



DETERMINANTS OF BALANCE OF PAYMENT IN ETHIOPIAN ECONOMY

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DECLARATION

I, the undersigned, declare that this thesis is my original work; prepared under the guidance of Dr. Alem Hagos. All resources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of learning any degree. And that all source materials used in this thesis have been properly acknowledgment.

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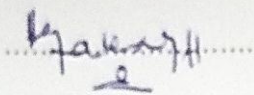
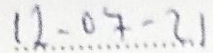

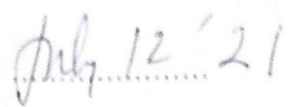

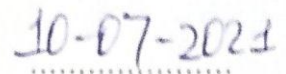
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LIST OF ACRONYMS

ADF	Augmented Dickey Fuller
BOP	Balance of Payment
NBE	National Bank of Ethiopia-
FDI	Foreign Direct Investment
GDP	Growth Domestic product
IMF	International Monetary Fund
OLS	Ordinary Least Square
SAPs	Structural Adjustment Programs
WB	World Bank
IR	Inflation Rate
PI	Political Instability

ABSTRACT

This study assessed the determinants of balance of payment performance in Ethiopia using time-series data for the period 1996 – 2019 using the Johansen Cointegration test, Vector error correction model and the Granger causality test. The study adopted restricted VAR model which had lag two as the maximum lag to estimate the relationship between balance of payments in Ethiopia and previous balances in balance of payments account, external debt, inflation rate, Foreign Direct Investment and political instability. The VECM model showed that all variables and their lags were highly significant in determining the balance of payment in Ethiopia. On the other hand , a positive relationship was found between current balance of payment and previous balance of payment at first lag, differenced FDI, differenced External debt, differenced inflation rate and foreign direct investment at first differenced lag. The study analysis to get a significant long run relationship between BOP, FDI, Inflation rate, external debt and political instability. Political Instability and inflation rate are short run relation between BOP. Political instability translated to unfavorable situation in the current balance of payment in Ethiopia. On the other hand, Balance of payments is negatively influenced by External debt and political instability and positive influenced by FDI and Inflation rate. The study recommended that the Government of Ethiopia, National bank of Ethiopia, all financial institutions and other stakeholders whose activities influence External debt and political stability ought to apply relevant policy measures for better management of Ethiopia's balance of payment. Policies that encourage domestic investments, foreign direct investment and increased trade earnings can be effective in rising GDP growth and reducing dependence on external debt for sustained economic development.

Keywords: *Balance of Payments, Macroeconomic variables, FDI, inflation, political stability, External debt, Ethiopia*

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

Based on the Balance of payments and International Investment Position Manual, sixth edition (BPM6), the BOP is a statistical statement that summarizes transactions between residents and foreign residents during a period. Balance of Payments Account (It consists of products and services account, primary income account, secondary income account, capital account, and financial account). BOP accommodates all types of transactions of a rustic like – exports and imports of products and services, buy and sale of overseas properties, overseas direct funding and portfolio funding additionally to borrowing from and lending to the relief of the world. During this sense, the balance of payments is one altogether the foremost indicators of a country's status in global (BPM6).

BOP accounting serves to consider a country's competitive strengths and weaknesses and helps in achieving balanced process. It can significantly affect the economic policies of a government then the economy itself. Therefore, every country strives to have an honest balance of payments and maintains its future sustainability the prominent factors on which the nation's balance of payments situation tends to depend are the balance of trade, rate of exchange movement, inflation, industrial production and Gross Domestic Product (GDP). BOP crisis distorts the workings of the overall system (economy) because it creates disequilibrium between the provision and demand for money.

BOP disequilibrium is additionally a mirrored image of disequilibrium within the industry (IMF, 2000). Monetary disequilibrium produces adverse effect on the mixture expenditure for goods and services (absorption) within the sense that, if the last word public has an excess supply of money it gets eliminated by passing its excess cash balance to foreign countries in exchange for goods and services. If the general public desires to remain extra cash than it's available, it achieves it by reducing absorption and ultimately passes goods and services on in foreign countries in exchange for money (William H. White, (1981).

Balance of payments' can be favorable (positive), unfavorable (negative) or indifference (around zero).(Kennedy, (2013) argues that a country's favorable balance of payments cannot be taken as an indicator of economic prosperity or the unfavorable balance of payments is not a reflection of economic failure. A poor country may have a favorable balance of payments due to large inflow of foreign loans, foreign aids and equity capital. A developed country may have unfavorable balance of payments due to massive assistance given to developing countries. Thus, a deficit or surplus of balance of payments of a country should not be taken as a sign of economic failure or prosperity of the country (Serawit, 2017).

However, the longer the BOP deficit continues, the greater it'd suggest some essential issues therein national economy thanks to the next reasons. If the steadiness of the charge deficit is financed from end to end borrowing, it's miles unsustainable with inside the very while and international locations could even be harassed with excessive hobby bills. Countries with massive hobby bills have little left over to spend reception funding one as example Ethiopian finances inspiration for debt provider for the 12 months 2017/18 is larger than 3 instances as compared to the schooling finances (Serawit, 2017).

If international locations run a cutting-edge account deficit, it approaches it wishes to run a surplus at the capital account. Getting capital account surplus approach foreigners to own a growing declare at the house belongings, which they'll value more highly to be back at any time. There's likewise a threat that the international locations' nice belongings are obtainable via the way of means of foreigners, lowering while earnings and might increase the soundness of bills deficit. Ethiopia is promoting many of its public companies rather the identical because the brewery enterprise to foreigners inside the form of FDI to mitigate the cutting-edge account deficit. However, ultimately the cutting-edge account deficit could return lower back over and thru with FDI income expatriate (Serawit, 2017).

A current account deficit may also moreover propose that global places are looking forward to customer spending, and became noncompetitive. This ends during a decrease and increase within the export sector (Umar, 2010). This might preferably be specifically a hassle for international locations like Ethiopia which lack competitiveness inside the earth marketplace which can rather be the motive for huge cutting-edge account deficits.

A Balance of payments deficit may additionally motive a scarcity of self-assurance via way of means of overseas buyers that the buyers may get eliminate their investments inflicting an infinite fall with inside the worth of the house currency (devaluation). This might cause a decline in dwelling requirements and reduce self-assurance for funding (Imoisi, 2012). Therefore, it's prudent to grasp the weather or the variables that affect and recognize the adjustments inside the staleness of charge to form a knowledgeable financial decision.

This study investigates the determinants of BOP in Ethiopia's economy for the duration Between 1996 and 2019. The study also leads to a better understanding of the factors that affect the balance of payments, their significance and policy implications. This study, therefore, tries and resolves the determinants of the balance of payment like FDI, Inflation, political instability, and External Debt on the Balance of Payments situation prevailing in Ethiopia

1.2 Background of Ethiopian Economy

Ethiopia - the second most populous country in Africa - could even be a one-party state with a planned economy. For over a decade before 2016, GDP grew at a rate between 8% and 11% annually – one altogether the fastest growing states among the 188 IMF member countries. This growth was driven by government investment in infrastructure, likewise as sustained progress within the agricultural and repair sectors. Quite 70% of Ethiopia's population continues to be used within the agricultural sector, but services have surpassed agriculture because the principal source of GDP.

Ethiopia has the bottom stage of income-inequality in Africa and one in each of the bottom in the world; with a Gini coefficient adore that of the Scandinavian international locations. Yet despite progress toward eliminating extreme poverty, Ethiopia remains one in every of the poorest countries within the globe, due both to rise and a coffee starting base. Changes in rainfall related to world-wide weather patterns resulted within the worst drought in 30 years in 2015-16, creating food insecurity for immeasurable Ethiopians. The state is heavily engaged within the economy. Ongoing infrastructure projects include power production and distribution, roads, rails, airports and industrial parks. Key sectors are state-owned, including telecommunications, banking and insurance, and power distribution. Under Ethiopia's constitution, the state owns all land and

provides long-term leases to tenants. Title rights in urban areas, particularly city, are poorly regulated, and subject to corruption (Source: CIA World Fact book, (2020).

Ethiopia's interchange earnings are led by the services sector - primarily the state-run Ethiopian Airlines - followed by exports of several commodities. While coffee remains the foremost important exchange earner, Ethiopia is diversifying exports, and commodities like gold, sesame, khat, livestock and horticulture products have gotten increasingly important. Manufacturing represented but 8% of total exports in 2016, but manufacturing exports should increase in future years due to a growing international presence. The banking, insurance, telecommunications, and micro-credit industries are restricted to domestic investors, but Ethiopia has attracted roughly \$8.5 billion in foreign direct investment (FDI), mostly from China, Turkey, India and thus the EU; US FDI is \$567 million. Investment has been primarily in infrastructure, construction, agriculture/horticulture, agricultural processing, textiles, leather and leather products.

To support industrialization in sectors where Ethiopia contains a comparative advantage, like textiles and garments, leather goods, and processed agricultural products, Ethiopia plans to extend installed power generation capacity by 8,320 MW, up from a capacity of two thousand MW, by building three more major dams and expanding to other sources of renewable energy. In 2017, the govt. devalued the birr by 15% to extend exports and alleviate a chronic foreign currency shortage within the country. (Source: 2020 CIA world fact book)

1.3 Statement of the Problem

In the face of the relatively extensive theoretical and empirical literature, there's no consensus on the determinants of balance of payment especially in developing countries(Ajayi, (2014).It means the character; performance and determinants of the balance of payment remain an empirical problem in developing countries .One of the foremost focuses of the Ethiopian government is to grasp external balance in its balance of payments a long side other objectives like economic growth, improved living standards and internal balance. To boost stable external balance in Ethiopia, prudent policies that include structural adjustment programmers (SAPs), import substitution, export promotion, liberalization of capital flows, financial sector policy reforms, international trade regulation reforms, government budget rationalization, and paternal reforms, use of suitable rate regimes, strengthening of grouping, administration reforms and

privatization were adopted.(source: The National Development Policies of Ethiopia Economics Essay,(2015).

These policies were intended to spur economic activities, gain low inflation rates, create positive real interest rates, achieve stable nominal exchange rates, attain price stability and build an enabling environment for accumulation, and efficient utilization of economic resources which finally translate to viable economy with favorable balance of payment.

Despite the implementation of these numerous policies to spice up stability of Ethiopia balance of payment, there are still persistent imbalances within the BOP. There are continuous deficits in accounting section of the balance of payment in Ethiopia there by making external balance sustainability a major problem (Serawit,(2017).

Instability in balance of payment is an argument because it's visiting end up in an exceedingly decline in process and better level of poverty by creating unemployment and unstable macroeconomics environment. Persistent deficit is additionally a significant issue for it should result into crises like currency crises, external debt crisis, selling of assets and reduction of international reserves: (Juan Hernandez, April 17, 2017). These necessitate understanding of the underlying dynamics.

The studies by (Serawit; (2017 and Mabior;(2014), assessed the determinants of specific macroeconomic variables on Ethiopia balance of payment and Kenya balance of payment. Specifically, the authors An Analysis of Ethiopian's Balance of Payments during the period from 2004 to 2015 and the determinants of balance of payment performance in Kenya the period from 1975 to 2012. In all studies, the main focus was to find out the gross saving and gross investment are the main determinants of Ethiopian balance of payments and money supply, terms of trade and openness of economy are the main determinants of balance of payment performance in Kenya . The authors also included real interest rate, gross capital formation, and political instability to assess their determinants on balance of payment using VAR model.

This study does not concentrate on the previous studies using the macroeconomic variables like gross saving, gross investment , money supply, terms of trade a, openness of economy ,real interest rate and gross capital formation, because the above variable are not the only variables the determinants of balance of payment. This study use macroeconomic variables like FDI, Inflation,

political stability, and External debt using VECM as to analyze Ethiopia balance of payment. It is difference to the previous studies; this study uses the Restricted VAR or VECM (Vector error correction Model) approach to know the impact of FDI, Inflation, political stability, and External debt on balance of payment Ethiopia economy through co-integration and vector error correction model to fill the previous literature and methodological gaps.

1.4 Research Question

What are the foremost economic factors determining Ethiopian balance of payments?

1.5 Objectives of the Study

1.5.1 General objective

The General Objective of the study is to spot significant economic determinant that impacts the balance of payment over time in Ethiopia.

1.5.2 Specific Objectives;

1. To analyze the effect of inflation on balance of Payment
2. To examine the effect of FDI on balance of Payment.
3. To discuss the effect of External debt on balance of Payment.
4. To investigate the effect of political instability on balance of Payment
5. To examine a causal relationship between FDI, Inflation rate, external debt, political instability and balance of payment in Ethiopia.

1.6 Hypothesis of the Study

According to Uma Sekaran (2003), “hypotheses are often defined as a logically conjectured relationship between two or more variables expressed within the variability of a testable statement”. This study uses the null and alternate hypothesis format. The null statements indicate negatively relationship whereas alternate expressed as positively relationship.

