

Naira devaluation: Impact and implication on the Nigerian economy (1970-2014)

¹ Peter Teru (Ph.D), ² Mohammed A.M Usman

¹ Department of Accounting, Adamawa State University, Mubi Adamawa State, Nigeria

² Department of Economics, Adamawa State University, Mubi Adamawa State, Nigeria

Abstract

The main thrust of this study was to examine the impact and implication of the 'continued' naira devaluation on the Nigerian economy from 1970-2014. Data for the variables used were collected from the CBN statistical bulletin as well as from the database of National Bureau of Statistics. Data collected were analyzed and tested using the ordinary least square (OLS) technique but due to the fact that data are not stationary, a unit root test was employed; it further resorted to granger-causality test so as to test and prove that the variables does not have causal relationship between each other, after which Error Correction Model was also used. From our findings, we discovered that a decrease in the exchange rate value of the naira retards investment in Nigeria, while imports as well as the export affects the GDP negatively because of the lack of diversification in the Nigerian economy and subsequently affect economic growth. It was recommended that the government should focus on diversification, as well as expand technological knowledge and innovations emanating from Nigerians by providing necessary assistance among several other recommendations. This paper concluded that devaluation cannot improve the trade balance in the Nigerian economy. Devaluation can only benefit countries that are originally export based before the devaluation of a currency. For an economy that is structured like that of Nigeria, devaluation will surely complicate the problem at hand, rather than solving it.

Keywords: devaluation, exchange rate system, currency devaluation, import, export

Introduction

Devaluation in Nigeria can be traced back to 1973 when Nigeria devalued her currency by 10% in response to U. S. devaluation that same year. Nigeria's foreign exchange reserves grew by 773.5% in 1974. Thus the impact of the devaluation in the preceding year was valuable in enhancing the foreign exchange asset position of the Nation. Many other factors contributed to the growth of Nigeria's foreign exchange in 1974 amongst which is the increased export of crude oil as a result of the 1973 Arab-Israeli war and the increased oil price negotiated by OPEC. The International Monetary Fund (I.M.F.) allows countries to devalue their currency in order to correct "fundamental disequilibrium" in their balance of payments. Great Britain devalued her currency in 1967. The U. S. devalued in 1973 and France did same in 1969 followed by her 14 Francophone African countries. Devaluation thus is not a new concept and should not be seen as an outlandish and terrible act; it is a permissible method of fixing the exchange value of a currency in light of new supply and demand reality. More recently, the Monetary Policy Committee (MPC) of the Central Bank of Nigeria (CBN) took a decision to devalue the Naira to N168 from N155 to the American Dollar. The devaluation, which was one of the outcomes of the two-day MPC meeting in Abuja headed by the Central Bank of Nigeria (CBN) governor, Godwin Emefiele, came against the backdrop of uneven growth in the global economy, the fall in oil prices and the vulnerability of the domestic economy. The said devaluation of the Naira by CBN, was mainly directed at curbing negative speculations on the Nation's currency, particularly by the banks which have

reportedly been putting so much pressure on the Naira. Whether or not this devaluation yields the expected positive result, the meaning of the concept and its long and short term impact on the Nigerian economy is the focus of this article.

Literature Review and Theoretical Framework

There exists a large body of literature on the devaluation of a nation's currency. With reference to some scholar's view on devaluation, Todaro (1981)^[30], was of the view that "currency devaluation is a deliberate reduction in the official rate at which its Central Bank is prepared to exchange the local currency for dollar is increased". Also, Campbell (2004), defined currency devaluation as "a deliberate downward adjustment in the official exchange rate established by a government against specified standard or another currency". As noted by Venin (1991)^[21], a currency is the reflection of the country in which it is legal tender. It stores all the data about that country and their appraisal. Therefore, a currency is a unique measure of past and future with significant implications on the present. By convention, changes in the value of a currency are measured against the American dollar, so devaluation means a reduction in the dollar price of a unit of foreign currency or, what is the same thing, an increase in the number of units of the foreign currency that can be purchased for a dollar.

The concern of the above scholastic discourse simply mean that devaluation of currency is about stimulating exports and lowering importation of goods and services for the achievement of balanced growth, with the general goal of alleviating poverty, creating a very conducive environment for

private investment in that economy and also to improve the general welfare of the citizens. However, it is suffice to say that the Nigerian situation is a paradox, which tends to cause for this question: does devaluation of currency causes more harm than good to the Nigerian economy?

Meaning of Devaluation

Devaluation is a reduction in the value of a currency with respect to those goods, services or other monetary units with which that currency can be exchanged. It also means official lowering of the value of a country's currency within a fixed exchange rate system, by which the monetary authority formally sets a new fixed rate with respect to a foreign reference currency. Devaluation is a monetary policy tool of countries that have a fixed exchange rate or semi-fixed exchange rate. This definition is by no means exhaustive of the term. A concept which is closely related to devaluation and which is sometimes confused with devaluation of a currency is depreciation. Depreciation and devaluation are sometimes incorrectly used interchangeably although they both refer to values in terms of other currencies. Depreciation is used to describe a decrease in a currency's value (relative to other major currency benchmarks) due to market forces, as against devaluation which is a Federal Government or Central Bank policy action. For depreciation, Central Banks maintain the rates up or down by buying or selling foreign currency, usually but not always USD. Closely related to devaluation is inflation, which is a sustained increase in the general level of prices of goods and services.

Exchange Rate

Exchange rate can be described as the price of the domestic currency in terms of other currencies. There are two basic types of exchange regimes: floating exchange and fixed exchange rate.

Floating Exchange Rate System

A floating regime is one where currencies are allowed to move freely up and down according to changes in demand and supply. Thus, floating exchange rates change freely and are determined by trading in the forex market. This is in contrast to a "fixed exchange rate" regime.

Fixed Exchange Rate System

A fixed exchange rate, sometimes called a pegged exchange rate, is a type of exchange rate regime where a currency's value is fixed against either the value of another single currency, or to a basket of other currencies, or to another measure of value, such as gold. A fixed exchange rate is usually used in order to stabilize the value of a currency by directly fixing its value in a predetermined ratio to a different, more stable or more internationally prevalent currency (or currencies). In doing so, the exchange rate between the currency and its peg does not change based on market conditions. This makes trade and investments between the two currency areas easier and more predictable, and is especially useful for small economies in which external trade forms a large part of their GDP. In a fixed exchange-rate system, a country's central bank typically uses an open market mechanism and is committed at all times to buy and/or sell its

currency at a fixed price in order to maintain its pegged ratio and, hence, the stable value of its currency in relation to the reference to which it is pegged. The central bank provides the assets and/or the foreign currency or currencies which are needed in order to finance any payments imbalances.

