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THE EFFECT OFILLEGAL FINACIAL FLOW ON ECONMIC GROWTH OF ETHIOPIA

MSc THESIS

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EFFECT OF ILLEGAL FINANCIAL FLOW ON ECONOMIC GROWTH OF ETHIOPA

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THESIS SUBMITTED TO WOLKITE UNIVERSITY DEPATRTEMENT OF ECONOMICS, INSTITUTE OF BUSINESS AND ECONOMICS, SCHOOL OF GRADUTE STUDIES

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APPROVAL SHEET

SCHOOL OF GRADUATE STUDIES WOLKITE UNIVERSITY

As Thesis research advisors, we hereby certify that we have read and evaluated this Thesis prepared, under our guidance, by Basha Biranu, ID. GSE/044/10 entitled: **Effect of Illegal Financial Flow on Economic Growth of Ethiopia;** we recommend that it be submitted as fulfilling the Thesis requirement for Master degree of Development Economics.

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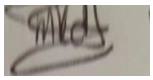
Mekides Shewangizaw (MSc)		**19/06/2020**
Co-Advisor	**Signature**	**Date**

DEDICATION

This Thesis is dedicated to my mother Jifare Emana, and to my Father Biranu Dabesa who devoted their lives with strong prayers for growing up my life and achieving success in academic career and the result of this thesis is dedicated to the prominent young Oromo Singer Hachalu Hundessa Bonsa who was assassinated in Finfinne (Addis Ababa) on June 29, 2020. I would like to express my deep sorrow for the sudden passing away of this super hero. You are really sealed in my heart Hachalu; Rest in Peace and your soul rest in paradise! Your life deserves justice!

DECLARATION

I, Basha Biranu, declare that this thesis entitled: **''Effect of Illegal Financial Flow on Economic Growth of Ethiopia'** is outcome of my own effort and study and that all sources of materials used for the study have been duly acknowledged.

To the best of my knowledge, this study has not been submitted for any degree in this University. By: Basha Biranu Dabesa

Signature: 

Date: 22/06/2020

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ACCRONYMS & ABBERVIATION

ADF	Augmented Dickey Fuller
BOP	Balance of Payment
CED	Change in External Debt
CSA	Central Statistical Agency
DOTS	Direction of Trade Statics
DW	Durbin Watson
ECM	Error Correction Model
FDI	Foreign Direct Investment
FOB	Free on Board
GDP	Growth Domestic Product
GFI	General Financial Integrity
GER	General Estimation Residual
GNP	Growth National Product
GMM	General Method of Moments
HDM	Harod- Domar Model
HMN	Hot Money Narrow
ICOR	Incremental Capital Output Ratio
IFF	Illegal Financial Flow
IMF	International Monetary Fund
LDC	Least Developing Countries
NBE	National Bank of Ethiopia
OCED	Organization for Cooperation and Economic Development
ODA	Official Development Aid
R&D	Research and Development
SDG	Sustainable Development Goal
TOT	Terms of Trade
WB	World Bank

Abstract

This study investigates the effect of illegal financial flow on economic growth of Ethiopia the period 1980/81-2017/18 using Johnson co-integration and granger causality test procedures. The study employs secondary data obtained from the Central Bank of Ethiopia, Central Statistical Agency (CSA) and International Monetary Fund (IMF). The long run estimation result revealed that illegal financial flow, population growth rate and terms of trade affect economic growth of Ethiopia negatively and significantly and consumption affects economic growth positively and significantly. Furthermore, the short run estimation results of VECM reveals that the deviation of the system in the short run from its steady state restored to its equilibrium by 14.5% in the long run per year or speed of adjustment from the shock exists toward the long run equilibrium is 14.5% annually or the dis equilibrium correct (adjust) itself by 14.5% in the short run. The Granger Causality test results show that illegal financial flow, consumption and terms of trade granger cause real GDP. However, gross capital formation and population growth rate do not cause real GDP in Ethiopia. Generally, we conclude that illegal financial flow has significant negative influence on economic growth and its trend has been increasing on average about 7.14 million USD annually, which lose to the Ethiopian economy. Based on the research findings, we recommend the following to be made such controlling and auditing mechanisms for trans-boundary trade activities, creating effective institution and building collaborative.

Key Words: ***IFF, HMN, Trade Miss-invoicing, ECM, Ethiopia, Co –integration and time series analysis***

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

There is no single definition of illegal financial flow; however, different scholars and organization are defined as its perspective. According to World Bank, illegal financial flow refers to a cross border movement of capital and other resources that are associated with illegal activity and illegal in its sources which used crosses the borders (WBG, 2016).

Council for International Development (2014) defined illegal financial flows as the transfer of illegally earned assets or the hiding of legally earned assets to facilitate illegal tax evasion. Global Financial Integrity (2013) says illegal financial flows are activities that involve the transfer of money collected through corruption, bribery, tax evasion, criminal activities and transactions involving contraband goods and again Kar and Freltas (2012) opine that illegal financial flow are funds that are illegally earned, transferred or utilized, and cover all unrecorded private financial assets by a resident in contravention of applicable laws and regulatory frameworks of one country.

Globally, illegal financial flow is an obstacle to economic growth and development in a given country and its effects reflect on domestic expenditure and both domestic private and public investment, which reduce public service. For this reason and others, reducing the effect of illegal financial flow is the current agenda internationally (GFI, 2017).Over the past decade, most low income and least developed countries have recorded steady improvements in economic performance. During the 1980s and 1990s, the GDP growth for low-income countries as a whole was averaged 2.7 percent annually between 2000 and 2011, the figure almost doubled to 5.3 percent. These helped the developing countries to address their development challenges. However, national and international policy debates have tended to focus on how to mobilize more domestic and foreign financial resources in support of development. And at the same time, less attention has been paid to illegal capital flight and especially illegal financial flows which drain scarce resources and severely undermine the collective efforts to achieve sustainable development in the poorest countries like Ethiopia (World Bank, 2012).

Illegal financial flow tends to rest on two main arguments. First, since IFFs are mostly hidden and may come from illegal activities, governments cannot tax them. This, in turn, reduces potential government revenues that could be used for the benefit of the overall

economy through either saving, investment or consumption. Second, since IFFs travel abroad, they cannot benefit the society where they originated (Eriksson, 2017). These illegal financial flows strip resources from the developing countries that could be used to finance much needed public services, from security and justice to basic social services such as health and education, While such practices exist everywhere that cause more severe the social and economic development in smaller resource base and markets than the developed ones (Alamayo and Addis, 2017).

Estimates vary greatly are heavy there is a general consensus that illegal financial flows likely exceed aid flows and investment in volume. The most immediate effect of illegal financial flows is a reduction in domestic expenditure and investment, both public and private. This means fewer hospitals and schools, fewer police officers on the street, fewer roads and bridges and many of the activities which generate the illegal funds are criminal, while financial crimes like money laundering, corruption and tax evasion are damaging countries, and the effects on developing countries are particularly corrosive (Addis ,2016). For example, corruption diverts public money from public use to private consumption. We know that in general private consumption has much lower positive multiplier effects than public spending on social services like health and education. Proceeds of corruption or criminal activities will generally be spent on consumption items such as luxury vehicles, or invested in real estate, art, or precious metals (World Bank, 2006).

Generally, as stated above, different literature from different country had gave their definition on illegal financial flow, however, there is no single common definition and there is no common estimation model and also between some literatures there is disagreement on the approach of estimation models, to overcome this and other problems, this research have come up with the below listed research objective by two estimation model. Since, honestly as researcher knowledge the same research was not conducted in Ethiopia on effect of illegal financial flow on economic growth with selected variable and same model and the researcher has believed that it is important to study about effect of illegal financial flow on economic growth and recommend the effective mechanisms to measure its effect from the finding of the research,

Since the general objective this study is to examine the effect of illegal financial flow on economic growth. To simulate its effect co -integration and causality approach would be deployed as an econometric model and to see the magnitude two models are used.

1.2 Statement of the Problem

The effect of illegal financial flow definitely staggering Ethiopia in particularly as it drains foreign reserves, heightens inflation, reduces tax collection, cancels investment and undermines free trade (Saheed and Ayodeji, 2012). Besides removing resources that could otherwise be used for poverty alleviation and economic growth, it tends to restrict the capacity and ability of countries to mobilize domestic resources and access to foreign capital for financing economic growth and development. Consequently, an illegal financial flow contributes to the retardation of economic growth and development of developing countries (Saheed and Ayodeji, 2012).

Despite the necessity, some studies show their findings on the effect of capital flow in Ethiopia like (Alemayehu & Addis, 2016), Ethiopia had lost on average 974.4 million USD between years 1991 to 2012. Boyce & Ndikumana (2012) also showed that "Ethiopia was also ranked 8th in Sub-Saharan Africa in terms of cumulative real capital flight, which amounted to $25 billion in 2010. However, different scholars investigate the effect of capital flight as a general, but capital flight is containing both legal and illegal flows of capital. Illegal financial flow results in a loss of what are often desperately needed resources to fund public initiatives (investments).

Therefore, to the best of my knowledge, there is no study which investigates the effect of illegal financial flow on economic growth using trade miss invoicing model. In this regard, we focus on the illegal financial flow and money which are not captured on the country balance of payment or any financial official of a country and which transferred with controversial to rule and regulation of that country. Generally, for developing countries and particularly for Ethiopia, this often forgone tax revenues that could have otherwise been collected and used for supporting sustainable economic growth, creating jobs, reducing inequality and poverty, In response to the problem and come up with its measurement, this study uses the hot money narrow and trade miss invoicing models. These models help to see whether the increment of illegal financial flow significantly deteriorates the real GDP through affecting domestic investment. Thus, this research study could be able to identify the gap to be filled up.

1.3 Objective of the Study

1.3.1 General objectives of the study

The general objective of this study is to investigate the effect and trend of illegal financial flow on economic growth in Ethiopia.

1.3.2 Specific objectives of the study

- To analyze empirically the effect and trends of illegal financial flow on economic growth in Ethiopia.
- To investigate the long run relationship between illegal financial flow and economic growth in Ethiopia.
- To examine the short run relationship between illegal financial flow and economic growth in Ethiopia
- To analyze the causal link between illegal financial flow and economic growth in Ethiopia.

1.4 Research question

This study would try to answer the following questions that arise from the view point of the effect of illegal financial flow on economic growth of Ethiopia and to achieve the above specific objectives the blow listed research question are raised.

- Does an illegal financial flow have an effect on economic growth of Ethiopia and how its trend?
- Is long run relationship between illegal financial flow and economic growth and to what extent the Ethiopian economy affected by illegal financial flow in the long run?
- Is short run relationship between illegal financial flow and economic growth in Ethiopia?
- Is a causal relationship between illegal financial flow and real economic growth?

1.5 Research hypothesis

In achieving the objectives of this study and providing answers to the research question, the following hypotheses would be outlined and tested:

1) HO: There is no significant effect of illegal financial flow on economic growth of Ethiopia. H1: There is significant effect of illegal financial flow on economic growth of Ethiopia.

2) HO: There is no long run and short run relationship between illegal financial flow and economic growth.

H1: There is long run and short run relationship between illegal financial flow and economic growth.

3) HO: There no causal relationship between illegal financial flow and economic growth.

H1: There is a causal relationship between illegal financial flow and economic growth.

1. 6 Significance of the study

The result of this study is useful to enumerate the effect of illegal financial flow and to understand intensity of its effect on economic growth. The result of this study also becomes a stepping stone for, researchers, policy makers and government to design a mechanism to fight illegal financial flow.

1.7 Limitation of the Study

Threats to validity for the study are manly limitation of data availability from solitary source. Especially on exhausting estimation models like IMF‟s trade miss invoicing was difficult to find data on trade executed by the trade partners against Ethiopia reported by the international trade partners. Thus, such data can only be found from international organizations that has such interest. Therefore, there may be differences which arise because of data treatment difference. The other most challenging limitation in this study was FOB ratio adjustment. To correctly measure all DOT data there must be equal bases. Thus, all exports have to be adjusted to FOB through extracting deducting Fright and Insurance costs. Therefore, exports and imports can be compared at fright on board. To execute the adjustment, there must be fob ratio especially for exports reported by trading partners and exports reported by Ethiopia. However, it's almost unlikely to get FOB ratio for all countries who had imported from Ethiopia.

1.8 Scope of the study

This paper would focus on investigating and examining the effect of illegal financial flow on economic growth with specific reference to Ethiopia. This would be study to see the effect of illegal financial flows on economic growth in Ethiopia using a time span analysis.

1.9 Organization of the paper

The thesis is structured in five main chapters. The first chapter describes the introduction part of the study. Chapter two presents theoretical perspectives and empirical evidences of the thesis. Chapter three provides an insight on how the research is designed. Definitions, measurements and expected signs of variables, model specification, diagnostic and variables testing techniques, econometric analysis are also included in this chapter. Results of empirical analysis and descriptive statics are discussed in the fourth chapter. Chapter five presents conclusion, recommendation and policy implication.

CHAPTER TWO

2. LITERATURE REVIEW

This literature review is organized in a way to provide readers as a comprehensive and deep understanding throughout methodology, analysis techniques and interpretation about two fundamental cornerstones of the research, which is main independent variable (Illegal financial flow) and dependent variable of (real GDP). Consequently, to achieve the objective of the study the literature review constructed in two main parts. The first section gives a detail on theoretical literature review and the second and final section of the literature review explores what other researchers in their publications have said about the illegal financial flow and its effect on economic growth in both developing and developed countries. However as we reviewed many literature, there is no interconnected linkage of the illegal financial flow and economic growth empirically.

