CENTRAL BANK OF NIGERIA

EDUCATION IN ECONOMICS SERIES

NO. 4

FOREIGN EXCHANGE RATE

CENTRAL BANK OF NIGERIA

RESEARCH DEPARTMENT

2016

The Education in Economics Series is intended to provide a user-friendly introduction to a wide variety of economic issues. Each topic seeks to present simple and comprehensible readings to all segments of the general public, particularly those interested in obtaining a clearer understanding of the economic issues affecting the Nigerian economy.

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Foreign Exchange Rate[1]

1.0 Introduction

A national currency is used by economic agents to make and receive payments within a country. However, when carrying out international trade, domestic residents of countries use foreign currencies. The exchange rate makes it possible to convert domestic currencies into foreign currencies and vice versa. Exchange rate is, therefore, the price of one currency in terms of another currency. The exchange rate assumes relevance because of cross-border flows of goods, services, financial assets and funds transfer.

Therefore, this educational series intends to enable people have a better understanding of the exchange rate and its variants using the simplest language. The brief is arranged into seven sections. This introduction is followed by Section 2, which discusses the conceptual issues. Section 3, discusses exchange rate dynamics, while Section 4, examines the various exchange rate regimes. Section 5, considers the foreign exchange market, while Section 6, discusses foreign exchange administration and markets in Nigeria. Section 7, contains the glossary of exchange rate terms.

2.0 Conceptual Issues

2.1 Exchange Rate

The exchange rate is the price of one currency in terms of another currency, that is, the current market price for which one national currency can be exchanged for another. It is

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normally expressed as the number of units of a domestic currency that will purchase one unit of a foreign currency or the number of units of a foreign currency that will purchase one unit of a domestic currency. For example the naira per United States (US) dollar (N/US$) or US dollars per naira (US$/N). If 1 US Dollar can be exchanged for N240, then one naira can be exchanged for US$0.0042.

The exchange rate plays a critical role in an economy because imports and exports constitute a large part of the economy. Essentially, exchange rate changes affect the price of imported goods, services and our exports. When the value of a currency, for example the naira falls, imported goods become more expensive, and we tend to reduce the volume of our imports. At the same time, other countries will pay less for some of our products that are exported and that will tend to boost export sales and foreign exchange earnings as well as the country's export industries competitiveness in the international markets. On the other hand, a higher exchange rate makes it harder to sell overseas as other countries exports become cheaper than that of Nigeria. This will lead to a fall in exports which will eventually reduce real national output and cut back employment level. In this regard we can say the Nigerian economy is less competitive. Also, exchange rate changes can affect foreign investments held by individual investors. For a Nigerian investor owning US investments, a strengthening of the Nigerian Naira relative to the US dollar

tends to reduce the value of the US investments as the US value of the securities becomes fewer in naira term.

In Nigeria, the central bank maintains the stability of the Naira exchange rate in order to achieve its objective of maintaining price stability because domestic prices (inflation and interest rates) are very responsive to exchange rate fluctuations. There are two main types of exchange rates in Nigeria; official and market exchange rates. The official exchange rate is determined by the monetary authority/central bank, while the market exchange rate is basically determined by market forces of demand and supply. When the demand for foreign exchange exceeds supply, the value of the Naira will go up, and if exchange rate supply exceeds demand, the value of the Naira will go down.

2.2 Cross Exchange Rate

A cross exchange rate is the exchange rate between two currencies to a third currency. That is, the exchange rate between two currencies expressed in terms of the exchange rate between them and a third currency. For example, given the US dollar/naira and Japanese yen/naira exchange rates, the dollar/yen exchange rate becomes the cross exchange rate. It can be calculated as the ratio of the US dollar to the Nigerian Naira divided by the ratio of the yen to the Nigerian Naira (two different currencies compared to a third currency).

2.3 End-Period Exchange Rate

The end-period exchange rate simply refers to the final exchange rate prevailing at a particular period. An end-period exchange rate is the exchange rate ruling on the final working day of a given period. For instance, we can have weekly, monthly, quarterly and yearly end-period exchange rates depending on the frequency. In the case of yearly frequency, the last exchange rate at end-December would be taken as the end-period exchange rate. The end-period exchange rates are usually applicable to stock variables, such as external reserves and financial assets.

2.4 Average Exchange Rate

Average exchange rates are the arithmetic average of the daily and monthly exchange rates during a given period. The average exchange rate is determined by dividing the sum of the exchange rate by the number of units that make up the period. For example 30 days in a month for the monthly average exchange rate or twelve months for annual average exchange rate.

2.5 The Appreciation/Depreciation of the Exchange Rate

The exchange rate of the naira simply refers to the amount of domestic currency (in this case, Naira) required to purchase a foreign currency. When the amount of naira required to buy a unit of a foreign currency falls, the naira is said to appreciate or strengthen or increase in value and when the amount of naira rises, the naira is said to

depreciate or weaken or decrease in value . Depreciation is caused either by a decrease in demand for domestic currency or an increase in supply of the domestic currency, while an appreciation is caused by an increase in demand for domestic currency or a decrease in supply of domestic currency.

2.6 Exchange Rate Premium

The exchange rate premium measures the spread between the recognised official market exchange rate and the Bureaux de Change (BDC) rate. The exchange rate premium can also be measured by the differential between the official and inter-bank market exchange rates. The exchange rate premium helps to evaluate the stability in the foreign exchange market. The exchange rate premium is not expected to go beyond 5 per cent for the foreign exchange market to be considered stable.