Types of fixed exchange rate systems

The Gold Standard

Under the gold standard, a country's government declares that it will exchange its currency for a certain weight in gold. In a pure gold standard, a country's government declares that it will freely exchange currency for actual gold at the designated exchange rate. This "rule of exchange" allows anyone to go the central bank and exchange coins or currency for pure gold or vice-versa. The gold standard works on the assumption that there are no restrictions on capital movement's or export of gold by private citizens across countries.

The central bank must always be prepared to give out gold in exchange for coin and currency upon demand, and must therefore always maintain gold reserves. Thus, this system ensures that the exchange rate between currencies remains fixed. For example, under this standard, a £1 gold coin in the United Kingdom contained 113.0016 grains of pure gold, while a \$1 gold coin in the United States contained 23.22 grains. The mint parity or the exchange rate was thus: $R = \$/\text{£} = 113.0016/23.22 = 4.87$. [6] The main argument in favor of the gold standard is that ditties the world price level to the world supply of gold, thus preventing inflation unless there is a gold discovery (a gold rush).

Gold Exchange Standard

The fixed exchange rate system set up after World War II was a gold-exchange standard, as was the system that prevailed between 1920 and the early 1930s. A gold exchange standard is a mixture of a reserve currency standard and a gold standard. Its characteristics are as follows:

All non-reserve countries agree to fix their exchange rates to the chosen reserve at some announced rate and hold a stock of reserve currency assets. The reserve currency country fixes its currency value to a fixed weight in gold and agrees to exchange on demand its own currency for gold with other central banks within the system, upon demand. Unlike the gold standard, the central bank of the reserve country does not exchange gold for currency with the general public, only with other central banks.

Determinants of Naira devaluation

Currency devaluation usually comes about when some determination is made that the domestic currency is overvalued relative to major world currencies. The impact of Naira devaluation in the Nigerian economy depends on many factors which include:

- **Competitiveness Advantage:** If the country has lost its competitiveness advantage in a fixed exchange rate, devaluation could be beneficial in solving that decline in competitiveness and help to restore competitiveness and economic growth.
- **The state of business cycle of the economy:** In a recession era, devaluation can help boost growth without causing inflation. Whereas, in a time of boom, a

devaluation is more likely to cause inflation in the economy. In other words, the state of the global economy matters.

- **Elasticity of demand for exports and imports:** A devaluation of a country's currency may take a long while to improve the current account base because demand is inelastic in the short term. If demand is price inelastic, a fall in the price of exports will lead to only a small rise in quantity. Therefore, the value of exports may actually fall. As such, when devaluation becomes necessary, its impact is expected to be felt in the long run. Because in the short term, demand may be inelastic, but over time demand may become more price elastic and have a bigger effect.
- **Capital Flight:** This has also been seen as a factor; as foreign investors run shy of currencies in emerging markets exposed to oil price turbulence.
- **Inflation:** The effect on inflation will depend on other factors such as; Spare capacity in the economy. E.g. in a recession, a devaluation is unlikely to cause inflation. Import prices are not the only determinant of inflation. Other factors affecting inflation such as wage increases may be important.

The reasons for Naira Devaluation

Almost all the countries of the world have devalued their currencies from time to time to achieve certain economic objectives. Following are the main reasons why a country like Nigeria would adopt to devalue its currency:

1. **To Encourage Exports:** Devaluation policy is adopted to increase the exports of the country. As the currency of any country is devalued, the commodities of that country become cheaper for the other countries and they increase their demand.
2. **To Discourage Imports:** As the currency of any country is devalued the other countries goods becomes costly to import from that country. So the people reduce their demands for foreign goods.
3. **To Correct Balance of Payment:** When the balance of payment of any country is unfavorable the devaluation policy is adopted. When the currency is devalued, the value of imports increases but the value of exports will be greater than the value of imports; we will say that the balance of payment is favourable. An improvement in the current account on the Balance of Payments depends upon the Marshall Lerner condition and the elasticity of demand for exports and imports.

Therefore, Nigeria may wish to devalue its Naira so as to combat trade imbalances. Devaluation causes a country's exports to become less expensive, making them more competitive on the global market. This in turn means that imports are more expensive, making domestic consumers less likely to purchase them.

Although, as Abolaji (2014) ^[1], a Lagos economist, said on a daily trust newspaper that "devaluation made sense as it aimed to boost local industries by keeping import prices high. But this is not the case in Nigeria because we depend on imports. We import virtually everything we need in this country, from toothpicks to cars." From another observation in 2014, a weak local currency could trigger inflation, said Denja Yaqub, from the Nigeria Labour Congress (NLC), adding: "People will

have to pay more for goods and services."

Devaluation in Modern Times

Present day currencies are usually fiat currencies with variable market value. Some countries hold floating exchange rates while others maintain fixed exchange rate policies against other major currencies such as the United States Dollar, European Euro or British Pound Sterling. These fixed rates are usually maintained by a combination of legally enforced capital controls or through government trading of foreign currency reserves to manipulate the money supply. Under fixed exchange rates, persistent capital outflows or trade deficits may lead countries to lower or abandon their fixed rate policy, resulting in devaluation (as persistent surpluses and capital inflows may lead them towards revaluation). In an open market, the perception that devaluation is imminent may lead speculators to sell the currency in exchange for the country's foreign reserves, increasing pressure on the issuing country to make an actual devaluation. When speculators buy out all of the foreign reserves, a balance of payments crisis occurs. Economists such as Paul Krugman and Maurice Obstfeld present a theoretical model in which they state that the balance of payments crisis occurs when the real exchange rate (exchange rate adjusted for relative price differences between countries) is equal to the nominal exchange rate (the stated rate). In practice, the onset of crisis has typically occurred after the real exchange rate has depreciated below the nominal rate. The reason for this is that speculators do not have perfect information; they sometimes find out that a country is low on foreign reserves well after the real exchange rate has fallen. In these circumstances, the currency value will fall very far very rapidly. This is what occurred during the 1994 economic crisis in Mexico.