2.1 Theoretical literature

2.1.1 Concept and definition of Illegal financial flow

Illegal financial flow can be defined as cross border movements of money or capital that is illegally earned, transferred, utilized and the main sources are: commercial tax evasion, trade miss-invoicing and abusive transfer pricing, the laundering of the proceeds of criminal activities, corrupt payments and the theft of state assets (Cobham, 2014 and Baker, 2005). In addition, according to Global Financial Integrity (2006), illegal financial flows refer to capital earned from illegal activities like corruption, smuggling and criminal activities as well as transfers through informal channels of capitals acquired by legal activities in order to escape the control of the origin country tax authorities. Regarding to this definition, illegal capital flight have certain similarities that Kapoor (2007) listed in the following points: (i) illegal capital flows are not recorded in official statistics on the balance of payments, (ii) they are cratered by a desire to disguise the origin, destination and beneficial owners of the funds, (iii) they are often associated with losses in the public sector and gains for individuals, (iv) and finally, profits from illegal financial flows are not generally repatriated to their origin country.

Generally, as economic theory, illegal financial flow refers to a form of illegal capital flight which occurs when money is illegally earned, transferred and spent. This money is intended to disappear from any record in the country of official origin and earnings on the

stock of illegal financial flows outside of a country generally do not return to the country of origin. Illegal financial flows can be generated in a variety ways that are not revealed in national accounts or country balance of payment, including trade miss invoicing, bulk cash movement and smuggling. The concept of illegal financial flow is nonetheless vague and its content is controversial. It is marred by a lack of terminological clarity, which somewhat limits the emergence of effective policy options (UNECA, 2013). There are various definitions of illegal financial flows, but essentially they are generated by methods, practices and crimes aiming to transfer financial capital out of a country in contravention of national or international laws (OECD, 2013).

Blankenburg and Khan (2012), define illegal financial flow more broadly as financial flows that have a direct or indirect negative effect on economic growth in the country of origin depending on the particular national development situation. Illegal financial flows involve the cross border transfer of money mainly earned through illegal (or underground) economic activities such as corruption, transactions in contraband goods including drugs, criminal activities and human trafficking (Kar, 2012).Illegal financial flows can be broken down into three main forms(UNECA, 2013): first the proceeds of theft, bribery and other forms of corruption by government officials, the second one is the proceeds of criminal activities including drug trading, counterfeiting, contraband, and terrorist financing and the third is proceeds of tax evasion and laundered commercial transaction.

2.1.2 Theories of Economic Growth

In this day we live in world economy that is accompanied by many and sophisticated problems which many of them lies on unlimited need and wants which are growing faster than our economic growth. Thus, all this conditions make economic growth the central part to the answers of many and sophisticated questions. Therefore, to get this key, many economists have come up with their assumptions and theories. We try to give highlight on some of them but as our knowledge and pervious study there is no economics theory which describes illegal financial flow and economic theory in the same topic.

A variety of studies have addressed the issue of economic growth, mostly using either cross sectional, time series or panel data approach while most of these studies utilize the standard neo-classical growth models. Recent studies focus on endogenous growth models. There have been two periods of powerful work on growth theory, the first was in the 1950s and 1960s, and the second in 1980s and 1990s.

2.1.3 Keynesian theory of growth

According to Keynesian theory of growth demand from consumer and state were the prerequisite for economic growth. This assumption means that changes in income, especially disposable income is the prime influence on consumption expenditures. If the household sector has more income because of the economy is expanding, then they increase consumption expenditures. If the household sector has less income because of the economy is contracting and a large group of workers is unemployed, then they decrease consumption expenditure (Keynes, 1936).However, the assumptions and results are, basically the same. While Keynes emphasized the impact of investment on aggregate demand, Harrods Domar emphasized on how investment spending also increased an economy's productive capacity. HDM is based on the assertion that every economy must save a certain proportion to its national income to replace worn-out or impaired capital goods (buildings, equipment, and materials). Finance new investments representing net additions to the capital stock that is required to bring about growth in GDP. Any net additions to the capital stock in the for The Harrod-Domar (H-D) model considers a closed economy in which one homogenous good Yt is produced, where Yt = total gross output at time t. This good may be either used as an investment good at time t (It), aggregate saving at time t (St), or as consumption of good at time t (Ct). It is assumed that the household sector as a whole (or the representative household) consumes a constant fraction of output and the rest. In a closed economy, total output is the sum of consumption and saving by assuming a two-sector economy households and firms.

The policy implication of the model is growth of GDP can be raised by pushing up saving rate. Note that for an open economy, policy options related to overseas borrowing and foreign investment can be considered in case it faces financial gap. Like the d difference between required saving and actual saving. Though, the necessary conditions, investment and saving are not sufficient conditions for economic growth. Therefore we need some kind of skills and managerial capacity to transform the potentials of capital investment (saving) into growth in GDP. Essentially, there is no consideration for population and demographic explosion. In reality, saving rate and ICOR are not as exogenous as treated in HDM. Specifically, since in the real world we are likely to encounter diminishing returns to scale, ICOR cannot be a fixed parameter as assumed in the model are generally the criticisms of HDM (Todaro 1994).

2.2 Robert Solow growth theory

Economic growth can be traced back to the classical economists of the eighteenth century, whose works are briefly reviewed alongside the transition to neo classical growth theory. The basic framework of neoclassical growth models was first developed by Robert Solow (1956) and Trevor Swan (1956).Slow growth theory also states that saving rates are important factors in enhancing capital stock which results in production increment. However, it‟s a net capital stock which is capital less depreciation. Slow works under the assumption of full employment and by considering technical progress as exogenous. In regard to labour or population growth, to sustain capital labor ratio or per capital income, population growth should be commensurate with investment. But if population grows faster or capital stock decreases it would result in low capital labour ratio(R, Solow, 1956). The other important variable in Solow‟s growth model is technical progress such us increasing the educational level of workers, the improvement of the organizations, growth of production scales and so on. Solow suggested that if the economic growth is a continuous phenomenon it‟s because of technical progress, since it insures economic efficiency via continuously progressing technical skills to increases productivity or output.
Finally, Solow‟s model predicts that in order for poor or developing countries to catch up with developed countries by taking the assumption of exogenity of technical progress and rate of saving and investment would be equal. Besides diminishing returns of capital would also be a factor for developing countries to converge with developed countries through time.

2 . 2 . 1 Endogenous Theory of Growth

As the name implies this model tries to amend technical skill by indigenizing the growth process. This model appeared for the first time, in formal mathematical and economic models, the American economists Paul Romer and Robert Lucas hypothesized about the endogenous character of the most important technological innovations based on investment contribution in technological development and in human capital. Endogenous growth models look similar to the neo-classical ones, but they differ significantly in initial assumptions and conclusions (UN, 2011).

The model without technological change predicts that the economy will eventually converge to steady state with zero per capital growth. The fundamental reason is the diminishing returns to capital. The basic improvement of new growth theory or endogenous growth theory over slow model is that it explicitly tries to model technology rather assuming

it to be exogenous. It is an economic growth model that includes mathematical explanation of technological advancement, which incorporates a new concept of human capital (skill and knowledge) that make workers productive. Unlike physical capital, human capital has an increasing rate of return. Therefore, overall there are constant rate of return to capital and economies never reach a steady state. According to the Endogenous theory of growth, economic growth does not slow as capital accumulation, but the rate of growth depends on the type of capital a country invest in. As research indicates that increasing human capital (education) and technological change (innovation) fast economic growth in long run (Romer and Lucas, et.al 2004).

A key factor in the endogenous growth theory of Paul Romer is the variable called "knowledge. It assumes that the knowledge contained in the inventions and discoveries are available to everyone and can be used at the same time. The Romer‟s theory assumes that total amount of human capital remains constant during the considered time interval. It is only possible its redistribution between the sphere of production, research and development activities in accordance with the function of consumer preferences.

The basic idea of the theory of Romer is as follows: "there is an exchange between consumption today and knowledge that can be used for the expansion of consumption tomorrow." He formulates the idea as "research technology," which produces "knowledge" from the past consumption. Thus, the rate of economic growth in the theory of Romer is directly dependent on the value of human capital, focused in obtaining new knowledge (Sharipov, 2015).

The first version of endogenous growth theory was AK theory, which did not make an explicit distinction between capital accumulation and technological progress. In effect it lumped together the physical and human capital whose accumulation is studied by neoclassical theory with the intellectual capital that is accumulated when innovations occur. An early version of AK theory was produced by Frankel (1962), who argued that the aggregate production function can exhibit a constant or even increasing marginal product of capital.

In the special case where the marginal product of capital is exactly constant, aggregate output Y is proportional to the aggregate stock of capital K. Sustained growth in living standards is due to technical progress the rate of technological progress is exogenous.

Where A is the amount of output for each unit of capital (A is exogenous & constant). Key

difference between this model & Solow is, MPK is constant here but it diminishes in Solow. Investment (sy), depreciation: (δ K) are equation of motion for total capital. According to AK theory, an economy's in the long-run growth rate depends on its saving rate.

One of the key equations in endogenous growth model (Romer) is the one describing the research and development (R&D) sector. In this theory, the central motive of profit maximization of business firms are considered to determine technological progress as these firms involve in research and development (R&D) seeking new and better idea. There are three Facts about R&D in the Real World. Many researches is done by firms to seeking profits, Firms profit from research because of new inventions can be patented; creating a stream of monopoly profits until the patent expires there is an advantage to being the first firm on the market with a new product. Innovation produces externalities that reduce the cost of subsequent innovation. Much of the new endogenous growth theory attempts to incorporate these facts into models to better understand technological progress. Generally, the implication is that the growth rate of researchers and parameters of production function for ideas determine the long-run growth. Intuitively, it is highly likely to get people with brilliant mind in large population than small one (Seid, 2000).

2.2.2 How Illegal Financial flow Effect Economic Growth

The direct economic effect of illegal financial flows on developing countries cannot be precisely quantified. It may, however, be considered not only as negative but also grave consequence. These flows pose serious concern, as evident by inadequate growth, high levels of poverty, resource needs and the changing global landscape of official development assistant.

There is broad consensus in the extant literature that IFFs deprive the affected countries of appreciable amounts of investment funds, which could otherwise spur economic growth and usefully complement foreign loans and aid payments in funding the public sector. Global Financial Integrity carried out a joint study with the African Development Bank and found that Africa was a net creditor to the world to the tune of up to $1.4 trillion over the period from 1980 through 2009, with the most conservative estimate of the capital loss being around $600 billion (Saheed and Ayodeji, 2012). Thus, despite the inflow of international aid into every region of Sub-Saharan Africa, outflows of illegal capital continue to result in net loss of resources that overwhelms any positive economic effects of recorded capital inflows.

Capital flight from African economies constitutes a serious development challenge for several reasons. First, capital flight diverts scarce resources away from domestic investment and productive activities and investment levels are substantially lower in African countries than other developing countries. Second, capital flight has a substantial regressive impact on wealth distribution. This is because it is the members of the sub continent's economic and political elites that take advantage of their privileged positions to engage in capital flight by acquiring and channeling funds. The impact of resulting shortages of revenue and foreign exchange is borne by the poorest members of society. The regressive impact of capital flight is compounded when financial imbalances result in devaluation: the wealthy that hold external assets are insulated from the effects. Third; most sub-Saharan African countries are still heavily indebted as the result of capital flight (Leonce, Ndikumana and James K. Boyce, 2011). Ethiopia is one of the countries, which suffer from it.

2.2.3 Illegal Financial Flow in Africa

According to GFI data, illegal financial outflows continue to vary across geographical regions, but the estimated level of illegal financial outflows continues to be largest in Africa, where they reached an estimated total value ranging between US$272 billion and US$388 billion dollars in 2014 in Africa, on the other hand, it has the lowest estimated level of outflows in absolute terms with an estimated range of outflows of US$36 billion to $69 billion in 2014. When compared to the volume of illegal financial outflows registered in Asia, the African figures might appear small or irrelevant, but once the size of the economies is taken into account, the true magnitude of the issue for Africa becomes clear: when we measured as a share of total trade, illegal outflows from Africa account for 5.3% to 9.9% of total trade in the region. In Asia, however, this figure represents only between 3.9% and 5.6% of total trade (Global Financial Integrity, 2017). Another telling figure is that official development aid (ODA) for Africa in 2014 amounted to US$54.2 billion dollars (OED, 2016).which means that the continent could be losing more money through illegal outflows than it is receiving in development aid.

2.2.4 Illegal Financial Flow in Ethiopia

Generally, Ethiopia has very strict laws that are meant to prevent money laundering within the country and illegal financial flows out of the country, but their effect has been limited and concerns that illegal financial outflows might impact government revenues and weaken governance in the country remain (Yimer, 2017). Similarly another literature by Gusarova (2009) provides a theoretical notion that "the flight of capital is a lost

opportunity for the money to work in the country's economy. Moreover, when the capital leaves the country legally, it enters another country legally and can improve its economic condition. However, capital which leaves the country illegally, will not appear in the national accounts of any other country, but rather will settle down in some body's pocket. The money fled from the circulation cannot produce any additional money in either country.

2.2.5 Main sources of Illegal financial flow

1) Trade miss invoicing

Trade miss-invoicing refers to the intentional misstating of the value, quantity and composition of goods on customs declaration forms and invoices; usually for the purpose of evading taxes or laundering money (Roberto, 2018).

