Monetary Policy Variables Relevance on Balance of Payments Adjustment in Nigeria 1980-2020

Gerald, Chimezie Nwadike[1], Onwuka, Izundu C.C.[2], Ifeako Maureen, Okahorocha[3], Chika Maureen[4]

[1]Department of Economic; Imo State University.

[2,3,4]Department of Economic; Federal University Agriculture Umudike, Abia State.

ARTICLE INFO	ABSTRACT
Publication Online: 09 August 2021 Corresponding Author: **Gerald, Chimezie Nwadike**	This study examines monetary policy relevance on the Nigerian balance of payments adjustment, form 1980-2020. Objectives are; to examine the relevance of monetary policy variables such as Exchange rate, Inflation rate, Balance of trade, Real Gross Domestic Product and Domestic Credit on the Nigerian balance of payments adjustment. Evaluate the significant speed of adjustment of monetary policy variables such as Exchange rate, Inflation rate, Balance of trade, Real Gross Domestic Product and Domestic Credit on the balance of payments adjustment within the period under study. The study employed the following advanced econometric techniques; Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests, chow test, ECM model OLS model, statistical tests & Co-integration test. Based on the above econometric techniques conducted, it was observed that group unit root test result shows that variables used in the study became stationary after the first differenced at degree of order one I(I). There is Co-integration (long run relations) among variables used in the study. Our results indicated rejection of the two null hypotheses of this study and acceptation of the alternative three hypotheses that said; Nigerian monetary policy variables such as Exchange rate, Inflation rate, Balance of trade and Domestic Credit have significant relevance on the Nigerian balance of payments adjustment. Nigerian monetary policy variables used have significantly three years to adjust balance of payments adjustment in the Nigerian economy within the period of the study. The researcher recommends that; the need to manage domestic liquidity wisely in view of the tremendous pressure on the balance of payments of excess money. A determined effort to mobilize resources through private saving and the implementation of a prudent fiscal policy through efficient collection of tax revenues, rationalization of government expenditure towards growth enhancing and poverty reduction programmes will also enable the government to pursue its development programs without having to rely on the monetization of its budget deficit. Overall concentration on monetary tools solely should be reduced and employ other policy instruments to correct the balance of payment fluctuation. The government should also be cautious of budget deficit that are often time financed by internal borrowings.
KEYWORDS: Monetary Policy, Balance of Payments Adjustment, and Nigerian Economy.	

BACKGROUND TO THE STUDY

One of the goals of every economy is to ensure that stable balance of payments adjustment equilibrium of the country do not fall over time. This could be achieved through good monetary policies that could facilitate balance of payments adjustment programs. Balance of payments adjustment is a periodic report that summarizes the flow of economic transactions with foreigners, disturbance which can be deliberately initiated in order to correct some other disturbance'. The traditional mechanisms, based on changes in exchange rates, prices and incomes, can no longer be applied effectively because they are domestically impalatable. Consequently, governments have come to rely on new ways of initiating countervailing disturbances, among them (a) pressures on surplus countries; (b) changes in foreign tastes; (c) stimulating economic growth; and (d) forming or joining a customs union. In the present disequilibrium system, new adjustment mechanisms like these are being widely used, and are in fact becoming the only effective means for maintaining international equilibrium

(Tijani, 2014). Balance of payments adjustment provides information on the nation's exports, earnings of domestic assets owned by foreigners, international capital movements, and official transactions by Central Banks and governments. Balance of Payments adjustment is one of the objectives of macroeconomics and/or has a significant role to play in the economic development of any nation (both developed and developing).

Before now, nearly all of Nigeria's foreign exchange assets before the 1970s were held in British pounds sterling. Under the post-World War II, IMF modified gold exchange standard, which lasted until 1973; sterling was a key currency in international trade. A country that accumulated sterling, as Nigeria did in the twenty years before 1955, mostly years of restrictions on sterling convertibility, essentially extended credit to Britain. During this period, Nigeria restricted no sterling imports, strengthening the balance-of-payments positions of the sterling area and Britain's international financial position (Ajayi, 1983).

From 1956 to 1965, Nigeria had a persistent merchandise trade deficit, which changed to a surplus in the period between 1966 and 1977 (including the 1967-70 civil wars) with petroleum's rapid growth as an export commodity. In late 1977 and 1978, demand for Nigeria's low-sulfur crude decreased as oil became available from the North Sea, Alaska, and Mexico, and as global oil companies reacted to the less favorable participation terms offered by the Nigerian government. Except for the period from 1979 to 1980, when oil shortages and prices increased, demand for Nigerian crude remained sluggish until 1990. From 1978 through 1983, the trade deficit continued. In early 1984, the Nigerian government closed Nigeria's land borders and international airports for several days, replaced all old naira notes with new currency bills, and introduced tough exchange-control regulations designed to reduce the repatriation of naira smuggled abroad and prevent future convertibility to other currencies.

From 1984 through 1986 and in 1990, Nigeria had surpluses, but not because of export expansion, but because an economic breakdown forced Nigeria to adopt severe import restrictions. Nigeria's structural adjustment under World Bank auspices brought some stability in the domestic and international economy but at the expense of falling real wages and decreased government social spending for much of the late 1980s (Library of Congress Country Studies and the CIA World Fact book, 2014).

Nigerian balance of payments, in recent times, is in deficit. Unlike in the early 50s and late 60s, where the structure of Nigerian economy was predominantly agrarian (agriculture) and its share to the Gross Domestic product (GDP) was relatively high, in other words, about 60%, while other sectors accounted for the 40%. The balance of payments was surplus. Nigerian economy started capsizing in the early 70s immediately after the oil glut. This sector that could hardly contribute 0.6% to the GDP suddenly has about 60%

accounted for in GDP. Since these periods, the Nigerian balance of payments had witnessed deficit.

Monetary policy, an economic management technique used to bring Sustainable economic growth and balance of payments adjustment in a given economy, has been the pursuit of Nigeria nation. This articulation has been mainly on the way money affects economic aggregate dated to the era of Adams Smith which after championed by the monetary economists. In Nigeria, since the establishment of Central Banks of Nigeria (CBN), CBN has taken the responsibility of performing legal roles expected of it. One of the CBN's roles is; the regulations of stocks of money in a way it should act to promotes Nigeria's balance of payments. These roles were anchor to this application of monetary policy that is commonly targeted towards the achievements of full-employments equilibrium, rapid economic growth, price stability, as well as external balances. Many years ago, the main objective of monetary policy has frequently been the two goals (Ajayi, 1983).

