International Journal of Economics, Commerce and Management
United Kingdom ISSN 2348 0386 Vol. IX, Issue 12, Dec 2021

http://ijecm.co.uk/

REAL EFFECTIVE EXCHANGE RATE, INTERNATIONAL COMPETITIVENESS AND MACROECONOMIC STABILITY IN NIGERIA

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Abstract

This paper examined the effectiveness of real effective exchange rate (REER) as a measure for international price competitiveness and macroeconomic stability in Nigeria. It is emphasized that the real effective exchange rate is an important indicator of the degree of competitiveness among trading nations. Its measurement and computation have presented intractable problems in the literature. The paper used a descriptive approach to examine the effectiveness of real effective exchange rate (REER) as a measure of international competitiveness of Nigerian export products. It is found that the REER performs better as a measure of international competitiveness under a floating exchange rate regime than in a fixed or pegged regime. Also, that macroeconomic stability is better achieved under a flexible exchange rate than in a fixed regime. Despite the massive depreciation in nominal effective exchange rate (NEER), Nigeria continued to experience appreciation in REER, due to the effect of crude oil prices volatility and the structural rigidity in production and consumption. It is recommended that concerted efforts be made at intensifying trade relations among member nations within the West African sub-region and the adoption of a holistic approach to macroeconomic management that will incorporate sound fiscal and monetary management, regional integration and economic diversification.

Keywords: REER, International Competitiveness, Macroeconomic Stability, Trends, Nigeria

INTRODUCTION

There is a general consensus among economists and policy makers that the real effective exchange rate (REER) plays a very crucial role in promoting international trade and payments. According to Harberger (2004), it is the "principal equilibrating variable" of a country's international trade and payments. A movement in the REER of a country overtime is an important indicator of the degree of international price competitiveness of its products in the world market. As noted by Boschen (2016), the usefulness of the REER is that it summarizes how *both* the exchange rate and the relative costs between two countries impact a country's competitiveness. By providing accurate signals to producers, the real exchange rate can help generate competitive jobs via exports. It can also help reduce income inequalities by raising the workers' marginal revenue product (Brixiova, Égert, and Essid, 2014). Empirical researches have shown that REER is not only an important relative price that connects domestic and foreign markets for goods and assets but also serves as an anchor which supports macroeconomic balance and a stable economic growth in the long run (Ajao, 2015; Ali, Ajibola, Omotosho, Adetoba and Adeleke, 2015). It is a measure of the costs of foreign goods relative to domestic goods and is therefore, a useful variable in explaining trade relations and national income (Nwachukwu, Adebayo, Shettima, Anigwe and Udechukwu-Peterclaver, 2016).

A number of studies have blamed the persistent macroeconomic woes that have befallen most third world countries, including Nigeria, such as high rate of unemployment, rising inflation and balance of payments /debt crises, on REER misalignment (Cline, 1989; Gulhati, 1985 as cited in Edward, 1989). In line with this view, Brixiova, et al. (2014) argued that reduced external competitiveness due to over-valued exchange rate hampers exports, aggregate demand, growth and job creation. Besides the longer-term implications, REER misalignment can lead to inflationary pressures and even trigger speculative attacks. Also, REER appreciation is said to undermine competitiveness, widen current account deficit and increase vulnerability to financial crises (Combes, Kinda and Plane, 2010). On the contrary, the economic successes recorded by some countries like Indonesia, Korea, Thailand and Colombia were attributed the realistic and appropriate exchange rate policies pursued by those countries (Dervis and Petri, 1987 as cited in Edward, 1989). Therefore, the objective of economic policy in many developed and developing countries is to keep REER at its equilibrium (competitive) level, avoid its excessive volatility and remove policy distortions as conditions for attaining sustainable growth in the long run.

Some researchers have observed that the basic difficulty faced in attempting to evaluate the effectiveness of REER as a measure of international competitiveness is that equilibrium real exchange rate (RER) is not observable. Commenting on this point, Aliyu (2011) noted that "oblivious of when it strikes, we may be pursuing it even when it is too far away from us and

chase it out even when it is there". Bose (2014) corroborated this fact by noting that "being unobserved and ambiguous in nature, the equilibrium RER could be difficult to pin down". There is, however, convergence of opinion on the fact that long run equilibrium RER is associated with reasonable growth and sustainable internal and external balance, (Edwards, 1989).

The REER is said to be at equilibrium when it corresponds to the level that equilibrates internal and external balance (Bose, 2014). The REER is said to be at a disequilibrium (misaligned) when it deviates from its equilibrium value (Ali, et al, 2015). Edward (1987) argued that maintaining REER at a "wrong" level would result in a significant welfare cost. Apart from generating incorrect signals to economic agents, REER misalignment also results in greater economic instability (Willet, 1986 as cited in Edward, 1989). Besides, a persistent overvalued REER is a reflection of deterioration in a country's trade competitiveness while an undervalued RER indicates the non sustainability of a country's competitive levels (Bose, 2014). Furthermore, Ellis (2001) opined that REER is a broad summary measure of the price of one country's goods and services relative to those of another country or group of countries thus reflecting the macro economic conditions in open economies.

Despite the many benefits of REER, there have been intense debates among economists and policy makers over the last two decades regarding the conceptualization, computation and measurement of RER. First, there are some disagreements regarding the proper definition of RER. Second, the different definitions give rise to different interpretations of the impact of the RER on the macro-economy. Third, there are also the problems associated with the appropriate price indices and weight to use in the computation as well as the problem of drawing the distinction between the tradable and non-tradable sectors. Finally, there is the problem of establishing the link between the theoretical concept of RER and the empirical application. As noted by Chinn (2002), the appropriate definition and calculation of the RER depends upon a complicated interplay of the theoretical model of interest and data availability.

This paper therefore, seeks to examine the basic concepts and measures of REER and its effectiveness as indicator for Nigeria's international competitiveness and macroeconomic stability, using Nigerian data. It is expedient that policy makers and practitioners should not only acquaint themselves with the concept and measurement of this very important macroeconomic variable, but also its implications for international competitiveness and macroeconomic stability.

CONCEPT OF REAL EXCHANGE RATE

Meaning

Real Exchange Rate (RER) has been variously defined by different authors. As noted by Edward (1989) there is no universally accepted definition of RER. Indeed some authors have

objected to treatment of exchange rate as a "real variable" considering the fact that it is a "nominal concept by definition" (Maciejewski, 1983, cited in Edward, 1989). This notwithstanding, the following variants of the definition of RER can be gleaned from the literature.

The Purchasing Power Parity (PPP) Definition: This approach sees RER as the 'Purchasing Power Parity exchange rate'. It defines RER as the nominal exchange rate multiplied by the price ratio of domestic to foreign goods (Ellis, 2001; Harberger, 2004; Catάo, 2007; Bose, 2014).

