A is less than country B because of differences in the final production of good X. In this case, a strong motivation arises to develop trade in the capital. If mobility of production factors is free, country A will have capital entrance and labor outgo (the reverse is true for country B). The mobility of capital causes imbalance of the inventory of production factors between the two countries and based on Hechscher-Ohlin model, more trade is done in goods as a result of

difference in the inventory of production factors. In conclusion, with the assumption of difference in manufacturing technologies of countries, mobility of capital can lead to increased trade in goods and a complementary relationship is created between foreign investment and trade.

3. Literature Review

Martinez, Benoga and Robles (2012) by using a panel of cross-country data on the EU-19 host countries of FDI and outer EU-5 source countries of FDI, found that EU commercial integration and FDI reinforce each other, and thus are complementary. Also, findings of irrelevant cost differentials between countries suggest that in the EU, the FDI pattern follows a horizontal strategy rather than vertical one.

Raju and Gokhale (2012) investigated the relationship between trade, liberalization of foreign exchange rates, and foreign direct investment. The researchers have concluded that the greater commercial freedom in a society could be, the greater investment attraction would be in the community.

Aizenman and Noy (2006) using the annual dataset of countries for the period 1982–1998, found the two-way significant linkages between FDI and manufacturing trade.

Beugelsdijk et al. (2008), argued that horizontal FDI and trade were largely substitutes based on the aggregated data of 44 host countries; thus an increase in trade couples with a decrease in investment.

Dauti (2016) provided an empirical assessment of the complementarity or substituting relationship between Trade and FDI in a link to country characteristics, using bilateral level data between FDI and trade for the period 1994–2010. Results supported both complementary and substituting relationship between trade and FDI.

Albulescu and Goyeau (2016) assessed the CEE countries intra-integration. For each country, they used a panel gravitational model for the bilateral trade and FDI, considering its interactions with the other three countries in the sample. Results suggested that outward FDI sustains the CEE countries commercial integration, while inward FDI has no significant effect.

Falk and Hake (2008) investigated the link between exports and the outward FDI stock, using a panel of industries and seven EU countries. Estimations using system GMM estimators showed that exports caused FDI, but not vice versa. Separate estimations by destination country yielded the same result that exports caused outward FDI; but the effect was only significant for the CEE countries and other developed countries.

Tayyebi, Azerbaijani and Rafat (2007) studied empirically the impact of foreign trade on FDI, using data on inward FDI to Iran within the period 1996–2005. Results showed that there was a complementary relationship between trade and FDI. Moreover trade, GDP, exchange rate and some convergences variable influenced on FDI.

Dodangi (2016) analyzed internal and foreign investment's attraction problems and difficulties, and proposed suitable solutions. The main scientific results showed that oil prices and oil incomes fluctuations, international sanctions, foreign exchange rates fluctuations and high inflation rate had resulted in increasing FDI in Iran.

Pourshahabi, Salimi and Mahmoudiniya (2012) applied panel unit root, panel cointegration and panel causality test to distinguish the position of short-run and long-run causality among foreign direct investment (FDI) and trade in a panel of sixteen advanced European countries. Results showed that an increase in FDI led to increasing the export and import in the short-run, and these led to an increase in total trade in the short-run.

Najjarzadeh and Shegaghi (2005) evaluated the impact of regional integration on boosting bilateral FDI among the member countries of MENA by using the adjusted gravity model. Results indicated that regional integration between countries had increased the level of bilateral FDI among them.

4. Data Description and Model Presentation

There is few studies that conducted panel data estimation on bilateral trade and FDI determinants with emphasis on their interrelationship for developing countries. This study is aimed to find out common

determinants of trade and FDI. The study also investigates the relationship between trade and FDI to determine whether the two are substitutes or complements to each other. For considering integration effect, there used bilateral trade, openness and economic similarity variables between Iran and selected countries in EU, ASEAN, ECO and D8. Iran trade partner was selected that had bilateral trade statistic from 1994 to 2014. Selected countries are:

EU: Austria, Bulgaria, Denmark, Finland France, Germany, Greece, Italy, Netherlands, Poland, Portugal, Sweden, Spain and United Kingdom.

