Addis Ababa University

College of Business and Economics

Department of Economics

The Effect of Multinational Corporations on the Economic Growth: The Case of Ethiopia (incoming investments)

Submitted By: Dereje Tilahun

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Submitted to: Girma Estiphanos (PhD)

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PREPARED BY	**Dereje Tilahun**		
Girma Estiphanos		March 10/2025	
Advisor	**Signature**	**Date**	
Dr Girma Estiphanos			
_____	_____	_____	
Internal Examiners	**Signature**	**Date**	
Habtamu Adare		March 15/2025	
External Examiners	**Signature**	**Date**	

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Acronyms and Abbreviations

MNCs: Multinational Corporations

BOP: Balance of Payments

UN: Un Employments

AR: Autoregressive

EG: Economic Growth

TB: Trade Balance

PP: Philips Pharon

ADF: Augmented Dickey-Fuller

AIC: Akaike Information Criteria

AR: Autoregression

CPI: Consumer Price Index

DF: Dickey-Fuller

DSP: Differenced stationary process

ECA: Economic Commission for Africa

ECM: Error Correction Mechanism

EPRDF: Ethiopian People's Revolutionary Democratic Front

GDP: Gross Domestic Product

HIC: Hannan-Quinn Information Criteria

IFS: International Financial Statistics

IMF: International Monetary Fund

LR: Likelihood Ratio

MoFED: Ministry of Finance and Economic Development

NBE: National Bank of Ethiopia

PP: Phillips-Perron

REER: Real Effective Exchange Rate

RER: Real Exchange Rate

RGDP: Real Gross Domestic Product RMSE: Root Mean Squared Errors

VAR: Vector Autoregression

VECM: Vector Error Correction Model VIF: Variance Inflation Factore

Abstract

This study analyzes the economic changes by multinational corporations on Ethiopia throughout the years using yearly time series data from 2005-2022. Using ARDL and VEC analysis, the effects of multinational corporations on gross domestic product growth, the exchange rate, the BP, and the Unemployment rate is been estimated in the long and short term. The study found that the effects of multinational corporations on economic growth works passed on the short-term aggregate demand and the long-term aggregate supply channel using GDP as an indicator of the economic growth and its effect on the exchange rate, the balance of payments and the Exchange rate. The devaluation of the national currency leads to economic growth only in the short term. In the long run, it affects negatively the EG. Public expenditure is statistically as vital as of the REER rate in explaining economic growth in Ethiopia.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

A multinational corporation is a company that has business activities out of the home country; by other definition it's 25% of minimum revenue is collected outside the home country. International companies are not entering to other country for the sake of revenue only; but they may inter for other reason. The history of multinational company was since the 15th century. Private firms individually were in charge of holding out the manufacturing of goods.

Formulation of multinational country is mainly focused on groups or aliens; this was due to the political power of the home country to some diplomatic advantage and extend to the new area. These are some big businesses that have grown beyond the country territory and have a multiple organizational process that needs beast management system.

The host country government that supports the host firm to rebuild the business and systematical deal with the computation of MNCs technological and other advantage.

The impact of multinational company is empathically debated over years some raised the positive contribution for economic growth and development, on the other hand some scholars raised the negative impact of the MNCs. The optimistic scholars raised the issue the country level of protection and selection of the company to encourage and discourage by different policy is very vital issue to technological and other important knowledge transfer. On the other hand, the pessimistic raised the capital flight from the less developing countries.

There are different thoughts that believes, the effect of multinational corporations relies on the home country readiness to progress or accepting new knowledge. Niels & Lensink (2003), raised one important issue, developing international financial system is a vital mechanism to attract multinational companies to invest their money, unfortunately it's still now the problem of many developing countries, they failed to create a smooth international financial system relative to developed countries.

1.2 Statement of the Research Problem

One of the major ways to measure or calculating the value of each variable of the economic growth is GDP. To comparing the leaving standards of the countries is making by the use of GDP per capital income it's a core indicator of economic power such as average living standards and economic wellbeing despite some recognized problems. It makes more representative of the role of the government involvements on the benefits. To elaborate economic development, almost all countries government try to create comfortable zone to foreign investors, Ethiopians policy change to benefits from the MNCs investments is not satisfactory or not well registered.

Despite the positive's; international corporations create to the host country, there are some disadvantages. Specially in Ethiopia the situation is bad compared to other developing countries because the average Ethiopia experiences is not satisfactory at all to affect the activities of multinational corporations, one of the main problems is the financial sector because, still close the door for foreign financial institutions.

In less developing countries specially in Sub–Sahar Africa unemployment rate is high; its rate decreased due to the introduction of this MNCs. Durham (2004) raised seen MNCs overall impact to economic growth is negative. Javaid (2016) on the other MNCs impact is depend on the country's economic absorption level. MNCs depending on the economic power they affect the less developing countries economy specially in the form of capital flight and other forms of transfers. One of their positive impacts on employment even raised some questions such as, they bring in skilled labor from their home countries and open vacant for unskilled labor to the host country workforce it hinders the technology transfer to the hosting country. For example, In Ethiopia, there is a Chinese company named chingung construction company. The company offers many vacant positions for unskilled labor to Ethiopian citizens (an underdeveloped country) skilled vacant for the home country citizens this hinders the technology and experience transfer to host country (physical visit).

In some point of view with the help of multinational corporations for host countries enterprises shared experience that leads to increased productivity of the local enterprises that are moving to some structural changes. Taking account, the current reaction of the host country about the

contribution of the MNCs to some local firms which is vital to economic growth the impacts of MNCs is very important.

Considering this, I will see those problems, benefits of MNCs and their impact on the EG of Ethiopia.

1.3 Research questions

The writer raised the following questions throughout the researcher. These questions include;

i. Does MNCs affect EG of Ethiopia in the LR and SR?
ii. Does Multinational Corporations contribute to unemployment in Ethiopia?
iii. Does Multinational corporation contribute to trade balance of Ethiopia?
iv. Does have Multinational companies' effect on real exchange rate?

1.4.1 Main Research Objectives

The main objective of the research is to show how MNCs influenced the EG of Ethiopia.

1.4.2 Specific Research Objectives

i. To show the LR and SR effect MNCs has on the EG of Ethiopia.
ii. To show the link between trade balance by MNCs and EG in Ethiopia.
iii. To show the link between UN, MNCs and EG in Ethiopia.
iv. To show the link between REER, MNCs and EG in Ethiopia

1.5 Research Hypothesis

The research hypothesis is stated below in the following alternative forms.

H01: MNCs doesn't affect the SR and LR EG of Ethiopia.

H02: UN does have effect on EG in Ethiopia.

