Assessment on Public External Debt in Ethiopia

By

MENGSTE, Tegene Hailu

THESIS

Submitted to

KDI School of Public Policy and Management

In Partial Fulfillment of the Requirements

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Committee in charge:

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ACRONYM

AMCP: African Monetary Co-operation Program

ARDL : Auto Distributed Lag Model

GDP: Growth Domestic Product

GEG: Global Economic Governance

HIPC: Heavily Indebted Poor Countries

IMF: International Monitoring Fund

MoF: Ministry of Finance

PDC: Planning and Development Commission

SSA: sub–Saharan African Countries

STATA: statistical software package

VECML: Vector Error Correction Model

WB: World Bank

WDI: World Bank Development Indicators

WTO: World Trade Organization

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DECLARATION

I declare that this Thesis is my own original work and every referred scholar works has been properly acknowledged in the paper. I assured that this thesis has not been submitted to any academic institution for the purpose of graduation.

ACKNOWLEDGMENT

It is my owner to thank the Almighty of GOD, who pooled me in this stage, from the bottom of my background which is not imaginable to have such grace without the help of him. Indeed , you will bless me more in the rest of my life.

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ABSTRACT

At early stage of economic development process, external borrowing is a means of fulfilling the resource gaps for the developing world. Nowadays, Ethiopia's external debt to GDP is rising and continuously forcing the country to become among world's Heavily Indebted Poor Countries. This is serious problem coupled with covid-19 , Internal conflict and political uncertainties. The aim of the study is to assess the determinants of External debt of Ethiopia both in the long-run and short-run. The study applied ARDL co-integration model and secondary data covers from 1990 to 2019. In this study STATA statistical software package version-16 deployed and the necessary diagnosis tests have been conducted.

The regression estimation result confirms that 88 per cent of the variation is explained within the model while 22 per cent is explained out of the model. The budget and trade deficit impart positive and statistically significant effect on external debt of Ethiopia. While debt service, inflation and openness have statistically significant and negative effects. However, economic growth has negatively and statistically insignificant effects. The result induces opening the economy to the rest of the world significant effect on reducing foreign debt burden. The policy implications are minimizing fiscal deficit by strengthening the tax system of the country; existing debt restructuring from business loan to concessional loan, which has lower interest rate, and properly managing inflation that contribute to the cost overrun of the country. All these efforts may reduce external debt in line with the capacity of the country in the future.

Keywords: ARDL, Public External Debt, Co-integration, VECM, Error Correction.

Chapter One : Introduction

1.1. Background of the Study

African debt crisis rising coupled with political and macro-economic uncertainties. The continent's history of debt crisis began in the 1970s resulted from a lack of domestic savings and a boom in domestic prices to finance public expenditure. The external debt increased from 39 billion dollars by 1976 to $112 billion by 1980. This increment was accounted for 187 per cent (Global Economic Governance,2018). The goal of taking on debt was to encourage economic recovery by implementing expansionary fiscal policies for countries, particularly those affected by commodity price fluctuations. However, lax fiscal management led to slow down economic growth. Additionally, production industries and agriculture collapsed while the borrowed funding was used for non-productive and non-export lead projects, which have not been able to generate revenue to cover repayments for debt service.

Africa's external debt to export and debt to gross national income ratio increased by 218 and 110 percent during 1980 and 1987 respectively. Many African countries fail to pay their debt service obligations due to rising fiscal deficits, rising international interest rate, and a drop in net capital inflows (Africa Monetary Co-operation Program, 2019). A debt to GDP ratio of 19 surpassed the AMCP benchmark which is 60 and 24 surpassed IMF benchmark, which is 55 per cent (AMCP, 2019). According to the World Bank's pulse study, around 18 nations were determined to be at higher debt risk by 2018 (World Bank,2019).

Ethiopia which is situated at the Horn of Africa and it has a total area of 1.1 million km^2 hectares of land. Its total population is estimated to be 110 million and the majority are youth, accounts more than half of the total population. Ethiopia has more than 80 ethnic groups and Amharic is serving as the Federal Official Language (Central Statistics Agency, 2019). Ethiopia has been experienced a strong, broad-based average economic growth of 9.9 per cent from 2007 to 2018, even higher as compared to the SSA average of 5.4 per cent. As a result, poverty decreased from 45 per cent by 1990 to 19 per cent by 2019. The per-capita income of the citizen has

reach 994 USA dollars by 2020 (PDC, 2020). The countries commitment to huge infrastructure development projects played the paramount role in the overall socio-economic development, though, they are not as expected. Moreover, development projects become a means for a higher accumulation of external debt (MoF,2020). As world Bank International statistics (2020) Ethiopia's external public debt raised from $21 billion by 2015 to $28 billion by 2018, accounting for 33.12 per cent of GDP. This forces the country to join the HIPC category and ranked the 7th position in Africa (World Bank, 2020).

Therefore, this study examines the public external debt of Ethiopia and provide policy options to reduce the external debt burden is a critical task.

1.2. Statement of the Problem

As a developing country, Ethiopia's economy has been faced a serious capital shortfall, though, the country's registered double-digit economic growth on annual averaged for the last two decades. As evidence from the World Bank revealed the Ethiopian public foreign debt was $28 billion in 2018. This forced the country to join the heavily indebted poor countries category as stated in the background. Moreover, debt service and interest payments presented a tremendous increment from 992.8; 258.45 by 2015 to 1,576.82;443.74 million dollars, respectively by 2019. During these periods the country's interest rate payment to debt service increase from 26 per cent to 28 per cent. Debt service to Growth Domestic Product induced from 0.7 per cent by 1981to 2.33 per cent by 2019(MoF, 2019). This implies that the country's GDP goes abroad due to debt service or reimbursement. Therefore, there is capital flight as the debt of the country increase since the country pays not only the principal but also the interest rate (MoF, 2019). This might have a crowded-out impact on the economy because the duty of debt service is fulfilled by reducing costs on pro-poor strategic sectors like education, health, road, social services, and wellbeing programs (Beyene & Kotosz, 2020).

The reduction of pro-poor sector investment highly impacted the overall socio-economic development of the nation as accumulation of external debt increased. In addition to this, discourages the private sector's

investment participation, because the private sector may not get the required foreign currency to invest domestically while the government is paying its debt services to the lenders. Especially in the meantime, the government of Ethiopia faced problems paying the debt services due to the situation of covid-19 and internal instability the economic activities are slow down. The source of debt services like tourism, export and hotel industries are highly affected. This forced the country to request debt relief from the lender's side (MoF,2021).

The budget deficit is the primary problem of the country due to a poor tax collection system. Ethiopian tax collection is very low as compared to the potential of the economy. The tax to GDP ratio was 10 per cent, which is the lowest compared to SSA countries, accounts 15 per cent of GDP by 2019. Therefore, the country is not collecting the required revenue from the economy (PDC,2018).

In addition, Ethiopia produces primary agriculture products, and their export value is very low and imports industrial products that have the nature of the finished and semi-finished product. These products price is too high and creates a negative trade balance, which accounts for 12 billion dollars by 2019 (WB,2020). On the contrary, the country's expenditure on huge infrastructures project needs a large amount of foreign currency. These result from the resource gap and forced the country to look at other sources.

1.2.1. Research questions

The study tries to address the following major research questions:

- What will be the fate of Ethiopia's economy with continuing external debt accumulation in the future?
- What are the major Macroeconomic factors affecting the Public External Debt of Ethiopia?
- Does opening the Ethiopian economy affects foreign debt?
- What are the policy instruments to overcome the deep-rooted problem of the external debt burden of Ethiopia?

1.3. Objectives of the Study

1.3.1. General Objectives

The overall goal of the study is to look into the primary determinants of Ethiopia's public external debt, both in the short-run and long-run, and to present evidence-based policy recommendations to help the country reduce its debt load.

1.3.2. Specific Objectives

- To investigate the effect of openness on public external debt.
- To examine the effect of inflation on public external debt.
- To examine the effect of Economic Growth on public external debt.

1.4. Significance of the Study

Generally, the study of Public External Debt of Ethiopia is an un-taped area. Therefore, the objective of this research is to investigate public external debt of Ethiopia empirically, which suffers from the shortage of empirical studies. Specifically, the research has the following significances. This research is studied in a way that the External Debt to Growth Domestic Product of Ethiopian becomes high and forced the country to join heavily indebted Poor countries (HIPC) category or rated as grade “C”. The study has been conducted in the middle of the world crisis of Covid-19, which may have an impact on expansion of public external debt. This time is a great opportunity for the paper to see the major factors that contributed to high external debt. In the meantime, the government of Ethiopia has been dealing with World Trade Organization to become a member of WTO. The objective of the WTO is to make free the domestic market to the rest of the world. So, this paper is examining the effect of import and export transactions on public external debt burden reduction ahead of time.

Lastly, the results of this study will be used by policymakers, researchers, students who have the interest to investigate the public external debt of Ethiopia.

1.5. Hypothesis

The researcher put the null and alternative hypothesis by using the previous empirical studies, which are investigated by researchers listed in the reference Annex1.