Traders can under-report the amount of imports in a transaction to circumvent applicable tariffs and vat. Import over-invoicing disguises the movement of capital out of a country. This could be work-around capital controls and a company may be able to subtract that input value from its year-end revenue report to the government, which would lower the amount of taxes it owes to the government. Export under- invoicing involves under reporting the amount of exports leaving a country in order to evade or avoid taxes on corporate profits in the country of export by having the difference in value deposited into a foreign account. Export over-invoicing involves over-stating the amount of exports leaving a country which often allows the seller to reap extra export credits. Banks request contracts made between the local importer and the foreign supplier to process foreign currency payments. However, they make very limited effort to verify the credibility of the price provided in the contracts. There is no national price index or directive that the banks use to cross check the credibility of the price provided in the contract (Roberto, 2018).

Under-invoicing is a common practice by Ethiopian exporters. Exporters use written contracts and bank payment systems for sake of documentation and to legalize their business; however, they negotiate with foreign business partners to understate the price in the contracts to be submitted to authorities. The exporters receive the under-invoiced payment through Ethiopian banks and the remainder is paid to them in cash or deposited for them in their name or in the name of other persons in a foreign bank account (Roberto, 2018).

2) Informal remittance systems

There are approximately 3 million Ethiopians living outside of the country and many of them send money back to the country to help their families.). Commonly, the informal facilitators collect money from the Ethiopian Diasporas who want to send money to Ethiopia to support their families or to start businesses. The informal facilitators often pay the beneficiaries back home in Ethiopian Currency and with exchange rates that are even higher than the black-market prices. This attracts a lot of demand among the Ethiopian Diaspora to use their services.

The money obtained from these transactions, is used for a number of purposes, including payments to corrupt officials or to reduce the risk of being charged for acquiring an unregistered or undeclared property under the property registration and disclosure proclamation. They may also use it to acquire property in Dubai or in some Western countries as this is becoming fashionable among the growing number of business and political elite (Yimer, 2017). In sum, due to the informal remittance systems, Ethiopia loses access to an important source of foreign currency that it could have gained from its Diaspora. Therefore, alternative remittances are causing a lot of damage to Ethiopian economy as one means of illicitly transferring resources out of Ethiopia.

3) Price transferring

Investors in Ethiopia tend to over-invoice products they import to get extra foreign currency and to avoid income tax at the production stage of the business. An important legal provision that encourages investors to over invoice their imports is most of their imports are exempted from customs duties as an incentive to attract foreign investment. Under Ethiopian investment laws, a foreign investor has the right to transfer out of Ethiopia foreign currency from profits and dividends, principal and interests payments for external loans, payments in relation to technology transfer, payments for collaboration agreements, and proceeds from the transfer of shares or of an enterprise to a domestic investor, proceeds from the sale or liquidation of an enterprise or compensation paid for them (Roberto, 2018).

4) Embassies, diplomatic channels and Corruption

There is evidence that show some embassies use diplomatic channels to assist their citizens and companies doing business in Ethiopia to illicitly transfer funds out of the country. The embassies collect Ethiopian currency from their nationals and it pay for their

nationals at home in their home currency. In this way the diplomatic offices use the local currency to finance their activities in Ethiopia and assist their nationals to transfer funds out of the country. There are also cases where diplomats with diplomatic immunity who are usually not searched when entering and leaving Ethiopia have been caught carrying foreign currency illegally (Yimer, 2017).

2.2.6 Measurement types of IFF

IFFs are difficult to estimate statistically due to the fact that many illegal transactions tend to be settled in cash, as parties involved in such transactions take great pains to ensure that there is no incriminating paper trail. Hence, economic methods and data sources tend to significantly understate IFFs. In order to avoid understating the problem of illicit flows, we shall always use the robust (non-normalized) estimate of IFF rather than the conservative or normalized (GIF, 2013).The main measurement of illegal financial flow is:

1) World Bank residual

World Bank residual method is computed by taking the difference of recorded source of funds and uses of funds in the official record balance of payment (Gusarova, 2009). Source of funds includes increases net external indebtedness and net inflow of foreign direct investment. Use of funds includes the current account deficit that is financed by the capital account flows and additions to central bank reserves. Illegal outflows (inflows) exist when the source of funds exceeds (falls short of) the uses of funds. Traditionally, economists have netted out illegal inflows from outflows thereby understating the adverse impact of illegal flows on developing countries. As illegal inflows are also unrecorded, they cannot be taxed by the government and are generally unusable for legitimate productive purposes. Hence, only gross outflows are considered in the change in external debt (CED) method (Freitals, 2002).

2) Dooly method

This seeks to measure the stock of privately held foreign assets that do not generate income reported to the domestic authorities. It does so by accumulating the identified capital outflows in the balance -of - payments accounts arid making three adjustments to capture unreported capital flows. The first is to add errors and omissions (World Bank 2012). The second is based on a comparison of the World Bank data on the stock of external

debt and external borrowing flows reported in the balance-of-payments accounts. Dooley adds the difference between each year's change in external debt according to the World Bank and the lows as officially recorded to his estimate of the increase in private sector foreign assets. Dooley assumes thus that the entire difference is private-sector acquisition of foreign assets. The third adjustment is to calculate the stock of external assets needed to give the (balance-of-payments) investment income by using an international market interest rate (World Bank, 2016). If investment income is underreported, then the imputed stock of external assets will less than external assets using balance-of-payments figures (and after making the previous two adjustments).The difference between the two is the stock of flight capital; and difference from year-to year is the measure of capital flight (Claessens and Naude, 1993).

3) Trade miss-invoicing

Trade miss invoicing has long been recognized as a major conduit for illegal financial flows. By overpricing imports and underpricing exports on customs documents, residents can illegally transfer money abroad. To estimate trade miss invoicing, a developing exports to the world are compared to what the world reports as having imported from that country, after adjusting for insurance and freight. Additionally, countries imports from the world are compared to what the world reports as having exported to that country. Discrepancies in partner country trade data, after adjusting for insurance and freight, indicate miss invoicing. However, this method only captures illegal transfer of fund abroad through customs re-invoicing; IMF Direction of Trade Statistics cannot capture mispricing that is conducted on the same customs invoice (Smith & Kar, 2013).

4) Hot Money Narrow

The hot money narrow measure is defined simply as net errors and omissions from the balance of payments statistics. However, this method is criticized for not capturing the most part of illegal capital flows. There are countries which should have high levels of illegal capital outflow due to the economic and political instability. However, they have zero net errors and omissions entries in the balance of payments (Gusarova, 2009).

2.2. Empirical Literature

There has no study regarding to the effect of illegal financial flow in Ethiopia to the best of

investigating many previous literature, but few studies has been studied as Ethiopia on impact and determinants of capital flight as a general including both developing and developed countries. The aim of this study is empirically investigate the effect of illegal financial flow on economic growth in Ethiopia over the period 1980/81-2017/18. The empirical analysis is to investigate the effect of illegal financial flow on economic growth by using the methodology of the Johansson co integration approach and ECM Model to see the long run and short run relationship and its equilibrium.

2.2.1 Illegal financial flow globally

Aurangeb and Haq (2012) investigated the impact of foreign capital inflows on economic growth of Pakistan. The data used in this study were collected from the period of 1981 to 2010. Unit root test confirms the stationary of all variables at first difference. The multiple regression analysis technique was used to identify the significance of different factors. Results indicate that the all three independent variables are having positive and significant relationship with economic growth (GDP). The Granger- Causality test confirms the bidirectional relationship between remittances and external debt, gross domestic product and external debt, foreign direct investment and external debt, and foreign direct investment and remittances. On the other side, the study found unidirectional relationship from gross domestic product to foreign direct investment. It is concluded that the foreign capital inflows are very important for the growth of any economy.

Narayan (2013) examined the casual relationship between foreign capital inflows and economic growth in

India. Using the pair-wise Granger causality test (1969), he specifically examines causal relationship between foreign capital inflows and economic growth in India. The important observations emerge from pair-wise Granger causality test, which shows there is the long-run equilibrium relationships exist between the following pairs of variables and also Han et al (2012) carried out an investigation by using ordinary least square techniques to ascertain whether there is an occurrence of capital flight from Hong Kong and to know the determinants of capital flight. The findings of the study revealed that the determinants of capital flight from Hong Kong are over-valuation of the currency, currency account deficit, and China‟s open door policy of 1979, captured by a dummy variable.

Al-Basheer et al (2016) employed the OLS technique to investigate the economic causes of capital flight in the Jordanian economy over the period 2000-2013. The study noted that external public debt, economic openness, taxes, and the previous capital flight significantly

determined capital flight from Jordan. The study suggests that the reduction of the level of external debt and the collaboration with the international institution will go a long way in reducing the phenomenon of capital flight in Jordan and

Auzairy et al (2017) investigated the dynamic relationship between capital flight and macroeconomic fundamentals in Malaysia between 1992 and 2012. Using co-integration and vector auto regression methods of estimation, the study noted that consumer price index (CPI), GDP, interest rate and exchange rate constitute the macroeconomic fundamentals determining capital flight.

Uddin, Yousuf and Islam (2017) carried an econometric analysis of the determinants of capital flight in Bangladesh between 1973 and 2013. They used OLS and noted that the major causes of capital flight are foreign direct investment flows, external debt, interest rate differentials, foreign reserves and current account surplus. The study also concluded that there is a strong positive correlation between interest rate differential and capital flight and between change in external debt and capital flight.

Fambon (2013) capture the impact of foreign capital inflows (which include foreign aid and foreign direct investment) on economic growth in Cameroon. Using the autoregressive distributive lag approach to Co- integration and time-series data for the period 1980–2008, the results of the study indicate that the domestic capital stock and foreign direct investment have positive and significant impacts on economic growth in the short and long terms, while the impact of the labor force on growth was significantly negative in both terms, a result that may be attributable to the fact that Cameroon is a developing country with unlimited supply of labor whose increase has a detrimental effect on growth.

Similarly, Dev and Freitas (2011) empirically examined the amount of illegal financial flows from developing countries over the decade ending 2009. The study provided estimates of illicit financial flows

(IFFs) from developing countries over the decade 2000-2009 based on the balance of payment (BOP), bilateral trade and external debt data reported by member countries. They used the residual model approach in doing the work. Their findings are that in 2009 IFFs from developing countries led by the top ten exporters of illicit capital, most of which are in Asia and the Middle East and North Africa region have declined by 41% over the last year.

2.2.2 Illegal financial in Africa

Illegal capital flight undermines the economic growth by draining valuable national resources; capital flight widens the resource gaps faced by these countries, perpetuating their dependence on external aid and moreover, first by deepening the resource gaps, illegal capital flight slows down capital accumulation and long run economic growth. Compared to other regions, illegal financial flow from Africa represents a more severe problem, causing heavy losses in government revenue, forgone investment, and lost output (Ndikumana, et al, 2014).

Kipyegon (2014) investigated the factors that account for capital flight from Kenya using a time series data between the years 1971-2001. Employing the Ordinary Least Squares (OLS) technique, the study found external borrowing as the most significant factor in determining capital flight from Kenya. The outcome of the study revealed that inflation rate, real exchange rate, real economic growth, and financial development are determinants of capital flight from Kenya. As a result, the study suggests that the Kenya's government should ensure accountability and transparency in the borrowing and management of external borrowings.

Employing the ARDL model, Forson, Obeng and Brafu-Insaidoo (2017) investigated the long-run and short-run determinants of capital flight in the Ghanaian economy between the periods 1986-2015. The outcome of the study showed that higher domestic real interest rate in relation to foreign interest rate, good governance, financial development, real GDP growth rate, and strong property right have a significant influence in reducing capital flight in both the long-run and short-run. The result further revealed that the ratio of external debt to GDP resulted in an increase in capital flight. In addition, the study noted that lagged external debt to GDP and financial development had a negative and positive impact on capital flight in the short-run.

Obiechina and Ukeje (2013) examined the impact of capital flows (foreign direct investment), exchange rate, export and trade openness on economic growth of Nigeria as well as the causal long-run relationship among the variables, using time series data from 1970 – 2010. The unit root test confirmed the series to be stationary at I (1), while the Johansen Co-integration test suggested the existence of at least one Co-integration vector among the variables. Using Engle-Granger 2-Step procedure, it was observed that all the variables, except the foreign direct investment are statistically significant and

influence economic growth in the short-run dynamic equilibrium model. Exogeneity test confirmed that foreign direct investment has weak exogeneity with economic growth. In addition, the Pair wise Granger causality revealed the existence of unidirectional causality between economic growth and foreign direct investment and unidirectional and bidirectional causality among some of the variables.

Ndikumana (2013) used data from a number of African developing countries to conduct an econometric simulation. The central question of the counterfactual study is how much additional growth the affected countries might have achieved without illegal financial outflows. Ndikumana concludes that the thirty- nine countries studied over the period from 2000 to 2010 might have been able to achieve on average 3 per cent more economic growth had there been a radical stop to all illegal financial flow. In oil-exporting countries, which are especially prone to illegal financial outflows, that additional growth might even have been 3.9 per cent.

2.2.3 Illegal financial flow in Ethiopia

The illegal Financial Flows from Developing Countries from 2005-2014 are remain persistently high and account for 14% to 24% of the value of total trade. This translates into an estimated range for total illegal financial flow of US$2 trillion to US$3.5 trillion in 2014 and estimated illegal outflows from developing countries to the developed countries added up to US$620 billion in 2014 and illegal inflows from the developed countries into the developing world totally more than $2.5 trillion (GFI, 2017). Additionally, Alemayehu and Addis (2017) estimate that the levels of capital flight from the country, which include illegal financial flows, have led to an average loss of 2.2 percentage points per year for the case of Ethiopia. Ethiopia are being one of the least developing countries in east Africa, which faced various problems, among different problems, low capital labour ratio is one of the problems, because of the illegal flow of capital and others, ensuring economic growth is not only a necessary to progress human lives in developing countries like that of developed ones. Correspondingly, in Ethiopia also, macroeconomic instability, budget deficits, exchange rate devaluation, interest rate manipulation, political instability and corruption are found to be reasons for illegal financial flow (Geda and Yimer, 2016).