3.0 Exchange Rate Dynamics

3.1 Volatility of the exchange rate

The exchange rate changes very often; it moves from minute to minute, hour to hour and day to day under a floating exchange rate regime. When there are large swings in the exchange rate over a period of time, the exchange rate is considered volatile. Thus, exchange rate volatility is a measure of the degree or frequency by which the price of the foreign exchange changes over time. The larger the magnitude of the price change, or the more speedily it changes over a period, the more volatile the

exchange rate is. If the price increases or falls with very wide margins over a period, it shows that the exchange rate is unstable or volatile and the foreign exchange market is said to be experiencing volatility.

Volatility causes panic in the foreign exchange market because the users and traders of foreign exchange are uncertain of what to expect in the market on a daily basis. Some of the users most affected by exchange rate volatility are investors and international traders. They could lose money if the exchange rate falls below their expectations. In either situation, the monetary authority or central bank can intervene to control exchange rate volatility and avoid panic in the foreign exchange market. Conversely, investor stand to gain if the exchange rate is above their expectation.

3.2 Misalignment of exchange rate

Exchange rate misalignment refers to the deviation of the exchange rate from its equilibrium or benchmark level. In simple term, an exchange rate is misaligned when it deviates from the underlying exchange rate that would have prevailed if the economy was simultaneously in internal and external balance (equilibrium). Internal balance means the economy is operating at full employment and at full capacity output, while external balance means a country has a sustainable current account position given its desired capital position. Misalignment can either make the exchange rate to be

undervalued or overvalued. An exchange rate is "undervalued" if it is below the equilibrium value, and "overvalued" if it is above the equilibrium value. Misalignments generally influence economic behavior and external competitiveness of the country.

3.3 Appreciation versus depreciation of the exchange rate

In a floating exchange rate regime, the increase or decrease in exchange rate is an interaction between how much foreign exchange is available to the market (supply) and how much of the foreign exchange is required by users (demand). Thus, market forces of supply and demand determine the value of the exchange rate. There are times, when less domestic currency is required to buy a foreign currency. When this happens, the domestic currency is said to have appreciated, while the foreign currency has depreciated. Currency appreciation is, therefore, the rise in the value of a country's currency relative to one or more foreign reference currency or currencies. On the other hand, when more domestic currency is required to buy a foreign currency in any period, the domestic currency is said to have depreciated, while the foreign currency has appreciated. Thus, currency depreciation simply means the fall in value of a country's currency in relation to one or more foreign reference currency or currencies.

3.4 Revaluation Versus Devaluation

In a fixed exchange rate regime, it is only the central bank or monetary authority that can alter the official value of the currency with the approval of the government. The exchange rate can, therefore, be adjusted to either increase (revaluation) or decrease (devaluation) its value relative to a foreign currency. Thus, currency revaluation is simply a deliberate increase in the value of a domestic currency in relation to a foreign reference currency in a fixed exchange rate regime so as to make the domestic currency stronger, while currency devaluation means a deliberate reduction in the value of a domestic currency in a fixed exchange rate with respect to a foreign reference currency to make the domestic currency weaker.

3.5 Factors Responsible For Exchange Rate Movements

Movements in exchange rate are not only determined by the forces of demand and supply, but also by the wellbeing of the economy, particularly, in a floating exchange rate regime. In this regard, the amount of goods and services a country produces and sells (exports) to the rest of the world and the amount of foreign exchange earnings and level of external reserves are very important. Thus, where a country exports exceeds its imports, the country earns more foreign exchange and increases its external reserves. The rise in external reserves makes the domestic currency to appreciate and stronger in value. However, when a country's exports are less than imports, the country draws

down on its foreign reserves to pay for the extra imports. This will cause the external reserves to reduce and if the trend persists, the domestic currency is likely to depreciate in value and becomes weaker.

Changes in interest and inflation rates can also cause exchange rate fluctuations. Foreigners tend to take advantage of high interests by bringing their money into the domestic economy; this increases the supply of foreign currencies, the domestic currency to appreciate. However, the country may find it difficult to export goods and services because the appreciation of its currency might make imports cheaper and exports costlier. Conversely, when interest rates fall, foreigners tend to move their money out of the domestic economy; the supply of foreign currencies will drop and the domestic currency will depreciate in value. Also, high domestic inflation makes domestic goods and services more expensive than imported goods and services. This causes a country's import to rise, depletes its external reserves and cause the domestic currency to depreciate. On the other hand, low domestic inflation relative to other countries, makes domestic goods and services cheaper and reduces imports. The country saves foreign exchange and the currency does not depreciate. Other factors that influence exchange rate movements in an economy include balance of payments position, market expectations, and socio-political climate.

3.6 Who Manages Foreign Exchange In An Economy?

In an economy, foreign exchange is managed by the Monetary Authority. In a country where the central bank has full autonomy, it is regarded as the monetary authority. However where an organ of the executive arm of government such as the treasury has the authority to allocate foreign exchange in the country, it can also be regarded as the monetary authority.

In Nigeria, Central Bank of Nigeria (CBN) manages the foreign exchange. The CBN is empowered by the Foreign Exchange Regulation Act to regulate the foreign exchange regime. It does this directly or indirectly by watching the activities in the market and intervenes when necessary.

The Bank issues guidelines and circulars regularly for market participants in line with the country's monetary policy stance, foreign exchange reserves position, balance of payments position and overall macro-economic fundamentals. The CBN issues licenses for authorised dealership in foreign currencies only to banks and BDCs. The amount of foreign exchange to be held by the authorised dealers is subject to the open position limits prescribed by the Bank. The authorised dealers maintain clearing accounts with the CBN in different foreign currencies to settle their mutual claims. If there are any excess foreign exchange holdings after these transactions, it is obligatory for them to sell it to the CBN. In case of shortfall of the limit, authorised dealers have to cover it either through purchase

from the market or from the CBN.

