ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

INTERNATIONAL TOURISM RECEIPT AND ECONOMIC GROWTH OF ETHIOPIA: EMPIRICAL ANALYSIS

A RESEARCH SUBMITTED TO THE SCHOOL OF BUSINESS AND ECONOMICS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF SCIENCE IN ECONOMICS (DEVELOPMENT ECONOMICS)

BY: FELMETA KEBEDE

ADVISOR: DR. ADANE TUFA

ADDIS ABABA, ETHIOPIA

JUNE, 2019

INTERNATIONAL TOURISM RECEIPT AND ECONOMIC GROWTH OF ETHIOPIA: EMPIRICAL ANALYSIS

A Thesis Submitted to the School of Graduate Studies of
Addis Ababa University in Partial Fulfillment of the Requirements for the
Degree of Masters of Science in Economics

Prepared By:- Felmeta Kebede
Advisor: - Dr. Adane Tufa

School of Graduate Studies
Addis Ababa University
Addis Ababa
Ethiopia

Addis Ababa University

School of Graduate Studies

This is to certify that the thesis prepared by Felmeta Kebede, entitled: International Tourism Receipt and Economic Growth of Ethiopia: Dynamic Analysis: and submitted in partial fulfillment of the requirements for the degree of Master of Science (Development Economics) complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Approval by board of Examiners:

Internal Examiner _____ signature _____ date _____

External Examiner _____signature _____ date _____

Advisor _____ signature _____ date _____

Statement of Declaration

I, Felmeta Kebede, have carried out independently a research work on "International Tourism Receipt and Economic Growth of Ethiopia: Dynamic Analysis" in partial fulfillment of the requirement of the M.SC program in Development Economics with the guidance and support of the research advisor.

This study is my own work that has not been submitted for any degree or diploma program in this or any other institution, and that all references materials contained therein have been duly acknowledged.

Name: Felmeta Kebede Advisor's Name: Dr. Adane Tufa

Signature---------- Signature----------

Acknowledgment

First of all, I would like to extend my great thanks to the almighty God for his unconditional gift in every aspect and providing me the opportunity to complete my study. My study would have been only wish if he had not guided and helped me through ought my life and specifically my study.

Next, I would like to express my special thanks to my thesis advisor, **Dr. Adane Tufa** who had put all his efforts to get the best out of my work. The accomplishment of this study would be impossible without his irreplaceable advice, support and encouragement.

Lastly but not least, I would like to forward my warmest appreciation and great thanks to my family as they were behind me in every occasions of my study.

Table of Contents

List of Figures

List of Tables

List of Acronym

ADF- Augmented Dickey-Fuller

AIEST - Association of International Experts for Scientific Tourism

CEO- Chief Executive Officer

EAL- Ethiopian Airlines

EDTH- Economy Driven Tourism Hypothesis

EIA- Ethiopian Investment Agency

EOE - Embassy of Ethiopia

ETO- Ethiopian Tourism Organization

EWCA- Ethiopian Wildlife Conservation Authority

FDRE- Federal Democratic Republic of Ethiopia

GDP- Gross Domestic Product

H–O - Heckscher–Ohlin

IBRD- International Bank of Reconstruction and Development

IISTE - International Institute of Science, Technology and Education

KPSS- Kwaitkowski-Phillips- Schmidt-Shin test

MoCT- Ministry of Culture and Tourism

MoFED- Ministry of Finance and Economic Development

MPRA- Munich Personal RePEc Archive

NBE - National Bank of Ethiopia

PP - Phillips-Perron test

SSA- Sub-Saharan Africa

TLGH- Tourism Lead Growth Hypothesis

UNECA- United Nation Economic Commission for Africa

UNESCO- United Nation Educational, Scientific and Cultural Organization

UNWTO- United Nations World Tourism Organization

USA - United State of America

USD- United States Dollar

VECM - Vector Error Correction Model

WB - World Bank

WTO- World Trade Organization

WTTC - World Travel & Tourism Council

Abstract

In recent years, tourism has become an important economic activity almost in all the countries of the world. It creates various direct, indirect and induced effects in the economy. Therefore, this paper investigates the relationship between international tourism revenue and economic growth, and their causality in Ethiopia using time series data over the period 1974-2017. Johansen's Co-integration test has been employed for the existence of a long-run relationship among the variables and VECM short-run dynamics. Granger Causality test has also been applied to examine the causal relationship between these variables. The results from Johansen co-integration test reveals a positive and statistically significant relationship between international tourism receipts and economic growth which is in support of tourism lead growth hypothesis for Ethiopian case. The Granger causality test also shows unidirectional relationship running from tourism receipt to economic growth in Ethiopia which is in the support of Tourism Lead Growth Hypothesis (TLGH). The speed of adjustment indicates 22.11% of the short run adjustment is made per year towards long-run equilibrium. Based on the findings the researcher suggests that the government should further improve and sustain tourism sector in order to generate the long run higher economic growth.

Key Words: Causality, Economic Growth, Ethiopia, TLGH, Tourism, VECM

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

There is no unique definition given for tourism industry. There are many beliefs and perception concerning the issue. Those differences may be originated from differences of ideas and attitudes of peoples and organizations defining it on different period of time. But there are definitions which are globally accepted by different organizations and institutions even though there are differences.

League of Nations (1936) defined the concept of foreign tourist from the perspective of a person traveling for the tour as "someone traveling abroad for at least twenty four hours". After League of Nation is changed to the organization that exists now, United Nation in 1945, the definition of tourism is amended from the angle of the duration of stay by including a maximum stay of six months. Hunziker and Kraft (1941) defined it as "the sum of phenomena and relationships arising from the travel and stay of non residents, in so far as they do not lead to permanent residence and are not connected with any earning activity.

UNWTO (2010) set three criteria which are used simultaneously in order to characterize a trip as belonging to tourism. The displacement must be such that;

- ✓ It involves a displacement outside the usual environment,
- ✓ Type of purpose: the travel must occur for any purpose different from being remunerated from within the place visited: the previous limits, where tourism was restricted to recreation and visiting family and friends are now expanded to include a vast array of purposes,
- ✓ Duration: only a maximal duration is mentioned, not a minimal. Tourism displacement can be with or without an overnight stay.

All the criteria could be fulfilled in order to satisfy the definition given by UNWTO.

The most recent data from WTTC (2018) indicates that in 2017, Travel & Tourism's direct, indirect and induced impact accounted for:

- US$8.3 trillion contribution to global GDP (10.4% of total GDP),
- 313 million jobs, 1 in 10 jobs across the world,
- US$1.5 trillion exports (6.5% of total exports generally and, 28.8% of global services exports)
- US$882 billion investment up on the sector (4.5% of total investment).

According to WTTC (2018), concerning the figures contributed by the international tourism sector Gloria Guevara, WTTC President & CEO said, "Travel & Tourism creates jobs, drives economic growth and helps to build better societies. Our research shows that our sector was responsible for the creation of one in five of all jobs globally. In the last few years, Governments around the world have been realizing the extraordinary benefits of tourism and I congratulate them for taking steps to maximize our sector's potential." His statements were basically based on the performance of the sector which is for the seventh consecutive year, the Travel & Tourism sector has outperformed the global economy and in 2017 it was the fastest growing broad economic sector globally, showing stronger growth than all sectors including manufacturing (4.2%), retail and wholesale (3.4%), agriculture, forestry and fisheries (2.6%) and financial services (2.5%).

Tourism has been known as a potential contributor in the economic sector based on long years experience of many countries that sustained and improved their national economies through tourism industry (Mansfeld and Winckler, 2008). This economic sector has multidimensional effect on the economy: it stimulates domestic demand and national economy from foreign direct investment in expanding the infrastructure and links tourism with other economic sectors such as transport, retailing, wholesaling, manufacturing and other services (Proenca and Soukiazis, 2008). In addition, it multiplies national, regional and local earnings from tourism and related activities (Balaguer and Cantavella, 2002). It also expands job opportunities through direct employment in the sector, or indirect placement which is job opportunities created by the sectors that are connected with the tourism sector, and induced recruitment (Vanhole, 1981). Tourism is one of the most important sectors of global economic activity by providing employment to 255 million people and supporting 6 billion dollars, which is 9 % of the total revenue of the world (Chou, 2013).

On the globe of economy, tourism is a fast-growing and leading export economic sector even though the lion's share goes to the developed hemisphere both in terms of a number of tourist arrival and corresponding receipt obtained from the visitors. The growth rate, however, is higher in developing countries. According to the Overseas Development Institute, although the share of Africa from world tourism is very low both in terms of number of arrivals and the monetary receipt, tourism in Africa, particularly Sub-Saharan showed an increasing trend. Tourism and travel in Africa accounts for 8.1 percent of GDP, 7.1 percent of total employment and 5.9 percent of total investment (Nurhssen, 2016).

The improvement of the performance of tourism sector is also seen regionally In Sub-Saharan African (SSA) countries; it is one of the key industries driving the current change and it could be a transformative tool. In 2012, SSA attracted 33.8 million visitors. Receipts from tourism in 2012 amounted to over US$36 billion and directly contributed 2.8. % of the region's GDP (WTTC, 2013).

Despite the fact that in Eastern Africa there is an improvement in the performance of tourism sector, the performance of revenue generation of Ethiopian tourism is much lower. In 2012 Ethiopia's revenue from tourism was USD 460 million as compared with Tanzania's USD 1.7 billion; Kenya's 1.2 billion and Uganda's USD 800 million. This poor performance of Ethiopia in generating revenues from the tourism sector was partially attributed to the low admission fees that parks and tourist sites charge visitors. It was reported that at that time the average admission fees to all parks were US$5.0 for visiting tourists. Kenya and Tanzania charge US$ 35 and US $ 65 respectively (Kidane- Mariam, 2015).

The total contribution of the travel and tourism industry on national employment of Ethiopia was estimated as 1,236,000 jobs in 2016 - about 5.1% of the total employment in the country. After a year (2017) this contribution is increased to 1,538,000 or sharing 6.1 percent of the total employment. This figure shows a dramatic change in one year (WTTC, 2018). In 2006, the sector was the third highest foreign exchange earner after coffee and oilseeds contributing - US$ 132 m from 150,000 inbound tourists. In 2009, it became the largest foreign exchange earner with receipts of $1.1 billion from 330,000 tourists. The number of inbound tourists has also increased significantly over the last decade from 81,581 arrivals in 1995 to 227, 398 in 2005 and further to 330,000 in 2009 an average growth rate of 13% since 2002 (Kidane-Mariam, 2015).

Ethiopia was named the World's Best Tourism Destination for 2015 by the European Council on Tourism and Trade, citing Ethiopia's outstanding natural beauty, dramatic landscapes and ancient cultural heritage found in the country. On the event held for the selection, there were 31 countries nominated for the prize and Ethiopia was selected as number one from the world keeping the rank from the African continent as a year before (2014) the winner was another African country Republic of Zimbabwe (Daily Mail, 2015).

Generally, Ethiopia has great potential in expanding the tourism industry from different views. There are plenty of natural beauty, cultural heritage and unique holiday celebrations that can attract international tourists. The objective of this study was hence, studying the causal relationship between tourism and economic growth in Ethiopia during the years 1974-2017 using time-series econometrics techniques.

1.2 Statement of the Problem

For every economy since many factors like a country's resource endowment and size, government policies objectives, the availability of external capital and technology transfer exist, and the international trade environment affect the development process, the major challenge in the minds of all developing countries is to put down the foundations for healthy and sustainable growth that generates maximum output, high employment, and good standard of living for their people so as to reduce poverty and to make sustainable growth and development.

According to Croes and Vanegas (2008), the role of tourism development can be linked to the work they have done earlier: Vanegas and Croes (2003, 2004) called "the democratization of the dollar". Vanegas and Croes (2003, 2004) described the democratization of the dollar in the way that tourism development leads to the transfer of wealth and income from residents of developed and developing countries to residents of developing and least developed countries, thereby leading to mass generation of employment opportunities and ample participation for all sectors of the economy which, in the end, increases income of developing countries as well as the standard of living (Croes and Vanegas, 2008).

The tourism sector is also a source of employment for a given domestic economy. There are a lot of job opportunities being created for the local economy. Tourists visiting certain place or area have to consume to survive and they need a lot of local products either for survival or for recreation. Hence, there is a room for the creation of job opportunity in order to address this demand. It is known that Ethiopia has high unemployed population and if this service sector enlarges, there is a chance of creating job opportunity or minimizing unemployment.

The labor costs required for the expansion of the tourism sector is low in contrast to the technologically incentive industries that require knowledgeable workers. From the expansion of tourism service, the increasing number of tourist inflows expands the local market size and generates higher ranked levels of services offered. This shows tourism development paves the way for economic growth and development either directly or indirectly. Additionally, tourism increases the diffusion of technical knowledge, encourages research and development as well as accelerates human capital accumulation (Brida and Risso, 2010).

Ethiopia is among the world's least developed countries, with 23.5 million people or 23.5 percent of total population living below poverty line in the period 2015. Over 80% of its population is rural, with agriculturally based livelihoods and extremely low levels of off-farm income (WB, 2019). Therefore, to overcome these deep-rooted problems, there are many development policies and strategies. Among these tools, tourism expansion is one option since the growth of tourism sector plays an important role in economic growth and development. If it is managed sustainably, tourism is an effective development tool especially for developing nations (WB, 2012).

In the past, plenty of empirical studies that focus on investigating the relationship between tourism revenue received from tourism sector and economic growth have been done in many developed nations especially those advanced in tourism sector and some developing countries. The period coverage and the methodologies applied for the accomplishment of these studies were different based on the objectives and willingness of different researchers. Here, there are some countries in which a lot of studies were done and the results were similar in some way and different in other aspects.

In Ethiopian economy, however, few empirical literatures have been done on the long run relationship between international tourism receipt and economic growth. Hence, even for government policy formulation that helps to develop the tourism industry for the country, it is difficult to conclude whether it is beneficiary to support pro-tourism policy or leaving it for economic growth by expecting that economic growth itself can drive tourism sector expansion. Therefore it is rational to study the link between economic growth and international tourism receipt for Ethiopia.

Meseret (2011) studied the impact of Ethiopian tourism sector on economic growth during the years 1981-2009 using time series data. The variables used ware GDP per capita, Tourism receipts per capita, gross fixed capital formation, terms of trade, and household consumption expenditure. This study used data only for the period covered 1981-2009 years which is annual data of 28 years and is not enough for analysis of time series studies. This may reduce the chance of detecting the true effect since the power of test or the probability of rejecting the null hypothesis when it is false depends on the time span of the data. For a given sample size, the power of the test (the probability of rejecting the null hypothesis when it is false) is greater when the time span is large (Gujarati, 2003).

Another study by Seble (2017) focused on the role of tourism in the economic growth of Ethiopia by using descriptive analysis method. As her study used this analysis method, she was unable to draw an inference for the long run relationship and the direction of their causality. Here we have addressed this gap by using time series data which enables to give more historical analysis for a longer period of time and in our case 1974 through 2017.

Therefore, in Ethiopia, studying the relation between tourism and economic growth is a critical issue in underlying principle for further increasing public investment in the sector and it is also necessary to incorporate tourism in such empirical study so as to enhance the contribution of the tourism sector to economic growth in Ethiopia.

1.3 Research Questions:

- What is the trend that international tourism receipt of Ethiopia is going through?
- Is there a long-run relationship between tourism and economic growth in Ethiopia?
- Is there a short run relationship between international tourism receipt and economic growth of Ethiopia?

1.4 Objectives of the Study

1.4.1 General Objective

The general objective of the study was to examine the relationship between international tourism receipt and economic growth in Ethiopia for the period covering from 1974 to 2017.

1.4.2 The Specific Objectives of the Study

- Assessing the trends that international tourism receipt of Ethiopia is going through.

-Accessing the long run relationship between tourism receipt and economic growth of Ethiopia.

-Accessing the short-run relationship between tourism receipt and economic growth of Ethiopia.

1.5 Significance of the Study

In Ethiopia, there are few empirical analyses of the long run relationship between international tourism receipt and economic growth. Thus, this study is very important in showing their relationship as the tourism sector is one of the important sectors of a given economy. Here there is an opportunity to have more analysis up on the issue concerning the Ethiopian case.

As there are little studies done, it also contributes to tourism literature for further studies so as to help the policy formulation for the government sector. Hence there could be a reference to develop the tourism potential and to increase its contribution in the effort to reduce poverty and underdevelopment in Ethiopia.

1.6 Scope of the Study

This study was limited to study the relationship between tourism and economic growth, and the causality direction between them in Ethiopia for the period 1974 to 2017. Even though economic growth (GDP) is a function of several variables, this research included only international tourism receipt, degree of trade openness measured by the ratio of the sum of export and import of the

country to its respective real GDP, government education expenditure and gross capital formation as explanatory variables into the model.

1.7 Limitation of the Study

Absence and inconsistency of data from different source has created a major limitation of this study. Some of expected explanatory variables that affect economic growth were not included in the results because of incompleteness or fully unable to get them. Some of the existing data were inconsistent between institutions, but the researcher tried to use those that are used most of the time.

1.8 Organization of the Study

This study is organized into six chapters. The remaining chapters are as follows: Chapter Two discusses the theoretical and empirical reviews of the study. Chapter Three explains the descriptive statistics whereas chapter four elaborates the methodology used in the study. Chapter five presents the results and the discussion employing the methodologies explained in chapter four. Finally, Chapter six outlines the conclusion and recommendations of the researcher.

CHAPTER 2: LITERATURE REVIEW

2.1 Theoretical Literature Review

From a theoretical perspective, Lanza and Pigliaru (2000) were among the first to investigate the link between tourism and economic growth. Based on their observations that countries with relatively large tourism sectors exhibit higher than average economic growth, they developed a Lucas-type two-sector model. In this model, production in one of the sectors (called tourism) which depends on endowments of a natural resource, and showed that countries with relatively abundant natural resources will specialize in tourism and achieve a faster rate of economic growth.

Generally, as tourism industry has a multi-dimensional effect on the economy (Gautam, 2008b), it is believed that it has enormous potential to be an engine and dynamo of economic growth in the country. It can provide momentum to other sectors through its backward and forward linkages. It can contribute significantly to the economic growth and development of the country through the utilization of tourism potentials. It generates hard foreign currency for the host country. It has more value-addition comparing with other economic activities. The tourism industry is a service industry and it increases employment to a large number of people in the country. Consequently, it increases the income of the people and also benefits the firms involved in this business. In addition, it increases government revenue (direct/indirect tax). Tourism sector has a distinct link with other sectors of the economy. It eventually helps for the industrial and commercial development as well as conservation of heritage and environment.

Tourism industry isn't an issue of an individual, group of people, a given single state or government only. It is a concern of the global world as it has a different socio-economic and cultural impact on the world economy. From this fact, Kauffman (2008) established an actor-network theory which combines multiple dualisms as micro-macro, global-local, nature-society and actor structure. In the actor-network theory, the concept of actor and network are concatenated and one cannot be defined without the other. Action is the result of network construction, and networks are constructed out of all kinds of bits and pieces. In this study, actors are identified as stakeholders and network is identified as the tourism industry. Stakeholders represent the public, private and non-profit sector, all equally important and playing their own role. Therefore, stakeholders representing the public, private and non-profit sector are consulted.

Examples of stakeholders active in the tourism industry are local communities, companies, governmental authorities and non-governmental organization.

