ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ECONOMICS

THE EFFECT OF PARALLEL FOREIGN EXCHANGE MARKET ON ECONOMIC PERFORMANCE THE CASE OF SOME SECTED AFRICAN COUNTRIES

A THESIS PRESENTED FOR PARTIAL FULFILMENT OF MASTERS OF SCIENCE IN ECONOMICS (INTERNATIONAL ECONOMICS)

BY

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Department of Economics

The Effect of parallel foreign exchange market on Economic performance: The Case of Some Selected African Countries

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A Thesis submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements of a Master of Science in Economics (International Economics)

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Declaration

I Shimeles Bizuneh, registration number/I.D. number: GSE/4104/14, do here by declare that this thesis is my original work and that it has not been submitted partially; or in full, by any other person for an award of degree in any other university/institution.

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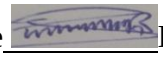
Full Name Shimeles Bizuneh Signature  Date12/10/2024G.C

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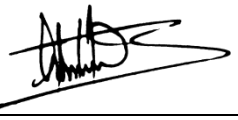
Name of Advisor: Zerayehu Sime (PhD) Signature  Date12/10/2024G.C

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List of Acronyms

PEMP	Parallel Exchange Market Premium
USD	United States Dollar
IMF	International Monetary Fund
WB	World Bank
GDP	Gross Domestic Product
DEVA	Devaluation
BOP	Balance of Payment
ODA	Official Development Assistance
REMI	Remittance
INFL	Inflation
OECD	Organization for Economic cooperation and Development
GFI	Global Financial Integrity
IFFS	Illicit Financial Flows
UNECA	United Nations Economic Commission for Africa
IOM	International Organization on Migration
CORR	Corruption
RTMS	Real Trade Models
CPI	Corruption Perception Index
GMM	Generalized Method of Moments
2SLS	Two stage Least Square
IVs	Instrumental Variable
OLS	Ordinary Least Square
VIF	Variance Inflation Factor
DGMM	Difference Generalized Methods of Moments
SGMM	System Generalized Methods of Moments

Abstract

This paper examines the effect of parallel foreign exchange market rate on Economic performance using panel data (extracted from the WB, Transparency international, OECD and central Banks) from 26 some selected African countries over the period from 2007 to 2023. The study applied a one-step system gmm dynamic panel data model to achieve its objectives. The finding results indicate that parallel foreign exchange market premium, Devaluation and Remittance inflow are positively associated with economic growth in some selected African countries. Balance of payment and aid are negatively associated with economic growth in the selected countries. Inflation and corruption are not significantly associated with economic growth in these countries. Based on the findings, the policy implication is that governments should be dedicated to minimize and gradually bring unification of the gap between parallel and official exchange for better economic performance. This can be done harmonizing all institutions that play great roles under the deal of exchange markets.

Keywords: *Parallel foreign exchange market, Economic performance**,** Selected African countries*

CHAPTER ONE

1. Introduction

Any country's economic structure must take exchange rates into consideration as they have a significant impact on commerce, investment, and overall economic success. Governments in many developing nations apply trade and capital flow restrictions in an attempt to curb the excess demand for foreign currencies. When two nominal exchange rates that are substantially different from one another are in effect in an economy at the same time, a system of parallel foreign exchange markets results. The official exchange rate, which is set by law, is usually one of them, and the other is a freely floating, market-determined "parallel" exchange rate. Parallel markets typically arise when authorities impose large restrictions on the amount or rate at which official foreign exchange transactions can take place. Theoretically, there are instances where having multiple exchange rates in place would be beneficial. For example, it can help keep current account transactions stable (at the official rate) while safeguarding terms of trade and, by extension, the variation in imports and exports from unpredictable fluctuations in the capital account (at the parallel rate) and financial markets (IMF, 2018).

Parallel foreign exchange markets refer to the existence of multiple exchange rates for a single currency within a country. These markets typically emerge in countries where there are restrictions on foreign exchange transactions, capital controls, or when official exchange rates are perceived as overvalued or manipulated. In a March, 2022 report of the World Bank noted that almost one fifth of emerging and developing countries had parallel exchange rates, and this was the highest in two decades. In such cases, parallel markets provide an alternative channel for individuals and businesses to access foreign currencies they provide avenues for hedging against exchange rate risk, facilitating cross-border trade, and enabling capital flight. Moreover, parallel foreign exchange markets can also serve as indicators of the underlying economic conditions and confidence in a country's official exchange rate regime (Han, 2020).

Key Characteristics of Parallel Markets include: Unofficial and Uncontrolled: Since transactions take place outside of the established financial system, it is challenging to monitor and control them (Mody, 2001). Compared to the official system, there is a greater chance of fraud and theft in the parallel market (Egert et al., 2013). The parallel market provides a more realistic view of the value of the home currency despite the risks since it frequently reflects real market forces

(Aasha et al., 2016). Businesses and individuals use the parallel market for a variety of reasons. The following is a list of some of the needs people utilize the black market to fulfill: getting foreign currency the parallel market becomes the only practical way to meet foreign exchange needs for investments, travel, and imports when official channels restrict access (Calvo-Gonzalez & Santos, 2017). Profit-seeking is the alternative. The difference in exchange rates between the official and unofficial markets might be advantageous to those who have access to foreign cash (Egert et al., 2013). People will use the parallel market to protect themselves against devaluation. Individuals and companies might use the parallel market as a hedge against the official currency rate's predicted depreciation (Aasha et al., 2016).

A variety of factors that can also result in corruption and its repercussions have an impact on the problem of foreign exchange shortages. The government's intervention in the market through rate pegs is the reason for the discrepancy between the supply and demand of foreign exchange. Because it lacks omniscience, the government is unable to ascertain the market clearing peg rate a priori. Due to the policy's setting of the official (pegged) exchange rate below the equilibrium exchange rate, there is always an excess demand for foreign exchange. To meet this excess demand, there will be an additional foreign exchange market. Engaging in the black market puts players at danger of legal repercussions should be discovered. For the selling of foreign exchange to be unlawful (corrupt), rents or intra-marginal returns must be paid. According to Patterson (2001), these rents are represented as the difference (premium) between the official (or bid) foreign exchange rate and the rate on the black market.

A substantial and dynamic simultaneous market may have an adverse effect on the stability of the economy. By examining the factors affecting exchange rates in the black market, decision-makers can: Identify issues, understanding the factors that influence an unofficial market's success can help identify important economic issues like inflation or currency imbalance (Aasha et al., 2016). This information and strategies can be implemented to reduce the difference between official and parallel rates. This can be ultimately lead to a foreign exchange market is more stable and effective (Calvo-Gonzalez & Santos, 2017). The currency market plays a vital role in the economies of all nations, and particularly for African nations. Its effectiveness and reliability is crucial for economic growth and advancement. Therefore, comprehending and pinpointing the and advancement. Therefore, comprehending and pinpointing the present

research deficiencies and the issues of concurrent foreign exchange markets are crucial for policymakers and investors (Han, 2020).

1.1. Statement of the problem

The number of nations with active parallel currency markets has increased as a result of the recent worsening of economic conditions and the mounting pressure on developing nations to devalue their currencies. There are now 24 developing economies (EMDs) with functioning parallel exchange markets. The exchange rate premium—the discrepancy between the official and parallel rates—is a significant issue in at least 14 of countries, with a percentage greater than 10% (World Bank, 2023).

A parallel exchange market can reduce the impact of international financial programs.

The economics of parallel exchange rates are clear: they are very expensive for all parties involved in the market, are linked to higher inflation, discourage foreign investment and the growth of private sector. The party that benefits from the loan is the party that pays it. Some don't. Therefore, there is a strong correlation, if not causality, between corruption and parallel rates (David, 2023). There is not much empirical evidence available on the Sub-Saharan African experience, but it is known that many countries in the region have active parallel foreign exchange markets with significant markups, despite their widespread presence and high prices. In sub-Saharan Africa, many countries outside of the franc zone have traditionally been charged higher insurance premiums compared to their developing country counterparts (World Bank, 1994). The importance of understanding the size of premiums in various countries within the region, as well as their impact on the overall economic activity, highlights the need to examine the economic factors that contribute to differences in premium sizes. Identifying these factors can offer valuable insights into the disparities within and between countries. Engaging in a valuable pursuit is worthwhile (Yiheyis, 1997).

Ebaidalla Mahjoub (2017), a studied on the various factors that impact the macroeconomic outcomes of Sudan's parallel foreign exchange market. According to the empirical study, exchange rate premiums are significantly affected in both the short and long run by factors such as the real exchange rate, GDP growth, trade openness, foreign aid, and international reserves. Nevertheless, it has been found that both the money supply and the expected rate of devaluation strongly influence exchange rate premiums in a positive manner.

In Ethiopia, Derrese (2001) discovered that the parallel rates in the long term were primarily influenced by the relationship between real money, real exchange rate, and foreign aid, while trade terms only had a short-term negative effect on taxes. Furthermore, inflation is typically viewed as the reason for a similar exchange rate during the time frame being studied.