Generally, a steady process of inflation is not considered as devaluation, although if a currency has a high level of inflation, its value will naturally fall against foreign currencies. Especially where a country deliberately prints money (often a cause of hyperinflation) to cover a persistent budget deficit without borrowing, this may be considered devaluation. In some cases, a country may revalue its currency higher (the opposite of devaluation) in response to positive economic conditions, to lower inflation, or to please investors and trading partners. This would imply that existing currency increased in value, as opposed to the case with redenomination where a country issues a new currency to replace an old currency that had declined excessively in value (such as Turkey and Romania in 2005, Argentina in 1992, Russia in 1998, Germany in 1923, or Bizone/Trizone in 1948, Ghanain 2007) reported by World Bank (2010). ^[32]

Exchange Rate Management in Nigeria

The exchange rate is usually determined in principle by the interplay of supply and demand in a free market economy. In practice, however, no currency is allowed to float freely by the monetary authorities. In Nigeria, past exchange rate policies have been designed towards demand management, as the supply side has always been limited by the monoculture base of the economy, where foreign exchange inflow is dominated by oil export proceeds. The main objective of exchange rate policy in Nigeria are to preserve the international value of the

domestic currency; maintain a favourable external reserve position; and ensure external balance without compromising the need for internal balance and the overall goal of sustainable output growth and employment in determining the daily exchange rate, the CBN is generally guided by the developments in the market on the one hand, and the movement in the nominal exchange rate. Exchange rate arrangement in Nigeria have gone from a fixed regime in the 1960s to a pegged regime between the 1990s and the mid-1990s and finally, to the various variants of the floating regime from 1986 with the deregulation and the adoption of the structural Adjustment Programme (SAP). A managed floating exchange rate regime, without any strong commitment to defending any particular parity, has been the most predominant of the floating system in Nigeria since the SAP. Following the failures of the variants of the flexible exchange rate mechanism (the AFEM introduced in 1995 and the IFEM in 1999) to ensure exchange rate stability, the Dutch Auction System (DAS) was re-introduced in July 22, 2002. The DAS was not to serve the triple purposes of reducing the parallel market premium, conserve the dwindling external reserves and achieve a realistic exchange rate for the naira. The DAS helped to stabilize the Naira exchange rate, reduce the widening premium, conserve external reserve and minimize speculative tendencies of authorized dealers.

In order to further liberalize the market and narrow the arbitrage premium between the official inter-bank and bureau de change segments of the markets and achieve convergence, the CBN introduced the Wholesale Dutch Auction System (WDAS) on February 20, 2006. This was meant to consolidate the gains of the Retail Dutch Auction System as well as deepen the foreign exchange market in order to evolve a realistic rate of the Naira. Under this arrangement, the authorized dealers were permitted to deal in foreign exchange on their own accounts for onward sale to their customers. According to Investopedia, a Dutch Auction System is a public offering auction structure in which the price of the offering is set after taking in all bids and determining the highest price at which the total offering can be sold. In this type of auction, investors place a bid for the amount they are willing to buy in terms of quantity and price. For example, the CBN offers foreign currency twice a week to keep the naira within a range of three percentage points above or below N168 per dollar. During its auction, CBN offers a total dollar sale of \$200m. Authorized dealers who have various needs for dollars approach the auction for dollar purchase. During the auction each authorized dealer makes an offer that may be below the N168/\$1 or above it depending on the forces of demand and supply. Therefore if there are more bids above the CBN's preferred N168 those bidders get to buy dollars while those who bid below lose out and vice versa. WDAS is an acronym for the Wholesale Dutch Auction System. It is a subset of the Dutch Auction System whereby the CBN receives bids from Authorized Dealers for purchase of forex. The Authorized Dealers on behalf of Bureau de Change (BDC) and other end users of forex (like companies, importers etc) will submit bids to the CBN for purchase of forex during an auction. Once their bids are successful they then sell the dollars to the BDCs and other end users. The Retail Dutch Auction System (RDAS) as the name implies is a direct sale

of Forex by the CBN through the banks to the end users of the forex. Unlike the WDAS, the RDAS is based solely on actual demand of forex by the end users of the forex. As such, the authorized dealers will only bid for forex based on the number of actual request it has received from its end users. One significant difference between RDAS and WDAS is that:

1. Under the retail DAS, end-users were allowed to bid through their banks.
2. Under the WDAS, authorized dealer banks, bid on their accounts and the successful banks would then sell to their customers.

Currently Nigeria operates the Retail Dutch Auction System which was resurrected in October 2, 2013 to replace the repeatedly failed wholesale DAS (WDAS). The reintroduction of the RDAS is an effort by the CBN to micro-manage the sale and utilization of forex in Nigeria.

Impact of Devaluation on Nigerian Economy

Devaluating a currency is decided by the government issuing the currency, and unlike depreciation, is not the result of non-governmental activities. One reason a country may devalue its currency is to combat trade imbalances. Devaluation causes a country's exports to become less expensive, making them more competitive on the global market. This in turn means that imports are more expensive, making domestic consumers less likely to purchase them. While devaluating a currency can seem like an attractive option, it can have negative consequences. By making imports more expensive, it protects domestic industries who may then become less efficient without the pressure of competition. Higher exports relative to imports can also increase aggregate demand, which can lead to inflation. Whether deliberate or as a result of market climate, currency devaluation reduces the price of a country's domestic output. This has the potential to benefit the economy by helping to increase its export volume. The decision to devalue the Naira, according to CBN governor, Godwin Emefiele, is mainly directed at curbing negative speculations on the nation's currency, particularly by the banks which have reportedly been putting so much pressure on the naira. In real terms, the devaluation amounts to 8.38% of the Naira. Further explaining the rationale for the decision, Emefiele said the level of excess liquidity in the banking system made the step imperative. To achieve this, the naira had to be devalued by moving the mid-point of the official window of the foreign exchange (forex) market by 100 basis points from 12 percent to 13 percent. In doing so, the CBN hopes to tighten the monetary policy framework by allowing some flexibility in the exchange rate, as well as stem speculative activities and depletion of foreign reserves which, as at October, had fallen to N37.1 trillion. With this devaluation, business parameters in the country are likely to be adversely affected. Inflation will increase, while the purchasing power of the people will reduce. It is also likely to fuel unemployment. Even though this devaluation may signal the commitment of the CBN to assert its operational independence to foreign investors, the greater worry is that the much-expected expansion of the economy may be far away, considering the far-reaching negative implications of currency devaluation, such as increased cost of production, with its resultant lower profit margins for companies and higher cost of services and goods,

especially imported ones. This will inevitably affect the general wellbeing of the people.

