



**ST. MARY'S UNIVERSITY  
SCHOOL OF GRADUATE STUDIES**

**INSTITUTE OF AGRICULTURAL AND DEVELOPMENT STUDIES  
DEPARTMENT OF DEVELOPMENT ECONOMIC**

**RESEARCH ON**

**THE EFFECT OF TRADE OPENNESS ON ECONOMIC GROWTH IN  
EAST AFRICA: PANNAL DATA ANALYSIS**

**BY  
FETENE SHIMELIS MAMO**

**May, 2020**

**ADDIS ABABA  
ETHIOPIA**

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EAST AFRICA: PANNAL DATA ANALIYSIS**

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**A THESIS SUBMITTED TO ST.MARY'S UNIVERSITY  
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1. _____	_____	_____
Name of Chairman	Signature	Date
2. _____	_____	_____
Name of Internal Examiner	Signature	Date
3. _____	_____	_____
Name of External Examiner	Signature	Date
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## **DECLARATION**

I declare that this MA thesis is my original work, and has never been presented for the award of any degree in this or any other university and all source of materials used for the thesis have been duly acknowledged.

Fetene Shimelis

Signature \_\_\_\_\_

St. Mary's University

## Endorsement

This thesis has been submitted to St. Mary's University, Institute Agriculture and Development Studies for examination with my approval as a university advisor.

Dr. Maru Shete (Associate Professor)

Name of Advisor



Signature

19 May 2020

Date

St. Mary's University

Addis Ababa/Ethiopia

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## ***ACRONYMS***

**COMESA:** Common Market for Eastern and Southern Africa

**IGAD:** Inter-Governmental Authority on Development

**EAC:** East African Community

**WTO:** World Trade Organization.

**F TA:** Free Trade Area

**CU:** Customs Union

**CMB:** Coffee Marketing Board

**ECCAS:** Economic Community of Central African States

**GDP:** Gross Domestic Product

**TOP:** Trade Openness

**OE:** Official Exchange Rate

**HDI:** Human Development Index

**FDI: Forging** Direct Investment

**PGR:** Population Growth Rate.

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## **ABSTRACT**

*The debate about the impact of Trade openness on economic growth is still open. Some argue that has a positive impact on the economy while others argue that it has either no effect, or has negative impact on the economy. The main purpose of this study is to examine the effects of trade openness on the growth of the economies of the 7 countries from east African. Data on relevant variables such as GDP, trade openness index, FDI, population growth rate, official exchange rate and HDI were acquired from secondary sources that constitute a time series of 18 years period (2000 to 2018). Data were analyzed using constitute a time series of 18 years period (2000 to 2018). Data were analyzed using panel data. The fixed effects model result suggested that trade openness have negative effects on economic growth. Whereas FDI, HDI, official exchange rate positively affects economic growth but population growth rate has not significant effect on economic growth. Finally the researcher recommends that policy makers should adopt policies on trade liberalization such as reduction of non-tariff barriers, reducing tariffs, reducing or eliminating quotas that will enable the economy grow at spectacular rates.*

**Keywords:** *Trade Openness, Economic Growth, east Africa countries, Fixed-effect model*

# **CHAPTER ONE**

## **I. NTRODUCTION**

### **1.1 Background of the Study**

In today's world the issue of globalization is undeniable; every nation in this planet are interconnect. The thing happen in one end of the world might have an implication on the other end of the world or the world is under a single glob or globalization is at its edge. Globalization is a process of interaction and integration among the people, companies, and governments of different nations, a process driven by international trade and investment and aided by information technology. ... Likewise, for centuries, people and corporations have invested in enterprises in other countries. One of the thing that globalization is expressed is trade. Trade is current effort to make it easy to exchange goods and services, labor information, capital, and ideas across the borders are known as trade openness. Trade openness has helped movement of resources from developing to developed economies and improved technological advancement (Herath, 2010).

In the early days of trade, exchange form was the gold or silver, even with the exchange of goods. Even in recent centuries, the trade would happen only inside of a country due to lots of barriers. However, nowadays, trade is occurring beyond the nations, which is known as international trade. This international trade is becoming popular as a result of the trade liberalization, more specifically for trade openness. Trade liberalization means there is relaxation on tax, customs, and levies, while trade openness means that the trade on which there will be no tariffs or charges like vat, tax or customs duties. International organizations such as World trade organization, International Monetary Fund and World Bank is constantly advising, especially developing countries, to speed up the process of trade liberalization to achieve high economic growth. High economic growth is the ultimate goal of all economic activities because it improves the standard of life of people which is desirable. The general perception is that high trade openness leads to high economic growth Tahir &Azid (2015)

Adam Smith (1776) and David Ricardo (1817) have confirmed the positive relationship between trade openness and growth. According to Smith and Ricardian model, openness increase income

per capita when countries specialize in that good that they have comparative labor-productivity advantage. Also, openness can indirectly lead to development via different channels like: technology transfer, product diversity, increasing scale economies, efficient allocation and distribution of resources.

According to WTO (2000) press release, Africa's external trade policies are designed to create an environment conducive to promoting its products in international markets, especially those of the developed countries of Europe, America and Japan without forgetting the promotion of intra-African trade. Trade policies are formulated with the view to speeding up countries industrialization process and make access to foreign markets easier for countries products. In pursuing, Africa has entered into Multilateral, regional, bilateral and preferential trade arrangements.

During most of the 20century, import substitution strategies (ISI) played a dominant role in most developing countries' development strategies. But, while developing countries in Latin America, following ISI strategies, achieved lower growth rates, East Asian countries that enacted export promotion policies, experienced a higher economic performance. This possibly explains the growing interest of many researchers to investigate the relationship between trade liberalization and economic performance since the late 1970s.

Henok Arega(2011) study trade policy and economic growth in sub-Saharan Africa from (2000-2008) and claims his result that trade openness Stimulates both economic growth and investment and REER has both direct and indirect impact on economic growth. Another study by AkuaAuffo (2012) on the relationship between trade openness and economic growth on African countries from 1980-2008 by using Cobb-Douglas production function on both one or two way fixed or random effect model founded that trade openness have appositve relationship with GDP. A study by Mori Kogid ,RozileeAsid(2012) on the impact of Real exchange rate and economic growth over a period 1971-2009 in Malaysia founded appositve long run relationship between variables and suggests systematic monetary policy to develop, promote stability and sustainability of economic growth of the country. However, the purpose of my research is to provide a description of the growth enhancing potential of trade openness in the selected east African countries.

## **1.2. Statement of the problem**

The relationship between trade openness and economic growth has been an issue queried in the theoretical and empirical growth literature for a long time. Trade has been an area of interest to policy makers as well as economists. It enables nations to sell their domestically produced goods to other countries of the world. But many researchers have conducted research on trade openness and its impact on economic growth or in a similar field and it has been regarded as an engine of growth which leads to steady improvement in human status by expanding the range of people's standard of living and preferences, Adewuyi, (2002).

But, debate is still open that trade openness has positive or negative impacts on the development of a country. Especially the focus of argument is that whether Trade openness is necessary or detrimental for economic growth. Several studies such as, Greenway, Morgan, & Wright (2002) empirical study on the impact of international trade on 70 developing countries were concluded that a significant positive relationship between Trade and economic growth, i.e., international trade is bedrock for economic growth.

Similarly Asfaw, (2014) examined the impact of trade liberalization on economic growth in a sample of 47 Sub-Saharan African countries. He found that openness to trade stimulates both economic growth and investment. Besides, trade policies such as average weighted tariff rate and real effective exchange rate affect economic performance through trade. Menyah,& Wolde-Rufael (2014) analyzed the causal nexus among financial development, trade openness and economic growth for 21 Sub-Saharan African countries. They found limited support for the Trade-led growth, hypothesis.

According to Tahir and Azid (2015) study examined the differential effects of trade on economic growth and investment using Cross country data over the period 1991 to 2011. They found that trade has positively impacted economic growth in developed and developing countries; its effect is insignificant for least developed countries (LDCs), which largely include African countries.

On the contrary, there are also arguments for the negative effect of Trade openness on Economic growth. Siddiqui & Iqbal (2010) studied the data on trade openness and GDP growth for Pakistan for the time period 1972 to 2002 to found a negative relationship between trade openness and economic growths of the country.



Similarly, Vamvakidis (2002); Ulasan& Eris (2013), they did not find any evidence of that trade openness impacts on the GDP increment. Moreover, Vlastau (2010) and Polat et al. (2015) suggested that open trade policies lead to the reduction of economic growth. Therefore, this study aims at finding out the empirical relationship between trade openness and Economic growth in East Africa region to provide a basis for policy approaches.

### **1.3 Objectives of the Study**

#### **1.3.1. General objective**

The general objective of the study to investigate the effect of trade openness on economic growth in East African countries.

#### **1.3.2 Specific Objectives**

Having this general objective, the following specific objectives will guide the study:

- To describe the trend of trade openness and economic growth
- To investigate the impact of trade openness on economic growth
- To identify the effect of macroeconomic variable on economic growth in the study area

### **1.4 Research Questions**

In order to answer the research objective, the study formulate the following specific research questions

- What is the of trade openness in east Africa countries?
- To what extent macroeconomic variable affects economic growth?
- To what extent that trade openness affect Economic growth in east Africa countries?

### **1.5 Hypothesis**

The hypothesis of this study to detect the impact of trade openness, FDI, population growth rate, exchange rate, and HDI on economic growth .since theoretically and empirically it is supported that this macroeconomics variable has impact on economic growth, so it has been tested on the data empirically:-

Ho: trade openness has no impact on economic growth

H1: Trade openness has an impact on economic growth

Ho: the exchange rate has no impact on economic growth

H1: the exchange rate has an impact on economic growth

Ho: HDI does not lead economic growth

H1: HDI leads economic growth

Ho: FDI does not lead to economic growth

H1: FDI leads to Economic growth

Ho: the population growth rate has no links on economic growth

H1: the population growth rate has links on economic growth

### **1.6 Significance of the Study**

The study will, as other researches it has its own significances. Hence, the finding of the study will contribute outputs to an existed knowledge by filling the research gaps devote to investigating towards to the effect of trade openness on economic growth in those selected counties.

In sum, the output of this study will benefit to the consumers, the government sectors can draw important concepts out of this study, and it may serve for the policy-makers and business men as a supporting material; and will benefit the public at larger. In addition to this, this study may help as a foundation for other researchers who want to conduct further research in this area for the future.

### **1.7 The Scope and Limitation of the Study**

The scope of this study delimited in seven selected East African countries such as Burundi, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda. However, the researcher excluded the remaining east African countries from the study due to data limitation. The other is that, accessing the trade policy of those countries is challenging. Due to the problem related with data insufficiency, the researcher attempts to focus only on those seven East African Countries.

## **1.8 Organization of the Study**

The study is organized in five chapters. The first chapter presents the introduction part starting the study background, statement of the problem, research question, and objectives of the study, significance of the study, the scope of the study, and organization of the study.

The Second chapter deals with the review of related literature, theoretical and empirical evidence and developing a theoretical framework of the study. The third chapter, research design and methodology Chapter four represent the research findings and its results, and the last chapter five includes the summary, conclusions, and recommendation drawn from this study. Finally, the lists of references were attached to the research paper.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE'S**

#### **2.1 Introduction**

This part of the study devoted to present the existing international, national and regional reviewing theories developed on issues related to trade openness and its implication economic growth .The intention is to provide theoretical foundation that serves as a framework of analysis.