H03: Trade balance from multinational corporation has an impact on EG of Ethiopia.

H04: real exchange rate from multinational corporation has an impact on EG of Ethiopia

1.6 scope

By using the time series data, we will see the impact of MNCs on EG of Ethiopia from 2005 to 2022.

1.7 Significance of the Study

Beside the existing written works, it will add additional ideas on this area and it will also recommend some measures that the government of Ethiopia shall use to controlling the actions of MNCs in Ethiopia, to get some economic benefits.

1.8 Limitations of the study

The limitation faced in this study will be getting the accurate and recent data. This is because our country institutions didn't have a culture to release accurate, perfect time information and the required data about their financial positions and lack of professional recording from local institutions that may lead to the researcher focusing on data from the WB and other international financial institutions for our country issue.

1.9 Organizations of the paper

My research paper body contained the following main parts, 1 Introductions, this section introduces the research problem, background, significance, objectives, and an overview of the methodology,2, Literature Review ,This section summarizes previous research related to the topic, identifies research gaps, and provides a theoretical, empirical and conceptual framework.,3. Methodology ,This section details the research design, data collection methods, sample selection, analysis techniques, and ethical considerations,4. Results and discussion, This section presents the research findings using text, tables, and figures without interpretation and interprets the results, compares them with previous studies, discusses implications, limitations, and future research directions,6 Conclusion and recommendations, This section summarizes the key findings, contributions to the field, and final thoughts and recommendations and final part of the paper will be References ad suggestions for further study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Literatures

2.1.1 Dependency Theory

Dependency theory is stated that the relationship between the two country is created on by a mutual benefit, from the developed country to the developing country in the form of supporting local firm and the reversal. waxborough (1974). Underdevelopment is raised due to decline in the term of trade by the exploitation of resources by MNCs Marxist point of view. So, transfer different resources from one country to another country to creating economic growth for a country MNCs are playing vital role.

Developed Countries played their role for underdevelopment of the poor countries by withdrawing capital in the form of dividend and other important resources from this poor country to the home country by the name of MNCs.

The other way to shared benefit from multinational company is implement structure or economic system change (Lexikon, 1993).

2.1.2 World System Theory

It developed following the dependent theory, it has some similarities with the dependance theory but the world system theory stated that the process of development is not an independent process its part of global process, under development is due to social economic and political forces that are not controlled by proximity society. (Bornschier, 2002)

2.1.3 The utilitarian theories

This philosophical theory stated that the companies should attach one function from their economic activities, so the company is not only alone benefited from the resource (Ismail, 2009, p.201). means that all MNCs intention is profit so, it should be adding some responsibility for corporate social responsibility at individual level of welfare from their benefits, this is because they aggressively done to collection of profit and give less intention to their bad externalities.

2.1.4 Growth Theory

2.1.4.1 Classical Growth Theory

The Classical Growth Theory postulates that a country's economic growth will decrease with an increasing population and limited resources. Such a postulation is an implication of the belief of classical growth theory economists who think that a temporary increase in real GDP per person inevitably leads to a population explosion, which would limit a nation's resources, consequently lowering real GDP. As a result, the country's economic growth will start to slow.

2.1.4.2 Neoclassical Growth Model

The Neoclassical Growth Theory is an economic model of growth that outlines how a steady economic growth rate results when three economic forces come into play: labor, capital, and technology. The simplest and most popular version of the Neoclassical Growth Model is the Solow-Swan Growth Model.

The theory postulates that short-term economic equilibrium is a result of varying amounts of labor and capital that play a vital role in the production process. The theory argues that technological change significantly influences the overall functioning of an economy. Neoclassical growth theory outlines the three factors necessary for a growing economy. However, the theory puts emphasis on its claim that temporary, or short-term equilibrium, is different from long-term equilibrium and does not require any of the three factors.

Production Function in the Neoclassical Growth Model

$$\mathbf{Y = AF\ (K, L)}$$

Where:

- **Y** – Income, or the economy's Gross Domestic Product (GDP)
- **K** – Capital
- **L** – Amount of unskilled labor in the economy
- **A** – Determinant level of technology

Also, because of the dynamic relationship between labor and technology, an economy's production function is often re-stated as Y = F (K, AL). This states that technology is labor augmenting and that workers' productivity depends on the level of technology.

2.1.4.3 Endogenous Growth Theory

The Endogenous Growth Theory states that economic growth is generated internally in the economy, i.e., through endogenous forces, and not through exogenous ones. The theory contrasts with the neoclassical growth model, which claims that external factors such as technological progress, etc. are the main sources of economic growth.

2.2 Empirical literature

MNCs are play vital role by value added to economic growth and development by creating job opportunities and other economic factors. According to Masawa, & Njenga (2017) thesis result stated that MNCs played very important role to economic growth by creating job opportunity to female employe and trained female employe and as a whole reduced illiteracy.

According to" Espigares & López, (2006) thesis result here shows that responsibility is more related with economic development If the computation is more likely played important role in the economy

The benefit or effects of the host country on MNCs are categorized in the following three forms product, factor market and spillover effect this impact relies on the nature of FDI and characteristics of the recipient country weather its vertical or horizontal (navaretti and venables 2004). Some scholars in the middle of nineteen and twenty century stated that FDI is very important to economic growth in the long run, but on the other side during the monetary period it created only short-term employment economic contribution Espigares & López, (2006).

2.3 Conceptual Literature

2.3.1 Effects of Multinational Corporation on developing countries

Due structural adjustment program o the period of 1980s 1990s developing nation experienced a great deal of FDI, the program had its own objectives on sub-Sharan Africa countries to create conductive business climate for investors to investing money on this country (UNCTAD. 2010).

Recently international company have become the main players in both developed and less developed countries economy.so the government of the country participated in the different ways to get benefit from such investment. Their effects multinational corporations create in developing countries have been two-side; positive and negative effects. When we looking on the effects of multinational companies on the developing nation it has two side the first one positively in the 1990s the FDI was poor approximately 150$ billion but its economic effect is raised positively at that period but, the FDI in 2005 average 334$ billion its effect is not similarly with ninety due to different reason like capital flight and other transfers to the home country.

Associated with the MNCs spillover effect, it has created a new dimension of economy to the host country in terms of technology this will leads to build strong international company to the host country this will affect positively the domestic firm level of technology and became competitive with the MNCs.

Local firms are benefited from spillover effect of MNCs to update their level of technology Blomstrom M, & Sjoholm 1999 on microdata from Indonesia, but in contrary some scholar raised the reveres its spillover effect is litter or it will be negative after some period and may leads to the case in Venezuela foreign joint venture to local small firms

Potterie & Lichtenberg 2001 study stated that spillover effect of technology is happened in the host country if they invest on research and development program, the shortcoming of this study is the growth of the domestic firm technology and the level of engagement by the local firm to updating and alarming any change in the industry.