Null Hypothesis	*Alternative Hypothesis*
H_0**:** Openness does *not affect public external debt Ethiopia*	H_1*:* Openness *significantly affects public external debt in Ethiopia.*
H_0*: Inflation does not affect public external debt Ethiopia*	H_2*: Inflation major factor that affects the public external debt of Ethiopia.*
H_0*:* Economic Growth *does not affect public external debt Ethiopia*	H_3*:* Economic Growth *negatively affects the public external debt in Ethiopia*

1.6. Limitation of the paper

This paper investigates the public external debt of Ethiopia and covers the period from 1990-2019. In addition, the country is now much more affected by external debt than the general debt due to the high capital flight resulting from debt services. Therefore, the paper is solely a study Public External Debt of Ethiopia.

Chapter Two: Literature Review

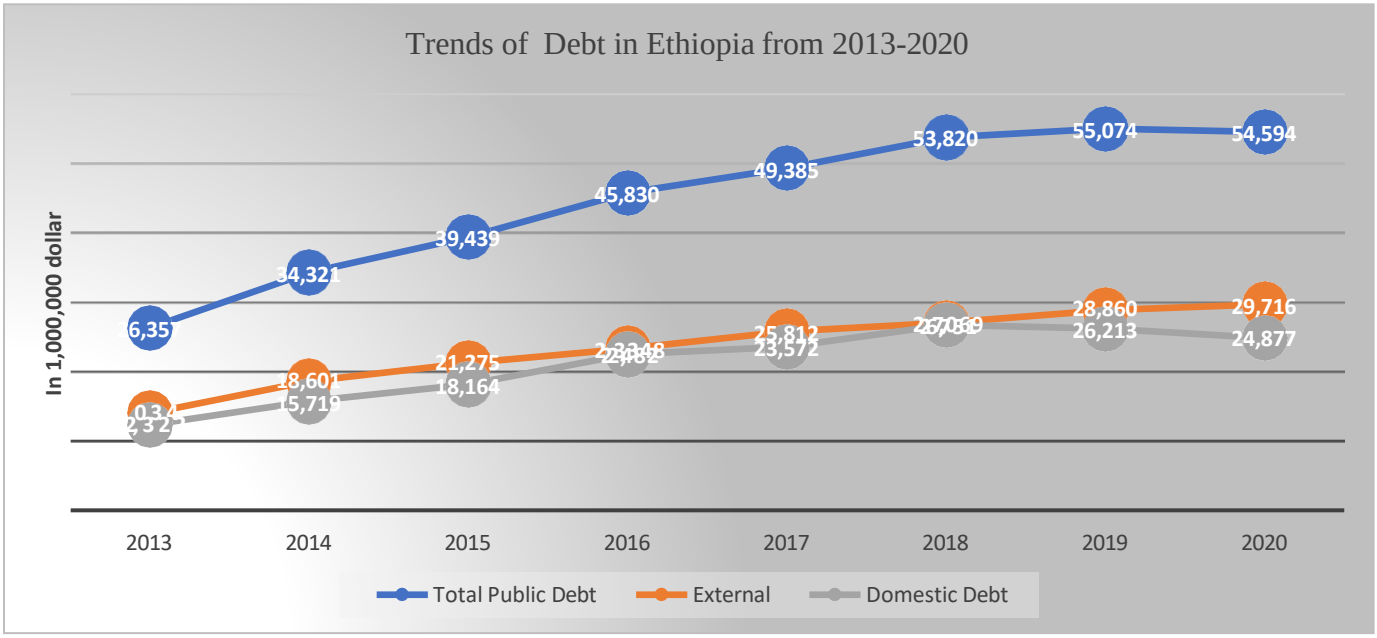
This review of literature has three main components. First, the paper provides an overview of the Ethiopian public external debt profile. Second, the theoretical aspects of debt and related issues are discussed. Lastly, snapshot the review of empirical studies of previous works.

2.1. Public Debt Profile of Ethiopia

As the Ministry of Finance annual debt bulletin report (2019) showed accumulation of Ethiopian Debt has been increased from 26 billion dollars by 2013 to 54.5 billion Dollars by 2020. The debt accounts for more than 60 per cent of Growth Domestic Product and joined Heavily Indebted Poor Countries categories

(IMF,2020). The external debt increased from 14 to 29 billion dollars and domestic debt increased from 12 to 24.8 billion dollars between 2013 to 2020. Table 2.1 revealed the total debt outstanding.

Figure 2.1: Ethiopia Government Debt Outstanding in Million USD

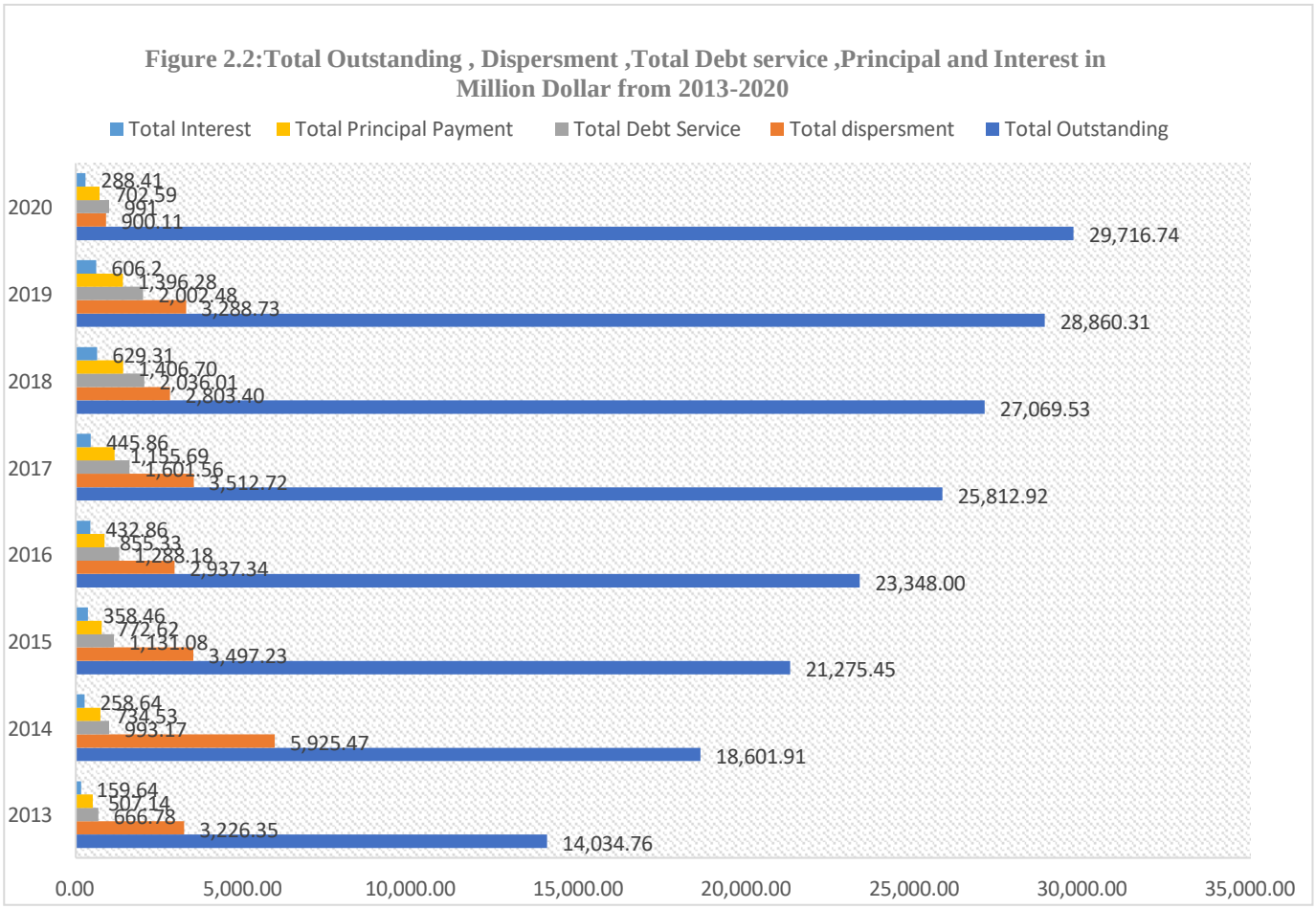


Source: Researcher own Computation,2021

2.1.1. External Debt Profile

The public external debt of Ethiopia accounts for 33 per cent of the Growth Domestic Product by 2020(PDC, 2020). Figure 1 revealed that the total external debt of the country has been increasing since 2014 and the ability of disbursement, debt services payment (including principal and interest rate) has been declining, especially due to the impact of covid-19 widen the gap between total outstanding and disbursement and debt service since 2019 onwards.

Figure 2.2: Public Sector External Debt outstanding, Disbursement, and Debt Service Payment in Million USD between 2013 and 2020.

