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Exchange rate fluctuations and Nigeria's economy

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Abstract

This research empirically evaluates how fluctuations in exchange rates affect growth in Nigeria's economy for the period of 1992 to 2023. The study is based on the Balance of Payment (BOP) Theory. To achieve the study's objectives exchange rate of Naira to Pounds, exchange rate of Naira to Dollars and exchange rate of Naira to Euros were used to proxy the study's independent variable (exchange rate). Also, gross domestic product growth rate (GDPGR) was used as proxy for Nigeria's economy which is the study's dependent variable. Secondary timeseries data sourced from Central Bank of Nigeria (CBN) statistical bulletin within the study period were employed. Stationarity test was done, and the data were stationary at levels (order 0) thereby necessitating the utilization of Ordinary Least Square (OLS) test. The multiple regression Ordinary Least Square (OLS) GARCH approach was used for data analysis with the aid of E-views 12 statistical package. From the obtained result it was found that there is positive and insignificant relationship between exchange rate of Naira to Pounds and GDPGR, negative and significant relationship between exchange rate of Naira to Dollars and GDPGR as well as positive and insignificant relationship between exchange rate of Naira to Euros and GDPGR. The results were discussed, and conclusion was made that exchange rate fluctuations negatively affects Nigeria's economic growth. Lastly, among others, the following recommendations were made:(i) More of Nigeria's exports should be channeled to the United States and Eurozone respectively as a weak Naira would make such exports cheap in terms of the Dollars and Euro thereby increasing their demand and foster economic growth, (ii) Nigerian producers should step-up their game in making quality products that would compete favourably with foreign goods while consumers in Nigeria should do away with their apathy for domestically produced goods and bias for foreign goods as this would ultimately reduce the demand for foreign currency and the price of foreign exchange.

Keywords: Exchange Rate, Economic Growth, Gross Domestic Products, Ordinary Least Square.

Introduction

Globally, countries of the world trade among themselves even with the fact that they have different currencies. That is to say that the buying and selling of goods and services occur outside the frontiers of countries not minding the fact that their currencies vary. Even when investors move beyond their home countries to make investments in other countries, it is required that they (investors) exchange their local currency for that of the host country (Adubi, 2019). In furtherance, when there exist transactions which involve the government of a country borrowing from another country, there is the movement of foreign currency from the lending country to the borrowing country. As such, there will be the need for such borrowed foreign currency to be changed into the local currency for easy spending within the domestic economy. Also, when the citizens of a country choose to consume foreign goods it would be required of them to change the home currency at their disposal into that of the seller's country (Udokang, 2021). In fact, there abounds a plethora of reasons for which a country's currency is exchanged for that of another country.

It is paramount to mention that if these different forms of transactions mentioned above where to take place within the same country it would only require the use of the domestic currency and there would be no need for any exchange. Hence, Ezirim (2005) opined that a most critical difference between domestic system of payments and international system of payments is the usage of the local currency in the former and the usage of different currencies in the latter. This use of different currencies for various purposes would require an exchange to ensue between the local currency and the foreign currency at a particular rate. It is this rate at which the local currency e.g. Naira (₦), is exchanged for a unit of foreign currency e.g. Dollar ($1), Pound (£1), Euro (€1), etc. that is referred to as foreign exchange rate or exchange rate. According to Ngerebo-A and Ibe (2013) exchange rate is the ratio between a unit of a particular currency and the amount of some other currency for which that unit can be exchanged at a particular time period. It is the number of a domestic (home) currency that is required to purchase a unit of a foreign currency (Abdoh et al., 2016). For Vogler et al. (2019) exchange rate is the price of a country's currency when expressed in thecurrency of another country. As such, Obaseki (2001) states that a country's exchange rate measures the worth of its economy expressed in terms of the currency of another country. This exchange is facilitated by the market for foreign exchange. Hence, Lumen (2021) opined that the market in which individuals or companies use one currency to buy another currency is known as the foreign exchange market.

Over the years, exchange rate in Nigeria has not been favourable to the domestic economy in the sense that it keeps fluctuating in an unfavourable manner leading to the depreciation of our currency (Naira). Exchange rate fluctuations refers to the changesin thevalue of a foreign currency when related to others in the foreign exchange market. It is the appreciation or depreciation of the domestic (home) currency when it is related to other foreign currencies within the global currency market (Nwobia et al., 2020). Exchange rates is greatly influenced most times by economic and political factors which are largely correlated (Alagidede& Ibrahim, 2017). As such, the constant devaluation of the domestic (home) currency has had some negative implications on many under-developed countriesone of which Nigeria is (Victoria, 2019). Little wonder, Nor (2015) surmised that exchange ratebehaviour is very important for the citizens of a country since exchange rate fluctuations possess direct effect on the prices of a lot of basic commodities. The increasing changes in the rate of foreign exchange has negatively affected Nigeria's economy (Udokang, 2020). Hence, over the years the amount of naira that has been exchanged for a Dollar ($), Pound (£), Euro (€), etc. has been on the increase which shows that our domestic currency (Naira ₦) is depreciating. Today a Dollar ($1) is exchanged for more than ₦1,500 in the official market and one Pound (£1) is worth more than ₦2,000 this accounts for the high prices of most foreign goods in Nigeria.