Hypothesis for this research as follows:

Hypothesis H1: inflation has significant and negatively relationship with BOP.

Ali (2011) study examines the monetary approach to Pakistan balance of payments .Ali tests whether excess money supply played a significant role as a disturbance by using co-integration tests and error-correction modeling. The empirical results showed that monetary variables do not play an overwhelming role in determining Pakistan's balance of payments Using co-integration and error-correction modeling. Ali's (2011) research the empirical results showed that monetary variables do not play an overwhelming role in determining Pakistan's balance of payments. The significant relationships were found inflation and balance of payment, and also inflation a strong positive relationship.

Hypothesis 2: FDI has positive and significant relationship with BOP.

The FDI can lead and influence the country's growth, industrial structure, employment and therefore the trade pattern more successfully than the other capital flows. Hence, the FDI can affect and improve significantly and considerably the extent of output and there-fore the trade of a rustic and may also accelerate and speed up its growth and develop-ment. Further, it plays an important and paramount role in achieving the country's social and economic desired objectives and targets (Zhang, 2001).

Hypothesis 3: external debt has positive and significant relationship with BOP.

Dr. Samer Ali Abdelhadi(2013) study the effect of external debt on economic growth of Jordan. Jordan has relied much on external debt in order to finance its saving investment gap and balance of payments deficits. The study found that there is a positive and significantly relationship between external debt and economic growth in Jordan. But with the increasing reliance on foreign funds and of loans foreign, in particular, led to rising debt service burdens, which has a negative impact on economic growth in Jordan, and this is shown by the results of this study, which explored that there is an inverse and significantly relationship between debt service and economic growth, because the country spends major portion of its Balance of Payment to serve its external debt. So, the policy makers should create credibility and a favorable investment climate to stimulate local a foreigner investors' confidence in order to get rid of reliance on external debt.

Hypothesis 4: political stability has significant and negatively relationship with BOP.

Arfan (2008) study the political stability. Political stability is playing important role in determination of stability of balance of payment. Stable political regime with visionary leadership leads the nation to a higher level of favorable balance of payment. It makes a healthy economic environment to achieve stability of balance of payment. Pure theoretical macroeconomic policies cannot make macroeconomic stability unless the country maintaining political stability.

1.7 Significance of the Study

A study of determinants in spite of everything of payment performance in Ethiopia is critical to policy makers, planners, investors and thus the last word public. Factors that influence balances of payment are visiting be identified and analyzed to appear at their effects on Ethiopia's balance of payment. The analyses of determinant the balance of payments are significant because: it helps in making of a country's monetary, fiscal and trade policies, determining the influence of foreign trade & transactions on the quantity valuable of a rustic and supply information to banks, firms, financial institutions and individuals Which are directly or indirectly involved in international trade and finance Findings on the study could even be accustomed mitigate adverse effects regarding balance of payment problems. Supported findings, informed policies are designed so on boost improvement and stability in Ethiopia's external balance.

The study intends to analyses determinants that have previously not been studied in Ethiopia and thus it'll make constructive addition to the available literature and data in any case of payment in Ethiopia. This research is one altogether the few researches done on determinants that influence balance of payment in developing countries. Consequently, it's visiting be used as a basis to hold out further researches that are useful in developing countries.

1.8 Scope of the Study

The Study covers between 1996 and 2019; the years the economy growth rates became fastest-growing economies however the balance of payments deficit is spreading. This study discusses concerning the Microeconomic variables like FDI, Inflation, political instability, and External debt the determinant of balance of payment in Federal Democratic Republic of Ethiopia. The methodology used for this study was secondary data with time series regression analysis.

1.9 Limitations of the Study

This study is limited to the period between 1996-2019, which covered twenty four years of time-series data on macroeconomic variable that can affect balance of payment and at this time the economy growth rates became constantly high and stable but the balance of payments deficit is widening.

Limitation of this study lies on the quality of the data. The study uses secondary sources of data. The Central Statistics Agency (CSA) and the National Accounts Department of the Ministry Finance and Economic Development are the two Ethiopian official institutions that are responsible for keeping track of the statistical data. But neither organization has the institutional capability to collect reliable and accurate economic data. According to (IMF, 2014) in its assessment of data adequacy of the Ethiopian government finds out limitation on data quality on National account; Finance statistics; Monetary statistics, and in the Balance of payments.

1.10 Organization of the Study

This paper has accommodated five chapters with different sections and sub-sections. The first chapter covers the introductory part including statement of the problem, objectives, significance of the study and scope and limitation of the study. The second chapter covers literature review which is divided into two namely Theoretical Literature and Empirical Literature review. The third chapter covers data sources, data collection method and methodology of data analysis. The fourth chapter expresses the result or outcome of the study and conferences of findings. Finally, chapter five covers the summery, conclusion and recommendation part of the study.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. Chapter Introduction

This chapter examines the literature on the determinants of BOP. The literature review discusses each theoretical and empirical review of the determinants of BOP. Theoretical literature makes an attempt to create evident a number of the influences that area unit associated with Balance of Payments supported economic theories whereas empirical literature shall review past studies by researchers from variety of states. Literature review shall provide the underlying support upon that a model is structured for this study and additionally during this chapter consist the studies that are done the determinants of balance of payment a number of the studies' area unit associated with African nation whereas others to remainder of the planet. Varied researchers have worked on the determinants of balance of payments and that they have used completely different approaches. It involves the theoretical framework in the end of payment; value existing written work in the end of payments and its relationship with the chosen economic science variables. The 3 theoretical approaches Absorption, financial and Elastics Approach, the snap approach, says that a nominal devaluation of currency improves balance. This read is stock-still in an exceedingly static and partial equilibrium approach to the balance of payments , the absorption approach and therefore the financial approach area unit improvement of balance because the rate of exchange devalue .The chapter additionally cowl empirical review in the end of payment during this review The impacts of currency depreciation on a country's balance are extensively examined within the empirical literature within the context of the Marshall lyricist condition in theory, nominal depreciation or appreciation of exchange rate is assumed to change the real exchange rate and thus has a direct result on the balance of payment. The chapter consists. Outline of Literature and analysis Gap and abstract framework.

2.2 Determinants of Balance of Payment

The balance of payment position of a rustic is decided by the extent of economic engagement that goes on between the domestic economy and the rest of the world; in terms of trade, Aid, cross-border foreign direct investment, portfolio investment, and political stability as well as the stability of domestic macroeconomic variables like inflation rates, interest rates and predictable exchange rate. Below is a discussion of some the determinants of balance of payments:

2.2.1 Foreign Direct Investment (FDI)

Foreign direct investment has traditionally been viewed as a key driver of prosperity, and modern FDI has also become a vehicle for transferring intangible assets. (James Anderson, 2019) Yet, the advantages of FDI don't accrue automatically and evenly across countries, sectors and local communities. National policies and the international investment architecture matter for attracting FDI to a bigger number of developing countries and for reaping the complete benefits of FDI for development. The challenges primarily address host countries, which require to determine a transparent, broad and effective enabling policy environment for investment and to create the human and institutional capacities to implement them.

2.2.2 External Debt

External debt is the portion of a country's debt that is borrowed from foreign lenders, including commercial banks, governments, or international financial institutions. These loans, including interest, must 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 lending country. (David Kindness, 2021)

2.2.3 Inflation Rate

According to Melberg (1992) the term inflation describes a general and persistent increase within the prices of products and services in an economy. Price stability exists when average prices are constant over time, or once they are rising at a really low and Predictable rate. Price inflation occurs when average prices are rising above this low and predictable rate resulting in high cost of living within the economy. The monetarists, following from the number Theory of cash (QTM), have propounded that the amount of money is that the main determinant of the worth level, or the

worth of cash, such any change within the quantity of cash produces an exactly direct and proportionate change in the price level (Umaru, 2012)

2.3.4 Political instability

Political Instability: This refers to the situations under which the country is during a political related crisis. It involves actions that intend or actually contribute to the disruption of peace within the country and consequently slows down economic activities. For instance, the eruption of violence associated with elections or attack by insurgents.

2.3. Review of Theoretical Literature

Theories of Balance of Payments square measure involved with distinctive attainable determinants of BOP, and well analysis of policies for conserving BOP equilibrium. In line with Johnson (1972) prior to Thirties, no comprehensive theory of BOP was out there for analysis instead there was a well discovered theory of mechanism of international adjustment underneath the gold normal. This approach is to boot known as the Classical Price-Specie-Flow mechanism. The mechanism assumes that voters in deficit (surplus) country would expertise a negative (positive) real balance result. And, thanks to modified relative costs and real balances, residents of deficit country would purchase less from abroad, and voters of surplus country would increase their imports. This method would continue till payments balance is remodeled. David Hume used this mechanism to refute the mercantilist belief that a rustic may deliver the goods a persistent balance of trade surplus by the mercantilist policies grievous protection and export promotion. However, among the globe each the mercantilist and David Hume theory of the balance of payment wasn't operating and researchers engaged in learning the supply of balance of payments situation and conjointly the mechanism to correct the disequilibrium.

An adjustment of situation in BOP will broadly speak divide into 2 types: Automatic and Policy induced or deliberate (Johnson, 1977). Per Johnson (1977) underneath automatic adjustment, the BOP adjustment comes automatically; it's not brought deliberately by government policy or intervention. The burden of adjustment is on the economy and method and not on the government. If method of demand and provides square measure allowed to possess a free play, in course of some time, BOP equilibrium square measure mechanically remodeled. Assumptive fastened or versatile exchange rates, the machine-driven adjustment in BOP takes place through

changes in costs, interest rates, financial gain and capital flows. Thus, underneath automatic adjustment there is not any government intervention.

However, it's to be noted that automatic adjustment does not inform reality and has unwanted facet effects. Johnson (1977) show Policy induced approaches broadly speaking divided into: Absorption, financial and Elasticities Approach Their square measure 3 theoretical approaches that attempt to justify accounting balance that square measure applied otherwise in line with prevailing economic surroundings thanks to the implications on policy of a nation.

2.3.1 Elasticity Approach

Elasticity Approach to Balance of Payment this might be often a theory that's associated with Robinson (1937). It provides an analysis of how devaluation of rate of exchange and index affect the Balance of Trade betting on the elasticity of supply and demand for interchange and foreign goods. Prices are assumed to be flexible and thus it is the movement of costs that determine this account balance. Rate is that the foremost vital price that's considered during this approach. This will be because rate is closely linked to balance. The speculation analyses markets of exports and imports and concludes that it is the difference between exports and imports that has risen to a balance of payment surplus or deficit. Elasticity approach pay no attention to income and take on that capital movement are left out (fixed exogenously).

The speculation applies devaluation for it to work. Devaluation of domestic currency increases the prices of imports within the economy making imports to be very expensive thus discouraging imports. Elasticity approach encourages exports and accounting deficit is corrected to surplus. The approach also applies the Marshall-Lerner condition which states that the sum of price elasticity of demand for imports and exports must be over one (1) in absolute term for devaluation of domestic currency to boost the balance of payments. The depreciation of currency isn't effective because;

1. It takes an extended time to affect trade
2. Decline in currency value will initially worsen the deficit before improvement(MABIOR, 2014)

2.3.2 Absorption Approach to Balance of Payment

This is a Theory by Alexander (1952) that analyzes balance of trade as difference between aggregate domestic income and aggregate domestic expenditure (absorption). The speculation emphasizes how domestic spending on domestic goods changes relative to domestic output. The speculation focuses on accounting balance and balance of trade which is viewed because the difference between what the economies produces and what it takes for domestic use. The absorption approach relies on the worth identity;

$$Y = C + I + G + X - M \dots\dots\dots (1)$$

Where; Y = value. C = private consumption of products and services purchased reception and abroad. G = Government expenditure. I = Total investment by firms and government. X = Exports of products and services. M = Imports of products and services.

Then C + I + G are combined into one term, A, which represents domestic absorption (Total domestic expenditure).

$$A = C + I + G \dots\dots\dots (2).$$

$$\text{Then } Y = A + X - M \dots\dots\dots(3).$$

By stating that value equals absorption the balance of trade,

$$X - M = Y - A \dots\dots\dots (4).$$

From equation 4), it'll be seen that balance of trade is adequate the difference between domestic income and total absorption. Equation (4) is that the essential equation of the Absorption approach. it's concluded that; if the whole absorption (expenditure) exceeds income (production), then the imports will exceed exports and thus a deficit within the balance of payment and if income exceeds absorption, the balance of payment are visiting be in surplus.

2.3.3 Monetary Approach to Balance of Payments (MABOP)

This study adopts the Monetary Approach to balance of payment (MABOP) framework that was mentioned by David Hume and Alexander (1952), Mundell (1968) and Johnson (1975). The speculation assumes that balance of payment is essentially a financial development that should

be analyzed in terms of adjustment of cash stocks. Any excess demand or provider of cash is exactly mirrored inside the movements in balance of payment. Associate in nursing excess demand for cash (*ceteris paribus*) causes absorption to be however financial gain and so produces a balance of payment surplus. The country here absorbs however it produces and so sells out the remainder to the foreign countries as exports. Simply just in case of excess provider of cash, absorption is larger than financial gain thereby manufacturing a balance of payment deficit. The country here receives from foreign countries over it provides them.