ASEAN+3: Indonesia, Malaysia, Philippines, Singapore, Thailand, China, Korea, Japan

ECO: Azerbaijan, Kazakhstan, Pakistan, Tajikistan, Turkey, Turkmenistan, Uzbekistan

D8: Bangladesh, Egypt, Indonesia, Iran, Malaysia, Nigeria, Pakistan, and Turkey

The main data were derived from the World Development Indicators (WDI) and UNCTAD. UNCOM TRADE was used for bilateral trade data. All data for the period 1994–2014 were measured in current US dollars. Because of the lack of statistical data in Iran bilateral FDI with its partner, there used just net inflow of FDI. Empirical studies such as Bajio and Simon (1994) were utilized for determinants of FDI, and there was employed a gravity equation which had been widely and successfully used to explain bilateral trade flows.

a) FDI Model
De Mello (1997) presented a brief summary of the case studies which specify inflation, exchange rate, domestic investment, and net trade ratio as the important determinants of FDI. Wang and Swain (1995), tested the relative importance of independent variables including market size, cost of capital, labor costs, tariff barriers, exchange rates, import volumes and economic growth in OECD countries as well as political stability, within the framework of a one-equation model.

It appears from the above review that studies on FDI determinants are mostly based on host country characteristics that play an important role in determining FDI inflows. Also, one of the theoretical basic

models of FDI determinants is Bajio and Simon's (1994). In the light of the above discussion, there specified the following equation for determining FDI inflow:

$$FDI_{it} = f\,(GDP_{it}, Exch_{ijt}, IR_{it}, INF_{it}, DI_{it}, EX_{ijt}, ECSI_{ijt}, U_t) \tag{1}$$

Where the subscript i is Iran, j $(=1, …, n)$ stands for trade partner of Iran in selected blokes, t $(= 1,…T)$ is the period of time (year), and U_t is the error components. The variables appearing in the equation are defined as follows:

FDI = Foreign direct investment (net inflow).

GDP = Gross domestic production. Used as a proxy for the market size. High demand, opportunities for economic production diversity and prospects for economies of scale provide a better condition for foreign investors. Large market size is expected to have a positive impact on FDI. The positive impact is also justified in literature in Schneider and Fry (1985), Wheeler and Mody (1992), and Zhang and Markusen (1999).

EXCH = Real exchange rate. An increase in the exchange rate implies a depreciation of the host country currency, and depreciation of the host country currency favors home country purchases of host country assets which leads to an increase in inward FDI in the host country (Froot and Stein, 1991). On the other way, depreciation of the host country currency allows home country investors to hire more labor for a given amount of the home country currency; therefore, real depreciation is associated with an increase in inward FDI in the host country (Gushman, 1985; Culem, 1988).

IR = Real interest rate. When interest rate in one market or country is higher than another, the capital will flow to the market with the higher interest rate. In fact, according to this theory, foreign direct investment has a direct relationship with interest rate in the host country. Yet, the fact of the matter is that multinational enterprises usually carry out FDI through borrowing from the financial market of the host country or through reinvestment of their earnings. Therefore, same as domestic investment, foreign investment would have a negative relationship with interest rate.

Inf = Inflation rate (Consumer Price Index). Constant rise of prices

reduces the value of domestic assets. So, in order to maintain the real value of their assets, citizens and investors prefer to change their optimal composition in favor of foreign assets. On the other hand, an increase in prices leads to a reduction of net profit of investment and assets value, and decreasing the inflow of capital.

DI = Domestic capital accumulation.Domestic investment may be a substitute or a complement for FDI, depending on the types of FDI and investment climate in the host country. When domestic investment increases, marginal productivity of investment decreases, and if the marginal productivity of FDI also decreases, then the relationship will be that of substitutes. This may happen when domestic investment dominates in production sector. On the contrary, if marginal productivity of FDI increases, then relationship will be complementation. This may happen when domestic investment dominates in infrastructure. Furthermore, if domestic and foreign investors compete for joint ventures, then domestic investment and FDI will be substitutes (Majeed and Ahmad, 2006).

EX = Manufacturing export (as proxy of trade: because we consider bilateral trade in our equation to avoid Double calculation, we just consider export data). This variable (EX) is added as endogenous explanatory variable in the equation in order to achieve the main goal of the study.