On the other hand, the Nigerian economy is the sum total of goods and services produced within its boundary. It is a middle income, mixed economy and emerging market with expanding service, communication, financial, technology and entertainment sectors (Meedee et al., 2014). It is measured with its annual value of gross domestic product (GDP). GDP refers to the total value of the finished

goods and services that is produced in a country for a particular time period, for instance, a year. According toOliinyk&Kozmenko(2019)GDP is a major macroeconomic indicator of a country's total wealth. Hence, growth in its gross domestic product (GDP) would mean growth in Nigeria's economy.However, the GDP as well be represented by its growth rate as we intend to do in this study. The economy of Nigeria is currently described as a "Mono Economy" bya lot of persons. That is, an economy which thrives or survives on the sale of one product. This stems from the fact that it is greatly focused on the proceeds from the sale of crude oil as its key source of revenue. Hence, this sale of crude oil is the major foreign exchange earner for the Nigerian economy. Therefore, Okonkwo (2019) stated that the sale of crude oil is the main foreign exchange earner for the Nigerian economy.However, Nigeria makes a lot of purchases from the outside world thereby requiring a large number of foreign currencies for these transactions. According to Udokang (2021) about 60% of Nigeria's consumption is imported. From the foregoing, it is glaring that foreign currencies are greatly required for the free flow of trade to enable or facilitate the consumption of citizens and that of government. Thus, it is paramount to determine the price (exchange rate) at which the foreign currencies are purchased in the foreign exchange market.

In Nigeria, the Naira units to the US dollar ($1) has been exchanged dynamically as the years pass by. This is evidenced by the reports of Central Bank of Nigeria (CBN, 2013) which revealed that a unit of the US dollar which was exchanged for ₦0.6100 as at 1981 increased to ₦0.8938 in 1985. In the year 1986 a dollar ($1) was exchanged for ₦2.0206 and in 1995 a dollar ($1) exchanged for ₦21.8861. Between 1996 and 2005 the value of one dollar ($1) was increased from ₦21.8861 to ₦132.1470. Also, a further depreciation in the value of the naira made a dollar ($1) to be increased from ₦128.6516 in 2006 to ₦157.3323 in 2013. In 2015 a dollar ($1) was exchanged for ₦193.2792and in 2018 one dollar ($1) was exchanged for ₦306.0802 (CBN, 2018). Currently, in the parallel market where foreign exchange is easily accessed, a dollar ($1) is exchanged for more than ₦1,600. Hence, Woko and Ojekudo (2021) asserts that the naira is gradually becoming worthless when compared with the dollar and many other currencies.In the midst of government intervention to maintain a stable exchange rate, the local currency (Naira) keeps depreciating (Benson & Victor, 2012). It (government) intervenes by devaluing the Naira against some foreign currencies hoping to attract foreign investors to come into its economy with their foreign currencies thereby increasing the stock of these foreign currencies within the economy that would result in their excess supply which would give rise to the appreciation of the Naira and the attainment of economic growth. However, Nigeria's economy is presently facing scarcity of foreign exchange thereby resulting to the prevailing situation of exchange rate beingvery high even with the constant periodic devaluation of the Naira by the government.

From our review of previousliterature,we found out that there existsa plethora of opinions on the relationship between fluctuations in exchange rate and the growth of Nigeria's economy. However, these opinions on how these macroeconomic variables (i.e exchange rate and economic growth) relate are conflicting. While some studies (Aliyu et al., 2009: Cruz, 2013: Basirat et al., 2014; Alabi, 2015: Emeka, 2020) have it that there exists a negative relationship between exchange rate fluctuations and economic growth, other studies (Agenor, 1995: Jamil et al., 2012: Victoria, 2019: Udokang, 2020) opined that the relationship between exchange rate fluctuations and economic growth is positive.Thus, there is no common ground on how these macroeconomic variables relate. Hence, our motivation to delve into this study is to, with the aid of recent data, ascertain the nature of relationship that is in existence between exchange rate fluctuations and economic growth in Nigeria within the study period. Hence, this study aims at investigating the relationship between exchange rate fluctuations and economic growth, while the specific objectives are to evaluate:

(i) The relationship between fluctuations in exchange rate of naira to pounds and GDPGR.
(ii) The relationship between fluctuations in exchange rate of naira to dollar and GDPGR.
(iii) The relationship between fluctuations in exchange rate of naira to Euro and GDPGR.

Haven finished the introductory part, the remainingparts of this study arereview of literature and theoretical framework, methodology, presentation of results, conclusions and recommendations.

2.0 Review of Literature and Theoretical Framework

According to Woko and Ojekudo (2021) exchange rate is the rate at which different currencies of countries of the world can trade for one another. It is the price at which one currency exchanges for another. Hence, Vogler et al. (2019) defines it as the price of a country's currency when expressed in that of another country. It can as well be termed foreign exchange rate (Ohale & Onyema, 2016).In Nigeria the prices of foreign currencies areoften not stable. Little wonder,Oji and Udokang (2021) opined that itfrequently fluctuates.Exchange rate fluctuation refers to all possible changes in the values of currencies quoted in the tender relative to each other, brought about by market forces, formal revaluation or devaluation of those currencies or from any cause howsoever arising (Kamil, 2016). When there is a change in the number of units for which a particular currency exchanges with another there exist fluctuation in the rate of exchange. Thus,Azu (2022) defines exchange rate fluctuations as changes in the units of the domestic currency required for the purchase of one unit of a foreign currency and vice versa. Simply put, it refers to an increase or decrease in the price of a country's currency stated in the currency of another country. Foreign exchange and its rate management in Nigeria has gone through lots of transformation overtime.These days, some currency rates are jumping to all-time highs while others plunge to record lows. Exchange rates are constantly fluctuating, and the major cause accounting for such fluctuations are based on their demand and supply even though sometimes the government's policy on revaluation and/or devaluation of the domestic currency could result in such fluctuations (Fetene, 2017). Most of the world's currencies are bought and sold based on flexible exchange rates, meaning their prices fluctuate based on the supply and demand in the foreign exchange market. A high demand for a currency or a shortage in its supply will cause an increase in price. A currency's supply and demand are tied to a number of intertwined factors including the country's monetary policy, the rate of inflation, and political and economic conditions. These days, some currency rates are jumping to all-time highs while others plunge to record lows.