Symbolically we can state this as $$\mathbf{RER} = \frac{EP}{P^*} \ldots (1)$$

Where E = the nominal exchange rate expressed as the number of units of foreign currency per unit of domestic currency, P = index of aggregate domestic price level and P* = index of aggregate foreign price level.

In this presentation, an increase in RER is interpreted as an appreciation while a fall indicates depreciation (Ellis, 2001). Alternatively, RER can be defined as the nominal exchange rate multiplied by the price ratios of foreign to domestic prices.

Symbolically we state as follows:

$$\mathbf{RER} = \frac{EP^*}{P} \ldots (2)$$

Where E = the number of units of domestic currency per unit of foreign currency.

Under this formulation, an increase in RER is interpreted as depreciation while a decrease is indicated as an appreciation in the RER. According to Edwards (1989), the PPP-type definition has the advantage that it measures the changing values in the domestic and foreign currencies as indicated by their respective rates of inflation. The definition however, suffers from the well-known criticism of PPP theory, that is, the difficulty is selecting the appropriate price indexes and of an adequate reference time period (Edwards, 1989)

The Dependent Economy Model Definition: This approach is also known as the 'Scandinavian model definition' (Chinn, 2002). Based on this approach, the RER is defined as the relative price of Tradable goods with respect to Non-Tradable goods (Edwards, 1989). That is,

$$\text{RER} = \frac{\text{Price of Tradable Goods}}{\text{Price of Non-Tradable Goods}}$$

Symbolically we state;

$$RER = \frac{EP_T^*}{P_N} \ldots (3)$$

Where E = Nominal exchange rate defined as units of domestic currency per unit of foreign currency, P_T^* is the world price of tradable goods and P_N is the price of non-tradable goods within the domestic economy.

The uniqueness of this definition is that it captures the degree of competitiveness of the tradable goods sector in the domestic economy. A higher relative price of tradable goods will result in a higher supply and lower demand for tradable goods leading to an improved current account and a higher level of competitiveness in the tradable goods sector (Edwards, 1989). A major critique of this definition is that it does not lend itself to the treatment of trade restrictions and changes in world commodity prices (Harberger, 2004). Another criticism is the difficulty in distinguishing between tradable and non-tradable goods. According to Bose (2014), tradable goods industries include those that face international competition, either in export markets or by competing with imports while the rest of the sectors constitute non-tradable goods sector.

Intuitive Definition: The intuitive definition tries to define RER using a non mathematical expression. Using this approach, Beggs (2016) defined RER as the number of units of a product or service of one country that can be purchased with one unit of equivalent good or service in another country given that the rate of exchange has not changed. It tells us, for example, how many loafs of United States bread can be bought with one equivalent loaf of Nigerian bread. Basically it seeks to answer the question: *if you took one bottle of Nigerian wine, sold it at the domestic market price, exchange the money into dollars and use it to buy equivalent wine in America , then how many bottles of American wine will it buy?*

As an example if a bottle of wine in Nigeria costs N2,000.00 and the nominal dollar/Naira exchange rate is $0.0028/N1, then the bottle of wine should cost 2000x0.0028 = $5.56. If a bottle of American wine costs $4.00, then $5.56/4 = 1.39 bottles of American wine can be purchased. This means that a bottle of Nigerian wine can be exchanged for 1.39 bottles of American wine. *The real exchange rate is thus 1.39 bottles of American wine to one bottle of Nigerian wine.* This suggests that the real exchange rate of the Naira has appreciated over that of the dollar. It pays to buy the American wine than Nigeria wine. Thus the appreciation in the real exchange rate of the Naira has resulted in the deterioration in international price competitiveness of Nigerian wine. In practice however, the real exchange rates are usually calculated for all goods and services in an economy rather than for a single good or service.

This can be accomplished by using a measure of aggregate prices such as the consumer price index or GDP deflator.

Real Effective Exchange Rate (REER)

The real effective exchange rate (REER) is an average of the bilateral RERs between the country and each of its trading partners, weighted by the respective trade shares of each partner (Catάo, 2007). It is used to measure the extent of misalignment or deviation of a currency from its equilibrium value against other major currencies of its trading partners. It should be noted that a country's REER may be in equilibrium while its currency is overvalued relative to one or more trading partners' currencies as long as it is undervalued relative to the others (ibid).

Equilibrium Real Exchange Rate (ERER):

The RER may be in equilibrium when it shows no tendency to change over time. Because the concept is un-observable, its definition and computation tend to vary from one author to the other. Mundell (1971) defined ERER as "the relative price of international to domestic goods that simultaneously equilibrates the money market, the domestic goods market and the international goods market". Viewing from the perspective of tradable and non-tradable goods sectors, Edward (1989) defined ERER as "the relative price of tradables to nontradables at which income equates expenditure, and both tradable and non-tradable goods markets are in equilibrium". Similarly, Bose (2014) defined ERER as "the rate that equilibrates internal balance (aggregate demand with aggregate supply) and external balance (savings - investment gap with capital flows)". Changes in RER from its equilibrium value are important indicators of extent of currency misalignment and reflect changes in a country's international competitiveness (Bose, 2014). A persistently overvalued RER reflects unwarranted deterioration in an economy's competitiveness while an undervalued RER indicates its non-sustainability at competitive levels. It has been observed that the ERER varies not only overtime but its identification remains sensitive to the macro model used to identify its fundamental determinants. It is further argued that the ERER may be a good measure of competitiveness for an economy, showing extreme under or over valuation but may not be appropriate for economies with moderate deviations (ibid).

REAL EFFECTIVE EXCHANGE RATE AND INTERNATIONAL COMPETITIVENESS

Bella, Lewis and Martin (2007) defined international competitiveness as the ability of a given country to produce goods and services of international quality standards more cost

effectively than other countries. Generally the starting point in the analysis of international competitiveness is to determine RER misalignment. According to Bella, et al. (ibid), the RER is said to be misaligned when it is out of line with its economic fundamentals for a sustained period of time. The magnitude of the misalignment should be the difference between the observed RER and a non-observed (equilibrium) RER. An "overvalued" RER indicates that the value of the current RER is above its equilibrium value, while an "undervalued" RER indicates the opposite.

Bose (2014) maintained that an appreciation in RER indicates a loss in both internal and external competitiveness. In many developing countries, domestic inflation has been a major driver of RER appreciation. The domestic economy consists of the tradable and the non tradable sectors. The tradable sector includes both the actual and potential exports and import substitutes. The non tradable sector includes the rest of the economy that do not produce for export. An economy losses its competitiveness when its tradable sector loses its competitiveness, either internally or externally. Tradable sector loses its internal competitiveness when tradable goods prices fall relative to the non-tradable goods prices and their external competitiveness when their prices rise relative to foreign prices. This will force RER to appreciate. This is illustrated in equation 4 below adopted from Bose (2014).

$$\mathrm{RER} = \mathrm{NER} \times \left[\frac{Domestic\ Traded\ Price}{Foreign\ Tradable\ Price}\right] \times \left[\frac{Non\ Tradable\ Price}{Tradable\ Price}\right]^{\mathrm{a}} \times \left[\frac{Non\ Tradable\ Price}{Tradable\ Price}\right]^{\mathrm{a}^*}$$

Where a, and a^* are the shares of non tradable domestic prices and foreign prices respectively.