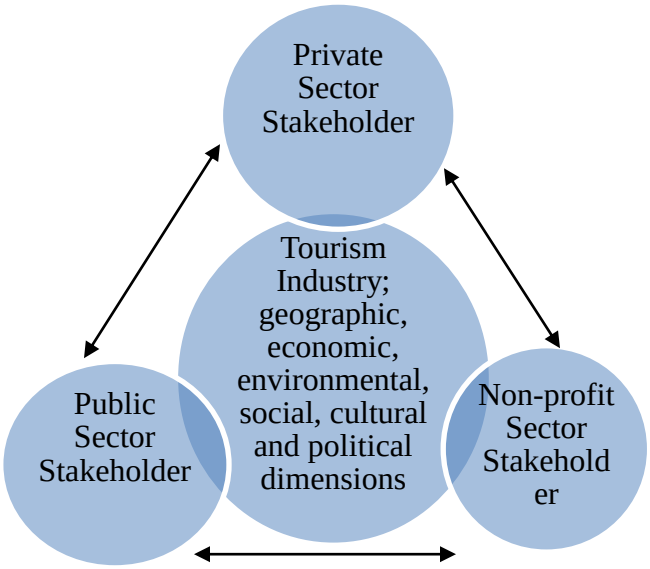


Figure 1: The dualism in the tourism industry

2.1.1 Tourism Industry in Developing Countries

The report of WTO (2010) indicates that tourism is the first or second source of export earnings in 20 of the world's 48 least developed countries. At the same time, in some developing countries, notably small island states, tourism can account for over 25% of GDP. It also identified the main characteristics of tourism sector especially in developing countries or low-income economies and communities towards the alleviation of poverty as follows:

- **Its response to particular assets.** Tourism places great value on some common features of developing countries, such as warm climate, rich cultural heritage, inspiring landscapes and abundant biodiversity. These strengths can be particularly apparent in rural areas, which may have a comparative advantage for tourism while being at a disadvantage in most other economic sectors.

- **It's accessibility to the poor.** Tourism is a relatively labor-intensive sector and is traditionally made up of small and micro enterprises. Many activities in tourism are

particularly suited to women, young people and disadvantaged groups such as ethnic minority populations. Many tourism jobs are potentially quite accessible to the poor as they require relatively few skills and little investment. Some may also be part-time and used to supplement the income from other activities.

- **It's connectivity.** As so many different activities and inputs make up the tourism product, which has a large and diversified supply chain, spending by tourists can benefit a wide range of sectors such as agriculture, handicrafts, transport and other services. Additional rounds of spending by those people whose income is supported by tourism spread the economic benefit further (the multiplier effect).

- **It's linking of consumers to producers.** Tourism, unusually, is an activity which brings the consumers to the producers. The interaction between tourists and poor communities can provide a number of intangible and practical benefits. These can range from increased awareness of cultural, environmental, and economic issues and values, on both sides, to mutual benefits from improved local investment in infrastructure.

International tourism has a very significant impact on the levels of trade and foreign exchange earnings in developing countries (Dwyer & Forsyth, 1997). The economic impact analysis focuses on changes in the volume of production and sales, income, and employment. Moreover, tourist activity works to achieve the following positive effects on the national economy:

2.1.2 Importance of Tourism Sector

1. Achieving economic development and increase economic growth rates and generate income: The income sector, through its contribution to the country's aggregate income.

2. Providing employment opportunities: Employment and both its availability and exclusivity are subsets of economic impacts of tourism. Direct tourism jobs, those that provide the visitor with their tourism experience include, but are not limited to: accommodation (building, cleaning, managing), food and drink services, entertainment, manufacturing, and shopping. Indirect tourism employment opportunities include the construction of additional infrastructure necessary to accommodate these travel products such as airports and harbors.

3. Improving the balance of payments: Globalization brought the whole world into one village. Every country in the world has a target of increasing its export revenue and then the balance of payment. Ethiopia has a deep-rooted problem of the negative balance of payment. Hence, increasing the welcoming of international tourists directly improves the balance of payment.

4. Developing the economic structure: In transforming the economy from an archaic agricultural base to the more improved and mechanized one, the service sector has a great potential in which the tourism industry has both direct and indirect contribution.

5. Encouraging trade activities: tourism industry is used in the mobilization of the international and domestic trade and the activities of various service-related industries like transportation, telecommunications, banking and travel agencies.

6. Increasing tax revenues: the primary source of the Ethiopian government's revenue is from the collection of tax. But the major tax payers in Ethiopia are employee especially civil servants. In broadening this base of tax revenue, the tourism sector can play a great role. The investment in this sector by both private and government can increase income and then tax revenue (Ashenafi, 2016 and Sebile, 2017).

The achievement of such positive effects in the national economy depends on the availability and fulfillment of the following factors (Mathieson and Wall, 1982):

1. The nature of the main tourist facilities and its attractiveness,
2. The size and intensity of capital spending,
3. The level of economic development in tourist destinations,
4. The size of the economic base in the tourist destination,
5. The degree of redistribution of the income within the tourist destination, and
6. The degree in which we can adjust the seasonal tourism demand within the tourist destination level.

The study of these factors with its availability and its effects on the positive impacts of the various tourism sectors requires the study of comparative advantages and competitive advantages for the tourism sectors in the national economy. The tourism sector development works to create external benefits such as the development of transport and communication, health education and

banking services and sanitation sector, and increase the sales of their products. It also enhances the internal trade, through opening the communication channels between businessmen, and helps the development of the trade sector, which depends on the ability of suppliers and businessmen to meet the demand, in addition to the historical development of the sector, and the size of the development of tourism in the region (Matheson & Wall, 1982).

2.1.3 Linkage between Tourism and Economic Growth

In many studies for the case of identifying the causal relationship between tourism industry and economic growth, four distinct relationships are identified. Those findings are different from country to country and the time span at which the studies held. At the same time, there are opportunities in which we can find different study results for the same country. This may happen because of employing different methodologies based on the needs and justifications of the researchers. The followings are the four highlights of the hypothesis indicate the relationship between these variables.

1. Tourism Lead Growth Hypothesis (TLGH)

This hypothesis is the most supported by different studies. It advocates that tourism is one among the main determinant of overall well-being of long-term economic growth. It is used to obtain better economic growth collaborated with other economic variables through importing capital goods, which in turn produce goods and services leading to economic growth in the host country (Brida et al., 2008). If the TLG hypothesis is valid for economic growth, effective public policies and institutions provide sufficient contribution to physical and human capital investment and help reach economic stability by supporting the infrastructure for international tourism. It alleviates unemployment since tourism activities are heavily based on human capital and it leads to positive economies of scale thus, decreasing production costs for local businesses (Antonakakis et al., 2013)

Tourism investment can encourage local firms whose volume of output increase because of greater efficiency due to the increased competition. Increased competition leads to positive scale economies and enhanced efficiency in the host country and other international tourist destinations. As a result, tourism-led economic growth hypothesis recognizes a unidirectional causal relationship from tourism to the whole economy. Thus, government resources should be allocated to the primary sector to improve the overall economy (Kum, et al, 2015).

2. **Economic Driven Tourism Growth Hypothesis (EDTG)**

The second hypothesis that explains the causal relationship between tourism sector development and economic growth is the economic-driven tourism growth hypothesis, which is the reverse of TLGH. Realization of the development and economic growth strategy of a country begins with the application of well designed economic policies and international trade policy, governance structures, and investments in physical and human capital. The socioeconomic power that is obtained this way encourages tourism activity through better use of the available resources, following good economic policy and achievement of political stability. If succeeded in these objectives, there is a room in which obtaining better economic growth can occur and economic sectors have an opportunity for expansion and development, among which one is tourism sector. This results in a unidirectional causality from economic growth to tourism. This reversed causality suggestes that an expansion in tourism will happen when every effort is made to increase overall economic growth (Lee and Chang, 2008).

3. Bidirectional Hypothesis (Bi-Causal BC)

According to this hypothesis, tourism policy affects economic growth performance and economic growth, in turn, affects the tourism sector (Antonakakis et al., 2013) which is bi-direction relationship. Each economic variable follows the ups and downs of each other. The improvement in the tourism sector leads to economic growth and the same thing should happen when there is economic growth: an opportunity for improvement in international tourism receipt. Since there is bi-directional causality between economic growth and tourism, an improvement in both areas will benefit both. Therefore, resources should be allocated for tourism and all other significant economic sectors equally in order to boost an economy (Dritsakis, (2004).

4. Neutrality Hypothesis (No Causal-NC)

This hypothesis indicates that there is no causality between economic growth and tourism. It indicates that the past history of one of these variables does not have a significant impact on the remaining. Thereby, the implementation of development policies and gains obtained from tourism are independent (Antonakakis et al., 2013). Hence tourism improvement strategies by tourism managers and decision-makers may not be effective in achieving a targeted economic growth (Oh, 2005).

2.1.4 Neo-Classical Economic Theory

The well-known developers of Economic theory: Solow (1956) and Swan (1956) have developed the most significant contribution to the economic growth literature. They were among the proposers and leaders of Neo-Classical Economics. Although their work was in the same year, they were independent of each other and their models have been published in different journals and different countries. From their study, they concluded that the economic growth relied on capital and labor which determine the technological change in return. In the literature of growth, their models are considered as the most outstanding models (Kan & Omay, 2010). They gave the lion share of determinants of economic growth for a number of labors in the country and the level of accumulation of capital in a given country or economy.

Another Economic model involved in Growth Theory was developed by Cass & Koopmans (1965) which is known as the Diamond model. Their model was developed by adapting Ramsey's analysis and accounting savings as endogenous in the model. They recommend that the most productive sector could get priority as their model ensures that worker and capital's productive elements are rated according to their marginal products, which is very similar to a decentralized competitive structure (Kan & Omay, 2010). From this perspective, tourism sector is considered as one option and chosen if the marginal productivity of the capital and labor employed in this sector is greater than other sectors.

2.1.5 Keynesian Theory and Government Expenditure

Policy makers and the economists in the developed and the developing countries have been concerned from a long time about the role of government's expenditures in generating economic growth. Government expenditure is an exogenous factor which can encourage economic growth, and got more emphasis in the early 1930s which is known as Keynesian theory. Those expenditures can be categorized into different sub-sectors and should receive priority based on their importance in achieving a proposed target. Government tourism expenditure plays a positive role and has a multiplier effect on the economy. This statement is supported by Keynes (1933) which says that there could be government roles implemented on aggregate demand when the economy remains stagnant, declining and even if in depression. Keynes believed that government expenditures might significantly enhance economic growth through the increase in

aggregate demand. This expansionary fiscal policy will increase income, support economic activities and reduce unemployment.

Moreover, Keynes (1936) said that when the government increases its expenditures, there is a room in which national income will increase as well. Therefore, the causality in the Keynes approach runs from government expenditures to the national income. The proposition of the Keynesian on government expenditures is based on the experiences of developing countries that strongly built their economic growth on the expansionary fiscal policies.

From our view of tourism lead growth hypothesis, the government is expected to increase its expenditure to an extent to which that expenditure can bring economic growth to the country. Tourism industry is the area in which private sectors of especially developing countries cannot be able to run independently. Therefore interference of government in this sector is important in boosting the economy.

2.1.6 Endogenous Growth Theories

The recent literature highlights the existence of a variety of channels through which steady-state growth may emerge endogenously. The new growth theory stressed the importance of innovation, human capital accumulation, the development of new technologies and financial intermediation as important determinants of economic growth. The development experience of East Asian countries also provided several lessons on the impact of policies on economic growth. It is agreed that government intervention aimed at removing obstacles to market mechanisms or other sources of market failures is not harmful to growth (Agenor and Montiel, 1996).

According to Salvadori (2003), there are two folds of aim of endogenous growth theory. The first one is to overcome the shortcomings of the neoclassical growth theory which does not explain sustained growth. Secondly, to provide a rigorous model in which all variables crucial for growth such as savings, investment and technology are the outcome of rational decisions. The accumulation of factors can be facilitated either by removing the scarcity of natural resources or by introducing technical progress. As far as the former is concerned, for example, labor has been straight forwardly transformed into a fully reproducible resource, human capital. As for technical progress, one of the main features of the endogenous growth theory is the capacity to indigenize the investment decision yielding technological progress which consists mainly in the

introduction of new intermediate and/or final goods. From this perspective, tourism industry has great potential in providing market for final goods international tourists need.

According to Heijdra and Ploeg (2006), Research and Development (R&D) activities provide some new and cheap type of technique of production which is exclusive for the inventor. In this case, even in the absence of physical and human capital, there can be growth. The model considers three types of productive sectors each with its own technology and pricing decision. These are final goods sector, Intermediate goods sector and Research and Development sector.

2.2 Empirical Literature Review

The tourism industry is related to service-oriented jobs which help to increase employment to a large number of people in the country. Hence, this sector plays a vital role in expanding source of revenue generation and then economic growth. Such type of economic relationship is known as Tourism Lead Growth Hypothesis. It treats international tourism as a potential factor for economic growth. Tourist spending provides foreign exchange earnings. The internationally received foreign exchange or currency is subsequently used to import capital goods from the rest of the world to produce goods and services, which in turn leads to the economic growth of the country of tourism service providing and hosting the tourists (Balaguer and Cartavella-Jorda, 2002, Samini and Sadeghi, 2011).

In the analysis of tourism, economists emphasize the economic effects of tourism development on the economy. Because tourism is a multidisciplinary activity that involves several industries, its benefits are spread over a wider section of society compared to other sectors of the economy (Telce, et. al, 2006). According to the export-led growth hypothesis, tourism can be seen as a kind of export, differing from the export of other goods and services because of the fact that consumers consume it in the host country.

In recent years, the development of tourism and its causal relationship with economic growth have become the focus of numerous research studies and scientific papers. In this context, there have been several empirical studies which explored the relationship between tourism and economic growth conducted in different developed countries even though little has been done in developing countries specifically in Ethiopia, covering different research periods and types of data (monthly, quarterly and annual), using different scientific-research methods and techniques.

In addition, different variables have been employed as explanatory variables of economic growth. Accordingly, Table 2.1 shows a list of a number of studies on the relationship between these two constructs, with categories of tested variables, empirical methods, data periods, country of analysis and results.

Table 2 1: Summary of selected studies on the relationship between tourism and economic growth

Authors	Observed Countries	Tested Variables	Method of analysis	Data Period	Drawn conclusion
Fayissa B. et al. (2007)	42 African countries	GDP per capita, International Tourism Receipts per capita	Panel Data Analysis	1995-2004 Y	Tourism → Economic Growth
Balaguer, J. & Cantavella-Jordá, M. (2002)	Spain	GDP, International Tourism Earnings	Co integration testing (Johansen & Juselius), vector error correction modeling, Granger causality testing	1975-1997 Q	Tourism → Economic Growth
Brida, J. G., et al. (2008)	Mexico	Tourism expenditure, real exchange rate, real GDP	Unit root test (ADF & KPSS), cointegration (Johansen & Juselius), Granger causality test	1980-2007 Q	Tourism → Economic Growth

Brida, J. G. et al. (2010)	Italy	GDP per capita, International Tourism Expenditure	Granger Causality Test	1980-2006Y	Tourism → Economic Growth
Kasimati, E. (2011)	Greece	GDP, International Tourist Arrivals	Unit root testing (ADF &PP), cointegration (Johansen & Juselius procedure), Wald Coefficient test, vector error correction, Granger causality testing	1960-2010 Y	No relation
Lanza et al. (2003)	13 OECD countries	Share of tourism expenditure in total consumption expenditure, relative price of tourist bundle of goods and services to the consumer price deflator,	Unit root testing (DF & PP), cointegration testing (Johansen & Juselius), almost ideal demand system	1977-1992Y	Tourism → Economic growth
Lean & Tang (2010	Malaysia	International visitor arrivals and industrial production	Granger causality testing, rolling subsample Granger causality testing	1989-2009 M	Tourism ↔ Economic growth

Tang & Jang (2009)	USA	Aggregate sales revenues of four different industries (airline, casino, hotel, and restaurant) and seasonally unadjusted GDP	Unit root testing (ADF and PP), co integration testing (Johansen and Juselius), Granger causality testing	1981-2005 Q	Economic Growth → Tourism
Dritsakis, N. (2004)	Greece	Real international tourism receipts, real effective exchange rate, real GDP	Unit root testing (ADF, KPSS), cointegration testing (Johansen & Juselius), vector error correction modeling, Granger causality testing	1960-2000 Q	Tourism ↔ Economic Growth
Oh, C.O. (2005)	South Korea	GDP, International Tourism Receipts	Granger Causality Test	1975-2001 Q	Tourism ← Economic Growth
Lee & Chien (2008)	Taiwan	Real tourism receipts, international tourist arrivals, real GDP	Unit root testing, cointegration (Johansen and Juselius procedure), weak exogeneity testing, structural breaks testing	1959-2003 Y	Tourism ↔ Economic growth

Katirciog lu (2009	Turkey	International tourist arrivals, real exchange rates, and real GDP	Unit root testing (ADF & PP), co integration (bounds test with distributed lag approach, and Johansen & Juselius)	1960-2006Y	No relation
Vanegas et al. (2007)	Nicarag ua	GDP, International Tourism Receipts	Granger Causality Test	1980-2005 Y	Tourism → Economic Growth
Kreishan (2011)	Jordan	Real GDP, International Tourism Receipts	Unit root testing (ADF & PP), cointegration (Johansen & Juselius procedure), Granger causality testing	1970-2009 Y	Tourism → Growth
Gunduz & Hatemi-J (2005)	Turkey	International tourist arrivals, real exchange rates, and real GDP	Unit root testing (KPSS), causality testing based on Leveraged bootstrap Simulation techniques	1963-2002 Y	Tourism → Growth

The symbols and abbreviations used above are defined as:
GDP = Gross domestic product used as a proxy variable for economic growth,
Y = Annual data, M = Monthly data, Q = Quarterly data,
ADF = Augmented Dickey-Fuller test,
KPSS= Kwaitkowski-Phillips- Schmidt-Shin test,
PP = Phillips-Perron test,
Tourism → Growth: denotes causality running from tourism development to economic growth;
Tourism ← Growth: denotes causality running from economic growth to tourism development;
Tourism ↔ Growth: denotes bi-directional causality between tourism and economic growth.

From table 2.1 there is no unique, clear and justified single causal relationship between international tourism receipt and economic growth. For this justification, for example, Gunduz

and Hatemi (2005), Katircioglu (2009) made a study for Turkey by using the data covering the period 1963-2002 and 1960-2006 respectively. They used the same variables and different methodologies in their analysis. Unfortunately, even though the study was held for the same country, their results were different.

Sinclair et al. (2010), found out that tourism sector had a positive influential role in economic growth (TLGH) through creating job opportunities and income generation to the government through foreign exchange earnings to the recipient economy. Foreign exchange is usually a vital component in bringing economic growth to especially developing nations because the export values of goods and services obtained by these nations are usually very small, and this foreign currency is used to purchase capital goods for further production and thus expanding the output.

While investigating the causality between international tourism receipts and economic growth in Greece using a VECM for the time period between 1960 and 2007, (Kasimati, 2011) found that the causality runs both ways (bidirectional causality). This meant that the previous year's tourism receipts could be used to explain the economic growth of the current period and vice versa. The same study was carried on by Belloumi (2010) using Tunisia data between 1970 and 2007 and applied a VECM. He found that the causality was bidirectional.

Another study conducted in Turkey by Zortuk (2009) investigating the relationship between economic growth and tourism growth found out a unidirectional causality running from international tourism receipts to Turkey's economic growth. His time period was, however, less than the minimum thirty years required in a time series data since it was between 1992 and 2008. This study was improved by Katircioglu (2009) who applied VECM on Turkey on larger data for a 46 year period. The study findings reveal no causality between the two macro economic variables. However, Arslanturk et al. (2011) used data from 1963- 2006 from the same country to show the direction of causality and the result indicates the causality is unidirectional running form the receipts to economic growth by applying rolling window and time-varying coefficients estimation methods.

On studying the contribution of tourism earnings on gross value addition, Odunga and Folmer (2004) used a seven-years data of Kenyan economy from 1995 and 2001 and found out that tourism contributed to an approximately twelve-percent of gross domestic product in this period.

They also found the existence of bidirectional causality between the two macroeconomic variables.

Lee & Chang (2008) studied the influence of the tourism sector on the economies of both OECD and Non-OECD countries using panel data for twelve years period. Their results they obtained reveal a contrary for the two regions. The results were interesting with a revelation of unidirectional and bidirectional causality in OECD and Non-OECD respectively.