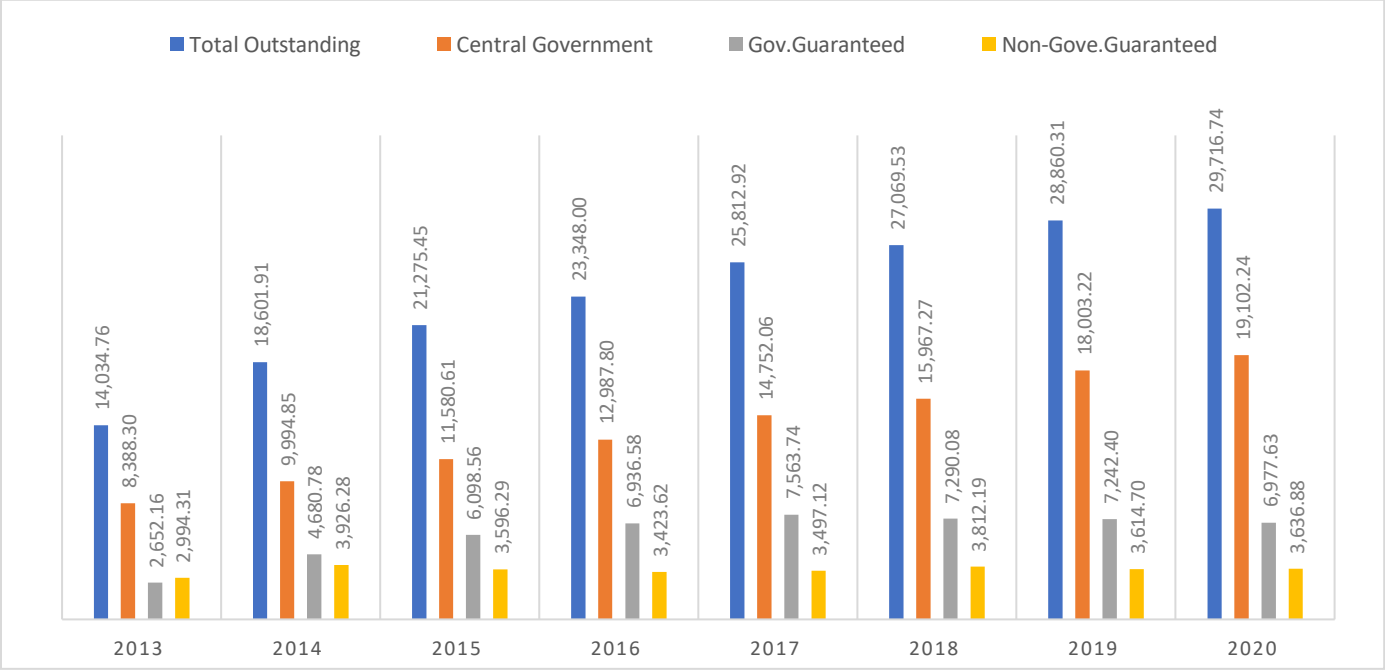


Source: MoF Public Sector Debt bulletins and Computed by the researcher,2021.

2.1.2. External Debt by owners

The Ethiopian External Debt has been taken by the central government and state-owned enterprises. As figure 2.2 revealed the total outstanding, central government and non-government guaranteed borrowing have been increasing, while the government guaranteed showed a slight decrease between 2013 to 2020.

Figure 2.3: Total outstanding debt in million dollars from 2013-2020

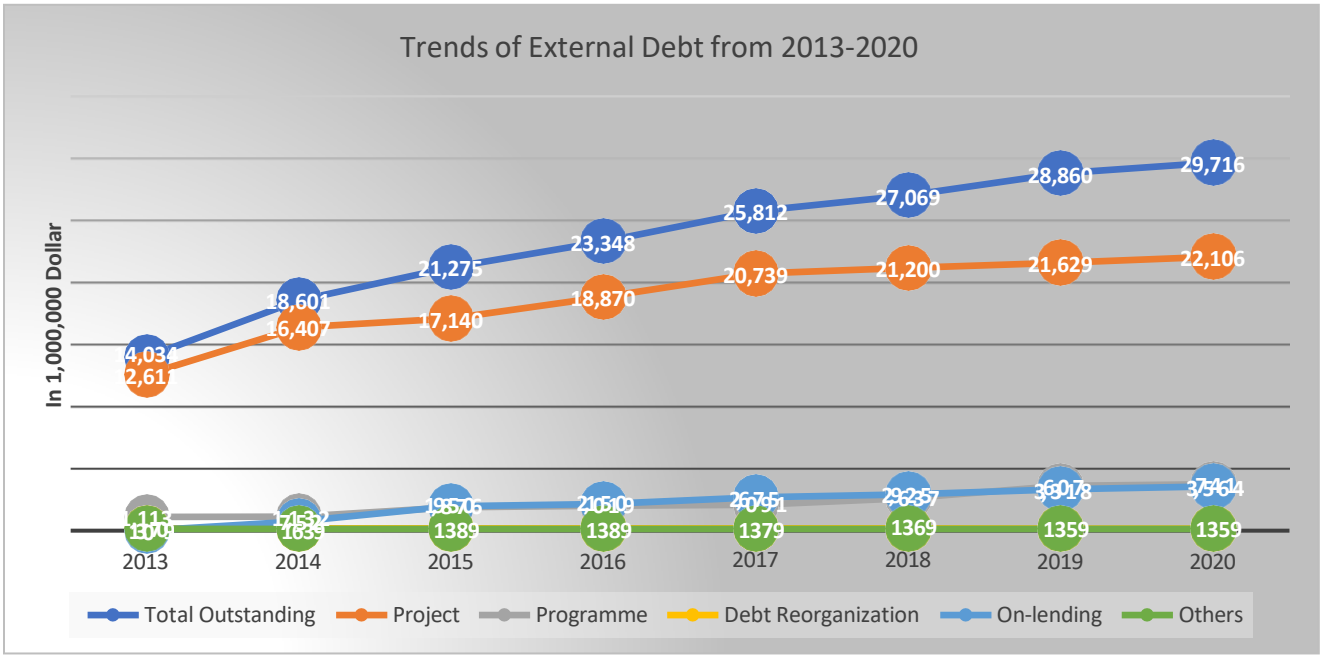


Source: MoF Public Sector Debt bulletins and Computed by the researcher,2021.

2.1.3. Public External Debt by Purpose

The government of Ethiopia uses the borrowed funds for sectors, that drive the socio-economic development of the country. Among all public sector the majority almost 85 per cent of the loan used for development projects across all years. The amount of investing in development infrastructure projects continued with a slight decrement by 2020 as presented in the table below.

Figure2.4: Public Sector eternal Debt outstanding by loan purpose from 2013-2020 in Milli/dollars

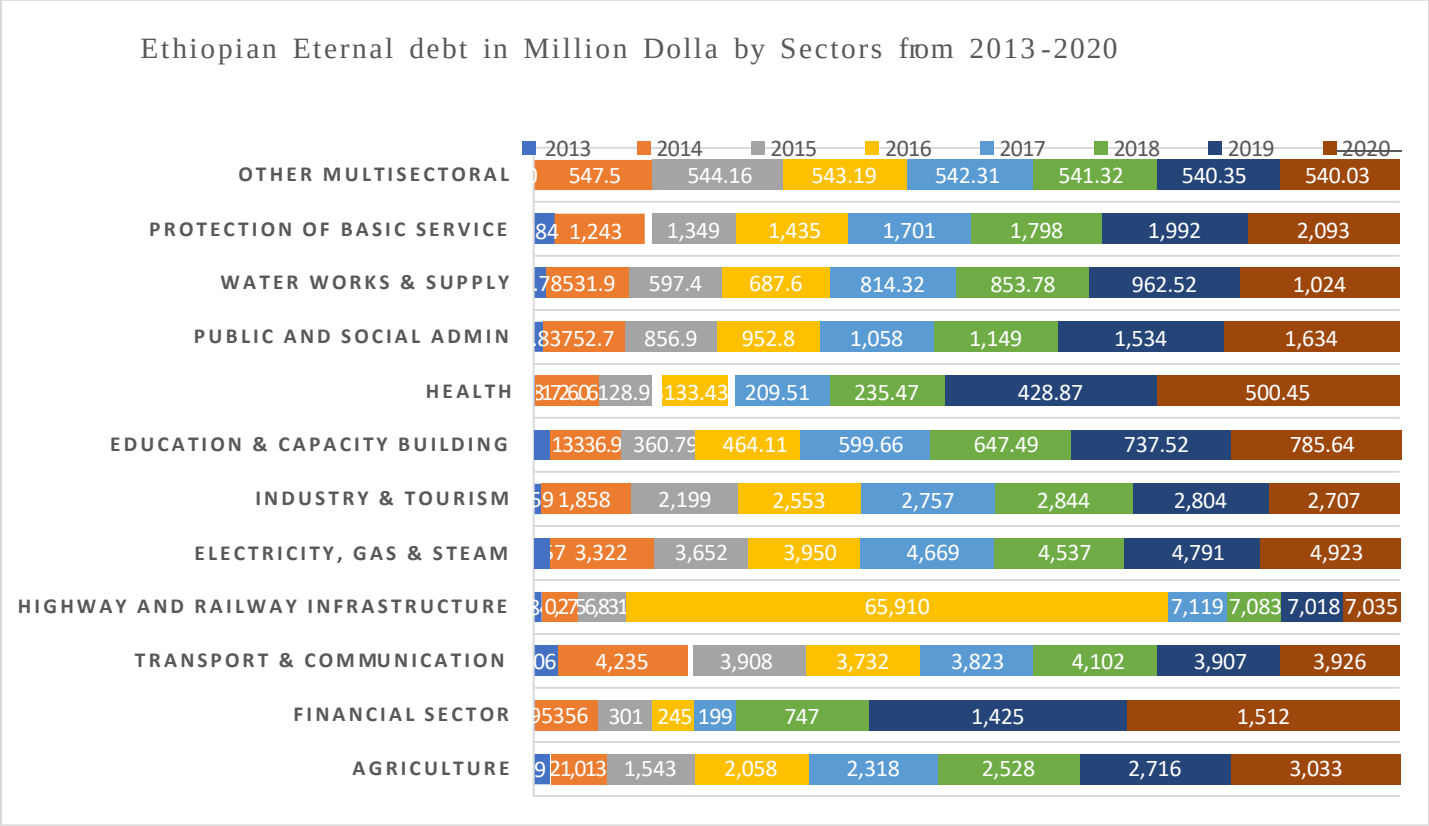


Source: MoF Public Sector Debt bulletins and Computed by the researcher,2021.

