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HOW DOES INWARD FDI AFFECT A HOST COUNTRY'S EXPORT PERFORMANCE? THE CASE OF ETHIOPIA

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ABSTRACT

This study is deemed to be significant in investigating the impact of Foreign Direct Investment on export performance of developing countries, particularly in Ethiopia. The analysis is made based on series of panel data available from the year 1980 – 2011. In order to differentiate the impact of independent variables, i.e. inward foreign direct investment capital, domestic investment capital, level of trade openness, and real effective exchange rate on the dependent variable, i.e. real exports, the researchers used explanatory research design with time series regression model which were used in the process of examining the effect of inward foreign direct investment on host country's export performance. In order to check the fitness or degree of robustness of the model, different tests such as; test stationary, co-integration, model accuracy and other econometric problems like test for multicollinearity, heteroskedasticity, and autocorrelation were conducted. According to the findings of the study, the four independent variables included in this study have positive and significant effect on export performance.

Key words: Inward Foreign Direct Investment, Host Country's Export Performance

INTRODUCTION

Export has been in focus of economic literature and policy making for years due to its multi-fold contribution to achieving and maintaining macro-economic stability, resolving macroeconomic problems like unemployment and trade deficit, accelerating economic growth, and increasing international competitiveness of economies of developing countries (Bucevska, 2010).

The recent growth of globalization process in the world gave rise to active participation of developing countries in international trade. So, in the development of technological environment, increasing competition, new organizational and managerial strategies, both developed and developing countries are trying to employ all their potential resources and sectors in order to attract more FDI (Ibrahim ova, 2010).

FDI inflows are believed to contribute in to the expansion of exports level of recipient country. This is assumed to happen basically through supplying the host economies with additional capital to be invested in to exporting sectors, transmitting newest production technologies, assisting in promoting the host countries' export goods to be offered on bigger, more advanced and developed market, encouraging domestic firms to learn from the experience of MNCs resulting in enhancement of managerial and organizational skills in the firm, etc. However hypothetically, negative effect of inward FDI on export via creation of harsh competition and thus, removal of potential, but weak exporters from the competition, hindrance of domestic investment expansion can also be expected (Zhang, 2005).

The performance of the export sector of Ethiopia has indeed been remarkable in the past few years. As such, the total value of exports has increased from ETB 3.9 billion in 1997 to ETB 8.9 billion in 2006 which is a two and half fold growth. As to Ethiopian custom authority, in the period between 1994 - 1999 E.C., export earnings grew on average by 22% with the earnings rising from USD 436 million in 1994 E. C. to USD 1.2 billion in 1999 E.C (MFA, 2007). Likewise, a report released by the UNCTD (2005) showed that FDI into Ethiopia has increased. The report indicates that FDI inflows to Ethiopia increased from US \$255 million in 2002, to \$465 and \$545 million in 2003 and 2004 respectively.

Thus, the study was aimed in analyzing effect of foreign direct investment on export performance of Ethiopia.

Statement of the Problem and research objective

Countries engage in international trade for a variety of reasons. Exports, in particular, are a means to generate the foreign exchange required to finance the import of goods and services; to obtain economies of specialization, scale and scope in production; and to learn from the experience in export markets. In a globalizing world, furthermore, export success can serve as a measure for the competitiveness of a country's industries (UNCTAD 1999).

Countries can attain objectives of adding value on primary products, advance their technological basis, and could be export-oriented in several ways: by improving and deepening the capabilities of domestic enterprises or by attracting Foreign Direct Investment (FDI) into export activities and upgrading these activities over time. These strategies may be complementary or alternatives. Neither strategy is easy (UNCTAD 1999).

The Government of Ethiopia has been exerting at most effort to bolster the export sector. This has not only resulted in sustained and remarkable growth in the export sector but also has paid off in terms of diversifying the narrow range of export products through new investments or foreign and domestic

Investments in export sectors such as floriculture and textile. FDI would broaden the opportunities for Ethiopia to participate in international specialization and other gains from trade. Besides FDI, export orientation has also been hailed as an engine of economic growth (MFA, 2007).

Hence, this study has been tried to diagnose how exactly inward foreign direct investment is affecting export performance of Ethiopia based on time series data.

Specifically, the researchers made an attempt;

- To analyze the trend of exports and inward foreign direct investment of Ethiopia during 1980 – 2011.
- To investigate to what extent the host country's export performance are affected by the inward foreign direct investment?

Literature Review

It is not uncommon to find substantial body of literature review and empirical evidences on the nature of foreign direct investment from different angles. Literally, the nature of inward foreign direct investment entails incoming of different resources from investors' homeland to the host country with technological, capital, human recourses and managerial skills spillover. The work of different scholars profoundly proved that fact.