3.7 Foreign Exchange Market Intervention

Foreign exchange (forex) market intervention, also known as currency intervention, occurs when the central bank or monetary authority sells or buys foreign currency to ease volatility and bring calmness to the forex market. This is done in order to ensure that the exchange rate is stable enough to support and boost economic activities. Thus, when the price of foreign exchange increases, the central bank intervenes by selling foreign exchange to the market to boost supply. This will bring down the price of the foreign exchange. Similarly, when the price of foreign currency decreases, it buys foreign exchange from the market. This will eliminate the over-supply of foreign exchange to the market and the price will increase to the desired level. However, before a central bank intervenes, there must have been detailed analysis of the factors affecting the market.

Generally, central banks intervene in foreign exchange markets in order to achieve a variety of overall economic objectives: controlling inflation, maintaining competitiveness, or maintaining financial stability. The precise objectives of policy and how they are reflected in currency intervention depend on a number of factors, including the stage of a country's development, the degree of financial market development and integration, and the country's overall vulnerability to shocks. Intervention in the foreign exchange market is to ensure balance in the short-

run and to prevent wide swings from taking place on a day-to-day basis. The number of times a central bank intervenes in a market at a particular period is determined by the severity of the situation.

3.8 Uses of Foreign Exchange

Foreign exchange is required by a country for the purpose of transacting business with the rest of the world. Some countries have convertible currencies, which mean that their domestic currencies can be accepted for international transactions. Examples of convertible currencies are the United States dollar; the Japanese Yen; the European Union Euro; the Swiss Franc; etc.

Countries whose domestic currencies are not convertible have to buy foreign currencies to be able to transact with the rest of the world. Thus, for such countries, their governments use forex to fund their external reserves and daily activities of embassies, payment for external debt as well as good and services, investment abroad, and monetary policy management, amongst others. Also, residents of these countries can buy forex to spend abroad during vacations and business trips, pay for education, health, and carry out other international transactions, fund their domiciliary accounts, and carry out private home remittances, amongst others.

4.0 Exchange Rate Regimes

An exchange rate regime refers to the method or system

adopted by a country's monetary authority (usually the Central Bank) to determine the value of its currency in relation to other currencies. It can also be defined as the exchange rate system by which the value of a domestic currency is determined vis-à-vis foreign currencies. Traditionally, exchange rate regimes are classified into fixed and flexible regimes on the basis of the degree of flexibility the central bank shows towards changes or variations in the exchange rates. However, in recent times, the IMF has reclassified the regimes into three broad categories, the hard exchange rate pegs, soft exchange rate pegs, and floating exchange rate regimes based on observed country's practices and the degree of monetary policy independence. In this write-up we adopt the recent IMF classification for easy understanding.

4.1 Hard Exchange Rate Peg (Fixed Exchange Rate Regime)

This is an exchange rate regime that takes away the power of independent domestic monetary policy from the central banks of the participating countries since its interest rates and exchange rate policies are tied to the country of the anchor-currency. IMF (2008), observed that hard pegs usually go hand in hand with sound fiscal and structural policies and low inflation.

In the hard peg regime, a country's exchange rate is maintained at a fixed level for all foreign exchange transactions. A country operating this system can have the

value of its currency fixed against a single currency or another measure of value such as gold or Special Drawing Rights (SDR) or a basket of other currencies. This basket normally consist of the currencies of major trading or financial partners and the weights reflect the share of the countries in foreign trade such as total trade weight, export-weight, import-weight or where the external debt is dominated. In some cases, countries completely give up their domestic currencies and adopt foreign currencies as legal tenders.

The main argument in favour of fixed exchange rate regime is that it ensures the credibility of monetary authorities. Thus, it is argued that if building monetary policy credibility becomes difficult domestically, then one can presumably import it by fixing the value of a currency to a hard-money country (Velasco, 2000). As a result, most countries practicing this system have their currencies anchored against low-inflation countries. The system can also minimize exchange rate risks, reduce interest rates, and ensure sound financial sector. The hard exchange rate peg includes;

4.1.1 Currency/Monetary Union

This is an exchange rate system where a group of countries come together to adopt the same legal tender currency. By this arrangement, the group of countries forming the union automatically gives up independent monetary policy in pursuit of a common monetary policy. An internally pegged exchange rate is thus adopted by all member countries, while the common currency is allowed to float externally. A currency/monetary union therefore entail the complete

surrender of the monetary authorities' independent control over domestic monetary policy.

4.1.2 Formal Dollarization

This occurs when a country legally adopts a major foreign currency or the currency of a dominant economy as its domestic currency/legal tender. Under this system, the monetary authorities completely surrender independent control over domestic monetary policy as monetary policy is delegated to the anchor country. As at 2004, nine countries were under this arrangement. Ecuador for example, adopted the US dollar as its legal tender (Obadan, 2012). This system is normally viewed as the hardest form of the peg regime.

4.1.3 Currency Board

Currency Board exists when there is a definite legislative obligation by a group of countries to exchange their domestic currencies for a specified foreign currency at a fixed exchange rate. In this arrangement, the monetary authority is legally mandated to abide by this commitment by ensuring that domestic currency in circulation and bank reserves are fully backed by foreign assets. Although, this eliminates the traditional central bank functions of monetary control and lender of last resort, but some flexibility may still be afforded, depending on how strict the banking rules of the currency board arrangements are (IMF, 2003). In a nutshell, a currency board combines three (3) elements: a fixed exchange rate between a country's

currency and an anchor currency; automatic convertibility; and a long term commitment to the system, often explicitly stated in the central bank's law. However, as noted by Sozovska (2004), a currency board system can only be credible if central bank holds official exchange reserves sufficient to, at least, cover the entire monetary base currency plus cash reserve of banks with the central bank.