2.1.4. Public External Debt to Priority Sectors

The Ethiopian government budget allocation focused on pro-poor sectors like road, health, education, water, railway, and power generation (MoF,2015). The external debt loan expenditure follows the strategic direction of the country priority areas. Look at the distribution of loan expenditure share of sectors in the following Table.

Figure 2.5: Public Sector External Debt Outstanding by Economic Sectors in Million USD

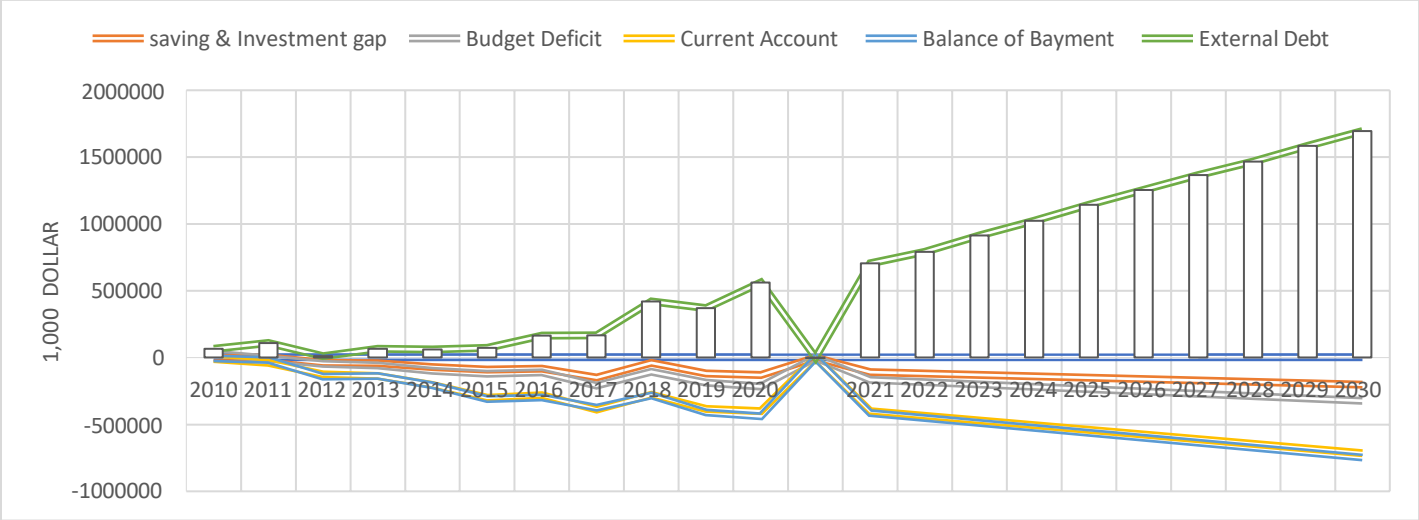


Source: MoF Public Sector Debt bulletins and Computed by the researcher,2021.

2.1.5. Forecasting Ethiopian External Debt and Main Sources of Finance

Indeed, as we have seen in the literature part of the Ethiopian external debt profile discussion the external debt of Ethiopia has been increased at an increasing rate. The gap between the main sources of finance also increasing as figure revealed. As the situation of Covid-19 and the internal civil war of the country continued the economy is expected to function poorly. This affects saving and investment, increase the budget deficit, negative trade balance and enable the government to look more at external sources. These phenomena have been seen in the forecasting of the variables. In contrast, the External debt accumulation expected to increase, it showed the country will continue borrowing beyond the ability to pay. Therefore,

Figure 2.6: Forecasting the relationship between External Debt and Major sources of finance



Source: Own Computation,2021.

the economy is continuing with macro-economic imbalances till the end of sustainable development goals (SDGs) unless the government take appropriate action sooner than later. In concussion, the country debt service may increase as the external debt increase This payment is at the cost of productive sectors because what is supposed to pay needs to be used for investment. Thus, the country economy slowdown. In addition, the private sectors may not get the required finance for their investment, this may crowd-out effect on the economy ahead of time.

2.2.Theoretical Review

2.2.1.Debt Definitions

The word "debt" comes from a Latin word "debere," which means "to owe". Debt is defined as resource of money used in an organization to which its owners do not contribute and which otherwise do not belong to its shareholders. The term "public debt" refers to the borrowings made by the country's public authorities whenever shortage of finance for expenditure. According to Musgrave (1960), the government borrows funds to render socio-economic services to the citizens, but if the debt goes beyond the limits or controls it would become a serious problem, that results in adverse effects on the entire national economy (Al-Fawwaz, 2016).

2.2.2. Public External Debt

External debt is a part of the debt of the country borrowed from foreign lenders including business banks, governments or international financial institutions (Charles, 2010). External indebtedness is the primary source of funding for development or other public objectives. Therefore, the government desires foreign currencies when the domestic savings are inadequate and lack hard currencies (Siddique et al., 2016). As Umaru et al. (2013) argue that in any economy borrowing is a source for funding, the formation of the capital where government borrowings are necessary to fulfil the financial gap between savings and investments as well as insufficient domestic revenue to cope up with capital costs. The concept of external debt is considered when a resident is currently responding to a non-resident who requires payments of a certain amount. External liabilities, which at all times require the payment of the principal debt or interest by the debtor at any point in the future, and are due by residents of the industry, to non-residents are those current liabilities, not contingent liabilities (Panizza, 2008). According to Panizza(2008), poverty mlow income ,low productivity and low saving in emerging nations like Africa are characterized by insufficient domestic capital development. This cir cumstance necessitates Western countries filling the gap by offering technical, administrative, and financial assistance. Foreign debt, on the other hand, is a substantial impediment to capital development in emerging countries. The debt accumulates in most circumstances as a result of the maintenance requirements as well as the principal. With this in mind, foreign debt in emerging nations becomes a long-term mechanism for exacerbating poverty, overwork, and development restrictions. Theories have argued, that the economy will be harmed if external debt increases fast and is unmanageable. External debt to a certain extent and under certain controls is an acceptable global phenomenon.

2.3. Empirical review

Public external debt is one of the main aspects of an economy investigated by scholars to determine its relationship with other independent variables. The primary focus of this section is seeing empirical association

among public foreign debt and some of the selected explanatory variables such as the budget deficit, trade deficit, inflation, debt service, economic growth and openness stated below.

2.3.1. Budget Deficit and Public External Debt

According to Matiti (2013) study of Kenya public debt impact assessments on selected determinants between 2003-2012. The study ensured that budget deficit is the primary source of government external debt, which affects significantly and positively the foreign debt of Ethiopia. As Al-Fawwaz (2016) study applied Johansen's co-integration test method to examine public debt in Jordan from 1980 to 2004. The result showed among the main determining factors of external debt was government budget deficits, which affect the public external debt of Jordan positively and significantly. Mahara and Dhakal (2020) study used the ARDL approach co-integration model to track a relationship between external debt and its determinants. The result assured that budget deficit induces external debt in Nepal. According to Belguith and Omrane (2015), the VECM model was used to investigate macro-economic factors impacting the government debt of Tanzania. The study revealed that the budget deficit had been statistically significant and had a positive effect on public external debt. Awan et al. (2015) studied the determinants of external debt in Pakistan between 1976 and 2010. Time series data was used to find the long-run equilibrium relationship, and the short-run dynamics had been analyzed using ECM by applying the ARDL model. They concluded that there was a positive and statistically significant relationship between the budget deficit and the external debt of Pakistan.

According to Adane et. al (2018) study conducted using ARDL between 1981-2016 investigated the positive relationship among budget deficit and external debt. Beyene & Kotosz (2020) investigated two and three gap models between 1981-2016. Their finding ensured that the budget deficit had a positive and significant effect on public external debt of Ethiopia.

2.3.2. Trade Deficit and Public External Debt

According to Abdul (2017) investigation on factors of external debt by applying panel data ranged from 2004 - 2013, the result ensured that trade deficit affects external debt significantly and positively. Beyene & Kotosz (2020) studied to address the gap of macroeconomic determinants of Ethiopia's external indebtedness from 1981 to 2016 by using the two and three model gaps as a theoretical context and a distributed self-governing approach to lag testing. The results indicate trade gap has a positive and significant effect on indebtedness. According to Asghar and Rehman (2011), trade deficit, and external debt have negative relationship. They also discovered that Pakistan's trade deficit and external debt had been rising over time.