Skilled labor force is vital to create capital goods, technological transfer is the way to get to skilled labor and in turn to capital and economic growth, so in general to spillover effect of technology in the country economy is requires open mind to improved technology given to natural and human resources. (Borensztien *et al, 1998*).

2.3.2: Trade balance and Multinational corporation in developing countries

Balance of payment is the difference between the country's export to import for a given period of time. Developing countries run international trade service trade, trade surplus for 2013 of. trade balance of less developing country is deficit or negative. Due to inability to produced

internationally demanded products and compete in international market. most of the time our country Ethiopia engaged in international market for import purpose.

Ethiopia experienced a consistence trade deficit over the year, by producing and exported agricultural goods and imported highly demanded technological and other products, main international trading alliance are China and Saudi Arabia 18% and 13% respectively, (trading economics).

2.3.3: Multinational Corporation and unemployment in developing countries.

MNCs transact big money across borders either due to globalization effect or due to liberalized and traditional of the local market, MNCs are analyzed the cost and profit before made any investment decision due to that reason many MNCs may prefer to invest outside of the country due to the availability of natural and human resources and its cost. Thus, many MNCs believed that emerging market is the key for growth (Kotler, 1994). Thus, these MNCs play a key role in the economic growth of the economy by considering un employment rate reduction only. For those who seen optimistically of Multinational corporations, they stated that it always creates employment opportunities for the host country at least.

Based (UNRISD, 2010) report out of created 73 million job opportunity only 12 million shares for less developed countries the number is really ridicules.

Some empirical study confirmed that MNCs has a better wage or salary and benefit packages compared to the local firm even its relatively low with the wage structure of some MNCs home country salary and benefit packages.

The coming of MNCs in Taiwan is completely changed the life of every single individual, the country are moved from agrarian to technological based economy and the salary of individual is raised highly Norberg, (2003),

Multinational Corporations play a key role in poverty reduction of developing countries. It may support the host country in terms of technology spillover effect and new job opportunities.

Empirical, Theoretical and Conceptual literature's stated that the impact of MNCs on the economic growth of the country differently. From theoretical perspective the first two theories

dependency and world system raised a little bit similar idea, they are taking about efficiency and dependency of countries which is the two vital components of economy growth of a country.

The utilitarian theory stated that MNCs is considering profit maximization by secured utility and societal joy without considering externality effects on the society and country side, the researcher will answer MNCs does have similar effect or not. similarly different Empirical and Conceptual literature's raised ideas related to MNCs. So, this paper specifically will have been assessing the impact of MNCs on the Ethiopia economy growth with the relationship of different variable such as unemployment and competition.

2.3.4 Exchange rate and multinational companies

Exchange rate is the value of one currency in terms of another currency Pilbeam K. (1998) defined exchange rate as "the value of one currency in terms of another currency". Exchange rate can be expressed in two ways based on in terms of economic analysis nominal and real exchange rate. the nominal exchange rate means the current date rate It is usually expressed in terms of index from a given period. Real exchange rate is a nominal exchange rate with some amendment on the price of the commodities in another country, for economic interpretation usually used the real exchange rate as an instrument.

Er =En.Pd/Pf this is real exchange rate by adjusting nominal rate but, it works only for trade between two countries. Less developing countries unable to affect foreign prices and/or trade weight. But depending on the upper and lower limit of set by national bank to exchange with interbank has an effect on real exchange rate RER is in another way it means the purchasing power of one country A currency in terms of country B or vice versa, which is sometime hide the level of economic development between countries. Less developed country may have higher RER rate due to currency policy.

CHAPTER THREE

3 Data and Methodology

3.1 Data

In Economics there is always one problem you may face when you used a time series data.it may not show a specific property data with trend may show structural break and then like this this make time series data are difficult to use for study some economic behavior Time Series data may have relationships with its previous result. The autoregressive (AR) iconic character is the by considering the data is some type of relationship with its previous value and adjustments will made, so this research works an Autoregressive Distributed Lag (ARDL) method to determine the link of the multinational corporations with the economic growth of Ethiopia by using time series data from 2005 to 2022. the period between 2005 to 2022 is selected to show the recent impact of the research questions and due to data availability (unable to get the most recent data).

Data collected from annual reports and publications of economic magazines, Ministry of Finance and Economic Development (MoFED), National Bank of Ethiopia as well as various issues and databases of International Monetary Fund (IMF), and World Bank (WB). In the model, I used to take GDP as an indicator of economic development. Furthermore, it will be used as a proxy for economic growth trade balance, unemployment and REER as measures of multinationals company effect. Unemployment trade balance and real exchange rate were the endogenous variables. The variable unemployment data will be collecting by looking rate of un employment over the years. The level of trade balance from multinational corporations' data will be collecting by the country's net trade balance over the years the real exchange rate data captured from NBE/word bank data as a proxy of REER.

3.2 Method of Data Analysis

The data are analyzed using STATA software. In order to make the stationary I will make serios unit root tests. Such tests, the Augmented Dickey-Fuller and the Phillips Perron test. The Augmented Dickey Fuller test is usually used to identify the suspected non stationarity of the data is exactly happening. DF test introduced by adjusting in to care of possibility of correlation in the error term by using adding of lagged difference term on regression (Gujurati 2004). The

other one are Phillips and Perron, methods of testing serial correlation is a nonparametric. The PP method predicted the non-augmented DF test equation and modifies the t-ratio of the α coefficient so that serial correlation does not affect the asymptotic distribution of the test statistic. A test of unit root using the Phillips-Perron approach does not require a pre-condition of lag length determination (Waheed, Muhammad, Alam,Tasneem and Ghauri,Saghir Pervaiz 2006).

3.3 Model Specification

The equation of the model given in the following one directional Y= b0 + b1x1 + b2x1 + b3x3 + anxn…… + u. the equation stated that the dependent variable affected by Monthan one independent.

As such, the Cov (x1x2) = 0 The correlation between the dependent variable is zero.

G = f (M, TB, U, RE) …….. (1)

Therefore, the econometric explanation of the above equation can be broken down as below

G = β0 + β1 M + β2T +β3 U + β4E+μ…….. (2)

Where,

G = Economic Growth

M = Multinational Corporations

U = Unemployment

T= Trade Balance

E= Exchange Rate

μ = error term.

β0 ≠ 0, It's a constant term there must be a variable that affects economic growth at any movements.