4.2 Soft Exchange Rate Peg

This is an exchange regime that is a hybrid between the fixed (hard peg) and floating exchange rate regimes. The soft peg allows the central bank limited flexibility over its domestic monetary policy. In this system, currencies are maintained at a stable value relative to an anchor-currency or a basket of currencies. This is achieved by allowing the exchange rate to oscillate around a central rate (nominal anchor) within a narrow band of less than ±1 per cent or a wide band of up to ±30 per cent or adjusted up or down periodically in line with some quantitative economic indicators including inflation differentials across anchor countries.

The monetary authority maintains stability by ensuring that it carries out foreign exchange interventions to safeguard the fixed parity. Also, interest rates can be adjusted and foreign exchange regulated, among others, to sustain the fixed parity. However, the monetary authority is not committed to devoting monetary (and, on occasion, fiscal) policy solely to the goal of defending the parity. Thus, the soft pegs tend

A price or quantity that serves as a target for monetary policy (IMF, 2008)

not to be long lasting because they can be vulnerable to financial crises-which can lead to large devaluation or even abandonment of the peg (IMF, 2001 and 2008). The soft peg regimes include;

4.2.1 Conventional Fixed Peg

The exchange rate which is pegged at a fixed rate to a currency or basket of currencies of the major financial or trading partners, is allowed to fluctuate in a narrow band of less than ±1 around the fixed rate. Alternatively, the maximum and minimum value of the exchange rate can be allowed to vary between a narrow band of 2 per cent for a short period of at least three months. The fixed rate, though not irrevocable is maintained through direct foreign exchange and other indirect monetary policy interventions.

4.2.3 Horizontal Band

This is conceptually similar to a conventional fixed peg as the exchange rate is also pegged at a fixed rate to a single currency or baskets of currencies and allowed to fluctuate within a band around the fixed (central) rate. However, it is softer in approach as the band around the fixed rate is much wider than ±1 per cent. Example of this type of arrangement is the European Exchange Rate Mechanism (ERM), currently known as the ERM II. A currency in ERM II is allowed to float within a margin of at least ±1 and ±15 per cent of a central rate against the euro. The degree of monetary policy dependency depends on the band width under this regime.

4.2.4 Crawling Peg

This is an exchange rate system that requires the exchange rate to be adjusted periodically in small percentage at a pre-set fixed rate or in reaction to changes in selected quantitative economic indicators, particularly, inflation differentials. The inflation differentials can be differences in past inflation or differences in target and expected inflation of major trading partners or differences between domestic and major trading partners' inflation rates. Adjustment to the exchange rate can be forward looking (set at a pre-declared fixed rate and/or below projected inflation differentials) or backward looking (set to create inflation adjusted changes in the exchange rate). The crawling peg combines the flexibility needed to accommodate different trends in inflation rates between countries, while maintaining relative certainty about future exchange rates relevant to importers and exporters (Obadan, 2012).

4.2.5 Crawling Bands

A crawling band is an arrangement where the currency is pegged within a wide band of at least ±1 per cent around a central rate, but the band or central rate is adjusted periodically at a fixed set rate or to reflect changes in selected quantitative economic indicators. The bands are either symmetric (same upper and lower limits) around a crawling central rate or widen progressively in an asymmetric manner (different upper and lower limits). Like the crawling peg, the commitment to maintain the

exchange rate within a band, places a limit on monetary policy independence. Thus, the degree of policy independence is a function of the band width. Adjustments to crawling bands can also be backward or forward looking.

4.2.6 Tightly Managed Float

A tightly managed float is a system in which interventions in the foreign exchange market takes the form of a very tight monitoring in order to keep the exchange rate generally stable but without any particular exchange rate path. The central Bank's intervention may be direct or indirect and may be influenced by indicators like the Balance of Payments position, external reserves, parallel market developments, etc. In other words, this regime allows the exchange rate to be market determined, but the Central bank monitors closely and intervenes in the market to manage the exchange rate in order to prevent high volatilities.

4.3 Flexible (Floating) Exchange Rate Regime

This is an exchange rate regime where the international value of a currency, at any point in time is determined by the interaction of the market forces of demand and supply of foreign exchange. This system allows the market to manage the exchange rate by making provision for a continuous adjustment of exchange rate to the changes in the demand and supply of foreign exchange. It therefore,

eliminates the difficulties associated with having to determine exchange rate as in the case of fixed exchange rate regime. Flexible exchange rate regimes thus, offer countries the advantage of maintaining an independent monetary policy.

Also, unlike a fixed exchange rate system which results in changes in the level of foreign exchange reserves and the monetary base, a flexible exchange rate arrangement equilibrates the demand for, and supply of foreign exchange by changing the exchange rate rather than the level of reserve. Flexible exchange rate regimes can be classified according to their degree of flexibility which in turn depends, to a large extent, on the degree of foreign exchange intervention.

4.3.1 Free Floating

A free floating exchange rate system (also known as clean floating) is one in which at any point in time, the exchange rate is determined by the interaction of the market forces of demand for, and supply of foreign exchange. In other words, under a free floating system, the exchange rate is purely market-determined and government does not intervene in the process of determining the exchange rate level or maintaining a given exchange rate. However, this is not the case in practice, as official foreign exchange interventions by monetary authorities do occur from time to time in an attempt to moderate the rate of change and

prevent undue fluctuations in the exchange rate, that are not justified by economic fundamentals. In a few countries, though, (for example, New Zealand, Sweden, Iceland, the United States, and those in the euro area), the central banks almost never intervene to manage the exchange rates (Stone et. al., 2008). Thus, monetary policy is in principle independent of exchange rate policy under a free floating system.

