

# The Impact of International Trade and FDI on Economic Growth in Ethiopia

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**Abstract:** - International trade has been identified as important supplement for the economic growth; the importance of foreign direct investment have increased after trade liberalization particularly in developing countries, However, the purpose of this study is to investigate the effect of international trade and FDI on economic growth in Ethiopia over the period 1990-2019 by applying Ordinary Least Square OLS test, Johansen Cointegration test and Granger Causality test to find the relationship between variables. The results show that foreign direct investment, export and population have a positive relationship with the economic growth, whilst the import is insignificant. The study recommends that Ethiopia should promote policies that encourage and create a good macroeconomic and microeconomic environment, as well as the country, should balance the cost of policies to attract foreign direct investment over those seeking to improve local conditions including the infrastructure. Finally, import dependence ratio are not bright, so Ethiopia government should start rethinking on the promotion and the improvement of local resource by improving the export ratio in the country and policymakers should promote a strategy and policy to control the inflation level of the region by using effective monetary policy.

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## 1. INTRODUCTION

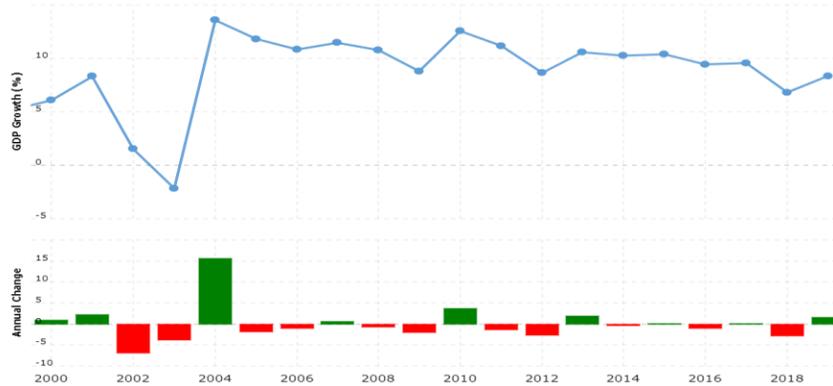
Trade and FDI inflows allow a country to grow, so we need them. Trade leads to the acquisition of competences that can be established using highly efficient technology and innovation. Exporters may use innovation and technology, when operating as subcontractor companies to foreign companies or by international market competition. The goal is, however, to increase the competition of foreign firms with imported substitutes. It really requires more capital-intensive production facilities to compete with developing countries which tend to produce capital intensive products (Frankel & Romer 1999). Trade openness is associated with economic growth through the accumulation of physical capital as well as the diffusion of technological improvements. Foreign Direct Investment's most important role is the raising of funds for domestic investment in a host country. This can be achieved through foreign investment in locally produced products and inter-company transfers of intermediate products. Moreover, foreign direct investment (FDI) can assess a host country's export capacity, so developing countries would be able to increase income from trade. On the other hand, the FDI can sometimes be beneficial to a country by strengthening the trade, technology transfer, and economic growth. According to Wang and Blomström (1991), technological spillovers are largely achieved via the four main channels of competition, mutation, skills and alliance. Most empirical studies investigated the link between

trade and FDI and GDP growth and also, on the relationship between trade and economic growth (Pahlavani, Wilson, & Worthington 2005) All these studies showed FDI inflows and trade to be positively associated with economic growth. However, in order to reach a conclusive conclusion about the associations in these developing countries, more research is needed. The FDI's impact on economies varies from country to country. In some countries, both foreign direct investment and trade can actually reduce economic growth (De Mello 1999). To make growth both sustainable and inclusive, Ethiopia needs to apply and maintain some structural and economic reforms. While reforms in favor of openness, diversification, and public governance of the economy have continued to advance in East Africa, the 2011 uprisings have demonstrated that these efforts have not yielded broad-based prosperity for all the social groups. In fact, economic deprivation and the difficulties that people face due to inequality are substantial causes of social malaise. In order to create a more open and inclusive economy and improve governance, it's needed to work together to create a better environment for the younger generation. Ethiopia has an integral focus on attracting FDI and liberalizing trade. So the contribution of the study is to explore the impact of international trade and FDI on economic growth in Ethiopia.