Understanding the factors that influence parallel market exchange rates is essential for addressing market inefficiencies, uncertainty, and risk, as well as for improving policy effectiveness and reducing macroeconomic instability. Identifying these issues allows policymakers to develop tactics that can decrease the gap between official and parallel exchange rates. This may include dealing with fundamental economic problems like inflation or currency misalignment, or improving the accessibility and appeal of the official market (Aasha et al., 2016). Having knowledge of the effects of parallel market exchange rates can help improve the accuracy and strength of economic models. These models have the capability to forecast changes in foreign exchange rates and how they will affect the overall economy, as stated by Egert and colleagues in 2013. Entrepreneurs and individuals can make well-informed choices regarding currency exchange by comprehending the factors that affect the parallel market. This information can assist individuals in managing the dangers that come with the black market and reducing any potential financial setbacks (Calvo-Gonzalez & Santos, 2017).

1.2. Objective of the study

The main objective of this study is to examine the effects of parallel foreign exchange market premium on economic performance in the selected African countries.

Specific objectives of the research are:-

1. To assess the pattern and trend of parallel exchange market performance on economic variables (such as inflation, devaluation, balance of payment, corruption, remittance and official development assistance).
2. To examine the effect of parallel exchange market on gross domestic product (GDP).

1.3. Research questions

It directs all other tasks in the research process, and once the data has been collected and analyzed, you should be able to respond to your original question at the end of the project

Hennink, et al., 2011). As a research questions in this study, the following questions are going addressed:-

I. What are effects of parallel foreign exchange market on economic performance in selected African countries?

II. What are pattern and trends of parallel exchange market on African economy?

1.4. Scope and Limitation of the Research

The scope of the research refers to the parameters under which the study will be operating. To put it another way, explicitly defining the research domain and the factors that falls inside the acknowledged scope of the investigation (Simon & Goes, 2013). Research limits, according to Price and Goes (2004), are difficulties and problems that researchers encounter while conducting their study that could have an impact on the findings and interpretations of those findings. The study will cover the parallel foreign exchange market effects on macroeconomic variables in some selected African countries. Because of the data availability and accessibility problem, the research will considers some of macroeconomic variables and selected African countries only.

1.5. Significance of the study

Although there are numbers of studies that have been done the effects of parallel foreign exchange market on economic growth, still there are challenges and research gaps on the area. In Developing countries including most African countries, currently the parallel foreign exchange market has been increasing and there is high parallel foreign exchange rate premium. It has very significant impact on economic and social cost. Therefore, it needs latest and sufficient studies to examine the problems in order to addresses the current gaps of the area. The importance of this study is to investigate the effects of parallel foreign exchange markets on economic variables and social costs in selected African countries as well as in developing countries in general, to contribute for policy makers inputs and used as initial sources for the study of other developing countries.

Table 1.1: Summary of the Results of Tests of Hypotheses

Hypothesis	**Result**
Ho: Parallel exchange market premium has no effect on Economic growth. H1: Parallel exchange market premium has effect on Economic growth.	Not supported Null hypothesis is rejected. Alternative hypothesis is accepted.
Ho: Inflation has no effect on Economic growth. H1: Inflation has effect on Economic growth	Supported Null hypothesis is accepted. Alternative hypothesis is rejected.
Ho: Currency Devaluation has no effect on Economic Growth. H1: Currency devaluation has effect on Economic growth.	Not supported Null hypothesis is rejected. Alternative hypothesis is accepted.
Ho: Balance of payment has no effect on Economic growth. H1:Balance of payment has effect on Economic growth	Not supported Null hypothesis is rejected. Alternative hypothesis is accepted.
Ho: Corruption perception index has no effect on Economic growth. H1: Corruption perception index has effect on Economic growth	Not supported Null hypothesis is rejected. Alternative hypothesis is accepted.
Ho: Official development assistance has no effect on Economic growth. H1: Official development assistance has effect on Economic growth.	Not supported Null hypothesis is rejected. Alternative hypothesis is accepted.
Ho: Inflow remittances have no effect on Economic growth. H1:Inflow remittances have effect on Economic growth	Not supported Null hypothesis is rejected. Alternative hypothesis is accepted.

Source: Author estimation results summaries

CHAPTER TWO

2.1. Theoretical Reviews

2.1.1. Parallel Foreign Exchange market Development

A parallel foreign exchange market system is when two exchange rates exist simultaneously in an economy, with a notable difference between them. Usually, one rate is set by law as the official exchange rate, while the other is a market-driven "parallel" rate that fluctuates independently. Parallel markets can emerge when authorities impose strict limits on the volume or price of official foreign exchange transactions. In principle, a dual exchange rate system may offer benefits in certain scenarios. One benefit is that it can maintain the stability of current account transactions at the official rate, while also protecting the terms of trade and reducing the influence of financial market fluctuations on imports and exports (IMF, 2022).

In many developing countries, it is common to have both fixed or regulated exchange rates as well as market-determined exchange rates operating simultaneously in what are known as parallel foreign exchange systems. At times, governments may create a legal secondary foreign exchange market in order to address balance of payments issues. The aim is to maintain a level of control over the flow of capital leaving the country and foreign currency reserves, all while minimizing the immediate impact of a drop in the exchange rate on domestic prices. Strict foreign exchange controls that limit access to official markets can lead to the creation of an illicit parallel market in certain situations. The significance of the black market grows as government authorities react to a worsening trade imbalance by implementing stricter controls and regulations, rather than reducing overall spending or devaluing the official currency (Kiguel and O'Connell, 1995).

The parallel or official exchange rate, whether by itself or compared to the real exchange rate, is a powerful tool in economic policy as it impacts how resources are allocated, influences the growth of international trade, and drives structural change. In a market economy, the most crucial relative price is the one that affects nearly every other price. Therefore, it is crucial to pay close attention, particularly when it comes to making decisions (Ogun, 2020).

Due to the recent decline in economic conditions and increasing pressure on developing countries to devalue their currencies, there has been a rise in the number of countries with active

parallel currency markets. At present, around 24 developing and emerging economies have operational parallel currency markets. According to the World Bank's March 2023 report, a minimum of 14 countries have a exchange rate premium that is more than 10%, which is the difference between the official and parallel rates.

2.1.2. Gross Domestic Product (GDP) and Parallel Foreign Exchange Market

Various researchers have not yet established a potential connection between currency depreciation and macroeconomic growth in different countries worldwide. The exchange rate serves as a pathway for monetary policy to influence important macroeconomic indicators such as output and employment levels (Iyoha, 2003). Given the substantial impact that these factors have on both the nominal and real aspects of the economy, it is logical to take them into account when analyzing domestic inflation, real imports and exports, and overall output. Three primary means through which exchange rate stability impacts real GDP are interest rates, trade, and macroeconomic stability, as identified by Schnabl in 2008 and DeGrauwe and Schnabl in 2008. The expectation is that a stable exchange rate will lead to decreased interest rates, reduced inflation, and increased international trade. Many African nations suffer from internal and external imbalances.

2.1.3. Inflation and Parallel Foreign Exchange Market

Countries with a dual foreign exchange market have typically seen impressive economic performances, but in a negative sense. These countries experience elevated and continuous levels of inflation, lackluster economic growth, and insufficient measures to combat corruption. Capital controls are often put in place or strengthened in response to an economic downturn or a significant shock, leading to the rise of parallel foreign exchange markets. However, regardless of the origin or root cause, the black markets that emerge and persist, or the parallel foreign exchange market, are primarily a result of a scarcity of easily obtainable foreign currency, often resulting in distortions. A lackluster economic performance, including low growth, high inflation, ineffective corruption control, and other negative factors, serves as a strong deterrent for both foreign and local investors. Ultimately, it hinders fair and sustainable growth and development. Parallel markets have continually experienced ongoing capital outflows, particularly when there is a rise in premium prices. Nevertheless, the possible risk of inflation skyrocketing due to a unified currency is inevitably brought up as a hurdle to changing the

present circumstances. These valid concerns are often blown out of proportion as they typically only have a short-term effect. Additionally, the economic imbalances created by parallel foreign exchange markets become more challenging and costly to address as they continue to exist over time (World Bank, March, 2022).

2.1.4. Corruption

According to Oskooee and Nasir (2001), countries that have higher levels of corruption tend to have higher inflation rates and lower productivity levels. Therefore, based on the "productivity bias hypothesis," these countries should see a decrease in the value of their currency. In numerous developing nations, restrictions are placed on trade and capital movements by the government to alleviate the high demand for foreign currencies due to an excess of demand. In many African countries, central banks establish and mandate a fixed exchange rate for currency trading, with all markets required to adhere to these set rates. Due to strict foreign exchange rules and active informal markets in developing countries, the official exchange rate is often seen as too low, which results in the local currency being overvalued. The Corruption Perceptions Index (CPI) for Africa in 2023 shows varied results, with some countries experiencing significant progress. However, most African countries experienced a period of no growth, which maintained the region's consistently low performance and kept the average regional score at 33 out of 100. Less than fifty was the score received by ninety percent of the countries in Sub-Saharan Africa. The economy of Sub-Saharan Africa expanded by 3.3% in 2023, yet the 462 million inhabitants of the region continue to endure extreme poverty. The long-standing issues in the area stem from years of inadequate funding for public services, exacerbated by corrupt practices like money laundering that redirect crucial funds away from necessary public programs. Addressing social and economic problems is still not effective, often coming at the expense of the most disadvantaged individuals. Corruption in the justice system disproportionately impacts the most vulnerable members of society, such as the poorest residents, women, children, and people with disabilities, who heavily depend on public services. This hinders the progress towards achieving regional and global development goals, as highlighted in the CPI 2023 report for Sub-Saharan Africa.