In their study of co-integration and causality between tourism's receipt growth and Taiwan's economic development, Kim et al. (2006) applied Co-integration and Granger causality tests. The study revealed that all variables used were co-integrated and finds Granger causality test was bidirectional implying that both economic variables granger cause each other.

According to Tonamy and Swinscoe (2000), the impact of tourism on employment can either be direct and indirect. Their study shows direct tourism jobs constitute approximately 5.7% of national employment in Egypt while the indirect and induced jobs included are about 12.6%. They further suggest that tourism accounts for over 10% to Egypt's GDP. But to Archer and Fletcher (1996), Tourism expenditure's Impact varied by the country of origin of the tourists so that if the tourist originates from a country with a higher spending behavior, there will be a greater economic impact. Their study shows that tourism earning alone accounts for over 24% of GDP in Seychelles.

Among a few studies using Ethiopian data, Meseret (2011) studied the impact of service trade on the economic growth of Ethiopia: the case of tourism during the years 1981-2009 using Augmented Dickey-Fuller (ADF) for unit root and Johansson and Julius for co integration test. The variables used were GDP per capita, Tourism receipt per capita, gross fixed capital formation, and terms of trade and household Consumption expenditure. The study used the data from 1981-2009 years for analysis. This may reduce the chance of detecting the true effect since the power of test or the probability of rejecting the null hypothesis when it is false depends on the time span of the data (Gujarati, 2003).

Another issue the researcher has gone through is the inclusion of recent data. Existing studies for Ethiopian analysis were done before a years. But in Economic studies, the time has great

importance and can cause a change of theories or empirics. Hence, the researcher tried to cover the time gap for the more recently available data which is up to 2017.

In addition, in Ethiopia, a few studies have been done on the area of the relationship between international tourism receipt and economic growth. Therefore, this research has tried to cover the research gap by combining international tourism receipt, government education expenditure, international trade openness, gross capital formation and real growth domestic product (GDP) in a model for analysis. Econometric techniques such as Augmented Dickey-Fuller test (ADF) for unit root test, Johansen's co-integration test for the existence of a long-run relationship between the variables under consideration, VECM for short-run dynamics and Granger causality test for causal relationships were employed.

CHAPTER THREE: ETHIOPIAN TOURISM SECTOR

3.1 Tourism Overview in Ethiopian Context

The Current Tourism Supply in Ethiopia

3.1.1 World Heritage Sites

UNESCO has recognized the uniqueness of Ethiopian heritage and the country is home to nine World Heritage Sites, among which eight are cultural areas and one natural site. The first sites were listed in 1978 and all are discussed in table 3.1.

Table 3 1: World Cultural Heritages: Ethiopia

Cultural heritage	Regional State location	Year of registration
Aksum	Tigray	1980
Fasil Ghebbi	Amhara	1979
Harar Jugol	Harar	2006
Konso Cultural landscape	SNNP	2011
Lower Valley of Awash	Afar	1980
Lower Valley of Omo	SNNP	1980
Rock-Hewn Churches, Lalibela	Amhara	1978
Simien National Parks	Amhara	1978
Tiya	SNNP	1980

Source: MoCT

3.1.2 Colorful Traditional Festivals

Even from the world, Ethiopia is renowned for its traditional festivals that in most cases reproduce traditions that have been maintained for centuries. The most important ones are: a Timket: Ethiopian Epiphany which is celebrated in January, Ethiopian Christmas locally called Gena and celebrated in January as Timket and Meskel which is the finding of the True Cross and celebrated in the month of September. The others are Thanksgiving of the Oromo's society to the supreme God "Waqa" and commonly held on the annual basis at Lake Arsedi of Bishoftu Town during the first week of October, a Sidama Nation New Year Festival specially celebrated at Hawassa town and locally called Fiche Cembelala, a Ethiopian Nations, Nationalities and Peoples Day; the event to experience Ethiopia on one stage in the month of December, Ashura in Harar, Ashenda celebration in Tigray and Shaday in Amhara region (UNECA,2015).

3.1.3 Amazing Landscapes

Even though Ethiopia is mainly known for the plateau feature of landscape, there are all highlands, lowlands and v-shape of Great East African rift valley passing through it. Most of the awesome landscapes are the followings explained by (UNECA, 2015) as follows:

- ✓ Simien Mountains a National Park which is registered at UNESCO and there are plenty of wildlife among which endemic animals are living there and species of birds in it. It overlooks the surrounding areas from a high plateau offering breath-taking views and is a favorite place for high altitude trekking.
- ✓ Ertale Volcano located in Afar region and is one of the five volcanoes in the world with a lava lake at the summit.
- ✓ Bale Mountains National Park, a high altitude plateau broken by spectacular volcanic plugs, peaks and plateaus.
- ✓ Sof Omar cave system under which Weyib river flows (Caves of Mystery) is one of the top ten spectacular and extensive underground caverns in the world running for nearly 15 km. It is also a sacred place of worship.
- ✓ The Ethiopian Great Rift Valley Lakes which is part of Great East African Rift Valley running from Syria to Mozambique: lake Ziway, Abijjata, Shala, Langano, Hawassa, Abaya, Chamo and seven lakes of Bishoftu.

But in most of the above mentioned natural areas, there is great absence of proper destination development, management plan and operational guidelines. There is a need for great emphasis to improve these drawbacks by concerned bodies.

3.1.4 Wildlife and Protected Areas

The country uses protected areas as part of its biological resources sustainable and wise utilization mechanisms and the major types of these protected areas include National Parks, Wildlife Reserve, Sanctuary, Controlled Hunting Areas and Community Based Wildlife Conservation Areas. Currently, there are sixty-six documented wildlife protected areas in the country, of which twelve national parks and two wildlife sanctuaries are managed by the Ethiopian Wildlife Conservation Authority (EWCA) at the federal level and the remaining Wildlife Protected Areas are protected by the respective regional states of the country (UNECA, 2015).

From total wildlife of Ethiopia, 287 species of mammals (31 endemic) have been recorded in the country. These are rare or endangered larger endemic mammal species/subspecies namely known as the Ethiopian wolf, Walia ibex, gelada monkey, mountain nyala, Swayne's hartebeest, Menelik's bushbuck, bale monkey and Starck's hare. There are also 862 species of birds where the country is the second country in Africa with the highest number of endemic birds; there are 17 in total. There are 34 Important Bird Areas (IBAs) identified as conservation hotspots that harbor diverse common, endemic, threatened, endangered and globally threatened species of birds. There are also 201 species of reptiles among which 14 are endemic, 63 species of amphibians among which 30 are endemic and 150 species of fish where 40 are endemic to the country. There are also 21 Wildlife Controlled Hunting Areas that attract some of the world's richest sport hunters and professionals (UNECA, 2015).

The country's national parks are mainly financed by public funds, lacks good policy of handling it and they are mostly poorly managed. As they are not operated as market-oriented organizations, their commercial values have not been effectively developed and no effort has been made to establish a connection between the investment made in these national parks and the revenue generated and/or the benefits derived by local peoples and the local economy (World Bank, 2012).

The history of tourism in Ethiopia dates back to the Pre-Axumite period when the first illustrated travel guides to Ethiopia can be found in the friezes of the pyramids and ancient sites of Egypt. These depicted travels to the land of Punt, which the Egyptians knew was the source of the Nile, and where they traded for gold, incense, ivory and slaves. Around the fourth century, Persian historian Mani described that the Kingdom of Axum as being one of the four great empires of the world, ranking it alongside China, Persia and Rome (World Bank, 2006). Hence, even though the exact date of the evolution or emergence of the Ethiopian tourism sector is not known, there are some clues and reference indicating it is a long time ago.

But modern tourism in Ethiopia received recognition from the ruling government during the imperial regime. It started with the formation of a government body to develop and control this sector in 1961: the Ethiopian Tourist Organization (ETO). The earliest analysis on the tourist flows and expenditures in Ethiopia was done by UNESCO (1968) using data covering 1963-1968.

According to Ashenafi (2016), in 1968 the first UNESCO mission visited the country to carry out a census of the monuments on the historic route. In the same year, a team of experts who were nominated by the IBRD recommended to the Imperial Ethiopian government in the preservation and development of the sites and monuments on the historic route for the growth of tourism. Several studies were carried out following these recommendations which forced the government to adopt various administrative and legislative measures including the budgeting of funds for the development of tourism in Ethiopia. The objectives were mainly:

1. The establishment of an inventory of the cultural heritages mainly art objectives.
2. Priority for the restoration of endangered monuments.
3. The work plan for the restoration of endangered monuments and cost estimation.

Ethiopia is endowed with a unique combination of nature, wildlife, historical and cultural heritage, and recognized archaeological sites like Axum's obelisks, the monolithic churches of Lalibela, Gondar 's castles, the Omo Valley, Tia's carved standing stones, Semien National Park, Bale National Park, etc. The physical features of the country are remarkable which incorporate high plateau, long mountain ranges, deep gorges, the largest cave in Africa (Sof Omar), the lowest depression on Earth (Dallol), the Great East African Rift Valley, savannah land, tropical forests, deserts, beautiful lakes including Tana, spectacular waterfalls and volcanic hot springs. One can observe the rich ethnic diversity by the colorful, smiling and friendly customs of the people (MoCT, 2008; Meseret, 2011).

From the 1960s onwards, even though the trend of tourism flow was rising, it was not in a sustained manner mainly because of the negative images a country owned such as political instability, recurrent drought, the political system and government policy especially during the Dergue regime and famine in Ethiopia. Those negative images that the country owned internationally hindered the flow of tourists for a long period of time. After the current government (FDRE) took the power (from 1991) the number of tourists was increased steadily up to 1997 mainly due to the political stability and the market liberalization that attracted a large number of business, conference and vacation tourists. Unfortunately, the country had another war with Eritrea during the last decade of the twentieth century. This war led to a fall in the number of tourists for two years (1998 and 1999). From 2000 onwards the county witnessed a massive inflow of tourists (MoCT, 2009; Yabibal, 2010).

In recent time, Tourism is one of the fastest growing economic sectors in the world. It is increasingly recognized as a valued mechanism for job creation, economic development and poverty reduction. Emerging economies like Thailand, Kenya and Mexico have benefitted from this sector. Through growing and diversifying their tourism resources they leveraged into economically productive assets. Similarly, Ethiopia is well positioned to leverage its vast tourism potential through integrated tourism development (MOCT, 2012).

3.2 Trends in International Tourist Arrivals

The report of UNWTO (2016) indicates that the number of world international tourists becomes incredible which was 1.18 billion tourists traveled the world outside their countries' borders for at least one night in 2015. It shows a rise by 4.4 percent or 50 million over 2014 and the 6th consecutive year of above-average growth, said the report. By the same year from the total international tourists across the world which was 1.186 billion tourists, more than half (607.2 million tourists to Europe and 192.2 million to Northern America) went to Western countries. This indicates the major portion of travel takes place towards developed countries.

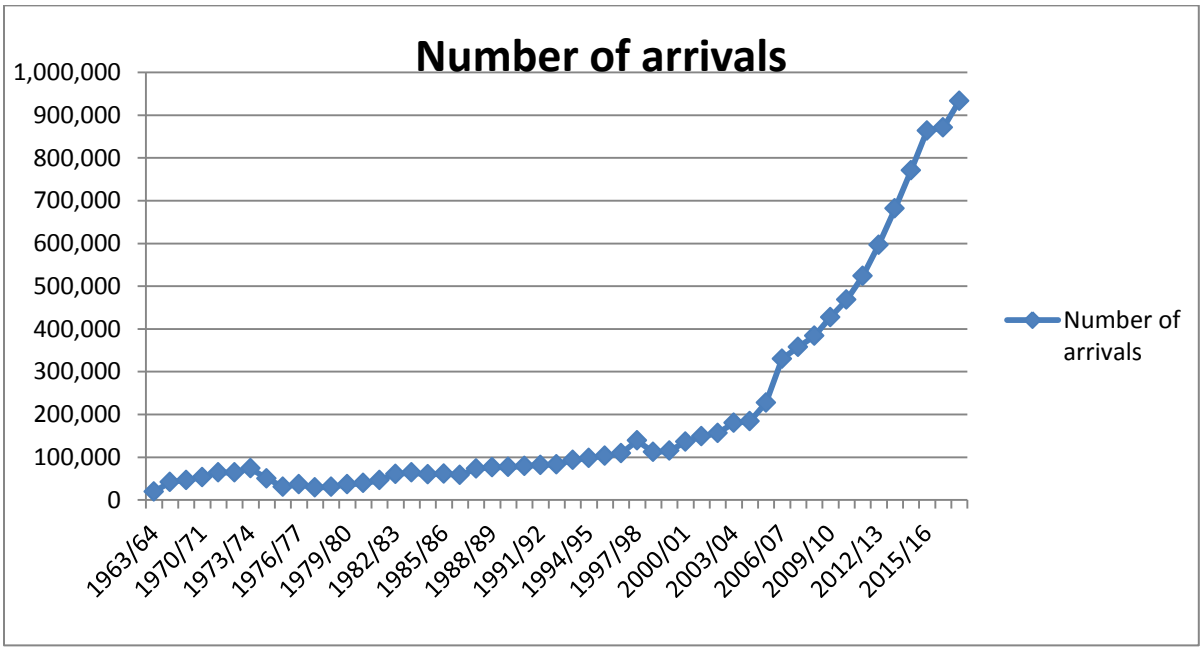
For the Ethiopian case, with the formation of a government entity for the expansion and running of the tourism sector, the number of flows towards Ethiopia started increasing. During1963 the figure was estimated to be 19,215. After ten years in 1973, this number increased significantly towards 73,662 which was almost four folds of the preceding ten years. But the later five years were not good for the economy of Ethiopia as a whole and the tourism sector specifically. The flow of a number of tourists dropped to the worst in 1977 which was 28,984 with the declining rate of 27.41% from the preceding year, 1976. There were different factors responsible for that shock such as the change in the regime in 1974 with new political and economic ideology and the repeatedly occurred drought and famine in the country in the mid of 1970s (MoCT, 2016).

Until 1991, the growth rate of tourist arrivals was less than ten percent for most of the calendar years. But with new moderately market-oriented economic policy; the EPRDF changed a lot and started appreciating the welcoming of international tourists. This brought a new spirit not only for the visitors to visit Ethiopia but also for Ethiopians to give attention in creating conducive tourism policy. During the 1990s' the number of tourist arrivals continued to increase. In 1993, it reached 93,072 with a growth rate of 10.59%. But in 1998 because of the Ethio-Eritrean war,

business travelers to Ethiopia considerably decreased. However, this happened for that calendar year only. From 2000 onwards, it showed an increasing trend continuously, due to relatively political stability and the market liberalization policy that attracted a large number of business, conference and vacation tourists. Besides, the ongoing infrastructural development, especially road projects, participation of private investors on creating conducive environment for tourists, good awareness created internationally up on touring Ethiopia, etc can be mentioned as a major factor (Yabibal, 2010).

The 2017 number of international tourist arrival for Ethiopia was estimated to be 933,344. Among them, nearly half of the total tourists or 432,687 reported that they were touring Ethiopia for the purpose of leisure and holidays (WTTC, 2018). This implies there is an opportunity that these tourists are going to buy a lot of domestic products as they are staying for a number of days. The second largest purpose of visit tourists touring Ethiopia as of 2017 was for transit towards another country which was estimated to be 325,844. The benefit that a country can obtain from these tourists is not much large as that of spending on leisure and holidays, as they are spending fewer days.

Figure 2: Number of International Tourists Visited Ethiopia from 1963 through 2017



Source: MOCT and own drawing

As one can see from figure 2, there is a significant change in the number of tourist arrivals in the last decade which is from 2005/06 onwards. This implies the trend of the flow of tourist in recent years is optimistic if used for policy purpose.

Regionally looking, international tourist arrivals from Africa and Europe have scored the largest percentage share by region of origin, representing up to 31 and 30 percent respectively. The third most important region that contributed visitors to Ethiopia is North America. South Asia still remains as a region with the lowest number of international visitors to Ethiopia.

The arrivals from America are mostly for the purpose of leisure and holiday where the visitors of the USA take the lions' share not only regionally but also across the globe. From Africa, the visitors are touring Ethiopia especially for transit purpose as Ethiopian Airlines is the best from other African Airlines from many perspectives. The other reason is Ethiopia serves as a host for the headquarters of the African Union and the United Nations Economic Commission for Africa. From this perspective, the other things remain constant, more Africans visit Ethiopia than any other region in the world.

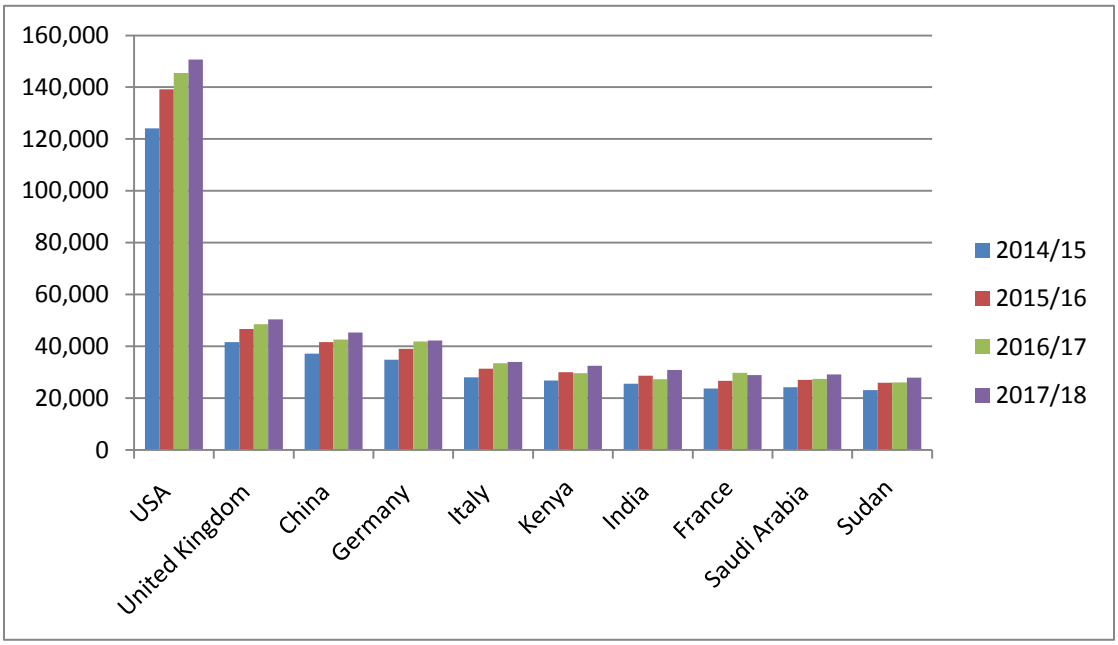
Table 3 2: Total number of travelers regionally towards Ethiopia from 2011 to 2014.

Year	Number of Tourist Arrivals			
	2011/12	2012/13	2013/14	2014/15
Africa	160,311	180294	216,787	232,416
Americas	96,246	117,082	129,695	150,367
Europe	162,784	170,653	200,745	231,407
East Asia and the Pacific	34,758	51,882	51,907	60,653
Middle East	47,583	53,472	58,750	68,075
South Asia	20,746	19,182	23,365	27,510
Total	523,438	596,341	681,249	770,428

Source: MOCT, 2016

But the majority of flows of tourists are from developed countries such as USA and UK. Figure assesses major countries visiting Ethiopia for the period 2014/15 to 2017/18.

Figure 3: Top ten countries touring Ethiopia for the period 2014/15-2017/18



Source: Own drawing using data from MoCT

From figure 3, we can see that the giant number of tourists flow is from the USA for the four consecutive years of 2014/15 through 2017/18. There is little variation (ups and downs) between years as the observed top ten countries are showing similar progress which almost increasing from year to year. Only France, India and Kenya showed a little fall for the period 2017/18, 2016/17 and 2016/17 respectively.