Generally, monetary policy refers to a combination of measures designed to regulate the values, supplies and costs of moneys in an economy, in consonance to that expected levels of economics activities. For many economies, the objectives of monetary policies include price stability, maintenance of balance of payments equilibrium, promotion of full-employment and output growth, and sustainable developments (Folawewo and Osinubi, 2006). The goals are important for the attainment of internal and external balances and the promotion of long-run economic growth. The importance of price stability derives from the harmful effect of price volatility, which undermines the ability of policy maker to achieve other laudable macroeconomics goals. There is indeed a general consensus that domestic price fluctuation undermines the role of money as a store of values, and frustrates investment and growths. However, empirical study by Ajayi (1983), Ojo (1993) and Fry (1997) on inflation, growth and productivity have confirmed the long term inverse relationship between inflation and growth. With the achievement of price stabilization, the condition at the financial market and institution could create a highly degree of confidence, at such which the financial infrastructure of these economy will be fit to meet the requirement of market participant. Indeed, an unstable financial sector will render the transmission mechanism of monitory policy less effective, making the achievement and maintenance of strongly macroeconomics fundamentals difficulties. This is because in period of price stability, investors and consumers could interpret market signal correctly.

Meanwhile, the Nigerian economy has also witnessed time of deficit and surplus but in terms of its balance of payments adjustment evident, the growths was not a sustainable one as the evidence of growing imbalance with other international trade reports. The questions now are, could the periods of balance of payments adjustment deficit be attributed to ineffectiveness of monetary policies? And could the period of balance of payments adjustment surplus be an appropriate monetary policy or factor other than monetary conducts? What measures are to be considered if monetary conduct would be effective in bringing about sustainable

balance of payments adjustment equilibrium for Nigeria? These are the questions that give attention to the background of this study that necessity the effect of monitory policy on the balance of payments adjustment Nigeria for the period 1981 - 2018.

One of the goals of monitory policy and as well, major macroeconomic goals in any country of the world is that of the stabilization policy which its objective is to maintain a healthy balance of payment position in order to safe guard the external value of National currency, the naira.

There has emerged a different school of thought from time to time on the balance of payments adjustment. The classical approach (1800 – 1900), centered on gold standard and emphasized the role of prices and interest rate. Its major shortcomings are that flow of gold are indirectly related to domestic money supply, any fall in money supply reduces output and employment rather than prices, full employment is unattainable, which invariably make price increases as money supply increases. These shortcomings led to the relevance of the Keynesian approach from 1930 to present. This stressed on income changes affecting adjustment; Some of it shortcomings are that countries with surplus in income experience rising national income, leading to an increased demand for imports- partially offsetting the surplus; This is otherwise for the deficit nations. In order to overcome the shortcomings of these approaches; Monetary approach was developed as the modern approach, this focus on role of money in changes and adjustment. Balance of payments disequilibrium represents an imbalance between the supply and demand for money. Excess supply of money encourages imports, which results in foreign exchange reserves flowing overseas and reducing the money supply (Carbaugh, 2004) cited in Tijani (2014).

This modern approach was propounded and originated by Polak (1957) which focal point is on the perspective that the balance of payments of any particular country is in actual fact a monetary trend. This was further built up by Mundell and Johnson (1968, 1972). Mundell established that 'monetary policy is more effective than fiscal policy in attaining external balance, basically because monetary policy improves both the current and capital accounts of the balance of payments (Mundell, 1968). Thus, Mundell and Johnson, with the assistance of graduate students at the University of Chicago, were led to develop on entirely different analytical framework and offer it as a substitute for the traditional approaches. What emerged was a cohesive body of theory that becomes known as the monetary approach to the balance of payments (Kreinin and Officer, 1978).

The essence of the approach is a consistent insistence that the balance of payments is monetary and not a real phenomenon as asserted by the conventional theories. The major point of departure of the modern approach is the identification of the fact that a country; imbalance of payments, deficit (surplus) would experience a change in its money stock, ceteris

paribus. The consistent deficits run down the stock of money and perennial surpluses build up the stock and after some time, the spending pattern changes such that the imbalance is rapidly eliminated (Johnson, 1972).

In spite of the difference in monetary regime that has been adopted by the Central Banks of Nigerian over the period, inflation and exchange rate remain a main problem to Nigerians balance of payments adjustment.

Although the monetary policy approach to the balance of payments has been commended by many for explaining the balance of payments, it has been criticized by some scholars as an approach that ignores other parts of international trade in determining the balance of payments (Iyoha,2001). According to Fleermuys (2005), the monetary approach to the balance of payments has been blamed for disregarding the fiscal and real factors that influence changes in the balance of payments, while concentrating only on monetary factors. The weak position in the country's current account was due to the deterioration in the services and income account which outweighed the surplus recorded in the merchandise trade and involved net transfer account, (Gbosi, 2001). In recent years, there have persistent deficit in the Nigeria's balance of payments.

Nigeria's balance of payments recorded remarkable improvement during the period 2004- 2005. However, the situation worsened in 2008 as a result of the global financial and economic meltdown coupled with the falling prices of crude oil in the international oil market (Gbosi, 2001). After all these measure at correcting balance of payments deficit, it yielded non significance response of balance of payment to the monetary policy instrument employed in Nigeria; This informed the need to investigate on the effects of monetary policy variables on Nigeria's balance of payments adjustment.

RESEARCH QUESTIONS
(1)   Do monetary policy variables (Exchange rate, Inflation rate, Balance of trade, Real Gross Domestic Product and Domestic Credit) have significantly *relevance* on the Nigeria's balance of payments adjustment within the period under study?

(2)   Do monetary policy variables such as Exchange rate, Inflation rate, Balance of trade, Real Gross Domestic Product and Domestic Credit have significantly speed of adjustment on the Nigeria's balance of payments adjustment in Nigeria within the period under study?

OBJECTIVES
The specific objectives of this study include:
(1)   To examine the relevance of monetary policy variables such as Exchange rate, Inflation rate, Balance of trade, Real Gross Domestic Product and Domestic Credit on the Nigeria's balance of payments adjustment within the period of study

(2)   To evaluate the speed of adjustment of monetary policy variables such as Exchange rate, Inflation rate, Balance of trade, Real Gross Domestic Product and Domestic Credit on the balance of payments adjustment within the period under study.

HYPOTHESES

(1) H_o: Monetary policy variables such as Exchange rate, Inflation rate, Balance of trade, Real Gross Domestic Product and Domestic Credit have no relevance on balance of payments adjustment in Nigeria within the period under study.

(2) H_0: Monetary policy variables such as Exchange rate, Inflation rate, Balance of trade, Real Gross Domestic Product and Domestic Credit have no speed of adjustment on balance of payments adjustment in Nigeria within the period of study.

THEORETICAL LITERATURE

Chuku, (2009) opines that the pursuit of price stability invariably implies the indirect pursuit of other objectives such as economic growth, which can only take place under condition of price stability and allocative efficiency of the financial markets, since inflation is generally considered as purely a monetary phenomenon, with significant cost to the economy. The primary goal of monetary policy to him is to ensure that money supply is at a level that is consistent with the growth rate. Without mincing words, the literatures stipulate that the pursuant of price stability therefore encompasses all main areas in macroeconomic environment of the country.