2.1.5. Remittances and Official Development Assistances

The hawala system is suitable for certain purposes, such as facilitating international money transfers in countries that lack a sufficient formal banking system (Abouzied, 2023). However, it is also utilized for illicit purposes such as funding terrorists and engaging in money laundering (Wheatley, 2005). Due to its informal nature, regulating and monitoring the Hawala system poses difficulties for governments. Hawala networks face distinct obstacles, including the inability to track transactions, the challenge of identifying transaction participants, and the potential for exploitation by terrorists and criminals (Passas, 2005). In many countries, hawala and similar service providers have typically operated without being subject to regulatory oversight. The chances of effectively regulating the informal sector are low, especially without consulting it (Qorchi et al., 2003).

2.2. Empirical Reviews

2.2.1. Parallel foreign exchange market in Some African Countries

In Ethiopia, the parallel foreign exchange premium increased rapidly over the period 1972 to 1991, rising from 21.74% in 1972 to 238% in 1991, and then dramatically fell to 45% in 1992 due to the maximum devaluation in that year. The premium further fell to about 15.89% in 1996 largely in response to the operation of the auction system (DerreseDegefa, 2001). A new exchange rate regime was introduced with the massive devaluation of the birr by about 142% in October 1992 and the foreign exchange auction system (which has been mainly financed by inflows of grants and loans) was adopted in May 1993. According to World Bank (2023) assessment report, Ethiopia's parallel foreign exchange rate in May 2023 was reached 84.1% over the official foreign exchange rate.

In Nigeria also there was a huge backlog of accumulated foreign exchange demand on the official market estimated to be $ 7 billion due in part to limited dollar flows as foreign instruments in to Nigeria and the country's sale of crude oil have declined.

The naira's official and black market exchange rates diverged for the first time in six years as demand for foreign cash keeps rising faster than supply. Following a dollar scarcity problem brought on by the decline in crude oil prices on the global oil market, the difference between the two rates reached 84% in June 2016 (Abdulkaree Mojeed, 2022).

Like other African countries, Burundi was affected by numbers of shocks emanating from international markets. The impact of these shocks on foreign reserves and on the economy in general, translating in to active parallel markets because of the allocation of foreign currency to the importation of a list of basic products while stopping the issue of foreign currency for almost all capital account transactions. Therefore, the average premium was increased during this period.

In Algeria, the gap between the official and parallel exchange rates has widened. The difference amount was more than 60% (Abdelnacer Bouteldja, 2023). According associate press on February 17, 2024, the gap between the official exchange rate and parallel exchange rates has been increased more than 66 percent.

In Sudan also, parallel economic activities have been primarily concentrated in foreign sector of the economy, in the form of miss invoicing and smuggling of exports and importation, diversion of remittances to parallel foreign exchange markets. The average parallel exchange rate Sudan was 170% during the period of 1970 to 1987 and over 500% from 1988 to 1990 (Miguel A. Kiguel. J., Saul Lizondo and Stephen A., O'Connell, 1997).

2.2.2. GDP Performance and Inflation Rate

Two alternative approaches offer explanation about the cause and consequences of parallel foreign exchange markets, and which are the neo-classical approach and structuralism approach.

The neo-classical argument indicates that inflation affects the parallel foreign exchange market in two ways. First, it causes the fixed nominal exchange rate to become increasingly over-valued, which in turn leads to expansion in the size of the parallel market. Second, by reducing the real domestic interest rate, inflation induces capital flight.

Structuralism, conversely, posits that an increase in the parallel foreign exchange rate or a devaluation of the official exchange rate results in a heightened demand for money. This occurs because the cost of foreign exchange in domestic currency terms rises, subsequently leading to an increase in domestic prices.

2.2.3. Corruption

According to global financial integrity (GFI) estimations, between 2005 and 2014 an estimated average of US$ 2 trillion to US$ 3.5 trillion dollars flows to and from developing countries as

IFFS (illicit financial flows). This equivalent to: 14% to 24% of the country's total trade (GFI 2017). Global Financial integrity (2010) estimates that illicit financial flows (IFFs) from Africa between 1970 and 2008 exceeds US$ trillion, a figures that significantly surpass the total inflows of development aid and foreign direct investment to the continent during the same time frame. Nigeria stands out among other resource-rich African nations, with outflows amounting to US$ 217.7 billion, representing 30% of the total.

Data from global financial integrity shows that between 55% and 80% of the illicit financial outflows leaving Ethiopia originate through trade miss-invoicing, which amounts to estimated 6% to 23% of the total values of the country trade.

According the assessment of United Nations economic commission for Africa (UNECA) in 2015, IFFS at the country and sector levels in Africa (2000-2010) through trade mispricing using miss invoicing in sector levels analysis, IFFS were highest in the extractive industries, Algeria accounting for 20.1% of the total IFFS in oil from Africa during this time. Morocco and Tunisia account 51.8% and 19.1% respectively.

According the report of African team and UNECA on July 7, 2021, Sudan loses about US$ 5.4 billion in illicit financial flows (IFFS) in every year. From 2012-2018 amounted to US$ 30.9 billion equivalent to 50% of total trade of the country during these years.

2.2.4. Remittance ,Official Development Assistance with Economic growth

Empirical data currently available (Fajnzylber & Lopez, 2005) suggests that greater remittance inflows are typically linked to lower poverty indices and faster growth rates at the national level. Remittances appear to lower output volatility, a measure of the risk that a country faces, and to improve social indices, at least in some countries and for certain socioeconomic categories. These benefits extend beyond the standard income dimensions of welfare. African countries are estimated to receive US$ 40 billion in officially recorded flows in 2010, but the true size is believed to be far lager. There are approximately three million Ethiopians living outside of the country and many of them send money back to the country to help their families. The value of the remittances has steadily measured around US$141 million dollars in 2003 to US$ 4 million in 2016 (APA news 2017). However, according to international organization on migration (IOM), as much as 78% of the money sent to country as remittances is sent through informal channels known as huwala (see also passas 2015).

Nigeria receives by far the largest remittance inflows throughout Africa. They ranked sixth highest in the world in 2017. US$ 24.2 billion was transferred to Nigeria in 2018. 5.9% of Nigeria's GDP was made up of remittances in 2017 (World Bank, 2017). However, according to a number of sources, the flows are significantly understated, with up to 50% of remittances entering the nation through unofficial means and going unreported in official statistics (Iheke, 2016).

The Remittance inflows to Algeria, Egypt, Morocco and Tunisia are significant and growing. Where as in 2008, they were worth US$ 17.7 billion; by 2019 this had increased to 37.3 billion. Egypt received the highest share, US$ 26.781 billion and Algeria was received the smallest share US$ 1.792 billion (Kalantarya, et.al, 2021).

While the remittances from Burundians living abroad are significantly lower than those from migrants of other countries in the region, a considerable number still contribute financially to their homeland. According to a World Bank report, in 2016, the average amount sent home by Burundians was US$ 140, in contrast to Tanzanians who sent an average of US$ 1,448 and Kenyans who sent as much as US$ 1,593. It is also plausible that additional funds are being transferred through unrecorded channels

In 2022, the personal remittances received in Sierra Leone remained nearly unchanged at around US$ 332 million with decline of US$ 0.4 million. A remittance is non- commercial transfer of money by non-resident workers, members of diaspora community (Statista research development, 2024, 26, February).

According to the World Bank, remittance to Sudan reached US$ 2.8 billion in 2020, accounting 10% of GDP of the country. In the same year, the report of central bank of Sudan was indicated that, the remittance accounting nearly 70% of foreign currency reserves.

In empirical research, the relationship between foreign aid flow and real exchange rate has been thoroughly examined. Some studies have shown that there might be a positive or negative influence (White &Wignaraja, 1992). The study's analysis of the Dutch disease effect in Sri Lanka shows a relationship between foreign aid inflows and real currency rate appreciation.

According to Elbadawi (1999), the studied result of 62 emerging economies, which 28 were Africans was indicated that unsustainable inflows of foreign aid in numerous non-African and

African economies have brought about considerable partial overvaluation of the real exchange rate.

Ethiopia is the top recipient of bilateral aid from many donor countries, such as the USA, Canada and the UK. It is the largest recipient of official development Assistance (ODA) in the Africa and the third largest recipient in the world according to OECD's aid at Glance. The net flows of ODA alone for the years 2009, 2010 and 2011 was US$ 3.819 billion, US$ 3.525 billion, and US$3.563 billion, respectively, with a net ODA/GNI of 12%, 11.9% and 11.3% for the same years. The country's GNI per capita was US$ 350, US$390 and US$400 for the years 2009, 2010 and 2011 respectively. Sector based (theme based) corruptive practices to show how the billions of dollars provided by multilateral financial institutions and donors have been captured by ethically organized elite groups and how these funds have played pivotal roles in making communities and aid recipient citizens of Ethiopia to become highly vulnerable to capture by local elites (Dagnachew Siyoum, 2012).

According to data from the Organization for Economic Cooperation and Development (OECD), which is an international organization, the United States has given Sudan the most aid, accounting for one-third of all aid given between 2000 and 2009. Over the course of these years, the nation received about US$ 2.035 billion in foreign aid.