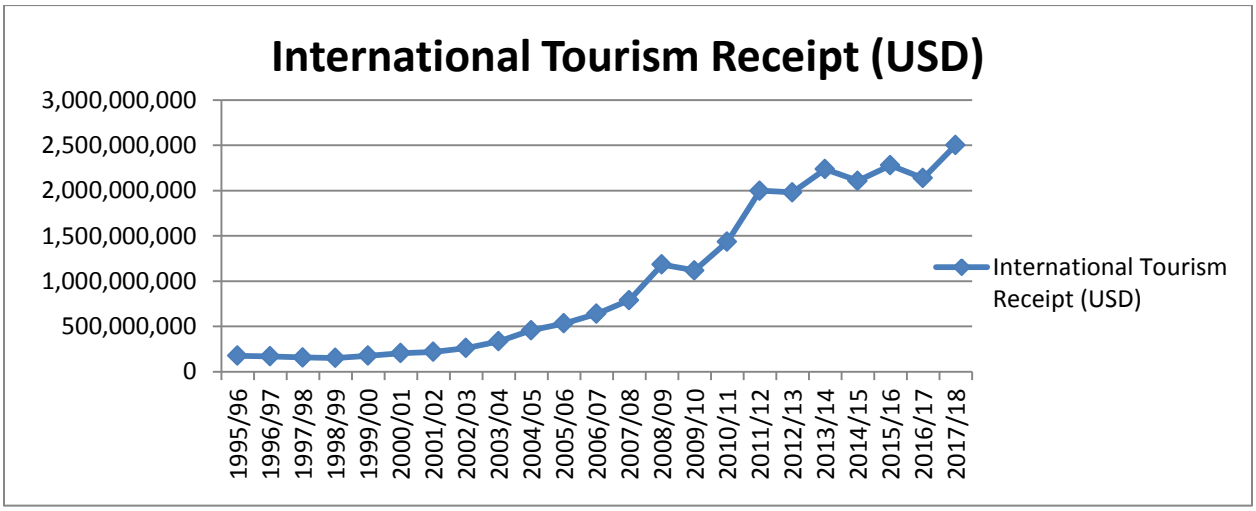
Additionally, the flow of tourists towards Ethiopia is not restricted in a certain region. It is almost dispersed through ought the continents. The top ten countries are from four continents where these continents cover the majority of the world population.

3.3 Trends in Tourism Receipts

The receipt from international tourists more or less relies on the number of visitors. It is total revenue obtained from tourists that visited a given country in a specific period of time. Globally, in cumulative dollar spent as international tourists' expenditure is estimated to be 1.526 trillion USD. For example, the total USD received by countries of the world as international tourism receipt for the period 2007 and 2015 were 1.023 and 1.403 billion respectively. These figures have great variation, implying that the global tourism receipt is increasing significantly. For the Ethiopian case, the total tourism receipt of the country obtained in 2017 was estimated to be

2.503 billion USD. When comparing it with that of the preceding ten years (for 2007) which was 790 million USD, it is more than three folds indicating outstanding increment. Hence the tourism sector of Ethiopia is showing significant improvement following the footstep of world tourism (WB, 2019). Figure 4 shows international tourism receipt of Ethiopia for the period 1995 through 2017 in current USD.

Figure 4: International Tourism Receipt of Ethiopia for the period 1995-2017



Source: Own drawing using data from WB, 2019

As indicated in figure 4, the number of flows of visitors during the period 1998/99 declined. Following the shock occurred from the Ethio-Eritrean war, the total receipt also declined.

3.4 Seasonality of the Arrivals

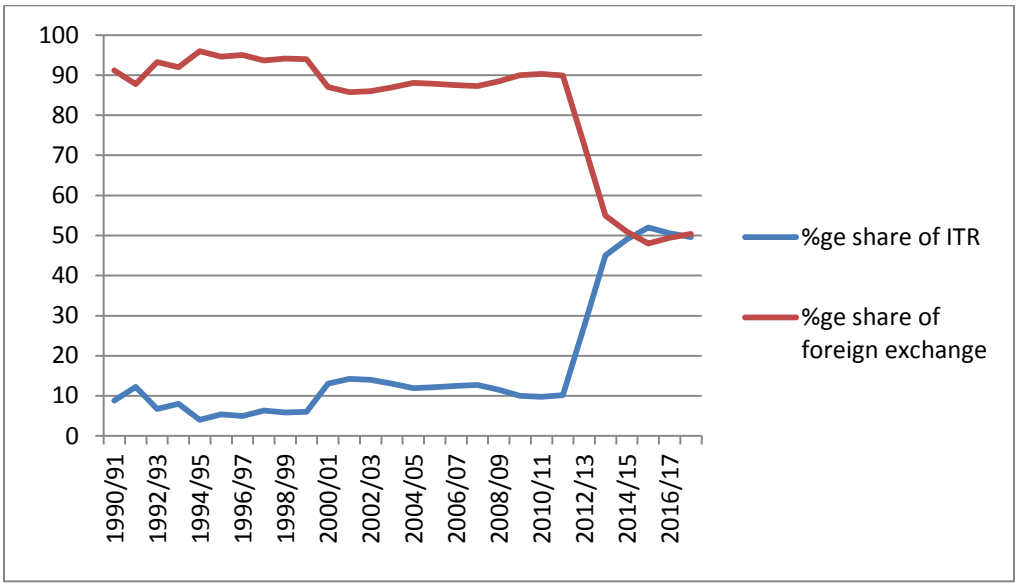
The report of MoCT, 2013 explains that in the years between 2009 and 2012, the peak month for arrivals is November/December whereas July has minimum peak. The highest number of arrivals was recorded in December, followed by January and on, the lowest number of arrivals was recorded in June and July in the years under considerations. The same report for the period 2012 to 2015 indicates that the peak months for arrivals remains more or less similar to the previous years. The highest season for visitor arrival falls during November/December and the mini-peak in July/August. This implies that there is a little variation among seasons and months in touring Ethiopia as the country is known for having thirteen months of the sun shining and comparatively less variation of weather condition with other world parts.

3.5 The Role of International Tourism Receipt in Foreign Currency Earning

Ethiopia's foreign exchange earnings are led by the service sector primarily the state-run Ethiopian Airlines followed by the export of several primary commodities. While coffee remains the largest foreign exchange earner, Ethiopia is diversifying exports of commodities such as gold, sesame, khat, livestock and horticulture products are becoming increasingly important.

The figure below indicates the share in earning of foreign currency in percentage between export of goods and international tourism receipt: the two giant means of obtaining foreign currency.

Figure 5: The share of foreign earning between international tourism receipt and export of Ethiopia for the period 1990 through 2017



Source: MoCT Compiled with NBE and own drawing

From figure 5, there was a great difference between export of commodities and receiving international tourists towards Ethiopia for the earlier periods in which tourism receipt had been contributing less than 10% while export of goods played the lion share coverage. The share of tourism receipt was very small until the figure started to increase with a great magnitude for the period 2012/13 where it contributed 27.5% and the remaining 72.5% was covered by the export of commodities. The share continued to increase and for the recent periods of 2013 through 2017 both welcoming tourists and exporting played an almost balanced 50-50 role in earning foreign currency.

CHAPTER FOUR: METHODOLOGY

4.1 Types and Sources of Data

It is known that any research analysis depends on the availability and quality of data employed. Thus, this research depends on secondary data which was collected from various institutions such as Ministry of Finance and Economic Development (MoFED), Ministry of Culture and Tourism (MoCT), National Bank of Ethiopia (NBE) and World Bank (WB). Books, journals, research papers, different encyclopedias and annual reports have been employed for the accomplishment of the thesis. All the data used were annual observations of the variables and the time period covered 1974–2017.

4.2 Method of Data Analysis

To achieve the stated objective the study used the annual data for the period 1974 to 2017 for empirical analysis. The econometric analysis was used to estimate the parameters corresponding to variables of interest from the secondary data.

4.3 Model Specification

According to Tourism Led-Growth hypothesis, economic growth of a country is affected by the number of tourists entering that country (Sinclair, et.al, 2002) then after the money receipt from the flow of those tourists. Therefore, as our objective is to investigate the relationship between international tourism receipt and economic growth, we selected real gross domestic products as a dependent variable which is expected to be proxy for economic growth while international tourism receipt and others as explanatory variables.

4.3.1 Formation of the Long-Run Model

The econometric equation of the relationship between Economic growth and tourism development takes the following form (e.g., Dritsakis, 2012):

$$GDP_t = f(ITR_t, Z_t)$$

Where GDPt is real Gross domestic product at time t,

ITRt is tourism receipts and

Zt is other explanatory variables the researcher incorporated in the model.

For the achievement of this study, the researcher developed a tourism-growth model in this section which is an extension of Solow (1956). In his landmark work on economic growth, the 1987 Nobel laureate, Robert Solow (1956), points out that an economy's output over the long term depends on its supplies of factors of production and available technology, which can be captured by the (aggregate) production function. The Cobb-Douglas production function is used jointly for the achievement of this model because it is the most commonly used production function in macroeconomics. For instance, the Cobb-Douglas production function is consistent with the law of diminishing returns, which is an essential feature of modern growth theories. Hence, following the growth literature pioneered by Solow (1956) which gives more emphasis for number of labor, capital accumulation and the level of technology as the main determinants of economic growth the researcher extended it by incorporating the target variable which is the international tourism receipt and other explanatory variables by Cobb-Douglas production function as follows:

$$GDPt = At\ Kt^{\alpha} Lt^{1-\alpha} e^{ut} \quad \ldots\ldots(1)$$

where GDPt is the real GDP of the country at a time t, Kt is its capital, Lt is its population (labor which has more impact on economic growth than total population size), At is productivity, and ut is a random disturbance term at a time t for the concerned country. To convert this Cobb-Douglas form production function of the Solow growth model into a linear function for the ease of operation and interpretation, we perform a natural logarithmic transformation on both sides:

$$lnGDPt = \ln At\ Kt^{\alpha} Lt^{1-\alpha} e^{ut} \quad \ldots\ldots(2)$$

Performing possible mathematical operations on equation 3 we can obtain another equation as follows:

$$lnGDPt = lnAt + \alpha lnKt + \beta lnLt + Ut \quad \ldots\ldots(3)$$

Adding target variable which is the international tourism receipt of Ethiopia and other explanatory variables, the researcher obtained the following econometric equation (model) by applying the above 1-3 steps.

$$LnRGDPt = \beta ot + \beta_1 LnITRt + \beta_2 Ln\ TOt + \beta_3 LnCFt + \beta_4 LnEE + \varepsilon t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

Where *lnR*GDP = Natural log of Real Growth Domestic Product

*ln*TO = Natural log of degree of trade openness

lnITR = Natural log of Total Tourism Receipt

*ln*CF = Natural log of Gross capital formation

LnEE=Natural log of Education Expenditure

t = Time

β = measures responsiveness of gross domestic product to change in a given variable by one percent.

ε = error term

As one can see above all variables are transformed into their natural logarithm so that their first differences approximate their growth rates. On the other hand, to eliminate the impact of heteroscedasticity for economic variables time series data, all variables are in natural logarithm.

TLGH hypothesizes that the absolute value of $\beta 1$ is greater than zero; increases in tourism activities is associated with increases in GDP (i.e., economic growth).

The goal of most empirical studies in econometrics is to determine whether a change in one variable causes a change in, or helps to predict another variable. Therefore, based on the objectives of the study the model is estimated using the Johansen co integration test, VAR, VECM and Granger causality test environment.

4.3.2 Variables Description

***Real GDP (RGDP)*:** is a macroeconomic measure of the value of economic output adjusted for price changes (i.e., inflation or deflation). This adjustment transforms the money-value measure, nominal GDP, into an index for quantity of total output. It is the sum of consumer spending, Investment made by industry, the trade balance which is the difference between trade export and import and total government spending. When there is the existence of inflation GDP would increase and this does not actually reflect the true growth in the economy and hence we call this

nominal GDP. That is why the effect of inflation must be adjusted from the nominal GDP to get the real growth percentage called the real GDP. Most of the studies conducted on the relationship of economic growth with any variables used the real Gross Domestic Product (GDP) as the measurement of economic growth. Hence, this study relied on the annual monetary value of real GDP as a proxy to represent economic growth. Thus real GDP is used as a dependent variable in this study.

Trade Openness: The indicator is defined as follows (at current prices, current exchange rates):

$$\frac{Imports + exports\ (both\ goods\ and\ services)}{\text{GDP}}$$

Trade to GDP ratio is the sum of exports and imports divided by GDP. This indicator measures a country's 'openness' or 'integration' in the world economy. It represents the combined weight of total trade in its economy, a measure of the degree of dependence of domestic producers on foreign markets and their trade orientation (for exports) and the degree of reliance of domestic demand on foreign supply of goods and services for imports (BIS performance indicators, 2015). The expected sign of the effect of trade openness on the economic growth of Ethiopia is positive. The more the country relies on international trade through export diversification and expanding its volume, the more existence of the ability to import necessary materials for production which the country cannot provide and further country the more economic growth. Shayanewako (2018) recommended governments to follow open for more economic growth from his study.

Gross Fixed Capital Formation: represents the value of the durable goods (tangible and intangible assets) for non-military purposes, purchased by the resident producing units to be used at least one year in the production process, as well as the value of services incorporated in fixed capital goods. It measures the value of acquisitions of new or existing fixed assets by the business sector, governments and households less disposals of fixed assets. It consists of large-scale projects (construction of roads, irrigation channels, buildings and waterways to be made in order to help economic activity and trade to be carried out (Gibescu, 2010). GFCF is called "gross" because the measure does not make any adjustments to deduct the consumption of fixed capital (depreciation of fixed assets) from the investment figures. The expected sign of coefficient of CF is positive.

International Tourism Receipt: is the monetary value obtained from those traveling across Ethiopia. The tourists may reside in the country for many purposes but the most common are for leisure, international conferences, use Ethiopian Airlines (the most famous Airline from Africa) as transit and business tourists. The above-mentioned tourists are expected to spend a certain sum of foreign currency mostly USD and Euro. The expected sign of the coefficient of international tourism receipt is positive.

Government Education Expenditure: is the other economic variable the researcher used in this study. It represents human capital since the expenditure spent on the education sector is expected to boost the technical skill of the citizens in production. The sign of the coefficient of government education expenditure can be either positive or negative. Adul-Razak et al. (2012) obtained a positive coefficient whereas Jeffery (2018) and Salwa (2017) found a negative coefficient.

4.4 Method of Econometric Model Estimation

4.4.1 Unit Root Test

In classical time series regression model the inferences are based on the assumption that the data generating processes are stationary, i.e., the moments of the variables under consideration are time invariant. However, as the economy grows and evolves over time, most macroeconomic time series variables are likely to grow over time leading them to be non-stationary (Granger and Newbold, 1974). Regression using non-stationary variables will only reveal a relationship that is not real, rather spurious regression. In such cases, as the sample size increases, the mean and variance of coefficient don't tend to be constant and the consistency property of OLS estimators does not hold more. So, the first thing in an econometric work is to check whether a series is stationary or not.

Hence, the non-stationary (trend) in variables needs to be removed first before getting into any econometric work. In the following equation, assuming that μ_t is a white noise error term with mean 0 and variance σ^2 then the random walk model can be specified as follows:

$$Y_t = \rho Y_{t-1} + \mu_t \text{ ..... (5)}$$

If the coefficient ρ equals to unit, then equation (5) becomes a random walk without drift and this is a situation of unit root problem i.e. the situation of non-stationary. The name unit is due to the fact that $\rho = 1$. If however, $|\rho| < 1$, then it can be shown that the time series Y_t is stationary.

The formulation is as follows:

$$Y_t - Y_{t-1} = \rho Y_{t-1} - Y_{t-1} + \mu_t \text{ (Subtracting } Y_{t-1} \text{ from both sides of equation (5)..... (6)}$$

$$\Delta Y = (\rho - 1) y_{t-1} + \mu_t$$

$$\Delta Y_t = \alpha Y_{t-1} + \mu_t \text{ ..... (7)}$$

Where the coefficient $\alpha = \rho - 1$, Δ is the first difference operator, therefore, equation (7) can be estimated and the null hypothesis of $\alpha = 0$ will be tested as follows:

If $\rho = 1$, then $\alpha = 0$, showing the existence of unit root, i.e. the time series is non-stationary and then equation 8 becomes:

$$\Delta Y_t = Y_t - Y_{t-1} = \mu_t \text{ ..... (8)}$$

Since μ_t is white noise error term it is stationary, which means that the first differences of random walk time series are stationary.

Existence of unit root or under null hypothesis in which $\alpha = 0$, the estimated t value of the coefficient of Y_{t-1} in equation (7) follows the t(tau) statistic or the test is known as the dickey fuller (DF). It is estimated in three different forms, i.e. under the different null hypothesis.

i. Y_t is a random walk model without drift or constant term and trend:

$$\Delta Y_t = \alpha Y_{t-1} + \mu_t \text{ ..... (9)}$$

ii. Y_t is a random walk model with drift but without trend:

$$\Delta Y_t = \beta + \alpha Y_{t-1} + \mu_t \text{ ..... (10)}$$

iii. Y_t is a random walk with a drift around a stochastic trend:

$$\Delta Y_t = \beta_1 + \beta_{2t} + \alpha Y_{t-1} + \mu_t \quad \text{..... (11)}$$

In which *t* is the time trend variable. In each case, null hypothesis is $\alpha = 0$ againist alternative hypothesis of $\alpha < 0$.

It is assumed in the dickey fuller (DF) test that the error term μt is uncorrelated but if not, the augmented dickey-fuller (ADF) test should be used. In the ADF test, the equations used in the DF test are augmented by adding the lagged values of the dependent variables, ΔY_t thus, the ADF test consists of estimating the equation below when both drift and trend are included:

$$\Delta Y_t = \beta_1 + \beta_{2t} + \alpha Y_{t-1} + \sum_{i=1}^{q} \xi_t \Delta Y_{t-i} + \varepsilon_t \quad \text{..... (12)}$$

Where ε_t is a pure white noise error term, $\Delta Y_{t-i} = (Y_{t-i} - Y_{t-i-1})$, $\Delta Y_{t-2} = (Y_{t-2} - Y_{t-3})$, β_1 is intercept, t is linear time trend, i=1,2,3,…q and q is the number of optimal lag length to ensure that ε_t is white noise.

The test to be done in ADF test is the same with that of DF: the hypothesis to test is α is zero (i. e $\alpha = 0$) and for both cases, the hypotheses to be tested are as follows:

H_0; There is a unit root in the model i.e., the time series is non stationary

H_1; There is no unit root, i.e., the time series is stationary (level stationary)

4.4.2 Optimal Lag Length Selection

The determination of vector autoregressive lag length for a time series is one among the important factors in economics studies. For achievement of this criteria Various lag length selection criteria such as the Akaike's information criterion (AIC), Schwarz information criterion (SIC), Hannan-Quinn criterion (HQC), Final prediction error (FPE) and Bayesian information criterion (BIC) are employed and the optimal lag length is chosen based on the result obtained by

most of the criterions. But if they offer different lag lengths, then the result of Schwarz information criterion (SIC) is chosen.

4.5 Co-Integration Test

This test detects the presence of any long term relationship between the variables in the model. Two or more variables are said to be co-integrated if they share common trends or they have long-run equilibrium relationships. The economic interpretation of co-integration is that if two or more series are linked to form an equilibrium relationship spanning the long-run, then even though the series themselves may contain stochastic trends (i.e., non-stationary) they will nevertheless move closely together over time and the difference between them will be stable or stationary (Enders, 1995).