Additionally, a benefit of FDI is its ability to stimulate growth and development, especially in developing countries that lack the resources to stimulate their own long-term growth (United Nations Conference on Trade and

Development 2013). FDI is viewed as an integral component of financial globalization, due partly to potential benefits to host countries. In recent decades, it has grown at a faster pace than trade flows between countries (Blonigen 2005). Academic scholars have proposed a variety of theoretical arguments regarding FDI contributions to the host economy, with the overall benefits categorized as both direct and indirect. Macroeconomic effects occur through increases in

investment, tax revenues, creating jobs, and increasing foreign exchange receipts. These long-term effects also occur through technology spillovers to domestic firms (Paus & Gallagher 2007). FDI can improve productivity by increasing total factor productivity and hence improving efficiency of resource use in host countries.



**Figure 1. GDP growth annual change in Ethiopia**

**Source:** (World Bank)

Ethiopia GDP growth has increased 6.82% from 2018 to 8.36% in 2019, which means the GDP growth has increased 1.55% in 2019, Ethiopia is one of the fastest growing African countries. The growth of the service industry which followed the development of Ethiopia GDP growth has increased 6.82% from 2018 to 8.36% in 2019, which means the GDP growth has increased 1.55% in 2019, Ethiopia is one of the fastest growing African countries. The growth of the service industry which followed the development of agriculture, the main source of economic growth. From demand-side growth in Ethiopia, consumption was the main driver of growth. Agriculture, the main source of economic growth. From demand-side growth in Ethiopia, consumption was the main driver of growth.

## 2. RESEARCH METHODOLOGY

This stage of the thesis explains the methodology for research, the data source and data form, the theoretical structure, the model specification, the methods used to analyze the data and the techniques employed. It also outlines how to create, evaluate and interpret the relevant methodology.

### 2.1 Theoretical Framework and Model specification

The thesis is based on the Augmented Solow economic growth equation model, which aims to demonstrate the impact of international trade and FDI on economic growth in Ethiopia. As Solow formulation indicates, Economic growth is a function of accumulation of labor expansion, capital and

exogenous factors, technological advancements which increase the productivity of physical capital and labor. Therefore the basic model specification is provided as follows:

$$Y = A * f(K, L) \tag{1}$$

The thesis adopts a modified version of the Solow model in order to define the impact of international trade and FDI on economic growth in Ethiopia by making a minor adjustment. The choice of variables is in the line with the choice made by other researchers (Bibi, Ahmad & Rashid, 2014), specifying the following empirical model as below: Equation (2) can be restated as following:

$$GDP_t = C_0 + \alpha_1 FDI_t + \alpha_2 X_t + \alpha_3 M_t + \alpha_4 POP_t + \alpha_5 INF_t + \varepsilon_t \tag{2}$$

Where GDP is Gross Domestic Product, FDI is Foreign Direct Investment, X is export, M is import, POP is Population, INF is Inflation and  $\varepsilon_t$  is error term.

## 2.2 Method of Estimation

### 2.2.1 Descriptive statistics

Descriptive statistics reflect the basic characteristics of the outcomes in an experiment. Simple summaries and measurements of samples are given. Almost every quantitative data analysis and simple graphical analysis is based on them. The descriptive analysis indicates the average, minimum and maximum.

**Table 1.** Descriptive Statistics

Variables	N	Mean	Min	Max
LNGDP	30	23.61	22.69	25.25
LNFDI	30	5.22	-1.77	8.32
LNLM	30	22.15	20.58	23.69
LNINF	30	4.24	3.73	4.68
LNEX	30	21.32	19.63	22.71
LNPOP	30	18.12	17.68	18.53

Table 2 provides descriptive statistics showing the average maximum, minimum and mean. The overall mean value of the highest average. These statistics show that average economic growth in Ethiopia is approximately 23.61 units. Overall, the economic growth of the country has been largely driven by an agricultural activities and an increase in industrial activity, including investments in infrastructure and manufacturing. Over this period, the highest GDP growth is 25.25. The results show that the average foreign direct investment in Ethiopia is 5.22, while the highest investment was (8.32). This suggests that foreign direct investment (FDI) has a significant source of economic development in the country. Ethiopia's highest export rate during this period is 22.71 and its lowest is 19.63. The country's exports rely primarily on agricultural products. Despite that, the overall import value is estimated an average of 22.15, which places

the country particularly reliant on various import products such as machinery and mechanical appliances, equipment and parts, vehicles, and pharmaceuticals. Regarding the population of the region has been increasing last decades. Overall, average of population is 18.12. With regard to Ethiopia's inflation, the average inflation rate is currently 4.24 per year. In the economy, service and goods overtime general price levels have been raised. It is estimated that inflation is 6.82% in 2019. The highest price shock occurs at 18.53 and the lowest occurs at 17.68.