From equation 4, it follows that the RER can be effectively represented in terms of the price ratio of non-tradable to tradable goods (for small countries facing given international prices of tradable goods) or the price ratio of domestic tradable goods to foreign tradable goods (when non-tradable prices are relatively rigid) or by the price ratio of domestic unit labour cost to the foreign unit labour cost for homogeneous goods whose prices equalize (Bose, 2014). It is also obvious from equation (4) that a country's international competitiveness increases when its price level decreases or its nominal exchange rate depreciates relative to the foreign economy or the price in the foreign economy increases. Nominal foreign exchange depreciation pushes up the demand for domestic goods relative to foreign goods. According to Bose (2014), the expansionary effect of exchange rate depreciation on output will be greater for economies with trade surplus, less import dependent and higher share of the manufacturing in exports. These conditions are hardly met in most third world countries, including Nigeria.

The developing countries have been losing in internal and external competitiveness due to high cost of local production caused by infrastructural decays and high domestic inflation. This has resulted in appreciation in RER thus impacting negatively on economic growth.

According to Enzo and Oxley (2013 as cited in Bose, 2014), an overvalued currency can also pull down growth in two way:- through spending effect and resource movement effect.

Spending Effect – A rise in world resource price raises incomes from commodity exports. Rising income causes the RER to appreciate, increase trade deficit and shift resources away from manufacturing sector.

Resource Movement Effect – There is resource movement away from the manufacturing to the booming resource tradable and non-tradable sectors.

This is the familiar “Dutch Disease” syndrome. The critical problem in using the tradables and non-tradables classification to diagnose the effect of RER appreciation on growth is the lack of unambiguous criteria for measuring the classification used. The use of export/sales and import/sales ratios to represent the tradable and non-tradable sectors had been advocated in the literature (Bose, 2014).

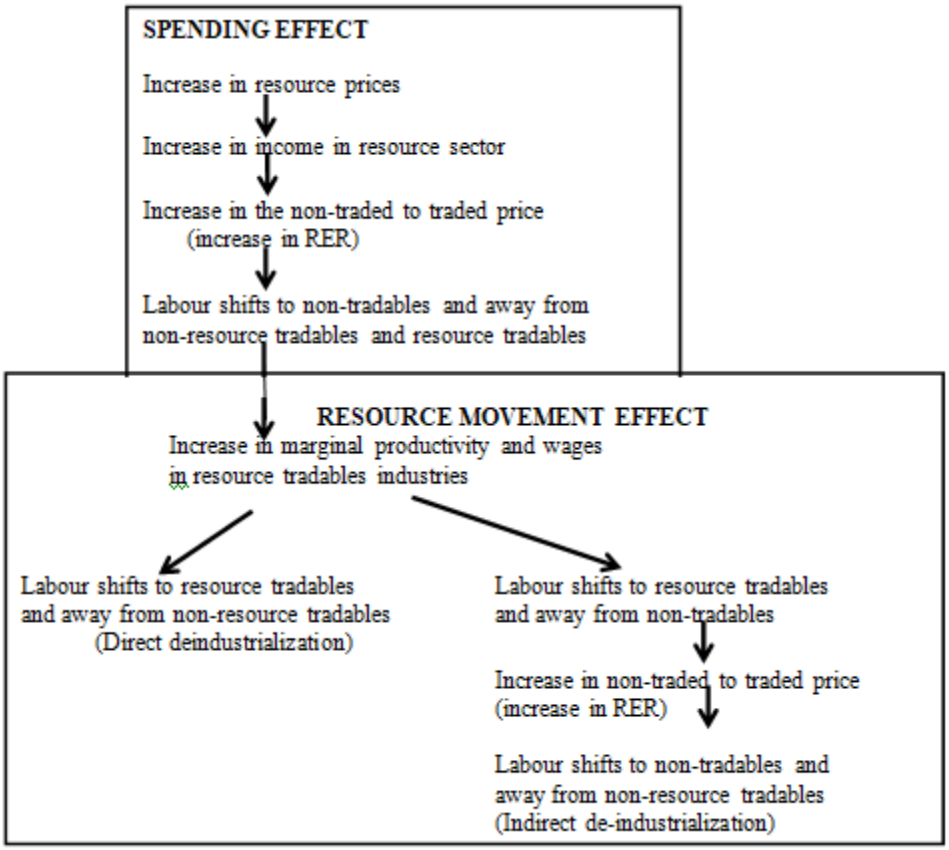

Figure 1: RER Appreciation and Resources Shifts Away from Non-Resource Tradables Sector (Including Manufacturing)

Source: Adapted from Enzo and Oxley (2013) as cited in Bose (2014)

THEORETICAL BASIS FOR MEASURING REER

According to Bose (2014), the choice of measures of REER depends on the macro economic theory and the time span envisaged in the empirical model. The following are some of the theories explaining the relationship between REER, international competitiveness and macroeconomic stability:

Purchasing Power Parity (PPP) Theory

This theory asserts that the nominal exchange rate adjusts to equalize price levels for similar tradable basket in common currency subject to trade and transport barriers and country policies. In reality however, the nominal exchange rate movements may not restore PPP, resulting in deviations of the REER from its equilibrium value in the short run. Thus, deviations of the actual REER from its long run average are often used as a first port of call for measuring changes in competitiveness of a country (Bose, 2014).

The Internal Terms of Trade (ITT) Theory

The internal term of trade is defined as the ratio of the proxy for the price of non-tradable to the proxy of the price for tradable goods (Bella, et al. 2007). This is used to capture the relative profitability (competitiveness) of tradable versus non-tradable sectors within an economy. According to this theory, ITT can be effectively used to represent REER, especially for small economies facing given international prices of tradables (Bose, 2014). An increase in ITT indicates a deterioration in international competitiveness and it points to an appreciation in REER. However, the difficulty in distinguishing between tradable and non-tradable goods renders this approach inoperative for empirical research. In practice, data are usually available only for exports or imports rather than for tradables or non-tradables. This tends to understate the size of the tradable sector.

Uncovered Interest Parity (UIP) Theory

This theory asserts that exchange rate adjusts to equalize expected returns on domestic and foreign asset. Thus if interest rate in the US is higher compared to that of Nigeria, it means that the US dollar depreciate against the Naira by an amount that prevents arbitrage. Interest rate differential among trading country partners can be used to detect early signs of appreciation in REER, particularly in the short run.