Foreign exchange and the management of its rates in Nigeria has gone through a lot of transformation over the years. It moved from the officially pegged exchange rate system which ensued between 1970 and 1985 to a market determined exchange rate system which started in 1986. The exchange rate of the Naira is presently determined through the market for foreign exchange on demand and supply basis. In the market the Dollar is the intervention currency; whereas other currencies' exchange rates are largely based on cross reference to the Naira - Dollarrate of exchange (CBN, 2021).

- **Effects of Exchange Rate Fluctuations**

Over the last few years, the exchange systems have experienced lots of ups and downs at international level which have affected the economic structures of some countries. Different systems exchange reveal how exchange rate is determined in an economy. Exchange rate over the years, particularly after the collapse of the fixed exchange rate system (the Bretton Woods system), has experienced many fluctuations (Ehsani et al., 2009). In furtherance, one of the most important issues in developing countries after World War II has been economic growth. Among the other factors which affect economic growth is exchange rate fluctuation.The effect of fluctuations in exchange rate on the growth of the economy varies from country to country. Hence, it suffices to say that one of the factors determining the way exchange rate fluctuations affect economic growth is the development level of each country's financial markets. Lots of new theories emphasize the high correlation between economic growth and innovation. This innovation in financial markets occurs by introducing new tools of financial development and in the real sectors of the economy with the introduction of new products. In fact, with the arrival of the financial intermediaries to growth models, by introducing new tools of finance and financial development, goals such as reducing risk, increasing capital efficiency through optimal resource allocation and mobility of savings are taken into consideration that eventually follow the objective of achieving long-term growth of the economy (Hosseini et al., 2011). Studiessuggest that when the financial markets in a country are developed enough, the exchange rate

fluctuations will not have a negative effect on its economic growth, whereas when such markets are not developed, fluctuations in exchange rate could impede economic growth (Bashirat et al., 2014).

In the bid to avoid exchange rate fluctuations, many countries fix the value of their currency against the most important currencies. However, it is observed that some other countries refuse to fix the exchange rate and accept the floating exchange rate systems which gives rise to fluctuations in exchange rate.It is worthy to note that observations show some difficulties such as negative effects on economic growth are raised as the result of applying floating exchange rate systems and the resulted exchange rate fluctuations in some countries, while in many other countries, most of which are developed countries, such negative effects are not observed. This dichotomy suggests that the effect of exchange rate fluctuations on important variables such as economic growth depends on a third factor named the level of financial development.

Depending on the direction and pattern of movements, fluctuations in exchange rate can be beneficial or detrimental to a country's economic growth. Whenever the fluctuations in exchange rate constantly result in a situation whereby more of the domestic currency (Naira) is required to be exchanged for one unit of a foreign currency (e.g. one Dollar $1), such fluctuation is detrimental to the growth of the domestic economy. This is so because foreign commodities would then carry more value and could deplete the foreign reserve. Hence, Udokang (2021) surmised that such fluctuationsportrays a depreciation (decrease in value) of the domestic currency in the foreign exchange market. On the other hand, anytime the fluctuations in exchange rate constantly bring about a situation where a reducednumber of the domestic currency (Naira) is required for the exchange of one unit of a foreign currency (e.g. Dollar $), such fluctuation is beneficial to the growth of the domestic economy. This is so because foreign commodities would then carry less value and this could increase the quantum of foreign reserve. Hence, David et al. (2016) states that such fluctuation entails an appreciation (increase in value) of the domestic currency in the foreign exchange market.

- **History of Foreign Exchange**

Evolution of the market for foreign exchange in Nigeria was greatly influenced by a lot of factors which include international trade's changing pattern, shifts in production structure and institutional changes in the economy. Before the Central Bank of Nigeria (CBN) came into existence in 1958 and enactment of the 1962 Act for Exchange Control, the private sector earned foreign exchangeand held in balances abroad by the commercial banks that acted as local exporters' agents.Within this period, a large portion of foreign exchange receipts in Nigeria was contributed by agricultural exports. Because the Nigeria Pound was tied at par to the British Pound, with ease in the process of conversion, actually delayed the development of an active foreign exchange market in the local economy.However, with the establishment of the CBN and the consequent centralization of foreign exchange authority in the Bank, the need to develop a local foreign exchange market became paramount.The increased export of crude oil in the early 1970s, following the sharp rise in its prices, enhanced official foreign exchange receipts. The foreign exchange market experienced a boom during this period and the management of foreign exchange resources became necessary to ensure that shortages did not arise. However, it was not until 1982 that comprehensive exchange controls were applied as a result of the foreign exchange crisis that occurred that year. Then a fixed exchange rate system was practiced. The increasing demand for foreign exchange at a time when the supply was shrinking encouraged the development of a flourishing parallel market for foreign exchange (Elekwachi, 2019).

The exchange control system was unable to evolve an appropriate mechanism for foreign exchange allocation in consonance with the goal of internal balance. This led to the introduction of the Second-tier Foreign Exchange Market (SFEM) in September, 1986. Under SFEM, the determination of the Naira exchange rate and allocation of foreign exchange were based on market forces. To enlarge the scope of the foreign exchange market, Bureau de Change were introduced in 1989 for dealing in privately sourced foreign exchange. As a result of volatility in rates, further reforms were introduced in the Foreign Exchange Market in 1994. These included the formal pegging of the naira exchange

rate, the centralization of foreign exchange in the CBN, the restriction of Bureau de Change to buy foreign exchange as agents of the CBN, the reaffirmation of the illegality of the parallel market and the discontinuation of open accounts and bills for collection as means of payments sectors.