### 2.2.2 Unit Root Test

The first phase is to analysis of unit root test, to test the data, stationary is checked through trends and intercepts with both Phillips-Perron and Augmented Dickey Fuller testing. The absolute hypothesis for PP and ADF was that the series was non-stationary and the series as an alternative hypothesis was stationary.

**Table 2.** Unit Root

	Levels	Model	ADF		PP	
			t-statistics	Prob. *	Adj. S-stat	Prob. *
LNGDP	At Level		-1.88	0.63	-2.48	0.33
	1st Difference		-3.78	0.03	-3.83	0.02
LNFDI	At Level		-2.99	0.14	-3.00	0.14
	1st Difference		-5.91	0.00	-6.44	0.00
LNPOP	At Level		-0.11	0.99	-6.54	0.00
	1st Difference		-4.89	0.00	-1.53	0.79
LNEX	At Level		-2.07	0.53	-3.07	0.13
	1st Difference		-4.16	0.01	-4.10	0.01
LNLM	At Level		-2.21	0.46	-2.21	0.46
	1st Difference		-4.53	0.00	-4.56	0.00
LNINF	At Level		-3.78	0.03	1.85	0.65
	1st Difference		-4.94	0.00	-4.94	0.00

**Source:** (Author's analysis)

The result indicates that at level all variables are non-stationary except inflation and population are integrated at 3% significant level, which means ADF and PP tests are

stationary at level series, so null hypotheses were rejected at level. Moreover, GDP, FDI, export and import are stationary at the first difference at 5% significant level, so all null hypotheses did not fail to reject for every test at first

difference.

**2.3 Ordinary Least Square (OLS) Test**

The empirical investigation's objective is to determine the effect of international trade and FDI on economic growth in

**Table 3.** Ordinary Least Square, Dependent Variable: LNGDP

Variables	Coefficients	Prob. *
LNFDI	0.02	0.09*
LNM	-0.17	0.24
LNFX	0.20	0.08*
LNPOP	1.97	0.00***
LNINF	1.56	0.00***
C	-19.53	0.00***
<b>R-squared</b>	0.99	
<b>Observations</b>	30	

The results of empirical analysis are presented in Table 4 has several interesting results for the effect of international trade and FDI on economic growth in Ethiopia. Results of the study indicate that the export has a positive relationship economic growth; this is consistent with theoretical expectations mean that export has an important contribution in increasing the level of export in the country in the period of 1990 to 2019. This implies that the increasing of export commodities will lead to an increase of Aggregate demand of Ethiopia which causes toward higher economic growth of the country. This helps increase the efficiency of industry which is a major factor of productivity growth. The result is in the line with (Chemedha 2001) confirmed that positive export has a positive impact on economic growth in Ethiopia. On the other hand, import has a negative impact of the economic growth of Ethiopia but in this study it's insignificant.

The result shows that the FDI remained both positive and significant, which also represents the growth of private capital inflows, has the expected positive sign and is significant at a level of one percent, which means that foreign direct investment increases the economic growth of the host country by having an impact on the creation of new jobs, also

**Table 4.** Granger Causality

**Pairwise Granger Causality Tests**

**Null Hypothesis:**

**lnFDI** ~~Granger Causes~~ **lnGDP**  
**lnGDP** ~~Granger Causes~~ **lnFDI**

Obs	F-Statistic	Prob.
28	4.02	0.03***
	0.71	0.49

Ethiopia. The ordinary least squares (OLS) test is used in this study to estimate unknown parameters in a linear regression model and to determine the existence of an equilibrium relationship between all variables.

developing financial markets and opening up trade importers. The estimated coefficient has a significant positive impact on the economic growth. In particular, FDI in sectors has increased in the manufacturing sectors and the infrastructure which contributes to Ethiopia's economic growth. This result of study is consistent with the result of (Zekarias 2016) noted that foreign investment has positive impact on economic development in Eastern Africa.

Meanwhile, the population coefficient is thus positive and statistically significant at 5% level of significance. It means that growth of population will lead to higher economic growth. Therefore, the growth of population is having a major positive effect on the economic development of Ethiopia, making it important to contribute to the economic growth of the country.

**2.4 Granger Causality Tests**

To examine the direction between variable the study a Granger Causality test will be performed. The results, which are summarized the impact of FDI and international trade on economic growth in Ethiopia.

