Title: Influence of foreign direct investment over exports from alternate levels of gross national income

Track: Regional economic development

Abstract

Developing industries in any country requires capital. International trade and economic development theory, proposes a relationship between foreign direct investment and exports, which suggests an increase in economic growth. Using quantitative methods, the research considers data from 196 countries divided into several levels of gross national income. Results reveal that there is enough statistical evidence to support a positive relationship between the previously mentioned variables in middle income countries. However, nations in other categories do not have a strong correlation between the two variables. Therefore, inflows of FDI may be the capital needed for a successful industrialization for developing countries.

Keywords: *economic development, exports, foreign direct investment.*

1. Introduction

Foreign Direct Investment (FDI) has proven to be the main driver for governments in developing countries to start and successfully finish a process of industrialization. These governments use FDI alongside strong and stable economic growth models as import substitution and export promotion. In order for these to succeed, governments must found a source of income that will benefit productivity and financially stabilizes the country. Several authors have discussed about how FDI is the most efficient source of income for this purpose and what determinants influence in the attraction of FDI for developing countries in need of industrialization (Oman, 2000; Artige & Nicolini, 2009; Krugman & Obstfeld, 1979).

Due to incentives to attract FDI and the promotion of economic growth models (import and export oriented), some developing countries during the decades of 1960 and 1980 were able to implement policies of economic liberalization and cease the industrialization trend, as in the case of: Malaysia, Singapore, Taiwan and Thailand.

These countries had in common a lack of natural resources, high levels of poverty and an agriculture based economy. They managed to build an education system that allowed students and professionals to receive proper training, which encouraged the country into using their competitive advantages and invest in technology. Such capital was received by the increased inflows of foreign direct investment and the benefits of transitioning from protectionism to free trade. This integration in international market reflected the success of industrialization in these countries' economic development.

Malaysia and Thailand started with a stage of import substitution, then shifted to a model of export-oriented industrialization. However, even during its import substitution industrialization in the 1960s and early 1970s Malaysia had neither regulation on which goods and services should be marketed nor if they should have overvalued its currency; as it was the case in other developing countries that apply import substitution policies. Although, there was a wide range in tariff rates, overall average tariff rate of Malaysia's manufactured products was relatively low. Meanwhile, non-tariff barriers were practically non-existent in this country.

Malaysia's success in the manufacturing sector is rooted in adding value through competitive advantage. For example, large rubber plantations were essential for the economy since colonial times and so; large areas of arable land were cleared. An average growth of 8% between the decades of 1980 and 1990, transformed Malaysia into a newly industrialized country (NIC). It even became the main exporter of tin, rubber and palm oil. Malaysia's achievements in the export-oriented industrialization have been important for developing countries. Much of this economic development emanates from the foreign direct investment. Perhaps the most impressive contribution of FDI-led industrialization has been how the expansion of the domestic industry in developing countries tends to favor labor-intensive activities (Mendoza, 2011). The initial stage of the increased inflows of FDI in Malaysia reveals that foreign firms create strong relations and spillovers. This indicates

that the structure of the political environment and the capitalist prone economy stimulates and attracts foreign companies, as they play an important role in the process of export-led industrialization in developing countries.

Like Malaysia, Thailand applied an import substitution policy relatively low, with no discrimination on many goods and services. Thailand made greater use of non-tariff barriers. Once the phase of *easy import* substitution finished in the 1970s, it became clear that sustained industrial growth requires a necessary shift from import substitution to export promotion, which was reflected in the *third five-year development plan* of Thailand (1972-1976).

The shift to export promotion growth was also influenced by an effective cooperation between the government and the private sector, as reflected in the creation of the Joint Public-Private Consultative Committee (JPPCC) in 1982. One important task of this JPPCC was to provide the government with information on the various problems both local and foreign companies manufacturing Thai export-oriented goods. These challenges include long delays in obtaining tax refunds (i.e., the duty drawback) and cumbersome customs procedures for export authorization.

One of the problems faced by developing countries such as Malaysia and Thailand is to attract more FDI, to restore macroeconomic stability and stimulate their economies. However, once it has achieved economic recovery, developing countries are again facing the same challenge of how to achieve rapid and sustained economic growth needed to generate new opportunities for productive and meaningful employment for its growing workforce. This led countries to specialize in several industries and break their dependence from imports. Meanwhile, Latin American developing countries aim to industrialize experience systematic differences with other developing countries. Such as the complexity of the legal structure, the expropriation of companies and other measures, become key factors preventing foreign shareholders to invest in such developing countries and as such let these countries to develop their industries enough to become export promoting economies. This leads to the inquiry of the following research: Is there a relationship between FDI and the exports of a country?

2. Literature review

The importance of international trade for the welfare and economic development of a nation has been extensively documented in literature since the pioneering research of Adam Smith (1776). The foundation of this relationship suggests that economies need to export goods and services to generate revenue to finance imported goods and services that cannot be manufactured in the country (Becker, Chen, & Greenberg, 2013).

One of the most important economic indicators of a nation is the gross domestic product (GDP), as this measure is an estimate of the value of goods and services produced by an economy in a given period (Tayeb, 1992). Several economic theorists (Håkanson & Dow, 2012; Maier & Koumparoulis, 2012) have explored the idea that international trade can

influence the GDP. They concluded that an economic growth model must be based on export promotion. That is, as exports increase, *ceteris paribus*, a nation's GDP will rise to the point of creating an incentive to improve economic welfare and social prosperity. The way in which this relationship can be interpreted suggests that export performance has a stimulating effect on the entire economy of a country in the form of positive externalities such as high technology (Marin, 1992). Trade liberalization also demands greater efficiency and supports the activities of product and process innovation, while increases in specialization encourage the exploitation of profitable of economies of scale (Lin, 2011). Therefore, a model of economic growth driven by exports predicts increases in productivity throughout the economy.

Economic growth as such creates a variety of demands that cannot be easily met by domestic production only. Therefore, beyond a certain level, the higher the domestic demand, the more rapid imports will increase (Abdelmalek, 1969). However, the excess of imports over exports requires that the trade deficit might be financed by foreign government loans (Ghani, 2011).

Industrialization

Over the last century, Latin American countries have fought for progress from two sides: the conservative approach with capitalist tendencies and the liberal side that attempts to satisfy the basic needs of the people. The outcome of this political struggle resulted in several developing countries (Brazil, Mexico, Argentina, Ecuador and others) trying different economic models throughout the years. These included being export oriented, import substitution industrialization and a neoliberal model of economic development. The export oriented economic model gave emphasis to countries' production and export of primary goods. At first, this was labeled as the introduction of a "modern" sector for developing countries but was later demonstrated to being a sector more of subsistence due to their sole dependence on primary goods.