2.3.3. Debt Services and External debt

Tiruneh (2004) conducted an empirical study on the determinants of external indebtedness focusing on a case study involving 60 developing countries and a panel data set using both Random and Fixed effects methods. The results revealed that debt service had a positive and significant effect on public external debt of sampled countries. The trust of lenders depends on the borrower ability and willingness of paying principal and interest rate. From 1986 to 2010, Asin et al. (2014) investigated Nigeria's foreign debt sustainability and identified the key factors of external indebtedness using the Error Correction Mechanism, and the Johansen Cointegration Test. As a result of this discovery, country's external debt is proportional to its ability and willingness to pay its obligation. Hajivassiliou's (1987) study used a random effect model and covered 79 developing countries from 1970 to 1982. According to the findings, there has been a positive and statistically significant relationship between debt servicing and external debt accumulation.

2.3.4. Inflation and External Debt of Ethiopia

Indeed, inflation rise the amount of payment of debt because when there is inflation the country needs more domestic currency to pay its debt denominated by foreign currency, then the country could not pay its debt as required, so loans that expected from the lender decline. Forslund et al. (2011) examined the dataset,

which comprised of 1558 observations of 104 least developing nations from 1990 to 2007. Inflation has a negative and statistically negligible effect, showing that monetary credibility is a barrier to the growth of the domestic loan market. Although government debt and inflation are intimately linked, the impact varies according to country. Governments historically can choose a modest inflation reduction in public domestic debt. Aizenman and Marion (2011) look at the situation of the United States and conclude that inflation lowered the debt from 108 to 40 per cent of GDP after World War II. However, inflation increase debt, specifically foreign debt and short-term maturities.

2.3.5.Economic Growth and External Debt

The relationship of economic growth and external debt has become debatable among scholars. Empirical research has emerged in recent decades examining the effect of economic growth on external debt and vice versa. According to Al-Fawwaz (2016), the influence of external debt on growing domestic products in Iraq from 1980 to 2014 was studied by Ahmed et al. The analysis was carried out using the ARDL model and OLS-based autoregressive lag. The result indicated that there had been a negative impact of economic growth on external debt both in the short-run and long-run, but the short-run impact remained higher. Akram (2011) also confirms that the relationship between public external debt and economic growth appears negative and statistically significant in the short-run and long- run. In his research, he concluded that "debt Overhang effects" exist. Eichengreen and Portes (1986) conducted an empirical study on the causes and consequences of debt and default in the 1930s. The years ranged from 1990 to 1938. This study included participants from 20 different countries. The study employs the Ordinary Least Squares method. The result demonstrated negative and statistically significant link between economic growth and government debt.

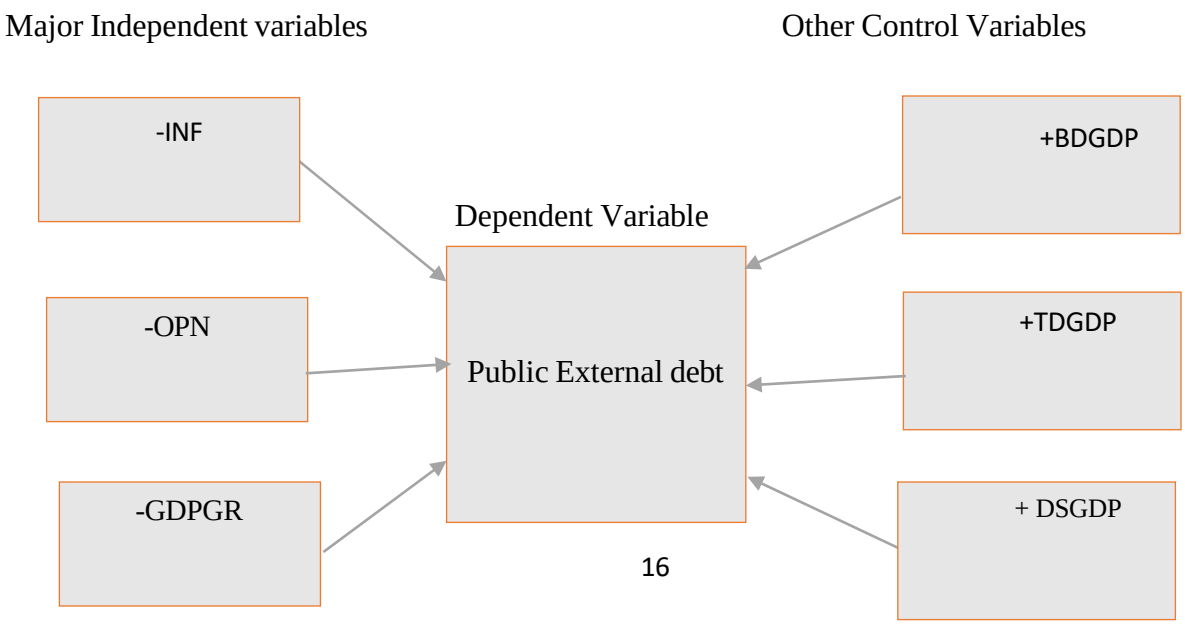
2.3.6. Openness and Public External Debt

An open economy would tend to benefit from the market due to the comparative advantage of the country. Imran cited Rajan and Ouyang's (2013) study, which examined the relationship between external debt and export competitiveness discovered that when external debt reaches a certain level, it has detrimental impact on export growth. According to Beyene & Kotosz (2020) openness has negative and statistically significant influence on public external debt. A research by Mahara and Dhakal (2020), which study on macro-economic determinants of external debt in Nepal using the ARDL approach, the result revealed that trade openness had positive and significant effect on public external debt of Nepal both in the short run and long run. According to Eichengreen and Portes 1930s study using both cross-section and panel data from 1930 to 1938 countries and they found positive correlation with government external debt, but not statistically significant.

2.4. Conceptual Framework

In this conceptual framework, the paper describes the relationship of dependent variables and explanatory variables. The dependent and independent variables relationship has been developed based on the above Empirical literature review.

Figure 2.5: Conceptual framework of the study



Sources: Researcher own Construction based on the Empirical literature Results,2021.

Chapter Three: Research Methodology

3.1. Theoretical Framework

The fundamental reason why countries borrow funds from abroad is to bridge either fiscal or trade deficits. According to the fundamental transfer theory, the borrowed fund be used for socio-economic development (Mahara and Dhakal,2020). When a country faces a resource gap, it can be covered from various sources including government loans, printing, external credits and foreign aid (Abdul, 2017).

$T_t + (D_t - D_{t-1}) = G_t + r D_{t-1}$ ----------(1)

Where, T_t = Government Revenue; G_t =Government Expenditure; D_t=Current debt; D_{t-1}=previous year debt , r=interest accumulated

The above equation 1 rearranged as follow

$D_t = G_t - T_t + (1+ r) D_{t-1}$----------(2)

Where, $G_t - T_t$ fiscal deficit from equation (2) it can be concluded that debt represents sum of budget deficit as well as debt stock.

The balance of payment side:

Current Account Balance= $X_t - M_t - r D_{t-1}$ ----------(3)

Where: X_t=export; M_t=import; D_{t-1}= previous year debt, r= interest

Capital Account Balance (CAB) = $(D_t - D_{t-1}) + (R_t - R_{t-1})$----------(4)

Where: R_t=International reserve.

From this, we can have,

CAB + CAB = 0. Then, could be expressed as:

$D_t=M_t-X_t+(1+r)\ D_{t-1}-\Delta R$ ---------- (5)

According to equations 2 and 5, main determinants of external debt appear to be fiscal deficit, stock of debt, trade deficit, and foreign currency reserve. In addition to this, potential variables that play role in external debt determination include inflation, debt service, GDP, FDI, trade openness, trade conditions, foreign currency reserves, currency exchange, etc (Abdul,2017). However, this study includes budget deficit, trade deficits, inflation, debt-service, economic growth and Openness.

3.2. Data Source and Variable Definitions

Annual data has been gathered from the World Bank Group (World Development Indicators), Ethiopian National Bank, the Ministry of Finance, and the countryeconomy.com database from 1990 to 2019.

Table 1: Description of Variables

Variables	Descriptions	Source
External Debt to GNP	It is the measure of External Debt / GNP.	WDI
Budget Deficit	The budget deficit is the difference between Revenue less Expenditure to Growth Domestic Product. It is measured Budget Deficit/ GDP.	countryeconomy.com database
Trade Deficit	The difference between country exports and import to Growth Domestic Product. It is measured (Export-Import)/GDP	countryeconomy.com database

Debt service	Debt service is the amount of a country's payment to lenders including both the principal and interest that the country paid to GDP.	WDI
Inflation	General average price of basket of goods and services.	WDI
Economic Growth Rate	The percentage change in the value of all of the goods and services produced in a nation during a specific period of time, as compared to an earlier period.	WDI
Openness	The sum of export and import to the Growth of Domestic Product. It is measured (Export plus Import)/GDP.	WDI

3.3. Methods of data analysis

The paper used STATA statistical software packages version-16 for organizing, arranging, and running tests and regression. The study used both Descriptive and Inferential statistics methods of analysis. This analysis helps us to the influence of independent variables dependent variables and verify whether the hypothesis is in a way the researcher anticipated or not.