<b>lnM</b>					
<b>lnGDP</b>	<b>lnGDP</b>	<b>lnM</b>	28	20.10	0.00***
				6.87	0.00***
<b>lnX</b>		<b>lnGDP</b>		17.07	0.00**
<b>lnGDP</b>		<b>lnX</b>	28	2.50	0.10
<b>lnPOP</b>		<b>lnGDP</b>		20.22	0.00***
<b>lnGDP</b>		<b>lnPOP</b>	28	2.13	0.14
<b>lnINF</b>		<b>lnGDP</b>		17.21	0.00***
<b>lnGDP</b>		<b>lnINF</b>	28	15.73	0.00***

The results from the Granger Causality test, indicating the existence of bidirectional causality between GDP and import, as well as GDP and Inflation. The result also indicates that there is a unidirectional relationship between FDI and GDP, which implies foreign direct investment has an important contribution in increasing the level of the economic growth in Ethiopia. Thus, foreign investors came to the country with strong economic development. Also, the result shows that the existence of unidirectional causality between export and economic growth, which indicates that the export has contribution to the economic growth. As well as Population and GDP have a unidirectional causality relationship

### 2.5 Johansen Cointegration Test

Cointegration analyses are used to determine whether or not Ethiopia has a long-term equilibrium between FDI,

export, import, population, inflation and economic development. The analysis of all variables included full self-value and trace checks, as well as the presumption of pattern and intercept. After the unit root test and establishing the existence of a unit root at each variable's first difference, the next step would be to determine whether the series' linear combination is stationary. The objective of this methodology is to determine whether the unit roots of each variable are different (non-cointegrated) or share a common unit root (cointegrated). While a non-stationary variable appears to drift over time, a common linear combination can hold a pair of non-stationary variables together. Johansen analyzes the long-term relationships between foreign trade and economic development in Ethiopia using effective maximum likelihood testing. The tests were conducted at a 5% level of significance.

**Table 5.** Johansen Cointegration Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.94	164.88	95.75	0.00***
At most 1	0.71	85.58	69.81	0.00***
At most 2	0.55	50.75	47.85	0.02**
At most 3	0.41	28.19	29.79	0.07

At most 4	0.36	13.29	15.49	0.10
At most 5	0.017	0.49	3.84	0.47

**Source:** (Author’s analysis)

\*\*\* p<0.01, \*\* p<0.05

The result of Trace test from the Johansen co-integration confirmed that there’s 3 Cointegration equations at 5 percent level of significance, which implies that the variables are cointegrated in the long-run. Thus the study rejects the null hypothesis that there is no co-integration, while supporting

the alternative hypothesis that there is a long-term association between international trade, FDI and economic growth in Ethiopia.

**2.6 Diagnostic test**

**Table 6.** Diagnostic test

<b>Serial Correlation Test</b>	<b>Prob. 0.33</b> <b>Prob. Chi-Square (0.23)</b>
<b>Heteroskedasticity Test</b>	<b>Prob. 0.92</b> <b>Prob. Chi-Square (0.92)</b>
<b>Normality Test</b>	<b>Prob. 0.55</b> <b>Jarque-Bera 1.18</b>

The findings indicate that null hypothesis of all models provided for every test cannot reject. There is therefore no problem with serial correlations and the functional form test confirms that the model is well defined. Likewise the errors are normally distributed, and the model does not have a problem with heteroskedasticity. On the other hand, the normality test show that the distribution to determine normality is accurate and it shows the data is normally distributed.

**3. CONCLUSION AND POLICY RECOMMENDATION**

The study examined the effects of international trade and FDI on economic growth in Ethiopia from 1990 to 2019. This study applied OLS test, Johansen Cointegration test and Granger Causality test to examine the relationship between the variables. The conclusion of the study confirms that FDI has a positive impact on GDP growth in Ethiopia, which suggests that FDI will increase the GDP growth rate overall, also export also has a positive statistically significant effect on economic growth.

Population has a significant and positive relationship with economic growth based on empirical data obtained from the OLS. It is encouraged to Ethiopia to focus on enhancing the region's attractiveness for investment and implementing economic reforms aimed at increasing the presence of FDI and pushing for some progressive reforms by eliminating market distorting actions to increase financial and political

security, reducing administrative burden on business, and diversifying investment strategies.

To invest in FDI, Ethiopia must deal with the deplorable state of its infrastructure. Various investigations have shown that outcomes for the impact of infrastructure on FDI is substantial, showing that infrastructure enhancements in Ethiopia may contribute to a rapid growth. Similarly, an improvement in infrastructure could lead to big returns for local investment. Furthermore, motives for attracting foreign direct investment (FDI) should be applied in different ways, such as by financing policies such as smoothing out financing costs at competitive levels and expanding access to capital; as well as trade policies like justification of tariffs and removing non-tariff and institutional reform policies, such as upgrading competitiveness and reinforcing rules of corporate administration.

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