The chapter also revisits empirical evidences from a variety of literatures trade openness as a lens. Accordingly, first it concentrates on providing explanation on concepts and definitions of trade openness and conceptually trade openness and economic growth. Then, developing the conceptual framework that helps to classify relevant facts and presented right after empirical studies related to issues under the investigation

#### **2.2 Conceptual Definition of trade openness**

An empirical measure of trade openness, defined as the ratio of exports plus imports to GDP, is a convenient variable routinely used in a variety of international macroeconomic studies. Trade means the exchange of goods or services. In the early days of trade, exchange form was the gold or silver, even with the exchange of goods. Even in recent centuries, the trade would happen only inside of a country due to lots of barriers. However, nowadays, trade is occurring beyond the nations, which is known as international trade. This international trade is becoming popular as a result of the trade liberalization, more specifically for trade openness. Trade liberalization means there is relaxation on tax, customs, and levies, while trade openness means that the trade on which there will be no tariffs or charges like vat, tax or customs duties (AbuNaser, 2017)

Moreover conceptually, trade openness may be defined as the degree to which an economy maintains its outward orientation in trade. However, empirically, adopting this definition is challenging because it requires detailed and consistent data for many countries on the extent of explicit and implicit trade impediments in various forms that are product-, destination-, and origin-specific and time-variant. Even if such data are available, an additional hurdle exists.

Aggregating the detailed data into an overall index that qualifies as a universal measure of trade openness is difficult (Harrison, 1996)

## **2.3 Economic growth theories**

The major economic growth theories are classified into the Classical, Keynesian, Neoclassical and Endogenous growth theories

### **2.3.1 Classical Theory of Economic Growth**

Classical economists believe that all savings are transformed into investment. According to the Classical, the rate of growth of the economy is determined by the interaction between savings and population growth rate, where savings are completely employed in investments and population growth rate is given as an increasing function of the real wage rate.

Adam Smith (1776) pointed out that the level of output depends on inputs of three factors of production: - labor, capital and land. The productivity of these factors is supporting element of growth. Rostow (1990) also defined Adam Smith's growth model to be a function of three components: - factor inputs, technology and non-economic factors. According to him, an economy will transfer to a higher level if some or all these factors are increased. Generally, Classical economists suggested a number of factors that promote economic growth. They started from the basic factors of production (such as labor, capital and land) and continued to noneconomic factors (such as political stability, security of private property, the role of laws and institutions, the expansion of towns and growth of population) and non-market variables (such as education and customs).

### **2.3.2 Keynesian Theory of Economic Growth**

The Keynesian theory of economic growth noted that not all savings are transferred into investment. Hence, it is the level of investment that determines growth not the level of saving. Harrod (1939) and Domar (1946) were among the first economists to develop macroeconomic model to formally analyze the problem of growth in the Keynesian framework. They emphasized the relationship between consumption and saving by households and investment decision by entrepreneurs although these behaviors were not theoretically developed

In the Harrod and Domar model, production is obtained only by means of physical capital and labor. The model focuses only on the equilibrium of the goods market because of the assumption that the market mechanism is not able to attain full employment of labor. The goods market is said to be in equilibrium when savings are equal to the desired investment (Salvadori, 2003). Later, Kaldor (1956) argued that it is not saving, investment, technical progress and population growth that are the causes of growth. These were just the features of growth. However, the cause of growth is the attitude of investing by the society and in particular entrepreneurs. In this, Kaldor follows the Keynesian approach in conceiving the expansion of the economy as driven by psychological and social factors like human attitude to risk taking and money making.

### **2.3.3 Neoclassical Growth Theory**

Robert Solow (1956) was the first economist to develop a model that represents the neoclassical theory of economic growth. Later on, his model was further developed by Trevor Swan. The latest model was then renamed as the Solow-Swan model. The neoclassical growth theory is best represented by this model.

Unlike the Harrod and Domar model the neoclassical growth model takes into account that labor and capital are substitutable. According to the Solow-Swan model, the output per worker increases with the output per capital but at a decreasing rate. This implies that there will be a point at which labour and capital can be set to reach an equilibrium state. Hence, unless there are technological advances economic growth will not take place. The model also shows how economic policy can raise an economy's growth rate by inducing people to save more. However, it predicts that such an increase in growth can not last forever. In the long run, the country's growth rate will revert to the rate of technological progress, which is taken to be independent of economic forces, or exogenous. Without technological change an economy can grow for a while by accumulating capital, but eventually that growth will be stopped by the diminishing marginal product of capital. With technological change, however, growth can be sustained and hence, the economy will converge to a steady state in which the rate of economic growth is exactly equal to the rate of technological progress (Aghion and Howitt, 2009).

### **2.3.4 Endogenous Growth Theory**

The main limitation of the neoclassical growth theory is that it views economic growth as a result of exogenous factors. The neoclassical growth theory provided no account for the rate of technological progress, which is taken to be given by some unspecified process that generates scientific discovery and technological diffusion. These limitations of the neoclassical growth theory are addressed by the endogenous growth theory. Hence, the endogenous growth theory endogenizes technology (i.e. growth is determined within the model) and was developed by Paul Romer, Robert E. Lucas and Robert J. Barro in the eve of the 1990s.

According to Salvadori (2003), the aim of the endogenous growth theory is twofold. First, to overcome the shortcomings of the neoclassical growth theory which does not explain sustained growth, and second, to provide a rigorous model in which all variables crucial for growth such as savings, investment and technology are the outcome of rational decisions. Hence, the new growth theory stressed on the importance of innovation, human capital accumulation, the development of new technologies and financial intermediation as important determinants of economic growth. The theory also focuses on positive externalities and spillover effects of a knowledge based economy which will lead to economic development

## **2.4 Theory of international Trade**

The major international trade theories include the Absolute Advantage, Comparative Advantage and Heckscher-Ohlin theories.

### **2.4.1 Absolute Advantage Theory**

Adam Smith (1776) in his book entitled "*An Inquiry into the Nature and Causes of the Wealth of Nations*" offered a new trade theory called absolute advantage, which focused on the ability of a country to produce a good more efficiently than another nation. Smith argued that trade between countries should not be regulated or restricted by government policy or intervention. He stated that trade should flow naturally according to market forces. In a hypothetical two country world, if Country A could produce a good cheaper and/or faster than Country B, then Country A had the advantage and could focus on specializing on producing that good. Similarly, if Country B was better at producing another good, it could focus on specialization as well. By specialization, countries would generate efficiencies, because their labor force would become

more skilled by doing the same tasks. Production would also become more efficient, because there would be an incentive to create faster and better production methods to increase the specialization. Hence, Smith's theory reasoned that with increased efficiencies, people in both countries would benefit and trade should be encouraged. His theory also stated that a nation's wealth should be judged by the living standard of its people (Ibid). The challenge to the absolute advantage theory is that some countries may be better at producing both goods and hence, have an advantage in many areas. In contrast, another country may not have any useful absolute advantages.

#### **2.4.2 Comparative Advantage Theory**

The comparative advantage theory was formulated by David Ricardo (1817) in his book entitled "Principles of Political Economy and Taxation". The law of comparative advantage indicates that each country will specialize in the production of those commodities in which it has the greatest comparative advantage or the least comparative disadvantage. According to Ricardo, a country will export those commodities in which its comparative advantage is the greatest and import those commodities in which its comparative advantage is the least. Hence, by concentrating on the production of the product in which it has the greater advantage, a country can further enhance both global output and its own economic well-being. This theory is based on the assumption that factors of production are immobile however, this assumption does not hold in the modern world since there is free movement of factors across the world.

#### **2.4.3 Heckscher-Ohlin Theory**

In the 1900s two Swedish economists, Heckscher (1919) and Ohlin (1933), focused their attention on how a country could gain comparative advantage by producing products that utilized factors that were in abundance in the country. Their theory is based on a country's production factors - land, labor, and capital. According to Heckscher & Ohlin, regions or countries have different factor endowments. It means that some countries are rich in capital while some are rich in labor.

They determined that the cost of any factor or resource was a function of supply and demand. Factors that were in great supply relative to demand would be cheaper; factors in great demand relative to supply would be more expensive. Hence, their theory stated that countries would



produce and export goods that required resources or factors that were in great supply and therefore, cheaper production factors. In contrast, countries would import goods that required resources that were in short supply, but higher demand (Ibid)

In general, there is no one theory dominant around the world. This section has tried to highlight the basics of international trade theories. In practice, governments and companies use a combination of the above mentioned and other emerging trade theories.

## **2.5 Empirical Evidences of the Study**

This is evidences from several studies have been done on the effective of trade openness on economic growth in different parts of the world. Therefore, this is a discussion of some of recent studies on this arena.

Adam Smith (1937) and David Ricardo (1973) have confirmed the positive relationship between trade openness and growth. According to Smith and Ricardian model, openness increase income per capita when countries specialize in that good that they have comparative labor-productivity advantage. Also, openness can indirectly lead to development via different channels like: technology transfer, product diversity, increasing scale economies, efficient allocation and distribution of resources.

A study by Chen (1999) the relationship between trade openness and economic growth by using the data 34 countries of the Asian and Latin American countries to observe how trade openness impacts on economic growth for the period of 20 years (1972-1992). He concludes that Asian countries have faster growth comparing to the Latin American countries. Asian countries are developing faster due to the greater trade openness while Latin American countries are pouring in the international debt and the high inflation rate.

A very recent study conducted by Keho (2017) on the Cote D'Ivoire an African nation. He analyzed the impacts of liberal trade policies for growing the economy. He found that trade liberalization has a positive impact in both cases, whether it is long-run or short run. Moreover, his results suggested that to improve the growth of the economy, investment impacts positively

The study conducted by Obadan&Okojie (2010) used annual time-series data covering the period 1980 to 2007 to examine the effects of trade on economic growth and development in Nigeria. Variables used included growth rate of GDP, openness, exchange rate, foreign direct investment,

domestic investment and political stability. The results showed that trade openness had a positive impact on economic growth in Nigeria and a strong negative impact on growth due to political instability. It was concluded that Nigeria's export base which solely depend on petroleum should be diversified to include agricultural and solid minerals export.

Similarly a study by Ahmad & Mohebbi (2012) examined the effect of trade openness on economic growth in Iran using OLS method for estimation parameters from 1971 to 2008. They found that a significant positive effect of trade openness on economic growth in Iran and we concluded that oil revenue and investment growths have a significant positive effect on economic growth in Iran.

A study conducted by MacDonald (2000) on the effects of the exchange rate on economic growth. He found that externally and internally the exchange rate and economic growth are positively correlated. Moreover, recently another similar study has been conducted by Jacob (2015) on 74 nations for the year of 2012. He concluded that these two variables are significantly correlated.

Moreover other study carried out by Ashour and Yong (2017) on the developing countries to investigate the impact of the exchange rate on economic growth. Their result implies that there is a positive impact of the exchange rate on the growth of the GDP. Moreover, they have added that if the country adopts a flexible exchange rate then the growth of the economy is much higher compared to the fixed exchange rate. Similar results have been seen for the developing countries on the research on Guellol, Marouf and Benbouziane (2017) carried out on the 36 developing nations. Their results also support that there is a significant positive correlation between the exchange rate and economic growth. Furthermore, they have concluded that the fixed exchange rate has a better off for the growth of the economies.

According to Huang & Malhotra (2004) study, they have considered 12 developing nations and 18 developed EU nations for the time period of 1976 - 2001. On their study, they have found two types of result for two different continents. Firstly, in the context of EU countries there are no link between the exchange rate and economic growth and in the second result implies that the exchange rate has a significance impact on the Asian developing economies. Based on their results, another research has been carried out on the perspective of Bangladesh, an Asian developing country by Razzaque, Bidisha & Khondker (2017) to assess the link between the

exchange rate and economic growth. They conclude that in the short-run negatively correlated while in the long-run, positively correlated between exchange rate and economic growth in the Bangladesh economy.