Macroeconomic Balance

Macroeconomic balance is said to be achieved when there is a simultaneous attainment of both internal (aggregate demand equals aggregate supply) balance and external (saving equals investment with capital flows) balance. This occurs when the REER is at equilibrium that is, shows no tendency to change overtime. Some scholars have however, argued that persistent current account imbalances need not indicate lack of stability, particularly if they mirror borrowings to finance productive investment in infrastructure or export (Bose, 2014). Be that as it may, trade/macroeconomic policy-driven current account imbalances could be indicative of exchange rate misalignment, impacting on international competitiveness that may not be sustainable.

Rising Domestic Inflation

The general increase in domestic prices relative to that of its trading partners makes export dearer and imports cheaper, thus reducing export and increasing import. The resulting current account deficit will derive up RER, reducing the country's trade competitiveness. As earlier noted, a rise in world resource prices raises incomes and causes RER to appreciate. The RER appreciation, driven by commodity price increases, shifts resources away from other sectors like manufacturing. It is however, argued that if the booming primary commodity sector generates positive externalities benefiting the entire economy, then the RER appreciation may help in reallocating resources without hurting growth (Bose, 2014). But this may not be the case in most developing economies, including Nigeria, where the primary commodities are enclave sectors.

Changes in Equilibrium Real Exchange Rate

In assessing changes in competitiveness, care must be taken to distinguish between changes driven by macroeconomic fundamentals and those generated by bubbles and speculative factors. Bose (2014) argued that if the RER movements are driven by changes in an economy's fundamentals then they may not reflect changes in competitiveness. The equilibrium could increase over time as an economy develops in consonance with the Balassa – Samuelson Effect (1964), through productivity-driven wage increases in tradable good's sector, spilling over into wages of non-tradable good's sector. This could drive up the non-tradable to tradable price ratio for an economy as its per capital income increases relative to others. Thus, RER increases due to productivity improvement do not denote a fall in an economy's competitiveness (Ibid).

DIFFICULTIES IN MEASURING REER

The measurement of REER is fraud with myriads of problems and issues among which are the followings: (Edwards, 1989; Ellis, 2001; Harberger, 2004; Bose, 2014)

Should RER be measured in level or as a difference?

A number of authors have argued in favour of using changes in REER rather than in level terms for the following reasons:

i. The REER, as a ratio of price indices of two countries represents an uneven comparison of two different country-weighting designs. Also, reliability and timeliness in the absolute price indices could differ across countries. Using, changes in REER is more meaningful as it controls for the different nature of indices used and shows whether a country has gained or lost in price competitiveness.

ii. Equalization of price level may not hold across countries due to transport cost and other trade barriers.

Which Price Index should be used?

The RER is defined as the nominal exchange rate multiplied by the ratio of foreign to domestic prices. Basically four alternative price indices have been suggested as possible candidates for the construction of RER. These are the Consumer Price Index, the Wholesale Price Index, GDP Deflators and the Wage Rate Index. It should be noted that none of these indices is perfect and all of them present some merits and demerits as follows:

i. **The Consumer Price Index**:

This is one of the most commonly used indices in RER computation. It is argued that this indicator provides a comprehensive measure of changes in competitiveness since it includes a broad groups of goods and services. Another advantage is that there are reliable and timely data on CPI for all countries. Its major weakness is that it includes a large number of non-traded goods.

ii. **The Wholesale Price Index:**

This index is recommended on the ground that it is more restricted to tradable goods. But the index is criticized on the ground that it contains largely homogeneous goods whose prices tend to be equalized across countries.

iii. **The GDP Deflator**:

For small open economies which are price takers, the GDP deflator is recommended. It is a genuine price index of aggregate production and therefore provides a better indicator of degree of competitiveness. Its major weakness is that the data on it are available on annual basis.

iv. Unit Labour Cost:

It is direct measure of relative competitiveness across countries. It has been argued that relative labour cost is more stable than relative good prices. A major snag is that it is very sensitive to cyclical productivity changes. There is also the problem of limited data availability.

How Do We Distinguish Tradable from Non-Tradable Goods?

The RER is defined as the relative price of tradables and non-tradables. Tradable goods industries include those that face international competition either in export market or by competing with imports. The major problem with this measurement is the lack of data on tradable and non-tradable goods prices.

One suggestion is to use export/sales and import/sales ratios as proxies for tradable and non-tradable sectors respectively (Bose, 2014).

What Weight should be used?

The use of real effective exchange rate to capture international competitiveness over a number of trading partners necessitates the use of weights. The choice of weighting scheme depends on the purpose as follows:

Import weighted indices are generally used when assessing the effect of exchange rate movements on import prices. **Trade shares** might be a reasonable weight but they do not reflect the "Third Country" effect. That is the competition that home country exports face in foreign markets from other exports of the same product. Among the weights suggested are:

- **Trade, Import and Export weights:** This is used for assessing changes in competitiveness in countries with export composition similar to that of the home country.
- **GDP weight**: This covers traded goods and does not necessarily correspond to a country's share in world output.
- **Capital Account Weight**: It is used to capture the influence of capital flows on RER.

ANALYSIS OF NIGERIA'S REER, INTERNATIONAL COMPETITIVENESS AND MACROECONOMIC STABILITY

Nigeria, in her post independent efforts to achieve a realistic exchange rate for the Naira, has implemented two broad exchange rate regimes. These are, the fixed exchange rate and the flexible exchange rate regimes. Under the fixed exchange rate regime, which lasted between 1960 and 1986, the Central Bank of Nigeria (CBN) fixed the nominal exchange rate by fiat on annual basis. The regime underwent some modifications, ranging from maintaining a fixed parity with the British Pound Sterling between 1960 and 1967, being pegged to the US dollar between

1967 and 1973, the adoption of a policy of "progressive appreciation" of the Naira between 1974 and 1976 and to the pegging of Naira to a basket of international currencies of seven major trading partners of Nigeria. Following the adoption of the Structural Adjustment Programme (SAP) in June, 1986, a flexible exchange rate regime was introduced for the country in September 1986. Under this regime, the Naira exchange rate was allowed to float, depending on the vagaries of the market. Between 1986 to 2018 several modifications were introduced into the system with a view to fashioning out a realistic and competitive exchange rate for the Naira as summarized in Table 1 below.

Table 1: Exchange Rate Regimes/ Approaches to Their Determination.