ECSI = Economic similarity. The best variable to show the economic similarity between countries is per capita income. The variable of economic similarity is the squared differences between per capita income in Iran and selected countries in EU, ASEAN, ECO and D8.

b) Bilateral Trade Model
In the pattern of trade flows, the variables of exchange rates, inflation, gross domestic production, economic similarity and economic openness are significant, and foreign direct investment variable is added into the equation as an explanatory endogenous variable in order to investigate the interaction between foreign direct investment and trade flows. There used gravity model and for the study's main purposes, there added FDI and economic similarity variables to

gravity equation. The equation for trade (bilateral exports) is as follow:

$$EX_{ijt} = f\,(FDI_{it}\,,\,GDP_{it}\,,\,GDP_{jt}\,,\,EXCH_{it},\,D_{ij},\,OPEN_{it},\,ECSI_{it},\,U_t\,) \qquad (2)$$

Where U_t is error components and:

EX = Manufacturing Exports. The dependent variable in the model is LEX_{ijt} denoting the bilateral manufacturing exports from exporting country i to importing country j in the year t.

FDI = Foreign direct investment (net inflow). In empirical literature, the role of FDI in exports promotion is controversial. Some studies found positive effect of FDI on exports and other studies found insignificant or weak impact of FDI on exports (Falk and Hake, 2008; Aizenman and Noy, 2006; Globerman, 2002).

GDP = Gross domestic production . In empirical literature, Kumar (1998) confirmed the positive impact of GDP on exports. According to standard trade theory, we would expect that an increase in the difference in GDP between partner countries will reduce the trade volume between countries, since trade is expected to maximize when countries are of equal size (Helpman and Krugman, 1986). However, according to standard gravity model applied in trade studies, we expect positive impact of the absolute difference of GDP between trading partners on the size of bilateral trade.

EXCH = Real exchange rate. A fall in the relative domestic prices due to exchange rate depreciation makes exports cheaper in international markets, and hence results in increased demand for exports. Therefore, we expect real exchange rate to have a positive impact on export growth.

D = To capture the trade costs, the model will include the distance variable (D). D_{ij} represents the gravity factor. Distance between source and host country is expected to have a negative effect on the size of trade flows due to costly adoptions of goods to local preferences (Johnson, 2006) and high transportation costs (Bevan and Estrin, 2004; Resmini, 2000).

OPEN = Openness. This variable is measured by the sum of exports and imports in goods and services over GDP. The variable of openness is used to capture the liberalization of trade and foreign

exchange transactions. The fewer restrictions an importing country imposes on trade, the higher will be trade flow from an exporting country. Therefore, a positive relationship between trade openness and trade flow is expected.

$ECSI_{ijt}$ = Economic similarity. The squared differences between per capita income variable are included in the model in line with the perceptions of the theoretical foundations of Heckscher-Ohlin theory and Linder's theory on international trade (Frankel et al., 1995).

5. Estimation Result

The analysis will continue with an instrumental variable regression. Two Stages Least Square estimators (2SLS) were used after checking endogeneity test. Wu-Hausman test was performed and it showed endogeneity is present; so, based on Baum et al. (2003), an IV approach is recommended. It was also check for the stationarity of panel data. The common tests employed in the literature as the LLC test (Levin et al., 2002) are based on the assumption of independent cross-section units. Unit root test results in Table 2 by using Levin-Lin-Chu (LLC) method have been reported. The results show that all variables are stable:

Table 1: Results of Unit Root Test

variable	Test Statistic	L.L.C Test p-value
GDPit	-2.33	0.0104
GDPjt	-4.93	0.0000
EXijt	-4.95	0.0000
Exchijt	-3.35	0.0004
INFit	-10.2	0.0000
FDIit	-6.02	0.0000
IRit	-6.31	0.0000
OPENit	-2.47	0.0075
ECSIijt	-3.41	0.0000
DIit	-4.32	0.0002
Dit	-3.32	0.0004

The models (based on equations 1 and 2) are first identified, and after ensuring that ranking and rating conditions are met, and by using Hausman test, the G2SLS method is used for estimation. The results are presented in Tables 2 and 3.