A study, conducted by Liargovas & Skandalis (2012), to test the impact of FDI and trade openness towards economic growth. They have considered 36 developing countries from all the trade blocs around the globe. They conclude that trade openness is impacting positively for the higher FDI to the developing countries. However similar study conducted by Levine & Renelt (1992) found on their study there is a robust relationship between the FDI and growth.

Similar results have been observed on the empirical research of Dornean & Oanea (2013). They also have conducted research on the European Union from 2008 to 2012. They found that there is a positive link between GDP growth and FDI. Another study carried out by Lipsey (2000) supported that inflow of the FDI to the countries has a positive effect on the economies

In sum up the causality test shows that there is a unidirectional relation from openness to the growth. However, Vamvakidis (2002) found on his research that in context of developing and developed nations, trade openness has no contribution to the increment of GDP per capita. For the first time series analysis for the period of 1870 to 1970, there was no impact of trade openness found. However, he experienced that there was a positive interrelation between them for another time period from 1920 to 1990. Similar results have been found on the study of Ulasan & Eris (2013). Their study is carried out on cross country panel data analysis for a period of 40 years (1960-2000). They have considered the averaging techniques of Bayesian model to handle the uncertainty issue in the systematic manner. The result inferred, there is no correlation between economic growth and trade openness. Therefore, this study aims at finding out the empirical relationship between trade openness and Economic growth in East Africa region to provide a basis for policy approaches.

## **2.6 Policy and Trade Patterns of Selected East African Countries**

East African countries constitute a diverse group: four are landlocked, two island states, and the remaining six have access to sea. In terms of weight, Eastern Africa accounts for about 26 % of Africa's population, 16 % of the combined GDP in 2009 current prices, and 22% of the continental landmass. Regional GDP growth was propelled by rising oil output in Sudan; mineral

exports in Ethiopia and Tanzania; and ongoing reforms across the region. Kenya is the regional trade hub and the transport link to the world for many of the countries. A robust services sector in the region would complement, integrate markets and boost demand for goods manufactured in the region. The uneven levels of enterprise competitiveness and productivity in some countries may dampen policy level appetite for greater regional integration in the short term. In 2008-2009, the average share of intra-regional trade in Eastern Africa was 9 %. Among the three regional groups, the EAC countries dominated intra-regional trade with a share of 71.82 %, followed by the Horn of Africa (27.74%). The island countries had a lower share (0.44%), illustrating their limited trade link with the mainland. Kenya is the regional trade hub accounting for 33% of intra-regional trade, attributed to its larger private sector, followed by Uganda (21%) and Tanzania (11%) (African Development Bank, 2011). In the context of the Common Market, the primary focus in EAC is currently now on consolidating the regional market and deepening national and regional level reforms, in order to enable removal of domestic barriers and foster the liberalization of services. All East African countries export mainly primary commodities and import manufactured goods. The terms of trade of primary commodities with respect to manufactured goods in Africa was deteriorating for more than a century before improving between 2003 and 2013, when global commodity prices started to improve (African Development Bank 2019). The highlights of each of the country's economic activity are discussed below.

## **1. Kenya**

Kenya's trade policy development can be traced back to the Sessional Paper No. 10 of 1965 on African Socialism and its Application to Planning in Kenya. The Paper centered on ensuring rapid economic development and social progress for all Kenyan's. It placed emphasis on promotion and protection of the domestic industries. The policy was a key influence on the development of the country's trade regime over the first decade of independence (Republic of Kenya Ministry of Trade, 2009)

The second major phase in the evolution of the trade policy in Kenya was through the Structural Adjustment Program's (SAPs) introduced in the mid 1980's by Sessional Paper No.1 of 1986 on Economic Management for Renewed Growth. It emphasized a change from reliance on import

substitution and protectionism towards a policy that led to industries being encouraged to manufacture for export with reform Program's aimed at improving efficiency, stimulating private investment and increasing the sector's foreign exchange earnings. It also meant economic liberalization bringing to an end the central role of the public sector institutions which had hitherto managed and coordinated trade distribution networks and related trade facilitation and promotion activities.

Presently Kenya's Trade regime is guided by market-driven principles of liberalization under the World Trade Organization (WTO), which came into effect in 1995. The liberalization phase has led to lowering of tariffs and reduction of non-tariff barriers in Kenya's export markets thereby improving market access to Kenya's products. The phase also coincided with increased efforts in the regional economic integration initiatives that resulted in the establishment of the East African Community (EAC), Common Market for Eastern and Southern Africa COMESA) and the Inter-governmental Authority on Development (IGAD).

The country progressive liberalization has significantly reduced tariff levels, eliminated price controls and licensing requirements leading to modest growth in export markets. However, despite the open trade policy pursued, Kenya's trade structure, remains concentrated in primary products and traditional markets due to limited capacity for value addition in the manufacturing sector and the relatively underdeveloped intermediate and capital goods industries (Ibid).

Moreover, in Kenya deepening and expansion of regional integration and bilateral trade agreements have widened the scope of trade opportunities for the Kenyan businesses. Therefore, Kenya has the potential to become a more competitive player in the region and global economy if factors affecting competitiveness are addressed (Ibid).

## **2. Ethiopia**

Ethiopia has adopted a free market economic policy in 1992; an in line with this has promoted private investment. With the introduction of market economy, Ethiopia has implemented a number of reforms including the privatization of state owned enterprises, liberalization of foreign trade, deregulation of domestic prices, and devaluation of the exchange rate. The Industry Development Strategy of the country has put in place the principles that primarily focus on the

promotion of agricultural-led industrialization, exported development, and expansion of labor intensive industries.

Ethiopia applied to join the World Trade Organization (WTO) in 2003. However, reformative policies aimed at ensuring rapid integration into the multilateral trading system are not yet fully in place or implemented to complete WTO accession. Broad policy discretion over tariffs and other trade measures are in the hands of Ethiopia's policy makers. Lessons from recently acceded countries indicate that the WTO accession process is quite complex and demands thorough preparation to allow well informed decisions on trade policy reforms that need to be made in-country to meet the requirements of accession. WTO rules and conditions have to be fully analyzed to understand the implications of WTO membership on the acceding economy.

Moreover Ethiopia is currently pursuing new multilateral trade agreements and numerous bilateral and regional trade pacts. It is also a member of the Common Market for Eastern and Southern Africa (COMESA) trade bloc, although it has not yet acceded to the COMESA free trade area (FTA) and customs union (CU) arrangements.

At the continental level, Ethiopia has signed and ratified the Abuja Treaty that aims to establish an Africa Economic Community (AEC) among the continent's 54 countries. The Treaty emphasizes the importance of setting up the AEC through the coordination, harmonization, and progressive integration of the activities of regional economic communities (RECs). Formation of a Tripartite Free Trade Area (TFTA) among the three RECs namely COMESA, EAC and SADC is part of the preparatory action based on the Abuja treaty.

At the inter-regional level, although the country's current trade with the EU is governed by the latter bloc's "Everything but Arms (EBA)" preferential trade arrangement, Ethiopia, as part of the Eastern and Southern Africa (ESA) configuration, is currently negotiating an Economic Partnership Agreement (EPA) with the EU.

### **3. Rwanda**

Rwanda has decided that having an open liberalized economy is a pre-condition for its economic growth. The trade policy therefore, does not look at reviewing alternatives to Rwanda's commitment to liberalization, but rather at establishing the right strategies to ensure that Rwanda

benefits fully from liberalization and to ensure that the potential negative effects are mitigated (Republic of Rwanda Ministry of Trade and industry, 2010)

The trade policy Rwanda articulates the policy environment that is necessary for trade to flourish, based on experiences in successful economies. The review is holistic in nature, examining all aspects related to Rwanda's trade policy. The re-articulation of the Rwanda Trade Policy will among others, look at the following constraints/issues:

- The limited production capacity, productivity and diversification in key economic sectors leading to limited participation of Rwanda in regional and global export markets
- Underdeveloped human capital accumulation and skills in trade policy formulation, and negotiations and in export promotion
- Low rate of science and technology and intellectual property development.
- The strengthening of the positive linkages between trade measures affecting exports, and the productive sectors of the country such as industry and agriculture.
- Increasing the scope, coverage and depth of market access conditions for Rwanda in all current and potential markets.
- Internal trade in Rwanda and the need to ensure the effective functioning of the Rwandan market through competition policy

The Trade policy document outlines the key objectives of Rwanda's trade policy as well as the strategic initiatives and actions to achieve the objectives. It outlines the objectives **of strengthening productive capacities as well as investment into productive capacities**, some of the recommended activities are the mobilization of investment for establishment of selected export-oriented industries; improving climate for attracting investment in to productive activities; Building up capacities to meeting product standards for human, animal and health protection, as well as environmental norms (Republic of Rwanda Ministry of Trade and industry, 2010)

Moreover the trade policy also proposes the **objective of strengthening participation in international trade through seeking greater market access and entry opportunities** by developing a National Export Strategy; supporting enterprises in finding new markets for exports of Rwanda, especially in Africa, in the EU under EPAs, in Asia and in transition economies;

building up and disseminating data and information on tariff and non-tariff measures affecting exports of Rwanda among others ( Republic of Rwanda Ministry of Trade and industry, 2010)

#### **4. Uganda**

Unilaterally, Uganda has implemented a series of trade reforms in a process that started in the late-1980s as part of structural adjustment programs (SAPs) with support mainly from the World Bank and the International Monetary Fund. These programs, anchored in economic liberalization led to:

- (i) privatization of state-owned enterprises, and encouraging greater participation by the private sector
- (ii) removal of domestic price control and subsidies that were used extensively since the 1960s to protect the agricultural sector;
- (iii) reduction of tariffs on imports (from average of 40% to 30%) and removal of export taxes; and
- (iv) Simplification of customs procedures.

Between the late-1980s to early 1990s, all state-owned agricultural marketing companies, notably the Produce Marketing Board (PMB), Lint Marketing Board (LMB), and Coffee Marketing Board (CMB), which for over 25 years held the monopoly on the purchase and export of agricultural commodities, were disbanded. Encouraged by the rise in farm share of export prices for cash crops in the 1990s, and improved economic performance, Uganda sought to build dynamic export sectors by reforming its overall tax system and exchange regime.

Moreover Uganda is a founding member of the Common Market for Eastern and Southern Africa (COMESA), established in November 1993 as a successor to the preferential trade area are a free trade area (FTA), (PTA) for Eastern and Southern Africa. Of the current membership of 19 countries, while six members, including Uganda, are not in the FTA. As a founding member, however, Uganda can export to COMESA at tariff rates 60-90% below the COMESA CET, on a reciprocal basis.