4.3.2 Managed Floating

Managed floating, which is sometimes called dirty floating is similar to free floating but with a lower degree of flexibility. Under a managed floating system, government influences exchange rate movements through active, direct or indirect intervention to stabilize the long-term trend of the exchange rate without specifying a predetermined exchange rate path or having a specific exchange rate target. Usually, governments fear that if the exchange rate appreciates or depreciates too much, it could threaten trade competitiveness and so it intervenes either directly or indirectly. Reasons for intervention include, but not limited to correcting balance of payments problems, controlling domestic inflation levels, accumulation of international reserves, correcting parallel market distortions, etc. The managed float system of exchange rate management thus, reflects what obtains in reality and has, therefore, become very common in recent times.

5.0 The Foreign Exchange Market

The foreign exchange market is a globally decentralized market for trading convertible currencies through a global network of banks, corporations and individuals. The market which is mostly driven by speculation, arbitrage and professional dealings operates “over the counter” with enormous turnover. This huge turnover has made the market the largest financial market in the world. A huge volume of trading transactions at the market is done largely on electronic trading platforms and the 24-hour dealing desk. Trading at the global foreign exchange market is done by large global investors and retail individuals with computer-driven algorithmic trading strategies. The synergy from these market participants has greatly fine-tuned and set new standards for the global financial market in general. It is pertinent to note here that despite the strides achieved so far, the global foreign exchange market is still evolving and in a transition period as different new trading participants continue to emerge as the market structure changes. Consequently, the global foreign exchange market is currently a mixture of old and new elements.

Among the world's financial centres, the largest amount of foreign exchange trading (32 per cent) takes place in the United Kingdom, despite the fact that the British pound sterling—is less widely traded in the market. The United States and Japan account for 18 and 8 per cent, respectively, of the global foreign exchange transactions.

The European, Western hemisphere and Asian time zone constitute the three largest global foreign exchange markets, accounting for about 58 per cent of the total global trade.

The global foreign exchange market is a 24-hour market where, aside from possible minor gaps on weekends, financial centres are open for business somewhere on the planet. In financial centres around the world, business hours overlap; as some centres close, others open and begin to trade. The foreign exchange market follows the sun around the earth, so it is said to be a 24 hour market.

The concept of twenty-four hour market means that exchange rates and market conditions can change at any time in response to prevailing economic and market conditions. Thus, traders and other market participants must be alert to the possibility that a sudden movement in an exchange rate can occur during an off hour, elsewhere in the world. The large dealing institutions have adapted to these conditions, and have introduced various arrangements for monitoring markets and trading on a twenty-four hour basis.

5.1 On-Line Forex Trading

On-line retail trading which became active since 1996, enables individuals to have access to the global foreign exchange market. Any individual with a computer and

internet access can trade in the forex market. The forex market maker, a bank or brokerage company that stands ready, every second of the trading day with a firm bid and ask price, creates the retail forex platform for individual investors to trade. It is now possible to trade currencies around the clock with hundreds of foreign exchange brokers through trading platforms. The market maker purchases and sells currencies to the investor, even if they do not have a buyer and seller lined up.

The on-line forex platform makes it possible for individuals to trade forex on margin, an act that enable retail traders to gain access to the professional currency market at the wholesale dealing spreads without interbank credit lines. Retail traders like big investors are provided with two prices, a bid and an offer. The difference between the two is the spread and it depends upon the size, volatility and the quoted currency. The quotes are valid only for a short time. Recently, forex brokers have become increasingly regulated. Minimum capital requirements of US$20m now apply in the US, as well as stringent requirements now in Germany and the United Kingdom. Switzerland now requires forex brokers to become a bank before conducting forex brokerage business in Switzerland. Several types of financial instruments, including forwards, futures, swaps and spot are commonly used in trading.

5.2 Foreign Exchange Spot Market

This is a market for the buying and selling of foreign currencies for either immediate delivery, delivery within two working days in the interbank market, delivery over the counter, or in physical cash. It is also known as the cash market. When a currency transaction is finalized, it is called a spot deal and the price is called the spot price. In a spot deal, one party agrees to deliver a certain currency to a counterpart and receives a certain amount of another currency at a certain exchange rate. The settlement is made in cash after the position is closed.

5.3 Foreign Exchange Forward Market

This is an over-the-counter market for fixing the price of foreign currencies for delivery at a future date. Thus, in the forward market, the exchange rate is fixed at present for future currency delivery. Forward transactions are called forward contracts and the agreed price, the forward price. Forward contracts help international traders to hedge against exchange rate risks.

Forward contracts are customized agreements between two parties to fix today the price to buy a certain currency at a specific future date. The contact specifies the time of transaction, the agreed exchange rate, place, and date of delivery and the precise currency to be delivered. The agreed price (exchange rate) is paid at the maturity of the contract in the forward market. Forward contracts are

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The agreed price is normally the spot exchange rate plus interest rate differentials.

somewhat risky and prone to high default because they are bilateral agreements between two partners without any formal trading facilities, building or regulating body.

5.4 Foreign Exchange Futures Market

Foreign exchange futures market is an organized market or exchange where currency future contracts are traded. A currency future contract is a standardized agreement between two parties to fix today the price to buy a specific currency at a future date. The standardized features make the contract tradable up to its maturity date at the future market or exchange. This makes the future contract more liquid than the forward contract. Though, forward and future contracts have some similar features, they also have some remarkable differences. Forward contracts can be tailored to fit a buyer's requirements, but futures contracts are standardized in terms of size and maturity. Forward contracts seldom trade on exchanges, but futures contracts are mostly exchange-listed. Thus, the obligation in the forward contract must stay till maturity, while that of the future contact can be "removed" before expiration by buying back (selling) at the exchange. A forward contract does not have guarantee, so it does not require an initial deposit, but since a future contract is guaranteed by the exchange, the buyer must pay an initial deposit (called the initial margin) to the exchange. His position is then tracked on a daily basis and he receives a margin call (variation margin) to pay up if there are losses in his account. The

forward contract is carried out in large denominations, while the future contracts are in standardized and small denominations.