The results presented in tables showed that there was a positive significant relationship between trade flow and foreign direct investment in Iran, which indicates the presence of a complementary relationship between these two important variables in international trading. The obtained coefficients indicated that the effect of trade flow on foreign direct investment is much larger than the effect of foreign direct investment on trade flows in the country. For example, foreign direct investment is increased about 0.25% per 1% in bilateral trade in economic similarity with EU model. This shows that by expanding trade ties between Iran and other countries, investment ties are also improved and Iran's ability to attract foreign investment is increased. The results summarized in Table 2 show that foreign direct investment in Iran promotes exports and has a positive effect on trade flows in this country. Simultaneously, one percent increase in the inflow of foreign direct investment into the country increases trade flow by about 0.11% in economic similarity with EU model. This result has been supported by Iqbal, Shaikh, and Shar (2010).

The impact of inflation on Iran's foreign direct investment is negative in all cases. Permanent increase in prices prompted a reduction in domestic assets in the country, and thus, people prefer to change the optimum combination of their assets in favor of foreign assets. This also applies to foreign investors, because price increase reduces assets' value and net return on investment. Therefore high rates of inflation increase the risk of long-term projects, and adversely affect activities of domestic and foreign investors.

The impact of gross domestic production on attracting foreign direct investment is positive. These coefficients show that by increasing domestic demand for goods and services, more foreign investment has been absorbed in the country. This result is similar to Umoh, Jacob, and Chuku (2012), Javed, Falak, Awan, and Ashfaq (2012), Chakraborty and Mukherjee (2012).

The sign of the exchange rate is negative. Changes in exchange

rates and its multi-rate in Iran during the study period were associated with economic instability and led to the divergence of foreign investment. This conclusion is supported by Azhar, Ullah, and Malik (2015), Raju and Gokhale (2012).

The variable of DI has just a significant positive effect on foreign direct investment attraction in ASEAN+3 similarity case. In this economic case, internal capitals are supplements for foreign capital, and their increase encourages foreign direct investment. This result is similar to Shawa and Amoro (2014).

The variable of Linder that shows the economic similarity of Iran and selected countries has a negative coefficient in all cases, which shows that the similarity of Iran's economy and other member states of the selected blocks leads to an increase in foreign direct investment in Iran. The greatest effect of this variable is related to the similarity of Iran's economy to the ECO and D_8.

Finally, interest rate generally has a negative coefficient on foreign direct investment in Iran. Interest rate can increase cost of investment in Iran, and therefore, foreign investment will reduce.

Table 2: FDI Regression*

	GDP	Exch	IR	INF	DI	EX	ECSI
Linder EU	1.21 (2.6)**	-0.35 (-3.4)	-.02 (-0.42)	-0.11 (-2.9)	0.17 (1.16)	0.25 (2.3)	-0.06 (-2.2)
Linder ASEAN	1.24 (3.2)	-0.17 (-2.3)	0.01 (0.0)	-0.28 (-2.1)	0.4 (2.12)	0.23 (1.87)	-0.04 (-2.8)
Linder ECO	1.19 (3.6)	-0.02 (-2.3)	-0.67 (-2.11)	-0.24 (-1.14)	0.6 (1.71)	0.17 (2.28)	-0.12 (-1.7)
Linder D8	0.99 (4.13)	-0.012 (-3.5)	-0.4 (-1.17)	-0.63 (-0.2)	0.4 (0.25)	0.11 (2.1)	-0.22 (-2.1)

* Logarithm of all variables is used.
** t- Statistics are in parenthesis.

Estimated results of Iran's trade flow presented in table 2 show that gross domestic productions of Iran and its partner have increased the volume of bilateral trade, indicating that higher production level in a country generates surplus output for exports purpose.

Openness of the Iranian economy has a significant positive effect on the country's trade flows. This coefficient is logical and consistent with theoretical expectations. Increasing openness of the economy is associated with a reduction in tariff and non-tariff barriers and assists expanding trade flows in the country.

Table 2: Trade Regression*

	GDPit	GDPjt	Exch	D	OPEN	FDI	ECSI
Linder EU	1.12	0.99	-0. 2	-0.001	0.31	0.11	-0.22
	$(2.2)^{**}$	(4.2)	(-2.4)	(-0.12)	(2.14)	(2.26)	(-3.1)
Linder ASEAN	1.21	1.22	-0.4	0.03	0.08	0.14	-0.22
	(2.2)	(2.45)	(-2.44)	(0.78)	(2.44)	(2.4)	(-1.7)
Linder ECO	1.39	0.78	-0.03	-0.33	0.14	0.016	-0.26
	(2.4)	(3.12)	(-2.71)	(-2.11)	(3.02)	(2.31)	(-1.7)
Linder D8	1.09	0.26	-0.01	-0.4	0.33	0.014	-0.4
	(2.31)	(2.99)	(-2.55)	(-1.17)	(1.28)	(1.98)	(-2.4)

* Logarithm of all variables is used.