The Foreign Exchange Market was liberalized in 1995 with the introduction of an Autonomous Foreign Exchange Market (AFEM) for the sale of foreign exchange to end-users by the CBN through selected authorized dealers at market determined exchange rate. In addition, Bureau de Change were once more accorded the status of authorized buyers and sellers of foreign exchange. The Foreign Exchange Market was further liberalized in October, 1999 with the introduction of an Inter-bank Foreign Exchange Market (IFEM).The naira was introduced on 1 January 1973, replacing the Nigerian pound at a rate of ₦2 naira = £1 pound.The coins of the new currency were the first coins issued by an independent Nigeria, as all circulating coins of the Nigerian pound were all struck by the colonial government of the Federation of Nigeria in 1959, with the name of Queen Elizabeth II on the obverse. This also made Nigeria the last former British colony to abandon the £sd currency system in favour of the decimal currency system. There was a government plan to redenominate the naira at 1 new Naira = 100 old Naira in 2008, but the plan was suspended.

- **Exchange Rate Regimes**

Each country determines the type of exchange rate system which is applied to their currency depending on their policy objectives. These exchange rate systems are basically three and are stated and briefly explained below:

•**Fixed Exchange Rate Regime:** Fixed exchange rate regime exist where the currency is tied directly to another currency (Rewane, 2015) or to a different measure of value, for instance, as gold. That is, it is a system whereby exchange rate is maintained at a fixed level (where a country's currency is fixed against some other currency).A country adopting a fixed exchange rate system means that the apex financial institution is ready and willing at any time to exchange the domestic currency with the foreign currency at the fixed rate. According to Adetifa (2005) this means that the exchange rate of a currency to other currencies is stable. As such, whenever there is a difference between the rate determined by the market and the fixed rate, there will be either a supply or demand of the domestic currency from the apex bank if the market rate is higher or lower than the fixed rate respectively until the rate equalizes. For example, if Nigeria's Central Bank fixes the Naira-Dollar exchange rate at ₦350/$, but the market determined rate is ₦360/$, what the CBN is saying is that they are willing to trade ₦350 for $1 and vice-versa. The above means that the Naira is undervalued in the parallel market and will attract the arbitrageurs who will use ₦350 to buy one Dollar from the CBN, and sells the one dollar for ₦360 in the parallel market, making a gain of ₦10 for each of such transaction. By this transaction, they keep mopping up the Naira in circulation and supplying the US dollar, thereby making naira scarce and US dollar more available in the Forex market. This exercise will increase the value of naira and decrease the value of US dollar and will continue until the parallel rate equals the fixed rate.

•**Floating Exchange Rate Regimes:** A freely floating exchange rate system also known as a flexible exchange rate regime is a system which allows the interaction of the market forces of demand and supply of a currency determine the exchange rate at any given time. In other words, the authorities do not interfere in the system, as the rate at which their currency exchanges with other currencies are determined solely by market forces which include; net export of goods and services and net capital flight. In this case, the authorities trust the market to manage the exchange rate (Urama and Iloh, 2018). Under this system, the exchange rate values would be determined by the market forces of demand and supply. The floating exchange rate systems are not interventions by various governments in the country. Under this system also, the country's central bank was not to be requiredto maintain the exchange rates at specific boundaries. Hence, it is not forced to institute an intervention policy which may have an unfavorable effect on the economy just to control exchange rates (Abdoh et al.,

2016). According to Dornbush et al. (1990) the main idea behind the choice of floating or flexible exchange rates is the autonomy in monetary policy they allow when capital mobility is high. As such, flexibility in exchange rate permits a country to choose its long-term inflation rate and allows the implementation of monetary policy which is aimed at domestic stabilization.

•**Managed Float Exchange Rate System:** Managed float exchange rate system is similar to the fixed system. The managed float exchange rate system allows the government to intervene for preventing its currency from moving too much. This system showsthat the currencyhave no explicit boundary. But this will tie it with supply and demand factors. If there were an oversupply of a certain currency as compared to its demand, it would the rate of exchange of that currency would probably fall. The government will manipulate exchange rate through using the float system to generate and benefit its own economyat the expense of others (Abdoh et al., 2016).According to Urama and Iloh (2018) the managed float has some of the features of fixed exchange rate regime and free floating exchange rate regime because it is a system where exchange rate is determined by the interaction of market forces of demand and supply for the currency but the apex financial institution (Central bank) intervenes when price moves towards crossing the limit set.

- **Determinants of Exchange Rate Regimes**

According to Meon and Rizzo (2002) the empirical findings on the determinants of exchange rate regimes are too many as well as controversial. The reason for the differences in the findings in most cases is due to the country samples taken into consideration, classifications of regime used in the analysis, period of time, method of estimation and assumptions of the econometric models. The econometric methods used as well as classification of regime used in the studies are different from each other. As such, there exist different results. Gosh et al. (1995) argued that if a flexible exchange rate arrangement can reduce growth volatility why do many countries have recourse to different types of fixed exchange rate systems which can actually limit monetary autonomy in a considerable way? Credibility in exchange rates, monetary and fiscal policies sometimes serve as the justification for the choice of a fixed exchange rate regime (Oji and Udokang, 2021). The fixation of nominal exchange rate has been argued to enable a country import the monetary policy credibility of the base country. This credibility gain will guide the expectations of economic units and improve monetary policy efficiency, thus resulting in the smoothing of economic cycles (Elekwachi, 2019). Through credibility and discipline effects on monetary and fiscal policies, fixed exchange rates help to create a domestic economic environment which is favourable to investment and trade which could result in a relatively sustained and stable growth (Gosh et al., 1995). Therefore, fixed exchange rate regimes reduce the risks of instabilities brought about by profligate fiscal and monetary policies observed in many developing countries.