IF B1 > 0 Economic Growth will be affected negatively by MNCs

IF B2 > 0, EG will be affected positively by BOP

IF B3 > 0 level of unemployment will affect EG Negatively

IF B4> 0, Increase real exchange rate by multinational corporation will increase economic growth

In the DF test, assumed to the error term is uncorrelated but in case of the error term correlated the developed a new test known as the Augmented Dickey–Fuller (ADF) test, it considered the correlation between the error term (Gujurati 2004). Phillipsand Perron, on the other hand, proposed a nonparametric method of controlling for serial correlation when testing for a unit root. The PP method predicted the non-augmented DF test equation and modifies the t-ratio of the α coefficient so that serial correlation does not affect the asymptotic distribution of the test statistic we will use for checking T tests. A test of unit root using the Phillips-Perron approach does not require a lag length determination (Waheed, Muhammad, Alam, Tasneem and Ghauri,Saghir Pervaiz 2006).

3.4 Testing for Cointegration

When a non-stationary variable is existed in our model, we have two options to deal it, the first one difference the series and get stationary variable and used for short run prediction only, if not the second one is testing the co integration test and seen the linear relationship between the variables and if they are co integrated we can use the variables to estimating long run relationship or effects of the variable. so, we will use Engle–Granger (EG) and Johansen Maximum Likelihood Method.

3.5 Error Correction Mechanism

The Construction of error correction mechanism is coming after the confirmation of the log run relationship between the variable but if they are not co integrated their will not be ECM model. It used any short run gap from their long run equilibrium. The error correction mechanism (ECM) first used by Sargan and later updated and introduced by Engle and Granger corrects for disequilibrium. ECM model vital mechanism to deal the deviation between the short run and long run estimation specially for co integrated variables.

3.4 Underling Assumptions

a. Let’s assume GDP is a proxy of MNCs over the years.

b. Let’s assume MNCs directly affect unemployment rate of Ethiopia over the years.

c. Let’s assume MNCs directly affect trade balance and exchange rate of Ethiopia over the years.

Chapter four

4 Data Analysis and Discursion of the results

4.1 Introduction to Data set

In Ethiopia dealing with empirical data is very frustrating associated with getting well organized and consistence data. For single variable may provide different result from local and international institutions and even between the local institutions.it may happed due to the method or the component include or exclude by institution differently.

To reduce the extent of the problem and maintain the consistency of the data set and due to availability, I am selected to use data provided by international institutions.

There are different alternatives or methods to calculating RGDP among them alternatives calculation of real GDP on the basis of nominal GDP and the use of CPI or GDP deflator. The ratio of between nominal GDP to real GDP is called GDP deflator. Another way is selected the base year and calculating the RGDP by growth rate in our case by using World Bank RGDP data to show the MNCs effect on our country economy.

In this Study the change of real effective exchange rate is the value of birr in terms of another currency is decrease or increase. a decrease/depreciation of the real effective exchange rate is leading to an increase in the real gross domestic product in almost every year except 2000s of a few years. Real effective exchange rate is a components of nominal exchange rate, price indices [foreign and domestic] and trade weights.

The third variable of our case unemployment rate in Ethiopia over the years are not declining due to lack of new job creations and various reasons but, The MNCs does have an effect which is significant or not we will see in our study.

BOP of Ethiopia is as we know negative over the years. MNCs in Ethiopia participated in different sector of the economy which is significant or not to our country trade deficit we will see by taking numerical data of the variables result over the years.

4.2 Descriptive statics

Table 4.1 explains statistical summary of the variable to describe real GDP growth in this study. The variables have 18 observations except lagged real GDP and RER growth. Except for BOP the other variable result is positive Except RER almost all have a minimum standard error. Except for RER and RGDP the gap is small between the variable its confirmed by the minimum and maximum value, RGDP hereafter called economic growth EG.

A matrix that shows the correlation between the two variable is called correlation matrix. If the explanatory variable is perfectly correlated it's difficult to filter out their impact on the dependent variable, so proper test of multicollinearity has to be implemented to select or reject the variable for the long run utilization purpose. We will conduct the formal test of correlation to filter out and seen the variables relationship.

Variabls	Obs	Mean	Std Dev	Min	Max
RGDP	18	9.361426	2.181464	5.317096	12.55054
LRGDP	17	9.599328	1.993435	5.641531	12.55054
RER	18	21.55695	12.14752	8.666442	51.75621
LRER	17	19.78053	9.81999	8.666442	43.73378
BOP	18	-6.788683	3.330434	12.64198	-2.122261
UN	18	2.639667	0 .5478293	2.245	3.93

Table 4.1 summarize statistic's source stata14

4.2 Test of Multicollinearity

VIF Table

VAR	VIF	1/VIF
RER	3.64	0.275084
UR	3.63	0.275566
BOP	1.22	0.816466

Mean VIF | 2.83

Table 4.2 Source stata14

VIF variance inflation factor is a mechanism to test of multicollinearity VIF result is greater than 10 requests further investigation. A value lower than 0.1 is may considered a tolerance level as a linear combination of independent variables as we know the exclusion of one variable is its behavior is represented by the one it holds on our model or select and exclude the identical behavior variables in the model. In our model the average result of the VIF is less than ten so, we will continue in the system with our variables without exclusion made except for lagged variables.

4.4 Test of Stationarity

Test of the series is stationary or not is the first task to identifying the data. If the series is said to be stationary its mean and variance is constant but, if the series is said to be non-stationary means its mean and variance is not constant, it makes difficult to use non stationary data for economic prediction purpose for this basic reason we have to use or change the data to stationary for a series to be stationary, its mean and variance have to be constant or stable over time. According to Gujarati (2004), If a time series is nonstationary, means the character of the series can be studied. As a consequence, it is not possible to estimated it to other time periods or one time. Therefore, for the purpose of prediction, nonstationary time series are of not more practical value. This makes to need unit root test of the series for further investigation.

We will examine three types of formal tests are to examine the behaviors of the series. These tests are the Augmented Dickey-Fuller test [ADF], the Phillips-Perron test [PP] and the Clemente-Montanes-Rayes test. We will see all variables result detail by taking stata2014 application with the first two popular stationarity test theories.