** t-Statistic are in parenthesis.

Exchange rates have a significant negative effect on trade flows in all cases. Obtained negative coefficient for the exchange rate in these cases shows that by increasing exchange rate (devaluations), exporters' income is increased which encourages exports. But increased exports could not compensate decline in imports that has occurred as a result of reduction in importers' gains due to increased exchange rate.

The variable ECSI has a negative effect on bilateral trade in all cases which indicates that economic similarity can increase trade between Iran and its partner.

6. Conclusion and Policy Implications

Empirical results show that gross domestic product has a significant positive effect on bilateral export (trade integration) and FDI in all cases. GDP is increased by government support to investors, providing necessary infrastructure, bank lending to the manufacturing sector and improving the business environment. This leads to prosperity, and increases willingness to invest in Iran.

GDP of Iranian partners in EU and ASEAN+3, compared to the two other blocks, have the greatest positive impact on bilateral trade with Iran. Increase in bilateral trade with these countries, because of having larger markets, should be conducted by policy makers, especially after JCPOA (Joint Comprehensive Plan of Action) which brought developing in communications.

This study recognized the role of domestic investment (domestic capital formation in data was used as proxy of domestic investment) as promoting FDI into Iran just in Iran and ASEAN+ 3 case. This implies that domestic investment in Iran is not catalyst for foreign investors to put capital into Iran. According to UNCTAD (2013), the contribution from FDI tends to be greater in countries where the domestic sector is dynamic and well-developed. As a result, policies towards FDI should be designed not only to raise growth, create jobs, and build productive capacity, but also to foster a dynamic and vibrant domestic private sector. Policy makers should rethink the investment policy approach to strengthen the linkages between domestic investment and foreign direct investment. The more balanced and strategic perspective on how FDI can fit into the development context of Iran should be adopted to stimulate domestic investment, promoting productivity of local enterprises, and thereby improving export performance of Iran. Furthermore, domestic enterprises create signals to attract foreign direct investment in Iran, which will make policy makers to promote the development of dynamic enterprises that can fulfill the requirements of highly competitive domestic and international markets. Such a good image about the state of the economy will be the most crucial determinants to gain foreign direct investment flows into Iran.

Inflation rate has a significant negative effect on FDI flow from EU and ASEAN+3. So, it is recommended to control stabilization and inflation which leads to increase investor confidence and their willingness to invest in Iran is.

Economic similarities between Iran, D_8 and ECO members have more effect on improving foreign investment and bilateral trade flows in Iran, and proves Linder's theory. Linder hypothesized that nations with similar demands would develop similar industries. These nations

would then trade with each other similar, but differentiated goods.

Export has a significant positive effect on FDI; therefore, it led to increase in trade openness that associated with more FDI. Thus, Heckscher-Ohlin trade model rejected the proposition which in goods and factor movements are substitutes for one another, and exports is complementary to FDI. Bilateral exports to EU and ASEAN+3 are more than two other blocks. This showed that FDI with EU and ASEAN+3 promote export ability of Iran through spillover effects. Also, FDI leads to improvement in export through consolidating and expanding the markets. Therefore, Iran's policy makers should drive FDI into export oriented sectors. Also, the results showed that higher level of export were associated with more FDI. Whereas exporting activity of host countries shows the international competitiveness of local firm. This shows that higher levels of export in Iran send a signal to the foreign investor that there is a potential market in this country.

Exchange rate has negative effect on both FDI and bilateral trade in all cases; but in EU and ASEAN cases, this effect is higher than D_8 and ECO. Since Iran has adopted the managed floating exchange rate regimes to support the export-oriented economy, findings indicated that central bank of Iran should make efforts to stabilize the real appreciation of Rial against USD by encouraging massive inflows of FDI into Iran.The optimal mix of exchange rate flexibility and stability should be maintained in such modern context of profound integration.