As countries began to search for a model that enabled them to break dependency from exporting primary goods only, the *import substitution industrialization* (ISI) model arose. This allowed industry to emphasize a process of capital accumulation, as it was needed as an internal driver for the developing countries' economies. The shift to this model was accompanied by the rise of progressive governments as Cardenas from Mexico, Peron from Argentina and Vargas from Brazil. Under these regimes, the model of import substitution went through two phases: the easy ISI which ended in the decade of 1950 and the difficult ISI which ended in 1982 due to external debt crisis. Easy ISI consisted in developing the industries of textile, food, clothing and other related sectors. As these industries were being developed, a decrease in imports reflected the success of the model. The government had a significant role for this success as they were able to protect the local industry with tariffs, finance their development with loans and fiscal incentives. The second stage of ISI broadens the industries that needed specialization with the financial resources obtained from inflows of foreign direct investment

(Guillen, 2008). While easy ISI focused on primary goods, the second stage of ISI specialized in intermediate goods.

During the decade of 1970, the success of import substitution was being questioned as problems were surfacing due to the high state intervention and the lack participation in international markets. Therefore, countries shifted toward a neoliberal model that favored the accumulation of capital by focusing on exports rather than regulating imports to let industries grow.

However, since the introduction of this neoliberal model in the 1980s, its benefits are outweighed by its drawbacks. Some Latin American countries were able to economically grow as Argentina, Brazil and Mexico, but others have a long way to go. For instance, Ecuador shares some past similarities with developing countries like Malaysia. This Latin American country is implementing an ambitious plan to transform Ecuador from agriculture based to an industrialized prone economy. Malaysia and eventually Thailand achieved this position about fifty years ago. Currently, Ecuador seeks to replicate the before mentioned model. However, some differences have arisen as the private sector is reluctant to assimilate the abrupt changes from the public sector over import substitution. Although, the country is open to FDI, the overall investment climate is uncertain.

According to World Bank data from 2013, Ecuador have a FDI as of 2013 of $725,051,206.00 (table A1) while neighboring countries as Peru and Colombia have thirteen to twenty-two times (respectively) FDI during the same year. This is due to economic policies being constantly changed and framed by a large bureaucracy with a complex legal system, which increases the risk and cost of doing business in Ecuador (Ocampo & Vallejo, 2012). The judicial system, in which the system relies, ought to offer the same conditions as other NICs to bring the country into a more industrialized state. To successfully achieve economic growth and development through industrialization, capital is needed. Developing countries as Ecuador use tax incentives to attract domestic and foreign investment for specific sectors that governments deem appropriate for potential growth that leads to industrialization. Some incentives, which may take the form of tax exemptions, tax deductions and tax holidays for five years, are difficult to apply due to red tape and some are just simply unknown to the average foreign investor.

International trade theory

Economists analyze international trade problems through three questions. The first is based on the explanations of trade flows between at least two nations. The second relates to the nature and extent of the gains or losses to the economy. Finally, the third question concerns the effects of trade policies on an economy. Most theories of international trade are devoted to the first question involving classical trade theory, factor proportions theory and the theory of product life cycle. *The classical trade theory* dictates the degree to which a country's exports and imports are related to its pattern of trade with

other nations (Ricardo, 1821; Smith, 1776). Therefore, the classical theory of trade actually describes a scenario where a country produces goods and services in which it has an advantage for the endogenous consumption and subsequently the surplus is exported. *Ergo,* countries import those goods and services, which have an economic disadvantage. The previous arise from differences in factors such as resource endowments, labor, capital, technology or entrepreneurship. However, the classical trade theory offers no explanation of what causes the differences in comparative advantages.

In contrast to classical trade theory, *the theory of factors' proportion* explains that countries tend to export goods and services that take advantage of an abundance of factors of production. Countries will import goods and services that demand large amounts of factors of production which may be relatively scarce (Jones, 1956). Therefore, this theory concept extends economic advantage into considering the provision costs and production factors. Both theories have proven inadequate in explaining the recent patterns of international trade. During the last fifty years, *the theory of product life cycle of international trade* turned out to be a useful tool to explain and predict the patterns of international trade framework (Vernon, 1966; Wells, 1968, 1969). The essence of this theory is that international technological innovation and market expansion are critical issues to explain the patterns of international trade. That is, technology is a key factor in the creation and development of new products, while the market size and structure are influential in determining the extent and nature of international trade.

Some theorists have attempted to address the limitations of the theories of international trade under the rubric of FDI. For example, the theory of international production (Dunning, 1980) suggests that the propensity of a firm to start production abroad depends on the specific attractions of the country of origin compared with implications and advantages of the resource location elsewhere. Company profile play a role in determining investment activities abroad, but the actions of foreign governments can significantly influence the attractiveness and conditions for partial entry companies (Rugman *et al.*, 2011). However, the theory of internationalization (Buckley & Casson, 1981) focuses on the idea that companies aspire to develop their own domestic markets where transactions can be done at a lower cost within the company. Therefore, internationalization involves a form of vertical integration bringing new operations and activities.

Economic development, foreign direct investment and export performance

The literature about foreign direct investment determinants and export performance is often related. The theory suggests that international companies face the decision to export or to invest in foreign markets (Anwar & Nguyen, 2011). Furthermore, the research of Krugman (1979), Wakelin (1998), Bernard and Jensen, (2004) and Merlitz (2003) determines that exports, technology, capital intensity and human capital are fundamental requirements to be competitive in international markets. These are factors that enable assuming sunk costs associated with the decision to export. Moreover, the availability

of information about companies has deepened on issues related to the heterogeneity of enterprises and the strategies used for positioning in international markets. Moreover, Damoense-Azevedo (2013) established that the contribution of the economic development and performance of a nation is positively influenced by the production, foreign direct investment, human capital, price stability and liberalization of trade. To this end Staal (2011) suggests that in emerging countries, the thrust of the pro-market reforms will steer local companies to upgrade their skills to compete leading to the growth of multinational companies.

Head and Ries (2004) found statistical evidence that supported the argument that FDI partially complements and stimulates exports, especially those of intermediate goods. Mendoza (2012) expounds on foreign direct investment highlighting that it was essential to industrialize the manufacturing sector, which was supported by Arisoy (2012) as the empirical results in his study indicates that FDI contributes positively to total factor productivity and growth through capital accumulation and technological externalities. The latter is ratified by, Romero (2012) who showed in his study that FDI should be considered only as complementary but not central to the growth process. In the absence of process innovation, the only alternative to growth is the accumulation of factors.

Also, Shu-Chen (2006) argued that economic growth and export positively impact FDI inflow. The author also analyzed the possibility of a relationship between FDI inflow and unemployment but evidence reflected that there was no relationship. Makki and Somwaru (2004) broaden the relationship of FDI and exports to FDI and trade. They established a positive relationship among the two variables as FDI drives the transfer of technology to developing countries. However, macroeconomic policies and institutional stability must be present for economic growth driven by FDI. These policies included lowering the tax burden, regulation of government consumption and inflation rate control. Furthermore, Görg and Greenaway (2004) discuss how domestic firms really benefit from FDI inflows. They establish FDI as the main driver for economic growth and development but argue that the economic system cannot be altered by just one variable. Trade policy climate as well as market conditions and communication systems, should be taken into consideration for domestic firms to benefit from FDI inflows.