Ethiopia had been contextualized by starvation, poverty, backwardness and ignorance for many centuries and still the county is described as one of the poorest country in the world. However, after a long time low-level equilibrium economic trap; Ethiopia is becoming more visible to the world in a “half full” perspective and more expounded as a

“fastest growing economies.” According to World Bank’s economic review the economy has experienced strong and broad based growth over the past decade, average of 10.8% per year in between 2003/04 - 2014/15 compared to the regional average of 5.4% (W B, 2016).

Therefore, to sustain economic growth through advancement of software and hardware infrastructure there must be capital attraction, but in Ethiopia capital is flow out illegally and different researches conducted using different estimation models inferred that the existence and the degree of illicit financial out flow from developing countries is very high when it‟s compared to their needs and available of capital stock. However, in the literature there is disagreement on the approach of estimation models. An especially in developing country like Ethiopia, no matter the figures vary according to data source and model choice, the scale of IFF and is its impact on economic growth is difficult to ignore.

A research conducted by Boyce and Ndikumana (2012) shows that “Ethiopia was also ranked 8th in sub-Saharan Africa in terms of total capital flight in years b/n 1970-2010, which amounted to $25 billion.

A research conducted by Boyce and Ndikumana (2012) shows that “Ethiopia was also ranked 8th in sub-Saharan Africa in terms of total capital flight in years b/n 1970-2010, which amounted to $25 billion.

In General, Few Scholars and literatures suggests the existence of acute reasons behind to reach IFF to this level is, policy and regulatory inconsistencies; weak institutions; limited oversight, accountability and rule of law, and the absence of transparent economic and governance processes , corruption, illegal exploitation of natural resources and tax evasion. Correspondingly, in Ethiopia also, macroeconomic instability, budget deficits and exchange rate devaluation, interest rate manipulation, political instability and corruption are found to be reasons for illegal financial flow (Geda and Yimer, 2016).

At last, different empirical studies are listed here above on the impact and determinant of capital flight which conducted in different countries, have shown differences in the types of models implemented, time period covered by the study, geographical areas and also between some of them there is disagreement and debate on the estimation models and on the its findings by using different data analysis and in line with other studies and results here above, the paper study on effect of illegal financial flow in Ethiopia by using trade miss invoicing model which was not study on estimating the effect of illegal financial flow using this model in country specific to Ethiopia.

Generally, many researchers used different estimation model to estimate the impact of illegal financial flow on economic growth in different African countries. Based on the above listed empirical literature and its findings, the researcher decided to use trade miss invoicing because many of cross-border capital movement is made through trade platform flow on economic growth, specifically for Ethiopia. Though, usually this model is not used alone because it's believed that it could understate the level of IFF. But as recommended in many literatures, it's added on Trade miss-invoicing estimation model to estimate the total amount of illegal financial flow.

As a whole, different research conducted in different countries which aimed to assess the impact, determinant of capital flight on economic growth using various econometrical models and literatures resulted in the its findings are showed below in the table.

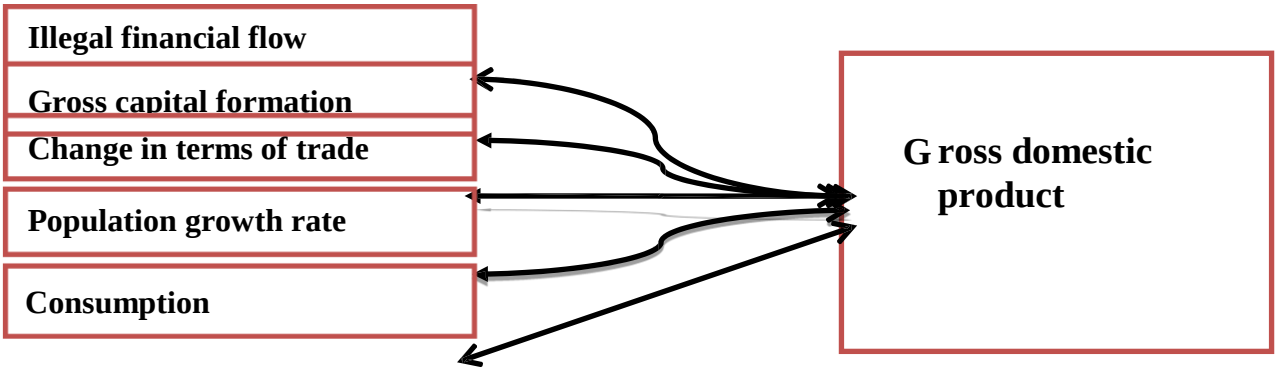
Table 2.1: Findings and methodology of other studies on impact and determinant of capital flight and illegal financial flow

Name of authors	Countries	Estimation	Its findings	Time covered the
Nkurunziza (2015)	35African countries	ICOR	Significant and Negative	2000-2010
Ndikumana (2013)	39African	ICOR	Significant and Negative	1970-2010
Ndiaye(2014)	Nigeria	OLS	Significant and Negative	1980-2011
Haq (2012)	Pakistan	MRA	Significant and Positive	1981-2010
Kipyegon (2014)	Kenya	OLS	Significant and both +ve and –ve	1971-2001
Leiw Manson and Puah (2016)	Malaysia	ARDL	Significant and +ve	1980-2010
Alemayehu and Addis (2017)	Ethiopia	ICOR	Significant and –ve	1970-2012
Auzairy et al	Malaysia	VAM	Significant and both +ve and –ve	1992-2012
Al-Basheer et al(2016)	Jordiana	OLS	Significant and negative	2000-2013
Aziz et al (2014)	Bangladesh	OLS	Significant and Negative	1972-2013
Henery and Salandy (2018)	Tobago & Trindad	OLS & GMM	Significant and Negative	1971-2011
Fanbon (2013)	Cameron	ARDL	Significant and Negative	1980-2008

2.2.4 Proposed Conceptual framework

In this study, many variables are identified from literature review in order to study the effect of illegal financial flow on economic growth in Ethiopia. This conceptual framework consists of the list of independent variables and the established relationship with dependent variables of the study as extract from the literature review.

Figure 2.1: Conceptual frame work



Source: Modified from Forstater, M (2016) Illegal financial Flows and Trade Mis invoicing.

CHAPTER FOUR

Data analysis and Econometric result

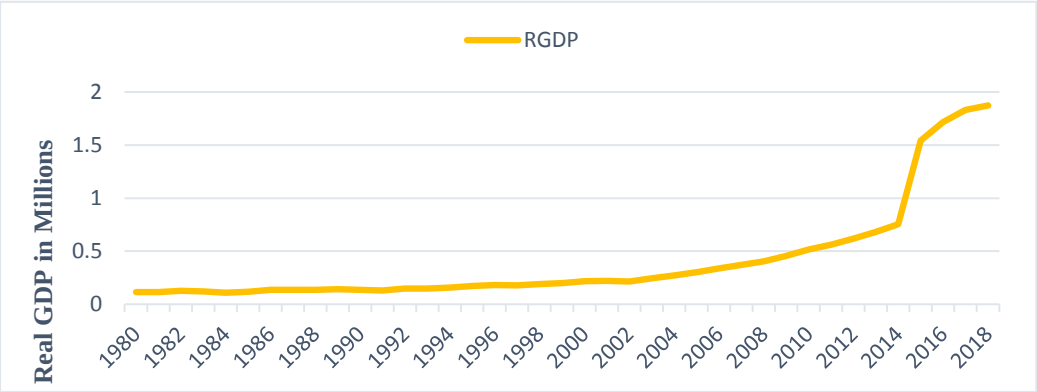
4.1 Descriptive analysis

This chapter analyzes and discusses the long run, short run relationships between IFF and economic growth with both descriptive and econometric techniques that are discussed in the previous chapter are employed in this chapter, and the results are discussed in detail. The first part deals with descriptive summary of the data, which helps to use each variable for advanced statistical analysis and for easy understanding. Consecutive subsection is an econometric technique, which include unit root tests are performed using the Augmented Dickey Fuller (ADF) test. Based on the results of stationarity we will move to check weather co-integration exist or long-run relationships between the variables understudy backed through theorems.

4.1.1 Trends and background of real GDP

Ethiopia is among the fastest growing non-oil economies in the world as the government reforms undertaken in recent years have succeeded in opening the economy to foreign direct investments and resulted in expansion of commercial agriculture and manufacturing industry. Figure 4.1 shows a stagnant economic growth for about twelve years from 1980-1992. After showing closely stagnant growth, it starts to show very slow economic growth for another ten years between 1992 -2012. The figure also shows that the economic growth of the country increases rapidly than before from 2012-2014 but it has rapidly increased for a year between 2014-2015 and finally it starts to grow slowly.

Figure 4.1 trend of Real GDP since 1980.



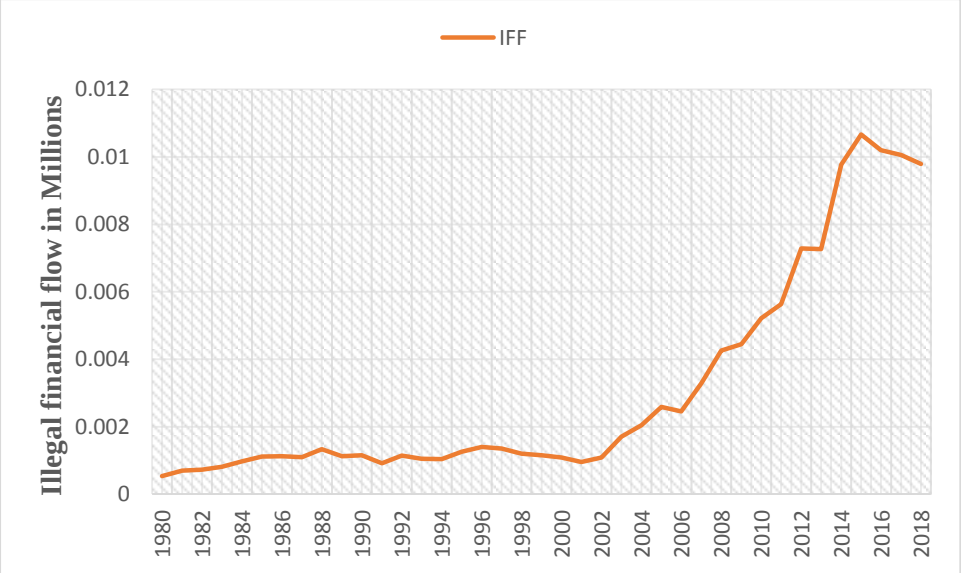
Source: National Bank of Ethiopia

4.1.2 Trends of illegal financial flow in Ethiopia

The flow of illegal financial have passed different trend within which the country exchanges illegal financial materials. It is the difference between over-invoicing imports and under-invoicing exports with the accurately recorded values of export and import across the trading countries.

Accordingly, the following figure illustrates the trend of illegally flow of financial materials over the year under the consideration. As the figure shows that, this financial flow moves in almost stagnant rate for eight years 1980-1988. After while it goes down from 1988 -1991 and again it steadily goes in stagnant rate from 1991-2002. But this flow of illegal financial trend highly increases from 2002 -2015 and finally decline.

Figure 4.2 the trend of illegal financial flow



Source: National bank of Ethiopia

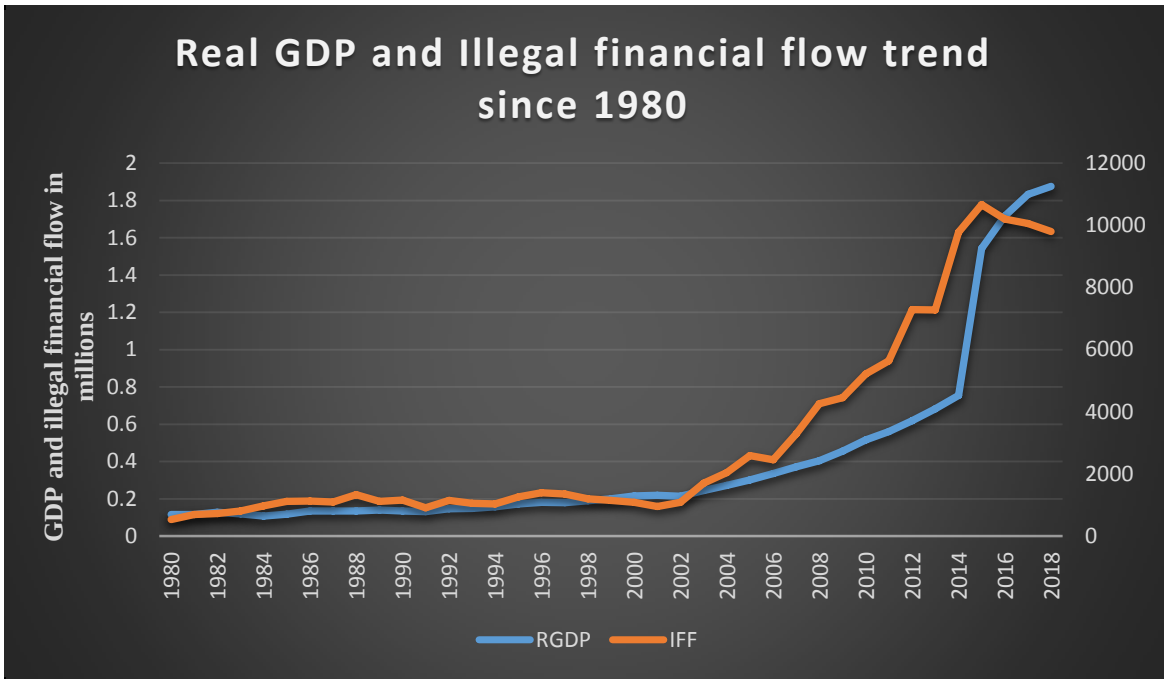
4.1.3 The relationship and trends between economic growth and illegal financial flow

From its definition, illegal financial flow is over-invoicing of imports and under invoicing of export with the truly calculated values of export and import of the country under the consideration. Illegal financial flow is a cross border movement of financial materials that is illegally earned, transferred or used that crosses border. This illegal trade invoice adversely affects total values of GDP through its effect on trade balance of open economy nation.