3.4. Model Specification

The following model is specified using OLS Multiple Regression Model where external debt is expressed as below.

$$EDGNP = \beta o + \beta i X i + \mu ------------------------------ (6)$$

Where βo stands intercepts, βi is the Coefficients, and xi is the independent variables.

$$EDGNP = \beta_0 + \beta_1 BDGDP + \beta_2 TDGDP + \beta_3 DSGDP + \beta_4 INF + \beta_5 GDPGR + \beta_6 OPN + \mu --- (7)$$

However, there are various stumbling obstacles in time series data analysis like non-stationarity that can lead to considerably misleading conclusions. To assess the long-run relationship across variables, the study involved the empirical method of limits testing for co-integration within the context of Pesaran's Autoregressive Distributed Lag Model (2001).Therefore, by using the ARDL framework, the above OLS equation can be written as follows:

$$\Delta EDGNP = \beta^0 + \sum_{i=1}^{\rho} \pi i\, \Delta EDGNP_{t-i} + \sum_{i=0}^{\rho} \omega i\, \Delta \mathrm{BDGDP}_{t-i} + \sum_{i=0}^{\rho} \varphi i\, \Delta \mathrm{TDGDP}_{t-i} + \sum_{i=0}^{\rho} \Psi \mathrm{i}\, \Delta \mathrm{DSGDP}_{t-i} + \sum_{i=0}^{\rho} \delta \mathrm{i}\, \Delta \mathrm{INF}_{t-i}$$

$$+ \sum_{i=0}^{\rho} \gamma \mathrm{i}\, \Delta\, \mathrm{GDPGR}_{t-i} + \sum_{i=0}^{\rho} \in \mathrm{i}\, \Delta \mathrm{OPN}_{t-i} + \theta_1\, \mathrm{BDGDP}_{t-i} + \theta_2 \mathrm{TDGDP}_{t-i} + \theta_3 \mathrm{INF}_{t-i} + \theta_4 \mathrm{DSGDP}_{t-i}$$

$$+ \theta_5\, \mathrm{GDPG}R_{t-i} + \theta_6 OPN_{t-i} + \mu - - - - - - - - - - - - - (8)$$

Where π, ω, φ, Ψ, δ, ϒ, ϵ, are coefficients of short-run and μ stands the error term. The maximum lag any variable has is represented by the number of lags shown by I and P. The long-run relationship is described by this part of equation, which begins with coefficients. Consequently, the null and alternative hypotheses for determining the long-term association are as follows:

H0= No cointegration

H1=H0 is not true

Pesaran et al. (2001) devised the bound test as a co-integration test to determine the presence of a long-run link between independent and dependent variables. Regardless of this, what matters is either the series is I (0), I (1), or a combination of the two. Then this approach applies. The limits test approach is seen to be advantageous for a small sample since it delivers consistent results. The estimated Wald statistics also called F-statistics is compared to the F-statistics critical value at several degrees of significance. Adhering to the decision-making rule, it can be concluded that cointegration exists if F-statistics well above the critical value for a given upper bound I (1). The study found that co-integration will not exist if F-statistics is less than

the crucial value for the bottom constraint I (0). Furthermore, the test is judged inconclusive when F-statistics lay between the lower threshold, I (0) and the upper bound, I (1). Bound test between the variables finds, then the long-run association is estimated as:

$$\Delta EDGNP = \beta_0 + \sum_{i=1} \theta i\, EDGNP_{t-i} + \sum_{i=0} \theta i\ BDGDP_{t-i} + \sum_{i=0} \theta i\, TDGDP_{t-i} + \sum_{i=0} \theta i\ DSGDP_{t-i} + \sum_{i=0} \theta i\, INF_{t-i} +$$

$$\sum_{i=0}^{\rho} \theta i\, GDPGR_{t-} + \sum_{i=0} \theta i\, \Delta OPN_{t-i} + ECM_{t-1} + \varepsilon_t \text{ ---------- (9).}$$

Once the long-run relationship is estimated we could estimate the short-run coefficients of variables through an error correction mechanism:

$$\Delta EDGNP = \beta_0 + \sum_{i=1} \pi i\, \Delta EDGNP_{t-i} + \sum_{i=0} \omega i\ \ \Delta BDGDP_{t-i} + \sum_{i=0} \varphi i\, \Delta TDGDP_{t-i} + \sum_{i=0}^{\rho} \Psi i\ \Delta DSGDP_{t-i} + \sum_{i=0} \delta i\, \Delta INF_{t-i} +$$

$$\sum_{i=0}^{\rho} \gamma i\, \Delta\, GDPGR_{t-} + \sum_{i=0} \in i\, \Delta OPN_{t-i} + V(ECM_{t-i}) + \varepsilon_t \text{ ---------- (10).}$$

The ideal lag is represented by p, while the speed of correction is represented by V. The same is true for ECM t-1, which is the error correction term generated from the model's long-run relationship.

3.5. Direction of Causality

Generally, Granger causality is cheeked in line with VECM study to determine the direction of causality among the variables. Granger (1988) argue that if two variables are stable, in order to co-integrate either the first variable should granger cause the second variable or the second variable should granger cause the first variable. As a result, Granger causality test is used to determine whether there is a causal relationship between variables in the estimated mode or notl. The equation is written as follows:

$$Y = Y_{t-1} + X_{t-1} + \mu_1 \text{ ---------- (11).}$$

$$X_t = X_{t-1+} Y_{t-1} + \mu \text{ ---------- (12).}$$

H0= no causal relationship

H1=H0 is not true

Chapter Four: Data Findings and Discussion

This chapter focused on the results of the study that the researchers investigated both in the long-run and short-run. The analysis used descriptive and inferential statistics. Descriptive statistics like mean, standard deviations, minimum value, maximum value, and standard deviation, VIF, graph and table used. Inferential statistics applied using ARDL model test co-integration by error correction bound test, VECM, diagnosis test and sensitivity tests are conducted.

4.1. Descriptive statistics

Summary statistics of public external debt and independent variables mean, minimum value, maximum value and standard deviation. Table 4.1 below reveals descriptive views of the data that consists of 30 observations of each variable used in the regression. The first column showed variables name, second observation, third standard deviation, fourth minimum and fifth maximum values. openness has the highest mean among the variables followed by External debt. The standard deviation result revealed openness is the most volatile among variables included in the model.

Table 4.1: Descriptive Statistics

Variables	Observations	Mean	St. Deviation	Minimum	maximum
EDGNP	30	61.2946	41.22957	10.50851	147.1813
BDGDP	30	-.037186	.02034	-.0888	-.0093
TDGDP	30	-.365433	1.107976	-6.22	-.0203
DSGDP	30	1.417101	.7434671	.2957349	4.092681
INF	30	10.67308	11.44203	-8.48424	44.39128
GDPGR	30	6.84763	5.897678	-8.67248	13.5726
OPN	30	74.84468	52.55298	29.62508	290.4993

Source: Researcher Own Computation,2021.

While the rest of the variables external debt, inflation, economic growth rate, trade deficit, debt service, and budget deficit relatively depicted a stable trend during the study period.

4..2 Correlation and Multicollinearity Test

The Pairwise Correlation result indicated whether the model has a strong correlation or not. This helps to avoid the inflated or deflated results of the regression.

Table 4.2: Pairwise Correlation Matrix

	EDGNP	BDGDP	TDGDP	DSGDP	INF	GDPGR	OPN
EDGNP	1.00						
BDGDP	-0.3848	1.00					
TDGDP	-0.0167	0.2684	1.00				
DSGDP	0.3964	-0.2275	-0.1116	1 .00			
INF	-0.4531	0.1510	0.0773	-0.4982	1.00		
GDPGR	-0.4715	0.4664	0.0963	0.0237	0.0862	1.00	
OPN	-0.0850	-0.1793	0.0550	0.0885	-0.0202	-0.0090	1.00

Source: Researcher Own Computation,2021.

The above correlation coefficients are less than 0.5, meaning the model has no strong correlation among the variables and could be applied for regression since there is no inflation or deflation of the result. Again, the model has no multicollinearity effect, as evidenced by the Variable Inflation Factors (VIF) mean of 1.3, which is less than the 10 standards.

4.3. Unit Root Test

In order to avoid erroneous regression, the unit root test is essential for determining whether time-series data is stationary or not. If time series is not stationary at level I (0), it will frequently become stationary after

order I (1), or order I (2) integration (2). The amount of covariance between two time periods depends purely on the distance or lag between the two time periods, but not the actual moment at which it is computed. Therefore, an event is called stationary if its mean and variance remain constant across time. Non-stationarity of data is no longer a concern of verifying the cointegration of the ARDL method. The ARDL approach is judged ineffectual when series are integrated to order 1(2) or above, hence unit roots tests for stationarity are still recommended. Thus, it is better to conduct a unit root test to make sure that the selected model is appropriate for the ARDL model. For this analysis, the Augmented Dickey-Fuller (ADF) test ensured that the order of integration for all variables is not more than one. Table 4.3 shows that variables are integrated into a sequence of either 1(1) or 1(0), indicating that the ARDL model is ready to run.

Table 4.3:ADF Unit Root Test

Variables	ADF Unit Root Test	Conclusion	
EDGNP	-1.188	-3.522**	I (1)
BDGDP	-2.536	-5.727 *	I (1)
TDGDP	-1.808	-3.236**	I (1)
DSGDP	-1.968	-5.044*	I (1)
INF	-3.460*	-	I (0)
GDPGR	-3.668*	-	I (0)
OPN	-6.058*	-	I (0)

Source: Researcher Own Computation,2021.