Javorcik (2008) labels the positive externalities of FDI as a market failure rather than a benefit. Since governments usually target their FDI inflows to specific sectors while the rest of the industry has a disadvantage, as it is not able to properly develop. However, Negara and Adam (2012) relate FDI with local firms' productivity and establish a positive intra-industry relationship. Nevertheless, Irsova and Havranek (2012) investigated the relationship between FDI flows on productivity; their fluctuating results show an inconclusive relationship.

Finally, Mendoza (2012) identifies three channels through which foreign firms export decisions affect or improve the export performance of domestic enterprises. First there is the *demonstration effect*, which explains how the entry of foreign investment provides information on local businesses about foreign markets. This information includes international performance, distribution and preferences of international demand. *Imitation effect* encourages national companies to change their products to be more like those of multinational companies and thereby improve their chances of exporting such products. Finally, the *competition effect* states that a higher competitive level contributes to increased productivity in domestic firms and thus is better prepared for the global market. This model of three channels describes foreign companies' decisions to improve export performance of domestic enterprises. Besides, it serves as a basis for demonstrating the need for inflows of foreign direct investment for the developing economies. To prove this premise, the research has tested several linear regressions, to ascertain the existing hypothesis of the relationship between foreign direct investment and exports.

3. Methodology

To evaluate the role of foreign capital in the export performance of domestic enterprises in developing and developed countries, the study will use a quantitative research method with a transversal approach. This regression, with a significance level of five percent, obtains its data for its independent (Foreign Direct Investment) and dependent (Exports) variables from the World Bank. This institution lists 215 countries and lending groups. The information relevant for this study will be represented in current US dollars from 196 countries for the year 2013, exposed in Table A1 from the Appendix. However, these nations (54 from Africa, 37 from America, 50 from Asia, 41 from Europe and 14 from Oceania) were analyzed for this study to ensure consistency in the data. Not every country or lending group had the relevant data needed for this econometric model.

Using a classification given by the World Bank and updated during July 2015, countries will be divided by its different levels of income. Countries will be classified according to its corresponding Gross National Income per capita of the year 2013, calculated with the World Bank Atlas Method. The categories will be 1) Low income, $1,045 or less; 2) Lower middle income, $1,046–4,125; 3) Upper middle income, $4,126–12,735; and 4) High income, $12,736 or more. Besides, high income will be divided into members and non-members from the Organization for Economic Co-operation and Development (OECD) to reflect a more accurate classification for high income. OECD members propose policies to foster closer and tighter economic, social, political and environmental protocols for the prosperity of countries.

4. Results

Classification	Africa	America	Asia	Europe	Oceania	Total
All	54	37	50	41	14	196
Low	26	1	4	0	0	31
Lower Middle	17	6	19	3	6	51
Upper Middle	9	17	12	8	4	50
High nonOECD	2	10	12	6	2	32
High OECD	0	3	3	24	2	32

Table #1: Observations divided by region and level of income

Table 1 represents the distribution of countries from different continents into different income classifications. This reveals that almost half of the African countries are classified under Low Income while almost another third belongs to Lower Middle Income. The next continent with a relative large number of countries is Asia. Their majority of countries concentrate between middle and high income (nonOECD). While most countries from North, South and Central America concentrate in Upper Middle Income, European countries concentrate in High Income (OECD). Finally, Oceania's majority is dispersed between lower and upper middle income.

Classification	R	R^2	Probability (B_0)	Probability (B_1)	B_0 (Intercept)	B_1 (FDI)
All	0.663	0.439	0.000	0.000	$76,476.77	3.976
Low	-0.039	0.001	0.268	0.836	$22,604.35	-3.136
Lower Middle	0.953	0.909	0.636	0.000	-$1,621.04	13.628
Upper Middle	0.984	0.967	0.040	0.000	$19,008.01	6.620
High nonOECD	0.874	0.763	0.020	0.000	$44,268.47	8.110
High OECD	0.476	0.226	0.000	0.006	$325,439.52	2.243

Table #2: Statistics results from linear regression models

Regarding Table 2, every observation from 196 nations reveal favorable results. With a positive Pearson correlation R of 0.66 and a R^2 of 0.439, the linear regression model may not be the best but it is satisfactory. However, every classification has a different concentration of countries from different continents.

First, the study reveals that the R for low income being negative which is against as expected. However, its low value as well as a R^2 of 0.001 proofs that the FDI from low income countries does not explain their exports. This is supported by both of the hypothesis tests which resulted in rejecting the null hypotheses as p values are greater than the average alpha of 0.025. Even if the level of significance changes from 5% to 10%, the B_1 p value will still fail.

The following classification studied is middle income, which is divided into lower and upper. Both of these regression models are the most promising. Middle income (lower and upper) indicators show better results than the model with the 196 countries. Both lower and upper middle income has R^2 higher than 0.90, which reflects a very strong positive relation between foreign direct investment inflows and exports. However, both classifications start to differ in its hypotheses tests as their p values are greater than the average alpha of 0.025. This means that B_0 is not statistically different from zero and therefore does not exist. B_1 which might be more important does statistically exist. If the model uses a significance level of 10% rather than 5%, both betas will exist statistically speaking but only for the upper middle income classification.

Finally, the high income classifications, divided into two separate groups, according to their Organization for Economic Cooperation and Development affiliation. High Income nonOECD refers to high income nations but who work independently and do not have as much as international cooperation (especially regarding economics and politics) as actual members. This group has better indicators than the average of all observations and those who are registered members. R and R^2 of high income nonOECD are strongly positive which backs up this research theory. Their hypotheses tests reject the null hypotheses and therefore there is enough statistical evidence to establish that both betas exist even with a significance level of 5%. All the hypotheses tests rejected the null hypotheses and therefore betas exist for high income OECD members. Its indicators for R and R^2 are weak per se and worse than the results of all observations. The graphical outcomes of the linear model regression made with SPSS are displayed in figure B1 to figure B6 in the appendix.

5. Discussion of results and limitations

The results varied between the different classifications but most of them supported the theory of this research that stated the existence of a positive relationship between foreign direct investment and exports. Arisoy (2012), Head and Ries (2004), Mendoza (2012) and Romero (2012) support this positive relation. The basis for this relation is to encourage countries to attract as much of foreign direct investment to have enough capital to industrialize their countries through export promotion strategies. Statistical evidence supports this but a higher degree of analysis is required on the exogenous variable. For example, those linear regression models with the worst indicators were also the extremes; these are the low income group and high income with OECD members.

The poor indicators from the low income group might be explained by a weak legal framework, especially in African countries. Even if they might be rich in minerals, capital being invested may be leaked due to corruption and it will not be properly invested for the development of their industries. Countries with the lowest level of income need more than just capital from foreign direct investment to develop; they need structural changes that promote stability (both economic and legal). This is supported by Staal (2011) who argues about the need of pro-market reforms for emerging countries to

develop and by Damoense-Azevedo (2013) who established a positive relation between economic development, FDI, production, human capital, price stability and liberalization of trade.