Therefore, one can infer a negative relation between illegal financial flow and growth of the economy. More specifically, the trendily relationship between these variables is illustrated as figure 4.3 below.

As figure shows, both gross domestic product and illegal financial flow grow stagnantly though their growth is counter direction from 1980 -2002. But, the trend showed that, Ethiopian economy growth slowly while illegal trade invoice highly grow between2002-20014. However, both variables show a rapid growth for about a year from 2014-2015, which is converse to the theoretical facts discussed in the methodological part. This may be because the positive enhancement of other GDP component will offset the faster growth of illegal financial movement. Finally, the reduction of illegal trade invoice has improved the growth of Ethiopian GDP from 2015 to date. Furthermore, the relationship between them depends on the situation of the economy and growing capacity of other component.

Figure 4.3 the trend and relation between illegal financial flows



Source: National Bank of Ethiopia

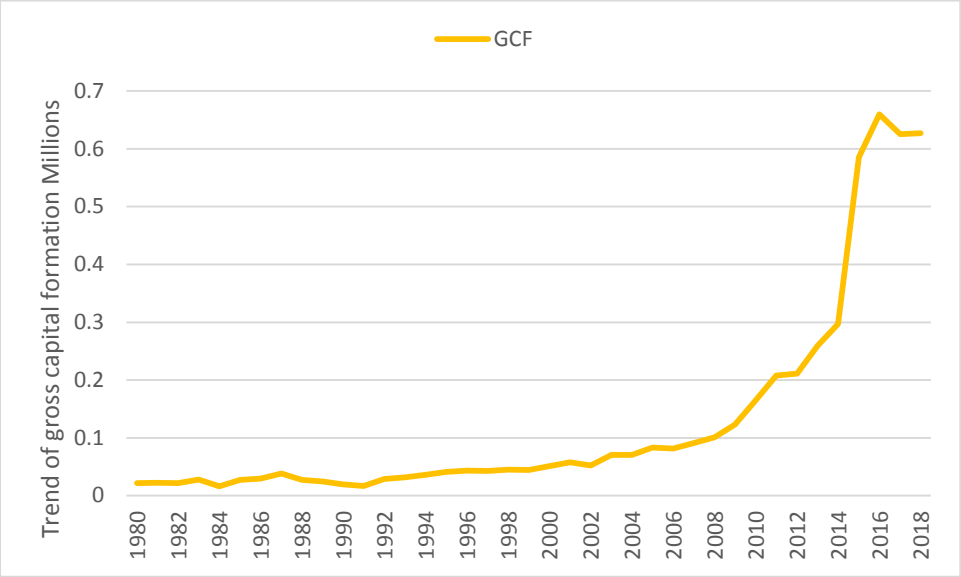
4.1.4 Trend of Gross Capital Formation

in economics the gross capital formation is not only main determinants of GDP but also the way in which it uses has also determines the level of country's total production.

As discussed in theory gross capital formation can be channeled from two sources; among these sources the first one is the way through which capital formation channeled through trade as a share of GDP and this has got a great attention in this paper as the objective of this study is analyzing the effect of illegal financial flow on the economic growth. Based on this fact, it is possible to infer the following trendily illustration on the figure below. Accordingly, the growth of gross capital formation from 1980 through 1991 shows closely stagnant rate.

After a while, as it uses in efficient way it improves its growth slowly in a gradual trend from 1991-2008. Following the slow growth of capital formation during seventeen years, not only growth of this capital formation accumulation but also the way of its usage also highly improved in the next eight years from 2008 -2016 and it showed a rapid growth of gross capital formation. Though finally, its growth decreases probably due to the fact that the way operates is over the carrying capacity of the plant from 2016-2018.

Figure 4.4 Trend of gross capital formation

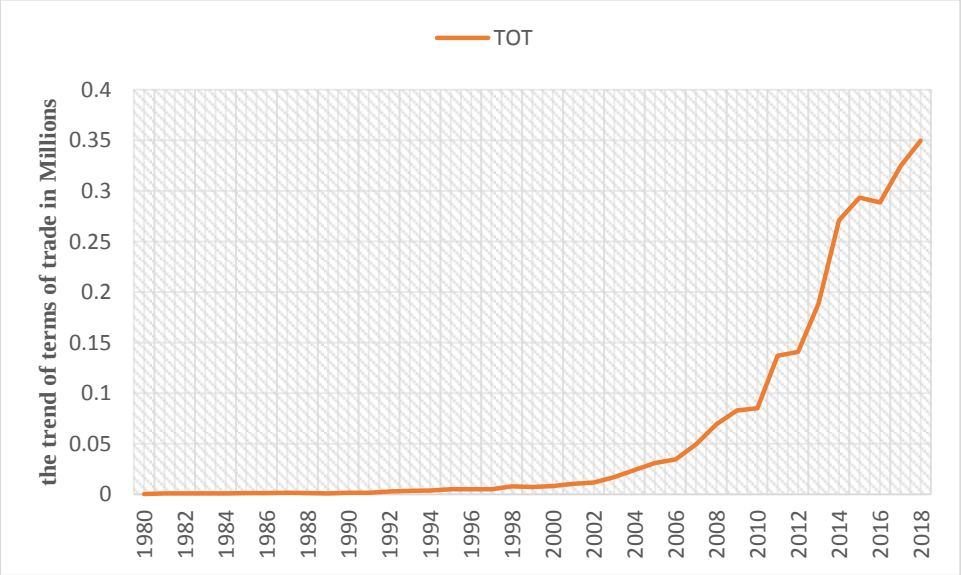


Source: National Bank of Ethiopia

4.1.5 The trend of Term of Trade

Theoretically, there is significant positive relationship between international trade and economic growth. The trends of term of trade and economic growth share similar shapes as both series have direct relationship as the theory proposes. Moreover, the following figure describes the trend of term of trade as discussed below. The improvement growth of term of trade is steady from 1980-1997 as the growth of economy hence this time is the time of infant production and the export of the country is likely inelastic as there were no competent export items at international level. At the second, phase its growth increases slowly as the value and productivity of export item improved from 1998-2016. Not only value but also as the supply of all export item increases, the term of trade growth increases rapidly from 2016 to date.

Figure 4.5 the trend of terms of trade



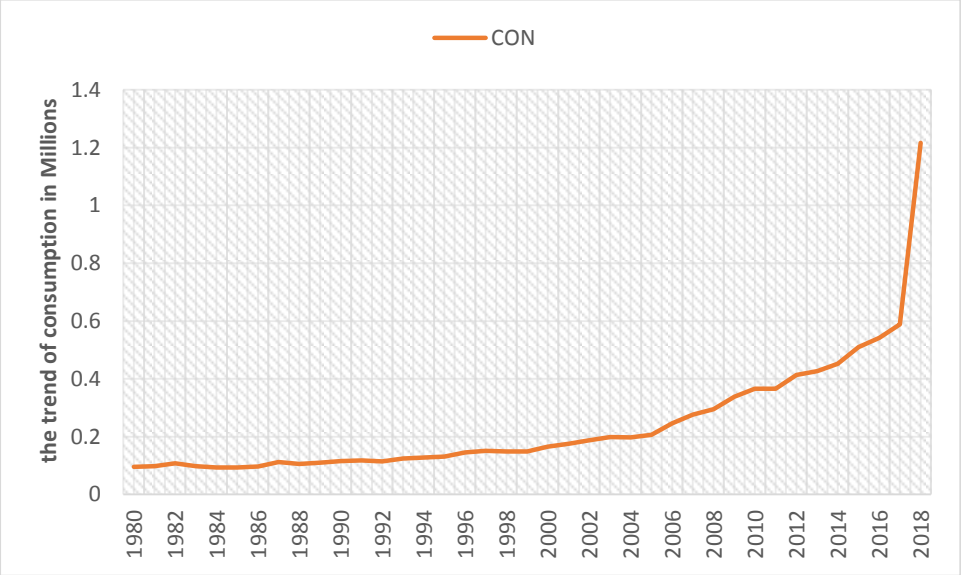
Source: National Bank of Ethiopia using EVIEWS10

4.1.6 The trend of consumption

Consumption in this study includes both household and government direct consumption expenditure on goods and services which is in millions of Birr. The total values of goods and services produced in all sectors depend on the level of aggregate consumption and the level of consumption by itself depends on the aggregate output. It is this dynamics, which this course of study incorporates as the determining variable. More specifically, the trendily growth of aggregate consumption based on Ethiopian annual consumption data is discussed as figure 4.6 below. At the beginning of this data set, the growth of consumption increases slowly from 1980-2005 and this may be due to the fact that our country Ethiopia transited from famine period to growing period many rural areas. In the second stage the level of consumption grows rapidly from 2005-2017 as the country has strengthen its domestic production and capable to import some tradable goods from the rest of the world.

Finally, in the recent year the growth of Ethiopian consumption very rapidly increases than before from 2017-2018. This is because good utilization of land and other resources like fertilizers for agricultural products and in turn positive return for industrial sector from households.

Figure 4.6 Aggregate consumption trend

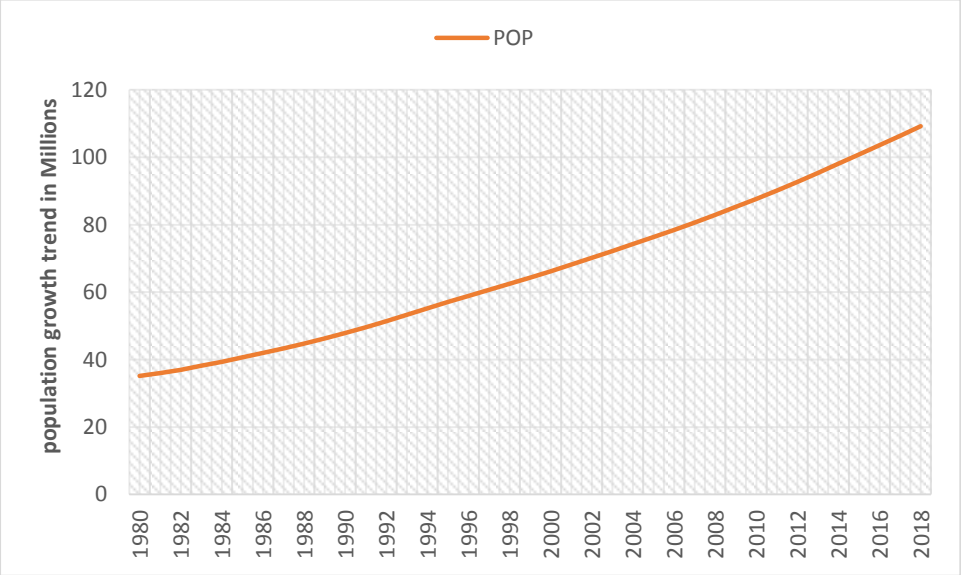


Sources: National Bank of Ethiopia

4.1.7 Population growth in Ethiopia

Ethiopia is one of the developing countries in the world data and from the evidence, most of the developing country is known by the rapid population growth. The increase in the population growth requires more house demand and food. This has an adverse effect on economic growth of the country, as high population growth should be accompanied with extra land settlement and consumption expenditures and negatively affects the economic growth of the country. The trendily explanation has given below as follows on figure 4.7. As the figure implies the rate of growth in population is increasing regularly and continuously for the entire year under the consideration. This implies from the year to year the growing trend of population throughout the country has increased as the new child birth requires new house and high exploitation of resource and finally the aggregate output declines. It is this phenomenon, which leads the focus of people to another alternative to overcome overcrowded of life. In general the growth in population, results to a reduction in the economic growth as the per capita income of each individual decline.

Figure 4.7-population trend in Ethiopia



Source: national Bank of Ethiopia

4.2 Econometric result and interpretation

4.2.1 Unit root test

Before using any raw time series data testing the stationarity of the series data is very important. Accordingly, in this study employed Augmented Dickey (ADF) has been employed as follows.

4.2.2.1 Augmented Dickey Fuller (ADF) Test

Augmented Dickey Fuller test is one of the essential manifestations of the stationarity of the series of data. Using any data estimation technique without checking whether the series of data is stationary or not falls under the problem of spurious result or fake regression. This is the scenario when data shows statistically significant result while there is no relationship among the variables in reality as the result is nonsense or fake coefficient as discussed in the methodology part. Hereunder is the tabular result of the stationarity of each series both regressand and regressors included in the data discussion as table 4.1 below.

Table 4.1 unit root test by Augmented Dickey Fuller (ADF)

Variables at level and 1st difference	t-statistics	t-critical at (5%)	Probability
LNRGDP	-1.770697	-2.948404	0.9996
ΔLNRGDP	6.328485 **	2.948404	0.0000**
LNIFF	0.512333	-2.941145	0.9850
ΔLNIFF	-5.698879**	-2.943427	0.0000**
LNGCF	0.733860	-2.941145	0.9914
ΔLNGCF	-7.185729**	-2.943427	0.0000**
LNPOP	-1.624099	-2.957110	0.4590
ΔLNPOP	-4.350251**	-2.971853	0.0020**
LNTOT	0.835868	-2.943427	0.9934
ΔLNTOT	-7.050962**	-2.943427	0.0000**
LNCON	0.621022	2.941145	0.9885
ΔLNCON	-6.062984**	2.943427	0.0000**

Sources: National Bank of Ethiopia; ** indicates each series are stationary at 5% level.