Christiano (2002) argued that monetary policy and macroeconomic events have a large influence on the unpredictability of the stock price, which further implies that macroeconomic variables could exert shocks on share returns and thereafter influence investors' investment decision. Literature abounds on the relative effectiveness of monetary policy in curtailing macroeconomic instability in recent years. However, there have been constructive opinions on which of the monetary policy tools exert greater influence on economic activity. Accordingly, our concern in this segment is not to take side in either of the groups but adopt middle-way approach to examine the nature of relationship between monetary policy and Nigeria's macroeconomic instability for the period 1980 to 2010.

Meanwhile, Sims and Zha (2005) discuss two fundamental propositions about the effect of the quantity of money on the economy predate the emergence of monetary economics as a recognized discipline of study. The first is that increases in the quantity of money without corresponding increases in real output will eventually lead to inflation. The second is that a shortage of money can depress the volume of economic activity. Much attempt has been made in the literature to give credence or discordance to these propositions.

Friedman and Schwartz (1963) inspired the campaign in their seminal work as they documented the strong time series correlation of monetary aggregates with both output and prices. They explained that these correlations did not primarily represent passive responses of monetary aggregates to development in the private sector, but instead mainly the effects on monetary policy shifts on the private sector. From their argument, it follows that innovation in monetary policy variables have the potential for stimulating the economy when it is sluggish or cooling it down when it overheats.

Ehrmann and Fratzscher (2007) and Geraats (2005) argued on the several factors which have been identified to determine the capacity of central banks to use monetary policy innovations to achieve countercyclical objectives in the economy. To Ehrmann and Fratzscher (2007) and Geraats (2005) these include "credibility" of monetary policy, which is the level of commitment of the central bank to following a set down monetary policy rule rather than following a discretionary approach. This is important because economic agents make their decisions based on the expected course of monetary policy as well as the current policy. Also, policy transparency which deals with the extent of policy disclosure and the timing of central bank communication are key success factors in evaluating the effectiveness of monetary policies.

However, in their study, Bemanke and Mihov (1998) and Leeper, Eric, Sims and Zha (1996) argue that the choice of the monetary instrument used for intervention is the major determinant of the degree of impact. Pointing out that the growth rate of monetary policy aggregates depends on a variety of non-policy influences; the both submit that the traditional approach by using changes in the money stock or depress economic activity is inferior to the use of interest rate. Other authors like Cochrane (1998) emphasize anticipation or non-anticipation by agents as the key factor, whereas Starr (2005), sounding the spirit of new Keynesianism, focused on the sticky and flexible nature of prices.

The diverse opinions of different authors about the major determinants of the effectiveness of monetary policy notwithstanding, it is certain that the effectiveness of monetary policy innovations is a function of a combination of variables, high developed economies, such as the United States (US) and some core European countries, there is substantial evidence of the effectiveness of monetary policy innovations on real economic parameters as pointed out by Mishkin (2002); Christiano et al (1999); Rafiq and Mallick (2008) and Bemake, Boivin and Eliasz (2005).

Anifowose (1994) describes foreign exchange as a monetary asset used on a daily basis to settle international transactions and to finance deficits in a country's balance of payments. He emphasizes that it is an important component of a country's stock of external reserve. Other components include holding of monetary gold and special drawing rights (SDRs).

Ozumba, (1978) describes liquidity puzzle is a finding that an increase in monetary aggregates is accompanied by an increase (rather than a decrease) in interest rates. The price puzzle is the finding that tight monetary policy through positive innovations in the interest rate seems to lead to an increase (rather than a decrease) in prices. And yet, the most common in open economies is the exchange rate puzzle, which is a finding that an increase in interest rate is associated with depreciation (rather than appreciation) of the local currency.

Herrero and Thornton, (1997) argued that commodity price developments have been used as a leading indicator of retail price developments for some economic reasons. First, commodity prices and retail prices are linked directly because commodities are an important input into production. Therefore, ceteris paribus, increases in commodity prices should reflect in higher prices of final goods. Second, commodity prices are established in flexible "auction" markets that respond quickly to "news" about inflation prospects whereas consumer prices are set by sellers and adjusted only gradually. Therefore, if conditions in commodity prices reflect aggregate supply and in the whole economy, an increase in aggregate demand which might eventually translate into higher inflation, should be expected to show up much earlier in commodity prices.

Bosworth and Lawrence, (1982) stated that even when commodity prices rose simultaneously with final goods prices, inflationary pressures would be observed first in commodity price indices since they are updated almost immediately whereas retail price indices are reported with a lag of several weeks. (Herrero and Thornton, 1997) argued that commodity price have forward-looking characteristics, arising from their storability. Hence, commodity shocks, and claims on them, which are traded in future markets, should be similar to financial assets as regards the sensitivity of their prices to expectations of future economic conditions. While Frankel and Hardouvelis, (1983), stated that if commodity prices respond quickly to general inflationary pressures, investors may view them as a useful hedge against higher inflation. Herrero and Thornton (1977) submit that this function appears to have been performed most often by gold.

Other authors like (Ozumba, 1978) have argued that commodity prices suffer some potential weaknesses as an indicator of general price development. First is the volatility of commodity prices. As such, even well-diversified indices exhibit inflation variances that are many times that of the Consumer Price Index. Under a commodity price rule, monetary policy might transmit this volatility to the real economy via the credit markets. Second, movements in non-commodity costs, particularly labour costs, may dominate as regards the impact of commodity prices on current prices.

The elasticity approach focuses on the trade balance. It studies the responsiveness of the variables in the trade and services account, constituting of imports and exports of merchandise and services relative price changes induced by devaluation. The elasticity approach to balance of payments is built on the Marshall Learner condition (Sodersten, 1980), which states that the sum of elasticity of demand for a country's export and its demand for imports has to be greater than unity for a devaluation to have a positive effect on a country's balance of payments. If the sum of the elasticity is smaller than unity, then the country can instead improves its balance of trade by revaluation.

This approach summarily postulates that devaluation would only have positive effects on the balance of trade if the propensity to absorb is lower than the rate at which devaluation would induce increases in the national output of goods and services. It therefore advocates the need to achieve deliberate reduction of absorption capacity to accompany currency devaluation. The basic tenet of this approach is that a favorable computation of price elasticity may not be enough to produce a balance of payments effect resulting from devaluation, if devaluation does not succeed in reducing domestic expenditure. The approach dwells on the national income relationship developed be Keynes and it tries to find out its implication on balance of payments (Machlup, 1955).