Table 4.3 stationarity test stata 14

Variables	Specifications	ADF Statistics	PP Statistics	5%(ADF)	5%(pp)	Level of integration
EG	With outC&T	-1.383	-1.738	-1.950	-7.300	I(0)
	With T	-2.005	-3.364	-3.600	-3.600	I(0)
	With C& T	-0.118	-3.364	-0.118	-3.600	I(0)

DEG	Without C&T	-6.356	-6.929	-1.950	-1.950	I(1)
	With T	-6.736	-10.266	-3.600	-3.600	I(1)
	With C& T	-6.689	-8.560	-1.761	-3.000	I(1)
RER	Without C&T	1.889	5.754	-1.950	-1.950	I(0)
	With T	0.391	-2.267	-3.600	-3.600	I(0)
	With C& T	1.635	-2.29	-1.771	3.850278	I(0)
DRER	Without C&T	0.652	1.005	-1.950	-1.950	I(1)
	With T	-1.192	-1.320	-3.600	-3.600	I(1)
	With C& T	-0.320	-0.213	-1.782	-3.000	I(1)
DDRER	Without C&T	-2.713	-3.498	-1.950	-1.950	I(2)
	With T	-3.447	-3.903	-3.600	-3.600	I(2)
	With C& T	-3.106	-3.773	-1.796	-3.000	I(2)
BOP	Without C&T	-1.535	-1.652	-1.950	-1.950	I(0)
	With T	-2.457	-2.314	-3.600	-3.600	I(0)
	With C& T	-2.614	-2.427	-3.000	-3.000	I(0)
DBOP	Without C&T	-4.105	-4.124	-1.950	-1.950	I(1)
	With T	-3.684	-3.983	-3.600	-3.600	I(1)
	With C& T	-3.869	-3.983	-1.782	-3.600	I(1)
UN	Without C&T	0.567	-2.660	-1.950	-1.950	I(0)
	With T	-2.009	-2.009	-3.600	-3.600	I(0)
	With C& T	-1.111	-0.673	-1.771	-3.000	I(0)
DUN	Without C&T	-2.955	-2.995	-1.950	-1.950	I(1)
	With T	-4.777	-2.445	-3.600	-3.600	I(1)
	With C& T	-3.182	-2.971	-1.782	(-2.630)	I(1)

The ADF and the PP tests gives identical results for all Variables at 5% level of significant except for exchange rate with trend but confirmed by PP test its stationarity at second difference and first difference of unemployment level with constant and trend term at PP test not confirmed its stationarity of data ,all variables are stationary by integrated of order one [I(1)] except real exchange rate it is stationary at level two by ADF and PP test, it makes difficult to predict the variables effect over the year.

According to Geda, Sawhney and Jalil (2009 and many other scholars stated that the test didn't consider structural break needs to further unit root test to know the real or covered character of the non-stationary variables. It needs further examination to clarifying the difference encountered we will see in fig to identifying the data looks like stationary or not specially o real exchange rate

which is stationary after second difference of the data and we are got similar results for ADF and PP test.

Economic analysis with non-stationary variable is not meaningful, as we have seen in the above fig, early on the chapter three stated that, dealing with non-stationary variables are depends on two ways to using the variable as a estimator, the first one first difference of the non-stationary variable and used for the short run estimation purpose but, for the long run we have to made a co integration test between the independent variable if it exists we can continue by using a variable as long run estimator and as the same time, if the two series are cointegrated, the problem of spurious regression is eliminated.

Our next destination to discussion is the cointegration test by using the test mechanism called vector autoregressive model. A vector autoregressive model is commonly used for estimate systems of relation between the independent time series data for analyzing the dynamic impact of random disturbances on the system of variables. Firs let's see the distribution of the variables over the year by figure then, we conduct tests of granger causality and optimal lag length determination.