4.5.1 Johansen's Method of Co-Integration Test

The Johansen's method takes its starting point in the unrestricted Vector autoregressive (VAR) model as follows:

$$Y_t = \alpha_0 + a_1 Y_{t-1} + a_2 Y_{t-2} + \ldots + a_q Y_{t-q} + AX_t + \varepsilon_t \quad \text{---------- (14)}$$

Where Yt is an n-vector of non-stationary I (1) endogenous variables that are integrated of order one-commonly denoted I (1) and Xt is an m vector of exogenous deterministic variables; $a_1, \ldots,$ a_q and A are matrices of coefficients to be estimated and ε_t is white noise residuals.

There are two co-integrating tests used to examine the existence of long-run equilibrium relations between variables through Johansen co-integration test. These are Maximum Eigen-value and trace statistics (Harris, 1985). For trace statistic, the null hypothesis is the number of co-integrating vectors is less than or equal to co-integrating vectors (r) against an unspecified alternative. In the case of maximum Eigen-value co-integration test, the null hypothesis is the number of co-integrating vectors (r) against the alternative of 1 + r. Most of the times, they offer the same result of the number of co-integration equations in the model. But if not, it is up to the researchers which one to select based on the justification they forward. Trace statistic is believed to offer distorted size if there is a difference among the results by these tests.

The co-integration equation can be expressed as follows:

$$\ln RGDP = \beta_0 + \beta_1 \ln ITR + \beta_2 \ln EE + \beta_3 \ln CF + \beta_4 \ln TO + \varepsilon_t \quad \text{..... (14)}$$

From the above co-integration equation we can drive the equation error term as follows:

$$\varepsilon_t = -(\beta_0 + \beta_1 \ln ITR + \beta_2 \ln EE + \beta_3 \ln CF + \beta_4 \ln TO) + \beta_5 \ln RGDP \quad \textit{.....(15)}$$

If we develop the equation of error term of one period lag which is used in estimating the speed of adjustment of the short run shock towards long-run equilibrium, we obtain the following

$$\varepsilon_{t-1} = \beta_5 \ln RGDP_{t-1} - (\beta_0 + \beta_1 \ln ITR_{t-1} + \beta_2 \ln EE_{t-1} + \beta_3 \ln CF_{t-1} + \beta_4 \ln TO_{t-1} \quad \textit{.....(16)}$$

If the vector of residuals ε_t, which is subjected to unit root analysis is found to be $I(0)$, then the variables are said to be co-integrated and the above equation indicates the existence of long-run relationship among the variables under consideration. Time series econometrics also requires an examination of the short run relation and this is captured by Error correction test.

If a group of variables is individually integrated of the same order and there is at least one linear combination of these variables that is stationary, then the variables are said to be co-integrated.

4.6 Engle-Granger Causality Test

Let y and x be stationary time series, to test the null hypothesis that x does not Granger-cause y or the optimally selected lagged values of x doesn't have a significant impact on the current value of y, one first finds the proper lagged values of y to include in a univariate auto-regression of y:

$$y_t = \alpha_0 + a_1 y_{t-1} + a_2 y_{t-2} + ... + a_q y_{t-q} + \varepsilon_t \quad \text{.....(17)}$$

Hence y_{t-q} is retained in the regression if and only if it has a significant t-statistic; q is the greatest lag length for which the lagged dependent variable is significant. Finally, the auto-regression is augmented by including lagged values of x which are the set of explanatory variables:

$$y_t = \alpha_0 + a_1 y_{t-1} + a_2 y_{t-2} + a_q y_{t-q} + b_1 x_{t-1} + ...b_p x_{t-p} + \varepsilon_t \quad \text{.....(18)}$$

In the notation of the above augmented regression p is the longest lag length for which the lagged value of x is significant. One retains in this regression all lagged values of x that are individually significant according to their t-statistics, provided that collectively they add explanatory power to the regression according to an F-test (whose null hypothesis is no explanatory power jointly added by the x's).

H_0: x variable does not Granger-causes y variable

H_1: x variable granger causes y variable

From the above causality hypothesis, H_0 is accepted if and only if no lagged values of x variable are retained in the regression meaning that the optimally selected lagged values of x variable are insignificant in affect the present values of y variable. The direction of causation is tested for both sides; x granger causes y and y granger causes x, which makes this method of testing the co-integration in a different way from Johansen co-integration test.

Generally, the standard Granger (1969) test was employed in the relevant literature to test the causal relationship between two variables. This test states that, if past values of a variable Y at a time t significantly contribute to forecast the value of another variable X at a time t+1, then Y is said to Granger-cause X and vice versa. The test for the causality is based on the following regression equations:

$$lnRGDP_t = \beta_{01} + \sum_{q=1}^{n} \beta_{11} lnRGDP_{t-q} + \sum_{q=1}^{n} \beta_{12} lnITR_{t-q} + \sum_{q=1}^{n} \beta_{13} lnEE_{t-q} + \sum_{q=1}^{n} \beta_{14} lnCF_{t-q} + \sum_{q=1}^{n} \beta_{15} lnTO_{t-q} + \varepsilon_{1t}$$

$$lnITR_t = \beta_{02} + \sum_{q=1}^{n} \beta_{21} lnRGDP_{t-q} + \sum_{q=1}^{n} \beta_{22} lnITR_{t-q} + \sum_{q=1}^{n} \beta_{23} lnEE_{t-q} + \sum_{q=1}^{n} \beta_{24} lnCF_{t-q} + \sum_{q=1}^{n} \beta_{25} lnTO_{t-q} + \varepsilon_{2t}$$

$$lnEE_t = \beta_{03} + \sum_{q=1}^{n} \beta_{31} lnRGDP_{t-q} + \sum_{q=1}^{n} \beta_{32} lnITR_{t-q} + \sum_{q=1}^{n} \beta_{33} lnEE_{t-q} + \sum_{q=1}^{n} \beta_{34} lnCF_{t-q} + \sum_{q=1}^{n} \beta_{35} lnTO_{t-q} + \varepsilon_{3t}$$

$$lnCF_t = \beta_{04} + \sum_{q=1}^{n} \beta_{41} lnRGDP_{t-q} + \sum_{q=1}^{n} \beta_{42} lnITR_{t-q} + \sum_{q=1}^{n} \beta_{43} lnEE_{t-q} + \sum_{q=1}^{n} \beta_{44} lnCF_{t-q} + \sum_{q=1}^{n} \beta_{45} lnTO_{t-q} + \varepsilon_{4t}$$

$$lnTO_t = \beta_{05} + \sum_{q=1}^{n} \beta_{51} lnRGDP_{t-q} + \sum_{q=1}^{n} \beta_{52} lnITR_{t-q} + \sum_{q=1}^{n} \beta_{53} lnEE_{t-q} + \sum_{q=1}^{n} \beta_{54} lnCF_{t-q} + \sum_{q=1}^{n} \beta_{55} lnTO_{t-q} + \varepsilon_{5t}$$

Where RGDPt, ITRt, EEt, CFt and TOt are the variables whose causality of each other's is tested, t is the time period of study and q is the optimal lag length up to which the variables granger cause each other.

4.7 Vector Error Correction Model (VECM)

In transforming the time series to stationary by differencing, removal of estimation bias will follow. Still, this has a significant implication since it tends to forgo information on the long run properties of the variables. Besides, economic theories are also generally formulated for levels of variables rather than for differences. One approach to dealing with this problem is to employ a method that combines long-run information with a short run adjustment mechanism. This is through error correction mechanism (ECM) which corrects for any disequilibrium happens in the short run, but come into equilibrium in the long run and the relationship between the co-integrating variables can be expressed as ECM as follows:

$$\Delta \ln RGDP_t = \beta_{01} + \beta_{11} \Delta \ln RGDP_{t-1} + \beta_{12} \Delta \ln ITR_{t-1} + \beta_{13} \Delta \ln EE_{t-1} + \beta_{14} \Delta \ln CF_{t-1} + \beta_{15} \Delta \ln TO_{t-1} + \lambda_1 ECM_{t-1} + v_t$$

$$\Delta \ln ITR_t = \beta_{02} + \beta_{21} \Delta \ln RGDP_{t-1} + \beta_{22} \Delta \ln ITR_{t-1} + \beta_{23} \Delta \ln EE_{t-1} + \beta_{24} \Delta \ln CF_{t-1} + \beta_{25} \Delta \ln TO_{t-1} + \lambda_2 ECM_{t-1} + v_t$$

$$\Delta \ln TO_t = \beta_{03} + \beta_{31} \Delta \ln RGDP_{t-1} + \beta_{32} \Delta \ln ITR_{t-1} + \beta_{33} \Delta \ln EE_{t-1} + \beta_{34} \Delta \ln CF_{t-1} + \beta_{35} \Delta \ln TO_{t-1} + \lambda_3 ECM_{t-1} + v_t$$

$$\Delta \ln EE_t = \beta_{04} + \beta_{41} \Delta \ln RGDP_{t-1} + \beta_{42} \Delta \ln ITR_{t-1} + \beta_{43} \Delta \ln EE_{t-1} + \beta_{44} \Delta \ln CF_{t-1} + \beta_{45} \Delta \ln TO_{t-1} + \lambda_4 ECM_{t-1} + v_t$$

$$\Delta \ln CF_t = \beta_{05} + \beta_{51} \Delta \ln RGDP_{t-1} + \beta_{52} \Delta \ln ITR_{t-1} + \beta_{53} \Delta \ln EE_{t-1} + \beta_{54} \Delta \ln CF_{t-1} + \beta_{55} \Delta \ln TO_{t-1} + \lambda_5 ECM_{t-1} + v_t \quad \text{.....(19)}$$

Where Δ denotes the first difference operator and ECM_{t-1} is the lagged value of error term at a time t, λ is the coefficient of the lagged error correction term which indicates the speed of adjustment towards long-run equilibrium if there is a certain shock in the short run and v_t is random error term.

The one period lagged Error correction representation term of equation 19 shows the short run and long run dynamics. The long-run dynamic is contained in the error correction term which is

the same as Johansen's long run co-integration equation. The coefficient of the error correction term is a priori expected to be negative and the magnitude of this coefficient shows the speed of adjustment in percentage towards the long run equilibrium per year since we are operating annual data. Small values of ECM_{t-1} tending to -1, indicate that economic agents remove a large percentage near 100% of disequilibrium in each period; Larger values, tending to 0, indicate that adjustment is slow; Extremely small values, less than -1 and below indicate an overshooting of economic equilibrium indicating that economic short-run disequilibrium is fully adjusted less than a year. Positive values would imply that the system diverges from the long-run equilibrium path rather than converging to long-run equilibrium or removing out the shocks occurred in the short run.

4.8 VEC Diagnostic Tests

After estimating the VEC model there are some diagnostic test to be checked which are vital for ensuring whether the results obtained from VEC estimation can be used for forecasting policy. The most important are LM tests for residual serial correlation, Jarque-Bera test for residual multivariate normality, Breusch-Pagan–Godfrey for heteroscedasticity of the residuals and stability of the model.

4.8.1 Serial Correlation Test

In simple regression models, one of the assumptions of the classical linear regression is that, the $cov(u_i\, u_j) = 0$, for i ≠ j, which implies that successive values of disturbance term u are temporarily independent of each other. This means that when observations are made over time, the effect of disturbance occurring at one period does not carry over into another period. If the above assumption is not satisfied, that is, if the value of error term in any particular period is correlated with its own preceding value(s), we say there is autocorrelation of the random variables. Consider this process: $\mu_t = \rho\mu_{t-1}$. The above relationship states the simplest possible form of autocorrelation; we observe that coefficient of autocorrelation ρ represents $-1 < \rho < 1$. If the value of ρ is 1 it is called perfect positive autocorrelation, if it is -1 we call it perfect negative autocorrelation and if $\rho = 0$, no linear autocorrelation among successive random errors.

Hypothesis: H_0: ρ = 0; No Serial Colleration

H_1: ρ > 0 or ρ < 0; Serial Correlation

4.8.2 Heteroscedasticity

It is the scenario where the distribution of error term (μ_i) around the mean is not constant (no constant variance). Hetroscedasticity problem affects the consistency property of OLS in which estimators have no minimum variance. This study employed the Breusch-Pagan –Godfrey test of hetroscedasticity.

Hypothesis: H_0: the Residuals display homoscedasticity

H_1: the Residuals display hetroscedasticity.

Decision rule: if the computed Chi-square (x^2) exceeds the critical x^2 value at the chosen level of significance, one can reject the hypothesis of homoscedasticity. Otherwise, the alternative hypothesis would be accepted.

4.8.3 Normality

Normality tests are used to determine if a data set is well modeled by a normal distribution and to compute how likely it is for a random variable underlining the data set to be normally distributed. More generally, the tests are a form of model selection and can be interpreted in several ways depending on one's interpretation of probability. This study employed Jarque-Bera test and it is measures whether sample data have the skewness and kurtosis matching a normal distribution.

Hypothesis: H_0: the Residuals are distributed normally.

H_1: the Residuals are not distributed normally.

4.8.4 Stability Test

The stability test is vital if the system is supposed to use for forecasting and policy analysis. It can be detected by a cumulative sum (CUSUM) test. It checks whether the root characteristics polynomials lies inside the unit circle or not. If all roots lie inside the unit circle the model is considered as stable and it can be used for policy analysis.

4.9 Test of Volatility: Impulse response

The impulse response function is a shock to a VAR system which is useful for testing the source of the variation. It identifies the responsiveness of the dependent variables (endogenous variables) in the VAR system when a shock is put to the error terms. It is also defined as the unit standard deviation shock applied to each residual of the variables in the VAR system and sees its

effect on the VAR system. Impulse response function further strengths the short-run analysis. On the other hand, it can trace the response of the endogenous variables to a shock in another variable. Hence any response given by the variables in this model from the shock of residual of the other variable can be seen in turn.

4.10 Variance Decomposition

It examines how important each component of the shocks is in the overall (unpredictable) variance of each of the variables over time. In another word, it examines the percentage share of each variables shock at period t including the endogenous variable (own shock) in the fluctuation of the endogenous variable at period t+n where t is a period where shock occurs and t+n is a future period of fluctuation of endogenous variable.

CHAPTER FIVE: RESULTS AND DISCUSSIONS

5.1. Result of Unit Root Test

As we clearly mentioned in chapter four, before any regression is performed with the time series variables, it is necessary to test whether the variables in operation are stationary or not and if not, establish their order of integration. The variables used in the analysis need to be stationary and/or should be co-integrated in order to infer a meaningful relationship from the regression. Augmented Dickey-Fuller (ADF) test statistics is employed for all the time series variables used in the estimation and the results are presented in table 5.1.

Table 5 1: Unit Root Test Results

Test	Variable	Augmented Dickey-Fuller (ADF)			
		Levels		First Differences	
		t statistic	Critical values at (5%)	t statistic	Critical values at (5%)
With constant and trend	lnGDP	2.7160	3.5236(1.0000)	6.7307	3.5208(0.0000)
	lnITR	3.0071	3.5181(0.1422)	6.1762	3.5208(0.0000)
	LnTO	2.7022	3.5181(0.2409)	7.7235	3.5208(0.0001)
	lnKF	0.3553	3.5208(0.9983)	9.5581	3.5208(0.0000)
	LnEE	2.8536	3.5181(0.1871)	7.2171	3.5208(0.0000)
With constant and no trend	lnGDP	4.4831	2.9350(1.0000)	5.3950	2.9331(0.0001)
	lnITR	1.1705	2.9314(0.9975)	5.8627	2.9332(0.0000)
	LnTO	0.5618	2.9314(0.8684)	7.8396	2.9332(0.0000)
	lnKF	2.7317	2.9332(1.0000)	8.4219	2.9332(0.0000)
	LnEE	0.5290	2.9314(0.9859)	7.1020	3.9332(0.0000)

Note: Probabilities are in parentheses where we reject the null hypothesis which says the variables under consideration have unit roots or non-stationary at below 5 percent level.

From table 5.1, all the variables under consideration depict the existence of unit root at 5 percent level. To use these data for analysis, it is difficult as it displays spurious regression and here we made the first difference of all the variables. The differenced variables displayed stationarity which enables us to reject the null hypothesis of the variables are non-stationary and we are

satisfied with the differenced variables for further use. Hence it is concluded that the variables are integrated of order one since all variables become stationary together at first difference I (1).

5.2. Lag length Selection

The next step of this study is to determine the lag length which would be included in the model. It is determined by applying criteria such as sequential modified likelihood ratio test (LR), final prediction error (FPE), Akaike information criterion (AIC), Schwarz information criterion (SC), and Hannan-Quinn information criterion (HQ). All the variables are treated as endogenous variables in VAR. The result of these criterions is presented in table 5.2

Table 5 2: Optimal Lag Selection Result

VAR Lag Order Selection Criteria

Endogenous variables: LNRGDP LNEE LNITR LNTO LNCF

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-98.72066	NA	0.000123	5.186033	5.397143	5.262364
1	52.66676	257.3586*	2.24e-07*	-1.133338	0.133321*	-0.675354*
2	74.70519	31.95572	2.76e-07	-0.985259	1.336950	-0.145622
3	97.97321	27.92162	3.55e-07	-0.898660	2.479099	0.322631
4	136.0793	36.20075	2.60e-07	-1.553963*	2.879346	0.048982

* indicates lag order selected by the criterion

From table 5.2 through applying all methods of lag selection criterions, we obtained the optimal lag length based on the five criterions. Among the five criterions, four of them including the Schwarz information criterion reported one optimal lag length. Therefore lag of one period is used for the analysis of this study.

5.3 Results of Co-Integration Test

Johansen's co-integration test was employed and the results are concluded in the Tables 5.3.1 and table 5.3.2 on the basis of Trace Statistic and Maximum Eigen Value respectively. Both test criterions indicate that these variables have one co-integration equation between them.

Table 5 3: Results of Johansen's Co-integration Test: Trace Statistic and Maximum Eigen Value Result

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.555400	78.56418	69.81889	0.0085
At most 1	0.415264	44.51984	47.85613	0.0995
At most 2	0.257457	21.98286	29.79707	0.2994
At most 3	0.201642	9.480550	15.49471	0.3228
At most 4	0.000529	0.022207	3.841466	0.8815

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

Table 5.3.1 indicates that there is one co-integrating equation. The null hypothesis of no co-integrating equation is rejected because the trace statistic value of 78.5642 is greater than the critical value of 69.82 at 5% significance level or 0.05 level of the p-value. But for more than one co-integrating equations, the null hypothesis of at most one co-integrating equations is accepted.

Table 5.3.2 Results of Johansen's Co integration Test: Maximum Eigen Value

Unrestricted Cointegration Rank Test (Maximum Eigen value)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.555400	34.04434	33.87687	0.0478
At most 1	0.415264	22.53698	27.58434	0.1941
At most 2	0.257457	12.50231	21.13162	0.4989
At most 3	0.201642	9.458342	14.26460	0.2500
At most 4	0.000529	0.022207	3.841466	0.8815

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

Table 5.3.2 also indicates that there is one co-integrating equation. The null hypothesis of no co-integrating equation among the variables is rejected which leads us to accept the alternative hypothesis of one co-integrating equation exists because the maximum Eigen value of 34.0443 is greater than the critical value of 33.87687 at 5% significance level or 0.05 level of p-value. The p-value is also significant since it is 0.0478 which is less than 0.05 and we are able to reject the null hypothesis. But for more than one co-integrating equations, the null hypothesis of one co-integrating equations is accepted whereas an alternative hypothesis of two co-integrating equations is rejected since the maximum Eigen value statistic of 23.539 is less than the critical value of 27.58434 at 5% significance level.

5.4 The Granger Causality Test Result

To test for the existence of causality between different macroeconomic variables used in the time series model, the Granger causality test is employed. The test checks whether one-period lag value of a given time series data could be used to predict another time series data and therefore it has been used in this study to check whether international tourism receipts could be used to forecast the real GDP of Ethiopia and vice versa.