Sierra Leone got US$ 364 million in official development aid (ODA) in total year 2006, according to data from the OECD Aid at a glance. In a society where entrenched interests drive most decisions, Sierra Leone was able to obtain foreign aid for over US$ 155 million (or 34% of total national revenue) between 1961 and 1971.

Nigeria received US$ 152 million in net aid flows from all donors in 1999. Aid shipments raised little to US$ 185 million in 2000 and US$ 573 million in 2004. From 1999 to 2007, Nigeria got US$ 6 billion in development assistance (Emmanuel, 2012).

Burundi's GDP is at an all-time high of US$ 2.715 billion, yet this high is still very low on global scale. Since Burundi's GDP is low funds to fight hunger are mainly provided through aid.

2.3. Conceptual Framework of Variables

The correlation between parallel exchange market premium (PEMP), inflation, currency devaluation, corruption, remittance, foreign aid and balance of payment with economic Growth

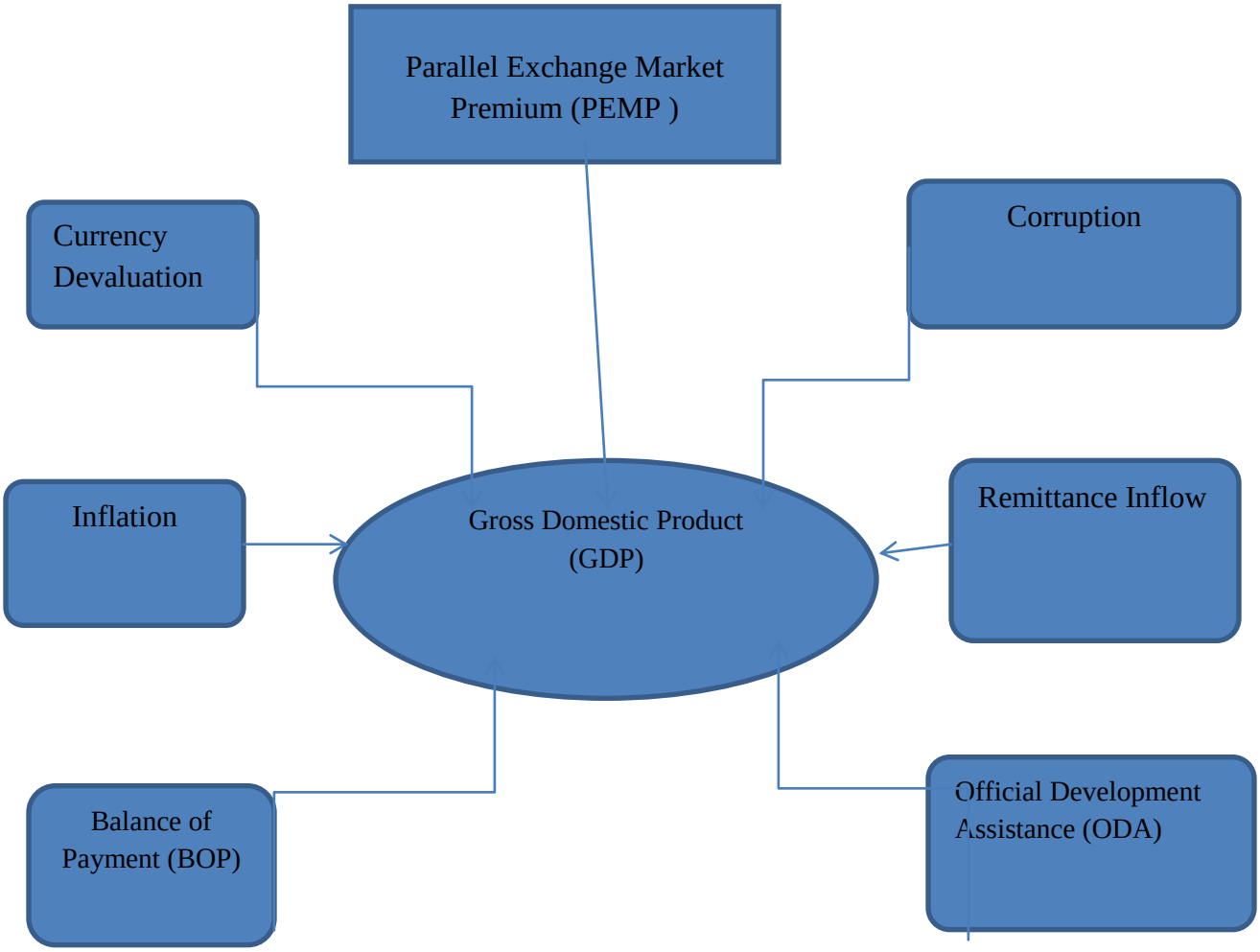


Figure 2.1: The relationship of parallel exchange market with Economic variables

Source: Author Conceptual Framework, 2024

CHAPTER THREE

3. Methodology

3.1. Research Design

A research design, according to Creswell & Plano Clark (2007), is a set of guidelines used in research projects for data collection, analysis, interpretation, and reporting. It is the general strategy for tying the relevant (and doable) empirical research to the conceptual research concerns. There are three types of research designs, depending on the goals of the research topics. According to Robson (2002), they are specifically exploratory, descriptive, and explanatory. Descriptive studies are used to give a picture of situations. When investigating a novel occurrence or an unclear problem, exploratory research is carried out (Saunders et al., 2007). The goal of an explanatory research is to account for and explain the descriptive data. Accordingly, explanatory studies aim to answer "why" and "how" inquiries, whereas descriptive studies may address "what"-type questions (Grey, 2014). Therefore, considering the criteria described above under the different research design, this study will be conducted by using explanatory research design.

3.2. Research Approach

There are three research approaches: a) quantitative b) qualitative c) mixed methods. The three methods are not as distinct as they seem at first. It is not necessary to regard quantitative and qualitative methods as inflexible. They display various continuum ends (Newman & Benz, 1998). Because mixed methods research combines aspects of qualitative and quantitative methodologies, it falls in the middle of this spectrum. Because quantitative data will be employed for the research analysis, this study has selected the quantitative research technique among the three research method approaches.

3.3. Data type and Sources

The study has utilized Secondary data that used to estimate the model and investigate the significance of the variables of twenty six (26) randomly selected African countries using annual panel data that covered from 2007-2023.

Parallel exchange market rate premium (PEMP), Gross domestic product (GDP), Balance of payment (BOP), Currency devaluation (DEVA), Remittances (REMI) have been collected from World Bank national account data; Corruption perception index (CORR) data source was Transparency international and Inflation rate (INFL), Official development assistance (ODA) data have been collected from www.macrotreds.net and Organization of Economic Cooperation and development (OECD) respectively. Parallel exchange market premium (PEMP) is the difference between the parallel rate and the official rate. GDP is gross domestic product (growth rate), which was obtained from World Bank national account data.

3.4. Model Specification

Several econometric models, such as the smuggling model, real trade models (RTMS), portfolio balance model, monetary model, and others, have been applied to the parallel exchange market premium (PEMP) by different authors. Different models studies on exchange rates were examined in order for this study to determine which model—the monetary model or the portfolio balance model—was more appropriate. The monetary model is easier to apply, but the portfolio balance model satisfied all requirements due to the microstructure and dynamic properties of the exchange rate by including dynamic general equilibrium (Osler, 2006). The portfolio balancing model has been modified and implemented for this study based on the literature reviewed (Kiguel and O'Connell, 1994; Elbadawi, 1992) and other relevant literatures.

Let us start with the basic relationship of the monetary sector:

$M_s = FR+DA$ ---------- 3.1

$M_d = P^*md$----------3.2

$m_d = F(Y, \Pi^e)$----------3.3

where M_s is the nominal money supply, FR is the foreign exchange reserve of the central banks, DA is the domestic asset, M_d is the demand for the nominal money, p* and md is the real demand for money which is function of real income and expected domestic inflation.

$\Delta Ms = \Delta M_d$ ----------3.4

Where equilibrium equation for money market is that the changes in the nominal money supply equal to changes in the nominal demand for money. By differentiating the logarithmically equation (3.1) and (3.2) then substitutes in to equation (3.4), yields

$(1-\alpha)\Delta FR + \alpha\Delta DA = p + md*$ ----------3.5

Where p is domestic inflation

Domestic price expressed as follows

Domestic price level, *P*, is determined by a weighted average of the prices of tradable, *PTr*, and non-tradable, *PNT r*

$pt=\beta pTr+(1-\beta)r$----------3.6

The prices of countries tradable goods is determined by world prices, $p*$. Different from the assumption in Blejer (1978) that the demands for current account transactions are satisfied in the official market. Hence, the domestic price depends on the world price and the rate of change of the exchange rate in the official rate, *e*, and the parallel market, *b*

$pTr=\theta e+(1-\theta)+p*$----------3.7

An excess supply of money implies an excess demand for both tradable goods and non-tradable goods - that is, an excess demand for foreign currency in the parallel market since demand for foreign in the official market is rationed. Assuming that the excess demand for non-tradable goods varies with the excess demand throughout the economy, the following equation can be represented for the determination of the price of non-tradable goods.

$pNTr=pTr+(D-md)$, $\lambda>0$----------3.8

Substituting equation (3.7) into equation (3.8) and then equation (3.8) into equation (3.6), the domestic inflation equation is expressed as a function of world inflation, of the official exchange rate, anddisequilibrium in the money market as follow:

$pt=[\theta e+(1-\theta)b+p*]+(1-\varphi)[\theta(D-md)]$----------3.9

Where $\varphi = 1/(1+\theta(1-\theta))$ if all goods are traded $\theta=1$ then $\varphi = 1$ and the domestic rate of inflation in a fixed country is fixed to the world rate.