5.5 Foreign Exchange Swap

This is a contract between two parties to exchange one currency for another currency at a set exchange rate and date (start date) and to re-exchange the two currencies at an agreed rate at a specified future date (end date). The exchange rates are agreed upon at the time the swap is initiated. In this way, any exposure to exchange rate variations during the period of the Foreign Exchange Swap is removed. Thus, a foreign exchange swap is a concurrent buying and selling transaction with two settlement dates and rates (swap rates).

The exchange rate for each of the transactions is usually different and this difference is called "swap points". Swap points are set by the market and will generally reflect the current interest rates of the two countries involved for the term of the Foreign Exchange Swap. They are added to, or subtracted from, the spot rate and therefore can represent either a premium or discount to those involved (Suncorp Bank, 2014).

5.6 Foreign Exchange Option

This is a contract whereby two parties agree to buy or sell a specific currency at a stated exchange rate, on or before a

specific date. Under this arrangement, the buyer has the right but not obligated to execute the option, while the seller is obligated to comply once the buyer exercises the option since he has already been compensated through the price or premium of the option. There are two types of options; call and put options. The difference between the two is the kind of right the buyer has. While the call option gives the buyer the right to buy, the put option gives the buyer the right to sell an agreed currency at a specific exchange rate, at a specific date.

5.7 Two-Way quote system

Two-way quotes in the forex market is a system that enable participants in the foreign exchange market to give two different spot exchange rate quotes: the "bid" (the price at which they stand ready to buy) and the "asked price" (the price at which they stand ready to sell) a currency.

Generally, a trader quotes two prices when asked for a bid. The first is the price at which the trader is willing to buy the given foreign currency and the second is the price at which the trader is willing to sell the foreign currency. The difference between the two prices is called the spread ("bid-ask spread). The "spread" represents the market maker's profit margin. For stable currencies with high volume of trade, the spread is very narrow, but it can be very wide in unstable and infrequently traded currencies. Specifically, the "bid-ask spread" is always such as to leave a profit to the market maker.

6.0 Foreign Exchange Administration And Markets In Nigeria

Exchange rate management is the strategies or types of exchange rate regimes adopted by the monetary authority in ensuring that the objectives of exchange rate are achieved. Central Bank of Nigeria (2009), the objectives of exchange rate management in Nigeria include: ensuring price stability; the preservation of external reserves so as to defend the external value of the naira; the diversification of the economy by encouraging non-oil exports' and narrowing the premium between the official and parallel/BDC rates. To achieve these objectives, the CBN has typically adopted different practices or regimes over the years in line with macroeconomic fundamentals. In this vein, this section undertakes a brief review of exchange rate administration and the structure of the foreign exchange market in Nigeria.

6.1 Foreign Exchange Administration in Nigeria

In the course of Nigeria's economic history, the fixed, flexible as well as some hybrid or variants of exchange rate regimes had been practiced at various times, depending on the prevailing economic conditions and the overall development objectives of the Federal government. Foreign exchange practices in Nigeria have been influenced by the country's changing pattern of international trade, institutional changes as well as structural shift in production.

6.1.1 Period of No Defined Exchange Rate Regime (Before CBN)

Prior to the establishment of the CBN in 1958 and the enactment of the Exchange Control Act in 1962, agriculture was the major foreign exchange earner. Foreign exchange at this time was earned by private companies and the foreign exchange balances were maintained in foreign banks by commercial banks, which acted as agents for local exporters. Thus, foreign exchange management was naïve and undeveloped since the Nigerian pound was tied at par with the British pound sterling during this period. However, the commencement of the CBN operation in 1959 and the coming on stream of more export products beyond agriculture (especially crude oil) led to the increase in Nigeria's trading partners, and the need to have robust strategies for managing foreign exchange became inevitable.

6.1.2 Fixed Exchange Rate Regime (1959 – June 1986)

Fixed exchange rate regime connotes an era during which the exchange rate of the country was fixed and controlled by the monetary authority without room for the market forces of demand and supply. This era lasted between 1959 (when the CBN started operation) and June 1986 (when the Structural Adjustment Programme, SAP, was introduced).

From 1959-1967, the country adopted ad hoc or administrative measures in determining the exchange rate of the Nigerian pound, which was fixed at par with the British

pound sterling until the devaluation of the British pound sterling by 10.0 per cent in November, 1967. From this period, the Nigerian government opted to operate its own separate exchange rate system independent of the pound sterling.

Consequently, the monetary authorities introduced US dollar as one of the reserve currencies for determining the exchange rate of the Nigerian pound. Thereafter, the country's currency was fixed to a basket of seven currencies (US dollar, the Deutsche mark, the Swiss franc, the French franc, the Dutch guilder, the Japanese yen, and the Canadian dollar). Each of the seven currencies was assigned different weights, based on their country's relative trade share with Nigeria. In 1985, the "one currency intervention system" was adopted to reduce the incidence of arbitrage in the naira exchange rate quotation. Under this system, the value of the Nigerian currency at any point in time was determined by quoting it against a single currency, the US dollar, and this rate was then used to determine the exchange rate of currencies of Nigeria trading partners.