Exchange Rate Regimes/ Approaches to Determination	Period
FIXED EXCHANGE RATE REGIME	**1960-1986**
Fixed Parity with British Pound Sterling	1960-1967
Fixed Parity with the US Dollars	1968-1972
Decimalization of the Nigerian Currency and Revert to Pound Sterling	1973
Fixed Parity to both the British Pound and US Dollars (Policy of "Progressive Appreciation"	1974-1977
Pegged to a Basket of Currencies (British Pound, US Dollars, German Mark, French Franc, Japanese Yen, Dutch Guilder and Swiss Franc.	1978-1985
FLEXIBLE EXCHANGE RATE REGIME	**1986-Date**
Introduction of Second Tier Foreign Exchange Market (SFEM)	1986
Merger of First and Second Tiers Foreign Exchange Market (FEM)	1987-1988
Creation of Inter-bank Foreign Exchange Market (IFEM) using Dutch Auction System (DAS). Creation of Bureau de Change.	1989-1993
Pegged Exchange Rate System	1994
Introduction of autonomous Foreign Exchange market (AFEM)	1995-1999
Re-introduction of IFEM	1999-2002
Introduction of Retail Dutch Auction System (rDAS)	2002-2006
Introduction of Wholesale Dutch Auction System (wDAS)	2006-2013
Re-introduction of IFEM	2015
Merging of Inter-bank and Autonomous markets into one Inter-bank	2016-2018

Source: CBN Annual Reports and Statement of Accounts. (Various issues)

The various measures adopted by the CBN as indicated above, produced mixed outcomes in terms meeting the desired objective of establishing a realistic and competitive exchange rate for the Naira. Table 2 presents a trend analysis of NEER and REER and their

relationship with selected proxies of international competitiveness and macroeconomic stability in Nigeria between 1980 and 2018.

Table 2: Trend Analysis of NEER, REER and Selected Macroeconomic Indicators (Selected Years)

YEAR	NOE/TOE	REER	NEER	CPI/WPI	NFA/GDP
1980		290.79	0.55	0.05	0.112
1985	0.043	486.79	0.89	0.06	0.010
1986	0.062	265.93	1.75	0.06	0.023
1988	0.088	86.04	4.54	0.08	0.025
1989	0.051	76.96	7.36	0.1	0.044
1990	0.030	71.62	8.04	0.09	0.084
1993	0.023	54.87	22.07	0.15	0.007
1995	0.024	161.45	21.9	0.27	0.020
1998	0.045	275.29	21.89	0.37	0.042
1999	0.016	69.78	92.34	0.37	0.118
2000	0.013	70.75	101.7	0.37	0.165
2002	0.054	79.08	120.58	0.47	0.109
2005	0.015	87.05	131.27	0.62	0.167
2008	0.051	100.5	118.55	0.66	0.215
2010	0.059	100	150.3	1	0.113
2012	0.058	110.52	157.5	1.12	0.120
2015	0.075	119.04	192.44	1.32	0.056
2016	0.074	110.17	253.49	1.49	0.077
2017	0.077	100.81	305.79	1.7	0.096
2018	0.074	109.1	306.08	1.86	0.092

Sources: i) CBN Statistical Bulletin (2018) ii) World Development Indicators

Trends in NEER, REER and Non-oil Export/Total Export Ratio.

Figure 2, which is extracted from Table 2, gives the trends in nominal effective exchange rates (NEER), real effective exchange rate (REER) and non-oil export/total export ratio between 1980 and 2018 in Nigeria. As can be gleaned from the Figure, the NEER maintained an upward trend over the review period, mainly reflecting a progressive and consistent depreciation in the value of the Naira against other currencies of the country's major trading partners.

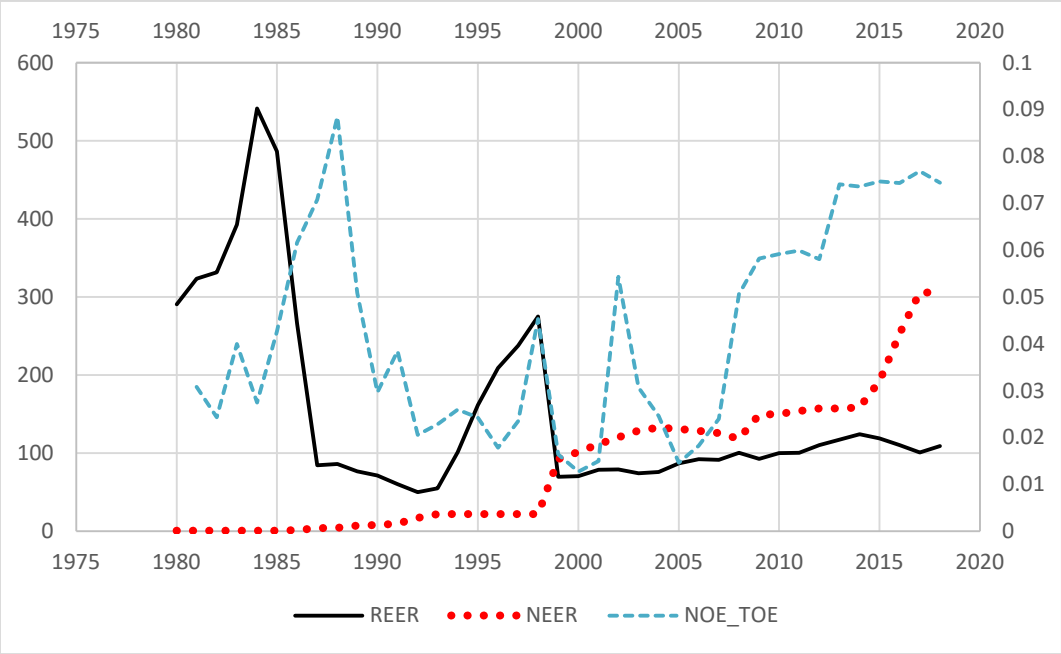

Figure 2: Trends in NEER, REER and NOE/TOE in Nigeria

Between 1980 and 1985, NEER maintained a stable trend in line with the regime of fixed exchange rate adopted at that time. At average of N0.70/$1, the Naira was believed to be over-valued. This was evident in the sharp rise in the REER from 290.7 in 1980 to 486.79.46 in 1985.The situation encouraged massive imports and discouraged exports, with the attendant negative implication for international competitiveness of Nigerian exports. Beginning from 1986 when the country adopted the floating exchange rate regime, the NEER began to rise reflecting a depreciation in exchange value of the Naira.Within two years of implementation of the new policy (1986-1988), the NEER depreciated from 1.75 to 4.54. In sympathy, the REER fell sharply from 265.03 to 86.04. In response to the price incentives provided by the depreciation of the REER, the share of non oil exports in total export increased from 6.2 percent to 8.8 percent over the period, reflecting an improvement in the international competitiveness of Nigerian exports.

The point to note here is that within the first two years of implementation of the policy of floating exchange rate under the Structural Adjustment Programme (SAP), the policy succeeded in turning around the fortunes of the non oil export sector of the Nigerian economy. These gains were however, short-lived. As could be gleaned from the Figures 2, between 1989 and 1993, NEER depreciated from 7.36 to 22.07 while REER dropped from 76.96 to 54.87 within the same period. Despite the drop in both NEER and REER over the period, the percentage of non-oil

export in total export fell from 5.1 percent to 2.3 percent. This clearly showed a loss in international competitiveness of Nigerian exports within the period.