Note: *** implies significance at 10%, ** implies significance at 5%, and * implies 1% level of significance. All variables first difference of stationarity supported the test statistics; hence, conclusively proved that all variables are integrated at the order of 1.

4.4. Lag Lengthen Selection

Table 4.4 revealed the lag selection taken place using Akaike Information Criterion (AIC). This varies from 0 up to 2. Openness has 0, the Trade deficit has 2 lags while the remaining variables lag level is 1.

Table 4.4: Lag Selection

Variables	Lag Level	AIC	Variable	Lag Level	AIC
EDGNP	1	8.61033*	INF	1	7.67274*
BDGDP	1	-5.22073*	TDGDP	2	-3.82867*
GDPGR	1	5.83331*	DSGDP	1	2.22721*
OPN	0	3218.18*			

Source: Researcher Own Computation,2021.

*: shows the lowest value, which means the lower the value the better the model estimation.

4.5. Co-Integration Result

The results of the following econometric test can be applied to assess the long-run connection between external debt and its primary independent factors.

Table 4.5 Result of the bound test (F-version)

Variables	T-statistics	Value	K	Sig. Level	Bound Test Critical Value	
f (EDGN, BDGDP, TDGDP, DSGDP, INF, GDPGR, OPN)	F-Statistic	11.33	6		I (0)	I (1)
				10%	2.12	3.23
				5%	2.45	3.61
				2.5%	2.75	3.99
				1%	3.15	4.43

Source: Researcher Own Computation,2021.

NB: k represents the number of non-deterministic regressors in long-run relationship critical values from Pesaran/ Shin/ Smith (2001).

The estimated F-statistics of 11.33 is larger than the upper bound test critical value of 4.43 at a 1% significance level (p-value), as indicated in Table 4.5. (1). As a result, even at a 1% level of significance, the null hypothesis of no long-run co-integration among the variables is rejected. As a result, the model's specified variables have a long-term relationship.

4.6. ARDL Regression Result and Its Implications

4.6.1. Long Run Coefficients

Having the existence of co-integration among the external debt and independent variables, that are affecting external debt. Autoregressive Distribution lag Model equation estimated as follows. The long-run equilibrium coefficients standard, error, t-value and p-value are presented in the table

Table 4.6: Long-run Coefficients Estimated Using the ARDL Approach

ARDL (1, 1, 2, 1, 1, 1, 1, 0) was chosen based on AIC.

Variables	Coefficients	Standard Error	T-Ratio [Prob]
BDGNP	786.1413	435.3662	1.81 [0.093]
TDGDP	949.4173	200.9745	4.72 [0.000]
DSGDP	-48.49066	18.06522	-2.68 [0.018]
INF	-2.526364	1.015947	-2.49 [0.026]
GDPGR	-1.594981	2.342013	-0.68 [0.507]
OPN	-.4220541	.1474682	-2.86 [0.013]
Cons	1682.52	16.15938	7.77[0.000]

R-Squared	0.88
Adj R-squared	0.77
Source: Researcher Own Computation,2021.	

Note: ***implies significant at 10%, ** implies significant at 5%, and * implies 1% levels of significance.

The estimated econometric equation revealed that, the long-run model could be expressed as: $EDGNP=1682.52+786\ BDGDP_t+34.3TDGDP_t-48DSGDP_t\ -2.6INF_t-1.59RGDPGR_t-0.42OPN$. Table 4.6 and the function represents the long-run coefficient of the variables determined in the model. The table showed coefficients in the second column, the standard deviation in the third column and T-statistics or P-value in the four columns. In the model, the explanatory variables explain more than 88 per cent of the systematic variation of external debt. The regression coefficient depicted those explanatory variables such as trade deficit, debt service, inflation and openness have a statistically significant effect while the budget deficit and growth rate have statistically insignificant effect in the long run. In addition, budget deficit and trade deficit affect the external debt positively and the remaining debt service, inflation, growth rate and openness decline the public external debt of Ethiopia in the long-run.

From Table 4.6 the budget deficit has positive and insignificant effect at 5% , but it has a significant effect at 10% level of significance. As the budget deficit increase by 1 dollar the external debt increases by 786 dollars, keeping other variables constant. This is consistent with the work of Adane et. al (2018), Beyene and Kotosz (2020), and Al-Fawwaz (2016). The result revealed that budget deficit was the primary source of public external debt accumulation in Ethiopia. That means in the long run the government of Ethiopia has less capacity to cover its expenditure from domestic revenue.

The trade deficit has a positive and statistically significant effect, which mean as the trade deficit increase by 1 dollar an external debt increases by 949 dollar keeping other variables constant. It is consistent with Beyene & Kotosz (2020), which shows on the investigation of trade deficit and external debt of Ethiopia. This positive

coefficient implies that the current account balance of Ethiopia is not sustainable in terms of ability and willingness to pay the debt, which causes external debt accumulation. This continues in the long run unless the government of Ethiopia do anything to curve the situation. Table 4.6 depicted that debt service had negative and significant effect at 5% significance level on external debt. These results contradict the findings of Asghar and Rehman (2011) and Tiruneh (2004).

Inflation has negative and significant effect on the external debt of Ethiopia. As the inflation increase by 1 per cent the external debt down by -2.5 per cent keeping the effect of other variables are constant. This result is consistent with the findings of Kristine et al. (2011). The reason is inflation reduces investment because people could expend their money to survive than invest, which in turn narrow the gap of saving-investment, then decrease external debt of the country. Therefore, inflation will have negative effect on external debt in the future.

Economic Growth has negative and statistically insignificant effect on external debt. As economic growth of the country increased by 1 per cent the external debt decreased by -1.6 per cent keeping other variable effects are constant. This indicated that in the long run, the Ethiopian economy will have a tendency of investing in highly productive sectors, which contributes to socio-economic development. This enables the country to minimize external debts by reducing the deficit of budget, trade and decreasing the saving and investment gap.

The finding that showed opening the economy to the rest of the world has negative and statically significant effect on external debt in the long-run. As the openness increases by 1 per cent the country external debt declines by -0.42, other variables remain constant. Such finding is consistent with the work of Beyene and Kotosz (2020) findings. Therefore, more openness will allow the government to have an advantage on exporting , which will give more advantageous in accumulation of foreign currency and this leads to reduction of external debt as once the problem of foreign currency of our development infrastructure projects solved in such away. This has a clear indication that Ethiopia should complete the deal with WTO and join the world market within a short period to ensure the benefit of the country in the long run from trade openness.

4.6.2. Short-run Coefficients

Table 4.7: Estimation of Error Correction Model

ARDL (1, 1, 2, 1, 1, 1, 0) selected based on AIC

Variables	Coefficients	Standard Error	T-Ratio [Prob]
ΔBDGDP	34.29762	126.3943	-0.27 [0.790]
ΔTDGDP	1.570501	2.408594	-0.65 [0.525]
ΔDSGDP	-9.630505	4.5022	-2.14 [0.051]
ΔINF	.5743822	.2450046	2.34 [0.034]
ΔGDPGR	-.4257928	.4371553	-0.97 [0.347]
ΔOPN	-.1379622	0.373163	-3.70(0.002)
ECM-1	-.3268828	0.1474682	-4.59 [0.000]

Source: Researcher Own Computation,2021.

Note: ***implies significant at 10%, ** implies significant at 5%, * implies significant at 1% level.

Table 4.7 revealed the speed of adjustment to restore equilibrium in the dynamic model. The ECM coefficient demonstrates how variables quickly approach to equilibrium; in fact, it is theoretically expected to have a negative and statistical significance coefficient. The same is true in this model. Furthermore, a high statistical significance error correction term confirms that the variables have stable long-run relationship. The error correction coefficient ECM -1 is - 0.33. This indicates that the deviation in the short-run equilibrium narrows to the long-run equilibrium at a speed of 33 percent per year. Hence, over all adjustment would require almost three years (see Table 4.7). Furthermore, compared with other variables in the model, the coefficient of ECM ensured that the external debt of Ethiopia is sustainable.

In the short-run, the first difference of debt services and the level difference of inflation are affecting significantly the public external debt. As the first difference of debt service and the level difference of inflation increases by one per cent the public external debt accumulation increases by 9.6,0.574 respectively. Debt payment, contrary to popular belief, has negative impact on public external debt. This may happen the fact that in the meantime the country joined the HIPC category, so even if the debt service increase, it may not be a guarantee for the country to acquire an additional loan from the lenders once the lender's confidence is eroded too. In addition, this happened coupled with covid-19 and other factors that affect the country not to be eligible for a loan in the short-run. At the first level difference of budget deficit and trade deficit, the level difference of economic growth has insignificant effect in the short-run. As budget deficit and trade deficit increase by one per cent the external induces by 34.29,1.5 respectively. As the first difference economic growth and level openness increase by one per cent the external debt down by 0.452,0.137 respectively. Economic growth has negative effect on the external debt of Ethiopia. This result is consistent with the finding of Akram (2011). This means that the country imports and export to the rest of the world somehow do not show any progress throughout the study period.