Table 5 4: Pair-Wise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
LnITR does not Granger Cause LnRGDP	43	3.72371	0.0408
LnRGDP does not Granger Cause LnITR	43	1.19580	0.2807

From table 5.4 the first null hypothesis indicates that international tourism receipt does not granger cause real GDP. It is rejected since the probability value is 0.0408 and it is less than p-value of 0.05. On the other hand, the second null hypothesis is the reverse of the first one. It says that real GDP does not granger causes international tourism receipt. We are unable to reject this hypothesis because the p-value is 0.2807 and is quite insignificant at 5% significance level. From these two hypotheses, tourism lead growth hypothesis (TLGH) is accepted since tourism granger causes real GDP but not true for the case of reverse. This result is supported by the results of Balaguer and Cantavella- Jordá (2002), Brida et al. (2008), Kreishan (2011) and Gunduz & Hatemi-J (2005).

5.5 Estimation of the Long-Run Model and its Interpretations

One among the specific objectives of this study is the determination of the long run relationship between economic growth and international tourism receipt of Ethiopia along with other explanatory variables under consideration. That is testing whether international tourism receipt of Ethiopia do significantly has an impact on the economic growth of Ethiopia in the long run. We employed the normalized Johansen's co-integration test. The result is displayed in table 5.5 employing the optimal lag length of one obtained in table 5.2 and one co-integrating equation in table 5.3.

Table 5 5: Long Run Regression Results

1 Cointegrating Equation(s):	Log-likelihood	45.66783		
Normalized cointegrating coefficients (standard error in parentheses)				
LNGDP	LNEE	LNCF	LNITR	LNTO
1.000000	0.946298	-1.187508	-0.324993	-0.940771
	(0.17583)	(0.19493)	(0.09088)	(0.24314)

From table 5.5 of Johansen's normalized co-integrating equation we can see that the coefficient of lnGDP is normalized to 1.0000 which implies that we are required to interpret the effect of increase or decline of explanatory variables by 1 percent leads to change of real GDP by the negative of the coefficients of the explanatory variable by percentage since all the variables are attributed in natural logarithms. After the normalization on ln*GDP*, the co-integration regression model of economic growth can be written as:

LnGDP = 0.325lnITR + 0.9408lnTO +1.1875lnCF – 0.9463lnEE

The above normalized equation shows the effect in percentage and signs of the coefficients whether they are consistent with a prior expectation. We start with one of our specific objectives; whether there is a long-run relationship between GDP and international tourism receipt. The result of the coefficient of ITR is positive and statistically significant at 5% level. This implies that international tourism receipt has a statistically significant effect in contributing to the economic growth of Ethiopia in the long-run. Furthermore, the impact of tourism receipts indicates that a 1% increase in ITR will lead to 0.325% increase in real GDP of the country. The

results conform to economic theory since expenditures by tourist increase the aggregate demand in the economy leading to an increase in production. Equally an increase of sale of domestic products to the international tourist earns foreign exchange that is crucial in the importation of capital goods for more economic expansion. This result is in line with a priori expectation and supported by Balaguer & CantavellaJorda (2002), Gunduz & Hatemi-J (2005), (2008), Fayissa et al. (2008, 2009), Chen & Chiou-Wei (2009), Brida et al. (2008, 2010), (Lee & Hung (2010) and Kreishan (2010).

On the other hand, the trade openness has a positive and significant impact on GDP of Ethiopia where the variable is from an international perspective as it measures how much a given economy is based on and benefited from the international market. The result implies that a 1 percent increase in trade openness of Ethiopia will lead to a 0.9408 percent boost of GDP of Ethiopia. This result is acceptable and justifiable as it is difficult to increase a given economy with a closed market. Ethiopia needs a lot of GDP. The result is also statistically significant at 5% level since the calculated t-statistics which can be obtained through dividing the long run coefficient of trade openness of 0.9408 by its respective standard error of 0.2431 is 3.87 and it is greater than the critical t-statistics of 1.96. Additionally our result is supported by the study result of Shayanewako (2018) and theory that suggest that a country with higher trade openness and exporting high-quality products will grow faster- a concept the classical economist such as Adam Smith and David Ricardo were advocating through suggesting the adoption of laissez-faire even though the primary export of the Ethiopian economy is raw materials whose international market price are very low.

The other factor included in determining economic growth of Ethiopia in this model is gross fixed capital formation. The coefficient of gross fixed capital formation is positive and significant which is analyzed as a 1 percent increase of gross fixed capital formation will lead to increase GDP of Ethiopia by 1.1876 percent and this result is significant because the t-statistics is 6.0934 which is obtained dividing the coefficient of lnCF by its standard error (1.1876 by 0.1949). The results conform to economic theory since gross fixed capital formation improves capital productivity and thus improving economic growth. The result is in agreement with a study carried by Rekha, (2011) where he found that a strong and significant impact of the gross capital formation economic growth of India.

Finally, government education expenditure is assumed to be a proxy for human capital. We too used this variable as it can represent the level of human capital and labor productivity. The long-run Johansen co-integration equation shows that government education expenditure has a negative impact on GDP of Ethiopia. The result indicates that a 1 percent increase in government expenditure causes decline of GDP of the country by 0.9463 percent and this figure is significant at a 5% significance level. The t-value for testing the significance of the coefficient of lnEE is 5.3828 which is obtained through dividing the coefficient of lnEE by its standard error (0.9463 by 0.1758) and is quite greater than the critical t-statistics of 1.96. The negative relationship between this variable and economic growth is in agreement with the study results of Jeffery (2018) on the data of Cote d'Ivoire and Salwa (2017) using panel data of 40 countries. The reason behind this result may be from many perspectives; among which high unemployment rate of Ethiopia where most of the unemployed citizens are university/college graduated youths and they are unable to pay back their expenses on education in general and the cost-sharing they have used during their stay in the government education institution specifically.

The other reason may be the low quality of education and hence the student's productivity and creativity of their own job after graduation in an economy of the country is very low. Generally the direct revenue an economy can obtain by investing in the education sector especially in Ethiopia where there is limited involvement and contribution of the private sector is very low. The sector is not supported enough by research and development institutions which can boost the economy of a country.

5.6 Short Run and Vector Error Correction Model Estimation

When the variables under Johansen's co-integration test are co-integrated, then we use a VECM econometric framework for dealing with multiple time series (Engle and Granger, 1987). In our VECM model, we have potentially five endogenous variables: real GDP, international tourism receipts, trade openness, gross capital formation and government education expenditure. But Johansen co-integration result reveals that there is only one co-integration equation, we have only one endogenous variable i.e RGDP. The VECM has co-integration relations built into the specification so that it restricts the long-run behavior of the endogenous variables to converge to their co-integrating relationships while allowing for short-run adjustment dynamics through the coefficient of the lagged VECM.

Table 5 6: Results of VECM for Short Run Dynamics

	Error Correction	D(LNGDP(-1))	D(LNITR(-1))	D(LNTO(-1))	D(LNEE(-1))	D(LNCF(-1))	c
coefficient	-0.2211	0.0764	0.0816	0.0247	0.1558	0.0922	0.0584
Standard erros	0.0685	0.1879	0.0503	0.0715	0.0699	0.0961	0.0222
t-statistics	-3.2267	0.4067	1.6227	0.3452	2.2267	1.9601	2.6237
p-value	0.0027	0.6867	0.1136	0.732	0.0325	0.3436	0.0128

From Table 5.6, the estimated VECM coefficients are presented as equation form as follows where the numbers in the brackets are the probability values of the respective coefficients:

$$\Delta \text{LnRGDP}_t = 0.0584 + 0.0764\Delta \text{LnRGDP}_{t-1} + 0.0816\ \Delta \text{LnITR}_{t-1} + 0.0247\Delta \text{LnTO}_{t-1} +$$

(0.0128) (0.6867) (0.1136) (0.732)

$$0.0922\Delta \text{LnCF}_{t-1} + 0.1558\Delta \text{LnEE}_{t-1} - 0.2211\text{ECT}_{t-1}$$

(0.3436) (0.0325) (0.0027)

This test is employed to estimate the short-run dynamics where the equation is regressed with the differenced real GDP as a dependent variable against the lagged differenced explanatory variables namely. A 1-lag structure is applied as the optimal lag length selected employing the appropriate lag selection criteria.

The speed of adjustment i. e the coefficient of ECT_{t-1} is negative and statistically significant at all 1%, 5% and 10% significance levels. The value of the coefficient of ECT_{t-1} is -0.2211 and it lies between -1 and 0, indicating the convergence in the long run after any shock or disequilibrium occurred in the short run. In other word, it indicates that approximately 22.11% of the previous year's disequilibrium from any shock on explanatory variables will be adjusted. Following the correction per year, the total number of years to eradicate the total shock of the short run system of equation is four and half years.

From the above Table 5.6 of VECM and the short run co-integration equation, only government education expenditure is significant in the short run in determining economic growth of Ethiopia at a 5% significance level.

In the short run, the sign of real GDP which indicates the effect upon itself is positive. But it is unable to have a determining impact on itself in the short run at 5% significance level as the probability value of the lag real GDP is 0.6867 which is greater than the probability value used as a reference which is 0.05. Although it is insignificant, the sign agrees with most of the literature, as the higher the current economic growth paves the way for the expansion of the economy of the near future.

At 5% of significance level, in the short run, international tourism receipt of Ethiopia does not improve the performance of economic growth. Most of the revenues a country obtains from international tourists go to the pocket of some individuals mainly the hotel and restaurant sector. The tourists stay in restricted hotels mainly in Addis Ababa, Bahir-Dar and Hawassa. The insignificance of the number of hotels and service rendering agents made economic growth not to get benefit since the income received from foreign tourists isn't being allocated for further production by these receivers.

Additionally, the majority of the Ethiopian population is living in the rural areas of Ethiopia where there is almost no tourist expenditures spent in these areas. This hinders the living standard of the population not to change significantly. There is also a lack of appropriate economic policy to change the welfare of society by allocating the income received from these tourists. The same is true for the reverse case; the short run economic growth of Ethiopia does not attract international tourists and then promote the receipt the country may get from these tourists.

The short-run coefficient of trade openness is positive and insignificant at 5% significance level. Additionally, gross capital formation has a positive impact on economic growth at this significance level but still, it is insignificant. As a result, we cannot say a lot about the impact of these variables on the economic growth of Ethiopia since the coefficients are insignificant at 0.05 p-values.

Education expenditure has a positive effect in determining the short run real gross domestic product of Ethiopia. It is obvious that the economy of Ethiopia is mainly supported by government expenditure. Education expenditure is one of the major areas in which the Ethiopian government spends its annual budget. This area creates job opportunities for citizens and enables them to consume more which initiates for further production in the short run. But the projects conducted under the education sector are not everlasting. They start at a certain period and end when finished. As a result, those obtaining income in the short run have no more chance to stay working in the long run.

5.7 Diagnostic Tests

5.7.1 Normality of the Residuals

Table 5 7: Normality Test Result

Test	Method	$\chi 2$-stat	P-Value
Normality	Jarque-Bera test	1.6899	0.4296

By employing the Jarque-Bera test we are able to accept the null hypothesis which says the residuals are normally distributed. The p-value is 0.4296 which is greater than the reference p-value of 0.05 and hence the null hypothesis is accepted.

5.7.2 Heteroscedasticity Test

We employed the test of the Null hypothesis: the presence of homoscedasticity against an alternative hypothesis of the existence of heteroscedasticity.

Table 5 8: Heteroscedasticity Test Result

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.697480	Prob. F(10,31)	0.1260
Obs*R-squared	14.86075	Prob. Chi-Square(10)	0.1372
Scaled explained SS	61.07794	Prob. Chi-Square(10)	0.0000

Since the probability of Chi-square for our observed R-squared obtained in table 5.8 is 0.1372 which is greater than our reference probability value of 0.05, we accept the null hypothesis of homoscedasticity in our model.

5.7.3 Auto-Correlation Test

The other diagnostic test of our study is testing for the existence of a serial correlation between our residuals. Hence we employed the test of Serial correlation LM test and the result is displayed in table 5.9

Table 5 9: Auto-correlation Test Result

VEC Residual Serial Correlation LM Tests

Null Hypothesis: no serial correlation at lag order h

Lags	LM-Stat	Prob
1	17.15998	0.8759
2	20.83721	0.7017

Probs from chi-square with 25 df.

Test statistic: LM = 17.15998 with p-value of 0.8759 at first lag length. Since the probability value is greater than 0.05, we are unable to reject the null hypothesis which says there is no serial correlation among the residuals. This is an indication of no serial correlation among the residuals at lag length one.

The other time series issue is whether the residuals display large or small correlation among themselves. The following table 5.10 shows the lower existence of residuals correlation.

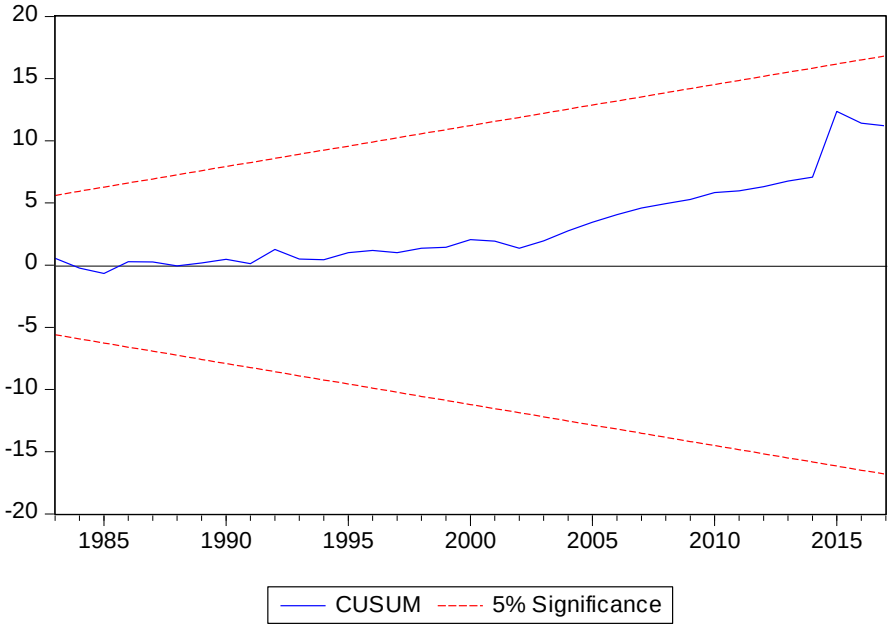
Table 5 10: Residuals Correlation Matrix

	LNRGDP	LNEE	LNCF	LNITR	LNTO
LNRGDP	1.000000				
LNEE	0.092497	1.000000			
LNCF	0.070639	0.262199	1.000000		
LNITR	0.037032	0.290110	0.264448	1.000000	
LNTO	0.086003	0.313273	0.059943	0.134029	1.000000

5.8 The structural Stability of the Estimated Result

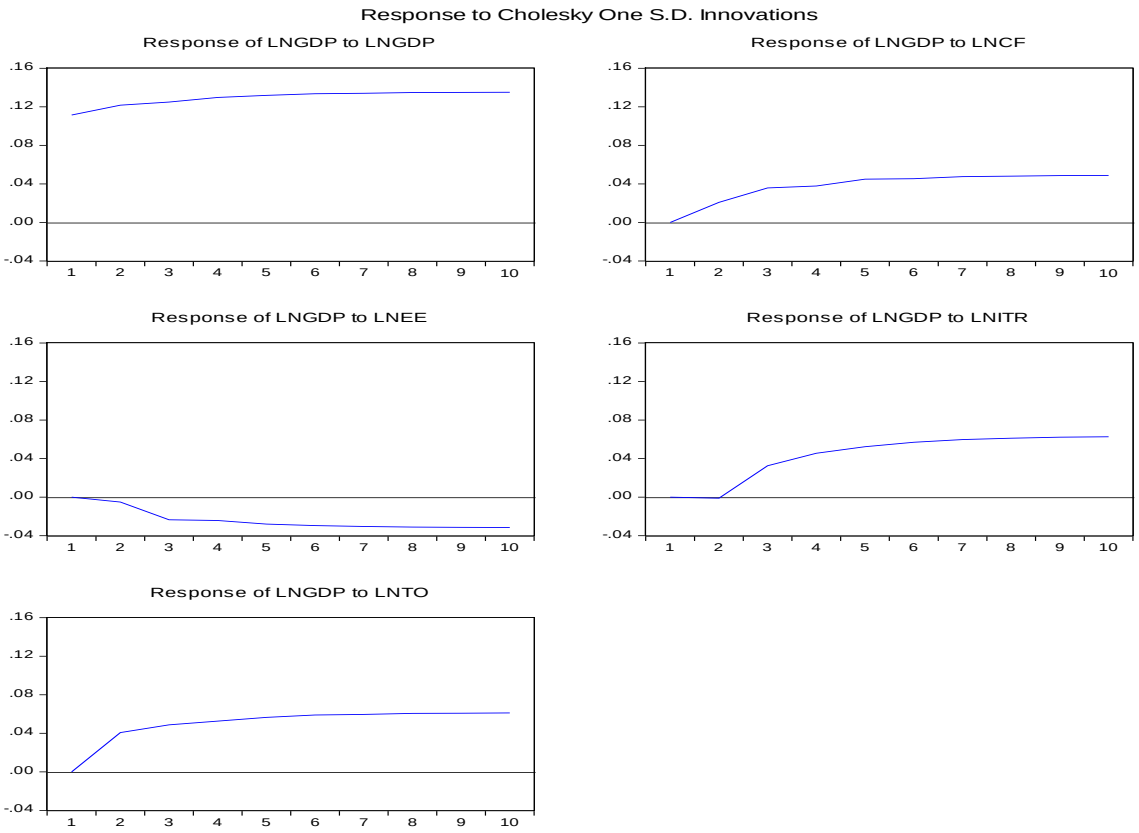
It can be seen in the plots of the cumulative sum of recursive residuals. It is displayed in Figure 6 below. This plot shows that the parameters and error terms of the estimated model are stable as the respective plots do not cross the 5% critical bounds. Hence, the model with LnRGDP as a dependent variable does not have any structural instability during the sample period or it is stable.

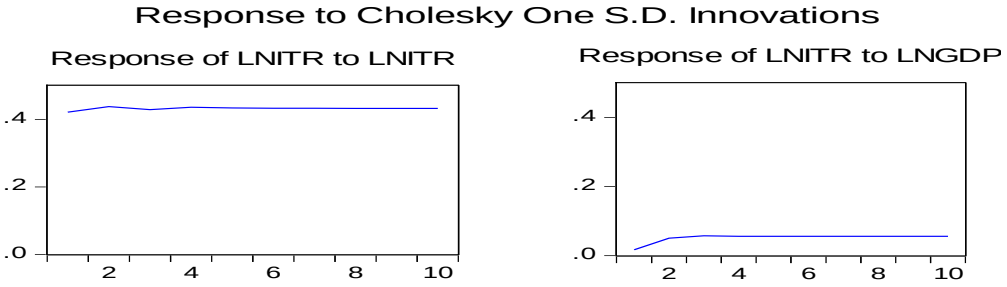
Figure 6: CUSUM Test of Stability



5.9 Impulse Response

Figure 7: Impulse Response of RGDP and ITR





The result of the impulse response analysis is illustrated in figure 7 above. From the figure we can see that real GDP responds positively to a positive shock of itself, ITR, TO and CF, but it has negative response to EE for the whole forecast period. On the other hand, a one standard deviation positive shock to real GDP and ITR (its own shock) leads ITR to response positively for the whole forecast period. In the long run, real GDP have stable response to the shock of all endogenous variables.