EMPIRICAL LITERATURE

Udude (2012) studied on the monetary policy and balance of payment in Nigeria (1981-2012).The study employed Ordinary Least Squares (OLS) technique of multiple regression models using statistical time series data from 1980-2010. Secondary data on Balance of Payments (BOP) used as the dependent variable; broad money supply (M2), Interest rate (INT), exchange rate (EXCR) and gross domestic product (GDP) represented the explanatory variables, and sourced mainly from CBN publications were first tested for the presence of unit root using the Augmented Dicey-Fuller test. Johansen co integration test was used to test for long run relationship between the dependent an independent variables. The ADF results indicate that all the variables were stationary after first difference at 5 and 1 percent levels of significance and the Johansen co integration test revealed the presence of a long run relationship among the variables. Ordinary least squares (OLS) technique was employed to estimate the individual parameters and the result indicate that the coefficients of M2 and EXCR were positive while those of INT and GDP were negative. All the parameter coefficients, except interest rate, were statistically significant.

Tijani (2014) investigated on balance of payment adjustment mechanisms: monetary channel in Nigeria, 1970– 2010. The study made use of linear regression analysis using data from 1970 to 2010. The estimated result shows a positive relationship between the dependent variable (Balance of Payments) and the Independent variables (Domestic Credit, Exchange Rate and Balance of Trade)while (Inflation Rate and Gross Domestic product) had negative relationship with the dependent variable. It concludes that though not entirely, monetary measures constitute immensely to the position of

BOP, cause disturbances and also serve as adjustment mechanism to bring BOP to equilibrium depending on it application and policy mix by monetary authority.

Adamu and Itsede (2010), studied on the Monetary Approach of Balance of Payment in West African Monetary Zone, using three estimation methods, General method of moment (GMM) system, Fixed-effects OLS and Differenced GMM. Their findings indicate that the log of GDP has a positive effect on the change in net foreign assets. This implies that a country's income plays a significant role for its net assets. The result also shows that estimated coefficient on the change in domestic credit is found to be statistically significant at 1 percent and consistent with the monetary approach of balance of payments. A negative relationship between domestic credit and net foreign asset was established for all the three models.

Alexander (2013), in a study of Ghana BOP Monetary approach form 1980-2010 using Dicker Fuller model, found that inflation is statically insignificant but 1% increase in domestic credit leads to 6.6% decrease in reserve, which implies that excessive generation of credit causes discrepancy in reserve. He concludes that though monetary variables are not solely responsible for the disequilibrium in balance of payment, factor such as government expenditure also play a role.

Obioma (1998) used data for 1960-1993 to test the validity of monetary approach to balance of payment adjustment for Nigeria under fixed and flexible exchange regimes. He found that an increase in domestic credit on money stock leads to external reserves outflow or adverse balance of payments during the fixed exchange rate regime. But in the flexible exchange rate era, an increase in domestic credit brings about exchange rate depreciation. Jimoh (2004), using data from 1960-1995, also found that the monetary approach is relevant in analyzing balance of payments adjustments in Nigeria.

Dhliwayo (1996, 2004) used data for the period 1980-1991 to investigate the monetary approach to balance of payments in Zimbabwe. His findings indicate a one to one negative relationship between domestic credit and the flow of international reserves. The empirical results validate the Management Authority of balance of payments (MABP) in Zimbabwe. This implies that money plays a significant role in the determination of deficit in the balance of payments. In a related development, a study by Imoisi et al (2013) to examine the impact of monetary policy on balance of payments stability in Nigeria from 1980 to 2010, found that money supply, exchange rate and balance of payment have positive relationship while interest rate is negatively related to balance of payment.

This is similar to a study by Nwani (2003), who investigates the long-run determinants of balance of payments dynamics in Nigeria between 1981 and 2002, using econometric method of co-integration and error correction mechanism. He found that all the variables except balance of payments, exhibited non-stationarity. The results also indicate that balance of payment co-integrated with all the identified explanatory variables, suggesting that balance of payment fluctuations in Nigeria could be caused by the level of trade openness, external debt burden, exchange rate movement and domestic inflation. He concludes that a reduction in fiscal deficits, an increased domestic production through private investment, inflation targeting and regulated capital market integration are the panacea to the negative fluctuation in the Nigerian balance of payment. It was revealed from a study by Akpansung (2013), when the balance of payments of Nigeria and some other countries were indiscriminately chosen and reviewed the studies. The study indicates that most of the empirical studies of monetary approach reviewed established stability of money demand functions and also shows evidence of causal relationship that exist between domestic credit and balance of payments. The growth in income and prices have positive effect on balance of payments (i.e surpluses), while growth in the domestic credit have negative effect on balance of payments (i.e deficits), which results into reserve outflows. This also means that 'balance of payments is evidently a monetary phenomenon' as it was claimed by Mundel (1968). However, Akpansungs' study shown that aside-by-side employment of both devaluation and restrictive monetary policies by the monetary authorities is the best result especially in the third world countries, like Nigeria. Nevertheless, the conclusion is slightly in variance to the modified monetary approach to devaluation as propounded by Johnson and Frenkel (1978) and elaborated by Connolly and Taylor (1976, 1979) which was employed by Nyong and Obafemi (1995).

Nyong and Obafemi (1995), adopted a modified monetary approach to devaluation as propounded by Johnson and Frenkel (1978) and elucidated by Connolly and Taylor (1976, 1979) in a study to investigate the Impact of Exchange Rate Adjustments (Devaluation) in Nigeria's Balance of Payments from 1960-1993.the study employed simultaneous equations model, stage-least squares estimating procedures covering the period 1962-1993. The study reveals that: (i) the devaluation coefficient was statistically not significant and had a wrong sign; the size of the coefficient was far from unity, conforming to the a priori expectation. This implies that devaluation may not correct the disequilibrium in Nigeria's balance of payments, all things held constant. (ii) The growth in domestic credit is an important source worsening the Nigeria's balance of payments position. (iii) The coefficient on change in domestic credit is not only close to unity but different from unity as predicted by the monetary approach. That is, the domestic credit coefficient is found to be -0.8746 instead of -1.00 as *a priori* expected. The coefficient is statistically significant at about 5 per cent level. (iv)The sterilization or neutralization coefficient of the error term is statistically significant at better than one per cent level. This result implies that the Central Bank of Nigeria carried out complete neutralization of the domestic money supply within the sampled period (i.e.1960-1993). (v) The

study model failed to track the actual effect of the 65 per cent devaluation in 1986 (where the Naira was devalued by 65 percent, trading vis-à-vis the US dollar at $1 = N4.60 as against the administered rate of $1= N1.60, during September 26, 1986).

Based on their empirical results and analysis, Nyong and Obafemi (1995) conclude that devaluation as a policy response to redress the disequilibrium in Nigeria's external sector is an inappropriate policy response to the fundamental disequilibrium plaguing the Nigerian economy. They went further to identify various factors responsible for the inapplicability of the monetary approach to devaluation in the Nigerian context to include the structure of Nigeria's production, imports and exports coupled with instability in the macro economy, political instability and unpropitious institutional environment. However, their study indicated the crucial role of domestic credit in macro-economic adjustment.