Graph 4.1 2nd difference of RER stata 14

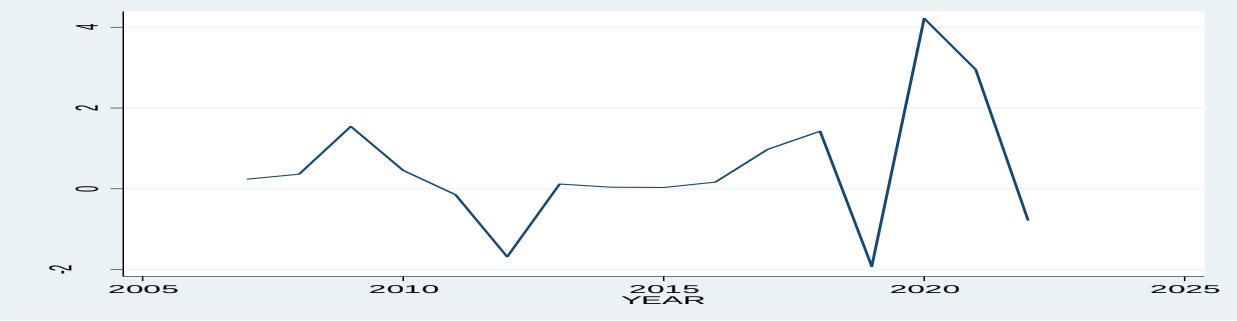


Fig 4.2 1st difference of RGDP stata 14

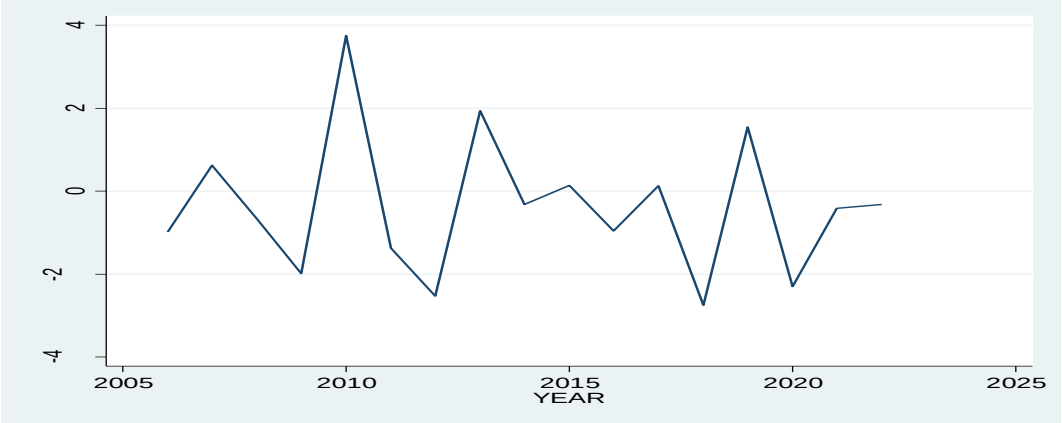


Fig 4.3 1st difference of UN stata 14

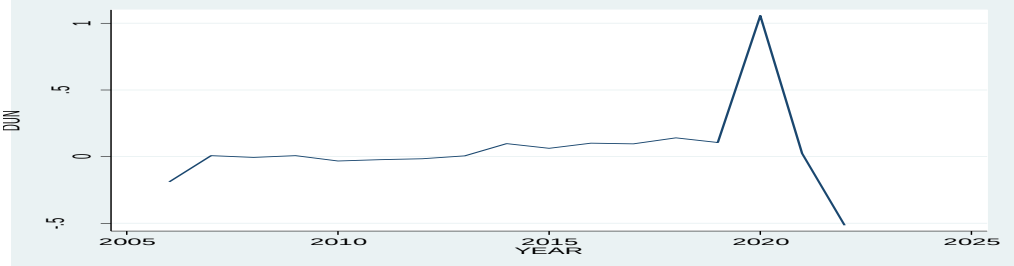
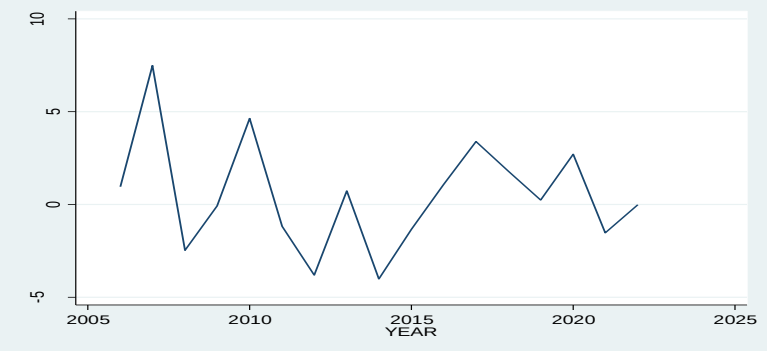


Fig 4.4 1st difference of BOP stata 14



As we have seen from the above figures the variables stationarity nature is not supported by trend specially to real exchange rate after even second difference of the results is makes soundless to predict the effect of the variable on the long run results of the dependent variables .but, for the time being now we will check the variables liner relationship is stationary or not by using the co integration test after that we will decide to take the variable for the short run prediction purpose only or not. The (ARDL) method to cointegration will be used to estimate the model. Pesaran, Shin, and Smith (1999).

4.5 Co Integration Test

4.5.1 Granger Causality Test

The importance of VAR model and the linkage between the variable is shown by Granger causality test, if one variable have granger causality to the other and vis versa, or if the variable have independently relation with each other, we can VAR test it shows the granger cause of each variable.

Table 4.4 tells us all variables are one directional granger causality effect each other except MNC/RGDP. BOP has granger causality effect on MNC UN and RER similarly UN rate has granger causality effect on MNC and BOP but not RER and RER are granger causality effect on MNC and BOP bun not on UN rate. So, it's possible to accept the null hypothesis to that MNC does not have granger causality effect to the dependent variable and RER does not have granger causality effect on UN rate but, for other variable there is a granger causality relationship and we can reject the null hypothesis.

Equation	Exclude	Chi 2	df	Prob>chi2
MNC	DBOP	32.34	2	0
MNC	DUN	29.3	2	0
MNC	DRER	27.518	2	0
MNC	ALL	52.34	6	0
DBOP	DGDP	8.2439	2	0.016
DBOP	DUN	2.2457	2	0.325
DBOP	DDRER	5.1695	2	0.075
DBOP	ALL	14.053	6	0.029
DUN	DRGDP	1.1268	2	0.569
DUN	DBOP	1.5971	2	0.45
DUN	DDRER	17.851	2	0
DUN	ALL	32.83	6	0
DDRER	DRGDP	6.3963	2	0.041
DDRER	DBOP	2.3012	2	0.316
DDRER	DUN	15.377	2	0
DDRER	ALL	23.999	6	0.01

Table 4.4 Granger causality (stata 14)

4.6 Optimal Lag length

Before conducting Cointegration test it's better to know the maximum lag of the variable because it's better to consider at some point of extent time series data are affected by its previous results. Some of the test results we compared to decision are The Likelihood Ratio test [LR], the Final Prediction Error test [FPE], the Akaike information criteria [AIC], the Shwarz information criteria [SIC] and the Hannan-Quinn information criteria [HIC] are used to determine the optimal lag length of the VAR model for cointegration test. Table 4.6 shows that AIC HQIC and SBIC suggested the maximum lag length is 3 but LR 1 and FPE said 2.so I prefer to the maximum lag length of one at 5% level of significance which is selected by LR criteria lower value and lag length as we know the lowest the lag length is compiled with the lowest error and faced multicollinearity issue to different order of stationary variables, so to our study purpose selected LR with the value of 42.924.

```
. varsoc dgdp DBOP DUN DDRER

  Selection-order criteria
  Sample:  2011 - 2022                    Number of obs     =        12
```

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-68.8238				2.19755	12.1373	12.0775	12.2989
1	-47.3617	42.924*	16	0.000	1.09561	11.2269	10.9277	12.0351
2	.	.	16	.	0*	.	.	.
3	1556.99	.	16	.	.	-251.498*	-252.216*	-249.559*
4	1547.46	-19.05	16	.	.	-249.911	-250.629	-247.971

```
  Endogenous:  dgdp DBOP DUN DDRER
   Exogenous:  _cons
```

Table 4.5 Maximum lag length selection stata14

4.7 Co Integration Test(variable)

In our previous discussion the stationary stationarity test result shows that the variable is non stationary. Economic estimation with non-stationary variable leads to spurious estimation the way to move from this problem is test the linear combination between the variable that's called co integration test If we can conduct this test and pass all our variable or co integrated we can used for long run estimation and saved our self from non-sense economic estimation.

In our study, almost all variables do not show consistence of trend as checked through the ADF and PP unit root tests. Due to this reason we made to use the assumption of the cointegration test is conducted with no trend.

If some of our variables are stationary at level and some of at first difference, we need to conduct bound test from ARDL we need to find maximum lag of individual variables.