The question that begs for answer is why did the policy of floating exchange rate succeed in the first two years of its implementation but failed subsequently? The answer seems to be rooted in the non-fulfillment of the popular Marshall-Lenner condition which requires that for devaluation (in a fixed exchange rate regime) or depreciation (in a flexible exchange rate regime) to be effective, the sum of exports and imports elasticity of demand in the devaluing country should be equal to or greater than unity. This condition is hardly met by most Less Developed Countries (LDCs) including Nigeria, due to structural rigidity in production and consumption. This point was succinctly made by Onimode, (1987) thus: “There is a basic structural asymmetry in the economy which leads to a situation where the country mainly consumes what it does not produce and produces what it does not consume” (Ibid).

Answering the above question more directly, non-oil exports responded positively and rapidly to the price incentives provided by the depreciation of the Naira in the first two years of the policy of deregulation because producers of non-oil exports depleted their stock of inventory to meet the rising demand for exports. In the subsequent years of depreciation, the stock of inventory dried up and supply remained fixed as producers of primary exports cannot increase output due to structural rigidity in production. This unfavourable outcome is entirely in consonance with what critics of devaluation (depreciation) have maintained that although devaluation (depreciation) leads to a relative rise in the prices of internationally traded goods and services as against non-tradables, the response to higher prices and higher profitability is far less in Less-developed than in More-developed market economies. This is partly due to the fact that the seasonal nature of primary products and their longer gestation period preclude flexibility in supply adjustment to market stimulus and also because these primary products face deterioration and volatile prices in the world market (ibid.)

Another reason why the depreciation of the Naira has not brought about increase in non-oil export in Nigeria is founded in the theoretical argument that nominal devaluation (or depreciation) only has a transitory effect on the real exchange rate. According to Ojameruaye (1987), ” in the long run, domestic prices and wages will rise by the full amount of the devaluation (or depreciation) and the real exchange rate will return to its original level”. If this happens, then “nominal devaluation (or depreciation) may fail to encourage export and may fail to improve the external competitiveness of the country’s tradable goods” (ibid).

The failure to achieve the desired macroeconomic objectives under the flexible exchange rate regime led to reversion to the pegged exchange rate system between 1995 and 1998. As expected the, the NEER assumed a horizontal line with average value of 22 within the

period. Consequently, REER rose sharply from 161.45 in 1995 to 275.29 in 1998, resulting in a fall in non-oil exports' share of total export from 2.4 percent in 1995 to 1.6 percent in 1999 with attendant loss of international competitiveness. Because of its non-sustainability, the policy was jettisoned and replaced with the floating exchange rate system in 1999.

It is important to point out that the sporadic and volatile movements in the REER during periods of fixed exchange rate regime in Nigeria were a reflection of the inconsistent macroeconomic policies adopted at that time. According to Edwards (1989), the fundamental principle of an open economy is that in order to have a sustainable macroeconomic equilibrium, it is necessary for the monetary and fiscal policies to be consistent with the chosen nominal exchange rate regime. That means the choice of exchange rate regime imposes a certain constraint on the macroeconomic policies to be adopted. Based on the principle of "unholy trinity", it is futile to attempt to control exchange rate, interest rate and commodity prices at the same time. It should be only two out of these three important macroeconomic prices that should be targeted. This was the policy error during the pre-SAP and immediate post-SAP fixed exchange rate regimes, during which exchange rates were fixed, interest rates were pegged and commodity prices were controlled. As a result, widespread distortions in production and consumption were recorded with the highest inflationary episode of 72.8 percent recorded in 1995.

Beginning from 1999 to 2018, Nigeria reverted to the floating exchange rate regime with various modifications (see Table 1 for details). Despite these measures, the NEER depreciated massively from 92.34 to 306.08 (official rates) over the period, representing a fall in the value of the Naira of about 241.47 percent. The REER on the other hand maintained a stable trend, rising marginally from 70.75 in 2000 to 109.10 in 2018, an increase of about 54.2 percent over the period. Using 2010 as the base year, REER exhibited a mean dispersion of 13.2 over the period. The relative stability in the trend of REER over this period is an indication that the REER is close to its equilibrium path and is a positive indicator of the effectiveness of the macroeconomic policy measures put in place by the government. It can also be assumed that the emergence of a relatively stable democratic governance in the country significantly contributed to the observed trend.

However, to examine the effectiveness of REER as a measure of international competitiveness of Nigerian exports, we compare the trend in the ratio of non-oil export to total export (NOE/TOE) with that of REER (Fig. 3).

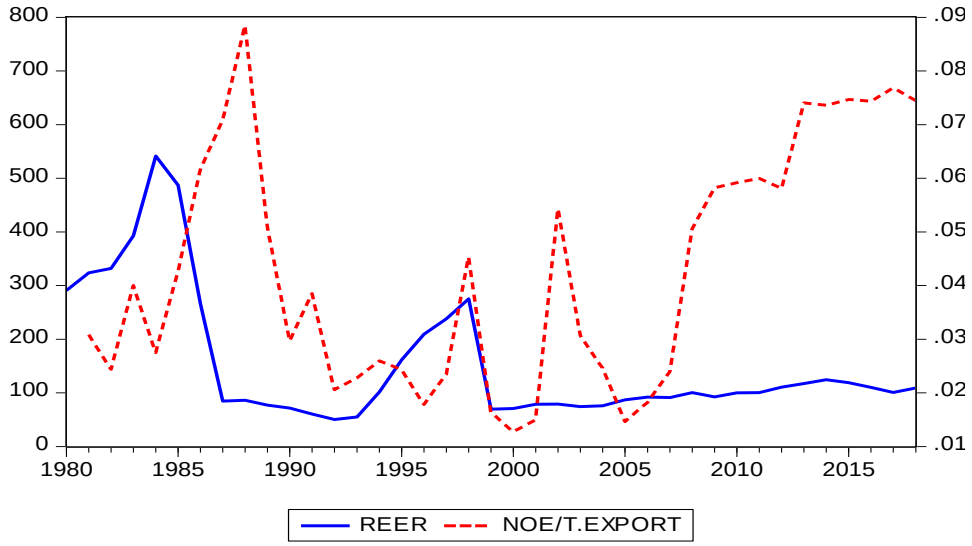

Figure 3: Trends in REER and Non-oil Export/Total Export

Between 2000 and 2018, the trend in NOE/TOE fluctuated widely as against the stable movement in REER, giving the impression of lack of strong correlation between the two variables. A closer scrutiny of the series showed that whereas the REER maintained a smooth and moderate increase from 70.75 to 87.05 between 2000 and 2005, NOE/TOE rose sharply from 1.3 percent to 5.4 percent in 2002 and fell sharply to 1.5 percent in 2005. Clearly such a sporadic movement in NOE/TOE may not be associated with movement in REER. Beyond 2005, REER maintained a gradual upward trend while NOE/TOE rose from 1.5 percent in 2005 to a peak of 7.7 percent in 2017, before declining to 7.4 percent in 2018. Since upward movement in REER is indication of a loss in external competitiveness, the growth in the NOE/TOE over the period may not have been explained entirely by movements in REER. Nonetheless, it is safe to say that the observed stability in REER may have contributed to the improvement in NOE/TOE over the period.

