RELATIONSHIP BETWEEN DEFICIT FINANCING AND ECONOMIC GROWTH IN ETHIOPIA

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SMU, ADDIS ABABA

RELATIONSHIP BETWEEN DEFICIT FINANCING AND ECONOMIC GROWTH IN ETHIOPIA

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ETHIOPIA

DECLARATION

I, the cosignatories, declare that this study entitled "Relationship between Deficit Financing and Economic growth in Ethiopia" is my own work. I have undertaken the research work independently with the guidance and support of the research advisor. This study has not been submitted for any degree or diploma program in this or any other institutions and that all sources of materials used for the thesis have been duly acknowledged.

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ENDORSEMENT

This is to certify that **Mekbib Feyisa** has done the study on the topic " Relationship Between Deficit Financing and Economic growth in Ethiopia " This study is authentic and has not been done before by any other researcher.

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This is to certify that the thesis prepared by **Mekbib Feyisa** entitled: "Relationship Between Deficit Financing and Economic Growth in Ethiopia " and submitted in partial fulfillment of the requirements for the Degree of Master of Development Economics complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDIX FIGURES

LIST OF ACRONYMS

ADF - Augmented Dickey Fuller Test

AfDB- African Development Bank

DBE- Development Bank of Ethiopia

FY- Fiscal Year

GDP- Gross Domestic Product

GNP - Gross National Product

IMF - International Monetary Fund

LDCs - Less Developed Countries

MDRI - Multilateral Debt Relief Initiative

MoFED - Ministry of Finance & Economic Development

NBE - National Bank of Ethiopia

ODA Official Development Assistance

OLS- Ordinary Least Square

RGDP - Real Gross Domestic Product

UNDP United Nations Development Program

USD - United States Dollar

VAR - Vector Autoregressive

ABSTRACT

The study looked at how deficit financing affected the expansion of the Ethiopian economy. The study used time series secondary data for this purpose, which was taken from the Federal Reserve Bank of St. Louis, the Ministry of Finance and Economic Development, the National Planning and Development Commission of Ethiopia, the World Bank development indicators database, the International Monetary Fund database, Trading Economics statistic Bulletin, and the International Monitory Fund database. The information spanned 31 years from 1991 to 2021.The budget deficit and economic growth were analyzed in both the long and short runs using the Autoregressive Distributed Lag (ARDL) co-integration method. Modeling and analysis of the study's data revealed a negative association between Ethiopia's budget deficit and economic growth in the long run, and these findings are consistent with the with Neo Classical School of thought. The study's conclusions showed that external debt borrowing used to finance deficits has a major detrimental impact on Ethiopia's economic expansion. Additionally, while debt service has no discernible impact on Ethiopia's economic growth, external debt has a positive considerable impact on it. Additionally, the rate of inflation has a negative and substantial impact on economic growth, but government spending and trade openness have a positive and statistically significant long-term impact on the economy. However, the short-term analysis showed that the budget deficit has positively contributed to long-term economic growth of the country. This demonstrates that adjustments to the budget deficit in the long run have a direct impact on economic development.

For Ethiopia's government to avoid specific levels of budget deficit and achieve the required level of growth, the report recommended some actions. To reduce corruption, linkages, and wastages, the study also advises that the government set up monitoring teams. These teams will ensure that the budget is carefully and effectively implemented, as well as that loans are borrowed, and they will do this by holding everyone accountable for every dollar of public funds spent.

Key Words: Deficit Financing, Trend Analysis, Economic Growth, Debt, Co integration, Ethiopia

CHPTER ONE: INTRODUCTION TO THE STUDY

1.1. Background of the Study

A budget is a tool that plans the country's policies, and it consists of the details of estimation of the receipts, disbursements, and expenditure for the financial year which may be reevaluated subject to annual revisions depending on the country's conditions. The prepared budget plan could be in deficit or surplus or adequate depending on the conditions of the countries starting from planning up to collecting the tax and disbursement of the expenditure. The budget deficit occurs when the total revenue collected from taxation, social contributions, grants, recurrent appropriations in-aid, or other revenue sources are less than the expenditures projected in the budget. The idea of the relationship between budget deficits and economic growth is inconclusive and is the subject of debate in developing and developed countries (Aisen andHauner;2008).

It becomes very difficult for a LDC including Ethiopia to finance all its development spending with its own resources. Hence, external debt is considered as a significant source of income for developing countries. To realize sustainable economic growth through capital accretion, domestic saving rate must be high. However, developing countries have low per capita income, inadequate saving, low tax base and inefficient tax collection system. On the other hand, developing countries export raw material and primary goods with least market prices as compared to expensive imports that lead to current account deficit. Even domestic saving rates are not high enough; necessity of foreign exchange is still inevitable because of the requirement of importing investment goods. As a result, to cover up the gap between its expenditures and revenues, it must mobilize aid or borrow one way or another from external resources.

 According to Cline (1985), one of the conditions essential for external loans to have a growth impact on the economy is to ensure that the marginal productivity of each foreign loan is at least, greater than the cost of the principal and interest payment. As Mjema and Musonda (1994) pointed out, this condition would further necessitate that foreign loan, once obtained, and should be used in productive sectors and in basic infrastructures that can facilitate the productivity of other sectors of the economy of the borrowing country; so that external debt servicing does not constrain the

debtor"s economic performance. However, the outcome of not servicing maturing foreign debt obligations is an accumulation of depts, which damages the credit worthiness stance of a recipient country. This action harms the economic performance of the debtor nations as its economic growth is dependent, among other factors, on the availability of foreign loans. During the four decades beginning from the 1950s, deficit in the current account were considered normal. Countries were encouraged to borrow abroad and create an environment conducive to foreign investment to boost their economic growth. In the process, little attention was paid to the liabilities side of the current account deficit which increased the external indebtedness of these countries (Were, 2001). As a result, the external indebtedness of African countries is an impediment to the re-establishment of the conditions desired for growth. The massive debt burden acts as a peril to the economic performance given the widespread poverty and structural rigidities in these countries (World Bank, 1988).

Deficit financing of public spending always brought challenge for policy making in less developed countries (LDCs). According to Keynesians and the socialists who dominated LDCs' policy circles for most of the 1960s and 1970s, in socialist countries the main feature of the intervention took the form of nationalization of key sectors of the economy, and it aimed for the eventual replacement of the market by a centrally planned economic system. In contrast, in the capitalist-oriented LDCs, Keynesian-style state intervention took the form of government spending more than revenue (deficit financing) aimed at reversing economic decline and/or accelerating economic growth and employment. The 1980s, on the other hand, saw ascendance of neo-classical schools such as those of the McKinnon (1973)-Shaw (1973) tradition to policy forums. This was followed by IMF-World Bank sponsored privatization and reforms towards the free-market system in almost all LDCs (see Nafziger 1997).The intellectual debate on the effectiveness of fiscal policy made wide use of the IS-LM model as an analytical framework (see Hillier 1991). Keynesians used it to demonstrate the role of government spending (financed by taxation, borrowing and printing money) in stimulating aggregate demand and thereby achieving policy targets set by the government. However, the same model was also used by monetarists to demonstrate the role of deficit financing in 'crowding-out' private consumption and investment.

With a weak tax system, undeveloped structures, and poor institutional capability, many developing countries, particularly in Africa including Ethiopia find it difficult to mobilize domestic resources for growth and development. In this light, many developing countries resort to foreign

13

aid and external debt financing for major development projects and poverty alleviation programs. However, the question remains whether grants (foreign aid) and external debt stimulate growth and development in these nations. Ogunmuyiwa, (2010), Suleman, (September 2022) argued that when tax revenue is limited and a fiscal vacuum is created, external debt-financing becomes the only available option for governments to raise a substantial amount of money and foreign capital to provide infrastructure for their citizens. This argument stem from the fact that printing more money to finance development projects could have severe economic consequences and undermine macroeconomic stability. Likewise, domestic borrowing as a source of financing for major development projects can lead to rising interest rates, increase domestic savings, low consumption, and investment, and consequently crowd the private sector out of business. Nevertheless, excessive reliance on external debt and inappropriate debt management can lead to a drawdown of a country's foreign reverses and calls for a greater portion of a country's revenue to service the debt (Wijeweera et al., 2005), and this certainly has economic, social, and political implications.

Theoretically, there are three views on the relationship between budget deficit and economic growth. The Keynesian theory asserts that budget deficit and economic growth have a positive relationship. The Neoclassical on the contrary states that both variables have a negative relationship; and Ricardian equivalence argues the relationship between the two variables is neutral (Akamobi and Unachukwu;2021;Peterset al.;2020). The causes of budget deficits are of varying levels. The causes may be from an incomplete understanding of the government's fiscal position (forecasting error) or/and exogenous shocks to the public finances or/and endogenous changes in economic policy settings (Aliona;2008). Ethiopia had registered the fastest economic growth for the past decades by running a budget deficit and financing the deficit from both external and internal sources (Ministry of Finance and Economic Cooperation, (MoFEC;2017)). Both have impacts on the macroeconomic stability and economic growth of the country. Nevertheless, domestic borrowing may have both positive and negative impacts on economic growth. When the government sells bonds to the private sector to finance the budget deficit, it decreases the bond prices and raises the interest rate. And where the interest rates are controlled, domestic borrowing leads to credit restrictions and reduction of private investments. However, a positive effect of domestic borrowing is that the money used for debt servicing remains within the country which automatically restrains the possible loss of liquidity towards the foreign land (Gaber;2010) regardless of all this facts, Ethiopia is currently running budget deficit partly due to national and

international economic disruption as a result of war, pandemic and the like .The government can finance its deficit externally through the mobilization of resources from international financial institutions, bilateral relations, and multilateral institutions. Foreign borrowing increases foreign debt stocks which lead to a currency crisis, the balance of payment crisis, and capital flight and devaluation of the currency, and debt reschedules. In extreme cases, government increases the money supply to pay back debt by monetizing, hence in short-term securities, the government offered the bank, and this caused the rise of money supply because banks may consider bonds more attractive for investing (William and Klaus;1993). Thus, the way the government finances budget deficit may have an impact on the economic growth of one's country.

Ethiopia's external debt has changed significantly in magnitude, structure, and composition over the last four and half decades. In 1991, it stood at about USD 9.133 billion and Moreover, in 2000 this figure had decreased to an equivalent of USD 5.5 billion (57.11% 0f GDP). Recently, in 2011 following the debt relief granted in accordance with development initiative designed to benefit the heavily indebted poor countries (HIPCs), it had raised to USD 8.6 billion (36.7% of GDP) (world Bank, 2011) the latest data of 2020 shows that 30.3 billion (28% of GDP) external dept has been registered. Ethiopia being a developing country has not been out of danger either the country is incapable of servicing its debt and attaining a reasonable level of economic growth. Source, (world Bank, 2011)

1.2.   Statement of the Problem

The goal of the various developmental plans has been the attainment of high levels of economic development that would translate into an improvement in the living standards of the populace and hence a reduction in poverty through an increase in the domestic output and the creation of employment and thereby the maintenance of a favorable balance of payments position (Ariyo, 2007 and Ojo and Akinbade, 2008).

Large deficits are common features of most developing countries, including Ethiopia. The economic consequences of such deficit are inflation, devaluation, deteriorating gross domestic product, fiscal adjustment, domestic and international war and disputes (2021- North war in Ethiopia), pandemic and epidemic (Covid 19) which constitute important element of the economic agenda. Deficits are often attributed to high government expenditure and caused by rising public spending over and above public revenue. A fact to this is that the government has at

15

its disposal various models of financing its spending. These includes Taxation, printing of money and loans and grants. Borrowing from public is not a major source of funding deficits in developing countries since personal incomes are generally low, credit creation has often been used by developing countries as an alternative mode of financing (Anyanwu and Oaikhenan 2005, Ogboru, 2006).

Deficit financing in Ethiopia was mainly resorted to enable the Government of Ethiopia to obtain necessary resources for the plans. The levels of outlay laid down were of an order, which could not be met only by taxation or through a revenue surplus. (Nigus Temare 2021)

The gap in resources is made up partly through external assistance. But when external assistance is not enough to fill the gap, deficit financing through external dept must be undertaken. The development targets of production and employment in the national development plans are fixed primarily with reference to what is considered as the desirable rate of growth for the economy. When these targets cannot be achieved through resources obtained from taxation, additional resources must be found through external borrowing. With this, deficit financing is then easier.

Over recent years, the Ethiopian economy has struggled to find its feet on the ground despite rising External public debt and unending inflows of foreign aid, it has been observed that regardless of inflow of external aid and dept, the socio-economic growth of the nation is not satisfactory. Against this backdrop, the proposed study employs appropriate model to test the usefulness of the debt and foreign assistance in the special case of Ethiopia, the study also assessed the trend and impact of deficit financing to the national economic growth. Fortunately, the findings of the study showcase the impact of external debt and total debt service on both short and long-run socio-economic growth and development of Ethiopian economy.

On another side , literatures and empirics dictate foreign aid catalyzes growth only in the short run and later suppresses rather than stimulates economic growth in developing country like Ethiopia in the long run. Poor countries lack sufficient domestic resources to finance investment and foreign exchange to import capital goods and technology. The existing situation in Ethiopia is a living example of the scenario which binds economic growth with deficit financing through Aid and public dept. This means that a large and accumulating budget deficit may not necessarily be a bad policy objective if such deficits are effectively utilized to enhance economic growth. It is in line with this that an appropriate operational definition and measure of budget deficit must be clearly stated (Antwiet al. 2013).