Imoisi et al (2013) examined the efficacy of monetary policy in achieving Balance of Payments stability in Nigeria using an Ordinary Least Squares (OLS) technique of multiple regression models for the period 1980-2010. The estimated result shows a positive relationship between the dependent variable (Balance of Payments) and the Independent variables (Money Supply, Exchange Rate and Interest Rate). Specifically, Money Supply and Interest Rate have significant relationship with Balance of Payments, whereas Exchange Rate is not statistically significant. Based on the results, it is therefore recommended that the government should promote the exportation of Nigerian products especially the Non oil products, as this will bring in more foreign exchange into the country, boost productive activities and improve the balance of payments position of the country.

METHODOLOGY
Research Design
For this study, Ex post Facto Researched Designs was adopted. It is because the study attempts to explored causes and affects relationship where cause has been in existence and cannot be manipulated. **the** study employed Unit Root Test, Co–Integration, Error Correction Mechanism (ECM). The models specified below were estimated using annual time series data from 1980 to 2020. The data was obtained from Central Bank of Nigeria Statistical Bulletin, 2020.

Theoretical Framework
This study was anchored on Mundell –Fleming model (2007) of small open economy under floating exchange rates and resource curse theory, The Mundell–Fleming model has been described as the dominant policy paradigm for studying open-economy monetary and fiscal policy (Mankiw, 2007).

Mundell-Flemig theory is a close relative of the IS-LM model. Both models stress the interaction between the goods market and the money market. Both models assume that the price level is fixed and then show what causes short-run fluctuations in aggregate income (or, equivalently, shifts in the aggregate demand curve). The key difference is that the IS-LM theory assumes a closed economy, whereas the Mundell-Fleming theory assumes an open economy. Thus Mundell-Fleming theory extends the short-run theory of national income by including the effects of international trade and finance (Mankiw, 2007).

However, Mundell-Flemig model makes one important and extreme assumption; it assumes that the economy being studies is a small open economy with perfect capital mobility. That is, the economy can borrow or lend as much as it wants in world financial markets and, as a result, the economy's interest rate is determined by the world interest rate.

In order to present Mundell-Flemig conclusions in the simplest possible way and to bring the implications for policy into sharpest relief, Mundell-Flemig assume the extreme degree of mobility that prevails when a country cannot maintain an interest rate different form the general level prevailing abroad. This assumption will overstate the case but it has the merit of posing a stereotype towards which international financial relations seem to be heading. At the same time it might be argued that the assumption is not far from the truth in those financial centers, of which Zurich, Amsterdan, and Brussels may be taken as examples, where the authorities already recognize their lessening ability to dominate money market condition and insulate them from foreign influences. we should also have a high degree of relevance to a country like Nigeria whose financial market are dominated to a great degree by the vast united state and great Britain, (Mankiw, 2007).

Mundell's assumption of a small open economy with perfect capital mobility will prove useful in developing a tractable and illuminating theory model. Mundell-Flemig theory model is of the assumption that the behavior of an economy depends on the exchange rate system it has adopted. Indeed, the model theory was first developed in large part to understand how alternative exchange rate regimes work and how the choice of exchange rate regime impinges on monetary and fiscal policy. However, we begin by assuming that the economy operates with a floating exchange rate. That is we assumed that central bank of Nigeria allows the exchange rate to adjust to changing economic conditions.

Let's begin with the assumption of a small open economy with perfect capital mobility. This assumption means that the interest rate in this economy (Nigerian economy) r is determined by the world interest rate r*. Mathematically, we can write its assumption as r = r*.

Here, the world interest rate is assumed to be exogenously fixed because the economy is sufficiently small relative to the world economy that it can borrow or lend as much as it wants in world financial markets without affecting the world interest rate. Although Mundell-Flemig idea was that perfect capital mobility is expressed with a simple equation, it is important not to lose sight of the sophisticated process that this equation represents, Mundell-Flemig imagine that some

event were to occur that would normally raise the interest rate (such as a decline in domestic saving). In a small open economy, the domestic interest rate might rise by a little bit for a short time, but as soon as it did, foreigners would see the higher interest rate and start lending to start lending to this country (by, for instance, buying this country's bonds). According to Mundell-Flemig, capital inflow would drive the domestic interest rate downward, capital would flow out of the country to earn a higher return abroad, and its capital outflow would drive the domestic interest rate back up to r*. To Mundell-Flemig, the r = r* equation represents the assumption that the international flow of capital is rapid enough to keep the domestic interest rate equal to the world interest rate (Mankiw, 2007).

Model Specification:

$$BOP_t = \lambda 0 + \lambda_1 EXR_t + \lambda_2 INF_t + \lambda_3 BOT_t + \lambda_4 DC_t + \lambda_5 NGDP_t + \mu_t \qquad \ldots 3.1$$

Where,

BOP = Balance of payments, EXR = Exchange rate (# / $), INF = Inflation rate, BOT= Balance of trade (X – M), DC =Domestic Credit, RGDP = Real Gross Domestic Product and μ = Error term.

RESULT AND ANALYSIS
Unit Root Tests Analysis

This study applied Phillips-Perron (PP) and Augmented Dickey-Fuller (ADF) group unit root test to eliminate the presence of spurious result and autocorrelation in the models. The result is presented in tables below.

Table 4.1: Unit Root Test (Tests include intercept and trend) Result

Group unit root test: Summary; At Level
Series: BOP, BOT, DOC, EXR, INFR, RGDP

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	1.61274	0.9466	6	222
Breitung t-stat	4.96356	1.0000	6	216
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.70768	0.7604	6	222
ADF - Fisher Chi-square	26.4486	0.0093	6	222
PP - Fisher Chi-square	25.2921	0.0135	6	228

Group unit root test: Summary; At First Difference
Series: BOP, BOT, DOC, EXR, INFR, RGDP

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.27798	0.0000	6	208
Breitung t-stat	3.81228	0.9999	6	202
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-5.13640	0.0000	6	208
ADF - Fisher Chi-square	75.6781	0.0000	6	208
PP - Fisher Chi-square	337.072	0.0000	6	222

Source: Computed by the authors using E-views Statistical package version 9.0

In the table above, the PP and ADF group unit root test statistic results show that at level, the ADF and PP of the group statistic is not free from the unit root problem. In other words, the variables are not stationary and were not significant in absolute terms at 5% levels of significance since their probability values of ADF, PP, and Shin W-stat [0.7604, 0.0093, and 0.0135] are insignificance. However, while at the first difference, the variables PP, ADF and Shin W-stat group test statistic became stationary since their probability values

in absolute terms at 5% levels of significance are statistically significant.

Generally, the results indicate that time series are integrated of order one, I(1). The integration of group probability values of the variables at are at the same order with the respective application (ADF, and PP); this implies a linear combination of series which could be said to be co-integrated. The level of their integrations indicates the number of time series have to be differenced before their stationarity is induced.