Finally, since the inward FDI has very little influence on trade of Iran with ECO and D8 countries (0.016 and 0.14), the efforts of the authorities to attract FDI in order to support an increased commercial integration will be in vain.

References

Africano, A. P., & Magalhaes, M. (2005). FDI and Trade in Portugal: A Gravity Analysis. *FEP Working Papers*, *174*, Retrieved from https://ideas.repec.org/p/por/fepwps/174.html.

Aizenman, J., & Noy, I. (2006). FDI and Trade Two-Way Linkages? *The Quarterly Review of Economics and Finance, 46*(3), 317-337.

Albulescu, C. T., & Goyeau, D. (2016). The Interaction between Trade and FDI: CEE Countries Experience. Retrieved from https://hal.archives-ouvertes.

Azhar, A., Ullah, N., & Malik, Q. A. (2015). Effect of Exchange Rate Volatility on Foreign Direct Investment in Saarc Countries, Middle-East. *Journal of Scientific Research, 23*(2), 350-356.

Bajio, R., & Simon, S. (1994). An Econometric Analysis of Foreign Direct Investment 1964-89. *Southen & Economic Journal, 1*(2), 1-33.

Baum, C. F., Schaffer, M. E., & Stillman, S. (2003). Instrumental Variables and GMM: Estimation and Testing. *The Stata Journal, 3*(1), 1-31.

Beugelsdijk, S., Smeets, R., & Zwinkels, R. (2008). The Impact of Horizontal and Vertical FDI on Host's Country Economic Growth. *International Business Review, 17*, 452-472.

Bevan, A. A., & Estrin, S. (2004). The Determinants Foreign Direct Investment into European Transition Economies. *Journal of Comparative Economics, 32*(4), 775-787.

Carr, D. L., Markusen, J. R., & Maskus, K. (2001). Estimating the Knowledge-Capital Model of the Multinational Enterprise. *American Economic Review, 91*(3), 693-708.

Chakraborty, D., & Mukherjee, J. (2012). Is There Any Relationship between FDI and Economic Growth in India. *Review of Market Integration, 4*(3), 309-337.

Clausing, K. A. (2000). Does Multinational Activity Displace Trade? *Economic Inquiry, 38*(2), 190-205.

Culem, C. (1988). The Locational Determinants of Direct Investment among Industrial Countries. *European Economic Review, 32*, 885-904.

Dauti, B. (2016). Trade and Foreign Direct Investment: Evidence from South East European Countries and New European Union Member States. *Zbornik Radova Ekonomskog Fakulteta Rijeci: Asopis Za Ekonomsku Teoriju i Praksu, 34*(1), 63-89.

De Mello, L. R. (1997). FDI in Developing Countries and Growth: A Selective Survey. *The Journal of Development Studies, 34*(1), 1-34.

Dodangi, M. (2016). Factors Affecting Domestic and Foreign Investments in Iran. *Quarterly Journal Of Economic Growth And Development Research, 6*(23), 131-147.

Dunning, J. (1977). *Trade, Location of Economic Activity and MNE: A Search for an Eclectic Approach*. London: The International Allocation of Economic Activity.

Falk, M., & Hake, M. (2008). A Panel Data Analysis on FDI and Exports. *Forschungsschwerpunkt Internationale Wirtschaft (FIW) Research Report, 12,* 1-27.

Frankel, J., Stein, E., & Wei, Sh. J. (1995). Trading Blocs and the Americas: The Natural, the Unnatural, and the Super-Natural. *Journal of Development Economics, 47*(1), 61-95

Froot, K. A., & Stein, J. L. (1991). Exchange Rates and Foreign Direct Investment: An Imperfect Capital Market Approach. *Quarterly Journal of Economics, 106*(4), 1191-1217.

Globerman, S. (2002). Trade, FDI and Regional Economic Integration: Cases of North America and Europe. *Presented at the Conference Enhancing Investment Cooperation in Northeast Asia*, Retrieved from http://www.cbe.wwu.edu/cib/globerman.pdf.

Gushman, D. (1985). Real Exchange Rate Risk, Expectations, and the Level of Direct Investment. *Review of Economics and Statistics, 67*(2), 297-308.

Helpman, E., & Krugman, P. (1986). *Market Structure and Foreign Trade*. Cambridge: MIT Press.