#### **5. Burundi**

Burundi has been a member of the WTO since 1995. Burundi has a relatively open trade regime, which aligns with the country's Economic Growth and Poverty Reduction Strategy. The average MFN applied tariff in 2012 was 12.8 per cent with agricultural exports into the country facing



higher barriers (19.8 per cent) compared to non-agricultural exports (11.7 per cent). As a part of regional integration strategy, Burundi acceded to the East African Community (EAC) in 2007, and began implementing the common external tariff (CET) in 2009, which constitutes the country's main trade policy instrument. While EAC member countries have bound their ad valorem rates only, Burundi's ad valorem rates on certain products are higher than its bound rates to the WTO – thereby it needs to reduce the CET to the WTO compliance level. The country also belongs to various other regional organizations including the Economic Community of the Great Lakes Countries (ECGLC), the Economic Community of Central African States (ECCAS) and Common Market for Eastern and Southern Africa (COMESA). In addition, Burundi has Bilateral Trade Agreements with various countries including the USA, South Africa and other EAC member countries plus with the EU (WTO 2012)

## **6. Tanzania**

Tanzania has embarked on a marked liberalization of its trade regime. The Government wants this reform process to continue and sees international integration at the global and regional level as a means to achieve higher economic efficiency, productivity and international competitiveness. Upon joining the East African Community (EAC) customs union in January 2005, Tanzania changed its import regime and adopted the EAC common external tariff. As a result, its listed average import duty rate fell moderately from 13.8 per cent to 12.3 per cent. The tariff regime continues to be escalatory and generates significant domestic market protection and anti export bias. The scale and dispersion of policy-induced transfers distorts production incentives and makes it possible for a considerable number of value-subtracting firms to persist, (World Bank, 2002)

Export restrictions have been phased out for most products in the late 1990s. However, in 2003 the Government introduced a 15 per cent export tax on raw hides and skins to assist the struggling domestic tanning and leather industry by discouraging exports and making a larger number of domestically produced hides and skins available for local processing. Yet, given the importance of informal trade in hides and skins and world-wide experience with export restrictions, the success of this strategy is highly uncertain. The Government should critically assess the effectiveness of the restrictions with a view to phasing them out. Tanzania has reduced its dependence on trade taxes as sources of government revenue through the introduction of

value-added taxation. Import duties now account for less than 10 per cent of government income compared with more than a third in the mid-1990s. This development represents a major achievement that should be consolidated by further strengthening the domestic tax system, and thereby laying the foundation for deeper international integration of the economy.

Moreover Tanzania is committed to the process of regional integration and is pursuing closer ties with neighboring African nations. The country is engaged in two regional trade agreements (RTAs), namely the East African Community and the Southern African Development Community, and is considering re-entering the Common Market for Eastern and Southern Africa, from which it withdrew in 2000. However, as regional trade is of only modest importance and external tariffs remain high, there is a considerable risk that regional agreements have a net trade diverting and welfare-diminishing impact. In order to reduce this risk, Tanzania should push for reductions in the EAC's common external tariff and anchor its regional integration efforts firmly within a framework of multilateral liberalization, while leveraging cooperation at the regional level to tackle regulatory impediments to trade.

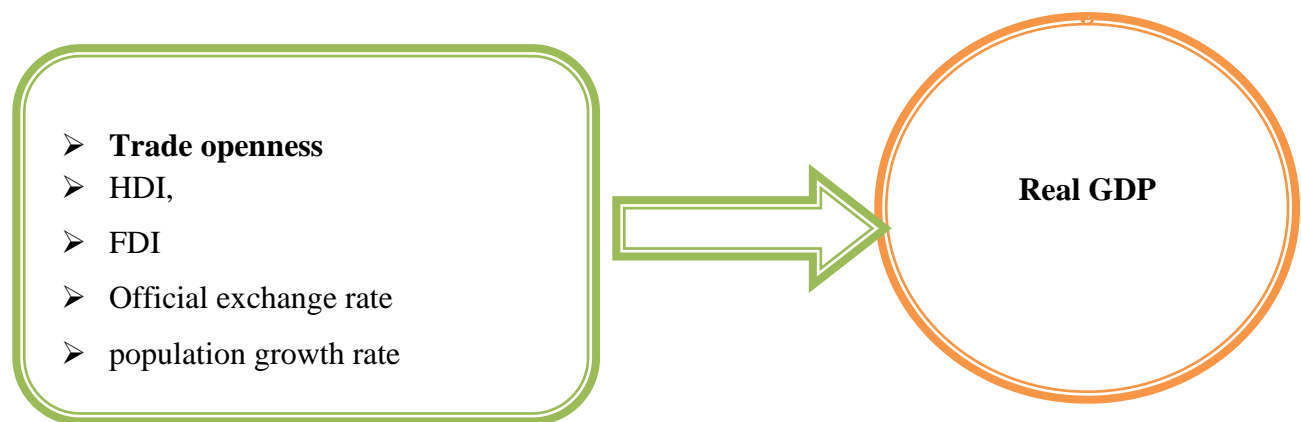
## **7. Sudan**

Sudan's tariff structure is focused on imports, given that its exports are very small and mostly informal cross-border trading. To become a member of the East African Community (EAC), the country has to adopt the three-tier tariff system and align its tariff structure with the regional bloc. Apart from its potential membership of the EAC, Sudan became a member of the Common Market for Eastern and Southern Africa (COMESA) in 2011 with an attempt to strengthen its ambition for regional integration. So far, the country has not yet entered into any bilateral treaties. Sudan is generally open to trade and there are no major trade restrictions. Recent trade policies aim at expanding its export base, reinforcing competitiveness in the export of non-oil products and opening new exports markets to encourage more foreign direct investment (African Development Banking Group 2013)

## 2.7 Conceptual Framework of the Study

According to Upton, (2001), a conceptual framework can be defined as a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a successive study. Therefore, a conceptual framework is a research tool intended to assist a researcher to develop awareness and understanding of the situation under examination and to communicate with a study (Upton, 2001). Hence, a conceptual framework is used to outline possible courses of action or to present a preferred approach to an idea or thought that developed based on the literature reviewed in respective to study undertaken.

So, the conceptual frameworks for the study identify, Real GDP as dependent variable whereas T population growth rate, Trade openness, human development index and, official exchange rate as independent variables. The above-mentioned independent variables directly impact economic growth and their intention the dependent variables, as to how the way to address these factors leads to the effect on trade openness at study will undertake .This more illustrated through the figure below.



**Figure 2.1: Conceptual framework of the Study**

**Sources: Developed by a Researcher, (2020)**

## **CHAPTER THREE**

### **RESEARCH DESIGN AND METHODOLOGY**

#### **3.1. Introduction**

This Chapter highlights the type of the research methodology; methods of data gathering tools together with the justifications for choosing one against the others. It will also describe on how these methods will be employed refers to the objective set earlier to address the purpose of this study and issues related to reliability and validity as well as ethical consideration within the proposed methods is being put in place briefly.

#### **3.2 Research Design and Approach**

For the purpose of this study explanatory research design was applied. Because, explanatory research design is used to for quantitative data it attempt to explain the relationship between the dependent and independent variables (Cruse, 2003). In ordered to accomplish the proposed research with respect to the objective and the nature of research questions of the study, quantitative research approach was adopted.

Therefore, quantitative data analysis is quantifying the relationship between variables, such as Real GDP (Dependent variable). Whereas, factors affecting Real GDP such as Trade openness, FDI, HDI, official exchange rate and population growth rate as (Independent variables).

#### **3.3 Description of the Study Cases**

##### **1. Ethiopia**

Ethiopia, with a total area of 1.1 million km<sup>2</sup> lies in the northeastern part of the Horn of Africa. The country is landlocked, sharing frontiers with Eritrea to the north and northeast, Djibouti to the east, Somalia to the east and southeast, Kenya to the south, and South Sudan and Sudan to the west. Ethiopia's topographical diversity encompasses high mountains and flat-topped plateau, surrounded by lowlands, and dissected by deep gorges with rivers and rolling plains with altitudes ranging from 110 m below sea level at the Denakil Depression in the northeast to over 4 600 m above sea level in the Simien Mountains in the north. The Great East African Rift Valley divides the country.

The total population of the country is estimated at 99 million (2015), of which 81 percent is rural. The annual population growth rate is 2.6 percent over the period 2005-2015 and the average population density is 90 inhabitants/km<sup>2</sup>, but varies from 7 inhabitants per km in Afar in the northeast to 114 inhabitants per km in Southern Region in the southwest of the country. The urban population is growing rapidly as a result of both population increase and high rural-urban migration. The Ethiopian economy is mostly based on agriculture, with industry and services slightly increasing recently. The main agricultural exports are coffee, oil seeds, cereals, cotton, sugarcane, khat, spices, natural gum, incense and cut flowers among others. Coffee is the largest export commodity responsible for a third of the agricultural exports earnings.

## **2. Kenya**

Kenya is located on the East African coast and on the equator. It is bordered by South Sudan and Ethiopia to the north, Somalia and the Indian Ocean to the east, the United Republic of Tanzania to the south, and Uganda and Lake Victoria to the west. The total area of the country is 580 370 km<sup>2</sup>, including 11 230 km<sup>2</sup> of inland water bodies in particular Lake Victoria and Lake Turkana. The Great Rift Valley dividing the Central Highlands is one of the main features of the country. The altitude varies from sea level at the Indian Ocean to the peak of Mt. Kenya, which is 5 199 metres above sea level. Kenya is also characterized by a large diversity of landscapes, from deserts, such as the Chalbi desert, to glaciated mountains, hosting a rich biodiversity.

The total population of the country is estimated at 44.4 million (2013), of which 75 percent is rural. The annual population growth rate is 2.7 percent in 2013 and the average population density is 76 inhabitants /km<sup>2</sup>. The population is concentrated on the medium to high potential agricultural land, representing less than 20 percent of the total area of the country. Kenya economy is largely dependent on agriculture and tourism. About 69 percent of the total economically active population is employed in agriculture. Agriculture accounts for 65 percent of Kenya's total exports and comprises five major sub-sectors: industrial crops, food crops, horticulture, livestock and fisheries (WB, 2014). Industrial crops and horticulture are the two main agricultural exports.

## **3. Rwanda**

Rwanda is a landlocked country in central Africa less than half the area of Tasmania. It has a predominantly mountainous terrain and is popularly known as "land of a thousand hills". The

landscape includes the volcanic Virunga range on the western edge of the Great Rift Valley. There are small tracts of rainforest on the western and north-eastern borders of the country and tropical savannah in the east. Deforestation is widespread. Rwanda is one of the poorest countries in the world. The economy is predominantly agricultural, with the vast Majority of the population engaged in mostly subsistence farming. Coffee and tea are grown for export while cereals, vegetables and rice are grown as food crops. Even before the genocide, Rwanda could not sufficiently feed its population; however after 1994 the country's economic base was severely impoverished, with a limited ability to attract investment.

#### **4. Sudan**

Sudan has a special geopolitical location bonding the Arab world in Northern Africa to Africa south of the Sahara. It has an area of about 1.88 million km and is the third largest country in Africa, after Algeria and the Democratic Republic of the Congo. Before the independence of South Sudan in 2011, it was the largest country in Africa. On the north-east Sudan is bordered by the Red Sea and it shares common borders with seven countries: Eritrea and Ethiopia in the east, South Sudan in the south, Central African Republic and Chad in the west, Libya in the Northwest and Egypt in the north.

Sudan's population is almost 38 million (2013) with an annual growth rate of 2 percent (over the 2012 -2013 period).Population density is 20 inhabitants/km and 70 percent of the total population is rural Most of the population lives along the Nile and its tributaries, and some live around water Points scattered around the country. At national level, 55 percent of the population had access to improved drinking water sources in the year 2012). In urban areas this coverage was 66 percent, while in rural regions it was 50 percent

#### **5. Tanzania**

The United Republic of Tanzania is located in Eastern Africa. It is bordered by Kenya and Uganda to the North, Rwanda, Burundi and the Democratic Republic of Congo to the West and Zambia, Malawi and Mozambique to the South. The country's eastern border lies in the Indian Ocean which has a coastline of 1,424 km. Tanzania is a developing country and its economy depends heavily on agriculture. The sector accounts for more than 40% of GDP, provides 85% of the country's exports and employs 80% of the total workforce. Apart from the agricultural sector, tourism, mining and small scale industries are increasingly contributing to the national economic growth.

## **6. Uganda**

Uganda is a landlocked country in Eastern Africa located at the equator. It has a total area of 241 550 kma north-south extent of about 650 km and a maximum east-west extent of about 500 km. The country borders South Sudan to the north, Kenya to the east, the United Republic of Tanzania and Rwanda to the south, and the Democratic Republic of the Congo to the west.