In this regard, studies carried out the relationship between budget deficits on economic growth and their results showed a significant positive effect (Fatima etal.2012; Onuorah & Nkwazema, 2013; Osoro, 2016). On the other hand, several studies surprisingly indicated contradicting results that a significant negative effect (Haider et al, 2016; Aslam, 2016). Besides few studies do not have any effect on economic growth (Ghali, 1997; Dalyop, 2010; Abd Rahman, 2012).

 Few studies pin down vital role of the emerging field of external debt and in the Ethiopia economy with emphasis on empirical relationship of deficit financing through external dept and economic growth. But most of the studies undertaken in this area failed to examine the structure, type, and composition of Ethiopia's external debt.

The study also showcases the effectiveness (usually measured by its impact on economic growth) dept in Ethiopia using a time series data covering the period 1991 to 2021 and it would be addressed by employing Augmented multivariate regression technique. Foreign assistance entered alone has a positive role in enhancing growth. However, the overall effect of dept on economic growth over the period turns out to be negative if there is lack of good dept management and policies.

This study would investigate and analyze the trend and recommend appropriate alternatives to Nations Socio-Economic growth and development.

Research Gap

Research has shown that some studies have been done on deficit financing in Ethiopia, however, a presentable framework for the dynamic changes on economic growth in Ethiopia have not been completely dealt with in these studies. Probably due to the various estimation techniques that have been used for the studies. So, the question of the extent to which deficit financing modes affect growth still lingers in the heart of many. It is for this reason that this work has attempted to assess the effectiveness of deficit financing as a tool for the acceleration of economic growth in the Ethiopian economy from 1991 to 2021. The period incorporated is essential because it captures , most economic rescission due to pandemic, epidemic (Covid 19), Domestic disputes and Wors in Northern part of Ethiopia in 2020, savior inflation from 2000 onwards, and different domestic policy reforms and world dynamics economics system.

Few studies pin down vital role of the emerging field of external debt and foreign aid in the Ethiopia economy with emphasis on empirical relationship of deficit financing through foreign aid

17

and external dept and economic growth. But most of the studies undertaken in this area failed to examine the structure, type, and composition of Ethiopia's external debt, allocation efficiency and management of external budget source. In addition, due to the existence of recent massive public investment to realize the country's Growth and Transformation Plan (GTP), the significance of updating the data and including a recent period of analysis is unquestionable. Therefore, the study aims to fill this research gap by examining the relationship between deficit financing and economic growth. In line with this gap, the study has recommended appropriate policy which is found to be research gap in the area.

Gap in Empirical Literature With the divergent estimation techniques and results from different studies on the assessment of the impact of deficits financing on economic growth in view, the pertinent question remains whether the persistent deficits have effect on Ethiopian's economic growth between 1991 and 2021. Notwithstanding these various approaches that have been adopted by various researchers, to add value to the existing studies, this study would not only extend its scope beyond those of earlier studies by modifying the available and contemporary economic models but will also fill knowledge gap by extending the periods captured to 2021.

1.3. Objectives of the Study

General Objective

The general objective of the study is to examine the relationship between deficit financing and Economic growth and the overall effectiveness of debt which is measured in terms of its impact on economic growth and development.

Specific Objective

➢ To examine the trend of deficit financing through External debt, and Domestic debt and respective economic growth in Ethiopia.

➢ To analyze the long- term and short-term effect of debt on economic growth.

1.4. Research Hypothesis

Reserch Hypothesis

Based on statistical analysis and empirical literature on the relationship between deficit financing (domestic dept and external Dept) and economic growth in developing countries, the researcher hypothesized and tested that higher debt has positively contributed to short run economic growth and negatively contributed to long run to economic growth of the country. This hypothesis is developed supporting the idea that an increase in the external debt and domestic dept might

indirectly depress the level of GNP by creating debt overhang effect, crowding out effect, discouraging capital formation and encouraging capital flight due to tax increase expectation. Furthermore, the study formulated and tested five hypotheses in their null form as a guide to achieve the objectives of the study:

1. **Ho:** External debt has no significant effect on Ethiopian economic growth.
   H1 : External debt has significant effect on Ethiopian economic growth.
2. **Ho:** Domestic debt has no significant effect on Ethiopian economic growth.
   H1: Domestic debt has significant effect on Ethiopian economic growth.
3. **Ho:** Debt service does not have any significant effect on Ethiopian economic growth.
   H1: Debt service have any significant effect on Ethiopian economic growth.
4. **Ho:** Consumption does not have any significant effect on Ethiopian economic growth.
   H1: Final Consumption have any significant effect on Ethiopian economic growth.
5. **Ho:** Aggregate saving does not have any significant effect on Ethiopian economic growth.
   H1: Aggregate saving have any significant effect on Ethiopian economic growth.

1.5.   Significance of the Study

The vital significance of this study is that it employs an econometric model with strong theoretical foundations that relate deficit financing and economic growth. Moreover, it would be useful to explore the deficit financing-growth issues by updating data and come up with results that are expected to have insightful implications for policy.

The importance of this study cannot be over emphasized because every sector of the economy stands to benefit one or two things from the researchers' work. Most people who will benefit from this work include:

- POLICY MAKERS: the study stands to enlighten them on the ways of finding the best policy to use when it comes to the issue of the Nations deficit financing techniques.
- INVESTORS: the study will help them to realize the actual state of the economy, especially when the country's budget is in deficit.

- RESEARCHERS: they will find it rewarding as it will add to the rich collection of work in available literature due to the expansion of years covered and modification of model.
- ECONOMY: the study helps to reveal the stand of the economy in the face of deficit budgeting system

1.6. Scope and Limitations of the Study

This study would explore the possible ways through which external debt burden affects growth, inspecting the direction and examining the transmission channels of this relationship. To realize this objective, the period 1991 to 2021 has been chosen. The results of this study can be limited by the quality of the data series available. Furthermore, the lack of long time series of data may limit the findings because long time series of data offer more information that makes the finding more reliable. Hence, to mitigate the limitations effect on the credibility of result an attempt has been made to take one variable from one source and triangulation among sources of data has been administered to doublecheck the information.

1.7. Organization of the Study

The theses have been organized as follows. Chapter 1 includes Problem statement , Objectives of the study, Reserch questions and Hypothesis, Significance, Scope, and limitation of the study. Chapter two is more of Literature review part, and it categorized in to three sub parts including Conceptual framework ,Theoretical review, and Empirical review of the study under investigation. Chapter three is more of the Methodological part, and it includes: Reserch Design, Sampling techniques , Econometric model Specification, Data Collection Tools / Instruments, Data Analysis. Results of data analysis and findings of the study has been summarized and analyzed in Chapter four and Chapter 5 presents a summary, conclusion, Policy implication and recommendations of the study .

CHAPTER TWO: LITERATURE REVIEW

2.1. Conceptual Review

Deficit Financing

Deficit is generally defined in terms of loan financing and drawing down of cash balances Nwogugu (2005). It connotes the difference between the budget receipts and budget expenditures Financed by withdrawal of cash balance and borrowing from public. Fiscal deficit simply refers to the excess of the public sector's spending over its revenue (World Bank, 2005). According to Jhigan (2002), the phrase deficit financing is used to mean any public expenditure that is more than current revenues. In advanced countries, deficit financing is used to do describe the financing of a deliberately created up between public revenue and public expenditure or a budgetary deficit. The term deficit financing is used to denote the direct addition to gross national expenditure through budget deficits whether the deficits are on the revenue or capital account. CBN (2013) define deficit financing as a practice in which government spends more than it receives as revenue and the difference being made up by borrowing more money into the economy than it takes out by taxation with the expectation that increased business activities will bring enough additional revenue to cover the shortfall. Deficit financing, however, may also result from government inefficiency, reflecting widespread tax evasion or wasteful spending rather than the operation of a planned countercyclical policy.

The essence of such a policy lies in the government spending more than revenue it receives in the form of taxes, earning of the state enterprises, loans from the public deposits and funds and then miscellaneous sources.

Fischer and Esterly (1990) identify four ways of financing the deficit:

> **a. Printing money (ways and means)**
>
> **b. External borrowing**
>
> **c. The use of foreign reserves**
>
> **d. Domestic borrowing**

The major methods of financing the budget deficit include monetary financing and debt financing. The International Monetary Fund (2009) and CBN (2010) agree that economic growth is the

increase in the amount of goods and services produced in an economy over time. It is conventionally measured as the percent rate of increase in Real Gross Domestic Product (RGDP).

External Debt

The portion of a country's debt that was borrowed from foreign lenders including commercial banks, governments or international financial institutions is external debt. These loans including interest, is usually be paid in the currency in which the loan was made. To earn the needed currency, the borrowing country may sell and export goods to the lender's country. External debt may be defined as debt owed to non-residents repayable in terms of foreign currency, food, or service (World Bank, 2004). External debts are basically from multilateral agencies, Promissory Note Holders, Bilateral and Private Sector Creditors and other sources (Jhingan, 2004, and Salawu, 2005).

Domestic Debt

Odozi (1996), in his opinion sees domestic debt as the gross liability of Government, and properly considered should include Federal, State and Local governments transfer obligations to the citizens and corporate firms within the country. Consequently, the Central Bank of Nigeria (CBN) as banker and financial adviser to the Federal Government is charged with the responsibility for managing the domestic public debt. (Alison et al 2003) reveal three principal reasons often advanced for government domestic debt. The first is for budget deficit financing, second, is for implementing monetary policy and the third is to develop instruments to deepen the financial market. Domestic debts are debts instrument issues by the federal government and denominated in local currency. State and local government can also issue debt instrument, but debt instrument currently in issue consists of Nigerian treasury bills, federal government development stocks and treasury bonds. Out of these treasury bills and development stocks are marketable and negotiable, while treasury bonds; ways and means advances are not marketable but held solely by the central bank of Nigeria, (Adafu et al 2010).

Debt Service

Debt servicing is the ability of a debtor nation to continue to repay the principal and interest components of an outstanding loan as and when due. Debt service is the cash that is required to

cover the repayment of interest and principal on a debt for a particular period. If an individual is taking out a mortgage or a student loan, the borrower needs to calculate the annual debt service required on each loan, and, in the same way, companies must meet debt service requirements for loans and bonds issued to the public. The ability to service debt is a factor when a company needs to raise additional capital to operate the business. The amount of money required to make payments on the principal and interest on outstanding loans, the interest on bonds, or the principal of maturing bonds. An individual or company unable to make such payments is said to be" unable to service one's debt. "An example of debt service is a monthly student loan payment. Farlex Financial Dictionary (2012).

Economic Growth

Lipsey (1986) Defined economic growth as the positive trend in the nation's total output overlong period. This implies a sustained increase in Gross Domestic Product (GDP) for a long time. Schiller (1999) opined that economic growth is an increase in output (real GDP), an expansion in product possibility curve. Schiller (1999) view was not different from that of Dolan and Lindsey (1991) who sees economic growth as most frequently expressed in terms of increase in Gross Domestic Product (GDP), a measure of the economy's total output of goods and services. This GDP as a measure of economic growth, like any other economic quantitative must be expressed in real terms. That is, it must be adjusted for the effects of inflations as for it to provide a meaningful measure of growth overtime. Economic growth is related to a quantitative sustained increase in the country's per capita output or income accompanied by expansion in its labour force, consumption, capital, and volume of trade (Jhingan, 2008). According to Aigbokhan (1995), Economic growth means an increase in the average rate of output produced per person usually measured on a per annum basic. It is also the rate of change in national output or income in each period. Economic growth is the increase of per capital gross domestic product (GDP) or other measure of aggregate income. It is often measured as the rate of change in real GDP. Economic growth refers only to the quantity of goods and services produced. Godwin (2007) defines economic growth as an increase in real gross domestic product (GDP). That is, gross domestic product adjusted for inflation. The growth can either be positive or negative. Negative growth can be referred to by saying that the economy is shrinking. This is characterized by economic recession and economic depression. Ullah and Rauf (2013) noted that whenever there is increase in real GDP of a country it will boost up the overall output and we called it economic growth. Economic growth

is helpful to increase the incomes of society, helps the nation to bring unemployment to a low level and helpful in the deliveries of public services.

2.2.   Theoretical Review/Framework

1.1. Budget Deficit and Economic Growth

There are some theories concerning the relationship between budget deficit and economic performance. According to Freidman if there is budget deficit in each country's economy, a government takes some measures to solve the problem. But each action was executed to counterbalance the deficit which creates definite consequences for the economy. By issuing cash which increases both the money supply and inflation. With other way, when monetary policy and fiscal policy were compression to moderate inflation, at the same time they embarrassed economic growth. So, to sum up the theory, according to Freidman and neo-classical there is negative relationship between budget deficit and economic growth. And Keynesians School concludes that there is positive relationship between budget deficit and economic growth, but this suggestion is applied till the end of 1960s, in 1970s and 1980s its acceptability was failed. Lastly, the Ricardian equivalence theory concludes that, there is not any relation between those variables (Onwioduokit & Inam, 2018)

1.2. Budget Deficit from Gurus point of View

Budgets are considered a very useful tool of control applied by companies. It can help set developmental policies in the country. A budget is black and white about the earnings and spending of an organization. The budget can be either deficit or surplus. Budget Deficit results in situations where the expenditures of the country exceed its revenues, earned from the taxes and other sources (Fatima etal 2012). The growing budget deficits and their consequences have created debate all over the world. Therefore, it is necessary to examine the relationship between budget deficits and increasing government borrowing on the processes   of sustainable economic growth and development. Besides, there were three schools of thought concerning the economic effects of budget deficits:

Neoclassical economists assume that each consumer belongs to a specific generation and the lifespans of succeeding generations overlap. This school of thought also assumes that the market

will always be at equilibrium in all periods. Based on these assumptions, they argue that budget deficits have detrimental effects on the economy and thus always advocate for a balanced budget (Bernheim, 1989).