Based on the above result, all variables are stationary after first difference. This implies that variables are integrated of order one i.e. I (1) and hence vector autoregressive (VAR) model is applicable for this analysis. From the above result, all variables included in the study are stationary at the same level and the next step to be proceeding is choosing optimal lag length and running Johansen co integration approach with the optimally selected lag length respectively.

4.2.2 Vector autoregressive (VAR) and lag selection

In any multiple time series analysis, choosing the ideal lag length for the basic VAR model is very important. The result of Johansen co integration test is much quit sensitive to optimal lag length. On the basis of the lag selection criteria, five of them, modified LR test statistics (LR), final prediction error criteria (FPE), Akaike's information (AIC), Schwarz information criteria (SC), the Hannan and Quinn information criteria (HQ) are calling that the optimal lag to be selected for the model is at lag 1 as illustrated on the table below.

Table 4.2 Lag selection criteria

VAR Lag Order Selection Criteria
Endogenous variables: LNRGDP LIFF LGCF LCON PGR LTOT INF
Exogenous variables: C Date: 06/03/20 Time: 17:36
Included observations: 37 Sample: 1980 -2018

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-87.51524	NA	3.90e-07	5.108932	5.413700	5.216377
1	129.1676	339.6650*	4.74e-11*	-3.95500*	-1.51685*	-3.09544*
2	177.0161	56.90095	6.80e-11	-3.892763	0.678761	-2.281087

Source: National Bank of Ethiopia using EVIEWS 10
** indicates lag order selected by the criterion*

The above table reveals that five criteria's are calling for lag 1 at which * signified. Once the optimal lag length is selected, the task to be proceeded is checking for the existence of long run co integration by Johansen co integration approach.

4.2.3 Johansen co integration test

The Johansen co integration reveals that both trace value and maximum Eigen value indicates that there is there co integration equation at the selected lag length with 5% level of significance. Accordingly, there are three long run equations to be modeled in this study. In this case, the target variable is real GDP and how illegal trade invoice affect the growth of economy in Ethiopia. The rest equation can be modeled based on the order of the variables.

Table 4.3 Johansen co integration (trace statistics) test

Sample (adjusted): 1982 2018 Included observations: 37 after adjustments
Trend assumption: Linear deterministic

Maximum rank	Eigen value	Trace statistics	0.05 critical value	Prob.**
0	0.920459	201.0693	117.7082	0.0000
1	0.705751	107.4046	88.80380	0.0000
2	0.551942	62.14147	63.87610	0.0694
3	0.402013	32.43669	42.91525	0.3652

Source: national bank of Ethiopia using EVIEWS 10 * denotes rejection of t*he hypothesis at the 0.05 level* Trace test indicates 2 co integrating eqn (s) at the 0.05 level

The above table shows that, the existence of co integration by trace statistics test at 5% significance level. At zero rank, the null hypothesis says that there is no co integration among the variables while the alternative hypothesis says that there is at least one co integrating equation. To check whether long run relationship between variables or not the trace statistics should be compared with the critical value at 5% level. As shown on table 4.3 the trace statistics is greater than the critical value at 5% significance level. Thus, the null hypothesis of no co integration is rejected. The same decision can be inferred at maximum rank one and there is at least two co integration equations. However, at the maximum rank 2, the trace statistics is less than the critical value at 5% significance level and null hypothesis of no co integration is accepted. Another method of checking for the existence of co integration is Eigen value test.

Table 4.4 Johansen co integration (maximum Eigen value) test

Sample (adjusted): 1982 2018 **Included observations: 37 after adjustments** **Trend assumption: Linear deterministic**				
Maximum rank	Eigen value	Max Eigen value statistics	0.05 critical value	Prob.**
0	0.920459	93.66469	44.49720	0.0000
1	0.705751	45.26318	38.33101	0.0069
2	0.551942	29.70477	32.11832	0.0958
3	0.402013	19.02488	25.82321	0.3036

*Source: National Bank of Ethiopia using EVIEWS 10, * denotes rejection of the hypothesis at the 0.05 level.*

Eigen value indicates 2 co integrating eqn (s) at the 0.05 level

Similar to the trace value case the system has two co integration equations. The null hypothesis of no co integration is rejected from maximum rank zero to maximum rank one and but its maximum Eigen value statistics is less than critical value at 5% significance at maximum rank two. Generally, in either case Johansen co integration approach showed that the system has two co integrating equation in the long run. Moreover, from the evidence of long run association vector error correction model (VECM) is inevitable to grasp how much the system can be go to their steady stable.

4.2.5 Vector Error Correction Model (VECM)

As long as long run co integration among variables have been checked, the vector error correction model is run by deducting one lag from the optimal lag obtained from VAR model.

However, the optimal lag is one and vector error correction model would be run by the obtained lag where p is lag length obtained in VAR model.

4.2.6 Long Run Estimation of the Model

Table 4.5 Johnson long run equation of the system

Dependent Variable:RGDP			
Regressors	Coefficient	Standard deviation	t-statistics
LNIFF(-1)	-5.943502	2.539819	[-2.340128]*
LNPGR(-1)	-82.68680	13.2847	[6.22420]*
LNIGCF(-1)	-30.69264	32.4929	[0.94460]
LNCON(-1)	772.6404	88.5174	[8.72868]*
LNTOT(-1)	-234.4184	36.2556	[-6.46571]*
@TREND(80)	0.914966		
C	-2753.220		

Source: National Bank of Ethiopia using EVIWS 10

** Indicates, a statistically significant coefficients*

The above result depicts that four of explanatory variables statistically affect the growth of economy with appropriate t-statistics. Hence, the study was focus on the economic impact of illegal financial flow on the performance of Ethiopian economy and its impact is negative. Accordingly, other things are remain constant, as the illegal trade-invoice increases by 1% the growth of Ethiopian economy decreases by 5.9% on average. Besides, keeping other things constant, increasing the growth of population and term of trade by 1 % results to **-82.68%** *and* **-234.41 %** in a reduction of Ethiopian economic growth respectively. On other hand, keeping all other variables constant, increasing the household consumption by 1% would increases growth of Ethiopian economy by **772.6%.**

The system can be modeled as follows, in equation with appropriate t-statistics in parenthesis.

$$LNRGDP_t = -2753.220 - 0.9@TREND(80) - 5.943LIFF_t - 82.68LNPGR_t +$$

[-2.340128]* **[6.22420]***

$772.64LNCONS_t$ - 234.4184LNTOT

[8.72868]* [-6.46571]*

The result shows that illegal financial flow negatively affects the economic growth of Ethiopia. It implies that the flow of illegal trade-invoice would cause to decreases of the country in the long run. Furthermore, the coefficients of household consumption, population growth and illegal financial flow are the same as expected in the methodology part. But, gross capital formation is not significantly determining economic growth while term of trade is opposite to the expected one. This may is because the term of traded recorded in our country are with infant export items and price elasticity against giant capital goods imports.

Generally, illegal financial flow has significant and adverse impact on the growth of Ethiopian economy in the long run. On the counter analysis, there is causal relation from real GDP to illegal financial flow regardless of the study objective is not within this causal relation.

4.2.7 Short run Dynamics of the Model

After long run coefficients of the model have been estimated, the remaining issue is the estimation of short run coefficients and the coefficient of error correction term (EC). This term indicates the speed by which the deviations happen in the short run restore to its equilibrium in the long run. In other words, (EC) term tells us how system quickly converges to its long run equilibrium whenever there is shock in the short run. Furthermore, to convey meaning message it should negative sign and statistically significant at the standard significance level. In statistical analysis, the standard level of the significance is at 5% in social science study. As a result, when the probability of the result of EC term is less than 5% the null hypothesis of zero coefficients is rejected. Rejecting null hypothesis implies the coefficient of EC term is statistically nonzero.

Table 4.6 Short run dynamics of the RGDP Model

Dependent variable: lnRGDP *Sample (adjusted): 1982- 2018*				
Model: ECM	Coefficient	Standard deviation	t-ratio	p-value
CointEq1	-0.145152	0.056823	-2.554456	0.0166**
D(LNRGDP(-1))	1.445673	2.465187	0.586435	0.5625
D(LIFF(-1))	-0.173238	3.127565	0.055391	0.9562
D(PGR(-1))	-0.218759	0.133075	-1.643886	0.1118
D(LCON(-1))	-5.580316	11.22857	-0.496975	0.6232
D(LGCF(-1))	3.813892	3.455056	1.103858	0.2794
D(LTOT(-1))	-6.952267		4.413644	1.575176

Source: National Bank of Ethiopia using EVIEWS 10

Bannerjee et.al. (2003,) as cited in Debela (2019), highly significant error correction term further confirms the existence of a stable long run relationship. As a result, the error correction term in this model is negative in sign and statistically significant at 5%. This coefficient can be interpreted as, the deviation of the system in the short run from its steady restored to its equilibrium by 14.5% in the long run per annum. Hence, the study has two model Real GDP model and illegal trade invoice model and in the first model, it is interpreted specifically as, any shock, which happen by each explanatory variable on Real GDP this year is corrected by 14.5% in the next year.

Based on this evidence the short run dynamics of the Real GDP model is captured with error correction model is put in their expected result except term of trade but not statistically significant. The lag of real GDP itself positively affects itself, and the gross capital formation positively affects the economic growth of the Ethiopia. Other variables like consumption, population growth, illegal trade invoice and term of trade negatively affect the growth of Ethiopian GDP.

However, the sign of coefficient of term of trade is opposite to the theory. In general, the illegal financial flows have significant effect on the economic growth of Ethiopia regardless of its sign of coefficient. The dynamics in equation n form can be written as follows with p-value in parenthesis.

DLRGDP = 1.44 D (LRGDP) (-1)) - 0.173 (LIFF (-1)) -0.218 D (PGR (-1)) - 5.580316 D (LCON (-1))

[0.5625] [0.9562] [0.1118] [0.6232]

+3.813 D (LGCF (-1)) - 6.952267D (LTOT (-1)) - 0.145ECM

[0.2794] 0.1269 0.0166 **

Table 4.7 Short run dynamics of LIFF Model

Dependent variable: lIFF *Sample (adjusted): 1982- 2018*				
Model: ECM	*Coefficient*	*Standard deviation*	*t-ratio*	*p-value*
CointEq1	-0.015110	0.002415	-6.258063	0.0000
D(LNRGDP(-1))	-0.692280	0.107923	-6.414546	0.0000
D(LIFF(-1))	*-0.075976*	*0.104752*	*-0.725296*	*0.4745*
D(PGR(-1))	*-0.036412*	*0.132898*	*-0.273981*	*0.7862*
D(LCON(-1))	*-0.011077*	*0.005655*	*-1.958875*	*0.0605*
D(LTOT(-1))	*-0.800598*	*0.477131*	*-1.677941*	*0.1049*
D(LTOT(-1))	*0.280826*	*0.146814*	*1.912800*	*0.0664*

Source: National Bank of Ethiopia Using EVIEWS 10

In this model, only real GDP affects the illegal financial flow and the impact of other variables is not significant. The causal relation relationship between economic growth and illegal financial flow is inverse. Thus, other things are remain the same increasing the economic growth by 1% decreases the illegal financial flow by 0.69% in Ethiopia. The coefficient of significant variable is denoted with * symbol with appropriate p- value in parenthesis as follows.

DLRGDP = - 0.69 D (LRGDP) (-1)) - 0.075 D (LIFF (-1)) - 0.036 D (PGR (-1)) - 0.0110D (LCON (-1))

[0.0000] [0.4745] [0.7862] [0.0605]**

- 0.8 D (LGCF (-1)) + 0.2808 (LTOT (-1)) - 0.0151 ECM

[0.104] [0.0664] [0.0000] **

4.2.8 Diagnostic tests of the model

4.2.8.1 Serial correlation LM test

Serial correlation is a case in which the successive periods of error terms are correlated to each other. In this study Breusch –Godfrey test used to detect the existence of serial correlation. Let us begin from hypothesis. H_0: Residuals are not correlated.

H_1: There correlation between residuals.

Based on this hypothesis, if the p-value of Chi-Square (2) is greater than 5%, the null hypothesis of no autocorrelation is accepted and vice versa.

Table 4.8 Autocorrelation (Breusch- Godfrey)

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.92131	Prob. F(1,25)	0.3463
Obs*R-squared	1.27954	Prob. Chi-Square(1)	0.2580

Source: National Bank of Ethiopia using EVIEWS 10

The above result shows that the probability of Chi-Square (2) 25.8% is greater than 5%, thus the null hypothesis of no serial correlation is accepted. Therefore, the model of this study is free of autocorrelation problem.

4.2.9 Heteroscedasticity test

To detect whether the distribution of error term is homoscedastic or not Breusch-Pagan-Godfrey test has been employed. To begin with, let us state the hypothesis of the test.

H_0: Homoscedastic distribution

H_1: No homoscedasticity distribution

Within this hypothesis statistical decision is made as, when probability of R-Square is greater than 5% the null hypothesis of homoscedastic distribution is accepted and vice versa. The following table depicts the tabular statistics of the data under the study.