Empirical literatures on Foreign Direct Investment and Export Performance

According to Kevin H. Zhang, foreign direct investment (FDI) is pertinent in promoting a host country's export performance. Export is a backbone for the economic growth of any country. Healthy and balanced export performance is helpful in maintaining balance of payment, and consistency in economic growth and development. It is highly hypothesized that FDI promotes exports of host countries by augmenting domestic capital for exports, helping transfer of technology and new products for exports, facilitating access to new and large foreign markets, and providing training for the local workforce and upgrading technical and management skills.

It is appropriate to view the possible positive and negative effects of FDI. The work of scholars suggest controversy findings about FDI; both positive implication and devastating consequences on the host country's economic performance. Among suggested ideas about FDI from the viewpoint of its possible destructive outcomes; it may affect domestic savings and investment; transfer of poor quality technologies which mightn't add any economic value for the host country's economic growth; concentrating principally only on the host country's domestic market than going for overseas market; could possibly block the growth and chance of native firms that might become exporters.

Among alternative means of encouraging inward FDI, Multinational Enterprises (MNEs) plays great role in enhancing the distribution of goods to international marketing and flow of investments. According to the estimation made by UNCTAD (2004), MNEs account for around two-thirds of world exports. Currently, in

globalized world international trade is dominantly relied on the role of MNEs with strong association among them. A multinational can serve the foreign demand in two ways, either it can export its product or it can create productive capacity via foreign direct investment. Kohpaiboon (2007), stated export-oriented FDI as an engine for host country's economic growth and performance. Countries becoming benefited from this economic advantage are typically the Newly Industrialized Economies' NIEs: Singapore, Hong Kong and Tai- wan.

Moosa (2002), mentioned three major categorization of FDI: i) import-substituting FDI; ii) export-increasing FDI; and iii) government initiated FDI. Export-increasing or export-promoting FDI is encouraged with the ultimate objective of diversifying alternative market sources for different commodities and to earn economic benefits from export of their commodities to international market.

This section describes other channels through which FDI may affect host country's exports, in addition to those described in the theory of multinational enterprise.

The impact of FDI on host country exports is not only direct, through the exports of the foreign affiliates, but there may be important side-effects, which may influence the export performance of domestic producers indirectly.

FDI has both direct and indirect effect on host country's export performance. The empirical works of Girma et al. (2007); and Barrios et al. (2005), reveal that the extent of the spillovers and indirect effects of FDI on exports depend on the initial technological and human capital level of the domestic producers.

Moreover, Barry and Bradley (1997) justified others possible factors which might affect the indirect effect of FDI on host country's export performance as the intensity of competition in domestic markets as well as on the government policies promoting linkages between domestic and foreign firms.

Research Design and Methodology

Study Design

An explanatory survey research design study was employed following more of quantitative approach to examine the effect of inward foreign direct investment on host country's export performance.

Data Source and Collection Methods

Data for the study were collected from secondary data source. The secondary data were collected from published reports and official web pages of Ethiopian Investment Agency, World Bank, UNDP, and NBE.

Data Analysis

Collected data were analyzed and interpreted through the use of different techniques of data analysis and interpretation. In order to examine whether foreign direct investment will affect export performance, collected data were analyzed using statistical tools and econometric model, i.e. time series regression

model. The econometric tool is helpful in depicting the relationship between dependent and independent variables. A STATA software package version 10 was used for running the econometric regression. Furthermore the software was used to test stationary, co-integration, model accuracy and other econometric problems like test for multicollinearity, heteroskedasticity, and autocorrelation.

Model Specification

There are many variables that are essential in explaining the relation between FDI inflows and export performance in developing countries (Dunning, 1993). In this section, we tried to demonstrate the effects of foreign direct investment on export by using a popular model of exports suggested by the Bucevska (2010); Kutana* and Vukšić (2007); Soliman (2003); Weishi, Awokuse and Yuan (2008). In the model, based on the researchers listed above, we used real export as a dependent variable and inward FDI stock as an independent variable. To test the impact of FDI on exports, it is important that we control for the other determinants of exports. Accordingly, we employ the following model specifications;

$$RE = f(\text{FDI, DI, REER, TO, RE}_{t-1}) \dots \dots \dots (1)$$

$$RE = f(\text{FDI, DI, REER, TO, RE}_{t-1}) \dots \dots \dots (1)$$

$$RE = \beta_1 + \beta_2 \text{FDI} + \beta_3 \text{DI} + \beta_4 \text{REER} + \beta_5 \text{TO} + \beta_6 \text{RE}_{t-1} + \varepsilon \dots \dots \dots (2)$$

Where,

β_1 = intercept

β_2 – β_6 = Slope coefficient

ε = error term

RE = real exports

FDI = inward foreign direct investment capital

DI = domestic investment capital

REER = real effective exchange rate

LTO = level of trade openness: measured by the sum of export and import as a share of GDP.