The Keynesian View of Fiscal Deficit: The Keynesian view in the context of the existence of some unemployed resources, envisages that an increase in autonomous government expenditure, whether investment or consumption, financed by borrowing would cause output to expand through a multiplier process. Subsequent elaborations of the Keynesian paradigm envisage that the multiplier-based expansion of output leads to a rise in the demand for money, and if money supply is fixed and deficit is bond financed, interest rates would rise partially offsetting the multiplier effect. Keynesian economics, according to Okpanachi and Abimiku (2007) an increase in government spending enhances domestic output. Deficit spending by the government stimulates the economy in the short run by making households feel wealthier. The Keynesian recognizes the possibilities of government spending crowding out private (investment) spending through increased cost of credit (interest rate). Hence the recommendation by Musgrave (Okpanachi and Abimiku, 2007) that fiscal deficit should be implemented only during a depression when interest rates are likely to be unresponsive to avoid the damping effect of rising interest rates on private investment expenditure. The Keynesian further posits that fiscal deficits could have a negative impact on the external sector, reflected through trade deficit, but only if the domestic economy is unable to absorb the additional liquidity through an expansion in output.

The Ricardian Perspective: In the perspective of Ricardian, fiscal deficits are viewed as neutral in terms of their impact on growth. The financing of budgets by deficit amounts only to postponement of taxes. The deficit in any current period is exactly equal to the present value of future taxation that is required to pay off the increment to debt resulting from the deficit. In other words, government spending must be paid for, whether now or later, and the present value of spending must be equal to the present value of tax and non-tax revenues. Fiscal deficits are a useful device for smoothening the impact of revenue shocks or for meeting the requirements of lumpy expenditures, the financing of which through taxes may be spread over a period. Ricardian equivalence requires the assumption that individuals in the economy are foresighted, they have discount rates that are equal to government discount rates on the spending, and they have extremely long-time horizons for evaluating the present value of future taxes.

2.3. Empirical Review

2.3.1. Relationship Between External Debt and Economic Growth

The relationship between external debt and economic growth has been mixed and inconclusive in the empirical literature. While some researchers reported a positive impact of external debt on economic growth, others report a negative relationship, and yet still, few other researchers found an inverted U-shaped relationship between external debt and economic growth. This is majorly due to different methods of estimations, country-specific analysis, and the heterogeneity among countries, as every country has its unique peculiarities. Previous studies such as : (Bourne, 1983; Frimpong & Oteng-Abayie, 2006; Owusu-Nantwi & Erickson, 2016; Schclarek & Alfredo, 2004; Siddique et al., 2016) have found that external debt significantly stimulates economic growth. In contrast, (Adubofour Isaac et al., 2021; Asteriou et al., 2021; Bal & Rath, 2014; Fejzaj et al., 2021; Fosu, 1996; Law et al., 2021; Le & Phan, 2022; Maitra, 2019; Makun, 2021; Manasseh et al., 2022; Pegkas, 2018) have also shown that external debt has adverse repercussion on economic growth and developing, in most especially developing countries. At the same time, Ndoricimpa (2020) found that lower external debt levels are growth neutral in lower and middle-income countries, whiles higher foreign debt is detrimental to growth. On the other hand, Panizza & Presbitero (2014) demonstrated that external debt has no significant negative impact on economic growth in the OECD countries and that the negative correlation between external debt and economic growth does not justify that external debt impacted growth negatively. Moreover, Schclarek & Alfredo (2004) also found that lower external debt levels promote economic growth, while the negative effect of public debt on economic growth at higher levels is driven by external debt.

2.3.2. Relationship Between Foreign Aid and Economic Growth

The nexus between foreign aid and growth has also been mixed and inconclusive, and the reasons are not far-fetched from accounting for the disparity in the relationship between external debt and growth. Prominent past empirical studies which found a positive relationship between foreign aid and economic growth include: (Asteriou, 2009; Chowdhury & Das, 2011; Clemens et al., 2012; Fashina et al., 2018; Gomanee et al., 2005; Hussen & Lee, 2020; Kitessa, 2018; Mekasha & Tarp, 2013; Museru et al., 2014; Nwaogu & Ryan, 2015). Contrary to these findings, studies such as (Ali

& Isse, 2005; Appiah-Otoo et al., 2022; Boateng et al., 2021; Fatima, 2014; Feeny, 2005; Khan & Ahmed, 2007; Kourtellos et al., 2007; Liu et al., 2014) also reveal that foreign aid negatively affects economic growth and development in developing countries. More so, Lessmann & Markwardt (2012) have shown that foreign aid significantly enhances economic growth in centralized developing countries, and it is insignificant or even harmful to growth in decentralized developing countries. Similarly, Tang & Bundhoo (2017) indicated that foreign aid has no significant impact on economic Preprints (www.preprints.org) | NOT PEER-REVIEWED | Posted: 26 September 2022 doi:10.20944/preprints202209.0397.v1 growth in Sub-Saharan African countries and that the effect is only positive and significant when it is complemented with a good policy index.

Osuka and Achinihu 2019, evaluated the impact of budget deficits on macro-economic variables in the Nigerian economy for the period 1981-2012. The study found out that the variables in the study are all co-integrated of order one showing the presence of long-run relationship between employed variables (GDP, interest rate, nominal exchange rate and inflation rate). However, the test for causality showed that there exists no causality between deficits and interest rate, budget deficits and inflation and budget deficit and nominal exchange rate. They thereby concluded that budget deficits exert significant impact on the macro-economic performance of the Nigerian economy.

Onwioduokit and Inam [13] investigated the relationship between budget deficits and economic growth in Liberia. The study employed Classical Ordinary Least Squares Technique (OLS) and Co-integration test using EngleGranger Two-Step procedure (EGTS); and a parsimonious Error Correction Model. It was evident from the analysis that there exists a long run relationship between Budget deficit and economic growth in Liberia. There also exists a positive and significant relationship between Budget deficit and economic growth in Liberia. Therefore, a 1.0 percent increase in deficits will result in an increase of approximately 0.42 percent in economic growth in Liberia.

2.3.3. Relationship Between Economic Growth and Budget deficit

AbdRahman (2012) examines the relationship between economic growth and budget deficit for Malaysia economy. The study considers four variables those are real gross domestic product, debt, non-productive and productive expenditure. Autoregressive distributed lag model approach also used for the study. Mainly the study was focused on the long run relationship between all-quarterly

time series variables from 2000 to 2011. As the study result shows there is no long run relationship between economic growth and budget deficit for Malaysia economy, the study proved the existence of Ricardian equivalence hypothesis in this country. Tung (2018) investigates fiscal deficit and economic growth for Vietnam perspective. The study applied error correction model for quarterly data which assert from 2003-2016. In Vietnam fiscal deficit has negative effect on economic growth in both long run and short run. The study result is consistent from Freidman and neoclassical idea. From the above listed empirical studies, the researcher concludes that some of the researchers found that economic growth, external debt, and budget deficit have a positive relationship. Another some studies also proved that there is negative relationship between economic growth, external debt, and budget deficit. Moreover, some of the studies display that the listed variables have no relationship relationships. Additional to see the relationship of those listed variables researchers used different models like VAR and ARDL model.

Eze and Ogiji (2016) investigated the impact of deficit financing on economic stability in Nigeria, using Ordinary Least Square (OLS) estimation technique. The result showed that deficit finance is positively related to economic growth. Nwaeke and korgbeelo (2016) in their study using ordinary least square estimation procedure, to provide empirical evidence on the relationship between deficit financing and selected macroeconomic variables in Nigeria. They found that budget deficit irrespective of the source of financing have no significant impact on inflation in Nigeria and budget deficit financed from external loans is negatively but insignificantly related to economic growth. The study conducted by Adesuyi and Falowo (2013), to assess and investigate the impact fiscal deficit has on the economy given some variables, using Ordinary Least Square (OLS) estimation technique. The result showed that fiscal deficit has made a significant contribution to the GDP and economic growth of the country.

2.3.4. Debt and its Impact

There have been several attempts to empirically assess the external debt-economic growth link by testing the existence of debt overhang and crowding out effects mainly by using OLS. Most of these studies find one or more debt variables to be significantly and negatively correlated with investment or growth. To mention some, IMF on its working paper (2004) investigated the major channels through which external debt affects economic growth, specifically whether debt affects growth through factor accumulation or total factor productivity growth. In addition, it tested for the presence of non-linearities in the effects debt on the different sources of growth using panel

data of 61 developing countries over the period 1969 to1998. This analysis indicated that the negative impact of high debt on growth operates both through negative effects on capital accumulation and on total factor productivity growth. On average for debt-ridden countries, doubling debt will reduce GDP growth by about 1 percent and reduce both per capita physical capital and total factor productivity growth by less than that. According to the contributions to growth, approximately 1/3 of the effect of debt on growth occurs through capital accumulation and 2/3 through total factor productivity growth.

Another study finds strong support for a non-linear, Laffer curve type relationship between the stock of external debt and growth. Using a large panel data of 93 developing countries over the period 1969-1998, Pattilo et al (2002) find that the average impact of external debt on per capita GDP growth is negative for net present value of debt levels above 160-170 percent of export and 35-40 percent of GDP. These results are robust across different estimation methodologies and specifications and suggest that doubling debt levels slows down annual per capita growth by about half to a full percentage point. Fosu (1996) tested the relationship between economic growth and external debt with an empirical study for the sample of Sub-Saharan Africa countries over the 1970-1986 periods by employing the OLS method. This study examined to which degree debt had a negative impact on economic growth of Sub-Saharan African countries. This study estimates the direct effect of debt hypothesis and indirect debt hypothesis. The direct effect of debt hypothesis proposed that if debt service payments do not decrease investment and saving levels considerably, the debt negatively affects growth directly by reducing productivity. It is also argued that the direct effect of debt hypothesis suggests that both debt service payments and debt outstanding may affect GDP growth rate negatively even if debt outstanding and debt service payments do not affect investment levels. The findings of this study also show that on average a high debt country faces about one percentage reduction in GDP growth rate annually.

In addition, Elbadawi et al (1996) generated a Laffer curve of debt establishing a critical verge beyond which debt affects negatively on growth and investment. Based on their results, debt of more than 97 percent of GDP is likely to have a negative impact on investment and growth. With respect to the private sector investment, they conceive that a debt to GDP ratio greater than 33.5 percent would generate a depressive effect by reducing investment. Faraji and Makme (2013) conducted a study in Tanzania to examine the link between foreign debt and economic growth for the period of 1990-2010. The main finding revealed that there was significant impact of debt stock

and debt service obligations on GDP growth. The total external debt stock has a positive effect and debt service payments have a negative effect. But in the long run there is no relationship between external debt and GDP. Iyoha (1997) examined similar results for SSA countries. He concludes that weighty debt burden acts to reduce investment through both the debt overhang and the „crowding out" effect. Similarly, during (1999) he examined the impact of external debt on economic growth in Sub-Saharan Africa countries estimated for 1970-1994 period using simulation approach. From this study the main finding was the significance of debt overhang variables in the investment equation, suggesting that mounting external debt depresses investment through both a disincentive effect and a crowding out effect.

On the other hand, Cohen"s (1993) results on the correlation between developing countries debt and investment in the 1980s indicated that the level of stock of debt does not appear to have much power to explain the slowdown of investment in developing countries during the 1980s. It is the actual flows of net transfers that matter. He found that the actual service of debt „crowded out" investment. Similarly, Menbere (2004) explored that the past accumulated debt of least developing countries (LDCs), is negatively related to growth of real GDP, per capita signifying the existence of debt overhang phenomena across developing countries. Additionally, Fosu (1999) estimated the impact of external debt on GDP growth in the 1980s, based on a cross country analysis of 35 Sub-Saharan countries. He observed that „net external debt", measured as total external debt outstanding fewer total reserves, as a proportion of GDP, is most likely the best measure of the debt burden. To evade the potential problem of causation, he uses the external debt measure for the first half of the period as well as that for the entire period. He finds a fractional elasticity of growth with respect to external debt of 0.5 for either measure. From the standing point of this finding, he concludes that Sub Saharan growth could have average 1.2 percent, nearly 50 percent, higher during the decade of the 1980s in the absence of the external debt burden. Similarly, Ayadi (2008) investigated the impact of indebtedness and debt service obligations on economic growth of Nigerian and South African economies. On this study he attempted to explore a linear as well as non-linear effect of debt on growth and investment using both ordinary least squares (OLS) and generalize least squares (GLS) in his analysis. He finds that external debt and servicing requirements have negative effects on both countries' economic growth. Moreover, from the result conclude that, South Africa performs better than Nigeria in the application of external credits to promote economic growth. The prominent Study by Were, (2001) examined the relationship

between external debt service and growth for Kenya. The result confirmed that external debt service has a negative effect on growth. Therefore, this study concludes that debt overhang phenomenon happened to these countries.

On the other hand, Udoka (2010) investigated the relationship between external debt management policies on the economic growth of Nigeria using ordinary least square (OLS) method. From the analysis he finds that GDP, exchange rate, fiscal deficit and terms of trade are the major determinants of external debt in Nigeria. In addition, the adverse effect of external debt is reflected in the country"s inability to meet the debt service obligations. However, Oke Michael and Sulaiman (2012) in Nigeria examined the impact of external debt on economic growth and investment by adopting the debt Cum-Growth model along with multiple regression technique. From the result they conclude that there was existence of a positive relationship between external debt, economic growth, and investment: and this result was confirmed by the coefficient of determination (R2) of about 79.8%. While the findings revealed that the current external debt ratio of GDP stimulates growth in the short term, private investment shows a decline. Moreover, different studies were undertaken to assess the effect of debt relief on the economic growth for different developing countries. For illustration, in a study conducted in Zambia and Tanzania, Bigsten et al, (2001) used computable general equilibrium model to indicate that the macroeconomic impact of debt relief per se is relatively modest. In Zambia GDP growth rate increases by 0.2 whereas in Tanzania a combination debt relief, increased public spending and accumulation of human capital would increase real GDP by 0.2 percent. And like Clements et al the Tanzania case illustrates that this impact could even be higher if additional public investment succeeds to improve private sector productivity.