The total population of the country is estimated at 37.6 million (2013), of which 83.6 percent are rural. The annual population growth rate is 3.4 percent in 2012, the third highest in Africa, and is forecasted to remain high in the next decades. This will add a significant pressure on an already very densely populated country with an average of 155.6 inhabitants/km. The population is concentrated on the shores of Lake Victoria, Albert, Edward and George. Ugandan agriculture is almost completely dependent on rained agriculture by small- and medium-scale farmers with a national average holding size of 1.1 ha (UBOS, 2010). Due to very limited use of irrigation, as well as other modern agricultural practices and inputs such as pesticides and fertilizers, improved varieties and mechanization, the agricultural productivity is low (Office of the Prime Minister, 2012; FAO, 2013).

## **7. Burundi**

Burundi is located in central Africa. Burundi is bordered by Lake Tanganyika, Democratic Republic of the Congo to the west, Tanzania to the north and east, and Rwanda to the north. While it's the 78th largest country, Burundi has a population of about 11.57 million people as of 2019. Poor economic planning and management from the government prevents economic growth. Burundi is landlocked, and its population is continually increasing. Land is the greatest source of conflict in Burundi. The country is overpopulated and rural, so land is valuable because it is a source of agriculture

### **3.4 Data Types and Sources.**

#### **3.4.1 Secondary Source of Data**

The researcher used for selected countries and all relevant secondary data sources from World Bank, refer to documentation, organization's reports and reviewing previous studies, searching on Websites such as published and unpublished materials, and other available sources for the simplicity of the research and as to properly organize the study

### **3.5 Method of Data Analysis**

The most methods of data analysis that is used for this study are descriptive and inferential statistics.

#### **3.5.1 Descriptive statistics**

Descriptive statistics is the discipline of quantitatively describing the main features of a collection of data. In this research, descriptive analysis conducted to understand the behavior and interaction of the panel data over time with the aid of simple graphs and descriptive statistics like mean and standard deviation

### **3.6 Econometric model**

The present study unified multiple regression technique to detect the dynamic relationship between trade openness and GDP. Rely on the nature of this study and type of data, panel data analysis has been unified to pick-up impartial results. Panel data are a kind of special pooled data in which the same cross-sectional units are documented over time. Basically, it coincides to data with large numbers of cross-sections, with variables held in single series in stacked form. This study is used Panel data due to its magnification over time series and cross-sectional dataset as the same can control for individual heterogeneity and conquers the problem of omitted or unobservable variable problem (Gujarati, 2003). The data of Time series are mostly hampered with non-stationary issues and heterogeneity problem which is associated with cross section data and often reported in empirical studies (Baltagi, 2005). The observations of the time series data adhere natural ordering over time, so the consecutive observations are eventual to demonstrate inter-correlation particularly, if the time interval between consecutive observations is short. The author, Baltagi (2005) demonstrated that panel data are more convenient to recognize and measure the effects that are unobservable in pure time series and pure cross sectional data. As per the concern of the author Brooks (2008), the issues of multi-collinearity and problems of



observation number scarcity are very high in time-series data and cross section data. In addition to the author Koutsoyiannis (2004) demonstrated that time series data are more convenient for projection of economic data as benefit of data cannot be appraised and there is propensity towards indefiniteness and versatility of the coefficients of relationship. On the contrary, panel data models allow to fabricating and testing more complex behavioral models than purely cross-section or time-series data. Here upon the using of panel data, the degrees of freedom can be enhanced because of greater number of data points, and emerge of collinearity among the explanatory variables can be detracted that accordingly lead to more efficient estimate (Gujarati, 2003). Furthermore, it also supports to detract the problems of endogeneity due to the reflection of specific industry and country effects, reverse causality, and measurement error (Sequeira and Nunes, 2008). The panel data can minimize the bias by making data available for several thousand units that might be occur due to concentricity of individuals and or firms into capacious aggregates. As per the concern of the authors Gujarati and Sangeetha, (2007) Panel data also enables to study the complex behavioral models. Thus, the using of static models which is related to panel data compliances the investigation of problems that cannot be trade with merely by cross-sections or by time-series (Hsiao, 2000).

In this study, panel data has been determined by pooled OLS, fixed effects and random effects techniques. To have the OLS estimates best linear unbiased estimator, the study would like to conquer the limitation of earlier studies by fulfilling the important assumptions of regression techniques.

### 3.6.1. Panel Regression Technique

The panel data is appraise better to explore and measure the relationships that cannot be explored in pure time series or pure cross-sectional data (Gujarati, 2003; Wooldridge, 2002). The basic advantage of a panel data keep over a cross section is that it permit the researcher great variability in model differences in behavior across individuals. Following is the general form of panel regression model:

$$Y_{it} = \alpha_i + x_{it}\beta + w_{it}$$

Whereas  $Y_{it}$  = Dependent Variable for cross-sectional units  $i$  at time  $t$ , whereas  $i = 1, \dots, n$  and  $t = 1, \dots, T$ ; and  $\alpha_i$  is a heterogeneity or individual effect.  $\beta$  is  $k \times 1$  and  $x_{it}$  is the  $i^{\text{th}}$  observation on  $K$

explanatory variables. Most of the panel data applications utilize a one-way error component model for the disturbances, with the is a united error term comprising of two components, which is the cross-section or individual-specific error component, and is the combined time series and cross-sectional error term. The heterogeneity or individual effect suppresses a set of individual or group-specific variables, which probably observed or unobserved and all are assessed to be constant over time  $t$ . If is observed for all individuals, then the whole model can be considered as an ordinary linear model and fit by least squares. If is unobserved, the difficulties arise which will be the case in most applications (Greene, 2003). So that, the complexity can be resolved by using fixed effect and random effect estimation techniques relating to panel data. However, the choice of technique pin one's faith on the relationship between the unobserved effects.

### **3.6.1.1 Pooled regression Model:**

The use of Pooled regression model occurs at the time when groups to be pooled out are comparatively identical or homogenous. This model can be directly run using ordinary least squares on the symbolized groups. If the models give way to the large standard errors (small  $T$  statistics) it indicates a warning flag that the group is against all that homogenous (identical) and in favor of random effect model or it may be more appropriate. It can also be noted here that it does not examine the individual or time effect that could lead to the risk of observing overestimate bias in the significance of coefficient (Barclay et. al., 1995; Bevan and Danbolt , (2004). Nevertheless, in the case of Heteroscedasticity in data, the variance of OLS estimator is not prefabricated by the usual OLS formulas. So, using the ordinary, the  $T$  and  $F$  test statistics can be highly elusive and may result in immense conclusion. Therefore, more advance approach like fixed or random effects models are appropriate to overcome these problems. The general equation of pooled OLS model is where  $y_{it}$  is the dependent variable where  $i$  = entity and  $t$  = time .  $\alpha$  is the common  $y$ -intercept.  $\beta$  represents explanatory variables is the coefficient of the explanatory variables is the error term

### **3.6.2.2 Fixed effect model:**

The model, Fixed effect meters the group differences in intercept for each by using a isolated dummy variable for each cluster on account of this reason it is also known as least squares dummy variable method. The odds in intercept for each dummy variable are measured by assuming stagnant slope (coefficients) for independent variables and static variance across the

groups. It comprises on an intercept for each individual to calculate individual specific effects and coefficients estimates reflect within individual variation. If the dummies are taken as a part of intercept for each individual to examine individual specific effects and coefficients estimates reflects within individual variation. It does not consider unit specific residuals and considers them non-random and then it is known as fixed model. While in random effects model dummies act as an error term. Least square dummy variable and within effect estimation methods are used with fixed effect models. Nevertheless ordinary least square (OLS) with dummies in fixed effect model is tested by the incremental F test (Gujarati and Sangeetha, 2007). A fixed effect model examines the group differences in intercept assuming constant variance across subjects and same slope.

### **3.6.3.3 Random effect model:**

In the random effect model variables are supposed to have not a mutual relationship or correlation with all the observed variables. This model strength the differences in the variance of the error term to models group collectively, assuming intercept and slopes. Random effect model is used for the analysis of sequential or panel data when one acknowledges that there is no fixed effect. This model is assumed to be random and coefficients variations are based on average variation between specific and within specific. Single error substantive term should be matched to any regressors' .Else, the assumption of ordinary least square is contravened. When the variance structure is known, random effect method used generalized least square (GLS) and when the variance structure is not known, feasible generalized least square method is used (Greene, 2003). For examination of random effects model Breusch Pagan or LM test is used. Yet, it is a still out daring task for the researcher to take the plunge whether to applied fixed effect model or random effect model. When  $(\epsilon_i)$  and X regressors are correlated then Fixed effect model is appropriate and if  $(\epsilon_i)$  and the X regressor's are uncorrelated the random effect is appropriate. In terms of degree of freedom and estimation, it is better to accept Random Effect Model because the effect economies of Random, in terms of degree of freedom do not require cross section units (N) rather require estimation of mean values of intercept and its dissimilarity.

### **3.6.4 Pooled OLS vs Fixed effect vs Random effect**

With a view to materialize unbiased result, this study applied pooled OLS, fixed effect and random effects model. Secondly, to identify the most appropriate model, the choice between

pooled OLS and Fixed effect model is pronounced by F test; the choice between pooled OLS and random effect model is identified by Breusch pagan test and finally a choice between fixed effect and random effect model is identified by Hausman test. Nevertheless, with a view to scrutinize consistency, the present study applied the entire three models. But ultimately, Interpretation and results are based on the most appropriate model. How to determine most appropriate model on the basis of these test is shown following.

### **3.6.4.1 Selection criteria of most appropriate model**

The selection of most appropriate model is based on the following way.

#### **1. Panel Diagnostic Test**

The accuracy and convincement of regression results rely upon the type of data and the methods which has been used to take the gauge of the models. In the first instance, the present study is rooted on balanced panel data analysis that can be determined through several methods i.e. Pooled OLS, Fixed Effects Model (FEM) and Random Effects Model (REM). For choosing best model is described following with three different methods and tests.

#### **2. OLS V/s Fixed Effect**

Selecting the best or adequate model for panel data between OLS and fixed Effect, F test or Wald test is used. In this test the null hypothesis justify that OLS model is adequate whereas alternative model is for Fixed Effect Model. Secondly, the Panel Diagnostic test justifies the result with P-value. If P-value is less than .05 the null hypothesis is rejected and it favors fixed effect model but if P-value is more than .05 the alternative hypothesis is rejected and in favor of Pooled OLS.

#### **3. OLS V/s Random Effect**

Selecting the best or adequate model for panel data between OLS and Random Effect, Breusch-Pagan LM test is used. In this test the null hypothesis justify that OLS model is adequate whereas alternative model is for Random Effect Model. Secondly, the Panel Diagnostic test justifies the result with P-value. If P-value is less than .05 the null hypothesis is rejected and it favors Random effect model but if P-value is more than .05 the alternative hypothesis is rejected and in favor of Pooled OLS.

#### **4. Random V/s Fixed Effect**

Selecting the best or adequate model for panel data between Random and Fixed Effect, Housman Test is used. In this test the null hypothesis justify that Random effect model is adequate whereas

alternative model is for Fixed Effect Model. Secondly, the Panel Diagnostic test justifies the result with P-value. If P-value is less than .05 the null hypothesis is rejected and it favors Fixed effect model but if P-value is more than .05 the alternative hypothesis is rejected and in favor of Random Effect Model.