Considering the ADF and PP test statistics at 5% critical values, it is observed that these tests (i.e. the t- statistics) are strong. Based on the above results, we can now further the other estimations model since the problem of spurious results has been adjusted with the aid of ADF and PP unit root test. Having found that all the variables are integrated of order one, co-integration tests are conducted to see if there is a long-run or equilibrium relationship between the variables.

4.2 Co-integration Test

The estimated equations report that there is a long run relationship between the D(BOP,2) and the explanatory variables; D(BOT,2) D(DOC,2) D(EXR,2) D(INFR,2) and D(RGDP,2) is the hypothesis to be tested in this study. Firstly, the summary of the Johansen Co-integration Test is shown in the Table 4.3 below. The model with lag 1 was chosen with the linear deterministic test assumption.

Series: BOP BOT DOC EXR INFR RGDP
Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.906703	206.5801	95.75366	0.0000
At most 1 *	0.769647	118.8173	69.81889	0.0000
At most 2 *	0.561786	64.49606	47.85613	0.0007
At most 3 *	0.468766	33.96933	29.79707	0.0156
At most 4	0.224877	10.56488	15.49471	0.2397
At most 5	0.030334	1.139751	3.841466	0.2857

Source: Computed by the authors using E-views Statistical package version 9.0

Under the Johansen co-integration test, there are four co-integrating equestions. In Johansen's method, the eigenvalue, trace or Max-Eigen statistic and critical value are used to determine whether co-integrated variables exist. The results from the trace statistics, show that the absolute values of (i.e. BOP [206.5801 > 95.75366], BOT [118.8173 > 69.81889], DOC [64.49606 > 47.85613], and EXR [33.96933 > 29.79707] variables were greater than 5% critical value respectively.

Also, their eigenvalues are significantly greater than zero (I.e. 0.9BOP, 07BOT, 0.5DOC, 0.4EXR, 0.2INFR) expect RGDP variable that stood at 0.03. In other words, the null hypothesis of no co-integration among the variables is rejected since more variables in the equations at 5% were statistically significant. The test result shows the existence of long-run equilibrium relationship between the variables D(BOT,2) D(DOC,2) D(EXR,2) D(INFR,2) and D(RGDP,2).

ECM Result

Dependent Variable: BOP
Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-124811.2	79506.32	-1.569828	0.1290
BOT	655.1169	1966.458	0.333146	0.7418
(EXR)	166043.2	128583.5	1.291325	0.2084
(INFR)	-1661.162	5127.162	-0.323993	0.7486
LOG(DOC)	0.228512	0.062593	3.650775	0.0012
LOG(RGDP)	-19827.64	26219.66	-0.756213	0.4566
(ECM(-1))	-0.253593	0.208356	-1.217116	0.2327

R-squared	0.437846	Mean dependent var	-2532.849
Adjusted R-squared	0.302928	S.D. dependent var	249470.1
S.E. of regression	208284.6	Akaike info criterion	27.52184
Sum squared resid	1.08E+12	Schwarz criterion	27.84247
Log likelihood	-433.3494	Hannan-Quinn criter.	27.62812
F-statistic	3.245294	Durbin-Watson stat	2.581992
Prob(F-statistic)	0.016914		

Source: Computed by the authors using E-views Statistical package version 9.0

The above equation estimated Balance of trade (BOT), foreign exchange rate (EXR), Inflation rate (INFR), Domestic Credit (DOC) and Real Gross Domestic Product (RGDP) on the dependent Balance of payments (BOP).

The ECM regression result above shows that Balance of trade (BOT), foreign exchange rate (EXR), and Domestic Credit (DOC) coefficients have positive relationship with the dependent variable (i.e. Balance of payment (BOP) in Nigeria within the period under study. The estimated result implies that a unit increases in these independent variables used (i.e. Balance of trade (BOT), foreign exchange rate (EXR) and Domestic Credit (DOC) will lead to increase in the value of Balance of payments adjustment in Nigeria by [655.1169BOT, 166043.2EXR and 0.228512DOC] percent respectively, within the period under study.

The sign borne by the parameter estimates of β_2, β_3 and β_4, were in conformity with the economic a priori expectation.

On the other hand, the coefficients of inflation rate (INFR) and Real Gross Domestic Product (RGDP) have negative linear relationships with Balance of payments (BOP) the dependent variable. If the inflation rate (INFR) and Real Gross Domestic Product (RGDP) coefficient in Nigeria decreases by [-1661.162 INFR and -19827.64 RGDP], will lead to increase to Balance of payments adjustment in Nigeria. Thus, the outcome of inflation rate (INFR) is in line with initial expectation since price relationship should be inverse relationship with value and volume of the Balance of payments while that of real GDP is not in line with the a priori expectation. Theoretically, the sign of the Balance of payments, the dependent variable could be positive or negative. Thus, if the Balance of payments result shows negative, it will implies that the Nigeria monetary policy variables coefficients employed are expected to influence positive effect and increases to Balance of payment adjustment.

Generally, the implication is that Balance of payment adjustment of the Nigerian economy with an adverse movement in her monetary and fiscal policy instruments will have enabling good control to inflation rates that will simultaneously expand the investment expenditure on importation, and as well, increasing the non oil sector of the economy like agricultural sector output for export to other countries. This in the long run will lead to economic stabilization towards achieving Balance of payment adjustment as on the Macroeconomic objectives.

T-test: The calculated t-value for the regression coefficients of Balance of trade (BOT), foreign exchange rate (EXR), Inflation rate (INFR), Domestic Credit (DOC) and Real Gross Domestic Product (RGDP) are [0.333146BOT], [1.291325EXR], [0.323993INFR], [3.650775DOC] and [0.756213NGDP] respectively. The tabulated t- value is 1.569. It is clear that not all the calculated t-values of all the independent variables were greater than the tabulated t-value

at 5% level of significance. Only the foreign exchange rate (EXR) and Domestic Credit (DOC) calculated t-value coefficients were greater than the tabulated t-value at 5% level of significance. We then conclude on the T-test that only foreign exchange rate (EXR) inflation rate and Domestic Credit (DOC) regression coefficient were statistically significant to the study within the period of study (I.e. 1980 to 2020).

F-Test: This is used to test for the joint influence of the explanatory variables (i.e. Balance of trade (BOT), foreign exchange rate (EXR), Inflation rate (INFR), Domestic Credit (DOC) and Real Gross Domestic Product (RGDP) on the dependent variable [i.e. Balance of payments (BOP)]. Thus, the $F_{\text{calculated}}$ value stood at [3.245294] while the $F_{\text{tabulated}}$ value is 1.45at 5% level of significance. Since the $F_{\text{calculated}}$ 3.2 % value is greater than the $F_{\text{tabulated}}$ value 1.45%, we then concluded that the regression plane is statistically significant. In other words, it means that the joint influence of all the explanatory variables (i.e. Balance of trade (BOT), foreign exchange rate (EXR), Inflation rate (INFR), Domestic Credit (DOC) and Real Gross Domestic Product (RGDP)] on the dependent [i.e. Balance of payments (BOP)] are statistically significant.