IMF (2003) working paper examined the channels through which external debt and debt relief affects growth. From their finding, conclude that the considerable decrease in the stock of external debt projected for highly indebted poor countries (HIPC) would straightforwardly increase per capita income growth by about 1 percent per annum. Reduction in external debt service could also offer an indirect boost to growth through their special effects on public investment. If half of all debt-service relief were channeled for such purposes without raising the budget deficit, then growth might speed up in some highly indebted poor countries by an additional 0.5 percent per annum.

Contrarily Easterly (1999) found evidence from HIPC that incremental debt relief over the past 2 decades has led to asset worsening and new borrowing. He argues that debt relief may have a perverse incentive effect as countries borrow in anticipation of debt forgiveness and delay policy reforms waiting for the best deal. It leads to moral hazard incentives to borrow in the expectation that part of the debt will be forgiven. He also argues that debt relief makes the poor worse off if it creates incentive to delay reforms needed for growth. In addition, according to Easterly, debt relief would lead to replacement of foreign direct investment (FDI) and private lending by official lending since countries lose their credit worthiness. There is a concern that official and multilateral lending may not follow the same standards of creditworthiness as private lending. He concludes that debt relief is fruitless for countries with unchanged long preferences. Different scholars, in addition to the above issues, conducted studies to know the relation between external debt relief and adjustment effort or investment.

Much of the literature seems to agree on two conclusions. First, debt relief can increase investment if initially there is a debt overhang. There are several reasons for this, although the one emphasized by many authors is that investment depends on expected tax rates which, in turn, depend on the face value of the debt (Helpman, 1989). Hence, debt relief may be in the interest of the debtors as well as the creditor (Sachs, 1989). Second, as Corden (1989) and Callier (1989) pointed out; one of the reasons why governments engage in adjustment is because of the existence of a large external debt. To facilitate repayment, governments try to increase growth by resorting to measures such as liberalization, simulation of the tradeable sectors and fighting corruption. In the absence of a debt overhang, debt relief decreases the pressure to adjust and thus represents a disincentive to invest. Based on these two conclusions it can be argued that debt relief only promotes investment in the presence of a debt overhang.

To summarize, the existing empirical literature provides limited evidence on how the stock of external debt and debt service affect growth, particularly in low-income countries. There is scope for additional work to clarify the size of these effects, especially for low-income countries that are benefiting from debt relief. Furthermore, more work is needed to explore the channels through which debt affects growth. This study attempts fill this gap in the literature, with special attention being paid to the effects of deficit financing majorly through external debt and its service obligation on economic growth for the case of Ethiopia.

32

CHAPTER THREE: RESEARCH METHODOLOGY

3.1.　Description of the study Area

The study was carried out to examine the relationship between Deficit financing and Economic growth in Ethiopia, thus generally the study area is the entire Ethiopia. Ethiopia is a **landlocked country in the Horn of Africa**. It has the continent's second highest population at 114,358,444 (2020 Estimate) and its surface area of 1,100,000 sq. km. is the tenth largest. The capital is Addis Ababa , located almost at the center of the country and the country is bordered by Sudan to the west, Djibouti and Somalia to the east, Kenya to the south, and Eritrea to the north. Ethiopia is the **oldest independent country in Africa** and one of the world's oldest - it exists for at least 2,000 years. The country comprises more than 80 ethnic groups and as many languages. Ethiopia lies completely within the tropical latitudes and is relatively compact, with similar north-south and east-west dimensions.

3.2.　Research Design, Data Type and Source

In Ethiopia creation of appropriate regulatory framework and sound Economic and financial system is difficult particularly during the Derg regime (1974 to 1991). After the overthrow of the socialist regime in 1991, Ethiopia started market economy system. Following this, new Economic and financial institutions have emerged, and private sector becomes active players in the economic and financial system of the country.

The study relies on secondary data for the period 1991 to 2020 for all variables under investigation. The major sources of data are different domestic and international databases and organizations publications. The domestic sources include a range of organizations and ministries like Ministry of Finance, Ministry of Economic Development, Ministry of Plan, Ministry of Trade (MoT), National Bank of Ethiopia (NBE), Central Statistic Authority of Ethiopia (CSA) and Ethiopian Economic Association (EEA). In addition, essential data was acquired from international sources like the World Bank (World Bank data sheet), International Monetary Fund (IMF), Trading Economy statistics bulletin , Global Macro trend database, and World Debt Statistics. Historical data have also been collected from various databases including the International Monetary Fund's (IMF) database, world bank database , world statistics database, countryeconomy.com, naboan etc. . The historical data covers 31 years (1991-2021). In the data set GDP is measured at current market prices and Real GDP was measured at constant price of 2015.

Model Estimation Techniques

The researcher used Autoregressive Distributed Lag Model (ARDL) and Vector Autoregressive (VAR) model to address the stated objective of the study. The "F" , ''P'' and "t" test would provide if the variables were co-integrated, so the researcher analyzed both the long run and short run relationship of budget deficit/ dept and economic growth. Moreover, the study has also deployed causality test which exists between dependent and explanatory variables.

To increase the acceptability of the study, result the researcher would test the considered model by using diagnosis tests like HETEROSKEDASTICITY Test (BREUSCH-Pagan-Godfrey), Autocorrelation test (BREUSCH-Godfrey Serial Correlation LM Test), Ramsey RESET Test, Normality test of residual for ARDL model and Stability of ARDL Model. The studies pass all the listed tests; hence the ARDL model and the study result are confidentially acceptable. The study has also analyzed the trend and recommends appropriate alternatives to Nations Socio-Economic growth and development and policy implications.

3.3.   Definitions, Measurement of Variables and Formulation of Hypothesis

3.3.1. Definition of Variables

Gross Domestic Product : It is Dependent Variable, is a monetary measure of the market value of all the final goods and services produced and sold in a specific period by a country.

Real Gross Domestic Product : It is dependent Variable, GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products.

Domestic Dept : it is explanatory Variable; domestic Debt is the entire stock of direct government fixed-term contractual obligations to others outstanding on a particular date. It includes domestic liabilities such as currency and money deposits, securities other than shares, and loans. It is the gross amount of government liabilities reduced by the amount of equity and financial derivatives held by the government.

External Dept: It is an independent Variable, Total external debt is debt owed to nonresidents repayable in currency, goods, or services. Total external debt is the sum of public, publicly guaranteed, and private nonguaranteed long-term debt, use of IMF credit, and short-term debt. Short-term debt includes all debt having an original maturity of one year or less and interest in arrears on long-term debt. Data are in current U.S. dollars.

Private Consumption Expenditure: It is an independent Variable Final consumption expenditure (formerly total consumption) is the sum of household final consumption expenditure (private consumption) and general government final consumption expenditure (general government consumption). This estimate includes any statistical discrepancy in the use of resources relative to the supply of resources.

Aggregate Savings: Aggregate saving measures the portion of national disposable income that is not used for final consumption expenditure. Gross (or net) national saving is the sum of the gross (or net) savings of the various institutional sectors.

Debt Servicing (Aggregate): it is independent Variable, Total debt service is the sum of principal repayments and interest actually paid in currency, goods, or services on long-term debt, interest paid on short-term debt, and repayments (repurchases and charges) to the IMF. Debt servicing is the ability of a debtor nation to continue to repay the principal and interest components of an outstanding loan as and when due. Debt service is the cash that is required to cover the repayment of interest and principal on a debt for a particular period.

External Reserves. It is explanatory variable, Total reserves (includes gold, current US$), Foreign exchange reserves includes banknotes, deposits, bonds, treasury bills and other government securities. These assets serve many purposes but are most significantly held to ensure

that a central government agency has backup funds if the national currency rapidly devalues or becomes entirely insolvent.

3.3.2. How to Measure Variables

Gross Domestic Product : Ethiopian GDP can be measured using 3 methods: Value of goods and services method – The main way GDP is measured is measuring the value of all the goods and services produced in a country over the past year. This includes all sectors of the economy. A measure of income method – Another way to measure GDP is by measuring the value of the income earned in a country over the past year. Sum of expenditure method – The final way of measuring GDP is by measuring the value of goods and services bought in a country.

Real Gross Domestic Product : It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. For this research, Data are in constant 2015 U.S. dollars. Dollar figures for GDP are converted from domestic currencies using 2015 official exchange rates.

External debt Measurement : Gross external debt, which measures the total debt a country owes to foreign creditors. External debt as a percentage of Gross Domestic Product (GDP), which is the ratio between the debt a country owes to non-resident creditors and its nominal GDP. The direct money burden of external debt, which is the interest payment as well as the principal repayment (i.e., debt servicing) to external creditors. The direct real burden of such external borrowing, which is measured by the sacrifice of goods and services which these payments involve to the members of the debtor country.

Aggregate Saving Measurement : The national savings rate measures the amount of income that households, businesses, and governments save. The national savings rate is the GDP that is saved rather than spent in an economy. It is calculated as the difference between a nation's income and consumption divided by income.

How to measure National Reserve: Reserve assets are assets that are readily available to and controlled by monetary authorities for direct financing of payment imbalances. Reserve assets may be monetary gold, special drawing rights (SDRs), a reserve position in the International Monetary Fund (IMF), foreign exchange assets consisting of currency and deposits and securities, and other claims. This indicator is measured in SDRs. The IMF determines the value of SDRs daily by totalling the USD value (based on market exchange rates) of a weighted basket of currencies. The basket and weights are subject to periodic revision.

36

3.3.3. Expected Hypothesis of the study

The study formulated and tested five hypotheses in their null form as a guide to achieve the objectives of the study:

1. **Ho:** External debt has no significant effect on Ethiopian economic growth.

   H1 : External debt has significant effect on Ethiopian economic growth.

2. **Ho:** Domestic debt has no significant effect on Ethiopian economic growth.

   H1: Domestic debt has significant effect on Ethiopian economic growth.

3. **Ho:** Debt service does not have any significant effect on Ethiopian economic growth.

   H1: Debt service have any significant effect on Ethiopian economic growth.

4. **Ho:** Consumption does not have any significant effect on Ethiopian economic growth.

   H1: Final Consumption have any significant effect on Ethiopian economic growth.

5. **Ho:** Aggregate saving does not have any significant effect on Ethiopian economic growth.

   H1: Aggregate saving have any significant effect on Ethiopian economic growth.

3.3.   Model Specification

In the light of the objectives and hypotheses in the sections, a model is specified to examine the relationship of dept, aggregate saving, final consumption and on Ethiopia's economic growth, the study adopted Econometrics modal named, linear regression. The study has collected obtain time series data from the   central statistical Agency, National   Bank of Ethiopia, World Bank , International Money Fund, and other reliable sources.

The Model (CLRM) is stated as follows:

RGDP = f (DMTD, FRGD, PCEX, AGGS, DSRV, EXRV) --------------------(Equation 1)

RGDP = f (DMTD, FRGD, PCEX, AGGS, DSRV, EXRV)

where:

> **RGDP = Real Gross Domestic Product**
>
> **DMTD = Domestic dept**
>
> **FRGD = Foreign dept**
>
> **FCEX = Final Consumption Expenditure**
>
> **AGGS = Aggregate Savings**
>
> **DSRV = Debt Servicing (Aggregate)**
>
> **EXRV = External Reserves.**

This model was further broken down into simpler mode to enhance the effectiveness of the result and it goes thus:

$$RGDP = f(\textbf{DMTD}) \text{--(2)}$$

$$RGDP = f(FRGD) \text{--(3)}$$

$$RGDP = f(PCEX) \text{--(4)}$$

$$RGDP = f(AGGS) \text{--(5)}$$

$$RGDP = f(DSRV) \text{--(6)}$$

$$RGDP = f(EXRV) \text{--(7)}$$

In econometrics, equations (2,3,4,5,6 and 7) above are insufficient resulting from absence of error term. Hence, the researcher expresses the above equations in a functional relationship using **linear regression model** by introducing constant and error term, hence we have.

$$RGDP = \beta_0 + \beta_1 DMTD + \mu \text{--(2)}$$

$$RGDP = \beta_0 + \beta_2 FRGD + \mu \text{--(3)}$$

$$RGDP = \beta_0 + \beta_3 FCEX + \mu \text{--(4)}$$

$$RGDP = \beta_0 + \beta_4 AGGS + \mu \text{--(5)}$$

$$RGDP = \beta_0 + \beta_5 DSRV + \mu \text{--(6)}$$

$$RGDP = \beta_0 + \beta_6 EXRV + \mu \text{--(7)}$$

Converting Equation . 1 to the mathematical/econometric form by the introduction of the (β_0) and error term (μ) thus:

$RGDP = \beta_0 + \beta_1 DMTD + \beta_2 FRGD + \beta_3 FCEX + \beta_4 AGGS + \beta_5 DSRV + \beta_6 EXRV + \mu$ …….(Equation 2)

where:

    β_0 = Constant Term

    $\beta_1 - \beta_6$ = Coefficients of Predictors

    μ = Error correction term

Researchers Expectation

$\beta_3, \beta_4, \beta_5, \beta_6 > 0$ judging by the literature underpinning, we expect a direct and positive flow among the employed variables Real Gross Domestic Product (RGDP) and its dependent counterpart.