Table 4.9 Heteroscedasticity by Breusch-Pagan test

Heteroscedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.626230	Prob. F(12,23)	0.1528
Obs*R-squared	16.52441	Prob. Chi-Square(12)	0.1684
Scaled explained SS	8.675241	Prob. Chi-Square(12)	0.7304

Source: National Bank of Ethiopia using EVIEWS 10

The resulted given above shows that the probability of R-Square is greater than 5% and thus the null hypothesis of homoscedasticity is accepted. Because the probability of R- square is 73.04% which is greater than 5%.

4.2.10 Normality test

For testing normality of the, Jarque-Bera test has been employed. To check whether the model is normally distributed or not stating the possible hypothesis is helpful.

H_0: Errors are normally distributed

H_1: Errors are not normally distributed

Once, this hypothesis is inferred it is easy to decide whether the model is normally distributed or not by comparing the probability of Jarque-Bera with the standard significance level i.e. 5%.

Table 4.10 Jarque-Bera normality test

Variable	**Observation**	**At lag 1**	**Jarque- Bera**	**Prob Chi-Sq.**
Residual	37		0.123557	0.940091
H_0: residuals are normally distributed				

Source: National Bank of Ethiopia using EVIEWS10

The above table depicts that distribution of the residual is normal, as the probability of Jarque-Bera is greater than 5%. Thus, the null hypothesis of normal distribution is accepted because the probability of Jarque-Bera 94.009% which is greater than 5%.

4.2.11 Stability test

The visual examination of the graphs of the recursive parameter estimates can be useful in determining the stability of the model. To do that, the cumulative sum (CUSUM) test, which is based on the residuals from the recursive estimates? Hypothesis of the test can be stated as:

H_0: The CUSUM distribution is a symmetric distribution centered at zero.

H_1: The CUSUM distribution is not symmetrically distributed.

The null hypothesis could be accepted when the graph of the CUSUM statistics lays between the bounds the critical region for at the 5%. The resulted had been shown on **appendix 6d**.

4.2.12 Granger causality test

The general objective of the study was to analyze the effect of illegal financial flow on economic growth of Ethiopia. Recall that although co-integration between two variables does not specify the direction of a causal relationship between variables, economic theory guarantees that there is always Granger causality in at least one direction.

Hypothesis testing: H_0 – There is no granger causality from IFF to RGDP

H_1- There is granger causality from IFF to RGDP

Statistically significant probability value indicates the rejection of null hypothesis at 5 percent.

Table 4.11 Granger causality test

Dependent variable: RGDP			
Null hypothesis	Observation	F statistics	Probability
LIFF does not Granger Cause LNRGDP	38	7.01816	0.0120**
PGR does not Granger Cause LNRGDP	38	0.11343	0.7383
LCON does not Granger Cause LNRGDP	38	6.39955	0.0161**
LGCF does not Granger Cause LNRGDP	38	3.31665	0.0771
LTOT does not Granger Cause LNRGDP	38	8.02928	0.0076**

Source: National Bank of Ethiopia using EVIEWS 10

Based on the above result, illegal financial flow, population growth and term of trade granger cause real GDP. To meet the objective of the study illegal financial flow granger causes economic growth of Ethiopia.

4.2.13 Variance Decomposition

In the variance decomposition analysis, we obtain information on the percentage of variation in the forecast error of a variable as explained by its own innovation and proportional variation explained by other variables in the system. Based on the result, the variance decomposition of real GDP as variables endorsed to its own innovations and to shocks in the other variables for a forecast horizon of 1 through 10 is presented in appendix7. This result showed, in Ethiopia the significant source of variation in real GDP forecast error is its own innovations and its average of progress is 63.012% in the forecast horizon.

The term of trade innovation explains about an average of 23.83% of the variation in economic growth of Ethiopia. The illegal financial flow explains an average of 12.527% of variation in the growth of GDP. Household consumption and gross capital formation explain 0.311% and 0.304% variation in real GDP respectively. Finally, the innovation in population growth shows about 0.0076% of variation in real GDP of the country. In general, the result of the model suggested that the effect of term of trade and illegal financial flow on real GDP of Ethiopia appears to be highly significant respectively.

4.10 Impulse Response Function for Ethiopian Growth

Figure shown on **appendix 8** plots the impulse response of the real GDP to one standard deviation shock in the illegal financial flow in Ethiopia. As figure depicts the response of real GDP to the illegal trade invoice is negative. The result thus, proves that there is inverse relationship between illegal trade invoice and growth of economy as theory says. However, the response of real GDP to gross capital formation and consumption indeterminate. On the other hand, there is a positive response of real GDP to the term of trade in Ethiopia. Finally, the plots of figure shows there is no response of growth in GDP whether there is rapid population growth.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The direct economic effect of illegal financial flows from developing countries cannot be precisely quantified. It may however be considered empirically proven that not only they are negative, but also great consequence, With this in mind, The main purpose of this study is to analysis the effect of illegal financial flow on economic growth in Ethiopia using a time span data analysis over period of 1980/81-2017/18 and the study used secondary data collected from National Bank of Ethiopia and DOTS. Illegal financial flow was calculated using two models. Trade miss invoicing and Hot money narrow estimation model and different econometric specification is adopted, prior to the estimation of specified model; test for stationarity was carried out using ADF tests.

The results from the unit root testing exercise revealed that all the variables used in the estimation are all integrated of order one series, so that estimation is not spurious. In the co-integration analysis it is found that there is two co integrating vector implying that there is long-run relationship among the variables. The results from the long run estimation indicate that the illegal financial flow, Gross capital formation, population growth rate and change in terms of trade have negative and significant effect on economic growth. But consumption expenditure becomes positive and significant in affecting economic growth in the long run, while gross capital formation is become insignificant in explaining growth of Ethiopian economy. In addition the VECM result showed all variables have short run impact on real economic growth and except gross capital formation, all variables like consumption, population growth rate, illegal trade invoice and term of trade negatively affect the growth of Ethiopian GDP in the short run and the ECM value of -0.145152 shows a feedbacks of about 14.5% from the previous period disequilibrium would be corrected in one period or each year. This tells us GDP would only adjust at a speed of 14.5% per year or each period which arises from previous year disequilibrium.

Another empirical study shows that using trade miss invoicing depict that the average annual illegal financial flow Ethiopia losing is around 7.1 million US dollar and in total 271 million US dollar from

1980-2018. The other estimation result using hot money narrow which only captures a minimum amount of IFF shows the magnitude of IFF on average around 4,510 thousand USD and in total 171 thousand during years from 1980-2018.Thus, in general from our

calculation using both trade miss-invoicing and HMN models the total amount of IFF estimated for Ethiopia countries on average is 7, 14 million and in aggregate 271.4 million US dollar annually and the trend is moving up from time to time specially from a year 2011 to 2015 it‟s increasing in alarming rate without interruption. Therefore, from the above discussion we can conclude that IFF exists with a very high magnitude and has increasing trend in Ethiopia

A major finding of this study is the effect of illegal financial flow on economic growth. so as theory of economics ,real GDP is negatively related to illegal financial flow and as empirical study in this paper confirmed that illegal financial flow is negative and significantly affect the economic growth and there is causality between illegal financial flow and economic growth.

To put the main variable in to light, the study has found that, with significant level of assertion, a shock which was raised by IFF from 1980 to 2018 at each year Ethiopia's GDP can only correct or recover

17.3% at each year. This means, Ethiopia's GDP can only recover by 17% for each year from illegal financial flow between 1980 and 2018.

5.2 Recommendation

Based on the findings of this study, the following recommendation for policy suggestion could be drawn to restrain the effect of illegal financial flow on economic growth in Ethiopia.

The first policy is that, Ethiopia has witnessed rapid economic growth, with real gross domestic product (GDP) however, illegal financial flow has a significant negative effect on economic growth as indicated on the econometric analysis and besides, trends are increasing in alarming rate. Because of this it curves down a country's effort to reduce poverty and to enhance equitable wealth distribution. Hence, government should give focus to tackle this problem by establishing institutions which study the channels of IFF and government also should be established a centre of excellence in this area of study. Other important approach to fight IFF is to design controlling and auditing mechanizes which promotes traceability and openness of Trance boundary trade activities. By doing so we can avoid illegal activities which are intended to generate money. As a consequence, in addition to using capital to energize development activities, it would also help a country to secure peace and stability to sustain economic growth.

The second policy recommendation is that, the findings of this study confirm that the increasing of illegal financial in the country and capital formation has a significant positive affect for economic growth. This important to derive the policy which could reduce the

volume of illegal financial flows as increasing of growth capital formation (domestic investment) in the short run. As of the Discriminatory perspective theory, the domestic investor could choose to investment in abroad since they perceive the government gives more privilege for foreign investors. This fact could work for Ethiopian case. Therefore, to increase real economic growth by increasing country capital formation, the government is better to give incentives for domestic investment, providing credit for domestic investment, creating awareness and building the capacity of the domestic investment will re-divert perceive and their choice of domestic investors to invest in the domestic market which could also increase real GDP of the country.

The third recommendation which this research can offer is to use a collaborative approach. As we have learnt through different literatures, establishing global dynamic collaboration with capital flight destination countries is a necessary condition to tackle IFF. Domestically it's also important to have a holistic approach. An approach to be holistic, it must understand the motives for IFF which can be classified as pushing and pulling factors. Pushing factors may include illegal activities such as corruption and tax evasion, inflation and macro-economic instability etc. apart from that puling factor are factors which motivate actors to engage on act of IFF like seeking advantage for exchange rate or to avoid inflation. Therefore addressing this problem with a holistic and dynamic collaboration is necessary to tackle IFF.
Generally, as international the following policies are recommended:

- The government should strengthen the tax system, surveillance and collection of tax to prevent tax evasion and illegal financial flow.
- Reform the government policy intervention for curbing IFFs to make them effective.
- Engage with international partners especially the Offshore Financial Centers, which facilitate IFFs to take internationally, agreed counter-measures in their own spheres of influence including automatic exchange of information in tax matters.
- Stabilize macroeconomic policy as whole.
- Established improved legal and institutional frame work.

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Appendixes

Appendix 1: Unit root test

Null Hypothesis: LNRGDP has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.770697	0.9996
Test critical values:	1% level	-3.632900	
	5% level	-2.948404	
	10% level	-2.612874	

Null Hypothesis: D(LNRGDP) has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.328485	0.0000
Test critical values:	1% level	-3.632900	
	5% level	-2.948404	
	10% level	-2.612874	

Null Hypothesis: LIFF has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.512333	0.9850
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

Null Hypothesis: D(LIFF) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.698879	0.0000
Test critical values:	1% level	-3.621023	
	5% level	-2.943427	
	10% level	-2.610263	

Null Hypothesis: LGCF has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*

Augmented Dickey-Fuller test statistic		0.733860	0.9914
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

Growth capital formation @ I (1)

Null Hypothesis: D(LGCF) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.185729	0.0000
Test critical values:	1% level	-3.621023	
	5% level	-2.943427	
	10% level	-2.610263	

Null Hypothesis: PGR has a unit root
Exogenous: Constant
Lag Length: 6 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.624099	0.4590
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

Null Hypothesis: D(PGR) has a unit root
Exogenous: Constant
Lag Length: 9 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.350251	0.0020
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

Null Hypothesis: LTOT has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.835868	0.9934
Test critical values:	1% level	-3.621023	
	5% level	-2.943427	
	10% level	-2.610263	

Null Hypothesis: D(LTOT) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.050962	0.0000
Test critical values:	1% level	-3.621023	
	5% level	-2.943427	
	10% level	-2.610263	

Null Hypothesis: LCON has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.621022	0.9885
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

Null Hypothesis: D(LCON) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.062984	0.0000
Test critical values:	1% level	-3.621023	
	5% level	-2.943427	
	10% level	-2.610263	

Appendix 2: Lag selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-87.51524	NA	3.90e-07	5.108932	5.413700	5.216377
1	129.1676	339.6650*	4.74e-11*	-3.95500*	-1.51685*	-3.09544*
2	177.0161	56.90095	6.80e-11	-3.892763	0.678761	-2.281087

Appendix 3a: Johansen Co integration by trace value test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.911683	182.1577	107.3466	0.0000
At most 1 *	0.670923	92.36533	79.34145	0.0038
At most 2	0.467131	51.24122	55.24578	0.1077
At most 3	0.355606	27.95045	35.01090	0.2323
At most 4	0.192198	11.69099	18.39771	0.3325
At most 5	0.097453	3.793762	3.841466	0.0514

Appendix 3b: Johansen Co integration by maximum Eigen value test

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.911683	89.79234	43.41977	0.0000
At most 1 *	0.670923	41.12411	37.16359	0.0167
At most 2	0.467131	23.29077	30.81507	0.3118
At most 3	0.355606	16.25946	24.25202	0.3926
At most 4	0.192198	7.897225	17.14769	0.6142
At most 5	0.097453	3.793762	3.841466	0.0514

Appendix 4a: short run Dynamics for model 1

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.145152	0.056823	-2.554456	0.0166
C(2)	-5.943502	2.539819	-2.340128	0.0269
C(3)	1.445673	2.465187	0.586435	0.5625
C(4)	0.173238	3.127565	0.055391	0.9562
C(5)	-0.218759	0.133075	-1.643886	0.1118
C(6)	-5.580316	11.22857	-0.496975	0.6232
C(7)	3.813892	3.455056	1.103858	0.2794
C(8)	-6.952267	4.413644	-1.575176	0.1269
C(9)	0.584445	0.502323	1.163486	0.2548
C(10)	-0.022117	0.026950	-0.820646	0.4190