- **Types of Foreign Exchange Rate**

Nominal Exchange Rate (NER): It is the price of one currency in terms of another. It may be quoted as so many units of domestic currency per units of foreign currency or conversely. In Nigeria, it is quoted as so many units of Naira per unit of a foreign currency (eg US Dollar). In UK; it is quoted as so many units of foreign currency per units of pound sterling. The concept of Nominal exchange rate is important in many respects. It determines the cost of imports and the level of revenue to exporters. It is also used for policy purposes as variable to compensate for movements in differential rate of inflation. According to Mordi and Audu (1991) nominal exchange rate (NER) is the rate at which a currency is traded at a given point in time, established at the interplay of demand and supply in the foreign exchange market.

Real Exchange Rate (RER): Real exchange rate, according to Olisadebe (1995), is the ratio of price of tradable to the price of non-tradable. It is employed in measuring a country's price competitiveness. It is defined as the normal exchange rate deflated by the index of relative inflation rates.

Real Effective Exchange Rate (REER): The real effective exchange rate is a trade-weighted average of real exchange rate between one country and its trading partners (Nwobia et al, 2020). The weight reflects the proportion of' trading with a country's trading partner. It could be import or export based or a combination of the two.

Official Exchange Rate (FER): The official exchange rate is the rate which the monetary authority of a country allows or has decided to trade its currency for a foreign currency e.g Dollar. Thus, it is that rate at which people can source foreign currency from licensed financial institutions. Presently the official exchange rate between the Naira (domestic currency) and the Dollar (foreign currency) is above ₦1,500/$.

Parallel Exchange Rate (PER): Parallel exchange rate is the rate at which a foreign currency e.g Dollar ($) is traded in the black market. Hence, it is as well referred to as black market rate. It is the rate at which arbitrageurs sell foreign exchange. This rate is often higher than the official exchange rate which creates the room for dealers to in the parallel market to make profit. Presently the parallel exchange rate between the Naira (domestic currency) and the Dollar (foreign currency) is above ₦1,600/$.

However, in this study exchange rate is made directly among currencies as the value of Naira to major global currencies like Pounds (£), Dollars ($) and Euros (€) are what we intend to use to proxy fluctuations in exchange rate.

(i) Exchange rate of Naira to Pounds

This exchange rate is actually the rate at which the Naira (₦) is exchanged for a British Pound (£). The Pound (£) over the years have been appreciating against the Naira, making more units of the Naira (₦) to be exchanged for one unit of the Pound (£). Presently, the exchange rate between the Naira to a Pound is above ₦2,000 in the official market.

(ii) Exchange rate of Naira to Dollars

This is the rate at which the Naira is exchanged for a Dollar ($). Over the years, the Dollars have been appreciating against the Naira thereby giving rise for more units of the Naira (₦) to be exchanged for one unit of the Dollar ($). Currently the exchange rate between the Naira to a Dollar is above ₦1,500 in the official market.

(iii) Exchange rate of Naira to Euro

This represents the rate at which the Naira is exchanged for one Euros (€). Overtime, the Euros (€) have been gaining more value against the Naira thus, causing more Naira (₦) units to be exchanged for one unit of the Euros (€). Currently the exchange rate between the Naira and Euros (€) is above₦1,700 in the official market.

- **Theoretical Review**

Balance of Payment (BOP) Theory

This theory implies that the exchange rate of a nation is determined by the market forces in the foreign exchange market. These forces of demand and supply are determined by the Contents of the country's balance of payment. It also states that exchange rate is determined from the position of balance of payments of a country.Acountry's balance of payment can either be in deficit or surplus. Whenever it is in deficit it simply means that the demand for foreign currency exceeds the demand for

the home currency (Naira). On the other hand, a surplus balance of payment simply means that the demand for the home currency (Naira) exceeds the local demand for foreign currency. Thus, a favourable balance of payment results in the appreciation of the home currency (Naira) whereas an unfavourable balance of payment gives rise to the depreciation of the home currency (Naira).This theory is a more satisfactory theory than the purchasing power parity theory because it actually recognizes all the items within the balance of payment and their importance, rather than the few selected in the Purchasing Power Parity theory. It also postulates that balance of payment disequilibrium can be corrected by revaluation or devaluation of thecurrency of a country. A limitation of this theory is its unrealistic assumption of having a perfect competition in the market for foreign exchange market (Akrani, 2010). This study is largely based on this theory.

Purchasing Power Parity (PPP) Theory

This theory explains the relationship which exists between prices and exchange rate. It opines that the equilibrium exchange rate which is in existence between two inconvertible currencies can be determined via the ratio of their purchasing power (Ezirim, 2005). It is a view which states that commodities in a particular country will carry the same cost in another country, when their exchange rate is applied (Abdoh et al., 2016). Although the purchasing power parity concept origin can be traced to the Salamanca school back in the 16th century Spain, its use in modern days as a theory which determines exchange rate started with Gustav Cassel's work of 1918, in which it recommended as a way of amending pre-World War 1 exchange rate parities for countries resolve to go back to the gold standard system after the war ended. Some modification was necessary because countries that left the gold standard in 1914 witnessed extensively different rates of inflation during and after the war. As a principle of exchange rate determination, the easiest and powerful form of PPP (i.e. absolute PPP) is based on an international multi-good edition of the law of one price. Absolute PPP envisage that the exchange rate should adjust to equate the prices of national baskets of goods and services between two countries because of market forces driven by arbitrage.