The variables under research were later normalized which will lead us to log form due to positive skewness of the employed data. It is important to point out that all variables under study are transformed into natural logarithms to avoid heteroskedasticity (Gujarati, 2004). Therefore, in the long run, it is expressed by percentage change and equation (2) can be rewritten as.

$$\text{lnRGDP} = \beta_0 + \beta_1 \text{ln DMTD} + \beta_2 \text{ln FRGD} + \beta_3 \text{ln FCEX} + \beta_4 \text{ln AGGS} + \beta_5 \text{ln DSRV} + \beta_6 \text{ln EXRV} + \varepsilon_t \ldots\ldots\ldots.(\text{Equation 3})$$

Times series data are often not stationary at level although economic model is built on the assumption that the time series is stationary at level. Equation 3 can be differenced to achieve stationarity stationarity and avoid spurious results and given as in Equation (4):

$$\Delta \text{lnRGDP} = \beta_0 + \beta_1 \Delta \text{ln DMTD} + \beta_2 \Delta \text{ln FRGD} + \beta_3 \Delta \text{ln FCEX} + \beta_4 \Delta \text{ln AGGS} + \beta_5 \Delta \text{ln DSRV} + \beta_6 \Delta \text{ln EXRV} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots.(\text{Equation } 4)$$

3.4. Data Presentation and Analysis

The researcher deployed both Descriptive statistics and econometric methods to analyze the data. The data on gross domestic savings, dept, Dept service, final consumption, aggregate saving, and external reserve are measured in currency (USD). The study analyzes dept effectiveness (usually measured by its impact on economic growth) in Ethiopia using a time series data covering the period 1991 to 2021 by employing multivariate regression technique and causality test . The overall effect of deficit financing on economic growth over the study period would also been examined by employing time serious and trend analysis approaches.

3.4.1. Descriptive Statistics

This method has been used to present, organize, and summarize the masses of the numerical data into full form. The characteristics of the data series used in the analysis would be presented and analyzed using descriptive statistics method.

3.4.2. Econometrics Model

3.4.2.1. Testing for Unit Roots

Before estimating a macroeconomic time-series model, it is necessary to identify the nature of time series data whether it is stationary or non-stationary (trend). The model is said to be stationary if the mean and variance are constant regardless of the actual time taken. A stationary test makes sure that there will not be spurious results. Thus, to test this the researcher has applied the Vector Autoregressive (VAR).

3.4.2.2. Autoregressive Distributed Lag test

This study has employed Autoregressive Distributed Lag (ARDL) co-integration technique to test co-integration (Pesaran et al, 2001) to determine the long and short-run relationship between independent variables and economic growth of the country. The study considered economic growth (GDP) as outcome variables and budget deficit as interest explanatory variables .

3.4.2.3. Ordinary Least Square output

Ordinary Least Squares regression (OLS) would be used to estimating coefficients of linear regression equations which describe the relationship between one or more independent quantitative variables (Domestic dept, External dept, Dept service, consumption, Aggregate saving) and a dependent variable (Real Gros domestic product).

3.5. Model Fitness and Diagnosis tool

To increase the acceptability of the study, result the researcher test the considered model by using diagnosis tests like HETEROSKEDASTICITY Test (BREUSCH-Pagan-Godfrey), Autocorrelation test (BREUSCH-Godfrey Serial Correlation LM Test), Ramsey RESET Test, Normality test of residual for ARDL model and Stability of ARDL Model. The studies pass all the listed tests; hence the ARDL model and the study result are confidentially acceptable.

3.5.1. Residuals Normality Test

The test of normality of the residuals is one of the important post-estimation diagnostic tests to check the appropriateness of the model. To test the normality of residuals, Jarque-Bera (JB) test will be used for the normal distribution. Rejection of the null hypothesis at the standard critical values indicates the non-normality of the residuals.

3.5.2. Vector Error Autocorrelation Test

The other diagnostic test for evaluating the complete specification and robustness of the results of an econometric model is the test of serial correlation of the residuals. Breusch-Godfrey Lagrange Multiplier (LM) test, which is a multivariate test for residual serial correlation up to some specified lag order is also used to test an autocorrelation between exogenous and error terms. Rejection of the null hypothesis at the standard critical values indicates the existence of serial correlation among the residuals.

3.5.3. Heteroscedasticity Test

Breusch-Pagantest used to evaluate the heteroskedasticity of the residuals. Breusch-Pagantests the null hypothesis that the residuals are both homoscedastic and that there is no problem of misspecification.

Chapter 4: Results and Discussion

4.1.   Descriptive Analysis

Variable	Mean	Std. Dev	Min	Max	Number of Observation
Real Gros domestic product - RGDP	38.48032	5.01325	100.43	11.22	31
Foreign Dept- FRGD	12.19558	1.548285	30.363	2.22	31
Domestic Dept- DMTD	20.07903	5.206376	82.43	0.04	31
Final consumption Expenditure- FCEX	27.9159	4.639667	90.18	6.03	31
Aggregate Saving- AGGS	8.634839	1.867147	29.21	0.46	31
Dept Service - DSRV	.5314516	0.1196858	2.165	085	31
External Reserve- EXRV	1.636774	0.2242653	3.98	0.1	31

Table 1. Summary of Variables description

The real GDP) has 11.22 and 100.43 million USD minimum and a maximum value respectively, and the average value was 38.48 million USD. Throughout the last 31 years Ethiopians average foreign dept 12.19 million USD showing a minimum of 2.2 million USD and a maximum of 30.36 million USD, the standard deviation has been not very large indicates most of the value of real

economic growth has been around the mean growth rate. The consumption expenditure has an average value of 27.9 million USD with 90.18 million and 6.03 million Maximum and Minimum Value respectively. The Aggregate savings has an average value of 8.6 million USD with 29.21 million and 0.46 million Maximum and Minimum Value respectively. The Dept service has an average value of 0.5 million USD with 2.1 million and 0.6 million Maximum and Minimum Value respectively. Throughout the last 31 years Ethiopians average reserve 1.6 million USD showing a minimum of 1.2 million USD and a maximum of 3.98 million USD.

4.2.   Trend Analysis

4.2.1.   Trend of Budget Deficit
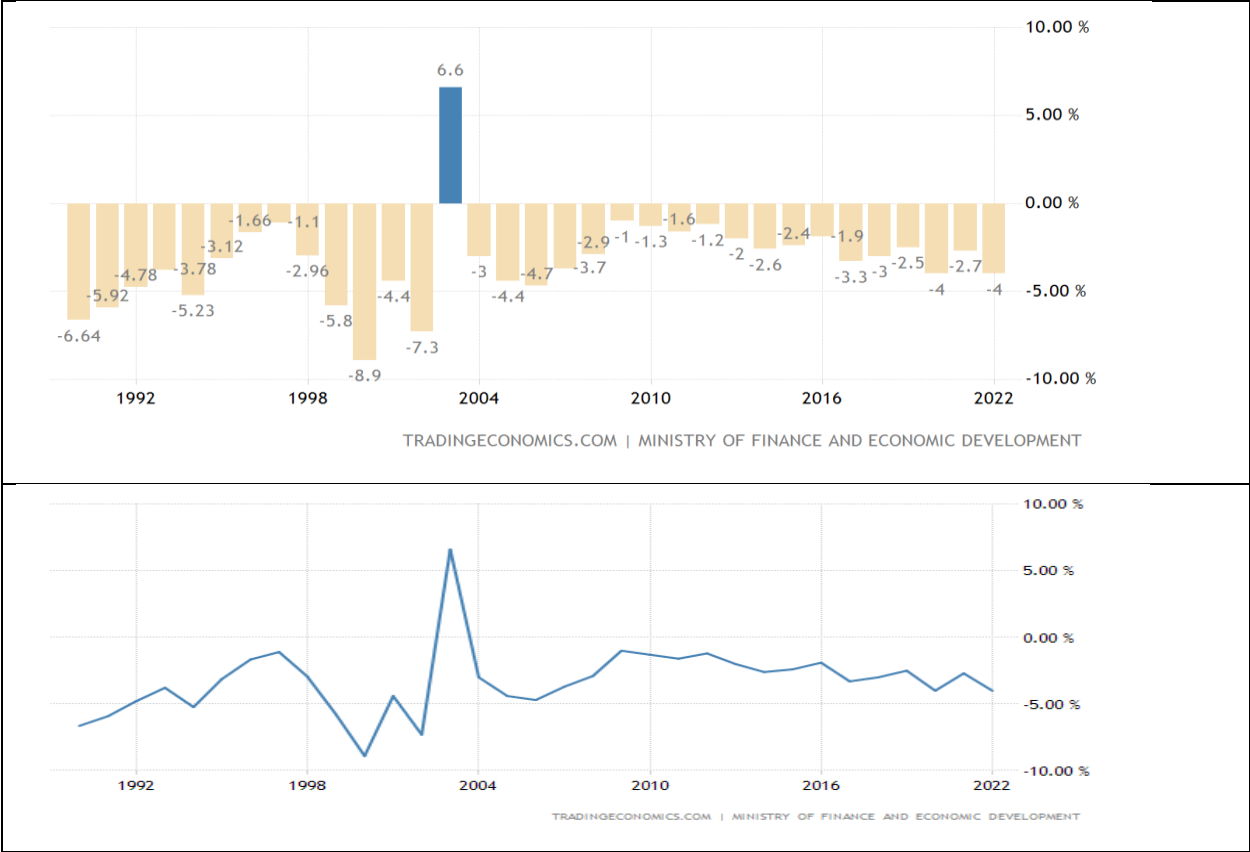
Figure 1. Trend of Budget deficit in Ethiopia

Ethiopia recorded a Government Budget deficit equal to 4 percent of the country's Gross Domestic Product in 2022. Government Budget in Ethiopia averaged -3.25 percent of GDP from 1990 until 2022, reaching an all-time high of 6.60 percent of GDP in 2003 and a record low of -8.90 percent

42

of GDP in 2000. Trend Analysis of Budget Deficit and Economic Growth graphs budget deficit as a percentage of GDP against the real economic growth. This is done to assess the effect of budget deficit on economic growth. Ethiopia is a country with fast economic growth for the past two decades. The GDP growth rate was 10.4% per annum during the years 2004- 2017. The most important factors that contributed to the economic growth of Ethiopia are agricultural modernization, the development of new export sectors, strong global commodity demand, and government-led development projects (WB, 2013).

The big push of public investment-led development has delivered positive returns, but the development of a strong and vibrant private sector is needed to sustain the high growth (WB, 2013).The economic growth grew from 3.2 percent in 1994 to 12.4 percent in 1996 and 1998 the economy more decline due to the war with Eritrea. However, since 2004 it showed an upward increment plus fluctuation trend due to rainfall shortage which affected the agricultural production in 2016 and similarly declined to 6.1 percent in 2020 because of pandemic covid 19. Figure a: Trends of the budget deficit and economic growth.

4.2.2. Trend Analysis of Structure, type, and composition of Ethiopia's External debt,

Figure 2 Trend of External Debt in Ethiopia

External debt stocks (% of GNI) in Ethiopia was reported at 27.11 % in 2021, according to the World Bank collection of development indicators, compiled from officially recognized sources. Total external debt is debt owed to nonresidents repayable in currency, goods, or services. Total external debt is the sum of public, publicly guaranteed, and private nonguaranteed long-term debt, use of IMF credit, and short-term debt. Short-term debt includes all debt having an original

43

maturity of one year or less and interest in arrears on long-term debt. Data are in current U.S. dollars. Ethiopia external debt for 2021 was $30,017,495,807, a 1.14% decline from 2020; external debt for 2020 was $30,363,325,104, a 7% increase from 2019.Ethiopia external debt for 2019 was $28,376,713,498, a 1.92% increase from 2018. Ethiopia external debt for 2018 was $27,841,902,864, a 6.39% increase from 2017.

Moreover, there exists unidirectional causality from external debt to economic growth. Therefore, external debt is found to have a negative effect rather than causing economic growth in Ethiopia for the period under study.

4.2.3. Trend Analysis of Structure, type, and composition of Domestic debt ,
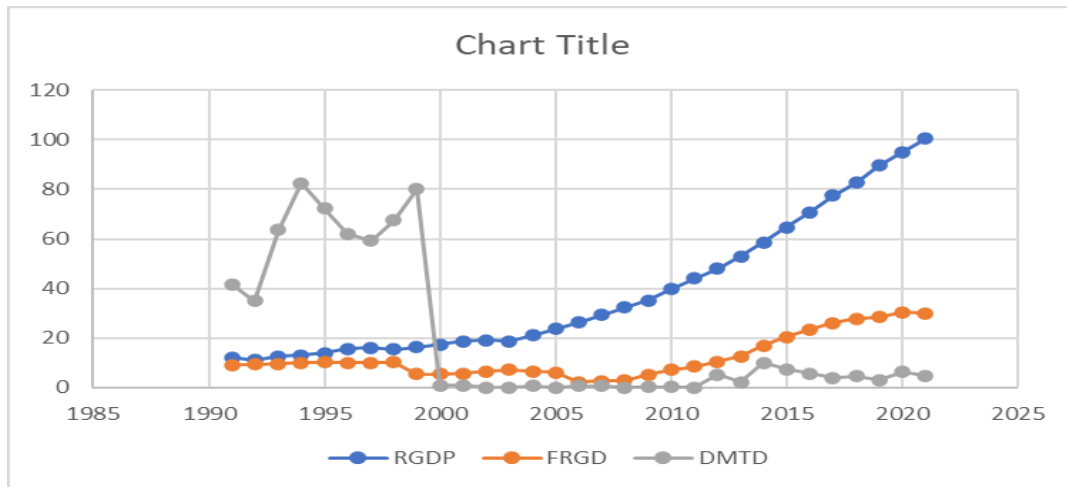
Figure 3 Trend of Domestic Debt in Ethiopia

The graph depicts unidirectional causality from internal debt to economic growth. Therefore, internal dept is found to have a negative effect rather than causing economic growth in Ethiopia for the period after 2000.