Parallel exchange market rate

The demand for foreign exchange is derived from the demand for current account transaction, D^{ca}, and the demand for foreign exchange as an asset, D^{fa}

$D = D^{ca} + D^{fa}$----------*3.10*

The demand for current account transactions can be partially satisfied in the official market and the rest in the parallel market. The demand depends on incomes the derivation of domestic prices from foreign prices.

$D^{ca} = \delta + \delta_1 Y + \delta_2 (P/P^*b)$ ----------*3.11*

Real income and demand for money

The model assumes that output (real income) responds positively to the excess supply of real money balances and the deviation of the actual output from its trend level. It was simply specified that:

$y = (M/P)t\text{-}1 + y^* + yt\text{-}1$ ----------3.12

Where y* denotes the capacity output.

Real money demand depends on real income, *y*, and expected inflation, *i**

$m_d = \tau + \tau_1 y_t - \tau_2 it^*$ ----------3.13

Dynamic Panel data regression was used to analyze the effect of parallel exchange market premium on economic growth in some selected African countries from 2007 to 2023 to capture the dynamic nature of the dependent variable. Numerous economic factors interact in a dynamic manner. To put it another way, they are identifiable by the inclusion of the lagged dependent variable in the right side regressors, indicating that the explained variable's effect from previous periods tends to continue into the present period. Autocorrelation issues also arise because of the lagged explanatory variable included among the regressors in dynamic panel variable regressions and the problem of individual effects caused by individual heterogeneity (Baltag, 2005).

3.4.1. Economic Growth Model

GDP=F (GDPt-t, PEMP, INFL, DEVA, BOP, CORR, REMI) ----------3.14

Where GDP is gross domestic product, GDPt-1 is one year lag of gross domestic product, PEMP is parallel foreign exchange market premium, INFL is inflation rate, DEVA is currency devaluation, CORR is corruption perception index, BOP is balance of payment, REMI is remittance, ODA is official development assistance. Therefore, the econometric model specification can be written as:

GDPit = β0it+ β1GDPit-1+β2PEMPit+β3INFLt+β4DEVAit+β5CORRit+ β6BOPit+β7REMIit+β8ODAitt+uit --3.15

Where i =1,2,3----------N(Cross sectional units)

t=1,2,3----------T(Time period in years)

GDP = Gross domestic product

GDPit-$_{1=}$ Oneyear lag of gross domestic product

PEMP=Parallel Exchange Market Premium

INFL =Inflation rate

DEVA = Currency devaluation

BOP = Balance of payment

CORR = Corruption perception index

ODA = Official development assistance

REMI = Remittance

uit= Composite error term. That is, u'it = v'i +ɦ'I .where v'i and ɦ'itare refer to country specific and time in variant effects respectively.

B0'it = unknown intercept for each entity

β1, β2, β3, β4, β5, β6, β7 and β8 = coefficients of the explanatory variables

Applying dynamics into the model, the above equation (3.15) is rewritten as an autoregressive one model (AR (1)), as follows:

GDPit – GDPit-1 = a't + VGDPit-1 + βx'it + u'it + £'i ----------3.16

where GDPit is gross domestic product, GDPit – GDPit-1 is the rate gross domestic product, GDPit-1 is the initial level of gross domestic product, x'it represents a vector of explanatory variables, u'it is an unobserved country specific and time invariant effect, £"i is the error term and the subscripts i and t represent country and time period respectively whereas a"t refers to the period specific intercept terms to capture changes common to all countries. Equivalently, Equation (3.16) can be written as follows:

GDPit = a't + (v + 1) GDPit-1 + βx'it + u'i + £'i---------- (3.17)

Equation four (3.17) above can also be written in first differences to avoid country specific and time-invariant component, as follows:

ΔGDPit = Δa't + (v + 1) ΔGDPit-1 + βΔx'it + Δ£'i----------3.18

3.5. Data Analysis

Random Effect (RE) considers the idea that an individual's unique characteristics are not related to the explanatory variables in a way that differs from Fixed Effect (FE). However, if the model includes a lag variable or a time-varying variable, the RE model faces a problem of endogeneity. This makes it challenging to use RE in a dynamic panel data analysis. On the other hand, if the time period is long, the bias can be minimized using both fixed and random effects asymptotic estimators. However, applying these estimation methods is difficult due to the limited time available for this research, as Roodman (2009) points out. An alternative estimation method in this context is the Generalized Least Squares (GLS) estimator.

Common panel data model estimation methods, such as random effects (RE), fixed effects (FE), generalized least squares (GLS), pooled ordinary least Square (POLS), within estimator, etc., are generally ineffective in dynamic panel datasets because they do not account for estimated equation endogeneity and individual specific effects (Baltagi, 2008). These established estimating methods will produce inaccurate and fluctuating results when they are utilized with a delayed regression independent variable on the right side of the equations. Roodman (2009) also points out that applying these estimation methods to dynamic panel data approaches leads to dynamic panel bias because they are primarily designed for static models.

To address the issue of endogeneity of the laged dependent variable in a dynamic panel data approach that arises when there is a correlation between the regressor and the error term, Generalized Method of Moments (GMM) was suggested by (Arrelano and Bond, 1991). The Generalized Method of Moments also accounts for unobserved panel heterogeneity, omitted variable bias, measurement errors, and autocorrelation. GMM considers regressorsthat areindependent from the error term and have strong correlations with the regressors to address endogeneity. It is also meant to be used for a brief period of time with a large group additionally; it is intended to manage any distributed fixed effects**.**

There are a number of explanations for using GMM estimation technique:-

First, Causality, from the explanatory variable to the explained variable and vice versa.

Second, Regarding the error term, it removes endogeneity problems.

Third, it combines the relationship between the regressor and the time invariant person specific fixed effects contained in the error term.

Fourth, it considers the likelihood of autocorrelation taken on by a lagged explanatory variable on the right hand side of the equation.

Finally, if our linear regression model includes an endogenous regressor, it is also helpful for panel data with large N and a short T.

The Differential Generalized Method of Movements (DGMM) method corrects or endogeneity by differentiating all explanatory variables, thus eliminating fixed effects. However, this differentiation of explanatory variable evolution has the drawback of amplifying differences in unbalanced panels by subtracting previous observations from the current observations.

This means using differential GMM may lead to poor results when the panel is unbalanced**.**

The System Generalized Method of Movements (SGMM) estimation on the other hand suggested by (Arellano and Bond, 1995) and (Blundell and Bond, 1998) modifies endogeneity by adding further instruments to increase efficiency and the conversion of the instruments to make them exogenous with the fixed effects. The original equation and the transformed equation are both used in System Generalized Method Movements of equations. SGMM uses orthogonal

deviations, which minimizes data loss in place of deducting the earlier observation from the current one.

3.5.1. Difference GMM Model

Initial:

$GDP\_it = b't + (v + 1)\ GDP\_it\text{-}1 + \beta x'it + z'it + \mu'i$……...…….. (3.19)

Model transformed

$\Delta GDP\_it = \Delta b't + (v + 1)\ \Delta GDP\_it\text{-}1 + \Delta\beta y'it + \Delta\mu'i$ ……..……...…… (3.20)

The lagged explanatory variable may be related with the disturbance term, the endogeneity problem still exists when the fixed effect is excluded by changing the regressors by first differencing. According to (Blundell and Bond, 1998); (Bond, 2001) since unobserved fixed effects, or z'it assumed that they are constant over time, they are no more involved in the converted equation. By using the first differenced lagged explained variables instrumented at historical levels, the equation characterizes changes in the explained variable.

3.5.2. System GMM Model

Applying the above given initial model, $GDP\_it = b't + (v + 1)\ GDPit\text{-}1 + \beta x'it + \mu'i$ with the hypothesis that the equation is a random walk model and GDP is determined, applying the difference Generalized Method of Movements will result both a biased and inefficient estimate of unlimited samples, especially when the time (T) is short.

According to (Blundell and Bond, 1998) the use of weak instruments is to blame for the difference GMM estimator's subpar performance under these conditions. So, this is where the system GMM is useful. Because it will express one equation in levels form with first differences as instruments and another equation in first differenced form with levels as instruments, GMM is appropriate. The system GMM uses a bigger number of moment instruments, as Monte Carlo research proposes that there are benefits in precision and the small sample bias is decreased when time is short and the explanatory variable is determined. A One-step GMM should be utilized, utilizing a weighting, when heteroscedasticity and serial correlation are existing as well.

Decision on Difference and System GMM Specification; the decision has been made based on the following steps:

First, a pooled Ordinary Least Square and Least Square Dummy Variables method to estimate the dynamic model (that is, using fixed effect approach)

Second, looking at the relations fixed effect estimate of b as a lower bound estimate and the pooled Ordinary Least Square estimate for b as an upper bound estimate.

Third, if the Difference GMM estimate for b is near to or lower than fixed effect estimate, it is possible that the composition is weak and the Difference GMM estimate is downwardly biased. Therefore, System GMM estimator must be used instead of DGMM estimator.

Finally, a System GMM must also be used if the model shows persistent random walk behavior.