5.10 Variance Decomposition

Table 5 11: Cholesky Variance Decomposition

Variance decomposition of lnGDP

Period	S.E.	LNGDP	LNEE	LNCF	LNITR	LNTO
1	0.351830	100.0000	0.000000	0.000000	0.000000	0.000000
2	0.494339	92.77403	0.001209	1.560769	0.004378	5.659611
3	0.607355	85.27041	0.337763	4.237868	2.105248	8.048710
4	0.708140	80.72667	0.465338	5.374296	4.226551	9.207150
5	0.793950	77.03364	0.564270	6.545546	5.856689	9.999854
6	0.873023	74.42128	0.649940	7.226463	7.137214	10.56510
7	0.945026	72.44503	0.705181	7.788521	8.134646	10.92662
8	1.012289	70.96738	0.750861	8.183190	8.888663	11.20991
9	1.075277	69.81790	0.784441	8.497149	9.485940	11.41456
10	1.134857	68.91534	0.811616	8.739183	9.956429	11.57744

Cholesky ordering lnRGDP lnEE lnCF lnITR lnTO

From table 5.11, we can see that at period 2, impulse or innovation or shock to RGDP accounts for 92.77 percent variation of the fluctuation of itself and has the lion share in the variation of that period. On the other hand, the remaining variables incorporated in this study collectively contribute a smaller percentage (7.23 percent) for the fluctuation of RGDP at that period. At period 10, a shock to RGDP contributes 68.92 percent for the fluctuation of itself where gross capital formation, trade openness, international tourism receipt and government education expenditure plays 8.974 percent, 11.58 percent, 9.96 percent and 0.81 percent fluctuation of RGDP respectively. This implies for the variation of RGDP, the percentage share of shock from itself is gradually declining whereas from the remaining explanatory variables the trend is increasing in the long run.

CHAPTER SIX: SUMMARY, CONCLUSION AND RECOMMENDATION

6.1 SUMMARY

This study generally aimed at analyzing the existence of any influence of international tourism receipts on Ethiopian economic growth using time series data for the period 1974-2017. Tourism has been known as a potential contributor in the economic sector based on long years experience of many countries that improved and sustained their national economies through tourism industry (Mansfeld and Winckler, 2008). But the studies conducted in Ethiopian case especially using recent data are scarce. This study, therefore, is the means to overcome this gap. It specifically targeted in investigating the role of the receipts from an international tourist on the country's economic growth in the long run along with the existence of any short-run causality between the two macroeconomic variables. In order to overcome the problem of specification error, the additional explanatory variables such as degree of trade openness, gross fixed capital formation and government education expenditure are included.

In this study, we achieved a set of general and specific objectives by applying different econometric techniques. The general objective is the relationship between international tourism receipt and economic growth which is explained by specific objectives of the existence of long run and short run relationship among the included variables. Testing for time series behavior, ADF is used for unit root test and reveals that all included variables displayed unit root at their level, but stationary applying the first difference.

In identifying whether long run co-integration exist among the variables included in this study, the Johansen co-integration test was applied which is followed by Engel-Granger for the short run causality and their direction between these variables. The results from the Johansen co-integration test revealed the existence of the long term relationship of all the variables used in the model and they were significant in explaining the long-run behavior of the economic growth of Ethiopia. Among four explanatory variables, three of them: international tourism receipt, gross capital formation and degree of trade openness have a positive effect on the economic growth of Ethiopia whereas government education expenditure has a negative impact for the period under the study in the long-run. The short term relationship reveals non-existence of both direction causality running between international tourism receipts of Ethiopia and economic growth under

the study period. From the result, among the included explanatory variables, only government education expenditure is found to have a significant impact in determining the short run Ethiopian economic growth under the period of study.

For diagnostic tests: Serial correlation LM test, Bruesch-Pagan Godfrey test and Jarque-Bera test were used for the serial correlation test, heteroskedasticity and normality of the residuals respectively. All the tests reveal no problem in the model. Additionally, CUSUM Test of Stability was employed and reveals stability of the model.

6.2 CONCLUSION

International tourism receipt becomes significant in determining the variation of RGDP of Ethiopia in many ways among which three main ways can be discussed. Firstly, the direct effect is tourist expenditures on a good or service, in which this money contributes directly to that specific place that the money is paid for. Most of these transactions start from Ethiopian Airline since the majority of tourists use it. The other payments are those made for specific places tourists visit and a purchase of goods from local sellers. The second impact is through indirect effect which is the increment of an opportunity of production sectors that are related to the tourism sector and supplies their products for the tourism sector. The third one is the induced effect which enables citizens employed in the tourism sector to increase their consumption of national outputs since their income increases if there is an expansion of the tourism sector. Therefore Ethiopia can have better economic performance and good standard of living through expanding and developing this sector.

In other words, when tourists visit Ethiopia, they incur a lot of expenses on goods and services such as transportation, food and drinks, accommodation, culture and sports activities, shopping and recreation. These transactions from tourists are recycled and spent again in the economy. As a result, the income of citizens will increase. This gives an indicator that tourism receipts have more than the direct effect in Ethiopia since it is contributing not only to tourism growth but also the multiplier effect. Moreover, when a tourist spends on a good or service, this money contributes directly to that specific place that the money paid for (direct effect). Beyond this, the money collected will contribute indirectly to other sectors related to that place such as the

payment for the workers and the payment for the supply of the goods and services from other sectors business in the economy to be used in their business (indirect effect).

Additionally, when Ethiopia achieves successful long-run economic growth, the government will have enough funds to provide basic infrastructure and facilities in addition to designing effective tourism planning and strategies for the development of the tourism sector. As a result, this may increase the attractiveness of tourism sector and might interest tourists from all over the world due to the development and good image in the country.

6.3 Policy Implication

In Ethiopia, tourism's potential for cross-sectoral complementarities is yet to be realized. It is important that tourism strategies be anchored and that they integrate the new national micro and small scale enterprises strategy as well as agricultural and industrial sector strategies. It is also essential to develop targeted and sector-specific regulations to facilitate investments and value chain linkages. Tourism, if well-integrated in the regional and local economies and other economic sectors, has the potential to generate and diversify local economic growth, create strong backward linkages with input sectors such as agriculture and manufacturing, generate large indirect economic impacts and increase its pro-poor impact. In order to create these complementarities, the National Tourism Strategy will need to be informed by the tourism potential. In addition regional and sub-regional development strategies, geographically differentiated development strategies such as Special Economic Zones and growth corridors in which tourism sector has an opportunity of leading the economy could be taken as a policy in broadening the base of the tourism sector which further generate an employment opportunity.

The Tourism sector of Ethiopian faces a combination of hard and soft infrastructure bottlenecks but enjoys available attractive natural spaces and cultural spirits by tourist and good international air transport accessibility and infrastructure thanks to Ethiopian Airlines' efforts to make Addis Ababa a regional air transport hub. To address the existing bottlenecks, it is important for tourism strategies to be anchored in and integrate existing infrastructure plans and to include innovative partnerships with the private sector, including public-private partnerships. Hard infrastructure bottlenecks include low coverage of road density and the related high transport costs, non-competitive domestic air transport, and limited lodging capacity, especially in the

regions. Soft infrastructure bottlenecks include the limited availability of financial institution for payment systems, especially e-payment. Solving and improving these bottlenecks has its own role in enjoying the good output from the tourism sector of Ethiopia.

The coordination between the government infrastructure developments with tourism sector representative plays a crucial role. For Ethiopian case, Institute an effective platform for vertical and horizontal integration between MoCT and infrastructure related ministries: Ethiopian Roads Authority, Ethiopian Telecommunications Corporation and financial sectors of Ethiopia have a significant role in exploring innovative partnerships with the private sector.

From the potential of the country in the sector, the overall recommendation of this study is that through a combination of strategic interventions, effective institutional structures, multi-stakeholder dialogue and dedicated tourism investment generation can lead to growth and employment-generation potential of Ethiopia's tourism sector. These measures will help to improve the tourism sector's status from underperforming to a more competitive and economically productive one in the medium to long term.

By now, the Ethiopian government lead by Abiy Ahmed (Ph.D.) has given good attention to the tourism sector especially targeted at generating foreign currency because the country has a great problem in generating and collecting it. Their plan and target is especially in Addis Ababa where there are few attractive sites and potential. Along with finding and producing new tourist attraction sites, focusing on the previously existing potentials will be helpful as they need smaller investment and expansion costs and such projects could be supported and expanded through ought the regional states.

Lastly, the researcher recommends that further studies could be done by government policy sector, Non-Government Organizations and higher education institutions in searching the potential of the country and expanding the sector. Different scope of studies could also be done on cultural assets since the country is rich from this perspective and special attention is needed in preserving and advertising these intangible assets throughout the world in any occasions and events.

REFERENCES

Abdul-Razak, A., Fidlizan, M. and Yahya, M. (2012). Education Expenditure and Economic Growth: A Causal Analysis for Malaysia. Journal of IISTE 3(7): 71-81

Agenor and Montiel (1996). *Development Macroeconomics*, Princeton university press, Princeton, New Jersey, USA.

Antonakakis, N., Dragouni, M. and Filis, G. (2013). Time-Varying Interdependencies of Tourism and Economic Growth: Evidence from European Countries. MPRA Munich Personal RePEc Archive, 4875. p1-34.

Arslanturk, Y., Balcilar, M. and Ozdemir, Z. A. (2011). Time-varying linkages between tourism receipts and economic growth in a small open economy.*Economic Modelling* 28 (1), 664–671.

Ashenafi, T. (2016). The Historic Route in Ethiopian Tourism Development, African Journal of Hospitality, Tourism and Leisure Vol. 5 (2)

Balaguer, J. and Cantavella, J.M., (2002). Tourism as a long-run economic growth factor: The Spanish case. Applied Economics, 34:877-884.

Belloumi, M. (2010). The Relationship between Tourism Receipts, Real Effective Exchange Rate and Economic Growth in Tunisia. International Journal of Tourism Research, 12, 550-560.

BIS Performance Indicators. (2015). UK. Retrieved from http://www.nationalarchives.gov.uk/doc/open-government-licence/

Brida, J., Sanchez, E. and Risso, W. (2008). Tourism's impact on long-run Mexican economic growth. Economic Bulletin 3(21), 1–8.

Brida, J. and Risso, W. (2010). "Tourism as a Determinant of Long-Run Economic Growth", *Journal of Policy Research in Tourism, Leisure and Events* 2(1): 14-28.

Chou, M. (2013). Does Tourism Development Promote Economic Growth in Transition Countries? A Panel Data Analysis, Economic Modelling, 33, 226-232.

Croes, R. and Vanegas, M. (2004). "Turismo Como Instrumento de Expansión Económica y Reducción de Pobreza." Policy discussion paper, July. Managua: Office of the President of Nicaragua and Nicaragua Institute of Tourism.

Croes, R. and Vanegas, M. (2008). Co-integration and Causality between Tourism and Poverty Reduction. Journal of Travel Research 47 (1): 94–103.

Daily Mail, (2015). Retrieved from (https://www.dailymail.co.uk/travel/travel_news/article-3160651/Forget-sunnySpain-enchanting-Thailand-romance-France-Ethiopia-named-World-s-Best-TourismDestination.html)

Dritsakis, N. (2010). Tourism Development and Economic Growth in Seven Mediterranean Countries: A Panel Data Approach: pp: 8-9

Dwyer, L. and Forsyth, P. (1997). Measuring the Benefits and Yield from Foreign Tourism, International Journal of Social Economics 24(1):223-236

Du, D., Lew, A. and Ng, P. (2015). Tourism and Economic Growth. Journal of Travel Research 55(4), 454-464

Engle, R. F. and Granger, C. W. J. (1987). Cointegration and error correction: representation, estimation, and testing, *Econometrica*, **2**, 251-276.

Enders, W. (2004).Applied Econometric Time Series, 2nd edition, New York: John Wiley and Sons.

Eugenio-Martin, J.L., Martín-Morales, N. and Scarpa, R. (2004), Tourism and economic growth in Latin American countries: A panel data approach. FEEM working paper No. 26, Retrieved from http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=367719.

Fayissa, B., Nsiah, C. and Tadasse, B. (2007). The Impact of Tourism on Economic Growth and Development in Africa. Tourism Economics 14(4): 807-818

Gautam, B. (2008b). Opportunities and Challenges of Tourism Financing in Nepal. Florida USA: Universal Publishers Limited

Gibescu, O. (2010). Does the gross fixed capital formation represent a factor for supporting economic growth? MPRA Paper 50135, University Library of Munich, Germany

Goeldner, C.R., Ritchie, J.R.B and McIntosh, R.W. (2000). Tourism Principles, Practices and Philosophies. New York.

Granger, C. W. (1969). Investigating causal relations by econometric models and cross-spectral methods. Econometrica: Journal of the Econometric Society, 37 (3), 424-438.

Granger, C. W. J. and Newbold, P. (1974). Spurious regressions in econometrics, *Journal of Econometrics*, **2**, 111-120.

Gujarati, D. (1995). Basic Econometrics. 3rd Edition. McGraw-Hill New York.

Gujarati, D.N. (2003). Basic Econometrics. 4th Edition, McGraw Hill Book Co., New York

Gunduz, L., and Hatemi-J, A. (2005). Is the Tourism-led Growth Hypothesis Valid for Turkey? Applied Economic Letters, 12(8), 499-504.

Harris, R.Z.D. (1985). *Using Co-integration Analysis in Econometric Modeling*, University of Portsmouth, Prentice Hall, London.

Heijdra B.J. and Ploeg F. (2006). *Foundations of Modern Macroeconomics*, Theories of Economic Growth, Chapter 14

Hunziker, W. and Krapf, K. (1941). Tourism as The Sum of Phenomena and Relationships Arising From the Travel and Stay of Non-Residents. Publications of AIEST.

Jeffery, K., (2018). Education expenditure and economic growth: some empirical evidence from Cote d'Ivoire MPRA paper no:88350

Kan, E. O., & Omay, T. (2011). Empirical issues and examples: Growth theory. *International Business & Economics Research Journal (IBER)*, *5*(8), 27–38.

Kasimati, E. (2011). Economic Impact of Tourism on Greece's Economy: Cointegration and Causality Analysis. International Research Journal of Finance and Economics, 79, 79-85.

Katircioglu, S. (2009).Revisiting the Tourism-led-growth Hypothesis for Turkey Using the Bounds Test and Johansen Approach for Cointegration. Tourism Management, 30, 17-20.

Kauffman A. (2008) Challenges and Future Perspectives for Tourism Development in the Central Rift Valley: Addis Ababa, Ethiopia.

Keynes, J. M. (1936). The general theory of interest, employment and money. London: Macmillan.

Kidane-Mariam, T. (2015). "Ethiopia: Opportunities and Challenges of Tourism Development in the Addis Ababa-upper Rift Valley Corridor". *Journal of Tourism and Hospitality*, 4 (4):1 – 9.

Kim, H., Chen, M., & Jang, S. (2006).Tourism expansion and economic development, the case of Taiwan.Tourism Management 27(5), 925– 933.

Koopmans, T. C. (1965). *On the concept of optimal economic growth* ((study week on the) Econometric Approach to Development Planning). Amsterdam: North Holland Publishing Co.

Kreishan, F. (2011). Time-series Evidence for Tourism-led Growth Hypothesis: A Case Study of Jordan. International Management Review, 7(1), 89-93.

Kum, H., Aslan, A. and Gungor, M. (2015). Tourism and Economic Growth: The Case of Next 11-Countries. International Journal of Economics and Financial Issues. 5(4), 1075-1081.

Lanza, A. and Pigliaru, F. (2000). Why are tourism countries small and fast-growing? In: Amedeo Fossati, and Giorgio Panella (ed.), Tourism and Sustainable Economic Development. Kluwer Academic Publishers, Dordrecht, pp. 57–69.

Lee, C. and Chang, P. (2008). Tourism development and economic growth: a closer look at panels. Tourism Management 29: 180–92.

Lee, C. and Chien, M. (2008). Structural breaks, tourism development, and economic growth, evidence from Taiwan. Mathematics and Computers in Simulation 77(4), 358–368.

Lean, H. and Tang, C. (2010).Is the Tourism-Led Growth Hypothesis Stable for Malaysia? A Note. International Journal of Tourism Research, 12, 375-378.

Mansfeld, Y. and Winckler, O. (2008).The role of the tourism industry in transforming a rentier to a long-term viable economy: the case of Bahrain. Current Issues in Tourism, 11, 237-267.

Mathieson, A. and Wall, G. (1982). *Tourism, economic, physical and social impacts. Tourism, economic, physical and social impacts.* Longman Group Ltd, Essex.

Meseret, G. (2011). The impact of Service Trade on the Economic Growth of Ethiopia: The case of Tourism, Addis Ababa University

MoCT, (2008). 2006-2008 Tourism Statistics Bulletin. Addis Ababa

_____, (2009). Tourism Development Policy. August, A.A.

_____, (2013). Tourism Statistics Bulletin (2009-2012) NO.10

_____, (2016). Tourism Statistics Bulletin (2012-2015) NO.11

Nurhssen, S. (2016). The Role of Tourism on Local Economic Development of Gondar City, Amhara Regional State, Ethiopia. J Glob Econ 4: 207.

Odunga, O. and Folmer, H. (2004). Profiling tourists for balanced utilization of tourism-based resources in Kenya. FEEM Working Paper No. 23.2004.

Oh, C. (2005). "The contribution of tourism development to economic growth in the Korean economy", Tourism Management, 26(1): 39–44.

Proenca, S. and Soukiazis, E. (2008). Tourism as an economic growth factor: A case study for Southern European countries. Tourism Economics, 14(4), 791-806.

Prof. Socker, K. (1986). "Tourism in the theory of international trade and payments", The Tourist Review, Vol. 41 Issue: 3, pp.24-26, available on https://www.emeraldinsight.com/doi/abs/10.1108/eb057953

Rekha, M. (2016). Short-Run and Long-Run Relationship between Capital Formation and Economic Growth in India, International Journal of Tourism Management, 19(2)

Samimi, A., Somaye, S. and Soraya S. (2011). "Tourism and Economic Growth in Developing Countries: P-VAR Approach."Middle-East Journal of Scientific Research 10 (1): 28-32.

Salvadori, N. (2003). The Theory of Economic Growth: A Classic Perspective, Edward Elgar Publishing Limited, UK.

Salwa, T. (2017). Public education expenditure and economic growth: the education quality threshold effect panel data, Journal of Economic Development Vol. 13(1)

Sebile, S. (2017). The role of tourism in economic growth: the case of Ethiopia using descriptive data analysis, Research Paper Submitted to Saint Marry University.

Shayanewako, V.B. (2018). The Relationship Between Trade Openness and Economic Growth: The Case of BRICS Countries. J Glob Econ 6: 289.

Sinclair, T. and Stabler, M. (2002). The Economics of Tourism. Routledge, London.

Soheila, K. (2013). Tourism Development and Economic Growth in Iran: Using ARDL Bounds Tests: ISBN: 978-960-474-386-5

Solow, R. M. (1956). A Contribution to The Theory of Economic Growth: The Quarterly Journal of Economics, Vol. 70(1): 65-94

Stabler, M. J., Papatheodorou, A. and Sinclair, M.T. (2010). The economics of tourism. Routledge: Oxon.

Tang, C., and Jang, S. (2009). "The Tourism-economy Causality in the United States: A Sub-industry Level examination", Tourism Management, 30, p. 553-558

Telce, Y.H. and Schroenn, J.L. (2006). The Contribution of HRD to Tourism Lead Development in an African Context, South African Journal of Economics and Management Science, 4:444- 457

Tonamy, S. and Swinscoe, A. (2000). The Economic Impact of Tourism in Egypt, Working Paper 40(3)

UNECA. (2015). FDRE Sustainable Tourism Master Plan 2015-2025, Eastern Africa Sub Region.

UNWTO. (2010c). Manual on Tourism and Poverty Alleviation: Practical Steps for Destinations, UNWTO, Madrid.

_____. (2016). UNWTO World Tourism Barometer. World Tourism Organization. Retrieved from http://www.tugberkugurlu.com/archive/definintion-of-tourism-unwto-definition-of-tourism-what-is-tourism)

Vanhole, N. (1981). Tourism and Employment. International Journal of Tourism Management, 2, 162-175.

World Bank. (2006).“Ethiopia: Towards a strategy for pro-poor Tourism Development”, private sector Development.

World Bank. (2012). Ethiopia’s Tourism Sector: Strategic Paths to Competitiveness and Job Creation.