The impacts and Effect of devaluation can be summarized as follows:

1. **Exports cheaper:** A devaluation of the exchange rate will make exports more competitive and appear cheaper to foreigners. This will increase demand for exports
2. Imports more expensive. Devaluation means imports will become more expensive. This will reduce demand for imports
3. **Increased Aggregate Demand (AD):** Devaluation could cause higher economic growth. Part of AD is (X-M) therefore higher exports and lower imports should increase AD (assuming demand is relatively elastic). Higher AD is likely to cause higher Real GDP and inflation.
4. **Inflation is likely to occur because:** Imports are more expensive causing cost push inflation. The high import prices would reduce demand for foreign goods and curtail our expenditure of foreign exchange to service a high import bill. Inflationary consequences of devaluation can be mitigated by the use of additional fiscal and monetary controls to mop up domestic liquidity
5. **Improvement in the current account:** With exports more competitive and imports more expensive, we should see higher exports and lower imports, which will reduce the current account deficit.
6. **Increased Employment Opportunities:** With an increased demand from exports, local industries will require more hands to meet up with its improved production.

Effects of the continued naira devaluation on the household, business and the economy

The continued volatility in the Naira will prove disastrous to the Nigerian economy. Although the Central Bank of Nigeria (CBN) has implemented several measures to slow the devaluation, it appears none of the measure has worked thus far. There appears to be panic in the forex market either due to real concerns or fears spread by speculators. It appears as thus, the world economic crisis and fall in the oil price is hitting the Nigerian economy with unyielding vigour. The full ripple effects of the current devaluation of the Naira will eventually be felt throughout the Nigerian economy as the country is a net importer of product as opposed to a net exporter. Majority of the basic goods (consumables and non-consumables) sold in are imported from overseas. Therefore as the Naira continues to free fall, the wholesalers and retailers of goods will have to adjust the prices of their products upwards to reflect the amount being paid for these goods. The problem is that this devaluation will eventually curtail foreign investments and if the current trend continues, it will truly give any investor a pause before investing in because it appears that at the current rate of volatility of the Naira there is no investment in that will produce a good return on investment.

Although the Governor of the CBN has been doing his best to curtail the free fall of Naira, we believe that more has to be done because the continued devaluation of the Naira will have a far reaching negative impact than the havoc the collapse of the capital markets has ripped on the Nigerian economy. If the

current situation is not checked we might be viewing stagflation in our future because Nigerian economy doesn't seem to be growing but prices for goods will skyrocket due to importers passing the increased prices to consumers.

Countries devalue their currencies only when they have no other way to correct past economic mistakes or problems forced on them by unforeseen circumstances. In the case of the precipitous decline in crude oil prices has significantly limited the amount of foreign currency that Nigeria receives from the sale of petroleum. Since majority of the goods utilized in the country are imported, the demand for foreign currency appears to be exceeding the rate at which the country. Foreign reserve is being replenished.

Therefore, as Nigeria is concerned, it is expected to step up its measures on scaling through this problem of continued devaluation or possibly face a danger of resulting into an economic crisis which will further dim the value of the Naira in the international market thereby chasing both foreign and local private investors away and also contribute to high demand for foreign currency which is used to purchase goods that are not manufactured domestically thereby depleting the country's foreign exchange reserves and stagnating or resulting to a decline in the growth of the economy.

On a concise note, the effects can be briefly summarized to be the following:

- Rise in airfares for major international routes
- Increase in the cost of imported products
- Increase to the cost of goods and services
- Greater difficulty in paying external debts
- Investors would require higher returns to compensate for the inflation
- The CBN may raise interest rates to fight off inflation

Implication of 'continued' naira devaluation

Individuals, firms or organization tends to experience varying impact of the money devaluation in an economy, as such the only economic agent that may remain safer from the Naira devaluation action are the ones who held on to assets rather than the Naira. People who have houses, lands, stocks, domiciliary accounts, foreign bank accounts and so on are the ones who would hardly feel the pain of Naira devaluation. While devaluating a currency can seem like an attractive option, it can have negative consequences. By making imports more expensive, it protects domestic industries who may then become less efficient without the pressure of competition. Higher exports relative to imports can also increase aggregate demand, which can lead to inflation.

Whether deliberate or as a result of market climate, currency devaluation reduces the price of a country's domestic output. This has the potential to benefit the economy by helping to increase its export volume. The decision to devalue the Naira, according to CBN governor, Godwin Emefiele, is mainly directed at curbing negative speculations on the nation's currency, particularly by the banks which have reportedly been putting so much pressure on the naira. In real terms, the devaluation amounts to 8.38% of the Naira.

Also, chances are that if the Naira continues to lose value, the labour union will demand for a salary increase and the cost of things in Nigeria such as food, books, housing and so on will also increase thereby leading to a drastic reduction in the level

of investment from the private sector, which will certainly affect the public sector as well and also, reduce the standard of living of the citizens by inducing hardship upon them.

The impacts of devaluation can be summarized as follows;

1. Exports become cheaper: A devaluation of the exchange rate will make exports more competitive and appear cheaper to foreigners. This will increase demand for exports.
2. Imports more expensive. Devaluation means imports will become more expensive. This will reduce demand for imports.
3. Increased Aggregate Demand (AD): Devaluation could cause higher economic growth. Part of AD is (X-M) therefore higher exports and lower imports should increase AD (assuming demand is relatively elastic). Higher AD is likely to cause higher Real GDP and inflation.
4. Improvement in the current account: With exports more competitive and imports more expensive, we should see higher exports and lower imports, which will reduce the current account deficit.
5. Increased Employment Opportunities: With an increased demand from exports, local industries will require more hands to meet up with its improved production.