This section benefits immensely from the *50 Years of Central Banking in Nigeria (1958 – 2008),* a publication of the Central Bank of Nigeria

6.1.3 Flexible Exchange Rate Regime (1986 June to date)

The exchange rate liberalization policy under the SAP framework gave way to flexible exchange rate regime in Nigeria in 1986. Under this system, foreign exchange administration became liberalized and the forces of demand and supply were allowed to determine the exchange rate. This system started in September 1986 with the dual exchange rate system – the first and second tier foreign exchange rate market (SFEM). The first tier had a fixed exchange rate and it was used for government transactions or official business, while the second tier, had a market determined exchange rate, and it was used for private sector transactions. The dual exchange rate system was intended to prevent sharp movements in exchange rate that could destabilize business activities. Due to the complexity of managing the systems, the first and second tier foreign exchange markets were merged into a single foreign exchange market (FEM) in July 1987. This was transformed into the autonomous foreign exchange market (AFEM) in 1988 to facilitate non-oil inflows into the Deposit Money Banks and curtail demand pressure. CBN (2009:76), opined that "the policy was intended to reverse the structural distortions in the economy by introducing a flexible exchange rate regime".

The AFEM turned out to be riddled with speculative activities and was later transformed into the inter-bank foreign exchange market (IFEM) in January 1989. During this period,

the CBN monitored developments in the exchange rate of the major international currencies as a guide for determining the appropriate level of the naira exchange rate. The IFEM was modified in December 1990, when the retail Dutch Auction System (DAS) was re-introduced having been first introduced in 1987. However, the continued volatility in the exchange rate, and the widening gap between the official and parallel market rates (which was above internationally acceptable limit of 5.0 per cent), led the CBN to further change the exchange rate mechanism. Thus, on March 5 1992, the foreign exchange market was fully deregulated with the floating of the Naira. Though, volatility eased during this period, the demand pressure persisted.

In 1994, the exchange rate was temporarily fixed but the policy objectives could not be realized as the naira depreciated sharply in the parallel market. This informed the policy change in 1995 from the fixed exchange rate system to a flexible system under the "guided deregulation" of the foreign exchange market. The primary objective of the new policy was to curb the substantial depreciation of the currency as well as achieve an efficient allocation and utilization of external reserves. Under the new policy, bureau de change (BDCs) introduced in 1989, were allowed to buy and sell foreign exchange in line with the Exchange (Monitoring and Miscellaneous Provision) Act 1995. The Act re-introduced the Autonomous Foreign Exchange Market

(AFEM), whose major element was the flexible system where privately-sourced foreign exchange was traded at the market rate, while government or official transactions were conducted at fixed exchange rate. The main features of AFEM were the enlargement of the market and the discontinuation of the inter-bank foreign exchange market, while the CBN continued its periodic official intervention in the market to stabilize the exchange rate. The AFEM was expected to reduce the gap between official rate and the parallel market rate and eventually ensure the unification of the various exchange rates in a single enlarged foreign exchange market.

The foreign exchange market was further freed up in 1999 with the re-introduction of the inter-bank foreign exchange market (IFEM) with a view to reducing rent seeking behaviour, and restore stability in the market. Following the widening premium between the official and parallel market exchange rates due, largely, to the ever increasing demand for foreign exchange in the country, the CBN reintroduced the retail Dutch Auction System (rDAS) in 2002. Though the system restored confidence in the market by moderating the rates, narrowing the premium and reducing rent-seeking behaviour, it was however, replaced with the wholesale Dutch Auction System (wDAS) in February 2006 to strengthen the gains of rDAS and further free up the foreign exchange market. Other reasons proffered by the CBN for the transition were the rising

external reserve position, banking sector soundness as a result of the consolidation exercise, and entrenched fiscal discipline.

The wDAS reduced the demand pressure in the market and brought about relative stability of the exchange rate. The result was huge foreign exchange inflow into the market from oil companies and foreign investors subscribing for Federal government debt instruments and the initial public offers (IPOs) of some indigenous companies in the first half of 2008. However, in October 2008, owing largely to the global financial crisis, there was a massive outflow of foreign exchange from the country, which increased the pressure in the foreign exchange market. This caused a sharp fall in the exchange rate, thereby making the CBN to re-introduce the rDAS in January 2009 to ease the demand pressure. In spite of this, thedemand pressure persisted and the exchange rate continued to fall in all segments of the market.

Consequently, the wDAS was re-introduced in July 2009. However, due to its inability to mitigate the demand pressures, it gave way again to the rDAS in October 2013 which was also withdrawn in February 17, 2015 following reforms in the market. Thus, the CBN closed the official window of the market and moved all demand for foreign exchange to the interbank market. This new exchange rate policy was necessitated by widened premium between the

interbank/BDCs and rDAS rates, the resultant speculative demand and unwholesome practices by economic agents as well as the falling price of crude oil at the international market, which impacted negatively on the external reserves.

6.2 Structure of the Nigerian Foreign Exchange Market

The Nigerian foreign exchange market has evolved over the years in line with changing macroeconomic fundamentals and in a bid to ease foreign exchange demand pressures and stabilize the Naira exchange rate. This evolution has resulted in the following sub-markets in Nigeria;

6.2.1 Official Foreign Exchange Market

This window is operated by the CBN for market interventions. The CBN uses it to sell (supply) foreign exchange to authorised dealers. The CBN is the largest single supplier of foreign exchange in this market by virtue of the custodian of the external reserves of the country. At this window, spot transaction is carried out twice in a week by auction (every Monday and Wednesday) and value is received in T + 2 days (that is, the transaction day plus two days).