Optimal Currency Area (OCA) Theory

The earliest and leading theoretical foundation for the choice of exchange rate regimes rests on Optimal Currency Area (OCA) theory, which was developed by Mundell (1961) and McKinnon (1963). This theory is concerned with stabilization of the business cycle and trade. It is based on the concepts of the symmetry of shocks, the degree of openness and labour market mobility. According to the theory, a fixed exchange rate regime can increase trade and output growth by reducing exchange rate uncertainty and thus the cost of hedging, and also encourage investment by lowering currency premium by stopping or delayingthe necessary relative price adjustment process.

- **Empirical Review**

Woko and Ojekudo (2021) in their work where they predicted the foreign exchange rate of the Naira to major currencies with data obtained from the Central Bank of Nigeria public website (CBN, 2021). Recent changes in Naira and five other currencies namely: US, Euro, Pounds, CFA, Rand and their relationship was plotted and analyzed using MATLAB 2018 version. The graph of the exchange rate of the five countries generated in MATLAB shows that US Dollar and South African Rand exchange rate to Nigeria Naira were stable between January and May 2021 but between January and February 2021 Euro and Pounds, dropped sharply.Nwobia et al. (2020) examined the effect of exchange rate fluctuations on Nigeria's external trade between 2000 to 2019. The study made use of secondary data sourced from CBN statistical bulletinfrom 2000 to 2019. The correlation and regression analysis of the Ordinary Least Square (OLS) were used to analyze the data. The result shows that the three variables; exchange rate, balance of payment, and inflation rate have significant effect on the Gross Domestic Product (GDP) and external trade of Nigeria; Exchange rate has a negative effect on GDP because as it increases, the external trade is negatively affected. Morina et al. (2020) examined the

effect of real effective exchange rate volatility on economic growth in the Central and Eastern European (CEE) countries. The study uses annual data for fourteen CEE countries for the period 2002–2018 to examine the nature and extends the impact of such movements on growth. The empirical findings using the fixed effects estimation for panel data reveal that the volatility of the exchange rate has a significant negative effect on real economic growth. They suggested that policymakers should adopt different policies to keep the exchange rate stable in order to foster economic growth.Ha and Haong (2019) tried to determine the direction and magnitude of the impact of an exchange rate regime on economic growth in Asia. Their study use exchange rate database which Reinhart and Rogoff constructed. It also employs the GMM (Generalized Method of Moments) technique on unbalanced panel data to analyze the effect of the exchange rate regime on economic growth in Asian countries from 1994 to 2016. Empirical results suggest that a fixed exchange rate regime (weak flexibility) will affect economic growth in the same direction. Okonkwo (2019) evaluated the relationship between exchange rate variation and Nigeria balance of trade between 1988 and 2018. The method of data collection was through secondary data obtained from CBN Statistical Bulletin 2019. The data collected were regressed by simple regression model and analyzed by ordinary least square (OLS) analytical method. Findings based on analysis showed that there is a significant relationship between exchange rate and balance of trade. Abdoh et al. (2016) examined macroeconomic factors that influence exchange rate fluctuation in ASEAN countries using data on export, interest rates and inflation rates obtained from World Bank and International Monetary Fund (IMF) between 2005-2014. Results obtained show that not all variables included in the model contribute to the explanation of exchange rate movement. From the results, only export had shown a significant relationship with exchange rate moveme Austin (2015) assessed the impact of exchange rate on output level of Nigeria still during various exchange rate regimes in the country by applying Ordinary Least Square (OLS) technique of multiple regressions in the analysis. The results portrayed that over the years exchange rate regimes in Nigeria have insignificant influence the level of output within the country. Alabi (2015) examined the effect of real exchange rate fluctuation on industrial output in Nigeria. The hypothesis developed was tested using the Ordinary Least Square (OLS) regression analysis. From the finding, the researchers discovered a positive bidirectional relationship between exchange rate and output in Nigeria and other resource dependent economies. They conclude that industrial output in Nigeria can be determined by movement in real exchange rate, capital utilization ratio, technology and available foreign exchange. Ilechukwu and Nwokoye (2015) examined the effect of exchange rate volatility and price shocks on economic growth in Nigeria. The study made use of ordinary least square (OLS) method to study the effect of exchange rate stability on industrial output in the economy for the period 1980-2013. The variables used in the investigation include foreign direct investment, domestic capital, population growth rate, inflation, changes in external balance and real exchange rate. The empirical results revealed that foreign direct investment, population growth rate, domestic capital and real exchange rate have significant impacts on the Nigeria industrial output. However, the results showed that inflation and changes in external balance have insignificant influence on industrial output in Nigeria. Jongbo (2014) investigates the impact of real exchange rate fluctuation on industrial output by examining the effect of misalignment of real exchange rate on the Nigerian industrial sector's output. The obtained result shows that real exchange rate plays a significant role in determining industrial output. Basiratet al. (2014) studied the effect of exchange rate fluctuations on economic growth between 1986-2010. The effects of variables such as trading volume, inflation, and production of the previous period on economic growth have been studied as well by them. The results obtained by analyzing panel data of 18 countries show that the effect of financial development on economic growth as well as the effect of exchange rate fluctuation on economic growth are negative and significant. On the other hand, the mutual effect of exchange rate fluctuations and financial development on economic growth is positive, but the effect in the studied countries is so small that is not statistically significant.

3.0 METHODOLOGY

Methodology refers to the way (how) a thing is done. It means the way and manner the study is actually carried out (Baridam, 2001).Thus, this section of this paper reveals the various processes to

be engaged in the studyin order to gather data needed for the analysis and how the analysis will be carried out.It is divided into the following:

3.1 Data and Description of Variable Used

The variables used in this study are termed dependent and explanatory variables. While the dependent variable is Nigeria's economic growth, proxied with its gross domestic product growth rate (GDPGR), the explanatory variable is exchange rate which is proxied with exchange rates of the Naira to Pounds (£), Dollars ($) and Euros (€) respectively. In this study, yearly data between 1992 to 2023of these proxieswould be sourced from the Central Bank of Nigeria (CBN) statistical bulletin of 2023.