Theoretical framework

There have been several theories and analysis in the economic literature that examine the effect of devaluation of an economy's currency e.g. the Naira on the trade balance between the public and private sector of the economy. The prominent theoretical analysis considered in this study include: the elasticity approach, monetary approach and absorption approach. The elasticity approach was propounded by Robinson (1947) and Metzler (1948) [20] and popularized by Krueger (1983) [18] which says that transactions under contract completed during the period of devaluation may affect the trade balance negatively in the short run but over time export and import quantities adjust which give rise to elasticities of exports and imports to increase and quantities to adjust. As a result of this, the foreign price of the devaluing country's export is reduced and increase the price of imported goods which directly reduces the demand for imports at the long run the trade balance improves. This theory clearly states that the effect of devaluation is dependent on the elasticity of exports and imports.

The main view of the monetary analysis to the effect of devaluation is that balance of payment is a monetary phenomenon (Frenkel and Johnson, 1977). Any excess demand for goods, services and assets, could lead to a deficit in the balance of payments; reflects an excess supply of or demand for the stock of money. Accordingly, the balance of payments behavior should be analyzed from the point of view of money supply and demand. The monetarist view is based on the argument that devaluation reduces the real value of cash balances and changes in relative price of traded and non-traded goods, and causes the trade balance to improve (Miles 1979) [22]. However, higher import prices after devaluation may contribute to higher overall domestic prices of non-traded good and then impact negatively on the trade balance.

Under the Absorption/Switching Analysis to the Effect of Devaluation, authors such as Harberger (1950) [13], Meade

(1951) [19],) came to be part of a new body of analysis known as the absorption approach to the balance of payments (Krueger, 1983) [18]. Johnson (1967) [16] and popularized by Miles (1979) [22], posits that the devaluation of a country's currency may cause the terms of trade to deteriorate, switching expenditure away from foreign goods to domestically produced ones, and thereby improving the trade balance of that country expenditure switching effect. According to Henan (1998) [14] this approach shifted focus of economic analysis to the balance of trade and solved most of the problems of the economic aggregate.

Dependency Theory aptly captured this study when adopted to mean an economic system where one country relies upon another for the purpose of its economic growth and development. The underlining tune in this dependency theory is economic relationship. The dependent nations as referred to in this theory are the peripheries or less developed nations (LDCs). The theory holds that the economic policies that regulate the economic activities of the less developed nations are externally formulated and dictated by the developed countries (DCs). In this case, the policies flow from the developed countries to the less developed ones, thereby creating room for slope sidedness. That is, a situation that represents master- servant relationship between the developed and less developed nations since the less developed nations are fenced out in the making of the existing global economic policies.

Methodology

This study employs econometric method of the Ordinary Least Square (OLS) in the analysis of the long run relationship between Exchange rate, Export, Import and Gross Domestic Product (GDP). The reason for the use OLS is based on its Best Linear Unbiased Estimator (BLUE) when compared with other estimators. After which, unit root test is conducted on the series to ascertain if they are stationary and Granger Causality test follow suit, to also ascertain whether there is any causal relationship between each of the variables under study. Thereafter, Error Correction Model (ECM) was adopted to causality observed in the variables under study. These models now form the basis for our analysis. The hypotheses are tested using the statistical and econometric tools. The Data required for this study are Gross domestic product (proxy for economic growth), Import, Export and Exchange rate. Further, the data were sourced from making use of secondary data. The data include data from journals especially CBN's economic and financial review papers, brief, occasional papers, annual reports and statistical bulletins and economic reports. Others are text books, newspapers and journals.

Model Specification

The models intended to be used for this study are based on the statistical technique employed for analysis. Hence, the models formulated for the study are specified below:

Model 1: Augmented Dickey Fuller Test

ADF equation 1 (with intercept only)

$$\Delta Y_t = \beta_1 + \lambda Y_{t-1} + \alpha_i + \epsilon_t$$

ADF equation 2 (with trend and intercept)

$$\Delta Y_t = \beta_1 + \beta_{2t} + \lambda Y_{t-1} + \alpha_i + \epsilon_t$$

ADF equation 3 (with no trend and no intercept)

$$\Delta Y_t = \lambda Y_{t-1} + \alpha_i + \varepsilon_t$$

Model 2: OLS Regression Model

Hypothesis one:

Null: There is no significant relationship between the exchange rate and GDP

GDP = f (EXCH) Theoretical Specification

GDP = $\beta_0 + \beta_1 EXCH + \mu$ Econometric Specification

A priori Expectation: $\beta_1 < 0$

Where:

GDP => Gross Domestic Product EXCH => Exchange Rate

β_0 and β_1 => Coefficients

μ => Error term or Residual

Hypothesis two:

Null: There is no significant relationship between the foreign trade and GDP

GDP = f (IMP, EXP) Theoretical Specification

GDP = $\beta_0 + \beta_1 IMP + \beta_2 EXP + \mu$ Econometric Specification

A priori Expectation: $\beta_2 < 0$ while $\beta_3 > 0$

Where:

GDP => Gross Domestic Product IMP => Import EXP => Export

$B_0 - \beta_2$ => Coefficients μ => Error term or Residual

Model 3: Granger Causality Test

GDP vs Exchange rate

$GDP_t = C_1 + EXCH_{t-1} + C_2 * GDP_{t-j} + U_{1t}$

$EXCH_t = C_3 + EXCH_{t-1} + C_4 * GDP_{t-j} + U_{2t}$

GDP vs Export

$GDP_t = C_5 + EXP_{t-1} + C_2 * GDP_{t-j} + U_{3t}$

$EXP_t = C_7 + EXP_{t-1} + C_2 * GDP_{t-j} + U_{4t}$

GDP vs Import

$GDP_t = C_9 + IMP_{t-1} + C_2 * GDP_{t-j} + U_{5t}$

$IMP_t = C_{11} + IMP_{t-1} + C_2 * GDP_{t-j} + U_{6t}$

Exchange rate vs Export

$EXCH_t = C_{13} + EXP_{t-1} + C_2 * EXCH_{t-j} + U_{7t}$

$EXP_t = C_{15} + EXP_{t-1} + C_2 * EXCH_{t-j} + U_{8t}$

Exchange rate vs Import

$EXCH_t = C_{17} + IMP_{t-1} + C_2 * EXCH_{t-j} + U_{9t}$

$IMP_t = C_{19} + IMP_{t-1} + C_2 * EXCH_{t-j} + U_{10t}$

Export vs Import

$EXP_t = C_{21} + IMP_{t-1} + C_2 * EXP_{t-j} + U_{11t}$

$IMP_t = C_{23} + IMP_{t-1} + C_2 * EXP_{t-j} + U_{12t}$

Model 4: Error Correction Model

The Error Correction model is specified thus:

$D(GDP) = \beta_0 + \beta_1 D(EXCH) + \beta_2 D(EXPORT) + \beta_3 D(IMPORT) + \beta_4 U_{t-1} + \varepsilon_t$

Where:

D is equal to the first difference of the respected variables

$\beta_1 - \beta_3$ are the coefficients showing the short run equilibrium relationship connecting the independent and the dependent variable.