However, the high income OECD members had a positive R^2 of 0.226, but the metric is still low compared to other groups and cannot be considered a moderate or strong relation. Interestingly, the scatter plots from the appendix reveal that some of these countries will have high exports with low FDI while others have high FDI with low exports. As developed countries, they don't need a proven relationship between foreign direct investment and exports to develop. Thus, variables as exports and FDI will continue to grow regardless the behavior of each other. This is ratified by, Romero (2012) who showed, in his study from developed countries, that FDI should be considered only as complementary but not central to the growth process. This is ratified by Head and Ries (2004) who found statistical evidence that supported their argument: FDI partially complements and stimulates exports of developed countries as these from the high income OECD classification. In the absence of process innovation, the only alternative to growth is the accumulation of factors. Besides, these developed countries are members of an organization that demands international cooperation for the promotion of certain policies. With such strong legal framework, there is no room for flexibility. Makki and Somwaru (2004) stated that macroeconomic policies and institutional stability must be present for economic growth driven by FDI. These policies included lowering the tax burden, regulation of government consumption and control of inflation rate.

The other high income group contains developed countries, non-members from the OECD. Their significantly improved results might suggest that characteristics like independence to decide their own policies regarding which industries to specialize or invest, framed by an established political and economic *status quo* provide a legal framework encouraging FDI. Additionally, they have more chances of developing and thus a proven relationship between FDI and exports. This will encourage them to become as economically developed as the members of OECD. The latter epitomizes the literature of Mendoza (2012) who demonstrates that FDI was essential to industrialize the manufacturing sector. Arisoy (2012) concurs as he indicates that FDI contributes positively to total factor productivity and growth through capital accumulation and technological externalities.

Finally, the most relevant group of this study is the middle income. With the finest overall indicators, these countries have the ability of using FDI as their main driver for development as it has a positive relation with exports. The previous is related to the findings of Görg and Greenaway (2004) that discuss how FDI is a primordial element for economic growth and development, but remains at the mercy of an aggregated economic system. Trade policy climate as well as market conditions and communication systems, should be taken into consideration for domestic firms to benefit from FDI inflows. However, as stated by Makki and Somwaru (2004), if these countries had high levels of capital from

foreign direct investment inflows, they could be able to specialize in certain industries and become export promoting economies by using FDI to transfer technology to developing economies.

The middle income group is divided into: low and upper middle income. While both have strong indicators, upper middle income is considered the best to represent the effects of a positive relation between foreign direct investment and exports. “T” test at 10% of significance level, on both country groups, have enough statistical evidence to claim the existence of their betas. Furthermore, R and R^2 are the highest of all the groups. Finally, this segment has the most diverse group of countries regarding different continents. This diverse group includes already industrialized countries like Malaysia, China, Colombia and others. These countries have taken advantage of the before mentioned relationship, thus achieving economic development. Table A2 (from the appendix) reveals the GDP composition of these countries with upper middle income during 2013. The research from Kushnir (2014) reveals that 35 out of 50 countries from this group have a common denominator on their segment composition of GDP. These countries have their majority of GDP invested in the service sector. Interestingly, 44.20% of world GDP is represented by this sector as well. The remaining countries from upper middle income have concentrated their resources in the industrial sector.

6. Conclusions

The research is based on the premise that a positive strong relationship between foreign direct investment inflows and export performance will encourage countries to economically develop through this means. While the outcome varies between income classifications, from an econometrical perspective only two regressions: low income and high income OECD members do not have statistical significance to proof a strong correlation between FDI and exports. These results reflect an overall positive relation between the variables, supported by economic literature.

The upper middle income is the research frontrunner, as it has the highest correlation depicted by R^2, containing countries that are already industrialized but may still economically develop. This does not mean that countries from other segments could not take advantage of this study. An improved legal framework enables countries from the low income group to attract foreign direct investment and redirect such capital to specialize in their industries. Furthermore, the lower middle income is mainly composed by Asian countries that may benefit from their great demand as a market. But they have to first resolve many political issues before expanding in the international market. Finally, high income countries have revealed that even if they are already developed, with a less strict legal framework, they can still continue to economically develop exponentially.

Furthermore, countries with economic potential may develop through industrialization financed by the capital obtained from foreign capital inflows. To this aim, countries should improve their incentives for attracting foreign direct

investment as it is now suggested to have a direct relation to exports. This study demonstrates the immediate need of attracting foreign direct investment to obtain short and long-term benefits through an enhancement of export of domestic goods and services. This will accelerate the economic development, since increased competition from foreign companies; will encourage domestic enterprises to compete at the same level. Furthermore, some of these countries could develop by shifting from a model of import substitution to an export promotion model.

The results from this research showed similar results than those from the literature review. Nevertheless, future research could be done in order to analyze more similarities besides a strong relation between FDI and exports. Besides these two variables, past researcher correlates economic development with technology, human capital, production, price stability, liberalization of trade and overall institutional stability. However, access to information on these variables for every country worldwide is limited. Studies could be done regionally, until more information is available.

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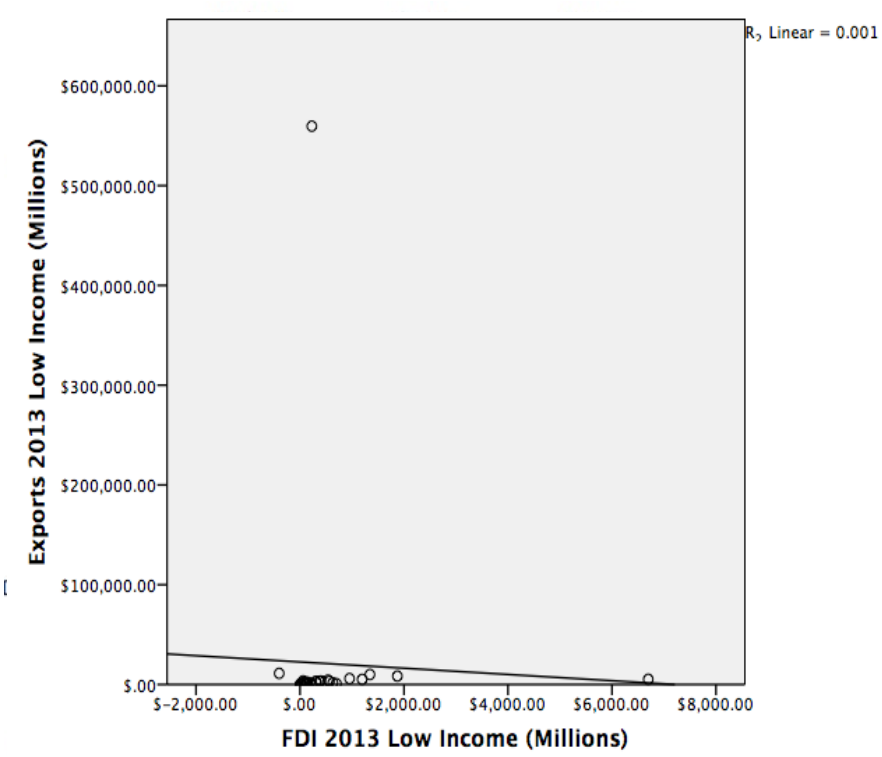
Appendix A