3.2 Model Specifications

Based on review of existing literature related to this study, the model for this study is presented. This model is specified in three different equations below:

The functional form of the model is:

GDPGR = f(ERNP, ERND, ERNE) ...……..…… (1)

Where:
GDPGR = Gross domestic product growth rate
ERNP = Exchange Rate of Naira to Pounds (£)
ERND = Exchange Rate of Naira to Dollars ($)
ERNE = Exchange Rate of Naira to Euros (€)

For estimation purpose equation (1) is re-written thus:

$GDPGR_t = \beta_0 + \beta_1 ERNP_t + \beta_2 ERND_t + \beta_3 ERNE + e_i$…….…... (2)

Where:
GDPGR = Gross Domestic Product Growth Rate
ERNP = Exchange Rate of Naira to Pounds (£)
ERND = Exchange Rate of Naira to Dollars ($)
ERNE = Exchange Rate of Naira to Euros (€)
β_0 = Intercept
β_1, β_2, β_3, = Estimation parameters for the explanatory variables
e_i = Error term

3.3 Apriori expectations

Theoretically, it is expected that whenever fluctuations in exchange rate cause more units of the local currency (Naira) to be exchanged for a unit of a foreign currency (e.g Dollar) the Nigerian economy would be impacted on negatively. That is, when increase in exchange rate occur the domestic economy will experience an effect which is less than zero (0).
Hence,$\beta_1<0$, $\beta_2<0$, $\beta_3<0$.

3.4 Specification of Tools of Analysis Used for Test

The key objective of this work is to empirically investigate the relationship between fluctuations in exchange rates and economic growth in Nigeria with the aid of the understated analytical tool:

3.4.1 Stationarity Test

Stationarity of the time-series data employed in this work will be verified through the usage of unit root test to validate their utilization and for the avoidance of spurious estimates. Hence, the

Augmented Dickey Fuller (ADF) test is relevant (Brooks, 2009) for this study. The decision rule is to reject the null hypothesis if ADF test statistic on absolute basis, is greater than all associated Mackinon's Critical values at 1%, 5% and 10% levels respectively. If the data is stationary at levels (order 0) the researcher will use ordinary least squares for the data analysis but if the data is not stationary the test will be done at order 1 (first difference). If the data is not stationary at order 1 (first difference) then the stationarity test will be done at order 2 (second difference). If the data is stationary at both order 1 (first difference) and order 2 (second difference) the Johansen co-integration test will be carried out, then the Error Correction Model will be utilized as well.

3.4.2 Multiple Regression Test (Ordinary Least Square)

This test captures the short-run dynamics of a predictive regression equation. The significance of the t-statistics of the independentvariables is expected not to be less than 0.05, for the null hypothesis of no significance to be rejected. Here the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) will be utilized since it sufficiently deals with historical fluctuations (volatility).

i. Probability

The probability is also known as the P-value or the marginal significance level. With a given P-value, you can tell by just taking a glance whether toaccept or reject the hypothesis that the true coefficient is zero against a two-sided alternative that it differs from zero. A probability lower than 0.05 is taken as a strong evidencefor rejecting the null hypothesis and vice versa.

ii. Coefficient of Multiple Determination

R- Squared (R^2): It is a measure in statistic whichdenotes the proportion of the variance of a dependent variable that is explained by the explanatory variable or variables in the regression model. It actuallyexplains the extent to which changesina variable is explained by changes insomeother variable(s). In this case, the $\mathbf{R^2}$ is used purely as a measure of the goodness of fit, which is a measure of the explanatory power of the model.

Adjusted R-Squared ($\bar{R}^2$): Adjusted $\mathbf{R^2}$, which is denoted as $\bar{R}^2$, faults the $\mathbf{R^2}$for adding regressors that do not contribute to the model's explanatory power. The $\bar{R}^2$is alwayssmaller than the $\mathbf{R^2}$. It can decrease as regressors are added. For poorly fitting models itcould be negative.

3.4.3 Johansen Co-integration Test

Johansen Co-integration test is aimed at obtaining significance of long-run equilibrium relationship which exists among the variables that are selected for use in the study (Brooks, 2009). The implied decision rule is that the magnitude of Max-Eigen statistics must be more than the associated critical value at 0.05 level.

3.4.4 Granger Causality Test

This test shows how the variations in independent variables support changes in the dependent variable. According to Brooks (2009) the test attempts evaluating how variations in a set of independent variables promote changes in a dependent variable. A Prob. value of 0.05 indicates the flow of causality.

4.1 Presentation of Results

A very important task for any researcher is the clear presentation of the study's data (see Appendix 1) as well as results that are obtained from the analysis process to simplify comprehension of the study's findings. Actually, research results should be presented in a way in which the aims and objectives of

the study is attained and to satisfy future users. It is against this backdrop that this section presents the following results.

Table 4.1: Summary Compilation of Stationarity Test of Employed Variables at Order (0).