β_4 is equal to the coefficient showing the long run relationship connecting the explanatory variables and the dependent variables. It has an a priori expectation sign of minus.

U_{t-1} is the residual obtained from the linear regression of the I(1) variables and lagged by one as expected in the granger representation theorem.

Lastly, ε_t is the disturbance term of the model.

The estimation of all the models was done using the E-views 8.1 package.

Data Analysis and Discussion of Findings

In order to validate or reject the hypotheses formulated in this study, there is the need to test such hypotheses and thus, arrive at valid conclusions. The data employed in this study include series on Gross Domestic Product, Exchange Rate, Import and Export. The period spans from 1970 to 2014. Meanwhile, the hypotheses of this study are as follows: there is no significant relationship between Exchange Rate and Gross Domestic Product; and there is no significant relationship between Foreign Trade and Gross Domestic product.

Data Analysis and Discussion of Findings

Model 1: ADF test

In order to avoid the possibility of spurious regressions from the OLS, it is very important to check the variables used for stationarity. Therefore, to test for stationarity, the study adopted the Augmented Dickey Fuller (ADF) 1989 unit root test. The regression equation is of the form:

$\Delta X_t = \alpha_0 + X_{t-1} + \alpha_2 \Delta_{t-1} + \alpha_3 t + e_t$

To test for a unit root in the regression, we test the coefficient of X_{t-1} .

All the variables: GDP, EXCH, EXPORT and IMPORT were found to be non-stationary at level but after first difference, they all became stationary. Below is the analysis of the ADF test of equation 2 (with trend and intercept) on the variables:

Table 1: Summary of ADF test on all variables at 5% critical value

Variable	P-value	Critical value (Mackinnon)	t-Statistics	Lags	Null Hypothesis	Decision
DGDP	0.0000	-3.520787	-6.320067	09	DGDP has unit root	Reject null hypothesis
DEXCH	0.0000	-3.518090	-6.232917	09	DEXCH has unit root	Reject null hypothesis
DEXPORT	0.0091	-3.548490	6.571850	09	DEXPORT has unit root	Reject null hypothesis
DIMPORT	0.0000	-3.520787	-6.063138	09	DIMPORT has unit root	Reject null hypothesis

Source: Researchers' computation on ADF test using eviews 8.1

From table 1 above, which present a summary of the result of ADF test conducted to check the stationary level of the variables, the result of the unit root test at first difference

shows all variables employed in the study became stationary or have no unit root as shown on the decision column where all the null hypothesis were rejected and alternative hypothesis

accepted, meaning all variables were found out to be stationary because the p-value is less than 5%, also, the t-statistics (after taking absolute value) became greater than the critical value which is the decision full for the rejection of null and acceptance of Alternative hypothesis.

Model 2: OLS Regression model

Hypothesis one

H₀: There is no significant relationship between exchange rate and gross domestic product in Nigeria.

H₁: There is significant relationship between exchange rate and gross domestic product in Nigeria.

A priori Expectation: $\beta_1 < 0$ (i.e. the coefficient of exchange rate should be negative.)

Ordinary least square (OLS) multiple regression was used to test this hypothesis. The result was presented in the table below.

Table 2: Regression result of the relationship between exchange rate (EXCH) and gross domestic product (GDP) Dependent Variable: DGDP

Variables	Coefficients	Std. Error	T Statistics	Sig.
(Constant)	22.26857	5.883722	3.784776	0.0005
DEXCH	-0.076872	0.480067	-0.160127	0.8736

Source: Researchers' computation on regression result in eviews 8.1

$R^2 = 0.080625$

Adj. $R^2 = 0.023750$

F (3, 24) = 0.025641

Prob (F-statistics) = 0.873567

DW= 1.829288

The result in Table 2 above shows an R^2 value (coefficient of multiple determinants) of 0.080625. This implies that only 8% per cent changes in the dependent variable GDP is caused by changes in the independent variables of exchange rate. This means that exchange rate fluctuation is not a good determinant of GDP. It therefore means that the remaining 92 per cent is caused by other variables not found in the equation but indicated by the error term.

The adjusted R^2 value of 0.023750 means that the model is only 2.35 per cent goodness fit. The F-value of 0.0256 which is lower than the critical F-value of 3.14 goes to confirm that there exist a significant relationship between the dependent variable of GDP and the independent variable of exchange rate. The estimated coefficient for exchange rate is negative, indicating that there exist an inverse relationship between exchange rate and GDP. This means that when exchange rate increases, GDP will then decrease. The result is in order with economic theory because once there is an increase in the exchange rate in Nigeria, more amount of the Naira needs to be paid to acquire imported goods which are mostly what Nigerians engage in, we import more than we export. The result of the probability value of exchange rate shows the

variable (at short-run) is not statistical significant in explaining GDP.

Hypothesis two

H₀: There is no significant relationship between foreign trade and gross domestic product in Nigeria.

H₁: There is significant relationship between foreign trade and gross domestic product in Nigeria.

A priori Expectation: $\beta_1 < 0$ $\beta_2 > 0$ (i.e. the coefficient of import should be negative and that of export should be positive.)

Ordinary least square multiple regression was used to test this hypothesis. The result was presented in the table below.

Table 3: Regression result of the relationship between foreign trade (EXPORT and IMPORT) and gross domestic product (GDP) Dependent Variable: DGDP

Variables	Coefficients	Std. Error	T Statistics	Sig.
(Constant)	19.15892	5.968649	3.209925	0.0026
DEXPORT	-0.007028	0.010520	0.668122	0.0479
DIMPORT	-0.001568	0.014482	0.108275	0.0143

Source: Researchers' computation on regression result in eviews 8.1

$R^2 = 0.743221$

Adj. $R^2 = 0.861801$

F (3, 24) = 4.903462

Prob (F-statistics) = 0.032712

DW= 1.971673

The result in Table 3 above shows an R^2 value (coefficient of multiple determinants) of 0.743221. This implies that the proportion of the variation in foreign trade that is explained by Export and import is 74.32% which means that foreign trade fluctuation is a good determinant of GDP. It therefore means that the remaining 25.68 per cent is caused by other variables not found in the equation but indicated by the error term.