RE_{t-1} = lagged exports, since the export performance in one year should be good predictor of the next year's exports.

Data Analysis and Interpretation

Summary of Descriptive Statistics

Table 1: presents the descriptive statistics of variables over the sample period i.e. 1980-2011.

VARIABLE	OBS	MEAN	STD. DEV.	MIN	MAX
RE	32	.2768621	.0372748	.231	.358
FDI	32	4.710025	7.025583	-11.1443	13.8596
DI	32	1.777274	.3177932	-.0672713	7.515159
REER	32	.0129476	.0173642	-.0004241	.0545507
TO	32	.0586197	.079007	-.0025595	.2486635
RE _{t-1}	32	.1115088	.0269303	.0628798	.1788801

From table 4.1 the mean value of Real export is 0.28 percent and a standard deviation is 0.037 percent. The minimum value of human development index is 0.331 percent while the maximum is 0.358 percent. The growth Ethiopian foreign direct investment over the sample period, on average, is 4.7 percent as measured by foreign capital flow. It deviates from mean value to both sides by 7.03 percent. The minimum and the maximum values are -11.14 percent and 13.86 percent respectively.

The average net domestic investment capital in proportion GDP is 1.78 percent. However, the standard deviation of inflows of domestic investment capital in proportion to GDP accounts 0.32 percent. The minimum inflows of domestic investment capital in proportion to GDP over the sample period were -0.067 percent and the maximum of 7.52 percent.

Regarding to real effective exchange rate, the mean value is 0.013 percent with the standard deviation of 0.017 percent. It means on average real effective exchange rate 0.013 percent which is fluctuated by 0.017 percent from its mean over the sample period. Regarding level of trade openness, the mean value is 0.059 percent with a standard deviation of 0.079 percent. The minimum value of level of trade openness is -0.002 percent while the maximum is 0.249 percent.

The descriptive statistics table also includes the descriptive statistics of lag of real export control variables used in the study, over the sample period it has mean value of 0.11 percent the standard deviation is 0.026 percent with a minimum and maximum value of 0.06 and 0.18 percent respectively.

Correlation Analysis

Correlation analysis-real export as an export proxy

Table 2: shows the correlation matrix that predicts the likely relationship of the real export with foreign direct investment measure and the control variables of the study.

	RE	FDI	DI	REER	TO	RE _{t-1}
RE	1.0000					
FDI	0.4357 (0.0182)	1.0000				
DI	0.3483 (0.0641)	0.4906 (0.0000)	1.0000			
REER	0.3323 (0.0782)	0.4259 (0.0000)	0.5682 (0.0000)	1.0000		
TO	0.0162 (0.0034)	0.3471 (0.0651)	0.3665 (0.0505)	0.3760 (0.0444)	1.0000	
RE _{t-1}	0.4806 (0.0000)	0.0730 (0.7065)	0.0067 (0.9727)	-0.0130 (0.9465)	-0.1175 (0.5440)	1.0000

Note: the p-values are listed in the parenthesis

The result of Pearson correlation analysis shows foreign direct investment has positively and significantly correlated at 5 percent level of significance with export.

Furthermore, as it is shown in the table, using Pearson's correlation, control variables; domestic investment capital, real effective exchange rate, level of trade openness and lag of real export are positively and significantly correlated at 10 percent, 10 percent, 5 percent and 1 percent level of significance with real export.

Goodness of Test

Tests for Stationary

Testing for the existence of unit roots is of major interest in the study of time series models and cointegration. The presence of a unit root implies that the time series under investigation is non-stationary; while the absence of a unit root shows that the stochastic process is stationary (Iyoha and Ekanem, 2002). In this study, the Augmented Dickey Fuller (ADF) test was used to test for unit roots.

As shown in table 4.4, all variables are stationary at their second difference because the absolute term ADF statistic is greater than the absolute term of critical value for rejection of hypothesis for unit root.

Table 3: Unit root test on variables

Variable	ADF test statistic	Critical Value	Order of Integration

	With trend	Without trend	With trend	Without trend	
RE	-6.968	-7.059	-3.596	-2.997	I(2)***
FDI	-7.311	-7.468	-3.596	-2.997	I(2)***
DI	-8.659	-8.845	-3.596	-2.997	I(2)***
REER	-8.156	-8.332	-3.596	-2.997	I(2)***
TO	-8.304	-8.482	-3.596	-2.997	I(2)***
RE _{t-1}	-6.039	-6.171	-3.596	-2.997	I(2)***

Thus, the models estimated have the following forms:

$$\Delta RE = \beta_1 + \beta_2 \Delta FDI + \beta_3 \Delta DI + \beta_4 \Delta REER + \beta_5 \Delta TO + \beta_5 \Delta RE_{t-1} + \varepsilon$$

Test for Co-Integration

Table 4 indicates that absolute value t statistic less than the absolute term of critical value suggest unit root. The residuals are non stationary, thus confirming the series are not co-integrated and, therefore, the modelling or equation should proceed with the differenced time-series.