Statistics / Variable	ADF t-stat	Test Critical Values			Prob.	Unit Root	Comment
		1% Level	5% Level	10% Level			
GDPGR	-6.222541	-4.537752	-3.824521	-3.512622	0.0021	Absent	Evidence of Stationarity at Order 0
ERNP	-6.936217	-4.537752	-3.824521	-3.512622	0.0150	Absent	Evidence of Stationarity at Order 0
ERND	-6.485452	-4.537752	-3.824521	-3.512622	0.0130	Absent	Evidence of Stationarity at Order 0
ERNE	-6.257784	-4.537752	-3.824521	-3.512622	0.0110	Absent	Evidence of Stationarity at Order 0

Where: **ADF** which means Augmented Dickey Fuller.
Prob. that is, Probability Level
Note: Other notations are referenced to this study's variables as stated in Chapter Three's Model Specification.
Source: Extract from E-Views 12 Output

Stationarity test as summarized in table 4.1 was indulged in and the obtained result revealed the data to be stationary at levels (order 0). It is shownas the absolute values of ADF t-statistics greater than the Test-critical value at 1%, 5% and 10% levels respectively. Additionally, the probability values which is less than 0.05 shows significance meaning that there is no unit root in the variables' data. As such, the employed data of the variables shows a trend that is reliable for indulgence in other analysis that will produce outputs that are reliable. Due to the attainment of stationarity at levels (order 0) the study further carried out the ordinary least squares (OLS) test since the data have been proven to be dependable. This simply mean that there is no need for further employment of any long-run analyses such as Johansen cointegration test, Error Correction Model(ECM), etc.

4.1 Presentation of Empirical Result

Table 2: ARCH Estimation

Dependent Variable: GDPGR
Method: ML ARCH - Normal distribution (BFGS / Marquardt steps)
Date: 11/01/24 Time: 08:15
Sample: 1992 2023
Included observations: 32
Failure to improve likelihood (non-zero gradients) after 11 iterations
Coefficient covariance computed using outer product of gradients
Presample variance: backcast (parameter = 0.7)
GARCH = C(5) + C(6)*RESID(-1)^2 + C(7)*GARCH(-1)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
ERNP	0.048184	0.025833	1.865206	0.0622
ERND	-0.085156	0.024630	-3.457438	0.0005
ERNE	0.014144	0.024612	0.574673	0.5655
C	4.740399	2.133985	2.221383	0.0263
	Variance Equation			
C	1.729399	2.043108	0.846455	0.3973
RESID(-1)^2	-0.107490	0.029012	-3.704977	0.0002
GARCH(-1)	0.922613	0.187021	4.933210	0.0000

R-squared	0.212305	Mean dependent var	4.133770
Adjusted R-squared	0.127910	S.D. dependent var	3.785459
S.E. of regression	3.535081	Akaike info criterion	5.463692
Sum squared resid	349.9103	Schwarz criterion	5.784322
Log likelihood	-80.41907	Hannan-Quinn criter.	5.569971
Durbin-Watson stat	1.348908		

The coefficient for ERNP is positive (0.048184) with a p-value of 0.0622. This suggests that, at a 10% significance level, there is a weakly significant positive relationship between the Naira-Pound exchange rate and GDPGR. This implies that a depreciation in the Naira relative to the Pound could be associated with a marginal increase in GDP growth.Thecoefficient for ERND is negative (-0.085156) and highly significant (p-value = 0.0005). This indicates a statistically significant negative relationship, meaning that a depreciation of the Naira against the Dollar is associated with a decrease in GDP growth. This suggests that fluctuations in the Naira-Dollar exchange rate have a strong adverse effect on Nigeria's economic growth.The coefficient for ERNE is positive (0.014144) but not statistically significant (p-value = 0.5655). This shows that changes in the exchange rate of the Naira to the Euro do not have a significant impact on GDP growth within the sample period.

The variance equation suggests the GARCH model's components, where the coefficient for **RESID(-1)^2** is negative and significant (-0.107490, p-value = 0.0002), and **GARCH(-1)** is positive and significant (0.922613, p-value = 0.0000). This indicates that past shocks and the lagged variance significantly affect the current variance of the GDP growth rate.

The analysis shows that fluctuations in the exchange rate of the Naira to the Dollar have the most substantial negative effect on Nigeria's GDP growth, highlighting the vulnerability of the economy to changes in this rate.The weaker significance of the Naira-Pound exchange rate and the insignificance of the Naira-Euro rate suggest that the economy is more sensitive to US Dollar fluctuations, likely due to the prominence of the Dollar in global trade and oil pricing, which is crucial for Nigeria's economy.

From theabove findings this study concludes that exchange rate fluctuations is inimical to Nigeria's economicgrowth, which is consistent with the findings of Alabi (2015) and Emeka (2020).

5. Recommendations

i. More of Nigeria's exports both oil and non-oil should be channeled to the United States as a weak Naira would make such exports cheap in terms of the Dollarsthereby increase their demand that could diversify the economy, facilitate more job creation and foster growth in the economy.

ii. Government should enact economic policies which would encourage the exportation of domestic products for the purpose of earning foreign exchange which would be kept as for the effective management of excessive volatility by the Central Bank and permit fluctuations to be in favour of Nigeria's economy.

iii. Nigerian producers should step-up their game in making quality products that would compete favourably with foreign goods while consumers in Nigeria should do away with their apathy for domestically produced goods and bias for foreign goods as this would reduce the demand and prices of foreign exchange thereby ultimately causing appreciation in our currency.

iv. Government should expand trade with more countries to reduce too much dependency on a single currency thereby lowering the impact of fluctuations in any particular currency.

v. Government should seriously focus on tackling the plague of insecurity to attract foreign direct investmentsas this will bring foreign currencies into the economy thereby increasing our foreign reserve. An increased foreign reserve wouldcause a downward pressure on the price of foreign currencies thereby making domestic investors source these currencies at relatively cheaper priceswhich would ultimately increase productivity level.

vi. Nigerians in the diaspora should reduce the extent to which they change earned foreign currency through applications like LeMFi, Remitly, etc.when they want to send money back home,rather they should makeforeign remittances to domiciliary accounts as such acts will tend to increase aggregate foreign reserve since such transactions would go through the official channel and ultimately increase the value of the domestic currency (Naira ₦).

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