4.6.3. Granger Causality Test Result

Table 4.8: The Result of VECM Granger Causality

	Model-1	Model-2	Model-3	Model-4	Model-5	Model-6	Model-7	Direction of Causality
ΔEDGNP	-	206.9	9.32*	-7.85	-.378	.62	.062	From EDGNP to TDGDP
ΔBDGDP	.0001	-	.004	.0006	-.00003	-.0008	-.0006	No Causality
TΔDGDP	-.00023	.611	-	.038*	.0008***	-.0008	.00019*	From TDGDP to DSGDP, INF and OPN
ΔDSGDP	.005	-1.93 2	-.167	-	.012	.026	5.96	No Causality
ΔINF	.286	-115.8	.629	-3.19	-	-.1189	.0129	No Causality

ΔGDPGR	-.157*	-43.7	-3.71*	3.74*	.084	-	.0059	From GDPGR to EDGNP, TDGDP, and DSGDP
ΔOPN	.189	-241.36	2.2854	35.25***	.357	-.812	-	From OPN to DSGDP

Source: Researcher Own Computation,2021.

As table 4.8 depicted all the variables have only one-way causal relationship. This relationship from external debt to trade deficit; from trade deficit to debt service, inflation, and openness; from economic growth to external debt, trade deficit, and debt service, and from openness to debt service. These findings infer that external debt granger causes the trade deficit and only economic growth granger cause external debt. This revealed that as the countries public external debt increase the per capita GDP decreases. Therefore, an accumulation of external debt will slow down economic growth. This happened when the country tries to pay its debt, a huge amount of the capital flight from the country to abroad, then the cost of investing in pro-poor sectors declines accordingly. Again, when the resource is paid abroad the private sector may not have an opportunity to acquire an investment loan. Thus, it will have a crowd out effect on the economy unless the government take the necessary measures in the future.

4.6.4. Diagnostic Test

Besides the above analysis, having a diagnostic test gives the model quality. Indeed, the following table 4.9 shows the result of normality, homoscedasticity, and autocorrelation test.

Table 4.9: Result of Diagnostic Test ARDL output.

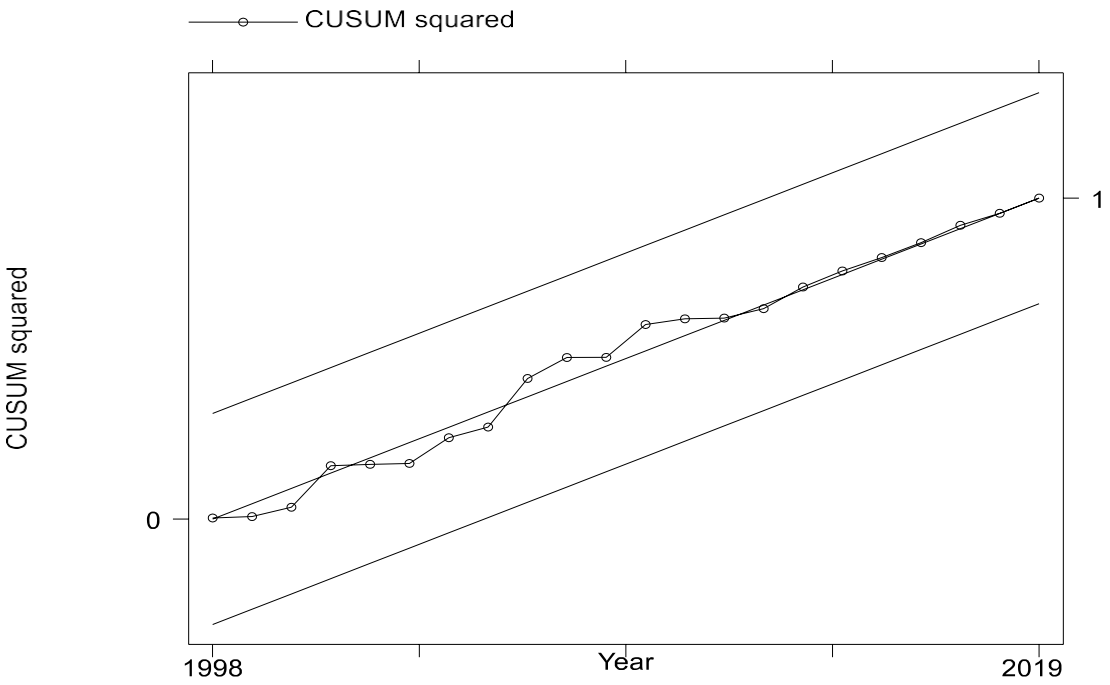
T-statistics	Type of Test	P-value
Normality	Jacque -Bera Normality Test	0. 0981
Homoscedasticity	White Test	0.2762
Autocorrelation	Breusch Godfrey LM Test	0.0652

Source: Researcher Own Computation,2021.

As shown in the table above, the model exhibits no heteroscedasticity or autocorrelation issues. We cannot reject the null hypothesis of homoscedasticity and no autocorrelation among the variables because the tests have a significance level of larger than 5%. There is no serial correlation or heteroscedasticity, according to the test. As a result, the model has a normal distribution.

4.6.5. Model Stability Test

A stability test is one of the model's functionalities tests that determine whether or not the model parameters are consistent. The CUSUM square test was used to assess the model's structural stability. The stability test null hypothesis assumed that the coefficients are consistent.



We cannot reject the null hypothesis because the residual bound at a 5% level of significance, as shown in Figure 4.1. This ensured the model's structural integrity and robustness.

Chapter Five: Conclusion and Recommendation

5.1. Conclusion

Indeed, at early stage of economic development, because of the occurrence of resources gaps, external borrowing is the means for fulfilling the gaps. Especially these are the characteristics of the developing world including Ethiopia. However, exceeding the limit, and unsustainable accumulation adversely affects an economy or will have a crowd out effect and overhang the economy. The main objective of this paper is to investigate determinants of public external debt of Ethiopia between 1990 and 2019 by applying the ARDL cointegration approach and the analysis part has been conducted using STATA 16 software package. The study has included both internal and external variables. In addition to this, this study also conducted all the necessary tests in the model. Lag selections test, stationarity test, cointegration test, diagnosis test and sensitivity test of the model has been conducted. The F-test is bigger than the upper bound of I (1) even at 1% level of significance, indicating a long-run link between public external debt and explanatory variables. The variables converge both in the short and long term, which takes three years on average.

The estimation result revealed that 88 per cent of variation is explained within the model while the remaining 22 per cent is explained out of the model. A trade deficit, debt service, inflation and openness have a significant effect at 1 percent level of significance except for budget deficit which has significant effect at 10 per cent level of significance. The effect of the economic growth rate is insignificant even at 10 levels of significance, which means the continuous economic growth rate has no significant role in reducing the external debt burden. This means, the economy of the country does not depend on the productive sector rather the economic growth is coming from the expenditure side. The budget deficit and trade deficit are positively affected the public external debt of Ethiopia. However, in the near run, the impact of both the budget and trade deficits is negligible. In the

long-run, debt service, inflation, economic growth rate, and openness have negative impact on Ethiopia's public foreign debt

A one-way causal relationship is shown by granger causality. These data suggest that only economic growth creates foreign debt, and that only external debt drives the trade imbalance. There is no serial association or heteroscedasticity, according to the diagnosis test. Again, the model is normally distributed. The stability of the model which is checked by the CUSUM square test showed the model is structurally stable and robust.

5.2. Recommendation

This recommendation is based on the analysis and discussion of chapter four. The main aim is to indicate policy direction to concerned organs to take corrective actions to help minimize the burden of external debt of the country. These are presented as follows:

Open the economy to the rest of the world: in fact, being a member of the World Trade Organization will benefit the country too as the long-run effect of openness showed. Therefore, the government should have to finish the ongoing deal with the WTO and make the country beneficial from the world trade transaction. This will reduce public external debt by earning the required amount of foreign currency from trade.

Strengthen current account: As the evidence from different sources indicated that the reason why the government have public external debt is the lack of foreign currency to run our infrastructure development projects. So, the government of Ethiopia has to export by increasing the export volume, quality, diversification of export lead products and having additional export destinations for our products in the future. Furthermore, the government of Ethiopia has to have a mechanism to import very strategic items and avoid unproductive imported items. These, reduce the negative trade balance of the country and will earn a surplus as time goes. In doing so the public external debt will be decline once the required currency secured from net export.

Fiscal Deficit: The government should strengthen the tax revenue by establishing a well-organized tax system that ensures effective and efficient tax revenue than the status quo. So, tax fraud, unnecessary tax exemptions and relief that reduce the amount of tax should be managed in a way that favors the country economy. This may reduce the country public external debt in the future.

Restructuring the Existing Debt: Ethiopia mostly accumulated business loans, whose payment or reimbursement period is short. This might be very challenging for the country to pay within this short of period due to several uncertainties around the world and domestic situation (covid-19 and instability of the country due to the war in the northern part of the country). So, the change the debt structure has to restructure from business loans to concessional loans, this may give the country to have relief.

General Price level: As the general average price increases the cost of development projects are increasing. we have seen from the literature part almost nearly eighty per cent of the external debt goes to the projects. So, inflation has to be reduced to minimize the burden of external debt in the future. Therefore, the government of Ethiopia need to manage inflation to reduce the burden of external debt.

Install public-private partnership for development projects construction. This will give an opportunity that the private sector to share the burden of the government financial constraints and reduce the external debt burden once the government share the burden in this way.

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