Trends in REER and Internal Terms of Trade (ITT)

In assessing the effectiveness of REER as a measure of international competitiveness, it is instructive to compare its trend with some other alternative measures of external competitiveness. One of such measures is the Internal Terms of Trade (ITT). As earlier noted, ITT is the ratio of the proxy for the price of non-tradable to the proxy of the price for tradable goods. In this analysis, the ratio of domestic CPI (CPI) to world CPI (WPI) is used as a proxy for ITT. Figure 4 represents a trend analysis of the relationship between REER and CPI/WPI over the review period. The trend shows an upward movement in CPI/WPI, implying rising domestic prices in relation to the world prices (prices of goods from Nigeria's major trading partners).

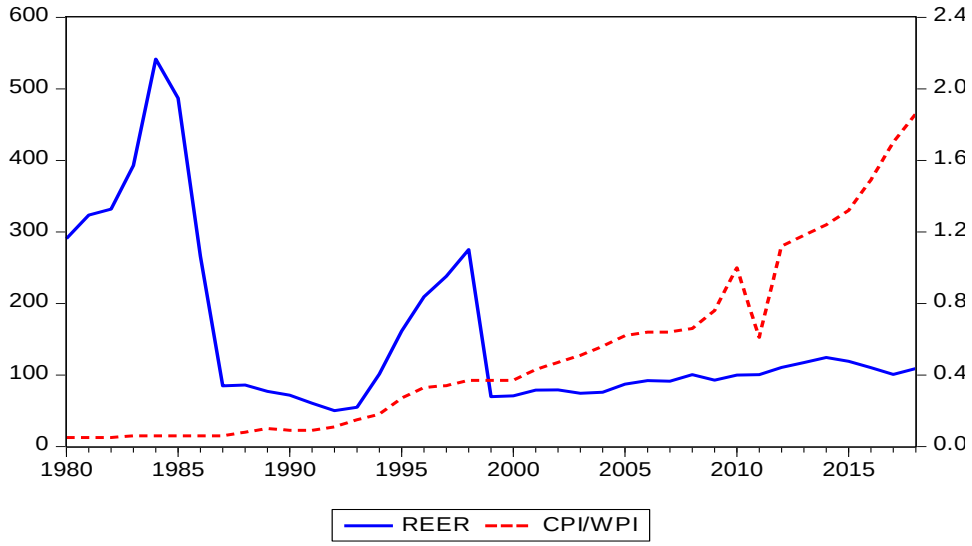

Figure 4: REER and Internal Terms of Trade

A close examination of Figure 4 shows that between 1980 and 1985 when the pegged exchange rate regime operated, CPI/WPI was static and low while REER rose sharply, signifying Naira's over valuation and REER misalignment. This brought about a loss in the competitiveness of Nigerian exports. Although NEER was depreciating in the wake of the adoption of floating exchange rate regime from 1986, the CPI/WPI showed a rising trend, forcing REER to fluctuate widely between 1986 and 2000. Beyond the year 2000, CPI/WPI rose sharply, forcing REER to rise moderately and this impacted negatively on Nigeria's external competitiveness. A similar pattern is observed when comparing the trends in REER and crude oil prices over the period (see Fig. 5)

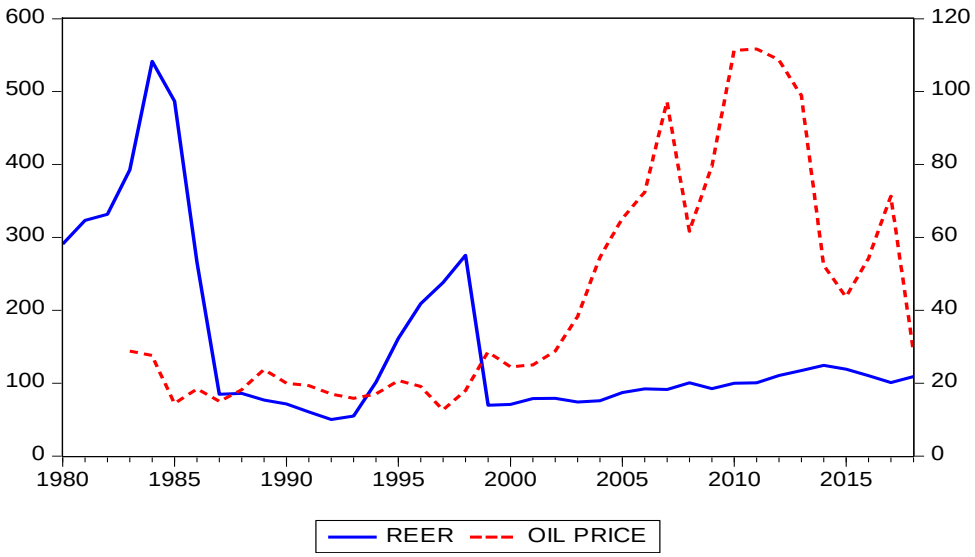

Figure 5: Trends in REER and Crude Oil Prices.

Trends in REER and Net Foreign Assets

Both the theoretical and empirical literature have confirmed that net foreign asset is one of the important economic fundamentals that influences movements in REER. The preponderant argument is that increase in net foreign asset leads to REER appreciation (Ali, et al., 2014; Essien and Akpan, 2016). Figure 6 gives a graphical picture of the trends in REER and net foreign asset/ GDP ratio (NFA/GDP) in Nigeria between 1980 and 2018. While there seems to be no clear pattern in the relationship between REER and NFA/GDP during the period of fixed exchange regime and extending up to 1999, a clearly discerning pattern is established between 2000 and 2018. Increase in NFA/GDP over this period has contributed to the gradual rise in REER, thus undermining the external competitiveness of Nigerian products.