Authorized banks credit their account with the CBN with the Naira equivalent of the foreign currency they intend to buy 48 hours before the auction. Their bids are later submitted to the CBN dealing room by 11am on the bidding day. Such

bids must include the name of customer, RC number, Form 'M' number, address, purpose, amount (USD), rate Naira/US$ (or other currencies of interest), mode of payment, Bank name and code. Any bid rate below the cut off for the action is considered unsuccessful. Authorized banks are permitted to source foreign exchange either in their own or customers' account under the wDAS, but only permitted in their customers' account under the rDAS.

6.2.2 Inter – Bank Foreign Exchange Market

The inter-bank foreign exchange market (IFEM) was first introduced in Nigeria in January 1989 to ease demand pressures in the official foreign exchange market. It was abolished in 1995 and re-introduced in October 1999. The interbank foreign exchange market allows the banks to trade among themselves, while the CBN intervene intermittently to ensure a realistic Naira exchange rate.

The interbank market comprises authorized banks and large institutions interacting and exchanging foreign currencies through the market process of demand and supply. The system is designed to be funded by the private sector (autonomous sources), with the CBN intervening at its discretion to keep the exchange rate at a desired level. Thus, apart from the CBN, other participants in this market include the banks, private oil companies, the Nigerian National Petroleum Corporation (NNPC), and treasuries of big firms, among others.

The interbank market operates by two-way quotes aided by the deal tracker. The CBN intervenes at the interbank. The rate at which the CBN intervenes is the prevailing interbank rate.

6.2.3 Bureaux-de-Change Market

BDCs were introduced in Nigeria in 1989 in order to expand the foreign exchange market and improve small end-users access to foreign exchange for Business Travel Allowance (BTA), Personal travel allowance (PTA), mortgage monthly payments, school fees, medical bills, and credit card payments, among others, subject to a set limit. BDCs act as dealers in the spot market and buy/sell foreign currency with small margin (premium) as returns. They also buy and sell foreign bank notes, and Travellers' Cheque (TCs) from members of the public, banks and the CBN. BDCs rarely buy or sell coins because of the higher cost of storage and shipping compared with banknotes.

One of the risks of BDCs is currency run, where there are more buyers of a currency than sellers or vice versa due to currency speculation. Currency speculation is the feeling or perception by traders that a particular currency is either overvalued or undervalued leading to a rush in demand or supply of such currencies. If the activities of the BDCs are not regulated they could be channels for money laundry to fund terrorist activities.

Nominal Exchange Rate (NER)

Nominal exchange rate is the worth or value of another country's money or currency that can be exchanged for a unit of home country's currency. For example, if the Nigeria naira, say N150.0 can buy $1.0 dollar at a particular time, we can say that the nominal exchange rate is N150.0 to a dollar for that period.

Real Exchange Rate (RER)

Real exchange rate is the nominal exchange rate that is corrected for inflation measures i.e. the ratio of domestic price level to the foreign price level. Using our previous example, say N150.0 is exchanged for $1.0 in Nigeria and inflation rate is 5 and 2 per cent in Nigeria and United States of America (USA) respectively. The RER will be:

$RER = e(P_d/P_f)$

Where

e = nominal exchange rate, which is N150

P_d = Inflation rate in Nigeria

P_f = inflation rate in USA

$RER = 150(5/2) = 150(2.5) = 375$

The interpretation of this result is that though the nominal exchange rate is 150 in Nigeria, the real exchange rate (RER) is 375. This is so because we factor-in inflation rates. If the RER declines, it is said to be appreciating but when it increases, it is said to be depreciating.

Bilateral Exchange Rate (BER)

Bilateral exchange rate is a rate between the monies or

currencies of two countries only. An example is if naira to the dollar rate is N120/$1, this is the rate between Nigeria's naira and United States of America's dollar. The bilateral rate between Nigeria's naira and United Kingdom's Pounds Sterling can also be written as N250/£1 and so on.

Nominal Effective Exchange Rate (NEER)

Nominal effective exchange rate is the rate that compares home country's money or currency to other countries' currencies, especially countries that are trading with it. For example, if we compare the exchange rate of the naira to the currencies of the countries Nigeria trades with such as the United Kingdom, Italy, France, India and so on we would get a single rate called the Nominal Effective Exchange rate. This rate is used to measure how well the naira is doing when compared with the currencies of the other countries.

Real Effective Exchange Rate (REER)

Real effective exchange rate is the nominal effective exchange rate that is corrected by inflation measures, which is the ratio of domestic price level to the price levels in the trading partners' countries. The REER reflects competitiveness of the home country's goods or products when compared with goods produced in other countries it trade with. If the REER declines, it is said to be appreciating but when it increases, it is said to be depreciating.

Fundamental Effective Exchange Rate (FEER)

The fundamental effective exchange rate is also known as

equilibrium real effective exchange rate. This rate is a function of macroeconomic fundamentals and these fundamentals jointly determine the movement in the rate. The external fundamentals include international terms of trade, international transfers including foreign aid, and world real interest rates, while the domestic fundamentals include those variables that are directly affected by policy decisions.

Purchasing Power Parity (PPP)

The basis for PPP is the "law of one price". The law states that in the absence of transportation and other transaction costs, competitive markets will equalize the price of an identical good in two countries when the prices are expressed in the same currency. To put it in simple arithmetic let N1,000.00 be the price of the shoe in Naira and £200.00 the value in pounds sterling of the shoe. The PPP exchange rate would be: N1,000.00/£200 = N5/£

In this case the naira is undervalued if actual exchange rate is N8/£ and overvalued, if the actual exchange rate is N4/£. The difference between the actual and the PPP rate is the inflation and the cost of transportation. PPP is always expressed in terms of a basket of goods and services. It is useful in showing the long run exchange rate and not so useful in determining the short term exchange rate.

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