A researcher needs to be conscious of some GMM diagnostics before requesting that his or her estimation outcomes are consistent. For GMM estimates to be reliable, the rationality of the instruments must be established incorporating (Hansen, 1982) and (Sargan, 1985) tests of constraints identification. These above tests are made to check the rationality of the null hypothesis about the entire set of instruments. The judgment to use instruments will be justified if the null hypothesis cannot be disproved. Another diagnostics test is error term autocorrelation or serial correlation test. The error term calculates the null hypothesis that first and second orders differenced error terms are consecutively associated. The initial error term is successively reversed if the null hypothesis that there is no second order serial correlation is not rejected.

CHAPTER FOUR

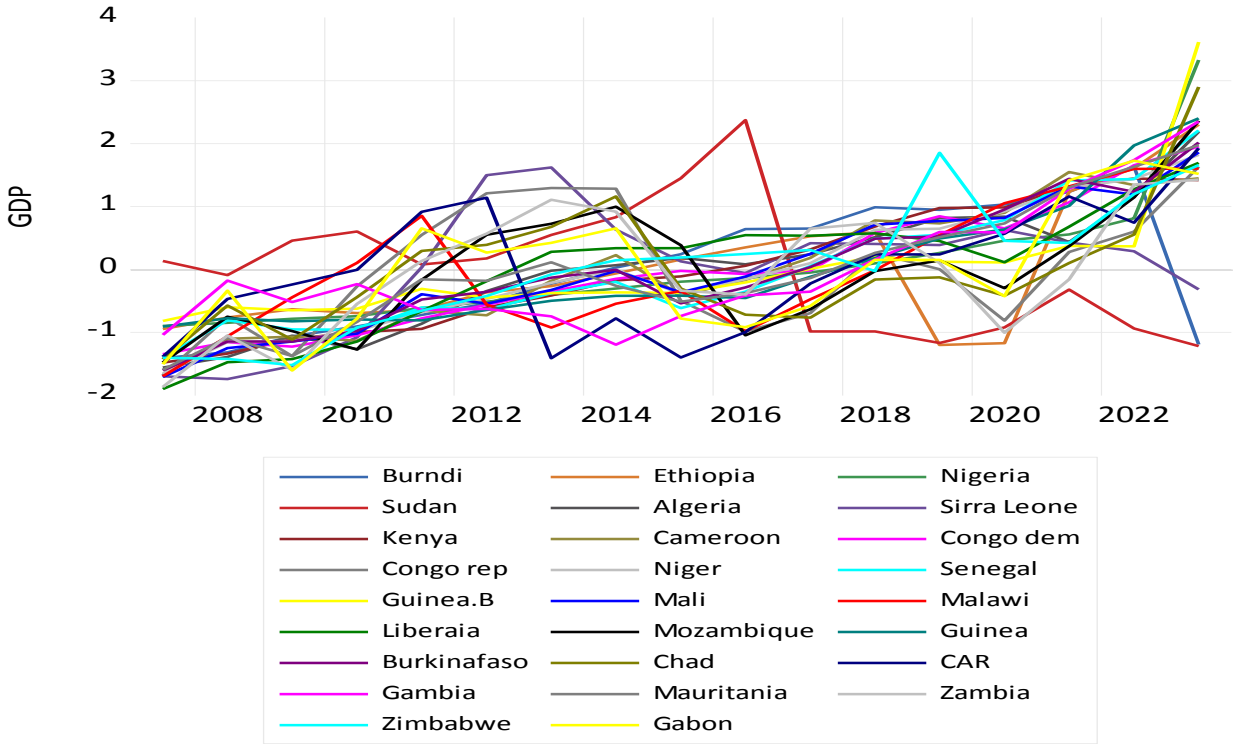
4. Data Analysis and Discussion

This chapter presents the empirical analysis based on econometric frameworks and discusses the results of the effect of parallel exchange market on macroeconomic performance in some selected African countries. In this section both descriptive and inferential data analysis were presented by using secondary panel data collected from twenty six (26) African countries, randomly selected based on the availabilities of data. The discussion of the descriptive statistics was focus only on some variables profiles and all necessaries diagnostic tests and their results have been presented.

4.1. Descriptive Statistics

The average annual growth rate of Real GDP in Africa was recorded at 5.1% from 2000 to 2010, representing an increase of 2.5% compared to the preceding decades. However, this growth rate decelerated to 3.3% per annum between 2010 and 2019. In terms of Sub-Saharan Africa, the annual GDP growth rate trends indicate that for 2022, the growth rate was 3.59%, reflecting a decline of 0.57% from 2021. The growth rate for 2021 was 4.15%, which marked a 6.11% increase from 2020, where the growth rate was -1.96%, a decrease of 4.52% from 2019. For 2019, the growth rate stood at 2.56%, showing a slight decline of 0.09% from 2018 (www.macrotrends). The GDP trends of selected African nations are illustrated in the figure below:

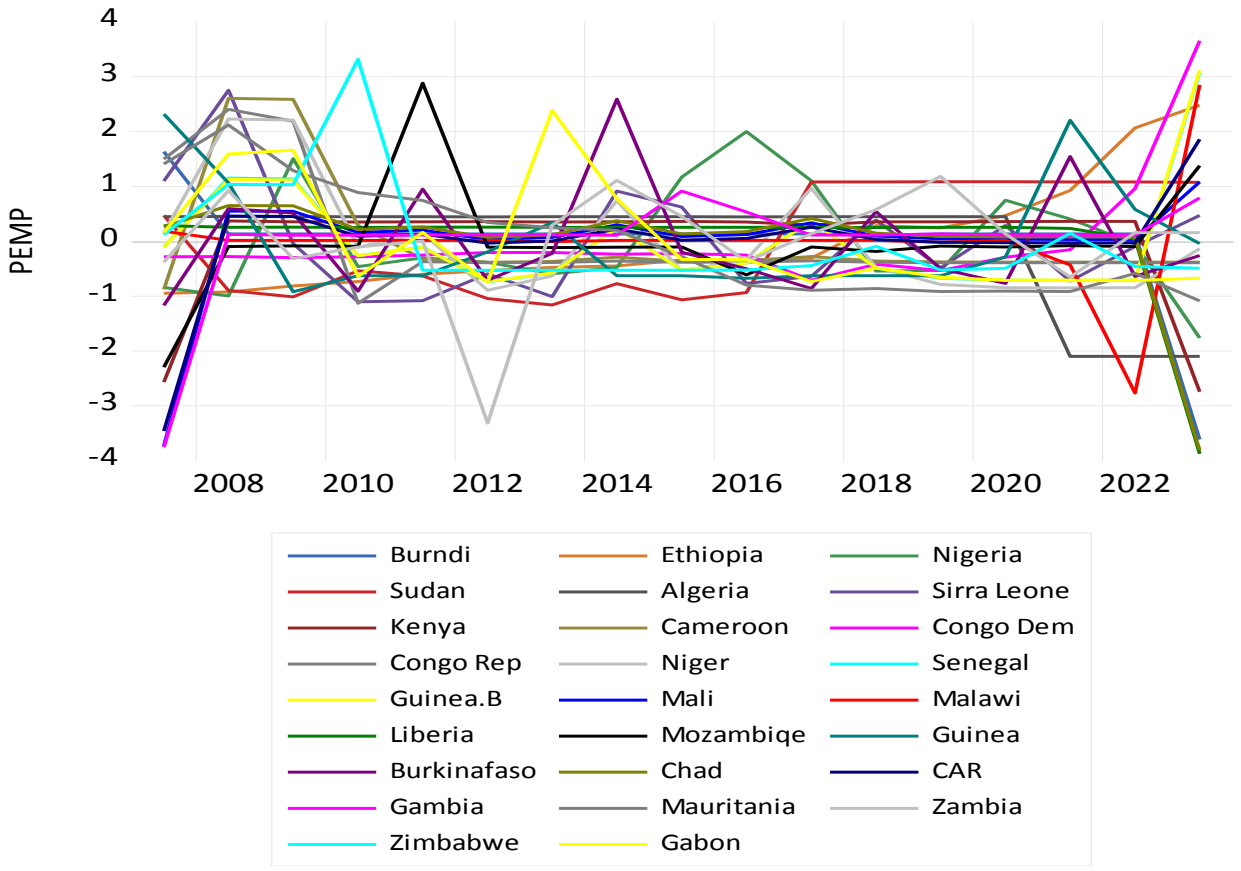
Figure 4. 1:Trends of Gross Domestic Product in Some selected African Countries (2007-2023)



Sources: Author raw data Computation result, 2024

Numerous developing nations continue to endure a disorganized web of restrictions and regulations regarding the possession and use of foreign currency, as well as a vast array of parallel foreign exchange market premiums, in spite of the growing trend of globalization in the global economy. Many of the developing nations use parallel exchange rates when they are experiencing balance-of-payment issues. In accordance with IMF policies, exchange rate distortions must be addressed; but progress has been limited in several countries with wide spreads, including Argentina, Ethiopia, Nigeria, and so on (World Bank March,2023).