Table A1: All observations obtained from the World Bank

GNI per Capita	Country	Continent	FDI (millions)	Exports (millions)	GNI per Capita	Country	Continent	FDI (millions)	Exports (millions)
High nonOECD	Equatorial Guinea	Africa	$1,914.00	$13,781.82	Low Middle	Cote d'Ivoire	Africa	$370.99	$13,693.24
High nonOECD	Seychelles	Africa	$177.61	$1,071.49	Low Middle	Djibouti	Africa	$286.00	$469.73
Upper Middle	American Samoa	Americas	$24.00	$0.06	Low Middle	Egypt	Africa	$4,192.20	$49,111.16
High nonOECD	Antigua and Barbuda	Americas	$134.29	$529.18	Low Middle	Ghana	Africa	$3,227.00	$16,205.90
High nonOECD	Argentina	Americas	$11,300.98	$96,226.21	Low Middle	Kenya	Africa	$371.85	$9,827.63
High nonOECD	Aruba	Americas	$168.77	$2,164.97	Low Middle	Lesotho	Africa	$44.90	$907.39
High nonOECD	Bahamas	Americas	$382.25	$3,503.11	Low Middle	Mauritania	Africa	$1,126.00	$2,837.71
High nonOECD	Barbados	Americas	$376.40	$1,591.95	Low Middle	Morocco	Africa	$3,360.91	$32,614.40
Upper Middle	Belize	Americas	$92.25	$1,056.13	Low Middle	Nigeria	Africa	$5,609.00	$92,906.54
High nonOECD	Bermuda	Americas	$54.90	$1,391.04	Low Middle	Sao Tome	Africa	$10.78	$48.88
Low Middle	Bolivia	Americas	$1,749.61	$12,701.33	Low Middle	Senegal	Africa	$298.26	$4,148.16
Upper Middle	Brazil	Americas	$80,843.00	$281,160.96	Low Middle	Sudan	Africa	$1,687.88	$8,348.20
High nonOECD	Bahrain	Asia	$988.83	$24,228.19	Low Middle	Swaziland	Africa	$24.20	$2,092.63
High nonOECD	Brunei Darussalam	Asia	$895.00	$12,269.68	Low Middle	Zambia	Africa	$2,099.80	$11,231.38
High nonOECD	Cyprus	Asia	$3,765.40	$13,827.98	Upper Middle	Dominica	Americas	$17.92	$169.65
High nonOECD	Hong Kong SAR	Asia	$76,857.45	$610,942.90	Upper Middle	Dominican Republi	Americas	$1,599.70	$16,052.30
High nonOECD	Kuwait	Asia	$1,433.63	$121,718.20	Upper Middle	Ecuador	Americas	$725.05	$27,722.45
High nonOECD	Macao SAR	Asia	$3,707.98	$55,251.80	Low Middle	El Salvador	Americas	$242.35	$6,421.71
High nonOECD	Oman	Asia	$1,625.88	$59,310.09	Upper Middle	Grenada	Americas	$74.69	$209.74
High nonOECD	Qatar	Asia	-$840.38	$147,941.76	Low Middle	Guatemala	Americas	$1,353.14	$12,714.24
High nonOECD	Saudi Arabia	Asia	$8,864.69	$387,643.85	Low Middle	Armenia	Asia	$370.20	$2,733.53
High nonOECD	Singapore	Asia	$64,793.18	$578,961.40	Low Middle	Bangladesh	Asia	$1,501.65	$31,569.99
High nonOECD	Taiwan	Asia	$3,598.00	$318,000.00	Low Middle	Bhutan	Asia	$49.78	$667.79
High nonOECD	United Arab Emirates	Asia	$10,487.95	$395,888.36	Low Middle	Georgia	Asia	$956.32	$7,174.60
High nonOECD	Croatia	Europe	$588.38	$24,867.40	Low Middle	India	Asia	$28,153.03	$467,758.81
High nonOECD	Faeroe Islands	Europe	$85.00	$1,323.47	Low Middle	Indonesia	Asia	$23,344.32	$205,033.31
High nonOECD	Latvia	Europe	$989.50	$18,219.51	Low Middle	Kyrgyz Republic	Asia	$757.64	$3,091.11
High nonOECD	Lithuania	Europe	$708.29	$39,254.80	Low Middle	Lao PDR	Asia	$426.67	$3,045.11
High nonOECD	Malta	Europe	$585.27	$15,780.28	Low Middle	Myanmar	Asia	$2,254.60	$11,293.31
High nonOECD	Russian Federation	Europe	$69,218.90	$593,397.95	Low Middle	Pakistan	Asia	$1,333.00	$30,035.89
High nonOECD	French Polynesia	Oceania	$99.21	$1,236.54	Low Middle	Philippines	Asia	$3,737.37	$67,847.56
High nonOECD	New Caledonia	Oceania	$2,213.71	$1,925.75	Low Middle	Sri Lanka	Asia	$915.57	$15,079.33
High OECD	Canada	Americas	$70,753.17	$555,244.62	Low Middle	Syria	Asia	$804.00	$1,428.91
High OECD	Chile	Americas	$19,263.79	$88,929.16	Low Middle	Tajikistan	Asia	-$54.17	$1,631.42
Upper Middle	Colombia	Americas	$16,199.37	$67,140.38	Low Middle	Timor-Leste	Asia	$51.68	$87.86
High OECD	Israel	Asia	$11,804.20	$95,689.10	Low Middle	Uzbekistan	Asia	$1,077.00	$16,835.16
High OECD	Japan	Asia	$7,412.01	$830,338.36	Low Middle	Vietnam	Asia	$8,900.00	$142,635.00
High OECD	Korea, Rep.	Asia	$12,766.60	$721,896.10	Low Middle	ist Bank and Gc	Asia	$177.21	$2,300.23
High OECD	Austria	Europe	$15,046.40	$227,717.06	Low Middle	Yemen	Asia	-$133.57	$9,567.27
High OECD	Belgium	Europe	-$48,286.21	$435,092.94	Low Middle	Kosovo	Europe	$343.17	$1,217.45
High OECD	Czech Republic	Europe	$7,357.58	$160,978.38	Low Middle	Moldova	Europe	$249.04	$3,036.95
High OECD	Denmark	Europe	-$862.22	$182,357.42	Low Middle	Ukraine	Europe	$4,509.00	$81,719.00
High OECD	Estonia	Europe	$884.16	$21,406.45	Low Middle	Kiribati	Oceania	$9.00	$17.76
High OECD	Finland	Europe	-$5,296.74	$104,626.56	Low Middle	Micronesia	Oceania	$1.89	$88.35
High OECD	France	Europe	$6,481.06	$835,800.47	Low Middle	ipua New Guine	Oceania	$18.22	$6,829.72
High OECD	Germany	Europe	$59,014.77	$1,706,008.47	Low Middle	Samoa	Oceania	$24.18	$225.19
High OECD	Greece	Europe	$2,945.42	$66,840.28	Low Middle	Solomon Islands	Oceania	$44.65	$572.97