Coefficient of Multiple Determination (R^2): The computed coefficient of determination (R^2 0.437846) shows that 43% of the total variations in the dependent variable [Balance of payments (BOP)] is influenced by the variation in the explanatory variables namely, Balance of trade (BOT), foreign exchange rate (EXR), Inflation rate (INFR), Domestic Credit (DOC) and Real Gross Domestic Product (RGDP)]. While other remaining 77% out of the total one hundred variations in the dependent variable is accounted to the other factors not included in the model, and have been captured by the error term in the regression model. Based on the R^2 value, we could conclude that our linear regression model has no good fit.

The Durbin Watson statistics suggest no evidence of auto-correlation since its value is equal to 2.5%.

Meanwhile, the ECM (-1) result is consistent with the theoretical negative values assumption and assumed significant at 5% level of significance. It therefore, follows that the ECM could negatively correct any deviations from short run to long-run equilibrium relationship between balance of payments adjustments and the explanatory variables employed. The co-efficient indicates a speedy adjustment of 25.3 percent of its coefficient which is too short for it to adjust or correct. This implies that following short-run disequilibrium, 3 percent approximately of the adjustment in the long – run takes places within three years. The f – statistic stood at 3.245294; as it measures the overall statistical significance of the entire regression plan. This was influenced by the explanatory variables in explaining

the dependent variable. It is found to be statistically significant at 5% level.

Durbin Watson statistics suggest no evidence of auto-correlation since it stood at 2.5%.

EVALUATION OF HYPOTHESES

Hypothesis I: Monetary policy variables such as Exchange rate, Inflation rate, Balance of trade, Real Gross Domestic Product and Domestic Credit have no relevance on balance of payments adjustment in Nigeria within the period under study.

The objective, hypothesis one of this study was tested using the t-statistic of the ordinary least squared model were used in testing the significant influence of the individual independent variable. Having estimated and tested these variables, and based on the statistical rule, which stated that null hypothesis of any study should be rejected once, the t-calculated statistic value is greater than the critical value at chosen five level of significant. It was observed only the t-statistic value of the independent monetary policy variables; Domestic Credit (DOC) did past the individual test of significance, the t- calculated values (i.e. 3.650775DOC) have the right sign at (1.569) five percent critical level respectively. Since the calculated T-value of one of the explanatory monetary policy variables is greater than the tabulated critical t-value at five percent level of significance, we then reject the null hypothesis one of this study and accept the alternative hypothesis. In other words, we conclude that; only one monetary policy variable Domestic Credit have relevance on balance of payments adjustment in Nigeria within the period under study.

Hypothesis II: Monetary policy variables such as Exchange rate, Inflation rate, Balance of trade, Real Gross Domestic Product and Domestic Credit have no speed of adjustment on balance of payments adjustment in Nigeria within the period of study.

We test this hypothesis thereof this study with ECM model. The coefficient of ECM here is 25.36 percent denotes that up to 3%, in other words, it will take up to three years (i.e. Speed of adjustment to attain equilibrium in the short-run dynamics of balance of payments adjustments in Nigeria) resulted from the independent monetary policy variables; foreign exchange rate (EXR), Inflation rate (INFR), Domestic Credit (DOC) coefficients employed in the study. Therefore, we reject the null and accept the alternative hypothesis three of this study that says "Monetary policy variables such as Exchange rate, Inflation rate, Balance of trade, Real Gross Domestic Product and Domestic Credit have speed of adjustment on balance of payments adjustment in Nigeria within the period of study.

CONCLUSION

In this study, focus on the effect of monetary policy Nigerian balance of payments adjustment, from 1980-2020. We find evidence that independent variables such as (Exchange rate, Inflation rate, Balance of trade and Domestic Credit employed by both theoretical and statistical criteria have strong significant effect on balance of payments adjustment in Nigeria. The results support the view that monetary policy variables used do have a significant influence on the Nigeria balance of payments adjustment, while other variables indicate insignificant impact on the Nigeria balance of payments adjustment.

Disequilibrium in balance of payment in any country is adjusted through various mechanisms which monetary measure is one of such adjustment mechanisms. The investigation into the monetary channel or approach of the Nigeria's balance of payments adjustment mechanism in indicated that balance of payment in actual fact, a monetary happenings and it's by and large true, that it is a basis of change in base money which could cause inconsistency in balance of payment this can subsequently correct the anomalies, if it application is done appropriately. It was revealed that monetary tools could effectively serve as adjustment mechanism to influence the balance of payments irregularities in Nigeria. Empirical proofs gathered in this work concluded that though not its entirety, balance of payments is palpably a monetary occurrence and any observed disequilibrium or instability in a country's balance of payment can be corrected via the adjustment of domestic credits demand and the quantity of balance of trade. So, the monetary authorities should adopt contractionary or restrictive monetary policy to reduce excessive growth of domestic credit, however exchange rate and balance of trade have strong influence on the direction of balance of payment.

RECOMMENDATIONS

Less emphasis of control should be placed on international market oil price since the oil price has 81% influences of international market externalities 'shock on Nigeria balance of payments adjustment. Rather, more emphasis should be place on other non oil sector contributions to Nigeria balance of payments adjustment since it may has virtually neutral or significant internal control effect lending to the Nigeria balance of payments adjustment. Efforts should be made to enhance the budgetary allocation to the agricultural sector. While balance of payments adjustment from cured oil sector are expected to invest in agricultural sector and other non oil sectors of the economy, monetary authorities must support this by enhanced palliatives. Apart from insurance, unforeseen situations like escalated costs should be covered by an assurance of subsidy payments. The need to manage domestic liquidity wisely in view of the tremendous pressure on the balance of payments of excess money. A determined effort to mobilize resources through private saving and the implementation of a prudent fiscal policy through efficient collection of tax revenues, rationalization of government expenditure towards growth enhancing and poverty reduction programmes will also enable the government to pursue its

development programs without having to rely on the monetization of its budget deficit. Overall concentration on monetary tools solely should be reduced and employ other policy instruments to correct the balance of payment fluctuation. It is pertinent to know that no matter how effective monetary mechanism adjustment of balance of payment in any country, the government should always complement it with other effective policy measures to foster economic growth and development in the Nigerian economy

REFERENCES

1. Adamu P. A. & Itsede O. C. (2010). Balance of payments adjustment. The West African Monetary Zone Experience". *Journal of Monetary and Economic Integration, Vol 10(2).*

2. Akpansung A. O. (2013). A review of empirical literature on balance of payments as a monetary phenomenon". *Journal of Emerging Trends in Economics and Management Sciences*. Amsterdam: North Holland.

3. Alexander D. (2013). Empirical analysis of balance of payment in Ghana; monetary approach (1980-2010). *European Journal of Business and Management,* Vol 5, (8).