Appendix 4b: short run Dynamics for model 2

	Coefficient	Std. Error	t-Statistic	Prob.
C(11)	-0.015110	0.002415	-6.258063	0.0000
C(12)	-0.692280	0.107923	-6.414546	0.0000
C(13)	-0.075976	0.104752	-0.725296	0.4745
C(14)	-0.036412	0.132898	-0.273981	0.7862
C(15)	-0.011077	0.005655	-1.958875	0.0605
C(16)	-0.800598	0.477131	-1.677941	0.1049
C(17)	0.280826	0.146814	1.912800	0.0664
C(18)	-0.437808	0.187547	-2.334389	0.0273
C(19)	0.044158	0.021345	2.068772	0.0483
C(20)	0.003021	0.001145	2.638007	0.0137

Appendix 5: Long run Equation of the system

Cointegrating Eq:	CointEq1	CointEq2
LNRGDP(-1)	1.000000	0.000000
LIFF(-1)	0.000000	1.000000
PGR(-1)	-82.68680	1.495927

	(13.2847)	(0.26302)
	[-6.22420]	[5.68752]
LCON(-1)	772.6404	-18.63216
	(88.5174)	(1.75252)
	[8.72868]	[-10.6316]
LGCF(-1)	-30.69264	1.293731
	(32.4929)	(0.64331)
	[-0.94460]	[2.01104]
LTOT(-1)	-234.4184	4.154185
	(36.2556)	(0.71781)
	[-6.46571]	[5.78729]
@TREND(80)	0.914966	0.000418
C	-2753.220	66.45459

Appendix 6 Diagnostic test

Appendix 6a autocorrelation test

Breusch-Godfrey Serial Correlation LM Test:

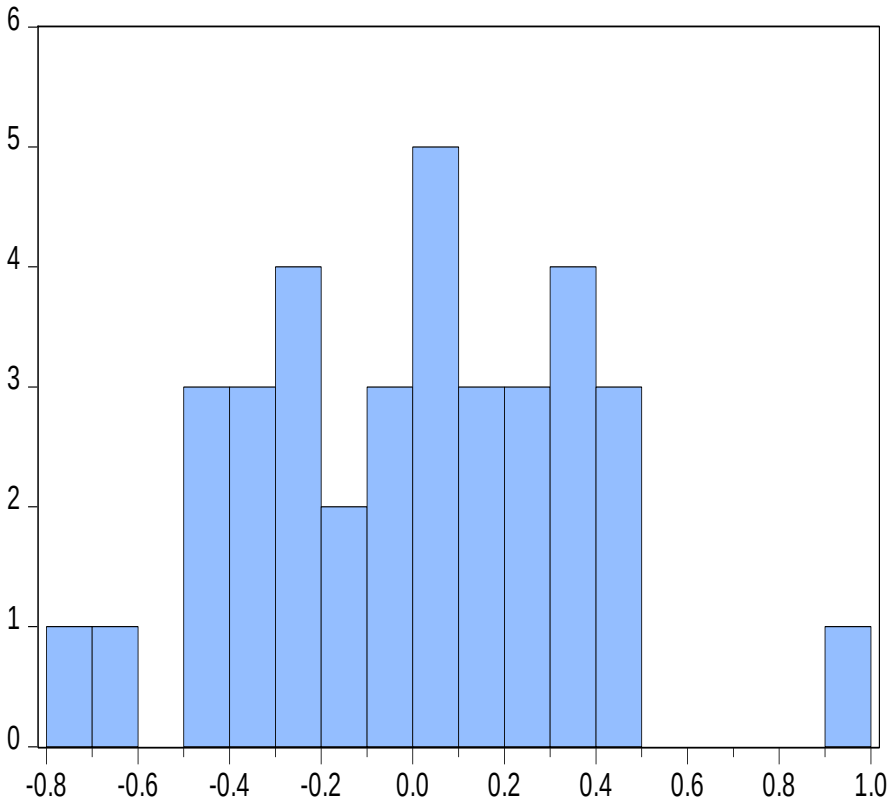
F-statistic	0.921315	Prob. F(1,25)	0.3463
Obs*R-squared	1.279540	Prob. Chi-Square(1)	0.2580

Appendix 6b heteroscedasticity test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

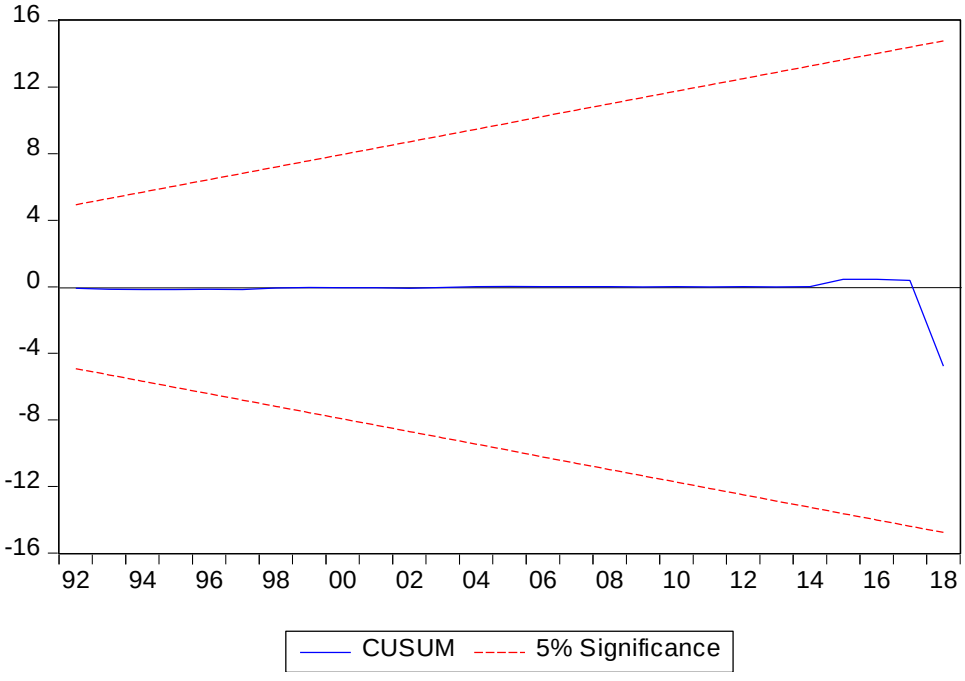
F-statistic	1.626230	Prob. F(12,23)	0.1528
Obs*R-squared	16.52441	Prob. Chi-Square(12)	0.1684
Scaled explained SS	8.675241	Prob. Chi-Square(12)	0.7304

Appendix 6c: Normality test



Series: Residuals	
Sample 1983 2018	
Observations 36	
Mean	-1.35e-15
Median	0.004832
Maximum	0.960350
Minimum	-0.769882
Std. Dev.	0.367163
Skewness	0.134668
Kurtosis	2.900858
Jarque-Bera	0.123557
Probability	0.940091

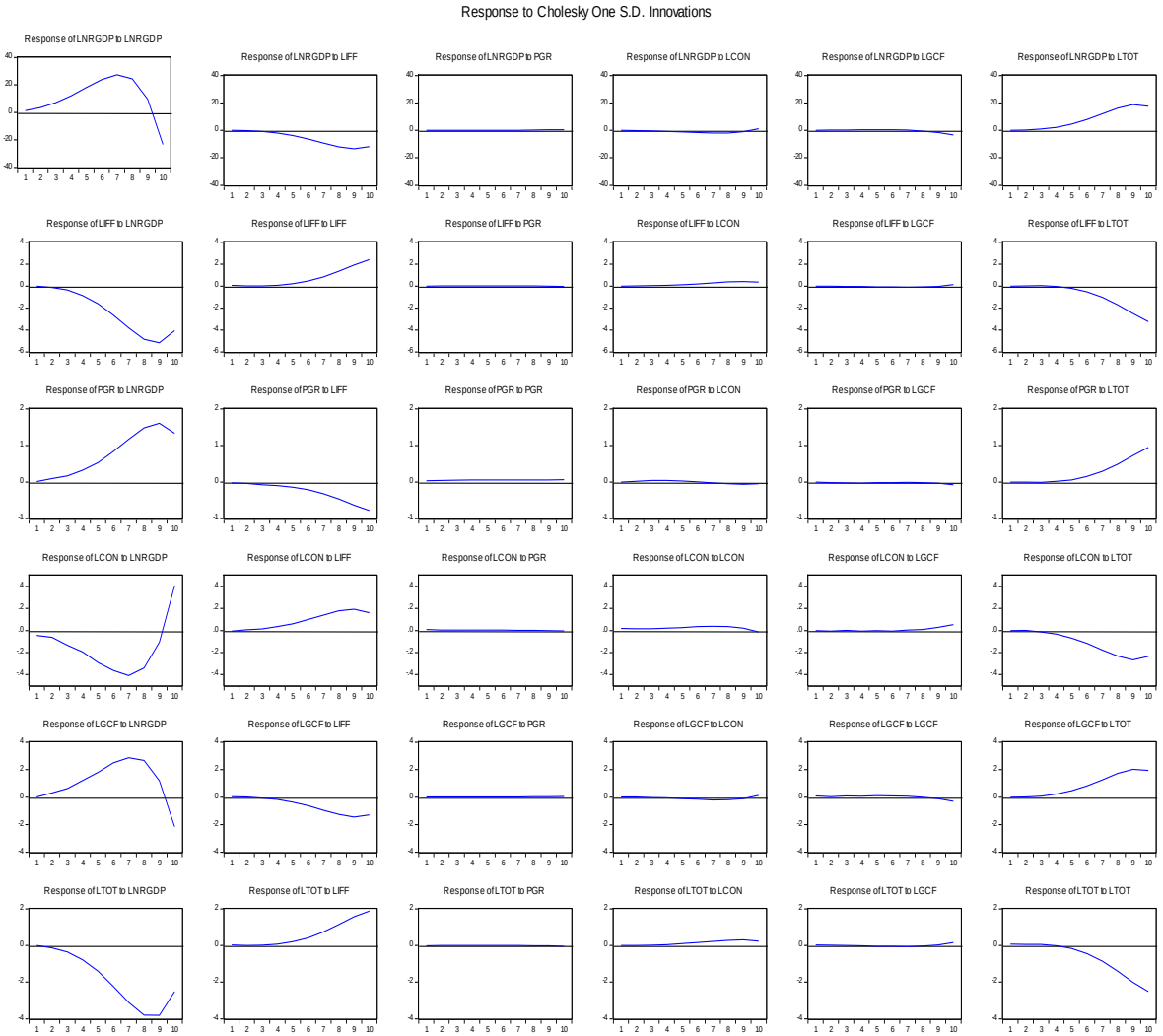
Appendix 6d: Stability test



Appendix 7: Variances decomposition

Variance Decomposition of LNRGDP: Period	S.E.	LNRGDP	LIFF	PGR	LCON	LGCF	LTOT
1	1.287587	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
2	3.629112	98.98539	0.572837	0.000875	0.136679	0.096734	0.207482
3	8.000958	97.20588	1.199635	0.000183	0.236586	0.080635	1.277081
4	14.68019	94.67901	2.160226	5.45E-05	0.324815	0.081840	2.754058
5	24.00096	91.62387	3.234645	2.08E-05	0.368296	0.059915	4.713255
6	35.32000	87.75345	4.618079	7.88E-05	0.395453	0.040348	7.192595
7	47.14619	82.63136	6.397272	0.000338	0.402186	0.023226	10.54562
8	56.75532	75.28229	8.917325	0.001192	0.391764	0.023781	15.38365
9	62.09528	65.29827	12.19463	0.003498	0.353588	0.090229	22.05979
10	69.68698	63.01253	12.52773	0.007651	0.311010	0.304575	23.83651

Appendix 8: Impulse response function



Appendix 9: granger causality test

Null Hypothesis:	Obs	F-Statistic	Prob.
LIFF does not Granger Cause LNRGDP	38	7.01816	0.0120
LNRGDP does not Granger Cause LIFF		0.12273	0.7282
PGR does not Granger Cause LNRGDP	38	0.11343	0.7383
LNRGDP does not Granger Cause PGR		30.8997	3.E-06
LCON does not Granger Cause LNRGDP	38	6.39955	0.0161
LNRGDP does not Granger Cause LCON		8.21446	0.0070
LGCF does not Granger Cause LNRGDP	38	3.31665	0.0771
LNRGDP does not Granger Cause LGCF		3.69483	0.0628
LTOT does not Granger Cause LNRGDP	38	8.02928	0.0076
LNRGDP does not Granger Cause LTOT		0.80647	0.3753
PGR does not Granger Cause LIFF	38	0.73824	0.3961
LIFF does not Granger Cause PGR		31.2356	3.E-06
LCON does not Granger Cause LIFF	38	7.12701	0.0114
LIFF does not Granger Cause LCON		0.08655	0.7704
LGCF does not Granger Cause LIFF	38	1.48848	0.2306
LIFF does not Granger Cause LGCF		14.0567	0.0006
LTOT does not Granger Cause LIFF	38	7.12588	0.0114
LIFF does not Granger Cause LTOT		0.05018	0.8241
LCON does not Granger Cause PGR	38	38.0381	5.E-07
PGR does not Granger Cause LCON		0.00749	0.9315
LGCF does not Granger Cause PGR	38	37.6444	5.E-07
PGR does not Granger Cause LGCF		0.05166	0.8215
LTOT does not Granger Cause PGR	38	41.2705	2.E-07
PGR does not Granger Cause LTOT		3.47572	0.0707
LGCF does not Granger Cause LCON	38	2.12523	0.1538
LCON does not Granger Cause LGCF		11.4696	0.0018
LTOT does not Granger Cause LCON	38	0.01977	0.8890
LCON does not Granger Cause LTOT		1.34967	0.2532
LTOT does not Granger Cause LGCF	38	9.86223	0.0034
LGCF does not Granger Cause LTOT		3.95581	0.0546