High OECD	Hungary	Europe	-$4,112.27	$118,709.99	Low Middle	Vanuatu	Oceania	$32.97	$375.05
High OECD	Iceland	Europe	$472.62	$8,574.19	Upper Middle	Algeria	Africa	$1,689.29	$68,242.31
High OECD	Ireland	Europe	$49,960.13	$234,496.06	Upper Middle	Angola	Africa	-$7,120.02	$69,562.22
High OECD	Italy	Europe	$19,530.57	$616,125.20	Upper Middle	Botswana	Africa	$188.61	$8,150.79
High OECD	Luxembourg	Europe	$30,075.37	$107,976.21	Upper Middle	Gabon	Africa	$856.00	$9,727.85
High OECD	Netherlands	Europe	$525,708.99	$667,726.27	Upper Middle	Libya	Africa	$702.00	$46,197.80
High OECD	Norway	Europe	-$1,018.16	$202,027.91	Upper Middle	Mauritius	Africa	$258.59	$6,278.46
High OECD	Poland	Europe	$12.00	$242,686.00	Upper Middle	Namibia	Africa	$903.78	$5,540.19
High OECD	Portugal	Europe	$7,881.59	$90,431.22	Upper Middle	South Africa	Africa	$8,232.52	$113,297.70
High OECD	Slovak Republic	Europe	$2,145.61	$92,947.55	Upper Middle	Tunisia	Africa	$1,058.62	$21,976.25
High OECD	Slovenia	Europe	$84.98	$35,858.99	Low Middle	Guyana	Americas	$200.52	$1,540.59
High OECD	Spain	Europe	$41,752.62	$456,835.12	Low	Haiti	Americas	$185.78	$1,536.00
High OECD	Sweden	Europe	-$857.64	$254,204.16	Low Middle	Honduras	Americas	$1,069.03	$6,374.81
High OECD	Switzerland	Europe	-$22,724.63	$486,644.38	Upper Middle	Jamaica	Americas	$653.92	$4,246.83
High OECD	United Kingdom	Europe	$41,136.81	$806,718.14	Upper Middle	Mexico	Americas	$44,626.69	$400,856.01
High OECD	Australia	Oceania	$51,852.04	$307,589.65	Low Middle	Nicaragua	Americas	$815.50	$4,616.50
High OECD	New Zealand	Oceania	-$509.64	$53,232.14	Upper Middle	Panama	Americas	$5,053.20	$26,986.30
Low	Benin	Africa	$320.06	$1,517.89	Upper Middle	Paraguay	Americas	$346.10	$14,366.33
Low	Burkina Faso	Africa	$374.32	$3,166.32	Upper Middle	Peru	Americas	$9,298.08	$47,342.23
Low	Burundi	Africa	$6.88	$222.17	High nonOECD	St. Kitts and Nevis	Americas	$110.79	$294.22
Low	Central African Republic	Africa	$0.80	$219.38	Upper Middle	St. Lucia	Americas	$83.52	$614.32
Low	Chad	Africa	$538.42	$4,346.69	Upper Middle	St. Vincent	Americas	$126.74	$194.02
Low	Comoros	Africa	$13.94	$104.94	Upper Middle	Suriname	Americas	$137.46	$2,566.98
Low	Congo	Africa	-$400.66	$11,176.31	High nonOECD	Trinidad Tobago	Americas	$1,712.60	$15,430.19
Low	Eritrea	Africa	$43.86	$258.02	High OECD	United States	Americas	$294,971.00	$2,280,197.00
Low	Ethiopia	Africa	$952.96	$5,934.27	High nonOECD	Uruguay	Americas	$3,040.15	$13,637.81
Low	Gambia	Africa	$25.28	$329.36	High nonOECD	Venezuela	Americas	$6,927.00	$91,159.00
Low	Guinea	Africa	$135.33	$1,989.78	Upper Middle	Azerbaijan	Asia	$2,619.44	$35,912.07
Low	Guinea-Bissau	Africa	$14.50	$165.33	Upper Middle	China	Asia	$347,848.74	$2,362,635.80
Low	Liberia	Africa	$700.27	$827.46	Upper Middle	Iran	Asia	$3,049.95	$64,438.17
Low	Madagascar	Africa	$566.55	$3,186.70	Upper Middle	Iraq	Asia	$2,852.00	$94,800.00
Low	Malawi	Africa	$118.44	$1,846.89	Upper Middle	Jordan	Asia	$1,798.45	$14,268.59
Low	Mali	Africa	$307.85	$3,301.86	Upper Middle	Kazakhstan	Asia	$9,738.52	$88,678.37
Low	Mozambique	Africa	$6,697.42	$5,245.23	Upper Middle	Lebanon	Asia	$3,028.93	$18,989.84
Low	Niger	Africa	$631.44	$1,735.66	Upper Middle	Malaysia	Asia	$11,582.68	$259,010.62
Low	Rwanda	Africa	$110.78	$1,205.23	Upper Middle	Maldives	Asia	$360.82	$2,835.04
Low	Sierra Leone	Africa	$144.09	$2,197.24	Upper Middle	Mongolia	Asia	$2,150.90	$4,978.26
Low	Somalia	Africa	$107.11	$564.05	Upper Middle	Thailand	Asia	$14,305.00	$284,063.38
Low	South Sudan	Africa	$78.00	$2,146.95	Upper Middle	Turkey	Asia	$12,457.00	$208,928.00
Low	Tanzania	Africa	$1,872.39	$8,450.55	Upper Middle	Albania	Europe	$1,253.78	$3,844.24
Low	Togo	Africa	$84.25	$1,923.14	Upper Middle	Belarus	Europe	$2,246.10	$44,046.10
Low	Uganda	Africa	$1,194.40	$5,136.35	Upper Middle	Bosnia	Europe	$315.02	$6,103.15
Low	Zimbabwe	Africa	$400.00	$3,507.30	Upper Middle	Bulgaria	Europe	$1,887.67	$37,162.70
Upper Middle	Costa Rica	Americas	$3,284.49	$13,374.64	Upper Middle	Macedonia	Europe	$413.46	$4,682.51
Low	Afghanistan	Asia	$59.60	$3,580.86	Upper Middle	Montenegro	Europe	$446.49	$1,842.60
Low	Cambodia	Asia	$1,345.04	$10,016.23	Upper Middle	Romania	Europe	$4,108.00	$75,181.00
Low	Korea, Dem. Rep.	Asia	$227.00	$669,818.56	Upper Middle	Serbia	Europe	$1,974.34	$18,560.38
Low	Nepal	Asia	$74.24	$2,187.60	Upper Middle	Fiji	Oceania	$158.21	$2,271.17
Low Middle	Cabo Verde	Africa	$81.93	$865.04	Upper Middle	Palau	Oceania	$7.69	$139.23
Low Middle	Cameroon	Africa	$325.45	$8,025.63	Upper Middle	Tonga	Oceania	$11.60	$93.48
Low Middle	Congo, Rep.	Africa	$2,038.30	$10,780.25	Upper Middle	Tuvalu	Oceania	$0.34	$20.57