The adjusted R^2 value of 0.861801 means that the model is 86.18 per cent goodness fit. The F-value of 4.903462 which is greater than the critical F-value of 3.14 goes to confirm that there exist an significant relationship between the dependent variable of GDP and the independent variable of exchange rate. The estimated coefficient for import and export is negative, indicating that there exist an inverse relationship between import and export on the GDP. This means that when export and import increases, GDP will then decrease. The result is in order with economic theory for import but not for export. The result of the probability value of foreign trade (p value of F-statistics) shows the variables are jointly statistical significant in explaining GDP.

Model 3: Granger Causality test

This test was conducted to understand the level of causality in the variables under study. The result of the test is presented in the table below:

Table 4: A summary of the Granger Causality test on all variables.

Direction of causality	p-value	Lags	Decision	Outcome
DGDP vs DEXCH	1.0000	09	Do not reject null	DGDP does not cause DEXCH
DEXCH vs DGDP	0.9999	09	Do not reject null	DEXCH does not cause DGDP
DGDP vs DEXPORT	1.0000	09	Do not reject null	DGDP does not cause DEXPORT
DEXPORT vs DGDP	0.9013	09	Do not reject null	DEXPORT does not cause DEXCH

DGDP vs DIMPORT	0.9998	09	Do not reject null	DGDP does not cause DIMPORT
DIMPORT vs DGDP	0.9185	09	Do not reject null	DIMPORT does not cause DEXCH
DEXCH vs DEXPORT	0.0211	09	Reject null	DEXCHdoes cause DEXPORT
DEXPORT vs DEXCH	0.0601	09	Do not reject null	DEXPORT does not cause DEXCH
DEXCH vs DIMPORT	0.3508	09	Do not reject null	DEXCHdoes not cause DIMPORT
DIMPORT vs DEXCH	0.6106	09	Do not reject null	DIMPORT does not cause DEXCH
DEXPORT vs DIMPORT	0.0011	09	Reject null	DEXPORT does cause DIMPORT
DIMPORT vs DEXPORT	0.0007	09	Reject null	DIMPORT does cause DEXPORT

Source: Researchers' computation on Granger Causality test in eviews 8.1

From table presented above, the researchers observed that almost all the variables does not cause each other except for 3 occasions where exchange causes export and import and export causing each other.

Model 4: Error Correction Model

Error Correction Model (ECM) was conducted so as to correct for the causality existing from the Engle Granger causality test and to also to ensure the regression model is not a spurious one. Therefore, the result of the Error Correction Model is presented below:

Table 5: Result from Error Correction Model Dependent Variable: DGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	19.72840	6.618726	2.980694	0.0051
DEXCH	-0.017811	0.497109	-0.035829	0.9716
DEXPORT	0.006850	0.010992	0.623172	0.5370
DIMPORT	0.001566	0.015014	0.104318	0.9175
U(-1)	-0.024517	0.168767	-0.026764	0.0088

Source: Researchers' computation on Error Correction Model in eviews 8.1

After estimating the ECM, short run coefficient (β_1 , β_2 , and β_3) of the respective variable were found out to be -0.0178, 0.0068 and 0.0015 which are all not significant in explaining GDP at the short run. The coefficient of the error term was found to be -0.0245 meaning that the system corrects its previous period disequilibrium at a speed of 2.45% annually. The error term was tested of unit root using Augmented Dickey Fuller to understand whether it is stationary or not. The test statistics was found to be -6.22 (but the absolute value is taken) hence, it is greater than the Engle Granger critical value at 5% (3.34), hence, the alternative hypothesis should be accepted, implying the residual is stationary, which means that GDP, Exchange rate, export and import have a long run relationship and also that the model is not a spurious one. Moreover, the sign of β_4 which is negative and significant indicate the validity of long run equilibrium relationship between GDP, Exchange rate, Export and Import. After estimating the error correction model, we progressed to check the Breusch Godfrey serial correlation LM test and observed that the model is free from serial correlation which is highly desirable because the probability value of F-statistics and chi-square are 5%, thereby the null hypothesis of no serial correlation is accepted.

Discussion of Findings

From the analysis conducted, the researchers observed that at level, all three variables were non-stationary but after first

differencing, all the variables became stationary. From the regression result, the researchers understood that exchange rate exerts negative effect on the GDP and it was observed insignificant in explaining GDP mostly, due to the fact that the exchange rate is only affecting the GDP at current price and not at constant price. Another reason observed is that the Nigerian economy re highly dependent on import, hence, devaluation affect the nation negatively. Also, the researchers observed that foreign trade is significant in explaining GDP but the import and export rate have negative effects on the GDP possibly because Nigeria depends on import to produce good for export, hence, affecting GDP negatively.

The variables were observed to be free from causality except on three occasions where import and export causes each other and the exchange rate causes export. After conducting a test to correct the errors of the model, the researchers observed that the model is not spurious and at the short run, all variables could not explain GDP but the residual which was found to validate the model prove that at the long run, equilibrium relationship between GDP, Exchange rate, Export and Import tends to exist, meaning the variables have a long run relationship and not a short one. After which, a serial correlation was conducted and the result was that the model was free from autocorrelation after first differencing.

Conclusion

In conclusion, history has proved quite effective in identifying the importance of devaluation amid economic crisis in an economy, which tends to contribute to finding possible solution to such economic crisis at the long run. The interesting question that arises what happens in the short run? The argument for devaluation is that, the pain can occur relatively quickly. A big currency devaluation instantly hits consumer purchasing power and reduces wages, purchases of foreign goods quickly fall because prices of foreign goods quickly soar etc.

Nevertheless, I belief that certainly not painlessly, Nigeria will become a better economy in the near future with a mega improved public and private sector and possibly, requests from international investors seeking to invest in Nigeria, will be trooping into the country in the nearest future.