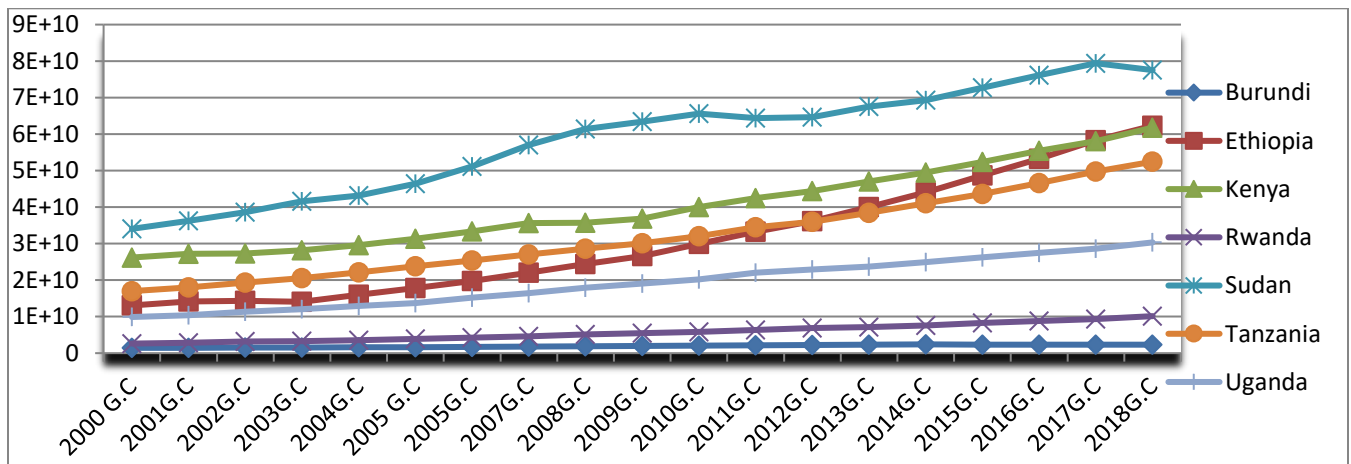
## CHAPTER FOUR RESULTS AND DISCUSSIONS

### 4.1 Descriptive statistics Trend Analysis

#### 4.1.1 Trend analysis of Real GDP

The graph below shows the real GDP of east African countries from 2000-2018. The Sudan GDP looks to have an increasing nature, although it had some fluctuation at the 2010s. According to BBC News, (2019) the Sudanese Revolution was a major shift of political power in Sudan that started with street protests throughout Sudan on 19 December 2018 and continued with sustained civil disobedience for about eight months, during which the 11 April 2019 Sudanese coup d'état deposed President Omar al- Bashir after thirty years because of this political instability Economic growth of Sudan was declining in 2018.

To the other extreme the Economic growth of Ethiopia ,Kenya and Tanzania seems strong compared to other east African countries, as shown in the trend graph, the change of growth rate is almost constant since the graph seems increasing at decreasing rate. Comparatively the Economic growth of Burundi is a little bit lower than other east African countries; the trend graph also shows the GDP of Burundi seems horizontal. Furthermore, the economic growth rate for almost all east African countries between the year 2007 and 2018 seems increased with a lower rate. Compared to other east African countries the economic growth rate of Uganda and Rwanda seems increase consistently as shown in the trend graph below.

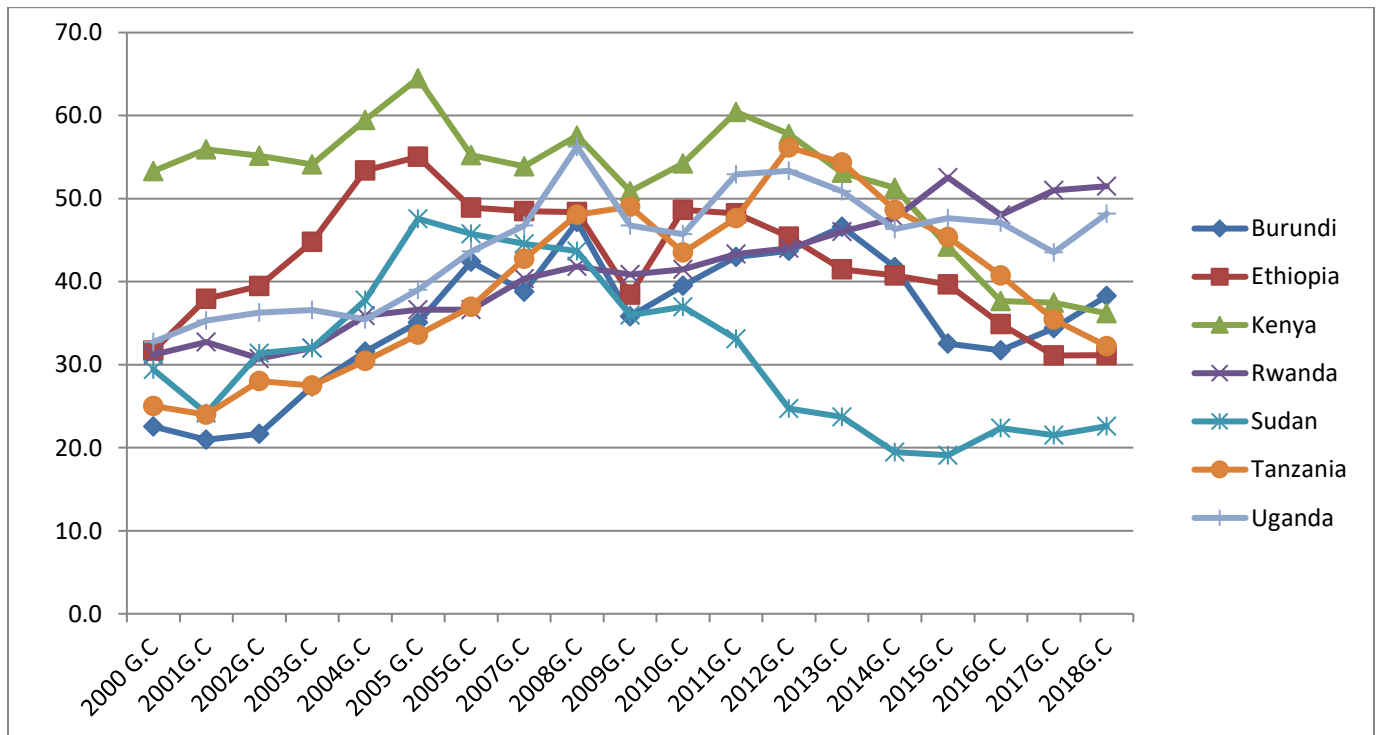


Source: Own analysis result based on secondary data (2020)

### 4.1.2 Trend Analysis of Trade Openness

As clearly shown in the graph below the trend of trade openness of east African countries from 2000-2018, comparatively Ethiopian trade trend for the period 2000 -2018, Clearly as depicted there is a steady increments' trade trend in the early 2000s, decline in the late 2005s and which is lost in the late 2005s. Kenya's trade trend for the period 2000–2018, clearly as represent there is a steady decline in trade from 2001-2002, an increase from in the late 2003s-2005s and from 2005-2007 the trend shows decreasing at decreasing rate.

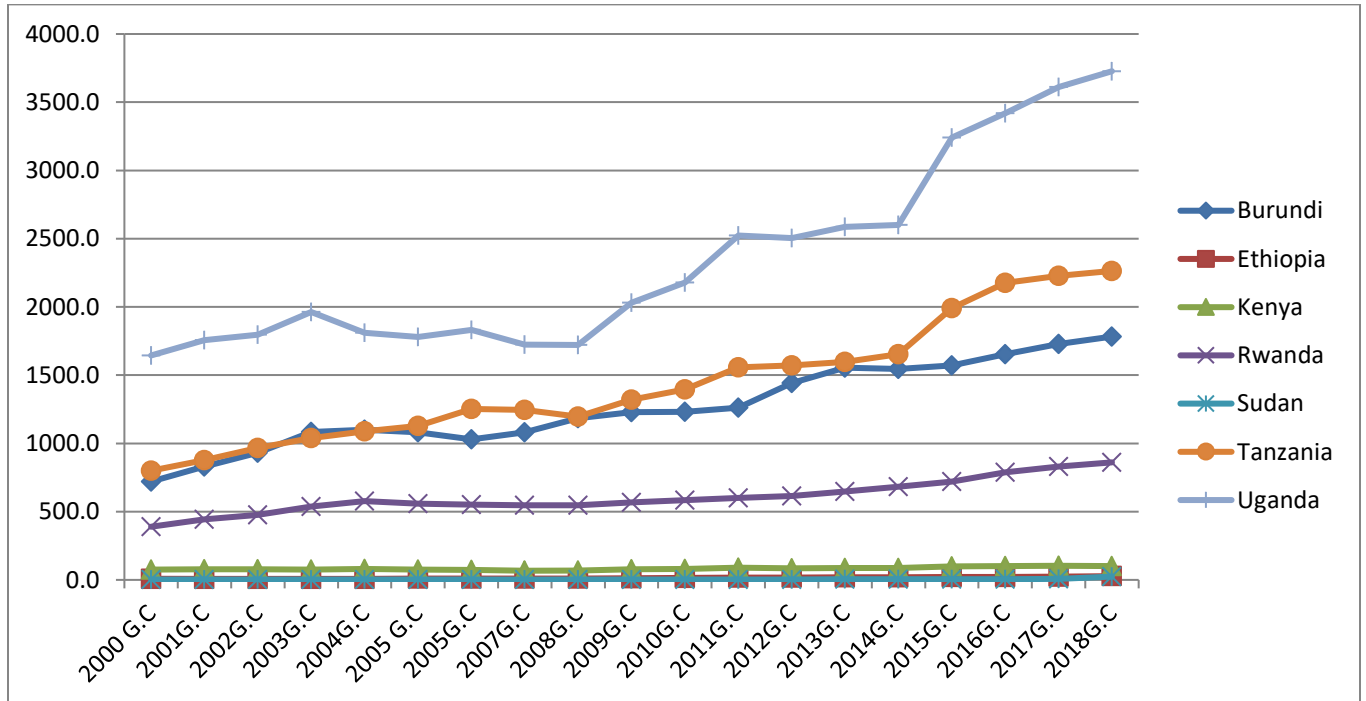
There for the trade openness the seven east African countries was increasing until 2005 as the trend graph shown below, particularly between 2006 and 2011 the trade openness of the seven countries is highly increased but after the year 2011 the trade openness was depreciated at a higher rate. According to the (Burundi Ministry of Trade, 2008), trade openness has negatives impacts on growth in countries with low financial development but has insignificant impact in countries with high financial developments.



Source: Own analysis result based on secondary data (2020)

### 4.1.3 Trend analysis of exchange rate

The graph below has shown the official exchange rate of east African countries, comparatively the exchange rate of Uganda is a little bit higher than other east African countries, the trend graph also shows the money values of Uganda is devaluating from year to year; particularly between 2008 and 2011 the exchange rate of Uganda is highly depreciated as well as after the year 2014 the exchange rate is depreciated at a higher rate; whereas the exchange rate for the other countries in the same year depreciate with a lower rate. To the other extreme the money value of Ethiopia seems strong compared to other east African countries, as shown in the trend graph, the change of exchange rate is almost constant since the graph seems horizontal. Furthermore, the exchange rate for almost all east African countries between the year 2001 and 2014 seems depreciated with a lower rate. Compared to other east African countries the exchange rate of Uganda fluctuates frequently, apparently and the exchange rate of Ethiopia and Kenya seems consistent as shown in the trend graph below; also the trend graph of Tanzania and Burundi seems increase consistently, although the exchange rate of Tanzania depreciated with a little bit higher rate.