4.2.4. Trend Analysis Aggregate Saving, Debt Service and Reserve
Trend Analysis of Structure, type, of Aggregate Saving, final consumption, Nation reserve and Debt service
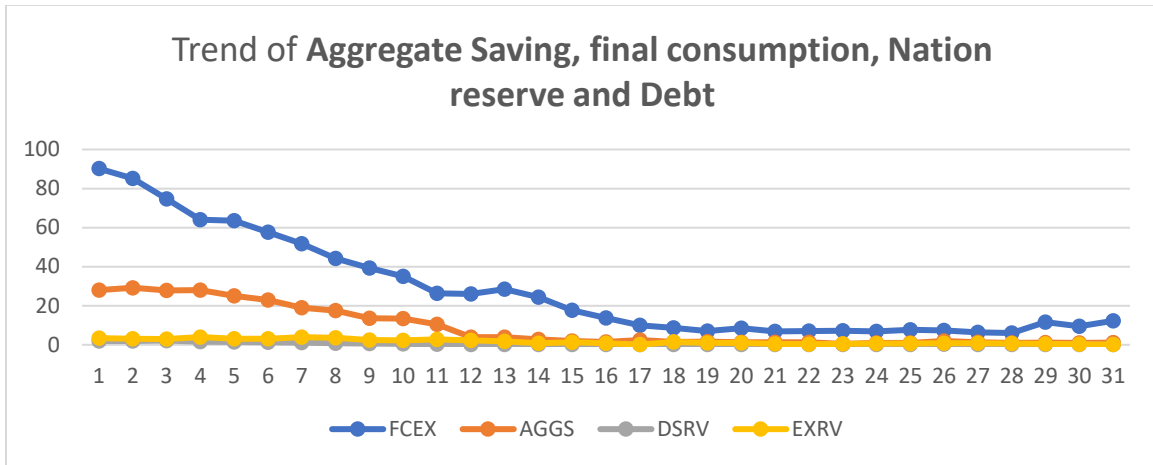
Figure 4. Trend of Aggregate Saving and Final Consumption in Ethiopia

The graph depicts unidirectional relationship and increasing trend of Aggregate saving, dept service, final consumption, and national reserve of Ethiopia for the last 31 years. Therefore, internal.

4.3. Econometric Analysis

4.3.1. Econometric Model and its output

```
. regress rgdp frgd dmtd fcex aggs dsrv exrv

      Source |       SS           df       MS            Number of obs =      31
-------------+------------------------------         F(  6,    24) =  801.32
       Model |  23257.2889        6   3876.21481        Prob > F      =  0.0000
    Residual |  116.09489        24   4.83728709        R-squared     =  0.9950
-------------+------------------------------         Adj R-squared =  0.9938
       Total |  23373.3838       30   779.112792        Root MSE      =  2.1994

------------------------------------------------------------------------------
        rgdp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        frgd |  -.7021842   .2402242    -2.92   0.007    -1.197983   -.2063858
        dmtd |  -.0351719   .0221724    -1.59   0.126    -.0809334    .0105897
        fcex |   .6033993   .0772577     7.81   0.000     .4439474    .7628513
        aggs |   .7334939   .3005067     2.44   0.022     .1132786    1.353709
        dsrv |   10.23728   3.640466     2.81   0.010     2.723732    17.75084
        exrv |   2.873179   .9177674     3.13   0.005     .9790006    4.767358
       _cons |   14.42868   1.565062     9.22   0.000     11.19855    17.65881
------------------------------------------------------------------------------
```

The Model shows the relationship among Variables and analyze the long- term and short-term relationship of deficit financing in terms debt and GDP in terms of economic growth.

The model estimates Certain parameters including the intercept term, the coefficient of frgd, the coefficient of dmtd, the coefficient of fcex, the coefficient of aggs, the coefficient of dsrv and the coefficient of extv.

- The coefficient of frgd- foreign dept means that for one USD increase in foreign dept then RGDP will decrease by $ 0.702.

45

- The coefficient of dmtd-domestic dept means that for one USD increase in domestic dept results in $ 0.035 decrease in RGDP.
- The coefficient of fcex – final consumption expenditure means that for one USD increase consumption, then the real GDP increases by $ 0.6.
- The coefficient of aggs -aggregate saving   means that for one USD increase in aggregate saving , the RGDP will increase by $0.733.
- The coefficient of dsrv-dept service means that for one USD increase in dept servicing , the RGDP will increase by $10.23
- The coefficient of external reserve   means that for one USD increase in external reserve   , the RGDP will increase by $2.87.
- The constant shows the average RGDP with no other variables. The value of the constant is -$14.42 which does not make sense since in our data the minimum RGDP is $11.22. Thus, one needs to be careful while interpreting the constant since depending on the regression, the constant might or might not have a useful interpretation.
- The fourth and fifth column show the t-statistic and p-value of the null hypothesis that the coefficient is equal to zero. For all the coefficients we can reject that hypothesis since the p-value is less than 1%.
- The 95% Confidence interval implies that there is a 95% probability that the interval will contain the population parameter.
- The probability (Prob > F) tests whether the independent variables have no power to explain the dependent variables or not. Given a p-value of 0.000% we can reject the null hypothesis. In other words, the null hypothesis is that joint tests whether all the coefficients are equal to zero or not. We can reject such a hypothesis and conclude that jointly the coefficients are significantly different from zero and they can predict the dependent variable.

The output of the regression model summarized as

- *The frgd and DMTD- dept - inversely related with RGDP and directly related with other independent variables.*
- *The coefficient of fcex – final consumption expenditure directly related with RGDP.*
- *The of aggs -aggregate directly related with RGDP.*
- *The dsrv-dept service   directly related with RGDP.*
- *The external reserve is directly related to RGDP.*

4.3.2. Results of unit root test.

The fundamental contribution of this test is to question the validity of the ''stationary'' assumptions of classical regression technique considering the time series property of macro variables. The first step in time series econometric analysis is to carry out unit root test on the variables of interest. The test examines whether the data series is stationary or not. Working with non-stationary variables leads to spurious regression results from which further inference is meaningless. To conduct the test for stationarity of the series, conventional Augmented Dickey-Fuller (ADF) test is used. The null hypothesis in these tests maintains that the series under investigation has unit root. On the other hand, alternative hypothesis claims that the series is stationary.

Standard econometric methodologies assume stationarity in the time series while they are in the real sense non-stationary. Hence the usual statistical tests are likely to be inappropriate and the inferences drawn are likely to be erroneous and misleading (Dauda, 2010). The essence of testing for unit root is because if the series is not stationary then all the results from the classical linear regression analysis are not valid. Considering the underlying shocks in the time series variable and some shock which could be found in the error terms, we therefore intend to capture the stationary of the employed variable. Hence, this will help in forecasting and predicting a great possible effect of the shock, while non-stationary data are not suitable for long run tests.

The stata result of Augmented Dickey-Fuller test presented here After.

Unit root test by Augmented Dickey-Fuller and Phillips-Perron test statistic at 5 % significance level.

Variables	t-statistics	Lag	PP-value	ADF value at 1% critical value	ADF value at 5% critical value	ADF value at 10% critical value	Stationery
RGDP	-0.507	2	0.9832	-4.352	-3.588	-3.233	Stationery
FRGD	-1.569	2	0.8044	-4.352	-3.588	-3.233	Stationery
DMTD	-1.600	2	0.7924	-4.352	-3.588	-3.233	Stationery
PCEX	-0.085	2	0.9933	-4.352	-3.588	-3.233	Stationery
AGGS	-1.654	2	0.7708	-4.352	-3.588	-3.233	Stationery
DSRV	-0.757	2	0.9691	-4.352	-3.588	-3.233	Stationery
EXRV	-1.694	2	0.7533	-4.352	-3.588	-3.233	Stationery

Table 2: Summery of results of Unit Root test

Note: If the p-value is less than or equal to the significance level or if the test statistic is less than or equal to the critical value, the decision is to reject the null hypothesis. Because the data provide evidence that the data are stationary, the recommendation of the analysis is to proceed without differencing.

To test null hypothesis, HO: rgdp is non stationery , that Demand follows a unit root process. usually reject the null when the p-value is less than or equal to a specified significance level, often 0.05 (5%), or 0.01 (1%) and even 0.1 (10%). Your approximate p-value is 0.9831, thus, null hypothesis is rejected. The other way to see this is that your test statistic is smaller (in absolute value) than the 10% critical value. If you observed a test statistic like -0.5, then you could reject the null and claim that your variable is stationary.

To test null hypothesis, HO: frgd is non stationery , that Demand follows a unit root process. usually reject the null when the p-value is less than or equal to a specified significance level, often 0.05 (5%), or 0.01 (1%) and even 0.1 (10%). The approximate p-value is 0.8044, thus, null hypothesis is rejected. The other way to see this is that test statistics are smaller (in absolute value) than the 10% critical value. If you observed a test statistic like -1.569, then you could reject the null and claim that your variable is stationary.

To test null hypothesis, HO: dmtd is non stationery , that Demand follows a unit root process. usually reject the null when the p-value is less than or equal to a specified significance level, often 0.05 (5%), or 0.01 (1%) and even 0.1 (10%). The approximate p-value is 0.7924, thus, null hypothesis is rejected .The other way to see this is that test statistic is smaller (in absolute value) than the 10% critical value. If you observed a test statistic like -1.6, then you could reject the null and claim that your variable is stationary.

To test null hypothesis, HO: fcex is non stationery , that Demand follows a unit root process. usually reject the null when the p-value is less than or equal to a specified significance level, often 0.05 (5%), or 0.01 (1%) and even 0.1 (10%). The approximate p-value is 0.9933, thus, null hypothesis is rejected. The other way to see this is that test statistic is smaller (in absolute value) than the 10% critical value. If you observed a test statistic like -0.085, then you could reject the null and claim that your variable is stationary.

To test null hypothesis, HO: aggs is non stationery , that Demand follows a unit root process. usually reject the null when the p-value is less than or equal to a specified significance level, often 0.05 (5%), or 0.01 (1%) and even 0.1 (10%). The approximate p-value is 0.7708, thus, null

hypothesis is rejected. The other way to see this is that test statistics are smaller (in absolute value) than the 10% critical value. If you observed a test statistic like -1.65, then you could reject the null and claim that your variable is stationary.

To test null hypothesis, HO: dsrv is non stationery , that Demand follows a unit root process. usually reject the null when the p-value is less than or equal to a specified significance level, often 0.05 (5%), or 0.01 (1%) and even 0.1 (10%). The approximate p-value is 0.9691, thus, null hypothesis is rejected. The other way to see this is that test statistic is smaller (in absolute value) than the 10% critical value. If you observed a test statistic like -0.757, then you could reject the null and claim that your variable is stationary.

To test null hypothesis, HO: exrv is non stationery , that Demand follows a unit root process. usually reject the null when the p-value is less than or equal to a specified significance level, often 0.05 (5%), or 0.01 (1%) and even 0.1 (10%). The approximate p-value is 0.7533, thus, null hypothesis is rejected. The other way to see this is that test statistics are smaller (in absolute value) than the 10% critical value. If you observed a test statistic like -1.694, then you could reject the null and claim that your variable is stationary.

4.3.3. Results of co-integration Test

Having tested the stationarity of each time series, the next step is to test for co integration between the variables. The Johansen procedure is used to identify long run relationships among the variables. Co integration of the dependent variable with the independent variable forms a dynamic basis through which forecast can be made.

4.3.3.1.   Bound test Result

Test Statistic	Value	Level of Significance	Upper I(0)	Lower I(1)
F statistic	6.963	10%	2.2	3.09
		5%	2.56	3.49
		1%	3.29	4.37
T statistic	-6.536	10%	-2.57	-3.66
		5%	-2.86	-3.99
		1%	-3.43	-4.6

Table 3: Summary Result of Co integrity Test

Bound tests for co integration: F-test and t-test F-Bounds Test Null Hypothesis: No levels relationship. Accordingly , based on the summary table, Null hypothesis is rejected.

4.3.3.2. Johnson Cointegration Test result

Under the ARDL procedure, the study tests the null hypothesis of no long-run relationship (there is no co-integration) exist against the alternative hypothesis of the existence of relationship in the model.

The ARDL bounds test results indicate that, in general, there is a co-integration among the variables given in the models .

  Ho: The long-run relationship does not exist

  H1: The long-run relationship does exist.

Then F-test through the bound test is used to check the joint significance of the study variables. The computed F-statistic value is compared with the lower bound and upper bound critical values tabulated value (Pesaran et al. 2001)

As per the summarized information from results of Johnsen test for cointegration, with two number of lags included in the model. When Maximum rank r = 5, all five variables in this model are stationary. Because the trace statistic at rank, r = 0 of 226.2198 exceeds its critical value of 124.24, we reject the null hypothesis of no cointegrating equations. Similarly, because the trace statistic at r = 1 of 156.15 exceeds its critical value of 94.15, we reject the null hypothesis that there is one or fewer cointegrating equations.

In contrast, because the trace statistic at r = 5 of 14.37 is less than its critical value of 15.41, we cannot reject the null hypothesis that there are five or fewer cointegrating equations.

T value show the t-statistic and p-value of the null hypothesis that the coefficient is equal to zero. For all the coefficients we can reject that hypothesis since the p-value is less than 1%.The 95% Confidence interval implies that there is a 95% probability that the interval will contain the population parameter.