The money provide identity, cash demand identity and equilibrium are so expressed as follows;

$$M^S = (R + D) \dots\dots\dots (5)$$

$$M^d = F(Y, P, I) \dots\dots\dots (6)$$

$$M^S = M^d \dots\dots\dots (7)$$

Where, M^S = money R = International reserve D = Domestic credit

M^d = cash demand Y = Level of real domestic financial gain I = rate of interest P = index. From equations five, six and seven on top of, we have a tendency to be able to get changes in reserves as shown below;

$$R = M^S - D \dots\dots\dots (8)$$

Since $M^S = M^d$ in equation (7), then equation (6) is remodeled as follow

$$R = F(Y, P, I) - D \dots\dots\dots (9)$$

Taking proportion changes in either aspect of equation (9),

$$\text{We get } \Delta R = \Delta[Y, P, I] - \Delta D \dots\dots\dots (10)$$

Therefore, Equation (10) is that the reserve flow equation that concludes that;

- a) Changes in reserves are results of divergence between the enlargement of cash demand and growth of domestic credit.

- b) With stable cash demand, a rise in domestic credit can cause a decrease in international reserves. The constant of ΔD shows the extents to those changes in domestic credit are offset by changes in international reserves.

The study has chiefly concentrated on the determinants of balance of payment in African country. Economy thus, it encompasses the terms FDI, Inflation, political instability, and External debt determinants of balance payment. This section in short can outline the fundamental terms of the study that are aiming to be used often throughout the paper.

Foreign Direct Investment: Refers the semi-permanent capital investment, like the acquisition of construction machinery, building, or whole producing plants. If foreigners are investment in an exceedingly country, that represents Associate in nursing arriving flow and counts as a surplus item on capital account

Inflation is Associate in nursing economic term that refers to Associate in nursing surroundings of usually inflation of products and services inside a selected economy. As general costs rise, the getting power of customers decreases

External debt is that the portion of a country's debt that's borrowed from foreign lenders, together with business banks, governments, or international monetary establishments. These loans, together with interest, should sometimes be paid within the currency during which the loan was created

Political Instability: This refers to the things below that the country is in an exceedingly political or political connected crisis. It involves actions that intend or truly contribute to the disruption of peace within the country and consequently slows down economic activities. As an example, the eruption of violence associated with elections or attack by protesters.

2.4 Review of Empirical Literature

Some studies are done regarding the factors that affect balance of payments countries economy. In Ethiopia some studies focused on determinants of accounting balance and other studies only looked into factors which influence elements of capital and financial account. There are just a few studies conducted in spite of everything of payments in Ethiopia as a full. keep with studies disbursed both in Ethiopia and other countries some factors influencing balance of payments

include terms of trade, country's process, exchange rates, net foreign direct investment, domestic inflation, fiscal balance, rate, trade liberalization, investments, openness of an economy and political stability.

Obafemi (1995) investigated the long-run determinants of balance of payment dynamics in Nigeria between 1961 and 1992, using econometric method of co integration and error correction mechanism. They found that everyone the variables except balance of payment, exhibited non-stationary. The results also indicate that balance of payment co integrated with all the identified explanatory variables, suggesting that balance of payment fluctuations in Nigeria are visiting be caused by the number of Trade openness, External debt burden, Charge per unit movement and Domestic inflation.

They concluded that a reduction in fiscal deficits, an increased domestic production through private investment, inflation targeting and controlled capital market integration are the cure to the negative fluctuation within the Nigerian balance of payment.

Umer (2010) studied the determinants of the balance of payments position typically specializing in explanatory variables that potentially influence investment and saving decisions. The variables usually included were: Competitiveness indicators, almost like the 000 of charge per unit (REER); catching up indicators, reflecting the state and speed of converge between countries with different income levels e.g. relative per capita income levels of the domestic economy and a reference foreign developed economy; Demographic factors, like increase and thus the old-age dependency ratio Business-cycle indicators, rather just like the output gap; Degree of economic market deregulation e.g. ratios like private sector credit-to-GDP or M^3 -to-GDP may provide useful proxies for assessing the impact of banking intermediation on domestic private savings that the accounting position; The degree of integration with international goods, services and financial markets; Fiscal variables, rather just like the government balance; and Other important variables, like aggregate proxies of investor and consumer uncertainty (e.g. inflation volatility) and special factors having a brief lived impact on this account (e.g. deviation of oil prices and freight rates from their respective long-term averages).

Akpansung (2013) in Nigeria undertook a review of empirical literature on the balance of payment as a monetary phenomenon. He found that balance of payment is monetary a phenomenon. The study showed a causal relationship between domestic credit and balance of payment. Additionally, it showed that growth in income and costs were associated with balance of payment surpluses which growth in domestic credit generally led to a balance of payment deficits and reserve outflows.

According to Selma and Kastrati (2013), FDI has benefits on the balance of payment in both developing and developed nations. These benefits include technology spill over, human capital formation support and improvement of enterprise development. Aside from host country making the foremost of inflows of capital, FDI could even be substitute for imports of products and services which end in improvement of BOP through this account. “The paper examines the benefits of FDI as a key component for successful and sustainable economic growth and also as a part of a method to social improvement. The objective Kastrati’s paper is to highlight the most main channels through which FDI makes a significant and exceptional impact on the economic development of the host countries. At the same instance, it is important to recognize that, like all things, FDI is neither good nor bad. A single discussion is devoted to the potential negative impacts of FDI flows on host economies” (Kastrati ,(2013).

Osoro (2013) while investigating determinants of balance of payments in Kenya found that the quantity of balance of trade, foreign direct investment and charge per units were the foremost determinants of Balance of payment in Kenya. His study found that balance of payment in Kenya is both a monetary and real phenomenon. Osoro’s (2013) study investigates the long-run determinants of balance of payment dynamics in Kenya between 1963 and 2012, using co integration and error correction mechanism. The Osoro paper uses annual time series data for Kenya. The results of the variables identified, confirmed that balance of payments co integrated. Osoro’s, study suggest that balance of payments fluctuations could be caused by the level of trade balance, exchange rate movement and foreign direct investment inflow.

In Namibia, Eita (2012) conducted a study on the balance of payment through co-integrated vector auto regression method with variables being fiscal balance, GDP and rate. These variables were found to be the foremost determinants of balance of payment. The paper investigates macroeconomic determinants of the balance of payments in Namibia for the period 1999 to

2009. The study was conducted through cointegrated vector auto regression methods. The Eita (2012) study make known that fiscal balance, GDP and interest rate are the main determinants of balance of payments in “[Namibia”[Eita (2012)]. Increase in GDP and interest rate causes a progress in the balance of payments. According to Eita Study the positive effect of GDP on balance of payments suggests that expansion of export has a positive impact on current account and the overall balance of payments. In Namibia, a rise in GDP and rate of interest was found to cause an improvement within the Balance of payments, while GDP policy is employed to extend exports on improve accounting, charge per unit policy was accustomed ensure favorable capital account.

Guglielmo and Mudida (2012) found that in Kenya there's a well-defined co -integrating relationship linking the balance of payments to the 000 charge per unit and relative income. Thus, moderate depreciation of Kenya Shillings may have a stabilizing influence on the balance of payment through this account without the necessity for top interest rates.

Oladipupo and Onotaniyahuro (2011) did a look on impact of rate of exchange within the top of payment in Nigeria and located that the charge per unit had an infinite impact on the balance of payments' position. This shows that depreciation finally finishes up in improved balance of payment if fiscal discipline is imposed. Moreover, they found improper allocation and misuse of domestic credit, fiscal indiscipline and lack of appropriate expenditure control policies as being sort of the causes of persistent balance of payment deficit in Nigeria. Inadequacy of foreign currency was found to guide to balance of payment problem and thus there was must manage foreign currency resources properly so on reduce adverse effects which is in a position to result from fluctuation of foreign currency during a nation.

In Pakistan, Ali (2011) distributed a study in the end of payment as a monetary phenomenon using econometric evidence with variables like excess pecuniary resource, net foreign assets, rate of exchange, inflation and rate. It had been evidenced that there existed a powerful relationship among net foreign asset, exchange rate, inflation and also the balance of payment. Additionally, the study confirmed a robust negative relationship among funds, domestic credit and balance of payment. Charge per unit was found to possess insignificant relationship with balance of payment. The monetary approach was found to play partial role within the Pakistan's Balance of Payment.

Arfan (2008) studied the link between political stability and balance of payment and located that stable political regime with visionary leadership leads the state to higher levels of favorable balance of payment. He found that pure theoretical macroeconomic policies cannot make macroeconomic stability unless the country is maintaining political stability. It absolutely was found that surplus of balance of trade, foreign direct investment and better international reserve mostly depends on its long run political stability under one party social group. He further suggested that political stability and economic freedom help in achieving international financial stability.

Parikh (2004) after researching on the link between trade liberalization, growth and balance of payment in developing countries revealed that trade liberalization can result in faster import growth than export growth and hence unsustainable balance of payment position in developing countries. It had been concluded that trade liberalization could constrain growth through the adverse impact on the balance of payments. He associated the rise of accounting deficits of African Economies during the amount of 1980-1999 to Trade liberalization in most African countries.

In Nigeria, Onyemauma and Odii (2003) studied a way to improve balance of payment through Agriculture. They found that interest rates, rate of exchange and nation's foreign reserve have direct relationship with balance of payment equilibrium. Hence, the effect found was that as rate of interest increases, the balance of payment increase, because the foreign reserve increases, there tends to be a good balance and therefore the more Naira it takes to shop for a unit of foreign currency, the upper the balance of payment.

Buscaglia (2003) studied sterilization of capital inflows and the balance of payment crises in emerging market economies. The empirical findings showed that "external factors are highly relevant to the determination of the timing and the magnitude of the capital flows to developing countries" Buscaglia (2003). Buscaglia (2003) study result suggested that an attempt to sterilize the capital inflows which follow from reduction in the international interest rate sets the economy in a path leading to balance of payment crises associated with sudden reversals of the flows.

Like, Sulaiman & Azeez (2012) studied the effect of external debt on the economic growth of Nigeria. They were working the method of ordinary least square and error correction model to determine the long run relationship of the endogenous and exogenous variables chosen. Sulaiman & Azeez (2012) study findings shown that the external debt has contributed positively to the Nigerian economy.

Nawaz et al (2012) make an attempt to examine the long run and short run dynamics of external debt and economic growth in Pakistan using time series data for the period 1980-2010. The Nawaz *etal* (2012) study was done using Johanson cointegration and granger causality Test. The data showed the existence of long run relationship between the two variables. In addition, in the short run there exists bi-directional causality between them. It is implied that, since Pakistan's external debt is sustainable, external finance could be used to tackle the scarcity of capital.

Melese (2005) valued the relationship between external debt and economic growth in Ethiopia using structural macroeconomic model, which is a single growth equation model, valued using the Ordinary Least Squares (OLS) method with data cover the period 1970-2002. The Co integration and Error Correction Models were estimated and the end result shown that there is a strong positive relationship between external debt and economic growth in Ethiopia.

Hailemariam (2010) examined the existence of long run relationship between external debt and growth in Ethiopia. Hailemariam (2010) discovers that the current level of external debt flow has a positive whereas the past debt accumulation has a negative impact on growth and private investment. This settles the presence of debt overhang hypothesis in the Ethiopian economy. Furthermore, in the long run, both external debt stock as well as total debt servicing has a negative and major impact on economic growth and private sector capital accumulation activity.

In Zimbabwe, Dhliwayo (1996) meted out an econometric research on the balance of payments as a monetary phenomenon for the amount 1980 to 1991 using reserves, real income, index, interest rates and domestic credit. He concluded that cash played a big role in determining the balance of payments. He established a robust negative relationship and link between domestic credit and therefore the flow of international reserves. it absolutely was thereby emphasized that balance of payment disequilibrium may be corrected through appropriate financial programming and monetary targeting.

In Nigeria, Tijani (2010) examined empirical analysis of balance of payment adjustment mechanisms of monetary channel for the amount 1970-2010. The results indicated that a positive relationship between domestic credit, charge per unit, balance of trade and balance of payment. Moreover, negative relationship was found between rate of inflation, gross domestic product and also the balance of payment. It absolutely was concluded that monetary measures partially influenced the balance of payment and government should therefore apply expenditure reducing monetary policies to push favorable balance of trade which stabilizes balance of payment.