Table A2: GDP composition for countries with upper middle income

Appendix B



Iraq	4.0	51.2	8.4	6.6	**5.6**	24.2
Jamaica	6.8	13.4	7.0	22.7	8.4	**41.7**
Jordan	3.20	23.30	4.80	10.30	13.00	**45.40**
Kazakhstan	4.90	31.50	6.30	17.70	10.80	28.70
Lebanon	4.20	12.10	6.70	18.20	6.30	**52.60**
Libya	2.20	57.50	5.70	5.00	**5.40**	24.30
Macedonia	11.00	17.90	6.60	16.20	8.70	**39.50**
Malaysia	9.40	36.70	4.20	17.00	6.60	26.00
Maldives	3.90	7.00	7.50	33.70	12.80	**35.20**
Mauritius	3.30	19.00	5.50	18.40	10.20	**43.70**
Mexico	3.30	30.30	7.60	18.30	8.80	**31.80**
Mongolia	16.50	30.30	3.00	13.40	**8.30**	28.50
Montenegro	9.80	13.80	5.00	22.30	10.10	**39.00**
Namibia	7.00	24.90	4.30	12.90	5.00	**45.90**
Palau	6.00	2.70	2.60	31.70	8.90	**48.10**
Panama	3.80	9.20	7.60	19.50	18.50	**41.40**
Paraguay	21.00	22.60	7.40	17.70	6.30	**25.10**
Peru	7.30	30.40	7.50	16.30	**8.70**	29.90
Romania	6.40	34.30	9.20	6.10	**10.20**	33.80
Serbia	9.40	26.60	5.10	12.80	10.10	**36.00**
South Africa	2.30	25.90	4.00	14.80	10.00	**42.90**
St. Lucia	3.00	7.40	6.70	23.80	18.10	**41.00**
St. Vincent	7.00	8.80	8.70	17.00	13.50	**44.90**
Suriname	8.60	28.70	6.20	25.40	**7.90**	23.10
Thailand	9.90	31.60	2.50	25.00	**6.30**	24.80
Tonga	19.90	11.10	7.10	15.80	7.40	**38.80**
Tunisia	8.80	26.40	4.60	13.20	13.30	**33.70**
Turkey	8.30	21.60	5.00	16.50	15.60	**32.90**
Tuvalu	25.50	1.20	8.00	10.70	5.10	**49.60**

Figure B1. Linear regression model from observations concerning the low income classification.

Figure B2. Linear regression model from observations concerning the lower middle income classification.

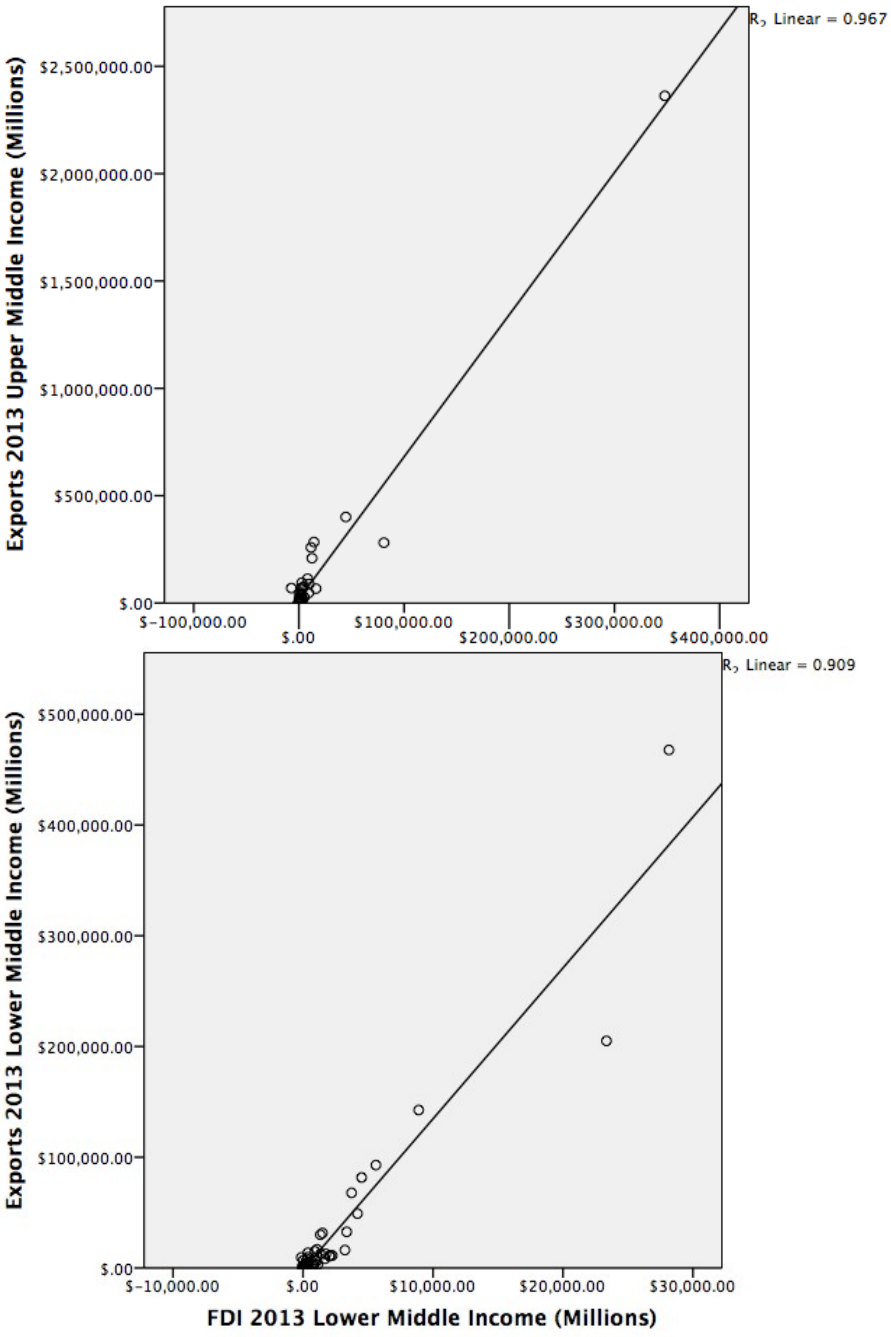


Figure B3. Linear regression model from observations concerning the upper middle income classification.