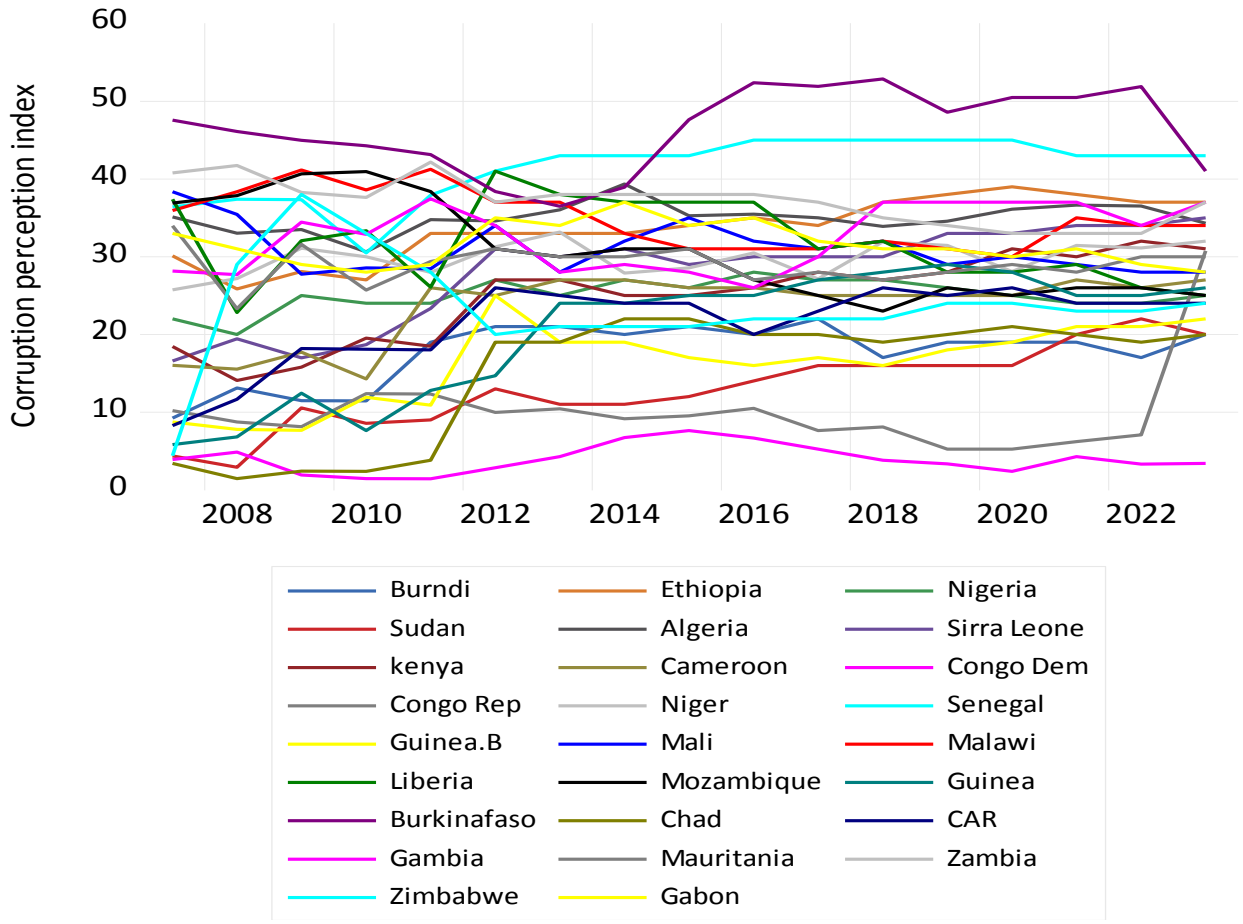
Figure 4.2: Trends of Parallel Exchange Market Premium in Selected African Countries (2007-2023)



Sources: Author raw data Computation result, 2024

Even though an economic growth rate of 3.3 percent in 2023, sub-Saharan African countries are grappling with extreme poverty, affecting about 462 million people. The region continues to face significant issues due to decades of chronic underfunding of public sectors, which are made worse by corruption and money laundering that diverts funds from essential public services (Transparency International, January 30, 2024).

Figure 4.3: Corruption Perception trends in Selected African Countries (2007-2023)



Sources: Author raw data Computation result , 2024

4.2. Multi-Collinearity test

Multicollinearity refers to a situation in which two or more explanatory variables in a multiple regression model are extremely linearly related. If the coefficients of variable inflation factor more than 5, then there is multicollinearity.

Table 4.1: Multi-Collinearity Test Result

Variable	VIF	1/VIF
ODA	1.21	0.825603
REMI	1.20	0.830276
DEVA	1.17	0.856356
PEMP	1.13	0.882933
INFL	1.05	0.953455
BOP	1.03	0.974643
CORR	1.01	0.992232
Mean VIF |	1.11	

Source: Author software computation result

As we can see from the table above the mean variation inflation factor (VIF) 1.11 is less than 5. Therefore this indicates that there are no multicollinearity problems between the variables.

4.3. Serial Correlation Test

Table 4.2: Serial Correlation test Result

N(resid<= -1583901056) = 221
N(resid> -1583901056) = 220
obs = 441
N(runs) = 232
z = 1
prob>|z| = .32

Source: Author software computation result

Serial correlation is the relation between observations of the same variable over the specific periods. Serial correlation occurs when the test of the variables result indicates conventional p-values less than 5 percent (5%), then the null hypothesis is accepted, otherwise the alternative hypothesis is accepted. Therefore as we see from the table above the P-value 0.32 is greater than 5 percent and we reject the null hypothesis then accept alternative hypothesis that means there is no serial correlation. Omitted variable and reverse causality are handed by system generalized methods moments (GMM) during the estimation.

4.4. Model Estimation Results

The estimation outcomes of our models described in chapter three are covered in this section. Using a System GMM estimation technique, we arrived at the empirical results demonstrating the links between parallel exchange market and economic growth. We tried to determine whether parallel exchange market premium affects economic growth in some selected African countries via direct relationship, as was already mentioned in the literature review in chapter two of this research study.

When estimating this model, we intended to put on the majority of the estimation techniques applicable to dynamic panel data model estimations in order to obtain a trustworthy result. Along the way, we ran a number of simulations in STATA using the One/Two Steps Difference GMM and One/Two Steps System GMM. However, the One Step System GMM estimation is more appropriate and passes the necessary testing, whereas the other dynamic estimation methodologies unsuccessful to pass the applicable simulation related tests. As a result, it is determined that the One Steps System GMM estimation is the best model for approximating the relationships between our study's major variables. However, it is effective and resistant to heteroscedasticity and autocorrelation as stated by (Roodman 2009).

Since, we used balanced panel data from 26 Selected African countries that may increase efficiency for unbalanced data; we did not need to use forward orthogonal deviations (FOD) GMM in our regression. Along with Roodman (2009), the first differenced alteration has disadvantages as it stresses gaps in the unbalanced panel. The outcomes of the Arellano and Bond test for first and second order autocorrelation (AR (1) and (AR (2)), the number instruments and groups, and statistics of Sargan and Hansen's, for over identifying restrictions and instrumental soundness and efficiency test are presented in below table together with other

pertinent tests. Instrument validity is estimated using the test of Sargan and Hansen. As stated by (Roodman, 2009) it examines the belief that the general instruments are reliable. We maintained the choice of the instruments via the failure to reject the null hypotheses. The null hypothesis, differenced error term's first and second order serial correlation is tested along with the test for error term serial correlation or autocorrelation. In line with (Arellano & Bond, 1991), it is inferred that instruments are precisely defined and the first disturbance term is serially uncorrelated if there is no rejection of no second order serial correlation hypothesis.

Table 4.3: One step System GMM Model Estimation Result

Variables	Coefficient	Standard Error	Z-value	P-value	95% conf.
L1.GDP	.20	.05	3.63	0.000	.09
PEMP	7.15	1.57	4.56	0.000	4.08
DEVA	3.55	3.79	9.36	0.000	2.81
INFL	-1.29	1.55	-0.84	0.403	-4.32
BOP	-309	47.96	-6.46	0.000	-403.7
CORR	6.69	5.88	1.14	0.255	-4.83
ODA	-19441	9798.7	-1.98	0.047	-38647
REMI	9526	2595	3.67	0.000	4440.
cons	-2.82	3.11	-0.91	0.365	-8.92
Observations		390			
Number of Groups		26			
Number of Instruments		13			
R(1)		0.145			
R(2)		0.619			
Joint P-Value		0.000			
Sargan Test		0.982			
Hansen Test		0.000			

Source: Author software computation result

The simulation result for Model utilizing the one-step System GMM estimate technique is shown in Table 4.3. From the diagnostic test results that all the variables are jointly significant along with the Wald test. This proposes that the model is well stated and proves the validity of the model's variables. As said by Roodman (2009), selecting from among the spectrum of Sargan's statistics confirms the overall chosen instruments and overcomes identification limits. The Sargan test (0.982) results are consistent with the diagnostic test. Furthermore, the results of the Arellano-Bond AR(1) and AR(2) tests of first and second order autocorrelation in residuals indicate that there is no first or second order autocorrelation with AR(1) and AR(2) for the one step system GMM being 0.145 and 0.619, respectively, complying with $P > 0.05$. In Table 4.3, it is also clear that there are fewer instruments than groups ($13 < 26$), which fulfills the condition that there be fewer or equal numbers of instruments and groups for identification. The model is adequately specified as evidenced by the fulfillment of all of these necessities.