2.5. Summary of Literature and Research Gap

From the literature discussed above, it will be concluded that the balance of payment fluctuations may be a results of both monetary and real factors. However as evident from the empirical literature, a little number of studies are disbursed regarding the BOP of Ethiopia and so little evidence to validate the theories within the Ethiopia economy is given supported studies drained Ethiopia regarding balance of payment little is thought about factors that may be influencing Ethiopia external balance because of insufficiency of the Literature. The findings on literature like SERAWIT (2017) indicated that some factors that positively influence balance of payment in Ethiopia includes gross saving and gross investment are the foremost determinant of Ethiopian balance of payments.(Mabior (2014) used a few variables and their study indicated that some factors that influence balance of payment in Kenya include money supply, exchange rate, real interest rate, terms of trade, openness of economy, gross capital formation and political instability using VAR model.

Having considered that, we realize that these studies didn't recognize and emphasize the varied effects of political instability, openness to economy, terms of trade and real rate of interest in any case of payments in Ethiopia. Serawit (2017) used some variables in their studies despite applying the techniques of Descriptive statistics, value Accounting Framework and Econometrics technique utilized in our study we used more variables to forecast balance of payment situation in Ethiopia.

2.6 Conceptual Framework

From both the theories and empirics we can infer that the BOP is the most important Macroeconomic area where different scholars had paid attentions working on it. Based on these theoretical and empirical facts mentioned in the above, for this study I tried to see the determinants of balance of payment in Ethiopia economy by using a 24 years' time series data on four variables, such FDI, External debt, inflation and political istability to analyze.

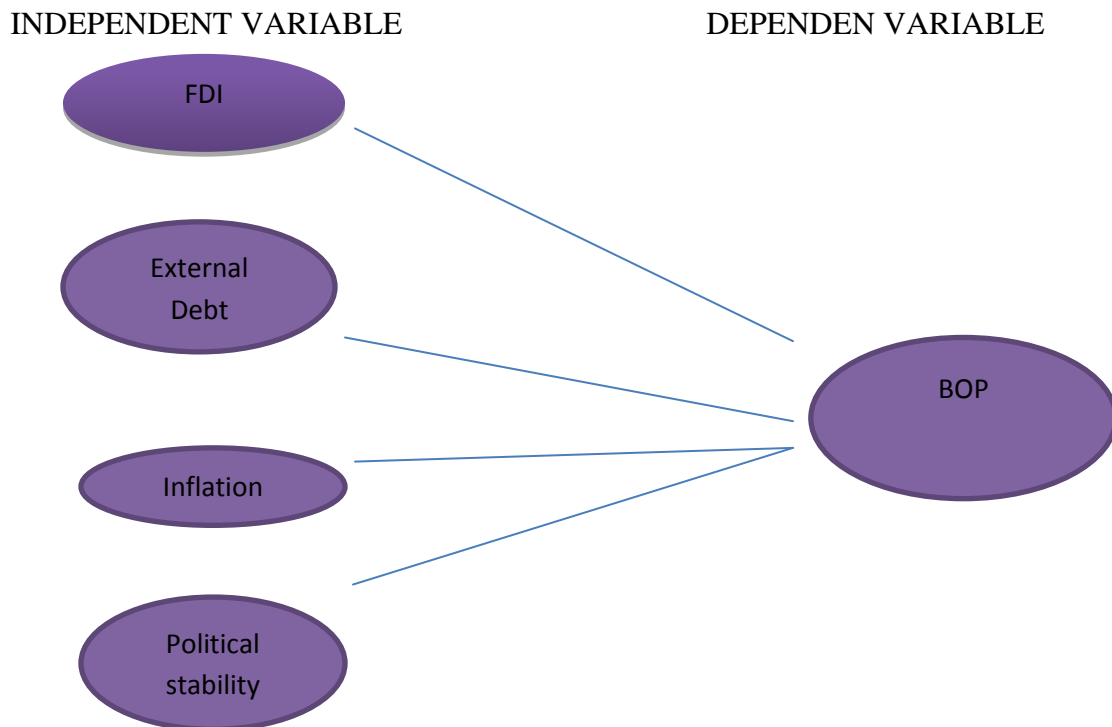


Figure 2.1 conceptual framework

Source: Researcher's

CHAPTER THREE

3. RESEARCH METHODOLOGY AND DESIGN

3.1. Chapter Introduction

This section presents the methodology to be utilized within the study. It presents the model specification, the econometric approach and estimation procedure yet because the tests to be undertaken to make sure the model is justified. A top level view of data sources are given additionally.

3.2 Research Design

The study examines the impact of external debt, inflation, FDI and political stability on the balance of payments of Ethiopia from 1996-2019 using econometric analysis. The sample period for this study is from 1996-2019. As the success of any econometric analysis ultimately depends on availability of appropriate data, it is, therefore, essential to discuss about the source and nature of the data. The study is conducted based on secondary data from domestic and foreign sources. For the domestic sources from documents of Ministry of Finance and Economic Development (MoFED) and the National Bank of Ethiopia (NBE) while for external sources from World Debt Tables, World Development Indicator, different World Bank Reports and IMF publications are utilized. This study use the VECM model, time series analysis to estimate the effect of external debt, political stability, inflation rate and FDI on the balance of payment in Ethiopia through Vector Error Correction model (VECM) between the time periods 1996-2019. This econometric analysis will be applied by using the statistical program (Eviews-11) on the time series data that collected during the period of the study.

3.3 Research Approach

The study use secondary data. The secondary data for the study are obtained by past reports & files kept by responsible organizations for further interpretation and analyses. These important data are obtained from respected organization moreover as department of the centralized. This study will measure the determinants of the balance of payment in Ethiopia using secondary time-series data for the amount 1996 – 2019. Using Descriptive statistics and Econometrics technique

the study will adopt a restricted VAR model. The VECM model show that a variable FDI, Inflation, political stability, and External debt FDI, Inflation, political stability, and External debt highly significant in determining the balance of payment in Ethiopia..

3.4 Research Method

The study used the secondary data that has already been collected by National bank of Ethiopia, World Bank and IMF the study used a 24 years' time series data from 1996 to 2019. In this years the economy growth rates became constantly high and stable but the balance of payments deficit is widening. Analyze this data use statistical analysis methods to test relationships between variables. Using VECM model statically analysis the relationships between variables such as FDI, External debt, inflation and political stability to BOP.

3.5 Data Analysis Method

The data collect are subject to method and thus the parameters are estimate using the Vector error correlation model (VECM) model which allows statistic aspects to be model simultaneously. The VECM model has therefore has accustom explore the link between the independent variables and also the Balance of Payment in Ethiopia using statistic data The variables first be subjected to stationary test considering that time series data are mostly non-stationary. Co-integration tests are undertaken to check for future relationships among the variables. Diagnostic tests like autocorrelation, heteroscedasticity model specification and normality tests undertake to check for the validity of the results.

3.6 Ethical Considerations

So on stay the confidentiality of the data given by respondents, the respondents give the past reports & files kept within the organization and guaranteed that their responses were treated in strict confidentiality. The research Data that plane to use, previously may are collected for other purposes but could even use within the instantaneous study we've taken prior permission from the respondents before conducting the research and no false information were given within the research. Within the theoretical analysis we've given proper references within the research. Respect for the dignity of research members should be place in order. Full consent should be obtained from the participants before the study. The protection of the privacy of research

participants has got to be ensured. Suitable level of confidentiality of the research data should be making sure. Anonymity of organizations participating within the research must be ensured. Any style of communication in relevance the research should be through with honesty and transparency. Any sort of misleading information, still as representation of primary data findings in an exceedingly very bias way are avoids. The research data considering the Reliability of, the Suitability of knowledge and also the Adequacy of information characteristic we get maintain the moral formalities throughout our research.

CHAPTER FOUR

4 DATA PRESENTATION, ANALYSES AND DISCUSSIONS OF RESULTS

4.1 Introduction

This section presents investigation and findings of the study as set out in the research objective and research methodology. The study is findings based on investigation of the determinants of balance of payments in Ethiopia for the period 1996 to 2019. It provides descriptive statistics and comprehensively gives econometric results which are later used in the next chapter for recommendations.

4.2 Descriptive Statistics

Descriptive statistics gives statistics that describes the data such that pattern might develop. Graphical representation of data is one method of descriptive statistics; it provides a quick method to make comparison between different data sets and to spot the smallest and largest values and trends or changes over a period. We considered average, standard deviation and the range in illustrating the characteristics of the study variables which include balance of payments, FDI, Inflation, External debt, and Political stability. The Balance of payments has an average mean of -128.2648 million us dollar with the range of between a deficit of -1227.300 and surplus of 210 million us dollar respectively.

Table 4.1: Summary Statistics.

Variable	Obs	Mean	Sta.dev	Min	Max	Skewness	Kurtosis	Jarque-Bera	Probability
BOP	24	-128.2648	554.2397	-1227.300	1210	0.133626	3.163273	0.098082	0.952142
External debt	24	1.12E+10	8.15E+10	2.22E+09	2.83E+10	1.034008	2.733514	4.347707	0.113738
FDI	24	1.03E+09	1.31E+09	20000000	4.14E+09	1.370880	3.413472	7.688210	0.021406
Political stability	24	-1.361667	0.330595	-1.80000	-0.63000	0.641738	2.399970	2.007347	0.366531
Inflation rate	24	0.103175	0.115620	-0.084800	0.443900	1.050554	4.766292	7.534440	0.023116

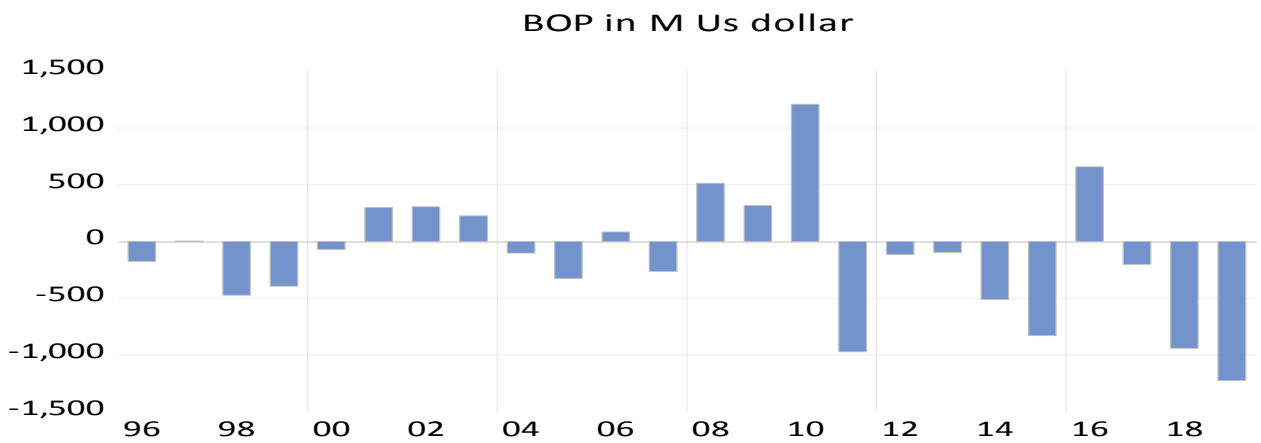
Source: Author's computation

Table 4.1 shows the descriptive statistics for the Dependent Variables BOP of Ethiopia independent variables like external debt, Inflation, FDI and political stability. From the table it

can be seen that the variables have positive skewedness. This table presents the means, minimum, maximum, standard deviations, Skewness and kurtosis of the variables in the study. Specifically, external debt scored the highest level of mean value and FDI scored the second highest. According to the table external debt and political instability are normally distributed but FDI and inflation rate are not normally distributed because the probability value are less than 5%. Overall, the study uncovers the fact that the independent variables affect the dependent variable, balance of payments. And also Table 1 illustrates that all the variables are skewed positively.