That means, the Johansen test based on confirms that there are five cointegration relationships that exist between the variables.

4.3.4. Model Diagnostic Checking

The study carried out several diagnostic checking which Ramsey's RESET test to check the functional form of the overall model, includes Serial Brush and Godfrey LM test to check serial

correlation or autocorrelation, Jarque-Bera test to check the normality of the error terms and Heteroscedasticity test to check whether the error terms are constant over a time taken.

4.3.4.1. Model stability / Linearity of the Model

Researchers used Ramsey Regression Equation Specification Error Test (RESET) to detect specification errors in the model. The RESET performs a nested model comparison with the current model and the current model plus some polynomial terms, and then returns the result of an F-test. The idea is, if the added non-linear terms explain variance in the outcome, then there is a specification error of some kind, such as the failure to include some curvilinear term or the use of a general linear model where a generalized linear model should have been used.

The P-value (0.412) is greater than the minimum threshold of 0.05, thus, the model has no specification error. A significant p-value from the test is not an indication to thoughtlessly add several polynomial terms. Instead, it is an indication that we need to further investigate the relationship between the predictors and the outcome. The null hypothesis is accepted , so that the model has no omitted variable.

4.3.4.2. Residuals Normality Test

The test of normality of the residuals is one of the important post-estimation diagnostic tests to check the appropriateness of the model. Researchers used Shapiro-Wilk test of normality to assess normality statistically. The null hypothesis for the test is normality, so a low p-value indicates that the observed data is unlikely under the assumption it was drawn from a normal distribution.

The small p-value leads us to reject the null hypothesis of normality. Fortunately, the P- Value of Shapiro-Wilk test is (0.52183) of the model, which is greater than the minimum threshold 0.05, thus, we can accept the null hypothesis and we can say the model has normality.
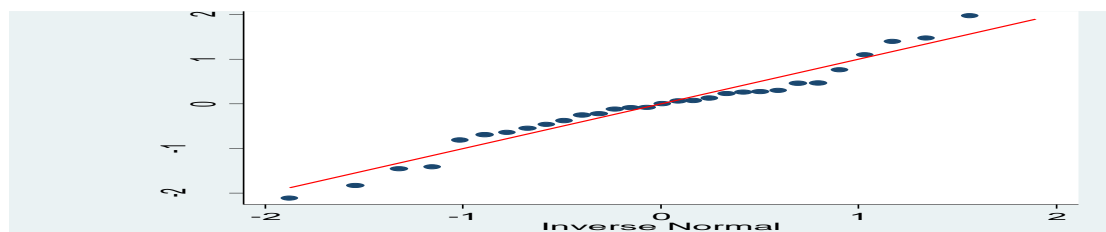
Figure 5. Residual normality of the model

Following the guide, the J-shape the plot indicates that the residuals are positively skewed.

4.3.4.3. Vector Error Autocorrelation Test/ Autocorrelation test

The other diagnostic test for evaluating the complete specification and robustness of the results of an econometric model is the test of serial correlation of the residuals. Breusch-Godfrey Lagrange Multiplier (LM) test, which is a multivariate test for residual serial correlation up to some specified lag order is also used to test an autocorrelation between exogenous and error terms. Rejection of the null hypothesis at the standard critical values indicates the existence of serial correlation among the residuals. Based on the First order autocorrelation using the LM statistic (Breusch-Godfrey) test Chi2 is 27.592 with one degree of freedom and Prob >Chi2 which is 0.0850, thus it is concluded that the null hypothesis is rejected and there is correlation among Variables. .

4.3.4.4.   **Heteroscedasticity Test**

Breusch-Pagantest used to evaluate the heteroskedasticity of the residuals. Breusch-Pagantests the null hypothesis that the residuals are both homoscedastic and that there is no problem of misspecification. Use the Breusch-Pagan test to assess homoscedasticity. The Breusch-Pagan test regresses the residuals on the fitted values or predictors and checks whether they can explain any of the residual variance. A small p-value, then, indicates that residual variance is non-constant (heteroscedastic).

The small p-value leads us to reject the null hypothesis of homoscedasticity and infer that the error variance is non-constant. The below figure shows how the reseduals are distributed.
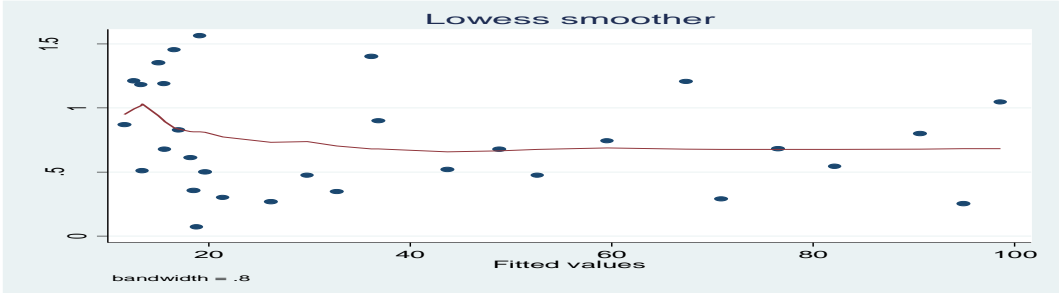
Figure 6. Heteroscedasticity of residuals

The residual variance is decidedly non-constant across the fitted values since the conditional mean line goes up and down, suggesting that the assumption of homoscedasticity has been violated.

Chapter 5 Summery, Conclusion and Recommendations of the study .

5.1. Summery and Conclusion

The main objective of this study was to investigate the impact of budget deficit on economic growth in Ethiopia. For this purpose, the study used time series secondary data, and the data were extracted from the World Bank development indicators, IMF, Ministry of Finance, and National Planning and Development Commission of Ethiopia. The data covered a period running from 1991 to 2021. The study has employed the Autoregressive Distributed Lag co-integration technique to determine the long and short-run relationship between dependent and independent variables. The study considered real economic growth as outcome variables and dept, aggregate saving, consumption expenditure, dept services and external reserve as its interest is the explanatory variable. After establishing the unit root status of the variables in the structural equation and the existence of co-integration, the Vector Autoregressive Estimate (VAR) was utilized in deriving the long run and short run estimates.

The findings resulted from modeling and analysis of the study showed that there exists a negative relationship between budget deficit (expressed by dept) and economic growth in Ethiopia and these results are consistent with the neoclassical economist schools of thought. Based on the co-integrity test and OLS model, the study concludes that in the long run, budget deficits affect economic growth negatively. This shows that a one USD increase in the externa dept would lead to a 0.702 USD decrease in real GDP or economic growth, holding all other factors constant. On the other

hand, the analysis in the short run depicts that the budget deficit is positive but statistically insignificant. Empirical evidence emerges that deficit financing has insignificant effect on Ethiopian economy.

In conclusion, the study which was aimed at studying the effect of deficit finance on Ethiopian economic growth, found that deficit finance has a significant positive effect on the nation's economic growth. The researcher also concludes that the government should ensure judicious use of borrowed funds and should invest such funds on project that can generate good return in the future.

5.2.   Policy Implication

The study recommends that Ethiopia should adopt and implement policies that could reverse the short-lived budget deficit leading to reduction of economic growth but rather, put the economy on a sustained path of growth and, development in the medium to long term. The optimal levels of governments' expenditure should be determined to avoid deficits and encourage as the impetus to economic growth through increased capital expenditure.

Owing to the current profile of Ethiopia's external debt, deficit financing should be discouraged in view of its failure to stimulate the desired level of growth and development in the economy. Different stakeholders in the economy have attributed this to poor budget implementation, corruption and mismanagement, investment in wrong projects and poor macroeconomic management. These apart, deficit financing has oiled inflation, increased the cost of borrowings, created income inequality and distorted investment pattern in the country. The Federal Government has always hinge to poor revenue base as its reason for continued external borrowing to financing her budgets. This reason adduced by the government is considered deceitful by the citizens' consequent to ethnicity and sentiment by those in corridors of power. To overcome the dearth of revenue that forces the government to always resort to deficit financing, the government encouraged it to expand its present revenue base. The government should set up strong monitoring teams that will make sure that the budget is well and carefully implemented. The monitoring team

should also ensure that the loan borrowed is directed to the project it is planned for to reduce wastage. Government should demonstrate a high sense of transparency in its monetary and fiscal operations to curb high prevalence of domestic and external debt, to reduce the incidence of inflation in Ethiopia. Concerted efforts should be made by policy makers to install financial discipline among political office holders.

5.3. Recommendations

- As a long-term strategy, the government can work to cut back the budget deficit by using its fiscal policy toolbox to promote economic growth, such as scaling back government spending.
- As one of the long-term remedy, Ethiopian government must increase its revenue base by implementing appropriates tax policy and promoting good administration system.
- The study recommends promoting economic growth as one of the best ways to reduce the budget deficit.
- Formulating and implementing suitable policies to encourage those who to pay their due shares of taxes, which should include some incentives for those, who pay taxes is also important, this, in turn, creates more revenue sources to increase the income to reduce dependence on developed countries.
- Variables that affect economic growth such as trade deficit and public debt must come up with reliable findings.
- As short-term remedy to resolve deficit financing, the government of Ethiopia should setup monitoring team that will make sure that the budget is well carefully implemented and as well as loan borrowed in other to reduce corruption and wastage.
- Government must put a stop to unproductive loans, wasteful spending and unregulated money supply with government putting into structure strategies designed to achieving increased and sustained productivity in economic sectors.

- Government and policy makers should carefully study the present state of the economy before deciding on measures through which deficit will be financed.

- Finally, government should maintain optimum level of external debt as it is one of the mechanisms for economic growth but to an optimum level and that all external debt should be effectively utilized for the purpose for which it was obtained to promote economic growth.

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https://www.macrotrends.net/countries/ETH/ethiopia/gdp-gross-domestic-product, Ethiopia GDP 1981-2023 MacroTrends,

World Fact Book, Fact of the Day, May 22, 2023

Ethiopian Central Statistical Agency, http://www.csa.gov.et/

Annexes

Figure . 7 . Regression Model of Stata

```
. regress rgdp frgd dmtd fcex aggs dsrv exrv

      Source |       SS           df       MS            Number of obs =       31
-------------+------------------------------           F(  6,    24) =   801.32
       Model |  23257.2889          6  3876.21481       Prob > F      =   0.0000
    Residual |   116.09489         24  4.83728709       R-squared     =   0.9950
-------------+------------------------------           Adj R-squared =   0.9938
       Total |  23373.3838         30  779.112792       Root MSE      =   2.1994

-------------------------------------------------------------------------------
        rgdp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+-----------------------------------------------------------------
        frgd |  -.7021842   .2402242    -2.92   0.007    -1.197983   -.2063858
        dmtd |  -.0351719   .0221724    -1.59   0.126    -.0809334    .0105897
        fcex |   .6033993   .0772577     7.81   0.000     .4439474    .7628513
        aggs |   .7334939   .3005067     2.44   0.022     .1132786    1.353709
        dsrv |   10.23728   3.640466     2.81   0.010     2.723732    17.75084
        exrv |   2.873179   .9177674     3.13   0.005     .9790006    4.767358
       _cons |   14.42868   1.565062     9.22   0.000     11.19855    17.65881
-------------------------------------------------------------------------------
```

Figure 8. Augmented Durbin Fuller Unit Root Test Stata Result

57

. dfuller dsrv, trend regress lags(2)

Augmented Dickey-Fuller test for unit root   Number of obs   =   28

	Test Statistic	─────── Interpolated Dickey-Fuller ───────		
	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-0.757	-4.352	-3.588	-3.233

MacKinnon approximate p-value for Z(t) = 0.9691

D.dsrv	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
dsrv						
L1.	-.0766802	.1012784	-0.76	0.457	-.2861907	.1328302
LD.	-.0255352	.2828474	-0.09	0.929	-.6106496	.5595792
L2D.	.2327481	.372378	0.63	0.538	-.5375745	1.003071
_trend	.0099451	.0056981	1.75	0.094	-.0018422	.0217325
_cons	-.0721814	.074737	-0.97	0.344	-.2267866	.0824238

. dfuller exrv, trend regress lags(2)

Augmented Dickey-Fuller test for unit root   Number of obs   =   28

	Test Statistic	─────── Interpolated Dickey-Fuller ───────		
	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-1.694	-4.352	-3.588	-3.233

MacKinnon approximate p-value for Z(t) = 0.7533

D.exrv	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
exrv						
L1.	-.3718991	.219486	-1.69	0.104	-.8259405	.0821423
LD.	-.2029396	.2222405	-0.91	0.371	-.6626792	.2567999
L2D.	-.2977807	.1961924	-1.52	0.143	-.7036357	.1080743
_trend	.0522151	.0305565	1.71	0.101	-.0109959	.115426
_cons	-.0808712	.2502192	-0.32	0.749	-.5984892	.4367467

```
. pperron rgdp, lags(2) trend regress
```

```
Phillips-Perron test for unit root                    Number of obs   =        30
                                                      Newey-West lags =         2
```

| | Test Statistic | ———— Interpolated Dickey-Fuller ———— | | |
		1% Critical Value	5% Critical Value	10% Critical Value
Z(rho)	0.349	-23.140	-18.280	-15.840
Z(t)	0.533	-4.334	-3.580	-3.228

MacKinnon approximate p-value for Z(t) = 0.9969

rgdp	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
rgdp						
L1.	1.013299	.0186008	54.48	0.000	.9751339	1.051465
_trend	.2102739	.0546597	3.85	0.001	.0981214	.3224265
_cons	-.8052167	.3772747	-2.13	0.042	-1.57932	-.031113