_____. (2018). Retrieved from: (https://data.worldbank.org/country/ethiopia)

_____. (2019). Retrieved from: (https://data.worldbank.org/indicator.CD?locations=ET)

World Travel and Tourism Council. (2013).“Travel and Tourism Economic Impact 2013 Sub-Saharan Africa”, WTTC, London, U.K.

_____. (2018). Travel and Tourism Economic Impact of Ethiopia London, U.K

_____. (2019). Ethiopia records biggest growth in world Travel Tourism retrieved from (https://www.wttc.org/about/media-centre/press-releases/press-releases/2019/ethiopia-records-biggest-growth-in-world-travel-tourism/)

WTO. (2010). Tourism and poverty alleviation. Annual report

Yabibal, M. (2010). “Tourist flows and Its Determinants in Ethiopia”, Ethiopian Development Research Institute Working paper 001. June 2010.

Zortuk, M. (2009). "Economic Impact of Tourism on Turkey's Economy: Evidence form Co-integration Tests."International Research Journal of Finance and Economics 25; 231-236

APPENDIX

1. Optimal Lag Selection

VAR Lag Order Selection Criteria
Endogenous variables: LNGDP LNEE LNCF LNTO LNITR
Exogenous variables: C
Date: 06/03/19 Time: 15:07
Sample: 1974 2017
Included observations: 40

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-98.72066	NA	0.000123	5.186033	5.397143	5.262364
1	52.66676	257.3586*	2.24e-07*	-1.133338	0.133321*	-0.675354*
2	74.70519	31.95572	2.76e-07	-0.985259	1.336950	-0.145622
3	97.97321	27.92162	3.55e-07	-0.898660	2.479099	0.322631
4	136.0793	36.20075	2.60e-07	-1.553963*	2.879346	0.048982

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

2. Johansen Co-integration Test

Date: 06/03/19 Time: 15:08
Sample (adjusted): 1976 2017
Included observations: 42 after adjustments
Trend assumption: Linear deterministic trend
Series: LNGDP LNEE LNCF LNTO LNITR
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.555400	78.56418	69.81889	0.0085
At most 1	0.415264	44.51984	47.85613	0.0995
At most 2	0.257457	21.98286	29.79707	0.2994
At most 3	0.201642	9.480550	15.49471	0.3228
At most 4	0.000529	0.022207	3.841466	0.8815

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.555400	34.04434	33.87687	0.0478
At most 1	0.415264	22.53698	27.58434	0.1941
At most 2	0.257457	12.50231	21.13162	0.4989
At most 3	0.201642	9.458342	14.26460	0.2500
At most 4	0.000529	0.022207	3.841466	0.8815

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

LNGDP	LNEE	LNCF	LNTO	LNITR
-3.988176	-3.774005	4.735992	3.751960	1.296131
3.111359	-0.578155	-5.485665	-0.514928	1.884798
4.342599	0.855754	-3.341801	1.205975	-0.836651
8.009875	-2.435342	-4.181315	4.547020	-0.489230
-4.451725	-0.510664	-0.024501	2.484593	0.354409

Unrestricted Adjustment Coefficients (alpha):

D(LNGDP)	0.055442	0.020075	0.035395	-0.016129	-0.000628
D(LNEE)	0.031667	0.112735	0.050342	0.065859	0.004621
D(LNCF)	0.019250	0.022336	0.083859	0.027429	-0.001762
D(LNTO)	-0.125878	0.042184	0.031605	-0.029276	0.001394
D(LNITR)	-0.005407	-0.151715	0.129366	0.033213	0.005038

1 Cointegrating Equation(s): Log-likelihood 45.66783

Normalized cointegrating coefficients (standard error in parentheses)

LNGDP	LNEE	LNCF	LNTO	LNITR
1.000000	0.946298	-1.187508	-0.940771	-0.324993
	(0.17583)	(0.19493)	(0.24314)	(0.09088)

Adjustment coefficients (standard error in parentheses)

D(LNGDP)	-0.221113
	(0.06853)
D(LNEE)	-0.126295
	(0.21651)
D(LNCF)	-0.076771
	(0.13213)
D(LNTO)	-0.502022
	(0.11436)
D(LNITR)	-0.021565
	(0.28116)

3. VECM

Vector Error Correction Estimates
Date: 06/03/19 Time: 15:09
Sample (adjusted): 1976 2017
Included observations: 42 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1
LNGDP(-1)	1.000000
LNEE(-1)	0.946298 (0.17583) [5.38179]
LNCF(-1)	-1.187508 (0.19493) [-6.09202]
LNTO(-1)	-0.940771 (0.24314) [-3.86923]
LNITR(-1)	-0.324993 (0.09088) [-3.57616]
C	-11.76965

Error Correction:	D(LNGDP)	D(LNEE)	D(LNCF)	D(LNTO)	D(LNITR)
CointEq1	-0.221113 (0.06853) [-3.22670]	-0.126295 (0.21651) [-0.58332]	-0.076771 (0.13213) [-0.58103]	0.502022 (0.11436) [4.38986]	0.021565 (0.28116) [0.07670]
D(LNGDP(-1))	0.076426 (0.18791) [0.40672]	-0.586246 (0.59370) [-0.98745]	0.779847 (0.36231) [2.15242]	-0.562384 (0.31359) [-1.79340]	0.129447 (0.77096) [0.16790]
D(LNEE(-1))	0.155771 (0.06995) [2.22673]	-0.058405 (0.22103) [-0.26424]	0.152412 (0.13488) [1.12995]	-0.062683 (0.11674) [-0.53693]	0.200038 (0.28702) [0.69695]
D(LNCF(-1))	0.092215 (0.09605) [-0.96010]	0.489172 (0.30347) [1.61195]	-0.506309 (0.18519) [-2.73394]	0.337207 (0.16029) [2.10376]	0.089785 (0.39407) [0.22784]
D(LNTO(-1))	0.024669 (0.07146) [0.34524]	0.203577 (0.22577) [0.90171]	0.238009 (0.13778) [1.72748]	-0.233372 (0.11925) [-1.95702]	-0.003354 (0.29318) [-0.01144]
D(LNITR(-1))	0.081635 (0.05031) [-1.62268]	-0.086520 (0.15895) [-0.54431]	-0.118565 (0.09700) [-1.22227]	0.244658 (0.08396) [2.91408]	0.046102 (0.20641) [0.22335]
C	0.058352 (0.02224) [2.62370]	0.184057 (0.07027) [2.61930]	0.064274 (0.04288) [1.49882]	0.058490 (0.03712) [1.57590]	0.142915 (0.09125) [1.56619]
R-squared	0.464371	0.133206	0.286518	0.538912	0.045304
Adj. R-squared	0.438263	-0.015387	0.164207	0.459868	-0.118358
Sum sq. resids	0.433993	4.332442	1.613492	1.208684	7.305798

S.E. equation	0.111354	0.351830	0.214709	0.185833	0.456878
F-statistic	2.096384	0.896446	2.342537	6.817901	0.276816
Log likelihood	36.42492	-11.89312	8.849232	14.91547	-22.86639
Akaike AIC	-1.401187	0.899672	-0.088059	-0.376927	1.422209
Schwarz SC	-1.111575	1.189284	0.201553	-0.087316	1.711821
Mean dependent	0.068008	0.172953	0.091778	0.070615	0.201435
S.D. dependent	0.119955	0.349154	0.234855	0.252856	0.432026

Determinant resid covariance (dof adj.)	1.95E-07
Determinant resid covariance	7.82E-08
Log-likelihood	45.66783
Akaike information criterion	-0.269897
Schwarz criterion	1.385027

4. Jarque-Bera Normality Test

Component	Jarque-Bera	df	Prob.
1	1.689863	2	0.4296
2	47.11895	2	0.0000
3	2.597228	2	0.2729
4	35.54849	2	0.0000
5	0.501732	2	0.7781
Joint	87.45626	10	0.0000

5. Serial Correlation LM Test

VEC Residual Serial Correlation LM Tests
Null Hypothesis: no serial correlation at lag order h
Sample: 1974 2017
Included observations: 42

Lags	LM-Stat	Prob
1	17.15998	0.8759
2	20.83721	0.7017

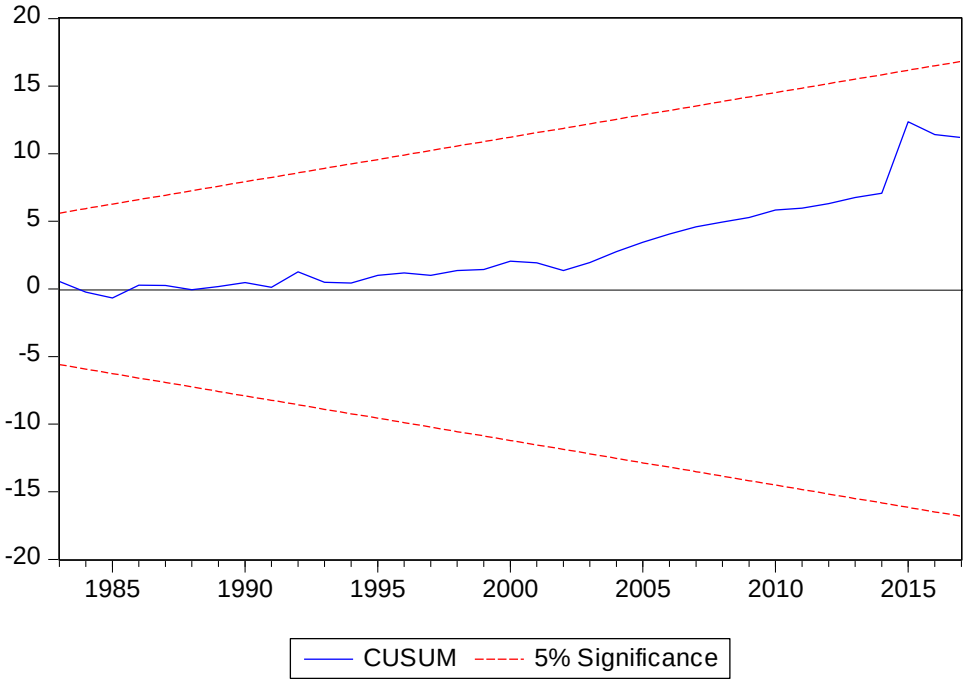
Probs from chi-square with 25 df.

6. Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.697480	Prob. F(10,31)	0.1260
Obs*R-squared	14.86075	Prob. Chi-Square(10)	0.1372
Scaled explained SS	61.07794	Prob. Chi-Square(10)	0.0000

7. CUSUM Stability Test and AR Roots Table



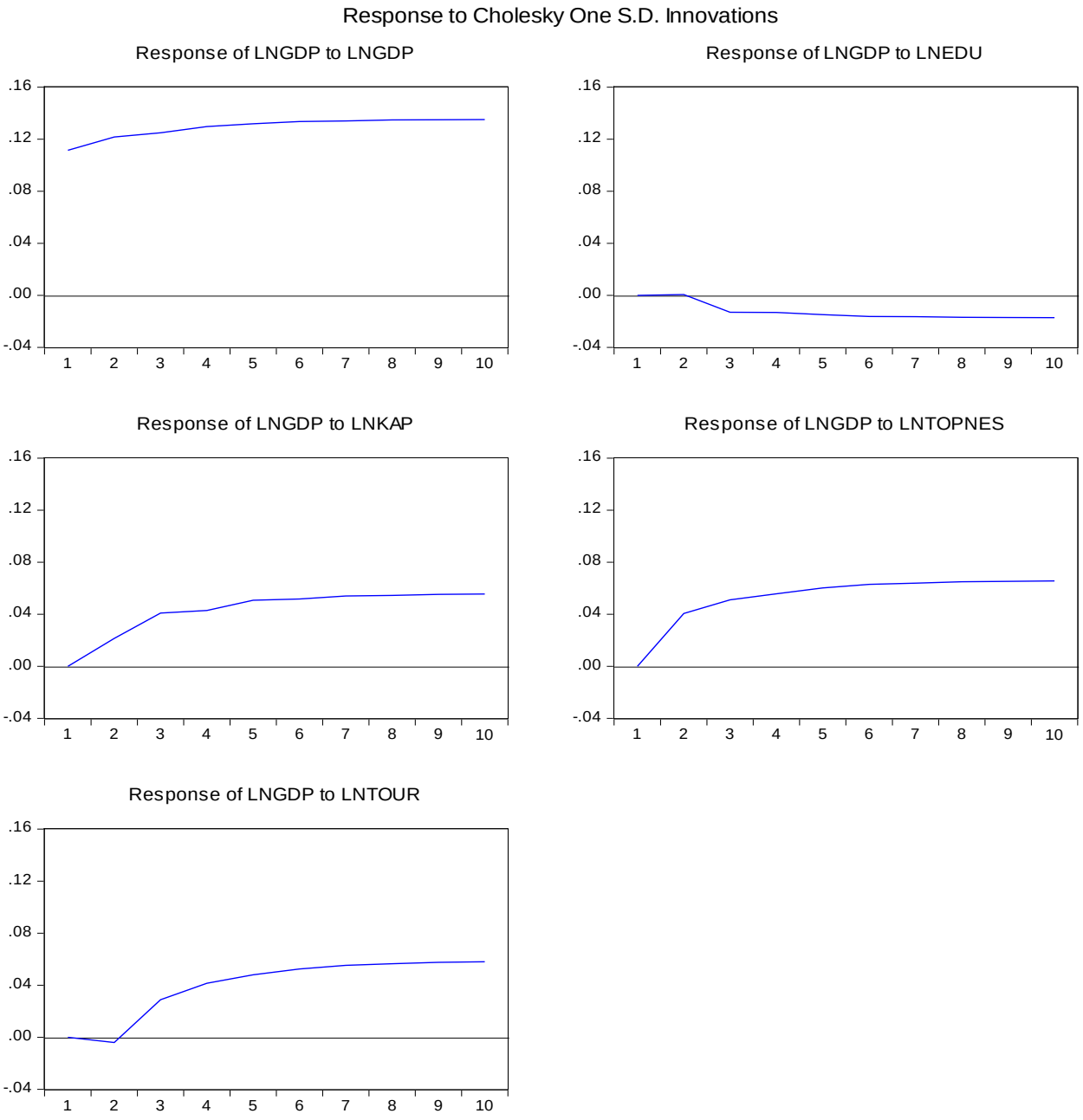
AR Roots Table

Roots of Characteristic Polynomial
Endogenous variables: LNITR LNTO LNCF LNGDP LNEE LNEDU
Exogenous variables: C
Lag specification: 1 1
Date: 06/09/19 Time: 17:47

Root	Modulus
0.994332 - 0.032774i	0.994872
0.994332 + 0.032774i	0.994872
0.584632 - 0.365785i	0.689633
0.584632 + 0.365785i	0.689633
-0.605032	0.605032
0.474690	0.474690
-0.143984 - 0.225106i	0.267215
-0.143984 + 0.225106i	0.267215
-0.247883	0.247883
0.130126	0.130126

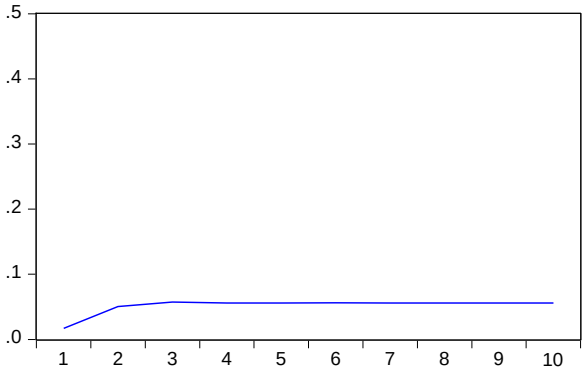
No root lies outside the unit circle.
VAR satisfies the stability condition.

8. Cholesky Impulse Response Function

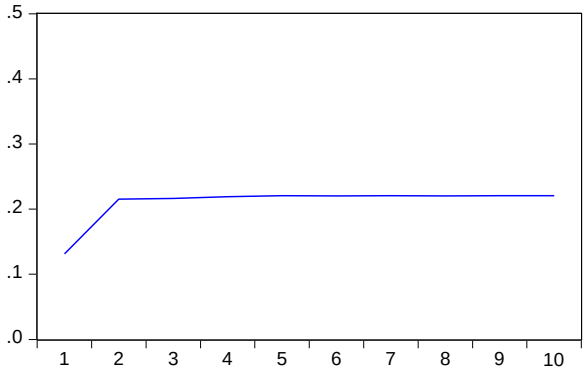


Response to Cholesky One S.D. Innovations

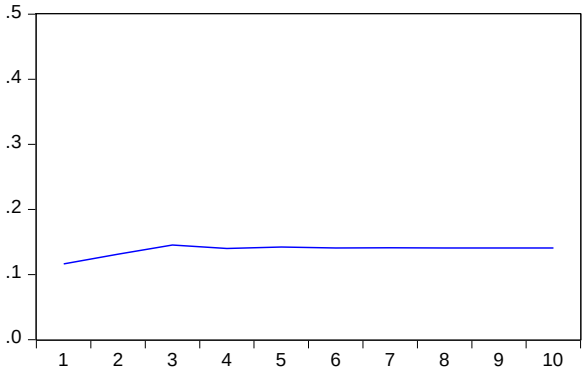
Response of LNTOUR to LNGDP



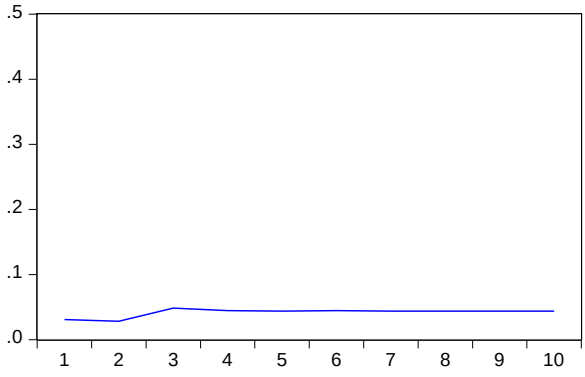
Response of LNTOUR to LNEDU



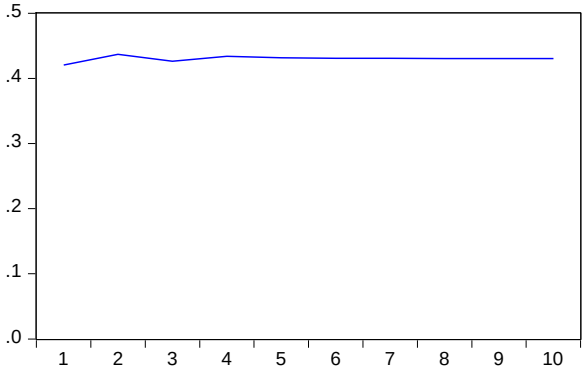
Response of LNTOUR to LNKAP



Response of LNTOUR to LNTOPNES



Response of LNTOUR to LNTOUR



9. Variance Decomposition

Variance decomposition of lnGDP

Period	S.E.	LNRGDP	LNEE	LNCF	LNITR	LNTO
1	0.351830	100.0000	0.000000	0.000000	0.000000	0.000000
2	0.494339	92.77403	0.001209	1.560769	0.004378	5.659611
3	0.607355	85.27041	0.337763	4.237868	2.105248	8.048710
4	0.708140	80.72667	0.465338	5.374296	4.226551	9.207150
5	0.793950	77.03364	0.564270	6.545546	5.856689	9.999854
6	0.873023	74.42128	0.649940	7.226463	7.137214	10.56510
7	0.945026	72.44503	0.705181	7.788521	8.134646	10.92662
8	1.012289	70.96738	0.750861	8.183190	8.888663	11.20991
9	1.075277	69.81790	0.784441	8.497149	9.485940	11.41456
10	1.134857	68.91534	0.811616	8.739183	9.956429	11.57744

Cholesky ordering lnRGDP lnEE lnCF lnITR lnTO