4.3 Patterns of the Determinants of the Balance of Payments in Ethiopia

Figure 4.1: Overall Balance of Payments



Source: Author's Computation

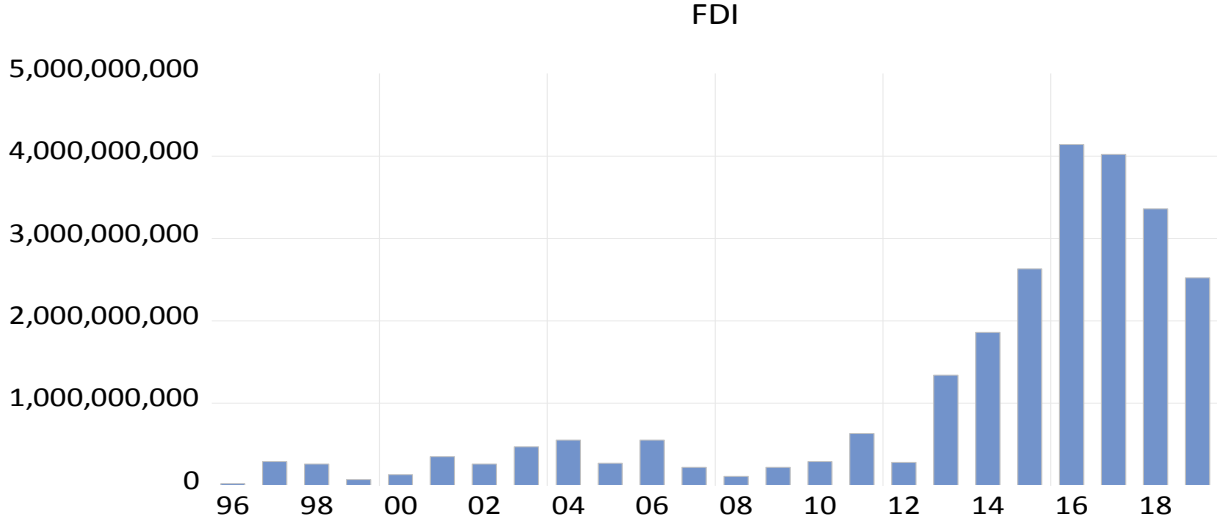
We found out that Balance of payments initially was low surplus and deficit from the year 1996-2006 from which it started deviating with huge sharp fluctuations which hit the highest point in 2019. The huge deficit around 2018-2019 may be attributed to economic global, crisis, political instability and the current account balance are deficit such as Merchandise Trade and Service income are lower than export.

4.3.1 Foreign Direct Investment (FDI).

Ethiopia registered a significant increase in FDI. Foreign direct investments inward reached close 2.52 billion dollars in 2019, up from 0 million dollars in 1996. According to world bank report Ethiopia foreign direct investment for 2019 was \$2.52B, a 25.12% decline from 2018. Ethiopia foreign direct investment for 2018 was \$3.36B, a 16.35% decline from 2017, direct

investment for 2017 was \$4.02B, a 3.04% decline from 2016, And Ethiopia foreign direct investment for 2016 was \$4.14B, a 57.73% increase from 2015. To attract more FDI, the government of Ethiopia is currently pursuing accession to the World Trade Organization, while maintaining their goal of attaining least-developed country status. It is actively pursuing improving the current investment climate through adopting more efficient bureaucratic processes in the areas of registration, logistics, and tax processes. The decline of FDI in Ethiopia the year 2016 to 2019 instability in some parts of the country, including regions with industrial parks, poor condition of infrastructure and strict foreign exchange controls.

Figure 4.2: Foreign Direct Investment (FDI)



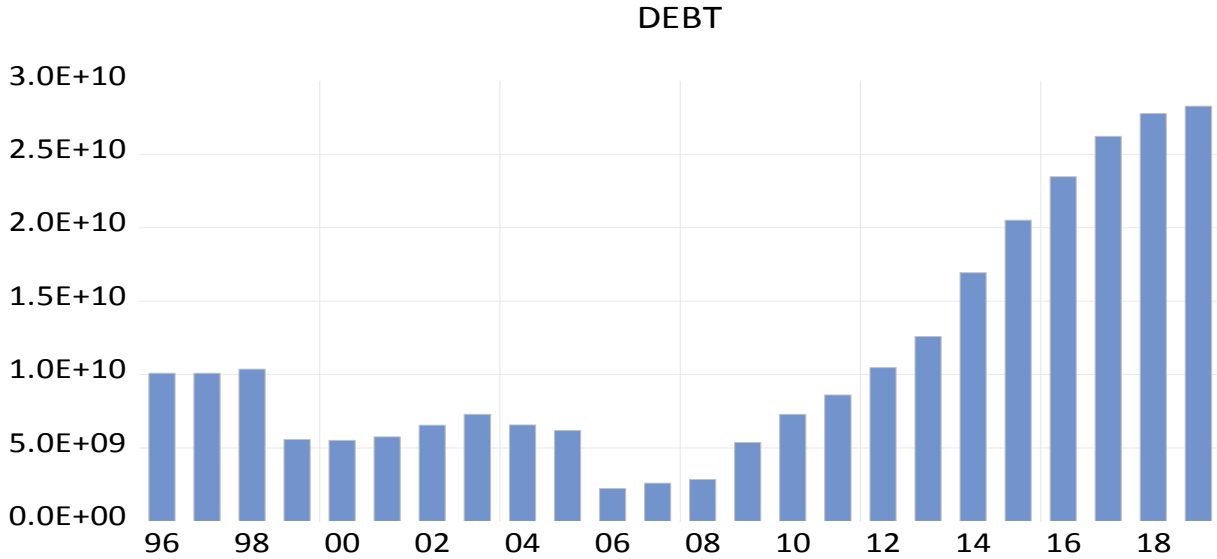
Source: Author’s Computation

4.3.2 External Debt

The accumulation of external debt is a common phenomenon of developing countries at the stage of economic development where the supply of domestic savings is low, current account payments deficits are high, and imports of capital are needed to supplement domestic resources. Although foreign borrowing can be highly beneficial, providing the resources necessary to promote economic growth and development, when poorly managed, it can be very costly. In recent years, these costs have greatly outweighed the benefits for many developing nations. The main cost associated with the accumulation of a large external debt is debt service (Todoro, 2012). Debt service is the payment of amortization (liquidation of the principal) and accumulated interest; it is a contractually fixed charge on domestic real income and savings. As the size of the

debt grows or as interest rates rise, debt service charges increase. Debt service payments must be made with foreign exchange. In other words, debt service obligations can be met only through export earnings, shortened imports, or further external borrowing. Under normal circumstances, most of a country’s debt service obligations are met by its export earnings. However, when export earnings diminish like Ethiopia, debt-servicing difficulties are likely to arise.

Figure 4.3: External Debt



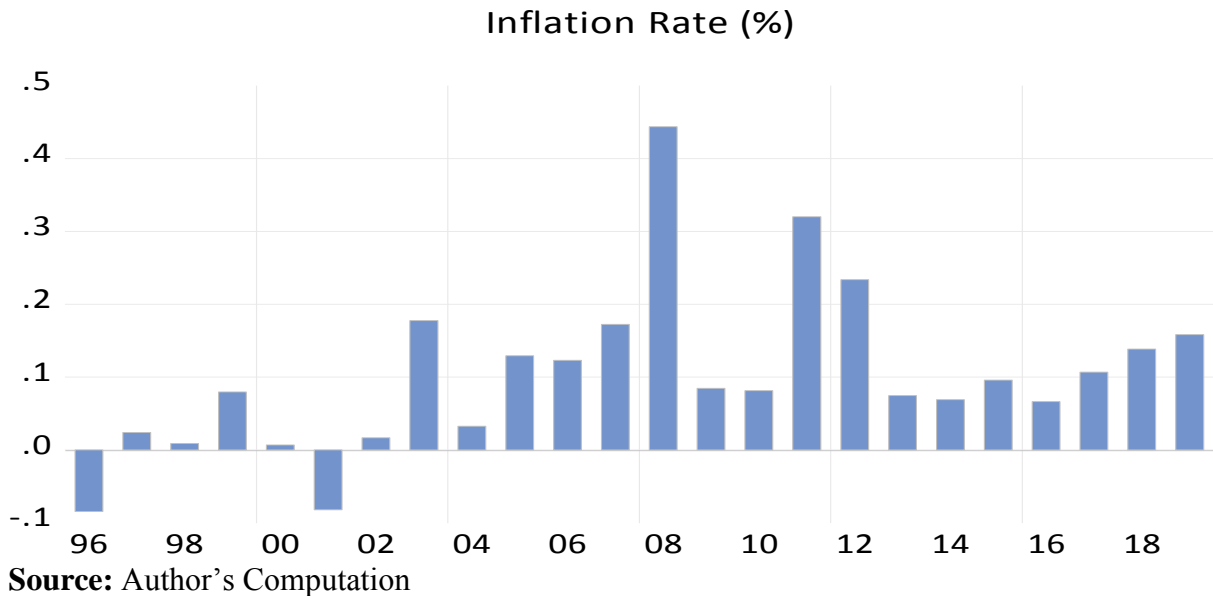
Source: Author’s computation

Ethiopia external debt for 2019 was \$28,287,820,759, a 1.78% increase from 2018, 2018 was \$27,793,379,640, a 5.95% increase from 2017, 2017 was \$26,233,362,395, a 11.76% increase from 2016 and 2016 was \$23,473,611,284, a 14.4% increase from 2015. The External debt level of Ethiopia has been on a rising trend particularly following the starting Between 1990/91 and 2019/20, the debt level has increased from USD 8.67 billion to over USD 28 billion. Government Debt to GDP in Ethiopia averaged 35.34 percent from 1996 until 2019, reaching an all-time high of 60 percent in 2018 and a record low of 24.70 percent in 1997. The decline was largely due to a rise in exports earning which capacitated the country its debt timely and debt cancellation. The sharp increase in the level of outstanding external debt was primarily driven by major import intensive public enterprises’ new borrowings for implementing infrastructure projects including roads and power generation that require huge foreign currency (African Economic Outlook 2016).

4.3.3 Inflation Rate

Inflation as measured by means of the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be permanent or changed at definite intervals, such as yearly. The Laspeyres formula is generally used. Data for inflation are averages for the year, not end-of-period data. According to the data result Ethiopia inflation rate for 2019 was 15.84%, a 2.01% increase from 2018, 2018 was 13.83%, a 3.15% increase from 2017, 2017 was 10.68%, a 4.05% increase from 2016 and 2016 was 6.63%, a 2.94% decline from 2015. causes for sustained and substantial increase in prices and the cost of living in Ethiopia includes the expansion of money supply and government expenditures that have not resulted in an equivalent or greater level of expansion in production, productivity and production capacity in the economy sustained rises in the cost of living in the economy is the ongoing and sustained devaluation of the currency and the associated disruptions in production and local and global supply chains is also another major factor for the current inflationary pressures in the Ethiopian economy.(Ethiopia economy 2020)

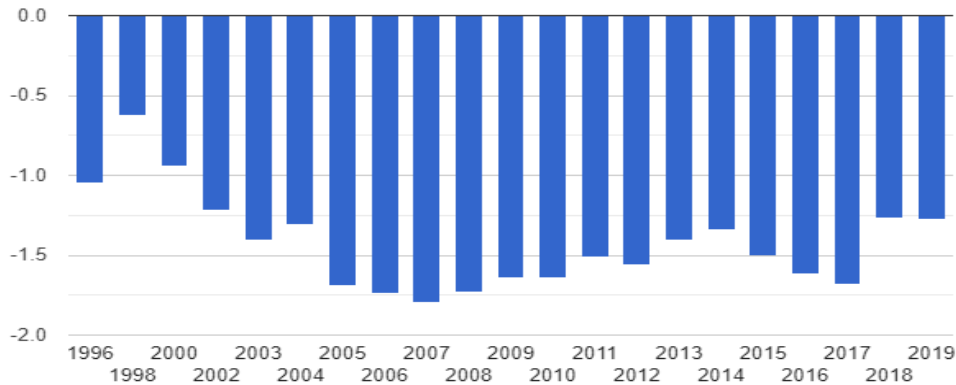
Figure 4.4: Inflation Rate



4.3.4 Political stability

Political instability define by the World Economic Forum, and the Political Risk Services, The index of Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood that the government will be disrupted or remove from power by unconstitutional or violent means, including politically-motivated violence and terrorism. The index is an average of numerous other indexes from the Economist Intelligence measured by index between -2.5 and 2.5.-2.5 week and 2.5 strong. According to World Bank report Ethiopia from 1996 to 2019. According to index data the average value for Ethiopia during that period was -1.43 points with a minimum of -1.8 points in 2007 and a maximum of -0.63 points in 1998.Political instability high in case of civil conflict, Competitiveness, Political rights and Civil liberties.

Figure 4.5: Political stability



Source: World Bank

4.4 Diagnostic Tests

4.4.1 Correlation Matrix (Spearman's Rank Correlation Matrix)

From table 4.2 inflation rate exhibited week relationship with BOP, FDI, External debt, Inflation rate and political instability and also negative correlation with BOP, External debt, Inflation rate and political instability but positive correlation with FDI, External debt week and negative correlation with BOP.FDI week and negative correlation with BOP but strong and positive correlation with External debt. Political stability can show week and negative correlation with

BOP, FDI, External debt and Inflation rate. BOP exhibited a direct relationship with all the independent variable.

Table 4.2: Correlation Matrix

Variables	Bop	Debt	FDI	Instability	IR
BOP	1.00				
DEBT	-0.459331	1.000			
	0.0239				
FDI	-0.276897	0.914518	1.000000		
	0.1902	0.000			
STABILITY	-0.232846	-0.008483	-0.237802	1.000000	
	0.2735	0.9686	0.2632		
IR	-0.117229	-0.040974	0.021345	-0.564274	1.000000
	0.5854	0.8494	0.9211	0.0041	

Source: Authors Computation

4.4.2 Autocorrelation Test

Serial correlation LM test: hypotheses of serial correlation test are “no autocorrelation “if pro value is greater than 0.05 it means we can accept H_0 which show no autocorrelation. If prob value is less than 0.05 it means we can reject H_0 which autocorrelation in regression model. From table below the residual diagnostic of serial correlation LM test we conducted Breusch Godfrey LM test, and confirmed that the p value of 0.3913 was indeed greater than the significant level of 0.05 and thus there was no autocorrelation accept null hypothesis .from this the model have no serial correlation. This means there is no auto correlation in the residuals which is desirable for a good model.