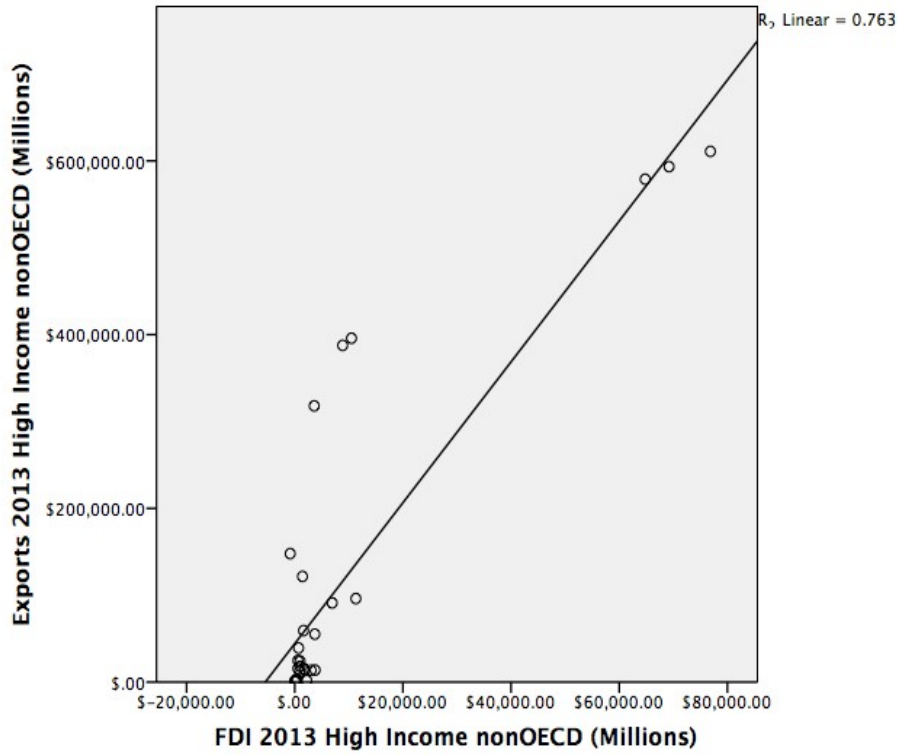


Figure B4. Linear regression model from observations concerning the high income nonOECD classification.

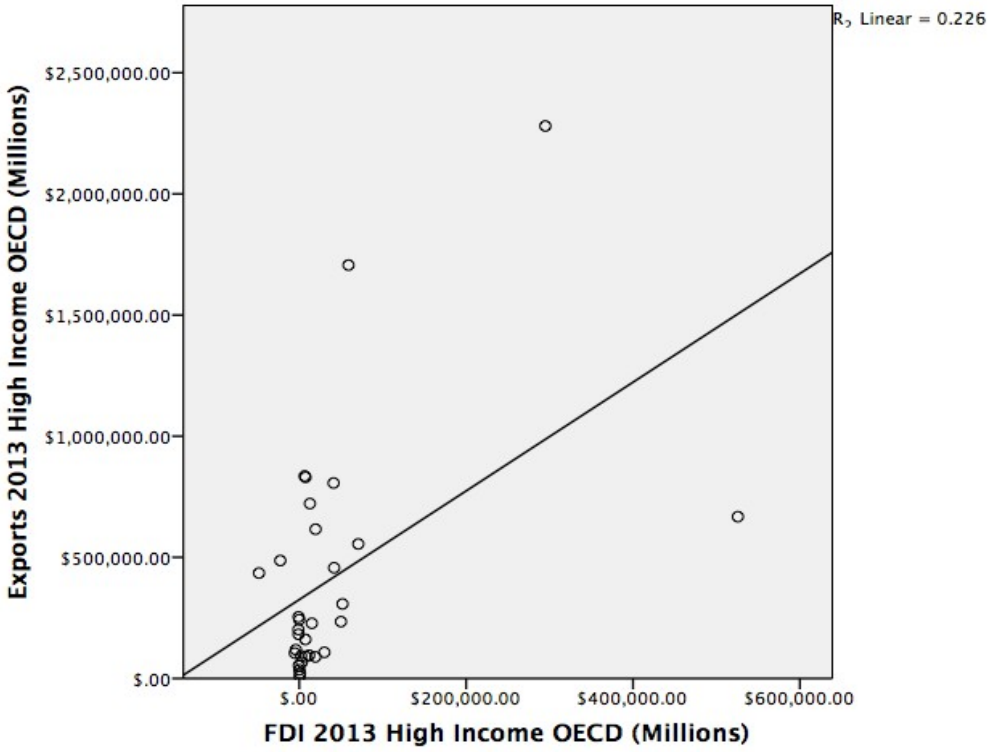


Figure B5. Linear regression model from observations concerning the high income OECD classification.

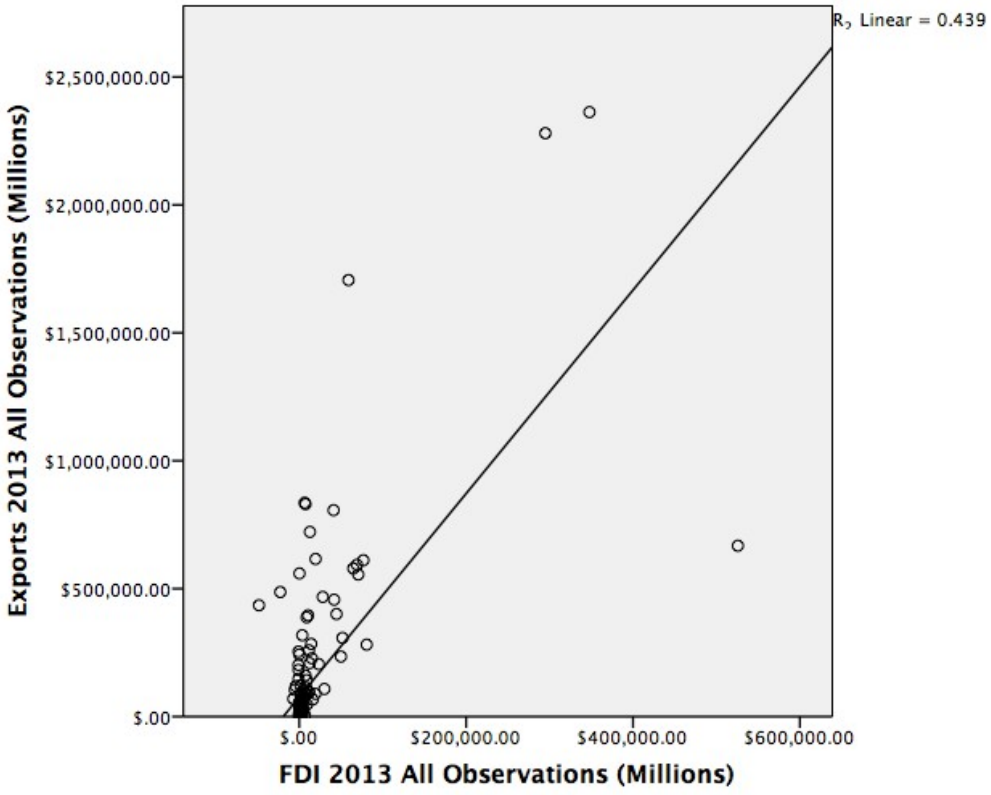


Figure B6. Linear regression model from all observations.