Recommendations

Considering the persistent problem of Naira devaluation and

its in-humane consequences on both public and private sector of the economy since from 1970 to date, the following are recommended to the government of Nigeria, so as to bring ease to the suffering populace with regards to currency devaluation:

- **Higher productivity:** Nigeria as a country needs to step up its productive capacity in producing goods and services needed both locally for domestic consumption and abroad for export.
- **Low dependence on import:** If the productivity increases and Nigeria produces home made goods to replace the foreign goods, then the large dependence on imports and foreign goods should reduce.
- **Employment opportunity:** There is a vast unemployment in virtually all fields of life in Nigeria, for the impact of devaluation to be favourable, both public and private sector should suffice a way of employing more personnels into its services thereby reducing unemployment which will improve productivity, reduce dependence and improve the standard of living.
- **Expansion of technical knowledge/Innovations:** Since Nigeria have its indigenous innovations which requires upgrading to meet up with the international standard, then as a means to reduce dependence on import, government should expand this indigenous innovations to a quality grade/level.
- **Creation of conducive atmosphere for investment:** For Nigeria to attain a sustainable economic growth, lucrative avenue should be created for both public and private sector to be able to invest freely and comfortably with all their expected motives achieved.
- **Provision of infrastructure:** The government of Nigeria should strive in developing the nation by providing all basic amenities and infrastructures needed to boost economic activities in the country domestically.
- **Diversification of the economy:** The most critical problem that plunged Nigeria into the economic crisis that resulted to the recent devaluation of the Naira is the sole dependence on oil as a source of revenue for the country. Nigeria should learn from this and diversify the economy to several other sectors thereby halting the possibility of the same problem occurring in future.
- **Increase in export:** As export becomes cheaper after devaluation, it is expected that Nigeria as a country will immensely improve on its exported goods and also increase the output of exportable goods so as to bring surplus budget.
- **Giving scholarships:** The government are advised to send young, vibrant and competent individuals abroad on scholarship base to acquire knowledge on the process at which the indigenous innovations can be upgraded, used and also on how the economy in general can attain economic growth.

References

1. Abolaji O. *Nigerian Naira Devaluation Leads to Fear about the economy* Published by APF 00:03 BST 27 November 2014. Retrieved from [Http://www.pmnewsnigeria.com/2014](http://www.pmnewsnigeria.com/2014).
2. Adeyemi AO, Paul OO, Ogundipe M. Estimating the Long Run Effects of Exchange Rate Devaluation on the Trade Balance Of Nigeria” *European Scientific Journal*, 2013.
3. Alao PA. An Empirical Investigation of Currency Substitution in Nigeria. *IfeJournal of Economics and Finance*. 2010, 4(1-2).
4. AlhajiNda M. *Effective Reserves Management in Nigeria: Issues, Challenges and prospects*. *Nigerian Financial Review*. 2006, 30(3).
5. Ayodele O. *Economics of Exchange Rate Management*. *Nigerian Financial Review*. 2006, 30(3).
6. Bukola O. Naira Devaluation: it’s Effects on Nigerians. *Daily Trust Newspaper*, 2015.
7. Campbell R. Advantages and Disadvantages of Devaluation. *International Economic Journal*, 2004.
8. Charles Mordi N. Challenges in exchange rate volatility in economic management in Nigeria. *Nigerian Financial Review*. 2006, 30(3).
9. Clement Ejiofor. Naira Devaluation: Effects for Nigeria and Nigerians. *Journal of Financial and Quantitative Analysis*, 2015.
10. Cooper RN. *International Finance*. Penguin Publishers. 1969, 25-37.
11. Difference between WDAS & RDAS published in www.nairametrics.com. Accessed, 2013.
12. Dornbusch, Rüdiger. Fisher Stanley. Startz, Richard. *Macroeconomics (Eleventh ed.)*. New York, 2011. McGraw-Hill/Irwin. ISBN 978-0-07-337592-2.
13. Harberger. The terms of trade and current account *Journal of political economy* 1950.
14. Henan R. Testing the Short Run and Long Run Exchange Rate Effect *Journal For Public Profiles For Economic Researchers* 1998. Retrieved From www.banrep.gov.co/borra120.
15. <http://martinslibrary.blogspot.com/2013/09/exchange-rate-management-in-nigeria.html>. Accessed on February 10, 2015
16. Johnson Theory of international Policy and strategy New York Press. 1967, 2.
17. *Journal of Economic and Sustainable Development* ISSN. 2002; 2:2222-1700. www.iiste.org
18. Krueger *Exchange Rate Determination* Cambridge University Press March 31 1983 pp.218
19. Meade and The Balance of payments London and Newyork: Oxford University press 1951.
20. Metzler *International Trade and Policy* Advanced Graduate Chicago Press 1948.
21. Mike Obadan I. Overview of exchange rate management in Nigeria from 1986 to date. *Nigerian Financial Review*. 2006; 30(3).
22. Miles Communal and Exchange Relationship *Journal of Personality, social and business*. 1979, 37-12-24.
23. Naira Devaluation Will Have Positive, Negative, Effects on Economy. *Economist Agency Reports*, 2014.
24. Omojimite I. *Money demand stability: A case study of Nigeria*. Auckland University of Technology, Auckland, New Zealand, 2010.
25. Ozumba CC. (ND). Devaluation and Balance of payments in ECOWAS countries: A study of Nigeria’, Exchange Rate Policy” Central Bank of Nigeria, Economic and Final Review. 1978.
26. Richard Cooper N. *Currency Devaluation in Developing Countries*. Essays in International Finance. Princeton University, Princeton, New Jersey, 1971.

27. Robinson. T Testing The Short Run and Long Run Exchange Rate Effect Journal For Public Profiles For Economic Researchers 1947.Retrieved From www.banrep.gov.co/borra120.
28. Sahil Hafeez. Why Do Countries Let Their Currency Fall in Value? *Economica*, 2014.
29. Sanusi Lamido. Buharism: Economic Theory and Political Economy. Article from the Daily Trust Newspaper, 2002.
30. Todaro M.P Economic development in the third World 2nd edition, New York Longman publishers Group 1981. ISBN 0582295327.
31. Venin Taylor. Can Investors Profit From Devaluations? The Performance of World Stock Markets after Devaluations. *European Economists Journal*, 1991.
32. World Bank. Global Economic Projects: Economic Implications of Devaluation. World Bank, Washington 2010.
33. www.sunnewsonline.com Accessed on December 8, 2014
34. Yinusa Olalekan D. Exchange Rate Volatility, Currency Substitution and Monetary Policy in Nigeria. Obafemi Awolowo University, Ile-Ife, Nigeria. Munich Personal RePEc Archive, 2008.