Table 4.3 Breusch Godfrey Langrage Multiplier Test for Autocorrelation

Breusch-Godfrey Serial Correlation LM Test:

Null hypothesis: No serial correlation at up to 1 lag

F-statistic	0.568591	Prob. F(1,18)	0.4606
Obs*R-squared	0.734907	Prob. Chi-Square(1)	0.3913

4.4.3 Stationary Test

The rationale of carrying out this test was to model stationary series, to use the fitted model for estimating and to identify the correct model for estimation. According to stationary data definition the Data is said to be stationary if its mean and variance are constant over time and the value of covariance between two time periods be contingent only on the distance or lag between the two time periods and not on the actual time at which the covariance is computed. It means that the joint distribution does not change when shifted in time space and as a result, the parameters such as mean and variance do not change over time or position. Unless this test is administered there's likelihood of ending up with spurious results. Either Augmented Dickey-Fuller test or The Phillips-Perron test which applies unit roots was employed.

4.4.4 Unit Root Test (Augmented Dickey-Fuller Test)

Table 4.4 Unit Root Test (Augmented Dickey-Fuller Test)

Variables	ADF Test Statistic	1%	5%	10%	ADF Probability	Statuses
BOP	-3.758899	-3.752946	-2.998064	-2.638752	0.0099	Stationary*
FDI	-3.417950	-3.808546	-3.020688	-2.650413	0.0226	Stationary**
INFLATION RATE	-3.595186	-3.752946	-2.998064	-2.638752	0.0142	Stationary**
EXTERNAL DEBT(D(DEBT,2)	-6.727707	-4.467895	-3.644963	-3.261452	0.0001	Stationary*
Political stability (D(stability)	-4.328207	-3.769597	-3.004861	-2.642242	0.0029	Stationary*

4.4.5 Unit Root Results

Economic time-series data were often to be holding unit root (i.e. non-stationary) once they were observed at levels' order of integration. Regression on the info which aren't stationary at levels might leading to 'spurious' regression' and thus, isn't favorable. Therefore, it's an important exercise to conduct a unit root test on each variable before proceeding to estimation of the co-integration models. First we developed unit root test, let start with BOP as variable , the rules is

that the NULL hypothesis is there's unit root and ALT there's no unit root, meaning that data is stationary, the Corresponding P value is 0.0099, which is less than 5%, meaning we can reject NULL hypothesis and accept ALT hypothesis meaning BOP variable doesn't have unit root at level, inflation rate the p value is 0.0142 which is less than 5% thus reject NULL accept ALT hypothesis .FDI the p value is 0.0226 which is less than 5% thus reject NULL accept ALT hypothesis , External debt The P value of the level and first difference, P value are 0.9503 and 0.1073 respectively which are greater than 5%, Now we convert External debt into second difference, P value is 0.000 meaning it is less than 5%, so we can reject the NULL hypothesis and accept the ALT hypothesis, meaning External debt at second difference does not have unit root. Then we run the unit root for political instability , the NULL hypothesis is there is unit root and ALT there is no unit root, meaning that data is stationary, the Corresponding P value is 0.5695, which is more than 5%, meaning we cannot reject NULL hypothesis, meaning political instability variable have unit root at level, Now we convert political instability into first difference, P value is 0.0029 meaning it is less than 5%, so we can reject the NULL hypothesis and accept the ALT hypothesis, meaning political instability have not unit root first difference .

4.4.6 Johnson Cointegration Test

For this test we will use the selected optimal lag order of 1 the results of this test are shown in a table the first row in the table sets the null hypothesis that there are zero cointegration equation. The trace statistics is in the rejection region, there for we reject the hypothesis of no cointegration and accept alternative hypothesis which states that we reject the null hypothesis H_0 for None* because the p-value are less than 0.05 so, it is seen that these time series variables are cointegrated and have long run association. Therefore, a VECM can be run.

Table 4.5 Johansen Test for Cointegration

Date: 05/04/21 Time: 10:12
 Sample (adjusted): 1998 2019
 Included observations: 22 after adjustments
 Trend assumption: Linear deterministic trend
 Series: BOP DEBT FDI INSTABILITY IR
 Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.865687	94.13654	69.81889	0.0002
At most 1 *	0.703090	49.96980	47.85613	0.0312
At most 2	0.568536	23.25460	29.79707	0.2338
At most 3	0.190022	4.762060	15.49471	0.8336
At most 4	0.005693	0.125600	3.841465	0.7230

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.865687	44.16674	33.87687	0.0021
At most 1 *	0.703090	26.71519	27.58434	0.0643
At most 2	0.568536	18.49254	21.13162	0.1125
At most 3	0.190022	4.636460	14.26460	0.7868
At most 4	0.005693	0.125600	3.841465	0.7230

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

* denotes rejection of the hypothesis at the 0.05 level

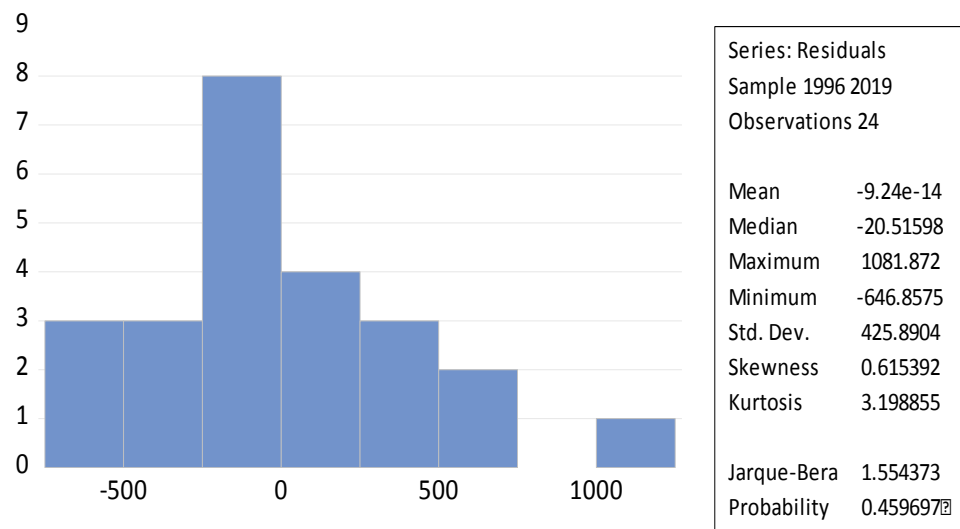
**MacKinnon-Haug-Michelis (1999) p-values

Since the series are integrated of order one, the author established a long run relationship between the two series using Johansen test for co integration. The results in the Table 4.5 indicate that BOP and Other variables have long run relation for the Eigen values and values of trace statistic are higher than critical values. This implies that there exists a stable long run relation between BOP and other independent variables. From the above tables both Trace statistic and Max-Eigen value indicates 2 co-integrating equations at 5 percent level. Based on the above tables we reject the null hypothesis of no co-integrating equations.

4.4.7 Normality Test

The result of the normality test is presented in below. The results of the VEC normality tests presented in Fig.4.6 reveal that the probability of Jarque-Bera is insignificant because the probability value of Jarque-Bera is 45.9 percent; it is greater than 5 percent. Thus, the null hypothesis of normal distribution of the residuals is not rejected. Accept the null hypothesis, the null hypothesis are residual are normally distribute.

Figure 4.6 Histogram Normality Test



4.4.8 Diagnostic Test Results

The results obtained from the various diagnostic tests are presented above. The goodness fit of the above model (R^2) shows that 61.4 percent of the total variation in the dependent variable (BOP) is explained by the independent variables in the model. While the remaining 38.6% is accounted for by factors not specified in the model or not related to the included explanatory variables. The Durbin Watson (DW) test also suggests that there's no autocorrelation problem (there is not any serial correlation within the residuals). Moreover, the varied diagnostic tests don't detect any problem about the multivariate analysis. That is, the tests don't reject the null of noise error terms suggesting no problem of error autocorrelation. The Jacque Berra test for normality cannot reject the null hypothesis of normality. It points out that the error term is normally distributed.

The F statistics rejects the null hypothesis that each one the coefficients within the model are jointly insignificant. The F-statistics value of 3.9845 shows that the model is fit and significant at 1% level (0.013868) which confirms that the variables in the model sufficiently explain the contribution of Micro economic variables to the balance of payment in Ethiopia economy. This further reveal that the result is not spurious and provide the basis for rejecting the null hypothesis that variables does not contribute to balance of payment in Ethiopia's economic.

Table 4.6 Long Run Normalized Co-integration Estimates

Bop(-1)	Debt(-1)	FDI(-1)	INSTABLITY	IR(-1)
1.000000	-8.54E-08	7.55E-07	-345.5802	-3288.743
	(4.4E-08)	(2.5E-07)	(397.609)	(1007.31)
	[-1.93670]	[3.03576]	[-0.86915]	[-3.26487]

Source: Authors Compilation from Eviews 11

The above table shows the normalized co-integration coefficient with the standard error and t-statistic in parentheses () and [] respectively. There is an elastic relationship between bop and debt. A unit change in debt will bring about a more than proportionate change in bop. The t-statistic shows the importance of the experimental variable with reference to the variable within the end of the day. The rule of thumb for t-statistics states that $t \geq 2$ is significant. Therefore, debt ratio is positively and statistically not significant at 1.93670. There is also an elastic relationship between bop and FDI. A unit change in FDI ratio will bring about a more than proportionate change in bop. The rule of thumb states that $t \geq 2$ is critical. Therefore, FDI ratio is statistically significant at 3.03576. There is positive relationship between bop and IR. A unit increase in IR will bring about 3.26487 and increases in bop. The rule of thumb states that $t \geq 2$. Therefore, FDI and IR are statistically significant at 3.03576 and 3.26487 respectively. There is a negative relationship between external debt and political instability, even though the result is insignificant.

The existence of linearly combined I (1) variables that co-integrated them in a stable long-run relationship, permits writing the relevant equation in which bop as a function of the other four explanatory variables. The vector of Co-integration indicates that the long run elasticity of with respect to FDI and Inflation rate is positive as expected. However, the long run elasticity of with respect to debt and political instability is negative.

Therefore, the end of the day growth equation with the corresponding signs and significance is presented as follows, where the t-values are within the bracket.

$$\text{Bop}(-1) = -8.54\text{E-}08 \text{Debt}(-1) + 7.55\text{E-}07 \text{fdi}(-1) - 345.5802 \text{instablity} + 3288.743 \text{ir}$$

$$[1.93670] \quad [3.03576]^{**} \quad [0.86915] \quad [3.26487]^*$$

Where, ** signifies rejection at 5% level of significance

The result implied that the variable FDI which is used as a proxy variable to measure the bop significantly positively affect in the long run. This shows that capital influences output because it

is included as an input in production and plays a serious role in enhancing growth. The long run elasticity of bop with respect to FDI is 7.55 indicating one percent increase in induces 755% increment in bop the result is significant at 5%.

The long run elasticity of bop with respect to Inflation rate is indicating one percent increase in annual IR 3288 percent increment in bop. The result is significant at 1%. One of the debt burden indicators, external debt as percentage of bop has a significant and positive relationship with bop. It is implied that external debt to bop has had a positive probability contribution to economic growth of Ethiopia. The coefficient of external debt 8.54 indicates a one percent increase in the stock of debt will result in 854percent increase in real GDP growth. This indicates the absence of debt overhang problem within the country. The result is significant at 1% level of significance.

4.4.9 Error Correction Estimates Using Vector Error Correction

In the short-run, there may be deviations from equilibrium and the researcher verify whether such disequilibrium converges to the long-run equilibrium or not. Vector Error Correction Model (VECM) can be used to check this short-run dynamics. The estimation of a vector error correction model requires the selection of an appropriate lag length. The number of lags in the model has been determined according to Akaike Information Criterion (AIC) and the appropriate lag length in the present study is 2. Then an error correction model with the computed-t values, standard error and probabilities of the regression coefficient is estimated and the results are presented in Table 4.8 below.