Table 4: The Unit Root tests results on Residuals

	Levels	
	ADF	
	Without trend	With trend
Residuals	-1.319 (-3.000)	-3.165 (-3.600)

Test of Autocorrelation

Table 5: Durbin–Watson d statistic

Durbin-Watson d-statistic =(6,32)	1.688911
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If Durbin–Watson d statistic is between du and 4-du there is no serial correlation between members of series of observations ordered in time series data (Gujarati, 2004).

For the given sample size and given number of explanatory variables, the critical dL and dU values at 95 percent are 0.508 and 2.649 respectively and 4-du is 1.351. So, the result revealed that Durbin–Watson d statistic is between du and 4-du which indicates that there is no serial correlation.

Test for Heteroskedasticity

In Breusch-Pagan / Cook-Weisberg test for heteroskedasticity, if the p-value is sufficiently small, that is, below the chosen significance level, then heteroskedasticity is a problem for the model (Wooldridge, 2005). There is no heteroskedasticity problem for the values fitted values of ΔRE .

Table 6: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Variables: fitted values of ΔRE	
chi2(1)	= 0.29
Prob > chi2	= 0.5918

Test for Multicollinearity: The VIF technique

VIF values greater than 10 indicate possible problem of multicollinearity.

Table 7: variance inflation factor

MODEL		
variable	VIF	1/VIF
RE	8.03	0.1245
FDI	6.78	0.1475
DI	5.87	0.1704
REER	4.52	0.2214
TO	3.83	0.2611
RE _{t-1}	3.01	0.3322
mean vif	5.34	

Consequently, in table above, there is no VIF score above value 10; i.e., there is no perfect co-linearity among independent variables.

Ramsey Omitted Variable Test

The Ramsey omitted variable test runs the Ramsey regression specification error test (RESET) for omitted variables. If p value is insignificant, say, at the 5 percent level, one can accept that the model has no omitted variables (Gujarati, 2004); (Wooldridge, 2005).

Table 8: Ramsey RESET test

F(1, 6)	1.46
Prob > F	0.2749

It is clear from the above table that the p value is insignificant; greater than 5 percent level of significance in the model. So, the model has no omitted variables using any of the standard significance levels.

Econometrics Analysis through Error correction mechanism

Table 9 below revealed that all FDI, DI, TO variables are statistically significant whereas REER and RE_{t-1} are statistically insignificant. The adjusted R squared value show higher explanatory powers of the explanatory variables in the model. In the regression model, independent variables explain the variability of the dependent variable to the extent of 53.16. As well, the overall significances of the regressions model measured by their respective F statistics are 3.84 with p-value 0.0096 indicated the model is well fitted at 1 percent level of significance.

Table 9: Results from co-integration regression

FDI	.1361383*** (0.007)
DI	.0455863 *** (0.008)
REER	.0057896 (0.841)
TO	-.157747 *** (0.000)
RE_{t-1}	.0000115 (0.666)
_cons	-.0001247 (0.794)
Adj R-squared	.05316
F statistics	3.84 *** (0.0096)

Table 9 reveals that foreign direct investment, measured by inward capital flow, has a positive and significant effect on export performance. It is significant at 1 percent. The result indicates that, one percent increase in foreign direct investment will lead to an average 13.61 percent increase on cumulative host country export performance in Ethiopia. The result has as economic implication of encouraging and rising of market and export seeking FDI in to Ethiopia from year to year for the improvement of Ethiopia's export performance.

Furthermore, the country exchange rate and lag real export measures remain non-significant in influencing country's real export performance. Openness measured by export and import in proportion to GDP, turn out to be positive and significant on export performance. Likewise, Domestic investment capital turns out to be positive and significant.

Conclusions

Ethiopia has made a significant progress towards becoming a functioning market economy and establishing a satisfactory track record of macroeconomic stabilization and export performance. Currently, the country is holding a primacy position among African countries in attracting foreign direct investment to the homeland. A thorough examination has been made by researchers in order to depict the magnitude of influence, direction of relationship and level of association among independent and dependent variables. The dependent variable is represented as real export measure as a dependent variable. As FDI measure; we used inward capital FDI net inflows over a sample period. In addition; four control variables (domestic investment capital, trade openness, exchange rate, and lag real export) were used.

The econometrics regression result confirm that the inflows of FDI have a directly and strongly positive and significant impact on real export in Ethiopia and this strong positive relationship holds even after controlling for domestic investment capital, trade openness, exchange rate, and lag real export. This implies that the inflows of FDI have a strong significant positive impact on host country's export performance. So, the evidence is consistent with the assumption of the direct and indirect effects of FDI on export performance.

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