The explained variable, GDP growth, is considerably impacted by its first period lag, as shown by our simulations of the One Step System in Table 4.3. As can be shown, at a 5% level of significance, the dependent variable's first prior period lag value is positively correlated with the growth of GDP Growth. Keeping everything else constant, the One Step System GMM calculation indicates that a 1% increase in the GDP growth figure from the prior year may have caused the current period's GDP growth to increase by 0.2%.

The approximation in the table above indicates that our focus variable, Parallel Exchange market premium, has a highly significant positive impact on economic growth. According to the simulation result from the one step System GMM, 1% increase in Parallel exchange market premium increases economic growth by 7.15% at 5% level of significance in Selected African countries under the year specified. The impact of parallel exchange market on GDP growth is so great.

The relationship between parallel exchange market rate and economic growth is not reached on consensus yet. Most studies that have been done in African countries concluded that negative impact on Economic growth. The study result that has been found in the case of Ethiopia by Degeffa (2001), in the case of Sudan by Ebaidalla M. (2019), Nkurunziza (2002) the case of Burundi, the case of Nigeria (Oladiran, Olaniyan and Folake, 2018), and Bouteldja (2023) the case of Algeria are some of the study's results indicate the negative effect relationship between

parallel exchange market rate and Gross domestic product (GDP). On the other hand, the recent studies show that the positive relationship between parallel exchange market and economic growth. According to AlabiRaphae (2015), his finding result indicates that there was a very high positive relationship between parallel exchange market and economic growth in Nigeria. The indirect analysis of Richard and Mun (1999) on the presence of black market makes foreign assets an attractive alternative to domestic capital and agents hold a portfolio comprised of both assets. This finding was indicate that the positive relationship between parallel exchange market and economic growth. The other related finding was the panel data analysis result of four North African countries by MatallaSiham (2015) confirm that the positive impact of parallel exchange market rate on the economic growth. Like the second case scenario, the finding result of this study indicates that there is positive impact of parallel exchange market on economic growth of these African countries. Therefore, the results indicate that the positive impact of parallel foreign exchange market on economic growth shows that the economy unsatisfied under the official exchange market uses through illegal ways.

The research finding result on 83 developing countries by (Spyromitros and Panagiotidis, 2022) has provided that a positive relationship between corruption and economic growth using panel data analysis for Latin America, Middles east and North African countries. Similarly the finding result of Atewe and Osahom (2020) on fifteen West African countries by using panel data for the period of 2000 to 2018 was indicate that positive relationship between corruption and economic growth. Likewise, the finding result of our case also there is positive but statistically not significant relationship between corruption and economic growth for these African countries.

The other important variable in this study is inflation. The theoretical and empirical evidence show that inflation has positive or negative effect on economic growth based on the level of threshold. The regression analysis result of this study shows that the relationship between inflation and economic growth is negative and statistically insignificant.

As mentioned by International Monetary Fund (IMF), "Remittance and macroeconomic Performance theory" was indicate that remittance has positive impact on economic growth (IMF March, 2008). Our one step system GMM estimation results showed remittance has positive and highly significant impact on economic growth of these selected African countries. Increasing 1%

of remittance inflow causes 9526% increasing in economic growth of the countries at 5% level of significant.

According to different studies, official Development Assistance has positive effect on economic growth. The simulation result of our model one step system GMM indicates that official development has negative impact and significant on the economic growth of the selected African countries. Statistically increasing by 1% in official development assistance, results 19441% reduction of economic growth the Countries at 5% level of significant. Balance of payment also has negative and significant impact on economic growth of the countries. The estimation result confirmed that 1% change of balance of payment; causes 309% decrement on the economic growth the countries at 5% level of significant.

Various researchers have not yet established a potential connection between currency depreciation and macroeconomic growth in different countries worldwide. The exchange rate serves as a pathway for monetary policy to influence important macroeconomic indicators such as output and employment levels (Iyoha, 2003). From one step system GMM estimation result, we can explain that currency devaluation has positive and significant on economic growth of the selected African countries. By 1% increasing currency devaluation, results 3.55% increasing of economic growth of these countries at 5% level of significant.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

The study aimed at evaluating the effect of parallel foreign exchange market on Economic growth performance in some selected African countries. From the research findings and the explanations offered, the study makes three major conclusions. Firstly, the study found out that parallel foreign exchange market has a significant positive effect on the Economic growth performance in some selected African countries. This indicates that there is informal contribution of parallel exchange market on economic activities which does not bring sustainable economic development and there were policies gap of these countries. Secondly, the study finding result confirmed that inflation and corruption perception index have insignificant effect on Economic growth performance of these countries. Currency devaluation and remittances inflow have significant positive effects on Economic growth performance in some selected African countries. Thirdly, from the conducted study observes that balance of payment and official development assistance have significant negative effects on macroeconomic performance in some selected African countries. Finally the study observed that parallel foreign exchange market directly affects the performance of Economic growth in developing countries, especially in most of African countries and indirectly economic and social cost of societies. Therefore exchange rate unification has crucial role for the better resources allocation and effective macroeconomic performance in African countries.

5.2. Recommendations

From the study findings and conclusions, the study recommends that African countries should be dedicate massive reforms on policies, rules and regulations to minimize and gradually bring unification of the gap between parallel exchange market rate and official exchange rate for the better of Economic growth performance. This can be done harmonizing all institutions that play great roles under the deal of exchange markets. Furthermore, policymakers in the selected African countries should create appropriate rules with the goal of lowering incentives to participate in illicit market activities. Perhaps more crucially, though, they must maintain the lowest feasible black market exchange rate by influencing the crucial elements that impact the

foreign exchange market on the underground. They can also stop transferring hard money out of the nation by implementing prudent economic measures.

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Appendix A: Estimation Results

```
. xtabond2 GDP l.GDP PEMP DEVA INFL BOP CORR ODA REMI, robust nomata iv(l2.GDP CORR INFL PEMP ) gmm(l.GDP, lag(
> 0 6)collapse)
Building GMM instruments..
Estimating.
Performing specification tests.

Dynamic panel-data estimation, one-step system GMM
------------------------------------------------------------------------------
Group variable: CountryID                       Number of obs      =       390
Time variable : Year                            Number of groups   =        26
Number of instruments = 13                      Obs per group: min =        15
Wald chi2(7)  =  3.16e+06                                      avg =     15.00
Prob > chi2   =     0.000                                      max =        15
------------------------------------------------------------------------------
             |               Robust
         GDP |  Coefficient  std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
         GDP |
          L1.|    .2024462   .0557773     3.63   0.000     .0931247    .3117678
             |
        PEMP |    7.15e+10   1.57e+10     4.56   0.000     4.08e+10    1.02e+11
        DEVA |    3.55e+12   3.79e+11     9.36   0.000     2.81e+12    4.29e+12
        INFL |   -1.29e+12   1.55e+12    -0.84   0.403    -4.32e+12    1.74e+12
         BOP |   -309.6813   47.96962    -6.46   0.000       -403.7   -215.6626
        CORR |    6.69e+11   5.88e+11     1.14   0.255    -4.83e+11    1.82e+12
         ODA |   -19441.94   9798.749    -1.98   0.047    -38647.14   -236.7455
        REMI |    9526.711   2595.127     3.67   0.000     4440.355    14613.07
       _cons |   -2.82e+13   3.11e+13    -0.91   0.365    -8.92e+13    3.29e+13
------------------------------------------------------------------------------
Instruments for first differences equation
  Standard
    D.(L2.GDP CORR INFL PEMP)
  GMM-type (missing=0, separate instruments for each period unless collapsed)
    L(0/6).L.GDP collapsed
Instruments for levels equation
  Standard
    _cons
    L2.GDP CORR INFL PEMP
  GMM-type (missing=0, separate instruments for each period unless collapsed)
    DL.L.GDP collapsed
------------------------------------------------------------------------------
Arellano-Bond test for AR(1) in first differences: z =  -1.46  Pr > z =  0.145
Arellano-Bond test for AR(2) in first differences: z =   0.50  Pr > z =  0.619
------------------------------------------------------------------------------
Sargan test of overid. restrictions: chi2(4)    =   0.40  Prob > chi2 =  0.982
  (Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: chi2(4)    =12917.15 Prob > chi2 =  0.000
  (Robust, but weakened by many instruments.)


. vif

    Variable |       VIF       1/VIF
-------------+----------------------
         ODA |      1.21    0.825603
        REMI |      1.20    0.830276
        DEVA |      1.17    0.856356
        PEMP |      1.13    0.882933
        INFL |      1.05    0.953455
         BOP |      1.03    0.974643
        CORR |      1.01    0.992232
-------------+----------------------
    Mean VIF |      1.11


. predict resid, resid
(1 missing value generated)

. runtest resid
 N(resid <= -1583901056) = 221
 N(resid >  -1583901056) = 220
           obs = 441
       N(runs) = 232
             z  = 1
      Prob>|z| = .32
```

Appendix B: List of African countries Selected for the Study

1. Algeria
2. Burundi
3. Cameroon
4. Congo Democratic
5. Congo Republic
6. Ethiopia
7. Guinea Bissau
8. Guinea
9. Liberia
10. Kenya
11. Malawi
12. Mali
13. Mozambique
14. Nigeria
15. Niger
16. Senegal
17. Sierra Leone
18. Sudan
19. Burkinafaso
20. Chad
21. CAR
22. Mauritania
23. Gambia
24. Gabon
25. Zambia
26. Zimbabwe