Figure 9. Johnson Co integrity test Result of Stata

Cointegrating equations

Equation	Parms	chi2	P>chi2
_ce1	6	258.3809	0.0000

Identification: beta is exactly identified

Johansen normalization restriction imposed

beta	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
_ce1						
rgdp	1	.	.	.	.	.
frgd	.0157223	.5565762	0.03	0.977	-1.075147	1.106592
dmtd	-.1254313	.0458004	-2.74	0.006	-.2151983	-.0356642
fcex	-.4018515	.1723555	-2.33	0.020	-.7396622	-.0640408
aggs	.2869029	.6525264	0.44	0.660	-.9920253	1.565831
dsrv	-22.31275	6.960532	-3.21	0.001	-35.95514	-8.670355
exrv	13.50608	1.952672	6.92	0.000	9.678917	17.33325
_trend	-2.558952	.	.	.	.	.
_cons	2.46238	.	.	.	.	.

```
. tsset year
        time variable:  year, 1991 to 2021
                delta:  1 unit

. vecrank rgdp frgd dmtd fcex aggs dsrv exrv, trend(constant)

                     Johansen tests for cointegration
Trend: constant                              Number of obs =     29
Sample:  1993 - 2021                                   Lags =      2
_____
                                                      5%
maximum                               trace     critical
  rank      parms        LL      eigenvalue   statistic    value
    0        56     -300.7214         .        226.2198   124.24
    1        69     -265.68793     0.91073     156.1529    94.15
    2        80     -234.14217     0.88646      93.0614    68.52
    3        89     -218.25753     0.66563      61.2921    47.21
    4        96     -205.9121      0.57319      36.6012    29.68
    5       101     -194.79975     0.53530      14.3765*   15.41
    6       104     -189.2248      0.31920       3.2266     3.76
    7       105     -187.61148     0.10530
_____
```

Figure 10. Vector Error cointegration Analysis

```
. vec rgdp frgd dmtd fcex aggs dsrv exrv, trend(trend) lags(1)

Vector error-correction model

Sample:  1992 - 2021                          No. of obs     =         30
                                              AIC            =   22.90813
Log likelihood = -316.6219                    HQIC           =   23.31156
Det(Sigma_ml)  =   3.465954                   SBIC           =    24.1692

Equation          Parms      RMSE      R-sq      chi2     P>chi2

D_rgdp              3      .858865    0.9527   544.0348    0.0000
D_frgd              3     1.50599    0.4707    24.01413    0.0000
D_dmtd              3     16.7546    0.0558     1.594568   0.6606
D_fcex              3      2.77333   0.6777    56.76205    0.0000
D_aggs              3      1.43381   0.4832    25.24665    0.0000
D_dsrv              3      .108332   0.5711    35.95127    0.0000
D_exrv              3      .531619   0.1977     6.65346    0.0838
```

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
D_rgdp						
_ce1 L1.	.0549094	.0197928	2.77	0.006	.0161163	.0937025
_trend	.2320595	.0188542	12.31	0.000	.195106	.2690131
_cons	-.7565825	.3248413	-2.33	0.020	-1.39326	-.1199053
D_frgd						
_ce1 L1.	.0940113	.034706	2.71	0.007	.0259888	.1620337
_trend	.0769804	.0330602	2.33	0.020	.0121836	.1417772
_cons	-.6648383	.5695983	-1.17	0.243	-1.781231	.4515539
D_dmtd						
_ce1 L1.	.45968	.3861151	1.19	0.234	-.2970917	1.216452
_trend	-.0763758	.3678057	-0.21	0.836	-.7972618	.6445101
_cons	-.8642008	6.336968	-0.14	0.892	-13.28443	11.55603
D_fcex						
_ce1 L1.	.0331927	.0639121	0.52	0.604	-.0920727	.1584582
_trend	.31254	.0608814	5.13	0.000	.1932146	.4318655
_cons	-2.305607	1.048933	-2.20	0.028	-4.361479	-.249736
D_aggs						
_ce1 L1.	.0832485	.0330426	2.52	0.012	.0184862	.1480109
_trend	.0598304	.0314758	1.90	0.057	-.001861	.1215217
_cons	-.1849385	.5422996	-0.34	0.733	-1.247826	.8779491
D_dsrv						
_ce1 L1.	.0098377	.0024965	3.94	0.000	.0049446	.0147309
_trend	.0048395	.0023782	2.03	0.042	.0001784	.0095006
_cons	-.0305354	.0409737	-0.75	0.456	-.1108423	.0497715
D_exrv						
_ce1 L1.	-.0280852	.0122513	-2.29	0.022	-.0520973	-.0040731
_trend	.0097306	.0116703	0.83	0.404	-.0131429	.032604
_cons	.0122977	.2010698	0.06	0.951	-.3817919	.4063873

Figure 11. Diagnostic test Result from Stata

```
. swilk res_std

              Shapiro-Wilk W test for normal data

     Variable |    Obs       W          V        z     Prob>z

      res_std |    31     0.97010    0.974    -0.055   0.52183

. estat ovtest

Ramsey RESET test using powers of the fitted values of rgdp
       Ho:  model has no omitted variables
             F(3, 21) =        1.00
             Prob > F =      0.4120
```

61

```
. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
        Ho: Constant variance
        Variables: fitted values of rgdp

        chi2(1)      =      2.97
        Prob > chi2  =   0.0850
```

estat bgodfrey, lags(1)

Breusch-Godfrey LM test for autocorrelation

lags(p)	chi2	df	Prob > chi2
1	27.592	1	0.0000

H0: no serial correlation

Figure 12. Multi Variant regression of Stata result

```
. mvreg rgdp = frgd dmtd fcex aggs dsrv exrv

Equation          Obs  Parms       RMSE     "R-sq"          F        P

rgdp               31     7    2.199383    0.9950     801.32   0.0000


        rgdp │     Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]

        frgd │  -.7021842   .2402242    -2.92   0.007    -1.197983   -.2063858
        dmtd │  -.0351719   .0221724    -1.59   0.126    -.0809334    .0105897
        fcex │   .6033993   .0772577     7.81   0.000     .4439474    .7628513
        aggs │   .7334939   .3005067     2.44   0.022     .1132786   1.353709
        dsrv │  10.23728    3.640466     2.81   0.010    2.723732   17.75084
        exrv │   2.873179   .9177674     3.13   0.005     .9790006   4.767358
       _cons │  14.42868    1.565062     9.22   0.000    11.19855   17.65881

. estat vce, correlation

Correlation matrix of coefficients of mvreg model

            │ rgdp
     e(V)   │   frgd      dmtd      fcex      aggs      dsrv      exrv      _cons

rgdp        │
     frgd   │  1.0000
     dmtd   │ -0.6440    1.0000
     fcex   │  0.2034    0.0990    1.0000
     aggs   │ -0.4637    0.3378   -0.3693    1.0000
     dsrv   │ -0.4864    0.1093   -0.4346   -0.3107    1.0000
     exrv   │  0.0826    0.0036   -0.1363   -0.6200    0.4318    1.0000
     _cons  │ -0.6780    0.0860   -0.5064    0.6022    0.3429   -0.4334    1.0000

. veclmar
```

Row data (RGDB,ED,ID,DS,TC,AS,ER) from 1991 to 2021

Year	GDP (in Billion USD)	Real GDP (Constant at 2015 USD)	External Dept (in Billion USD)	Internal dept (in Billion USD)	Total Consumption Expenditure (in Billion USD)	Aggregate Saving (in Billion USD)	Dept service (in Billion USD)	External Reserve (in Billion USD)	Growth rate in terms of GDP
Year	**GDP**	**RGDP**	**ED**	**ID**	**TC**	**AS**	**DS**	**ER**	
2021	111.27	100.43	30.017	4.92	90.18	27.93	2.001	3.50	5.64%
2020	107.66	95.07	30.363	6.35	85.24	29.21	1.997	3.05	6.06%
2019	95.91	89.64	28.376	3.07	74.69	27.84	2.165	2.99	8.36%
2018	84.27	82.72	27.841	4.69	63.97	27.95	1.652	3.98	6.82%
2017	81.77	77.44	26.169	3.93	63.49	25.02	1.482	3.05	9.56%
2016	74.30	70.68	23.396	5.61	57.66	22.99	1.239	3.03	9.43%
2015	64.59	64.59	20.443	7.50	51.83	19.06	1.102	3.84	10.39%
2014	55.61	58.51	16.944	9.99	44.19	17.49	0.759	3.53	10.26%
2013	47.65	53.07	12.584	2.14	39.27	13.50	0.655	2.36	10.58%
2012	43.31	47.99	10.463	5.23	34.98	13.39	0.428	2.30	8.65%
2011	31.95	44.17	8.606	0.17	26.44	10.40	0.344	2.84	11.18%
2010	29.93	39.73	7.286	0.31	26.04	3.89	0.179	2.24	12.55%
2009	32.44	35.29	5.360	0.24	28.55	3.89	0.095	1.78	8.80%
2008	27.07	32.44	2.846	0.06	24.37	2.70	0.103	0.87	10.79%
2007	19.71	29.28	2.591	0.73	17.74	1.97	0.126	1.29	11.46%
2006	15.28	26.27	2.220	0.67	13.75	1.53	0.133	0.87	10.83%
2005	12.40	23.70	6.175	0.12	10.04	2.36	0.088	0.10	11.82%
2004	10.13	21.19	6.568	0.65	8.61	1.52	0.096	1.49	13.57%
2003	8.62	18.67	7.281	0.05	7.07	1.55	0.092	0.96	-2.16%
2002	7.85	19.08	6.552	0.04	8.51	1.33	0.085	0.97	1.51%
2001	8.23	18.79	5.745	0.98	6.91	1.32	0.183	0.49	8.30%
2000	8.24	17.35	5.516	0.94	7.00	1.24	0.138	0.36	6.07%
1999	7.70	16.36	5.572	79.98	7.23	0.46	0.156	0.55	5.16%
1998	7.82	15.53	10.360	67.60	6.88	0.94	0.119	0.59	-3.46%
1997	8.59	16.11	10.090	59.33	7.60	0.94	0.099	0.59	3.13%

1996	8.55	15.62	10.091	62.06	7.353	1.90	0.348	0.84	12.43%
1995	7.66	13.89	10.324	72.31	6.36	1.30	0.154	0.82	6.13%
1994	6.93	13.09	10.079	82.43	6.03	0.90	0.112	0.59	3.19%
1993	8.83	12.69	9.717	63.57	11.63	1.06	0.095	0.49	13.14%
1992	10.49	11.22	9.355	35.03	9.54	0.90	0.11	0.27	-8.67%
1991	13.46	12.28	9.133	41.75	12.24	1.20	0.14	0.11	-7.14%

Source: https://www.macrotrends.net/countries/ETH/ethiopia/. Ethiopia GDP 1981-2023 | Macro Trends.

year	GDP	RGDP
1991	13463868357.48790	12280612209
1992	10492993077.60930	11215578553
1993	8830712713.90781	12689623422
1994	6927950564.55657	13094417914
1995	7663984567.90123	13896779867
1996	8547939730.62374	15623617882
1997	8589211390.49612	16113247514
1998	7818224905.55071	15556028996
1999	7700833482.00615	16359053896
2000	8242392103.68061	17352574817
2001	8231326016.47494	18793065207
2002	7850809498.16803	19077728597
2003	8623691300.04079	18665390255
2004	10131187261.44210	21198769598
2005	12401139453.97380	23704202561
2006	15280861834.60240	26272488211
2007	19707616772.79960	29282308336
2008	27066912635.22280	32441436521
2009	32437389116.03800	35297111229
2010	29933790334.34180	39727088708
2011	31952763089.33000	44167900367
2012	43310721414.08290	47987457193
2013	47648211133.21830	53065619502
2014	55612228233.51790	58508821687
2015	64589334978.80130	64589329345
2016	74296618481.08820	70682352527
2017	81770791970.98200	77442546767
2018	84269348327.34540	82721145212
2019	95912590628.14120	89640012689
2020	107657734392.44600	95071776945
2021	111271112329.97500	1.00435E+11
2022		1.05776E+11

Source: The world Bank, IBRD,ID, June 2022

Ethiopian Externa Dept Historical Data

Ethiopia External Debt - Historical Data		
Year	**Current US $**	**Annual % Change**
2021	$30,017,495,807	-1.14%
2020	$30,363,325,104	7.00%
2019	$28,376,713,498	1.92%
2018	$27,841,902,864	6.39%
2017	$26,169,980,395	11.86%
2016	$23,396,100,284	14.44%
2015	$20,443,253,424	20.65%
2014	$16,944,825,499	34.65%
2013	$12,584,251,066	20.26%
2012	$10,463,906,050	21.58%
2011	$8,606,311,905	18.12%
2010	$7,286,199,659	35.93%
2009	$5,360,207,434	88.31%
2008	$2,846,424,291	9.84%
2007	$2,591,387,173	16.68%
2006	$2,220,991,209	-64.04%
2005	$6,175,805,430	-5.97%
2004	$6,568,177,207	-9.80%
2003	$7,281,813,432	11.13%
2002	$6,552,441,033	14.04%
2001	$5,745,843,979	4.16%
2000	$5,516,263,792	-1.01%
1999	$5,572,314,681	-46.22%

Ethiopia External Debt - Historical Data		
Year	**Current US $**	**Annual % Change**
1998	$10,360,532,218	2.67%
1997	$10,090,618,085	-0.01%
1996	$10,091,749,360	-2.25%
1995	$10,324,075,338	2.42%
1994	$10,079,654,018	3.73%
1993	$9,717,488,584	3.87%
1992	$9,355,564,836	2.43%
1991	$9,133,608,406	5.65%