Iqbal, M. S., Shaikh, F. M., & Shar, A. H. (2010). Causality Relationship between Foreign Direct Investment, Trade and Economic Growth in Pakistan. *Asian Social Science, 6*(9), 82-83.

Javed, K., Falak, S., Awan, R., & Ashfaq, M. (2012). FDI, Trade and Economic Growth: A Comparison of Selected Asian Countries. *International Journal of Humanities Science, 2*(5), 210-220.

Johnson, A. (2006). FDI Inflows to the Transition Economies of Eastern Europe: Magnitude and Determinants. *CESIS Electronic Working Paper Series, 59*, Retrieved from https://static.sys.kth.se/itm/wp/cesis/cesiswp59.pdf.

Kumar, N. (1998). Multinational Enterprises, Regional Economic Integration, and Export Platform Production in the Host Countries. *Weltwirtschaftliches Archive, 134*, 450-483.

Levin, A., Lin, C. F., & Chu, C. S. J. (2002). Unit Root Test in Panel Data: Asymptotic and Finite Sample Properties. *Journal of Econometrics, 108*(1), 1-24.

Majeed, M. T., & Ahmad, E. (2006). Determinants of Exports in Developing Countries. *The Pakistan Development Review, 45*(4), 1265-1274.

Markusen, J. R. (2002). *Multinational Firms and the Theory of International Trade*. Colorado, Boulder: MIT Press.

MartInez1, V., Bengoa, M., & Robles, M. (2012). Foreign Direct Investment and Trade: Complements or Substitutes? *Technology and Investment, 3*, 105-112.

Najarzadeh, R., & Shagaghi, S. V. (2005). Regional Integration and Its Impact on FDI. *Tahghighat- E- Eghtesadi, 72*, 362-337.

Pontes, J. P. (2004). A Theory of the Relationship between Foreign Direct Investment and Trade. *Economics Bulletin, 6*, 1-8.

Pourshahabi, F., Salimi, E., & Mahmoudinia, D. (2013). Panel Causality Relationship among FDI and Trade. *Iranian Economic Review, 17*(1), 22-36.

Raju, R., & Gokhale, M. S. (2012). Empirical Analysis of Relationship between Nominal Exchange Rate and Foreign Direct Investment in India. *Global Journal of Management and Business Research, 12*(22), 60-66.

Resmini, L. (2000). The Determinants of Foreign Direct Investment in the CEECs: New Evidence from Sectoral Patterns. *The Economics of Transition, 8*(3), 665-689.

Schneider, F., & Frey, B. S. (1985). Economical Political Determinants of FDI. *World Development, 13*(2), 161-175.

Shawa, M. J., & Amoro, G. (2014). The Causal Link between Foreign Direct Investment, GDP Growth, Domestic Investment and Export for Kenya. *Journal of Economics and Sustainable Development,5*(16),107-115.

Shukurov, M. (2016). Determinants of FDI in Transition Economies: The Case of CIS Countries. *Journal of International and Global Economic Studies, 9*(1*)*, 75-94.

Tayyebi, K., Azarbayegani, K., & Rafat, B. (2007). Instrumental Variable and Two-Stage Least Squares for Panel-Data in Interaction between Trade and FDI. *Pajoheshhay-E-Eghtesadi, 8*(4), 77-94.

Turkan, K. (2006). Foreign Outward Direct Investment and Intermediate Goods Exports: Evidence from USA. Retrieved from http://www.etsg.org/ETSG2006/papers/Turkcan.pdf.

Umoh, O. J., Jacob, A. O., & Chuku, C. A. (2012). Foreign Direct Investment and Economic Growth in Nigeria. *Current Research Journal of Economic Theory, 4*(3), 53-66.

Vernon R. (1966). International Investment and International Trade in the Product Cycle. *The Quarterly Journal of Economics, 80*(2), 190-207.

Wang, Z. Q., & Swain, N. J. (1995). The Determinants of Foreign Direct Investment in Transforming Economies. *Weltwirtschaftliches Archive, 131*, 359-382.

Wheeler, D., & Mody, A. (1992). International Investment Location Decisions: The Case of US Firms. *Journal of International Economics, 33*, 57-76.

Zhang, K. H., & Maskusen, J. R. (1999). Vertical Multinationals and Host Country Characteristics. *Journal of Development Economics, 59*, 233-252.