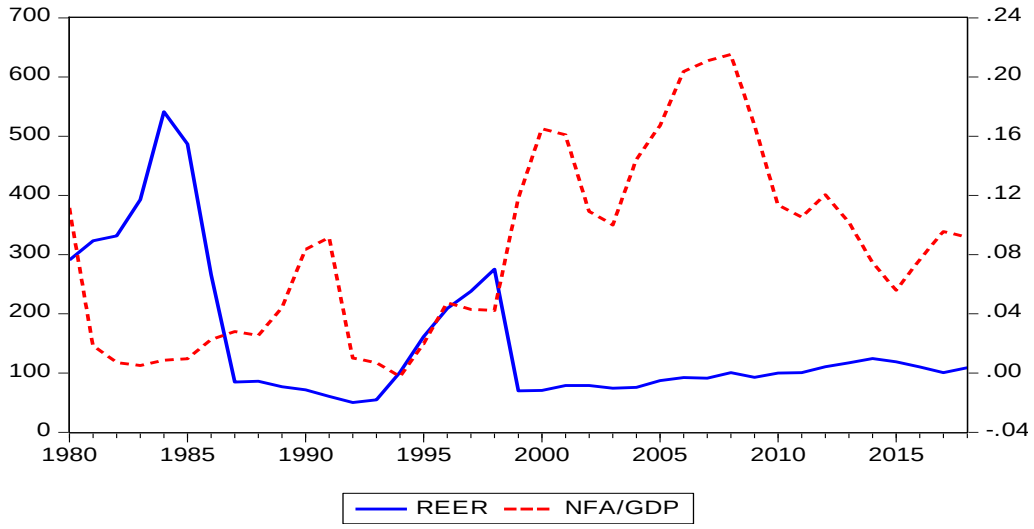

Figure 6: REER and Net Foreign Asset/ GDP

REER and International Competitiveness in Selected West African Countries

A cursory look at the trends in REER among selected West African countries in Table 3 and Figure 6 reveals some interesting facts about the international competitiveness of Nigerian products vis-a-vis their trading partners within the West African sub-region and the general performance of the economy as outlined below.

Table 3: Trends in REER among selected West African countries

YEAR	GHANA	CAMEROON	THE GAMBIA	SIERRA LEONE	COTE D'IVOIRE	NIGERIA
2012	86.47	96.45	89.01	118.14	97.40	110.52
2013	86.25	98.91	81.63	126.80	100.73	117.41

2014	66.38	99.73	73.75	131.47	101.28	124.49
2015	64.67	93.51	73.34	142.61	94.53	119.04
2016	74.23	95.62	88.93	129.67	95.80	110.17
2017	73.64	96.54	90.44	112.29	95.13	100.81
2018	72.03	97.91	89.09	101.73	97.28	109.10

Table 3…

Source: World Development Indicators

i. The pairs of Nigeria and Sierra Leone, Cameroon and Cote D'Ivoire, and Ghana and The Gambia exhibit closely related patterns in REER movement over the period. Of special interest is the similarity in the pattern of REER movement in Cameroon and Cote D'Ivoire, both belonging to the CFA monetary area. The observed pattern may not be unconnected with progress made towards meeting the criteria for establishing a single currency and monetary policy framework for the sub-region.

ii. With the exception of Cameroon and Cote D'Iviore, there is a greater level of macro-economic instability among countries of the sub region as reflected in the wide oscillations in their REER.

iii. With the exception of Cameroon and Cote D'Iviore, the rest of the countries experienced significant appreciation in REER, implying deterioration in the international competitiveness.

iv. With the exception of the two countries, the currencies of the other countries are overvalued, which impacts negatively on the international competitiveness of their products.

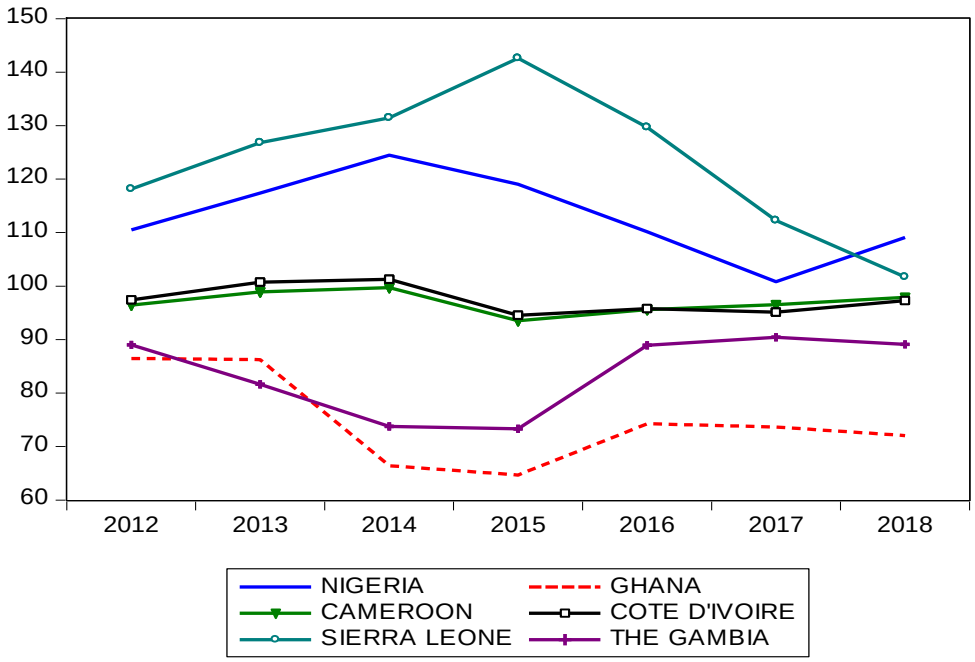

Figure 6: REER in Selected West African Countries.

CONCLUSION AND RECOMMENDATIONS

In this paper, attempts have been made to elucidate on real effective exchange rate (REER) and its implications for international price competitiveness and macroeconomic stability in Nigeria. It is emphasized that the real effective exchange rate is an important indicator of the degree of competitiveness among trading nations. Its measurement and computation have presented intractable problems in the literature.

Much as there are various time tested theoretical measures of REER, none is perfect and without some pitfalls. The choice of measures largely depends on availability of data which is a major challenge in Nigeria and the West African sub-region as a whole. The age long trade theories and the Keynesian expenditure switching policy prescriptions are increasingly finding no practical relevance to the perennial macroeconomic instabilities among developing nations.

The paper used a descriptive approach to examine the effectiveness of REER as a measure of international competitiveness of Nigerian products. It is found that:

1) The REER performs better as indicator of external competitiveness under a floating exchange rate regime than in a fixed or pegged regime.
2) Macroeconomic stability is better achieved under a flexible exchange rate than in a fixed regime.
3) Despite the massive depreciation in NEER, Nigeria continued to experience appreciation in REER, due to the effect of crude oil prices volatility and the structural rigidity in production and consumption.

Regrettably, Nigeria and indeed the West African sub region is not yet out of the woods after many years of experimentation with the received theories and model of development. What may be required is a concerted effort at intensifying trade relations among member nations within the sub-region and a holistic approach to macroeconomic management that will incorporate sound fiscal and monetary management, regional integration and economic diversification. There is need to break loose from the structural rigidity and asymmetry in production and consumption through diversification and leverage on our available human and material resources to secure a competitive edge at global market space. Efforts should also be made to discourage distabilizing short term foreign capital inflows by keeping interest rate low, while at the same time, encouraging domestic investment. Finally, Nigeria should take practical steps to become investors' destination by reducing the cost of doing business through policy transparency and consistency, infrastructural development and good governance.

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