Table 4.7 Table Showing Vector Error Correction Estimates

	Coefficient	Standard error	t-statistic	Prob
Coint Eq1(ECT)	-0.663547	0.208757	-3.178556	0.0062
D(BOP(-1))	-0.298202	0.206527	-1.443887	0.1693
D(DEBT(-1))	-3.07E-09	6.31E-08	-0.048711	0.9618
D(FDI(-1))	3.34E-07	2.93E-07	1.141447	0.2716
D(INSTABLITY(-1))	-2071.566	759.1530	-2.728786	0.0155
D(IR(-1))	2034.927	966.25525	-2.105994	0.0525
C	-114.8009	130.5960	-0.879054	0.3932

Source: Own estimation

$R^2 = 0.614471$ $\text{Adj } R^2 = 0.46$ $\text{DW} = 1.655849$

$F = 3.9845$ $\text{Prob}(F\text{-statistic}) = 0.013868$

The estimated coefficient of error-correction term (ECT) in the equation is statistically significant and has a negative sign, which conforms that there is not any problem in the long-run equilibrium relation between the dependent and independent variables, but its relative value (-0.663547), for Ethiopia shows the rate of convergence to the equilibrium state per year. Precisely, the speed of adjustment of any disequilibrium towards a long-run equilibrium is that about 66% of the disequilibrium or errors in economic growth are corrected each year (annually) in the long run. The ECT features a correct negative sign and it's also significant. It proves the existence of future relationship among our variables under study and therefore the speed of adjustment is extremely high towards a shock in any variables. According to the above table and wald test. There is a casual relationship running from independent variables such as political instability (-1) and IR (-1) to bop in the short run. Meaning that, there is a short run relationship or association ship between the variables such as instability and inflation rate the short run causality running from instability and inflation rate to bop.

David S. Hoelscher (2005) Economists generally accept the proposition that high inflation rates generate inefficiencies that reduce society's welfare and economic growth. However, determining the causes of the worldwide diversity of inflationary experiences is an important challenge not yet satisfactorily confronted by the profession. Based on a dataset covering around 100 countries for the period 1960–99 and using modern panel data econometric techniques to control for endogeneity, the paper shows that a higher degree of political instability is associated with higher inflation. The paper also draws relevant policy implications for the optimal design of inflation-stabilization programs and of the institutions favorable to price stability, the study support this study.

Ahmet Diken(2018) study to investigates the long run relationship between political stability and economic growth of Turkey in between 2002 and 2016. Political stability has been referred to be one the causes of existence of strong institutions together with democracy for economic development for countries around the world. Empirical investigations have shown that strong institutions will be supported by political stability and democratic governance, and that these institutions will bring about robust economic growth. This work first focuses on how political

stability index is related with the country's economic output level (GDP) and then the focus moves on to see the long run relation between political stability and several other prevalent macroeconomic variables such as inflation rate, exchange rate and short term interest rates, Ahmet Diken(2018) study contradict this study.

CHAPTER FIVE

SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of key data findings, conclusions drawn from the findings emphasized and policy recommendations that were made. The conclusions and recommendation drawn were in in quest of addressing research objectives of establishing the effect of selected macroeconomic variables on balance of payments in Ethiopia.

5.2 Summary

The specific objective of the study was to determine the macro-economic variables that affect the balance of payment and identify the factors that affect the balance of payment performance in Ethiopia. In order to achieve this objective, the study adopted restricted VAR (VECM) model to relate Ethiopia balance payments to selected determinants such as External debt, Foreign Direct Investment (FDI), Inflation rate and political Instability.

In determining maximum lag for the VECM model, lag Two was found as the best number of lags needed in estimating the VECM model. Based on the regression results for the Vector error correlation model, it was revealed that all variables with their respective lags were highly significant in determining the balance of payment in Ethiopia since the p values of 0.000 was less than the significance level of 5%.

The empirical analysis carried out revealed a significant long run relationship between bop, FDI,IR, debt and instability. Instability and IR are short run relation between bop. Political instability translated to unfavorable situation in the current balance of payment in Ethiopia. This is in line with a study conducted by Arfan (2008) whose result confirmed that stable political regimes with visionary leadership led a nation to higher level of favorable balance of payments.

Overall, we can say the model is a good model. The R^2 is very high 61% and F statistics is significant. If we see the independent variable are significant. The residual is normally distributed which is desirable and there is constant variance which means residuals are homoscedastic. Also there is no autocorrelation in the model. It should be noted that Balance of

payments performance plays a very critical role in an economy. For this reason, factors that influence Balance of payments needs to be closely studied and evaluated. According to the results obtained in the study, current Balance of payments is negatively influenced by debt and instability. In order to resolve their negative effects, policies that enhance improvement in Balance of payments should be encouraged and consistently implemented.

5.3 Conclusion

The study has been conducted on the determinants of balance in the Ethiopian context. It has covered the time period through 1996 to 2019 and the variables under consideration are: External debt, inflation rate, Direct Investment (FDI, and political stability. As a method of econometric analysis the vector error correlation method (VECM) test approach has been employed using Eviews 11. The data being time series, the tests results obtained from the various diagnostic tests the model (R^2) shows that 61.4 percent of the total variation in the dependent variable (BOP) is explained by the independent variables in the model. While the remaining 38.6% is accounted for by factors not specified in the model or not related to the included explanatory variables. The Durbin Watson (DW) test also suggests that there's no autocorrelation problem (there is not any serial correlation within the residuals). Moreover, the varied diagnostic tests don't detect any problem about the multivariate analysis. That is, the tests don't reject the null of noise error terms suggesting no problem of error autocorrelation.

There is an elastic relationship between bop and debt. A unit change in debt will bring about a more than proportionate change in bop. The t-statistic shows the importance of the experimental variable with reference to the variable within the end of the day. The rule of thumb for t-statistics states that $t \geq 2$ is significant. Therefore, debt ratio is positively and statistically not significant at 1.93670. There is also an elastic relationship between bop and FDI. A unit change in FDI ratio will bring about a more than proportionate change in bop. The rule of thumb states that $t \geq 2$ is critical. Therefore, FDI ratio is statistically significant at 3.03576. There is positive relationship between bop and IR. A unit increase in IR will bring about 3.26487 and increases in bop. The rule of thumb states that $t \geq 2$. Therefore, FDI and IR are statistically significant at 3.03576 and 3.26487 respectively. There is a negative relationship between external debt and political instability, even though the result is insignificant.

The existence of linearly combined I (1) variables that co integrated them in a stable long-run relationship, permits writing the relevant equation in which bop as a function of the other four explanatory variables. The vector of Co integration indicates that the long run elasticity of with respect to FDI and Inflation rate is positive as expected. However, the long run elasticity of with respect to debt and political instability is negative.

The estimated coefficient of error-correction term (ECT) in the equation is statistically significant and has a negative sign, which conforms that there is not any problem in the long-run equilibrium relation between the dependent and independent variables, but its relative value(-0.663547), for Ethiopia shows the rate of convergence to the equilibrium state per year. Precisely, the speed of adjustment of any disequilibrium towards a long-run equilibrium is that about 66% of the disequilibrium or errors in economic growth are corrected each year (annually) in the long run.

Different studies have been conducted in this area with emphasis on different variables and countries. the results vary from study to study i.e. some studies showed a positive ration ship among variables ,while others showed a negative relationship among the variables. The aim of this study is to show, the impact of FDI ,Interest rate, external debt and political stability on the balance of payments of Ethiopia . The effect of such variables was exploring using the johancen co-integration test and the VECM. The result showed the existence of long run relationship among the variables. Hence, to ensure a favorable balance of payments position in Ethiopia the Ethiopia government should apply polices, policies that enhance improvement in balance of payment should be encouraged and consistently implemented.

5.4 Policy Recommendations

It should be noted that balance of payments performance plays a really critical role in an economy. For this reason, factors that influence Ethiopia's balance of payment need to be closely studied and evaluated. According to the results obtained in this study, current balance of payment is negatively influenced by External debt and political instability. In order to resolve their negative effects, policies that enhance improvement in balance of payment should be encouraged and consistently implemented. The government of Ethiopia, National bank of Ethiopia, all financial institutions and other stakeholders whose activities influence External debt and political

instability ought to take a lead in addressing adverse effects found in Ethiopia's balance of payment.

In addition the recommendations to stable balance of payments through these variables, desirable policy measures that may be applied include Policies that encourage domestic investments, foreign direct investment and increased trade earnings are often effective in rising GDP growth and reducing dependence on external debt. The government could play fundamental part in stimulating the economy if the resources gained from the debt relief initiatives are applied at productive public investments and social expenses for the poor in the country. The funds (external debt) should be properly managed so as to avoid wastages and mismatch. Also, measures that might prevent the diversion of the funds should be instituted. Above all, good policies and political stability are paramount in enhancing equilibrium in Ethiopia's balance of payment.

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APPENDIX I: DATA

Year	Ethiopia Foreign Direct Investment - Historical Data	Ethiopia External Debt - Historical Data	Inflation Rate (%)	BOP in M Us dollar	Political stability index
1996	20,000,000.00	10091749360	-0.0848	-174	-1.05
1997	290,000,000.00	10090618085	0.024	5.135	-0.84
1998	260,000,000.00	10360532218	0.0089	-473.2	-0.63
1999	70,000,000.00	5572314681	0.0794	-393.7	-0.79
2000	130,000,000.00	5516263792	0.0066	-70.5	-0.94
2001	350,000,000.00	5745843979	-0.0824	300.2	-1.08
2002	260,000,000.00	6552441033	0.0165	306.51	-1.22
2003	470,000,000.00	7281813432	0.1776	226.7	-1.41
2004	550,000,000.00	6568177207	0.0326	-101.4	-1.31
2005	270,000,000.00	6175805430	0.1294	-326.3	-1.69
2006	550,000,000.00	2220991209	0.1231	84.7	-1.74
2007	220,000,000.00	2591387173	0.1724	-263.5	-1.8
2008	110,000,000.00	2846424291	0.4439	513.5	-1.73
2009	220,000,000.00	5360207434	0.0847	316.6	-1.64
2010	290,000,000.00	7286199659	0.0814	1210	-1.64
2011	630,000,000.00	8606448544	0.3201	-972.8	-1.51
2012	280,000,000.00	10463932699	0.2338	-114.2	-1.56
2013	1,340,000,000.00	12584252083	0.0746	-96.9	-1.41
2014	1,860,000,000.00	16945024499	0.0689	-512.4	-1.34
2015	2,630,000,000.00	20519350424	0.0957	-830.9	-1.5
2016	4,140,000,000.00	23473611284	0.0663	658.6	-1.62
2017	4,020,000,000.00	26233362395	0.1068	-201.6	-1.68
2018	3,360,000,000.00	27793379640	0.1383	-941.6	-1.27
2019	2,520,000,000.00	28287820759	0.1584	-1227.3	-1.28

APPENDIX II Descriptive Statistics

	BOP_IN_M...	ETHIOPIA_...	ETHIOPIA_...	POLITICAL_...
Mean	-128.2648	1.12E+10	1.04E+09	-1.361667
Median	-107.8000	7.95E+09	3.20E+08	-1.410000
Maximum	1210.000	2.83E+10	4.14E+09	-0.630000
Minimum	-1227.300	2.22E+09	20000000	-1.800000
Std. Dev.	554.2397	8.15E+09	1.31E+09	0.330595
Skewness	0.133626	1.034008	1.370880	0.641738
Kurtosis	3.163273	2.733514	3.413472	2.399970
Jarque-Bera Probability	0.098082 0.952142	4.347707 0.113738	7.688210 0.021406	2.007347 0.366531
Sum	-3078.355	2.69E+11	2.48E+10	-32.68000
Sum Sq. Dev.	7065177.	1.53E+21	3.93E+19	2.513733
Observations	24	24	24	24

APPENDIX III Linear Deterministic Trend

Date: 05/16/21 Time: 16:10
 Sample (adjusted): 1993 2019
 Included observations: 22 after adjustments
 Trend assumption: Linear deterministic trend
 Series: BOP_IN_M_US_DOLLAR_ETHIOPIA_EXTERNAL_DEBT___HISTORICAL...
 Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.838639	64.80581	47.85613	0.0006
At most 1	0.582902	24.67542	29.79707	0.1734
At most 2	0.211969	5.437851	15.49471	0.7607
At most 3	0.008917	0.197048	3.841465	0.6571

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

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.838639	40.13039	27.58434	0.0007
At most 1	0.582902	19.23757	21.13162	0.0902
At most 2	0.211969	5.240803	14.26460	0.7112
At most 3	0.008917	0.197048	3.841465	0.6571

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

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

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

BOP_IN_M_...	ETHIOPIA E...	ETHIOPIA F...	POLITICAL STABILITY_INDEX
0.002212	-1.82E-10	1.74E-09	0.831911
0.002684	7.79E-10	-3.97E-09	-2.992103
0.000924	-1.44E-10	8.59E-10	4.083678
0.000968	-1.95E-10	3.44E-10	0.135091

Unrestricted Adjustment Coefficients (alpha):

D(BOP_IN_M_...)	D(ETHIOPIA_...)	D(ETHIOPIA_...)	D(POLITICAL_...)
-339.4564	88636437	39247835	0.041315
-338.3167	-1.86E+08	39247835	0.058054
-48.60601	-6.23E+08	-35064403	-0.044330
-13.01018	80178442	10152142	-0.007291