Pesaran/Shin/Smith (2001) ARDL Bounds Test

H0: no levels relationship F = 11.898
t = -5.497

Critical Values (0.1-0.01), **F-statistic**, Case 3

	[I_0] L_1	[I_1] L_1	[I_0] L_05	[I_1] L_05	[I_0] L_025	[I_1] L_025	[I_0] L_01	[I_1] L_01
k_3	2.72	3.77	3.23	4.35	3.69	4.89	4.29	5.61

accept if F < critical value for I(0) regressors
reject if F > critical value for I(1) regressors

Critical Values (0.1-0.01), **t-statistic**, Case 3

	[I_0] L_1	[I_1] L_1	[I_0] L_05	[I_1] L_05	[I_0] L_025	[I_1] L_025	[I_0] L_01	[I_1] L_01
k_3	-2.57	-3.46	-2.86	-3.78	-3.13	-4.05	-3.43	-4.37

accept if t > critical value for I(0) regressors
reject if t < critical value for I(1) regressors

k: # of non-deterministic regressors in long-run relationship
Critical values from Pesaran/Shin/Smith (2001)

Table 4.6 ARDL Bound Test stata14

The ARDL bound test stated that if F statistics values less than I(0) series It does mean no co integration but If F statistics value is greater than I(1) series then we can't reject the null hypothesis. Similarly, if t stata is above lower bound, there is no long run relationship if t stata is below the lower bound there is co integration, and we can reject the null hypothesis. In our case F statics value 11.898 is higher than the critical value of all variable at 10%,5% and 1% of significant level. Similarly, the t statics value -5.497 is below the critical value at level of

significant. So, we can reject the null hypothesis and there is a long run relationship between the variables and we will next estimate the long run relationships between the variables.

```
.  ardl dgdp DBOP DUN DDRER, lags(1 0 0 0) ec btest

ARDL(1,0,0,0) regression

Sample: 2007 - 2022                             Number of obs     =         16
                                                R-squared         =     0.8123
                                                Adj R-squared     =     0.7440
Log likelihood = -26.626428                     Root MSE          =     1.5412
```

D.dgdp	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ADJ						
dgdp						
L1.	-1.36077	.2475472	-5.50	0.000	-1.905617	-.815922
LR						
DBOP	.1535584	.1161299	1.32	0.213	-.1020418	.4091586
DUN	-.4136769	1.314215	-0.31	0.759	-3.306244	2.47889
DDRER	-.2123514	.26082	-0.81	0.433	-.7864123	.3617096
SR						
_cons	-.4004313	.422986	-0.95	0.364	-1.331417	.5305546

```
note: estat btest has been superseded by estat ectest
      as the prime procedure to test for a levels relationship.
      (click to run)

Pesaran/Shin/Smith (2001) ARDL Bounds Test
H0: no levels relationship             F =  11.898
                                       t = -5.497

Critical Values (0.1-0.01), F-statistic, Case 3
```

Table 4.7 ARDL Long run relationship at 5% level of significant

As we know I am using GDP as a proxy variable to show the impact of MNCs in our country Economic Growth as a proxy variable Table 4.7 stated that the adjustment rate of discrepancy to long run equilibrium is 1.36 percent per annum in the economy growth of Ethiopia which is statically very important in our economy growth, BOP increased by one percent will leads to 0.15(%) increment in the economy growth, UN rate increased by one percent will leads to 0.41(%) decrement in the economy growth and IF a one percent appreciation of exchange rate will lead 0.22(%) decrement in the economy. the R^2 and adjusted R^2 result 0.8123 and 0.7440 stated that the independent variables over the economy growth of Ethiopia is 81% and 74% respectively.so this percentile is enough to make decision but we will add some current issue in our decision.

The ECM is very important mechanism to create linkage between the short run and the long period. It stated the adjustment of the short-run disequilibrium to prediction of a long-run equilibrium. Its coefficient describes that the stability of long run relationship. A stable cointegrating relation adjusts the short-run deviations by the extent of the error correcting term.

4.7.1 Test of The Result

4.7.1.1 Auto Correlation Test

Derbin Watson test stated that the correlation between the variable is determined by the range from zero to four, if the result gets zero means strong positive serial correlation if its four strong negative serial correlation and if it's two there is no auto correlation. In our case the result is 2.36, so the is no auto correlations.

Durbin-Watson d-statistic (5, 16) = 2.368959

Stata14

Another test to Serial correlation is by B Godfrey, He stated that the probability of chi^2 is greater than the probability of F statistics we can't reject the null hypothesis and there is no auto correlation by B Godfrey Test as well.

lags(p	Chi2	DF2	Prob > chi2
1	1.828	1	0.1764
BG L			

Table 4.8 Breusch-Godfrey LM test for autocorrelation stata14

H0: no serial correlation

4.7.1.2 Heteroskedastic test

White's test for Ho: homoskedasticity

against Ha: unrestricted heteroskedasticity

chi2(14) = 15.57

Prob > chi2 = 0.3405

Source	chi2	DF	P
Heteroskedasticity	15.57	14	0.3405
Skewness	8	4	0.0916

Kurtosis	0.23	1	0.6333
Total	23.79	19	0.2042

Table 4.9 Cameron & Trivedi's decomposition of IM-test stata14

Table 4.9 stated that the probability of Heteroskedasticity 0.3405 is greater than 0.05 so we can't reject the null hypothesis there is not heteroskedasticity problem.

4.7.1.3 Normality test

Var	Obs	Pr(Skewness)	Pr(Kurtosis	adj chi2(2)	Prob>chi2
DRGDP	17	0.1344	0.333	3.61	0.1644
DBOP	17	0.2378	0.4108	2.36	0.307
DDER	16	0.1247	0.1856	4.32	0.1151
resid(DUN)	16	0.5778	0.6616	0.52	0.7696

Table 4.10 sk test stata14

Table 4.10 stated that the p value is greater than 0.05 except for UN but, its residual value is greater than 0.05. so, we can't reject the null hypothesis it stated that the variable is normally distributed over time.

4.8 Short-Run Model (ECM Representation)

If a long-run relationship exists, we estimate the short-run Error Correction Model (ECM):

$$\Delta E_t = \alpha + \sum_{i=1}^{p} \beta i \Delta E_{t-i} + \sum_{i=0}^{p1} yi \Delta MNCs_{t-i} + \sum_{i=0}^{p2} \delta i \, \Delta UN_{t-i} + \sum_{i=0}^{p3} \phi i \, \Delta TB_{t-i} + \sum_{i=0}^{p4} \theta i \, \Delta RE_{t-i} + \psi ECT_{t-1} + \varepsilon_t$$

Where:

• ECT_{t-1} = Error correction term (lagged residual from long-run equation).

• ψ = Speed of adjustment coefficient (should be negative and significant for equilibrium correction).

• Δ = First difference operator (captures short-run effects).

• Short-run coefficients (γ_i, δ_i, φ_i, θ_i) measure the immediate impact of MNCs, unemployment, trade balance, and exchange rate on economic growth.

• Error correction term (ECT) ensures that deviations from long-run equilibrium adjust over time.