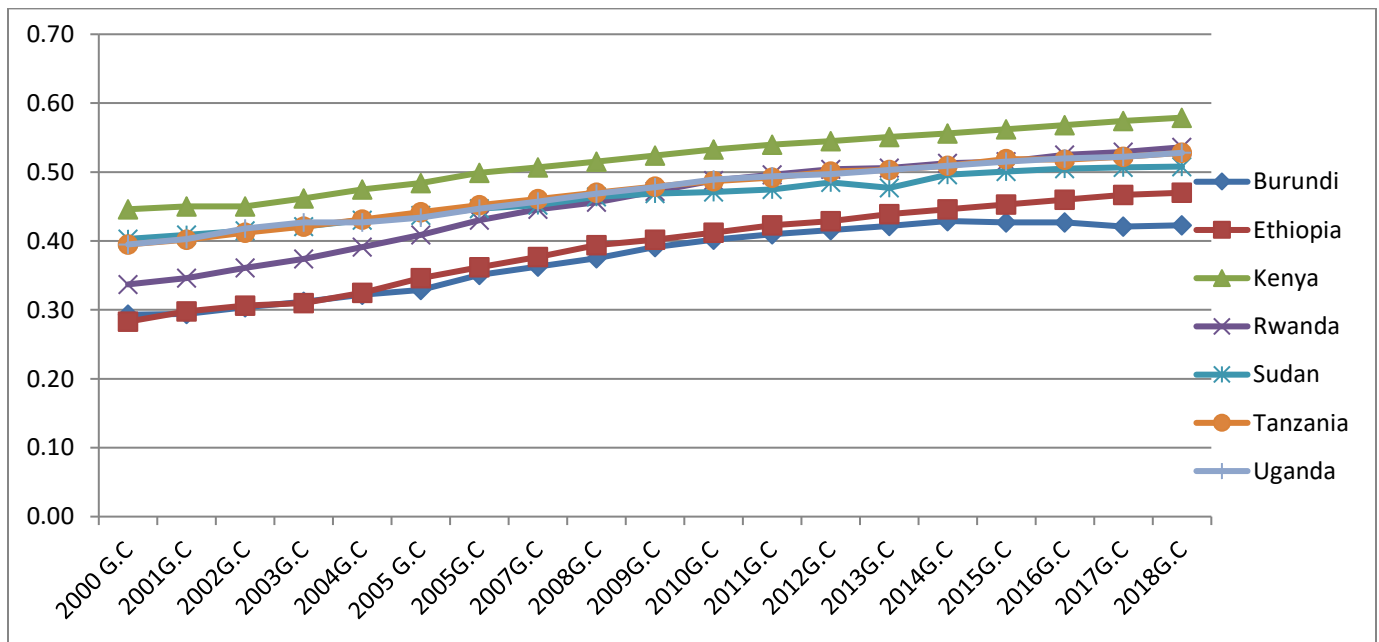


Source: Own analysis result based on secondary data (2020)



#### 4.1.4 Trend analysis of HDI

As it clearly indicate the graph below about the Human development index of east African countries from 2000-2018, comparatively the Human development index in Kenya a little bit higher than other east African countries the trend graph also shows the HDI of Kenya is increasing rate from year to year; which indicated that the level of human development and the distribution of achievements across people in the society is increased, whereas the HDI for the other countries in the same year increasing with a lower rate., Furthermore, the HDI for almost all east African countries between the year 2000 and 2018seems increasing with a lower rate. Which indicate that Average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living is not more enough.

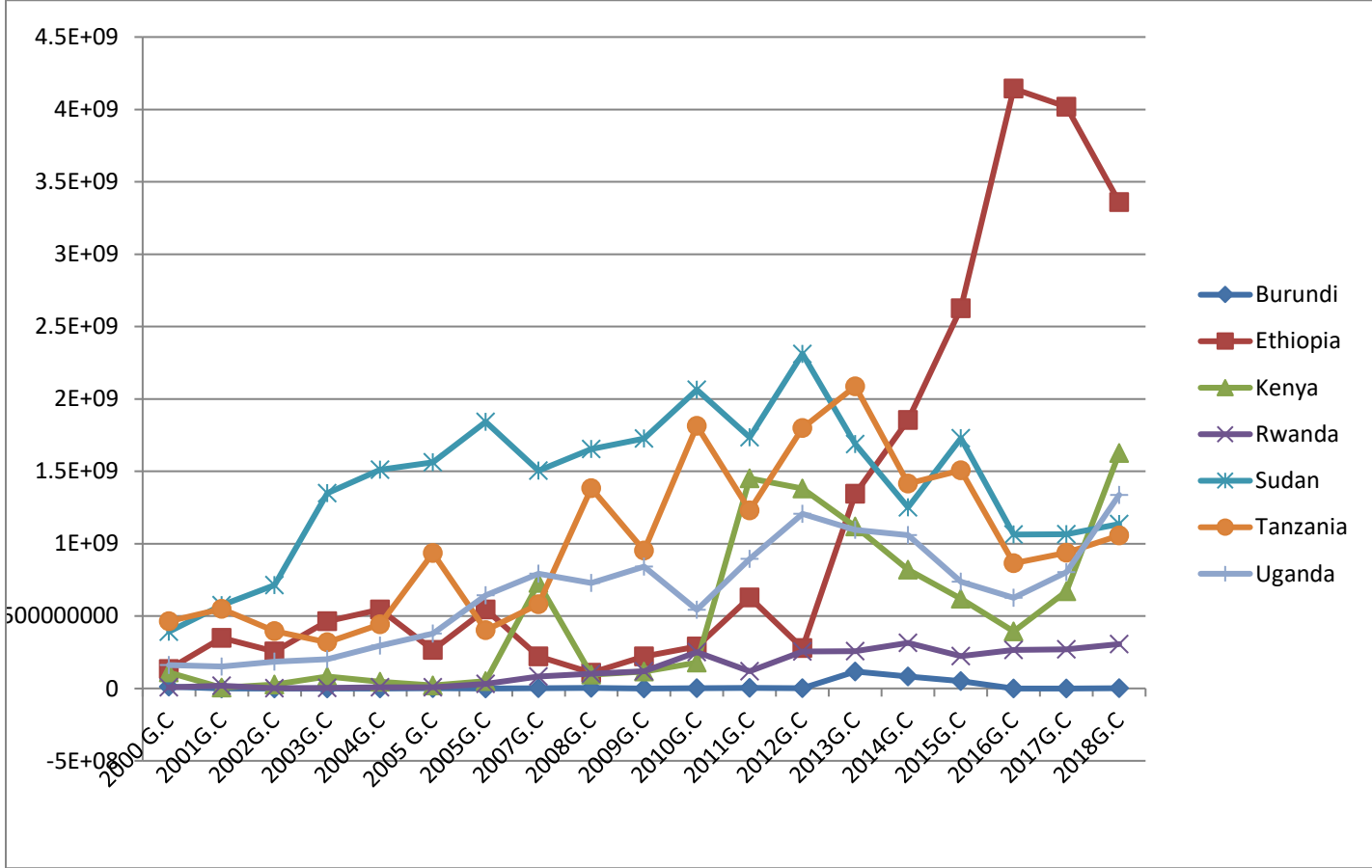


Source: Own analysis result based on secondary data (2020)

#### 4.1.5 Trend analysis of FDI

The graph below shows the foreign direct investments of east African countries from 2000-2018, comparatively the FDI in Ethiopia a little bit higher than other east African countries, the trend graph also shows the foreign investment of Ethiopia is increasing from year to year; particularly between 2012 and 2015 the FDI of Ethiopia is highly increased as well as after the year 2016 the FDI rate is decreased at a higher rate; whereas the FDI for the other countries in the same year

fluctuated with a lower rate. to the other extreme the FDI of Ethiopia seems strong compared to other east African countries, as shown in the trend graph, the change of Burundi FDI is almost constant since the graph seems horizontal.

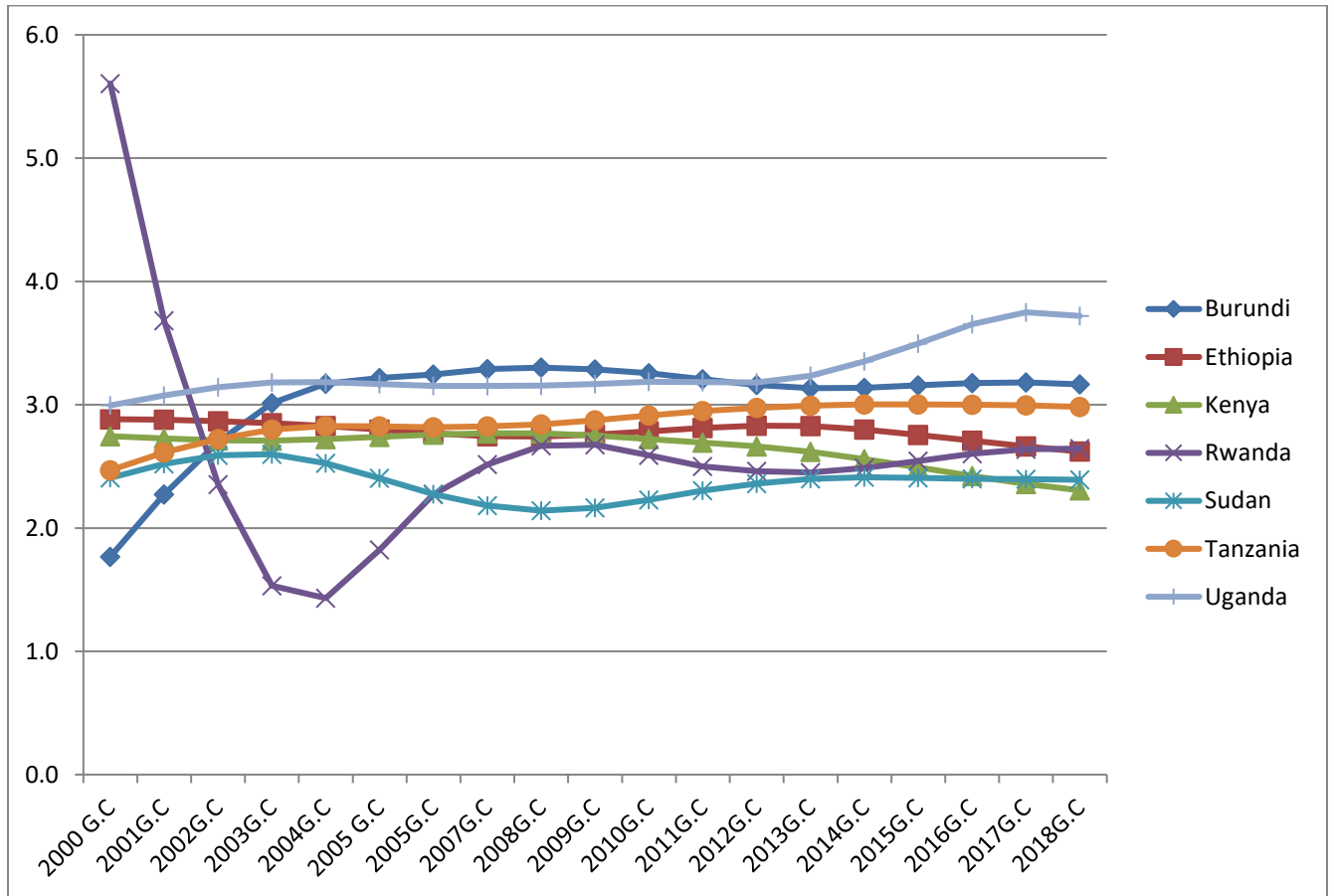


Source: Own analysis result based on secondary data (2020)

**4.1.6 Trend analysis of Population growth rate**

The graph below shows the population growth rate of east African countries from 2000-2018 , comparatively the population growth rate of Burundi is a little bit higher than other east African countries, the trend shows the population size of Burundi is increasing from year to year; particularly between 2000 and 2009 the population growth rate of Burundi is highly increased as well as after the year 2010 the population growth rate is Constant; whereas the population growth rate of Rwanda highly decreasing with a higher rate until 2002. Furthermore, the population growth rate for almost all east African countries between the year 2000 and 2018 seems fluctuated with a higher rate. Compared to other east African countries the population

growth rate of Rwanda fluctuates frequently, apparently, the population growth rate of Ethiopia and Kenya seems consistent as shown in the trend graph below; also the trend graph of Tanzania and Uganda seems increase consistently, although the population growth rate of Tanzania constant with a higher rate.