1 Cointegrating Equation(s): Log likelihood -1102.010

Normalized cointegrating coefficients (standard error in parentheses)

BOP_IN_M_...	ETHIOPIA E...	ETHIOPIA F...	POLITICAL STABILITY_INDEX
1.000000	-8.24E-08	7.87E-07	376.0219
	(3.7E-08)	(2.1E-07)	(252.560)

Adjustment coefficients (standard error in parentheses)

D(BOP_IN_M_...)	-0.751014		
	(0.27581)		
D(ETHIOPIA_...)	196099.4		
	(894072.)		
D(ETHIOPIA_...)	-794571.0		
	(117095.)		
D(POLITICAL_...)	9.14E-05		
	(8.1E-05)		

2 Cointegrating Equation(s): Log likelihood -1092.391

Normalized cointegrating coefficients (standard error in parentheses)

BOP_IN_M_...	ETHIOPIA E...	ETHIOPIA F...	POLITICAL STABILITY_INDEX
1.000000	0.000000	2.86E-07	46.37437
		(4.1E-08)	(142.655)
0.000000	1.000000	-6.082484	-4.00E+09
		(0.24059)	(8.4E+08)

Adjustment coefficients (standard error in parentheses)

D(BOP_IN_M_...)	-1.659119	-2.02E-07	
	(0.31857)	(7.3E-08)	
D(ETHIOPIA_...)	-304247.7	-0.161416	
	(1396326)	(0.32125)	
D(ETHIOPIA_...)	-689222.6	0.096073	
	(180911.)	(0.04162)	
D(POLITICAL_...)	0.000247	3.77E-11	
	(0.00012)	(2.7E-11)	

3 Cointegrating Equation(s): Log likelihood -1089.770

Normalized cointegrating coefficients (standard error in parentheses)

BOP_IN_M_...	ETHIOPIA E...	ETHIOPIA F...	POLITICAL STABILITY_INDEX
1.000000	0.000000	0.000000	3563.097
			(1635.69)
0.000000	1.000000	0.000000	-7.89E+10
			(3.5E+10)
0.000000	0.000000	1.000000	-1.23E+10
			(5.7E+09)

Adjustment coefficients (standard error in parentheses)

D(BOP_IN_M_...)	-1.704023	-1.95E-07	7.11E-07
	(0.32670)	(7.4E-08)	(4.0E-07)
D(ETHIOPIA_...)	-879771.7	-0.071618	0.359584
	(1331565)	(0.30085)	(1.63599)
D(ETHIOPIA_...)	-721616.2	0.101127	-0.811430
	(184504.)	(0.04169)	(0.22669)
D(POLITICAL_...)	0.000206	4.41E-11	-1.97E-10
	(0.00011)	(2.6E-11)	(1.4E-10)

APPENDIX IV Vector Error correction Estimates

Vector Error Correction Estimates
 Date: 05/16/21 Time: 16:22
 Sample (adjusted): 1998 2019
 Included observations: 22 after adjustments
 Standard errors in () & t-statistics in []

Cointegrating Eq:	CointEq1				
BOP(-1)	1.000000				
DEBT(-1)	-8.54E-08 (4.4E-08) [-1.93670]				
FDI(-1)	7.55E-07 (2.5E-07) [3.03576]				
INSTABILITY(-1)	-345.5802 (397.609) [-0.86915]				
IR(-1)	-3288.743 (1007.31) [-3.26487]				
C	-185.4425				
Error Correction:	D(BOP)	D(DEBT)	D(FDI)	D(INSTABILITY)	D(IR)
CointEq1	-0.663547 (0.20876) [-3.17856]	-98694.41 (746444.) [-0.13222]	-606755.6 (111289.) [-5.45208]	5.50E-05 (6.5E-05) [0.83957]	0.000126 (4.7E-05) [2.69256]
D(BOP(-1))	-0.298202 (0.20653) [-1.44389]	504595.1 (738469.) [0.68330]	431684.4 (110100.) [3.92084]	2.96E-05 (6.5E-05) [0.45747]	-8.89E-05 (4.6E-05) [-1.91912]
D(DEBT(-1))	-3.07E-09 (6.3E-08) [-0.04871]	0.367596 (0.22548) [1.63027]	0.126138 (0.03362) [3.75214]	2.93E-11 (2.0E-11) [1.47972]	-5.59E-12 (1.4E-11) [-0.39521]
D(FDI(-1))	3.34E-07 (2.9E-07) [1.14145]	1.586189 (1.04754) [1.51420]	0.356195 (0.15618) [2.28067]	-1.17E-10 (9.2E-11) [-1.27072]	-6.85E-11 (6.6E-11) [-1.04220]
D(INSTABILITY(-1))	-2071.566 (759.153) [-2.72879]	2.00E+09 (2.7E+09) [0.73578]	-1.64E+09 (4.0E+08) [-4.06254]	0.129840 (0.23810) [0.54531]	0.037585 (0.17021) [0.22082]
D(IR(-1))	-2034.927 (966.255) [-2.10599]	3.56E+08 (3.5E+09) [0.10292]	-9.77E+08 (5.2E+08) [-1.89574]	0.426031 (0.30306) [1.40577]	-0.197119 (0.21664) [-0.90988]
C	-114.8009 (130.596) [-0.87905]	3.25E+08 (4.7E+08) [0.69498]	-45682635 (7.0E+07) [-0.65616]	-0.027810 (0.04096) [-0.67894]	0.020272 (0.02928) [0.69234]
R-squared	0.614471	0.402337	0.782484	0.251035	0.410176
Adj. R-squared	0.460259	0.163272	0.695478	-0.048551	0.174246
Sum sq. resids	4498121.	5.75E+19	1.28E+18	0.442489	0.226119
S.E. equation	547.6082	1.96E+09	2.92E+08	0.171753	0.122779
F-statistic	3.984595	1.682959	8.993424	0.837939	1.738550
Log likelihood	-165.7261	-497.6985	-455.8283	11.75357	19.13843
Akaike AIC	15.70237	45.88168	42.07530	-0.432142	-1.103494
Schwarz SC	16.04952	46.22883	42.42245	-0.084993	-0.756344
Mean dependent	-56.01977	8.27E+08	1.01E+08	-0.020000	0.006109
S.D. dependent	745.3793	2.14E+09	5.29E+08	0.167730	0.135113
Determinant resid covariance (dof adj.)	2.12E+37				
Determinant resid covariance	3.13E+36				
Log likelihood	-1080.445				
Akaike information criterion	101.8587				
Schwarz criterion	103.8424				
Number of coefficients	40				

APPENDIX V Least squares

System: UNTITLED
 Estimation Method: Least Squares
 Date: 05/16/21 Time: 16:29
 Sample: 1998 2019
 Included observations: 22
 Total system (balanced) observations 110

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.663547	0.208757	-3.178556	0.0022
C(2)	-0.298202	0.206527	-1.443887	0.1529
C(3)	-3.07E-09	6.31E-08	-0.048711	0.9613
C(4)	-3.34E-07	2.93E-07	-1.141447	0.2573
C(5)	-2071.566	759.1530	-2.728786	0.0079
C(6)	-2034.927	966.2552	-2.105994	0.0386
C(7)	-114.8009	130.5960	-0.879054	0.3822
C(8)	-98694.41	746443.7	-0.132219	0.8952
C(9)	504595.1	738469.4	0.683299	0.4965
C(10)	0.367596	0.225481	1.630273	0.1072
C(11)	1.586189	1.047540	1.514204	0.1342
C(12)	2.00E+09	2.71E+09	0.735777	0.4642
C(13)	3.56E+08	3.45E+09	0.102925	0.9183
C(14)	3.25E+08	4.67E+08	0.694977	0.4892
C(15)	-606755.6	111288.8	-5.452079	0.0000
C(16)	431684.4	110099.9	3.920841	0.0002
C(17)	0.126138	0.033617	3.752145	0.0003
C(18)	0.356195	0.156180	2.280669	0.0254
C(19)	-1.64E+09	4.05E+08	-4.062538	0.0001
C(20)	-9.77E+08	5.15E+08	-1.895737	0.0618
C(21)	-45682635	69620923	-0.656162	0.5137
C(22)	5.50E-05	6.55E-05	0.839572	0.4038
C(23)	2.96E-05	6.48E-05	0.457475	0.6487
C(24)	2.93E-11	1.98E-11	1.479716	0.1431
C(25)	-1.17E-10	9.19E-11	-1.270722	0.2078
C(26)	0.129840	0.238103	0.545310	0.5872
C(27)	0.426031	0.303059	1.405768	0.1639
C(28)	-0.027810	0.040961	-0.678940	0.4993
C(29)	0.000126	4.68E-05	2.692555	0.0087
C(30)	-8.89E-05	4.63E-05	-1.919116	0.0588
C(31)	-5.59E-12	1.41E-11	-0.395206	0.6938
C(32)	-6.85E-11	6.57E-11	-1.042205	0.3007
C(33)	0.037585	0.170209	0.220816	0.8258
C(34)	-0.197119	0.216643	-0.909880	0.3658
C(35)	0.020272	0.029281	0.692344	0.4909

Determinant residual covariance 3.13E+36

Equation: $D(BOP) = C(1) * (BOP(-1) - 8.54352634375E-08 * DEBT(-1) + 7.54636520117E-07 * FDI(-1) - 345.580245572 * INSTABILITY(-1) - 3288.74271123 * IR(-1) - 185.442528874) + C(2) * D(BOP(-1)) + C(3) * D(DEBT(-1)) + C(4) * D(FDI(-1)) + C(5) * D(INSTABILITY(-1)) + C(6) * D(IR(-1)) + C(7)$

Observations: 22			
R-squared	0.614471	Mean dependent var	-56.01977
Adjusted R-squared	0.460259	S.D. dependent var	745.3793
S.E. of regression	547.6082	Sum squared resid	4498121.
Durbin-Watson stat	1.655849		

Equation: $D(DEBT) = C(8) * (BOP(-1) - 8.54352634375E-08 * DEBT(-1) + 7.54636520117E-07 * FDI(-1) - 345.580245572 * INSTABILITY(-1) - 3288.74271123 * IR(-1) - 185.442528874) + C(9) * D(BOP(-1)) + C(10) * D(DEBT(-1)) + C(11) * D(FDI(-1)) + C(12) * D(INSTABILITY(-1)) + C(13) * D(IR(-1)) + C(14)$

Observations: 22			
R-squared	0.402337	Mean dependent var	8.27E+08
Adjusted R-squared	0.163272	S.D. dependent var	2.14E+09
S.E. of regression	1.96E+09	Sum squared resid	5.75E+19
Durbin-Watson stat	2.000820		

Equation: $D(FDI) = C(15) * (BOP(-1) - 8.54352634375E-08 * DEBT(-1) + 7.54636520117E-07 * FDI(-1) - 345.580245572 * INSTABILITY(-1) - 3288.74271123 * IR(-1) - 185.442528874) + C(16) * D(BOP(-1)) + C(17) * D(DEBT(-1)) + C(18) * D(FDI(-1)) + C(19) * D(INSTABILITY(-1)) + C(20) * D(IR(-1)) + C(21)$

Observations: 22			
R-squared	0.782484	Mean dependent var	1.01E+08
Adjusted R-squared	0.695478	S.D. dependent var	5.29E+08
S.E. of regression	2.92E+08	Sum squared resid	1.28E+18
Durbin-Watson stat	2.654307		

Equation: $D(INSTABILITY) = C(22) * (BOP(-1) - 8.54352634375E-08 * DEBT(-1) + 7.54636520117E-07 * FDI(-1) - 345.580245572 * INSTABILITY(-1) - 3288.74271123 * IR(-1) - 185.442528874) + C(23) * D(BOP(-1)) + C(24) * D(DEBT(-1)) + C(25) * D(FDI(-1)) + C(26) * D(INSTABILITY(-1)) + C(27) * D(IR(-1)) + C(28)$

Observations: 22			
R-squared	0.251035	Mean dependent var	-0.020000
Adjusted R-squared	-0.048551	S.D. dependent var	0.167730
S.E. of regression	0.171753	Sum squared resid	0.442489
Durbin-Watson stat	2.254549		

Equation: $D(IR) = C(29) * (BOP(-1) - 8.54352634375E-08 * DEBT(-1) + 7.54636520117E-07 * FDI(-1) - 345.580245572 * INSTABILITY(-1) - 3288.74271123 * IR(-1) - 185.442528874) + C(30) * D(BOP(-1)) + C(31) * D(DEBT(-1)) + C(32) * D(FDI(-1)) + C(33) * D(INSTABILITY(-1)) + C(34) * D(IR(-1)) + C(35)$

Observations: 22			
R-squared	0.410176	Mean dependent var	0.006109
Adjusted R-squared	0.174246	S.D. dependent var	0.135113
S.E. of regression	0.122779	Sum squared resid	0.226119
Durbin-Watson stat	2.397063		