4.8 Short Run Estimation

Sample: 2007 - 2022			Number of obs = 16	
			F (4, 11) = 2.04	
			Prob > F = 0.1574	
			R-squared = 0.4264	
			Adj R-squared = 0.2178	
			Log likelihood = -26.626428	
			Root MSE = 1.5412	
dgdp Coef.	Std. Err.	T	P>t	[95% Conf. Interval]
dgdp				
L1. -.3607697	.2475472	-1.46	0.173	-.9056174 .184078
DBOP .2089576	.1419796	1.47	0.169	-.1035374 .5214526
DUN -.562919	1.765086	-0.32	0.756	-4.447847 3.322009
DDRER- .2889613	.3466851	-0.83	0.422	1.05201 .4740874
_cons -.4004313	.422986	-0.95	0.364	-1.331417 .5305546

Table 4.11 ARDL(1,0,0,0) regression stata14

Table 4.9 stated that the short run effect of the independent variable over the economic growth of Ethiopia. one percent rise in DBOP will leads to 0.209 percent rise in Ethiopian economy growth at 5% level of significance, one percent appreciation in exchange rate will lead to 0.2889 percent decrement in economy growth 5% level of significance, similarly one percent rise in UN rate will leads to 0.5629 percent decrement in economy growth of Ethiopia 5% level of significance and RGDP(MNC) short run effect on Ethiopian economy is affected by 0.36 percent. The short run regression shows that the endogenous variable is significantly affect the economic growth of

Ethiopia specially the un employment rate. the adjustment rate of discrepancy to long run equilibrium is 1.36070 percent per annum (Table 4.6).

4.9 Discussion of Research Findings

Scoular's around the world still debated on the outcomes of MNCs on the developed and developing countries. The debate is mainly due to the recipient or the host country benefit from the MNCs are not clearly known, based on our four main objectives which is stated the hypotheses were tested based on GDP it was used as a proxy for economic growth and MNCs, unemployment, Balance of payment and exchange rate as measures of MNCs as well. We will see detail of our hypothesis to accept or reject which is stated on chapter one of our paper.

H01: MNCs has no effect on the short and long-run economic growth of Ethiopia.

Our result revealed from the bound test that at 5% significance levels, the F statistics value stands at 11.898. It exceeds the lower bound with value 2.72 at 5% level of significance, as well as the upper bound valued at 3.77 at 5% level of significance. The result shows that the hypothesis of no co integration is now rejected, and that there is a leaner combination between Multinational Corporation and Ethiopian economic development during the long-run period. Similarly, ECM also stated that the exist relationship between the variables during the short-run. Its result shows that a negative value that have a significant impact on Ethiopian economy in the short run period. the short run economic effect is similar sign with long run effect but the level of impact or rate is different UN rate affect negatively the short run economic growth by 5.62919 percent depending on one percent increase similarly RER affect economic growth negatively by 2.8896 percent depending on one percent appreciation but BOP affect economic growth positively 2.089576 depending on one percent increase. the rate of adjustment to long-run equilibrium is approximately 1.36070% per annum with the given set of determinants in the long run. This result shows that the MNCs affect the economic growth of Ethiopia in the short run as well as in long run.

H02: Unemployment has an effect on EG in Ethiopia.

The results implies that a 1% rise in Unemployment (UN), would leads to real EG per capita to fall by 41% respectively in the current year. In less developed economy in sub–Saharan Africa

like Ethiopia the rate stable with a high rate even increase year after year this affect the country's Economy growth negatively.

H03: Trade Balance from multinational companies has an effect on EG in Ethiopia.

The results implies that a 1% rise in Trade Balance (BOP) would lead to real EG to rise by 15% respectively in the current year. In less developed economy in sub–Saharan Africa like Ethiopia the rate is negative or trade exchange is always deficit so trade balance shows our domestic production and dependency level of foreign goods.

H04: Real Exchange Rate from multinational companies has an effect on economic growth in Ethiopia.

The result implies that a 1% appreciation in Real Exchange Rate (RER) would lead to EG to fail by 21% respectively in the current year. In Ethiopia most MNCs are domestic firm their market center is inside the country territory that's why the appreciation affect the economy negatively. In our country case recently made major policy change, that is mode of exchange rate is changed to floating from fixed this will lead to raise the price of commodities imported and local products as well. Our study is also compiled with the current issue of our country.

Chapter Five

Conclusion and Recommendation.

5.1 Conclusion

- Ethiopia's trade deficit is persistent.
- Some MNCs contribute positively by increasing exports.
- MNCs create jobs mainly for unskilled labor.
- Most managerial positions are held by foreigners.
- Limited technology and skill transfer to local workers.
- Impact of MNCs wages on domestic labor market is higher.
- Exchange rate devaluation does have Short-term positive impact on GDP.
- MNCs have mixed effects on Ethiopia's economy.

5.2 Recommendation.

- Improve institutional frameworks especially financial institutions to attract beneficial FDI.
- Exchange rate policies must be strategically managed.
- Policy reforms to maximize MNCs benefits.
- Need for regulations to control capital flight.
- Policies to encourage skill transfer.
- Incentives for MNCs to invest in local industries.
- Strengthening local firms to compete with MNCs.
- Policy reforms to job opportunities for local citizens.
- Encourage imported product producers of MNCs.
- Encourage exported product producers of MNCs.
- The government should ensure peace throughout the country

Suggestions for Further steady

1. The influence of floating Exchange rate on MNCs and economic growth of Ethiopia.

2. The impact of MNCs on domestic producers.

3. A comparative survey to understand the level of technology(experience) transferred from MNCs to Local firms.

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Undertaking

I, the undersigned, declare that this thesis is my original work and that all sources of materials used for thesis have been duly recognized. The examiners' comments have been duly incorporated.

Declared by: Name: Dereje Tilahun Mihiretu Signature: _____

Date _____

Confirmed by Advisor: Name: Girma Estifanos (PHD) Signature: _____

Date: _____

Row data of variables from 2002-2022

YEAR	RGDP	RER	BOP	UR
2005	11.81877	8.666442	-12.642	2.5
2006	10.83473	8.698616	-11.6872	2.31
2007	11.45617	8.96595	-4.20145	2.317
2008	10.78852	9.599742	-6.6714	2.311
2009	8.802553	11.7776	-6.75348	2.318
2010	12.55054	14.40959	-2.12226	2.285
2011	11.1783	16.89923	-3.30368	2.262
2012	8.647812	17.70476	-7.10675	2.245
2013	10.58227	18.62663	-6.36626	2.25
2014	10.25749	19.58579	-10.3782	2.347
2015	10.39246	20.57685	-11.7149	2.409
2016	9.433483	21.73155	-10.6404	2.509
2017	9.56419	23.8661	-7.25029	2.605
2018	6.816148	27.42939	-5.4721	2.745
2019	8.364086	29.06975	-5.23928	2.85
2020	6.059531	34.92717	-2.52541	3.906
2021	5.641531	43.73378	-4.05104	3.93
2022	5.317096	51.75622	-4.07025	3.415