Source: Own analysis result based on secondary data,(2020)

### 4.3 Result of regression analysis

#### 4.3.1 Multicollinearity test

AVIF test was performed to test the existence of multicollinearity, problem. The result of the test indicates the highest VIF is 1.60, which indicates the model performed with no major multicollinearity problem among the explanatory variable.

Variable	VIF	1/VIF
Population growth	1.62	0.615849
Official exchange rate	1.60	0.623656

HDI	1.60	0.626357
Trade openness	1.31	0.763904
FDI	1.28	0.781045
Mean VIF	1.48	

### 4.3.2 Heteroskedasticity Test

The interpretation of Breusch-Pagan test is done using the p value, if the p value is less than 5% significant level it is the indication of heteroskedasticity. Accordingly, as shown in the table below, the result of the test shows there is a heteroskedasticity problem since the p value is less than 5% significant level, so in order to avoid the problem the researcher transformed the dependent variable in log form.

Breusch-Pagan/cook-Weisberg test for Heteroskedasticity
Ho: constant variance
Variable: fitted value of Real GDP
Chi2(1)=19.04
Prob>chi2=0.0000

### 4.3.4 Pesaran test of autocorrelation

Pesaran's test of cross-sectional independence = -1.387 = 1.8346  
Average absolute value of the off-diagonal elements = 0.401

### 4.4 Hausman or Model Specification Test (Fixed Effect Vs Random Effect)

There are broadly two classes of panel estimator approaches that can be employed in financial research: fixed effects models (FEM) and random effects models (REM) (Brooks, 2008). The choice between both approaches is done by running a Hausman test. In addition, as noted in Gujarati (2003) if T (the number of time series data) is large and N (the number of cross-sectional units) is small, there is likely to be little difference in the values of the parameters

estimated by fixed effect model and random effect model. Hence, the choice here is based on computational convenience. On this score, fixed effect model may be preferable than random effect model (Gujarati, 2003). Since the number of time series (19 year) is greater than the number of cross-sectional units (i.e.7countries). Therefore, Hausman test is performed to decide the model which is going to be employed; accordingly:

- $H_0$ : random effect model is appropriate
- $H_1$ : fixed effect model is appropriate.

The interpretation is done, if the p value is significant or below 5% we reject null hypothesis and accept alternative hypothesis meaning that fixed effect model is appropriate; on the other hand if the p value is greater than 5% we accept the null hypothesis and reject alternative hypothesis meaning that random effect model is appropriate. Accordingly, as we have seen in the hausman test below the p value is below 5%, and hence, we accept the alternative hypothesis meaning that the appropriate model is fixed effect model.

	---- Coefficients ----			
	(b) Fixed	(B) Random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
Exchange	.1623622	.0702072	.092155	.0091186
Trade openness	-.0184895	-.0744186	.0559291	
HDI	2.443121	2.673997	-.2308759	
FDI	.0166849	.0159823	.0007026	
Population	-.0538092	-.0322259	-.0215834	
b = consistent under $H_0$ and $H_a$ ; obtained from xtreg				
B = inconsistent under $H_a$ , efficient under $H_0$ ; obtained from xtreg				
Test: $H_0$ : difference in coefficients not systematic				
$\chi^2(5) = (b-B)'[(V_b-V_B)^{-1}](b-B)$ $= 98.89$				
Prob> $\chi^2$ = 0.0000				
(V_b-V_B is not positive definite)				

#### 4.4.1 Fixed Effect Model

Fixed effect( with in regression )		Number of obs =133			
Group variable: countrysum		Number of group = 7			
R-Sq: within =0.9526		Obs per group, min=19			
Between=0.3595		Avg= 19.0			
Overall= 0.3459		Max =19			
		F(5,121)=485.86			
Corr(ui,xb)=0.2548		Prob>F=0.0000			
Log real GDP	Coefficient	Std err	T. statistics	Prob	95% confidence interval
Trade openness	-0.0027896	0.0009238	-3.02	0.003	-0.004618--0.0009608
Official exchange rate	0.0001095	0.0000268	4.09	0.000	0.0000565-0.0001625
HDI	5.786884	0.202348	28.60	0.000	5.386282-6.187485
FDI	1.032e <sup>-10</sup>	1.33e <sup>-11</sup>	7.73	0.000	7.65e <sup>-11</sup> -1.29e <sup>-10</sup>
Population growth rate	-0.0291859	0.0195433	-1.49	0.138	-0.06787-0.0095052
Constant	20.96569	0.0968987	216.37	0.000	20.77386-21.15753
Sigma,u	1.0563951				
Sigma e	0.07941152				
Rho	0.9943809 ,(fraction of variance due to u,i				
F test that all u,i=0, F(6,121)=1761.63, Prob>F=0.0000					

**In this study the multiple linear regression equation with these values**

$$\text{Log Real GDP} = 20.96569 + (-0.0027896)(\text{TOP}) + 0.0001095(\text{OE}) + 5.786884(\text{HDI}) + 1.032e^{-10}(\text{FDI})$$

In the regression ,GDP real domestic product in Log form, TOP trade openness, OE official exchange rate ,HDI human development index ,FDI forging direct investment and PGR population growth rate.

However, in the multiple linear regressions the coefficient of (TOP) is -0.0027, which means the trade openness is negatively correlated with the growth of GDP that means if the trade openness

increases by 1% the total GDP decreases by 0.0027%. Moreover, different empirical study also shows trade openness are negatively related with GDP. A study by Chen (1999) the relationship between trade openness and economic growth by using 34 countries of Asian and Latin American to observe how trade openness impacts on economic growth for the period of 20 years (1972-1992). He concludes that Asian countries have faster growth comparing to the Latin American countries. Asian countries are developing faster due to the greater trade openness while Latin American countries are pouring in the international debt and the high inflation rate. Which has almost the same finding with this?

The second variable coefficient of (OE) is 0.0001, which define that a 1% change of exchange rate will increase the GDP by 0.0001% which is positive impact on economic growth. Similarly different empirical evidences show that, exchange rate has a positive impact on the rise of the economy. A study conducted by MacDonald (2000) on the effects of the exchange rate on economic growth found that externally and internally the exchange rate and economic growth are positively correlated. Moreover, recently another similar study has been conducted by Jacob (2015) on 74 nations for the year of 2012 and concluded that these two variables are significantly correlated.

A similar study carried out by Ashour and Yong (2017) on the developing countries to investigate the impact of the exchange rate on economic growth. Their result implies that there is a positive impact of the exchange rate on the growth of the GDP.

Moreover, they have added that if the country adopts a flexible exchange rate then the growth of the economy is much higher compared to the fixed exchange rate. Similar results have been seen for the developing countries on the research on Guellol, Marouf&Benbouziane (2017) carried out on the 36 developing nations. Their results also support that there is a significant positive correlation between the exchange rate and economic growth. They have further concluded that the fixed exchange rate has a better off for the growth of the economies..

Moving to the next variable HDI, the coefficient is 5.78, which means that if HDI increased by 1% leads to growth of GDP by 5.78%. In addition, the result of this study suggested that HDI has a positive attribute to the economic development for the lower middle-income countries.

The coefficient of FDI is  $1.032e^{-10}$  which means that if FDI increased by 1% than GDP increased by  $1.032e^{-1}$ . The finding shows that, FDI has a positive attribute to the economic development for

the east African countries. Similar results have been observed on the empirical research of Dornean and Oanea (2013). They also have conducted research on the European Union from 2008 to 2012. They found that there is a positive link between GDP growth and FDI. Another study carried out by Lipsey (2000) supported that inflow of the FDI to the countries has a positive effect on the economies. However, the more precisely it is seen that FDI is positively correlated with the economies of the east African countries.

Moving on to the hypotheses testing, the first hypothesis is to determine whether trade openness has an impact on economic growth or not. In the regression, first explanatory variable - trade openness has the p-value of 3%, which is a significant value for rejecting the null hypothesis. Since the significance level for the test is 5%. So, it is proven that trade openness has a negative impact on the selected developing countries' economic growth.

Coming to the second hypothesis of this study is to investigate the connection between the official exchange rate and the growth of the GDP. The p-value of the test is below the significant level (0.000), so the null hypothesis is rejected. Therefore, the result implies that there is a positive correlation between the official exchange rate and the GDP. More specifically, the exchange rate has a positive impact on economic growth.

The third hypothesis is to test the relation between HDI and economic growth, the p-value of the test is 0.000, which is a significant value. Therefore, the result leads to accepting the alternative hypothesis. The result indicates that HDI leads to the growth of an economy.

The fourth hypothesis is, to test the relation between FDI and economic growth. The variable is significant at  $p < 0.01$ . Therefore, the result leads to accepting the alternative hypothesis. The result indicates that FDI leads to the growth of an economy.

The fifth hypothesis is to see whether population growth rate can affect the growth of an economy or not. The p-value is 0.138 not significant at the 5% significant level. Hence, the null hypothesis is accepted. So it can be deduced that population growth rate has no any connection with GDP growth.



### Summary of hypothesis testing result

Hypothesis	Statement	Tools	Result
Ho	Trade openness has no impact on economic growth	Fixed Effect Model	Rejected
Ho	The exchange rate has no impact on economic growth	Fixed Effect Model	Rejected
Ho	HDI does not lead economic growth	Fixed Effect Model	Rejected
Ho	FDI does not lead to economic growth	Fixed Effect Model	Rejected
Ho	The population growth rate has no links on economic growth	Fixed Effect Model	Accepted

Source: own computation, 2020

## CHAPTER FIVE

### CONCLUSION AND RECOMMENDATION

#### 5.1 CONCLUSION

This study has been conducted to examine the effects of trade openness on the growth of the economies in east Africa .To carry out the research, countries have been selected from East African Region. To choose the best-fitted model that explains the dependent variable and the explanatory variables, the fixed effects model has been considered based on the Hausman test result. As the trend shown the trade openness of the seven east African countries was increasing until 2005, particularly between 2006 and 2011 the trade openness of the seven countries is highly increased but after the year 2011 the trade openness was depreciated at a higher rate.

The finding of the study indicates that the explanatory variables population growth rate has no effect on economic growth but other explanatory variable such as, trade openness, official exchange rate, FDI, and HDI considered as a vital factor for inducing the Economic growth of all selected East African Countries. To this end, Trade openness and economic growth has negative relationships (this result implies that trade openness has inverse relationship with low financially developed countries).

## 5.2 Recommendations

On the basis of the results and findings obtained and the conclusions drawn above, the following recommendations were forwarded based on the investigation made on the impact of trade openness on economic growth in East Africa countries.

Therefore, the following suggestions are forwarded.

- The researcher recommended that policy makers should adopt policies on trade liberalization such as reduction of non-tariff barriers, reducing tariffs, reducing or eliminating quotas that will enable the economy grow at spectacular rates.
- The finding with respect to exchange rate implies that policy makers should adopt long term policies because in the long term, a strong currency depends on economic fundamentals. To have a stronger exchange rate, countries will need a combination of low inflation, productivity growth, economic and political stability.
- This research study has been focused on impact of trade openness on economic growth. However, factors such as trade openness, HDI, FDI and official exchange rate, should be further conducted at different areas in various organizations since this study is limited to seven selected East Africa countries that would also be applicable to those areas.

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