4. Ajayi, S. I (1983). Directional causality between money and prices Nigeria *Journal of Economic and Social Studies 25(3):319-324.*

5. Batim N (2004). Achieving and maintaining price stability in Nigeria. *IMF working paper WP/04/197.*

6. Bernanke, B. & Milhov, I. (1998). Measuring monetary policy. *The Quarterly Journal o Economics 2*(3): 870-902.

7. Burdekin & Siklos, (2004). Measuring the effects of monetary policy: a factor-augmented vector autoregressive approach, *Quarterly Journal of Economics 4(2): 387-422.*

8. Bernanke, B., Boivin, J. & Eliasz, P. S. (2005). Measuring the effects of monetary policy: A factor-augmented vector autoregressive (favor) Approach. *the Quarterly Journal of Economics,* 120(1): 287- 422.

9. Bosworth, B. & Lawrence, R. Z. (1982). Commodity prices and the new inflation. *Brookings Institute, Washington **D.C.***

10. Beckerman, W. & Jenkinson, T. (1986). What stopped the inflation? unemployment or Commodity Prices? *Economic Journal, Royal Economic Society, 96(381):* 39-54.

11. Bernanke, B. S., & Mark Gertler, (1995). Inside the black *box:* the credit channel of monetary policy transmission. *Journal of Economic Perspectives, fall 19(95): 35-52.*

12. Central Bank of Nigeria (2010). Statistical bulletin. online edition, Copied from *www.cenbank.org.*

13. Central Bank of Nigeria (2009). Economic and financial quarterly report. CBN Abuja Nigeria 22(8): 70 -81.

14. Chuku, A. C.(2009). Measuring the effects of monetary policy innovations in Nigeria: structural vector autoregressive (svar) approach". African *Journal of Accounting, Economics, Finance and Banking Research 5(5): 67-89.*

15. Carbaugh R. J. (2004). Balance of payments adjustments under fixed exchange rate"; *International Economics*; 9th Edition, South-Western College Publishing. Chapter 14.

16. Christiano, L., Martin, E. & Charles, E. (1999). Monetary policy shocks: what have we learned and to what end? In Woodford, M. and John T.(Eds), *The Handbook of Macroeconomics 1(4): North-Holland, Amsterdam, pp. 65-148.*

17. Christiano, L., Martin, E. & Charles, E. (2002). Nominal rigidities and the dynamic effect of a shock to monetary policy. *Federal Reserve Bank of Chicago.*

18. Chuku, A. C (2009). Measuring the effects of monetary policy innovations on Nigeria: a structural vector autoregressive (svar) approach. *African Journal of Accounting, Economics, Finance and Banking Research 5(3): 56-67.*

19. Cochrane, J. (1998). What do the vars mean? measuring the output effects of monetary policy. *Journal of Monetary Economics 41 (2): 277-300.*

20. Dhliwayo R. (2004): "The balance of payment as a monetary phenomenon". *Canadian Journal of Economics and Political Science*, 29 (November),

21. Dhliwayo, R. (1996). "The balance of payments as a monetary phenomenon: An Econometric Study of Zimbabwe's Experience". *African Economic Research Consortium (AERC), Research Paper 46.* Nairobi.

22. Dhliwayo, R. & T. Moyo. (1990). "The monetary approach to balance of payments: A Case Study of Zimbabwe". *Final Report*, AERC.

23. Ehrmann, M. & Fratzscher M. (2007). The timing of central bank communication. *European Journal of Political Economy, 23(23): 124-145.*

24. Friedman, M & Schwartz, A. (1963). M*oney and business cycles".* Review of economics and statistics, February, pp. 32-64.

25. Frenkel J & Mussa M (1976) "Asset markets, exchange rates and the balance of payments". *Journal of Economic Issues* 26 (1) 262- 270. Payments', in R Jones and P Kenen (eds) *Handbook of International Economics*, vol. 2,

26. Frenkel J. A & Johnson H. G. (1976), eds., "The monetary approach to the balance of payments" *International Monetary Fund.*

27. Fry M. J (1997). In favor of financial liberalization. *Economic. Journal, 107(23): 754- 770.*

28. Fleermuys, F. N. (2005). "The Balance of payments as a monetary phenomenon: *An Econometric Study of Namibia". DEA Research Discussion Paper (72).*

29. Frankel, J. A. & Hardouvelis, G. A. (1983). Commodity prices, money surprises and fed credibility. *Journal of Money, Credit and Banking, 1 7(4): 425-438.*

30. Folawewo, A & Osinubi, T. (2006). Monetary policy and macroeconomic instability in Nigeria: a rational expectation approach. *Journal of Social Science, 12(2): 93-100.*

31. Geraats, P. (2005). Transparency of monetary policy: Theory and Practice. Research Paper, *Centre for Economic Studies Munich.*

32. Gbosi, A.N. (2001). *Fundamentals of international economics and finance,* 2nd Edition, Abakaliki: Pack Publishers.

33. Gbosi A. N. (2002). "*Financial sector instability and challenges to Nigeria's Monetary Authorities*". African Heritage Publishers, Port Harcourt.

34. Herrero, A. G. & Thornton, J. (1997).World commodity prices as a forecasting tool for retail prices: Evidence from the United Kingdom*", IMF Working Paper; 97(70): International Monetary Fund.*

35. Iyoha, M.A & O.T. Ekanem (2001). *Introduction to econometrics*. (Benin: Mareh Publishers).

36. Imoisi, A. I, Olatunji L.M, & Ekpenyong B.I (2013). Monetary policy and its implications for balance of payments stability in Nigeria. *International Journal of Economics and Finance,5(3), ISSN 1916-971X.*

37. Iyoha M. A. (2003). *An overview of leading issues in the structure and development of Nigerian economy since 1960*. In Iyoha, M. A. & Itsede, C. O. (Eds.), *Nigerian Economy: Structure Growth and Development. Mindex Publishing Benin City*

38. Iyoha M.I (2001). Policy simulation with a macroeconomic model of the Nigerian economy. *Nigeria Economic and financial Review, Vol 6: (*1).

39. Ibeabuchi S.N. (2007). Overview of monetary policy in Nigeria, CBN Economic and, *Financial Review 45 (4):15 – 37.*

40. Jimoh, A. (2004). The monetary approach to exchange rate determination: evidence from Nigeria". *Journal of Economic Cooperation*, 25(2):109- 130.

41. Jhingan, M. L (1998). Money, *banking and international trade*. vrinda publishing (p) std delhi ch. 20.

42. Johnson, H. G. (1972). The monetary theory of balance of payments theory. *Journal of Financial and Quantitative Analysis*, March: 1555 – 1572.

43. Johnson H (1977). The monetary approach to the balance of payments. A Non-technical Guide", *Journal of International Economics*, 7, 251-68.

44. Johnson H (1977). The monetary approach to the balance of payments. A Non-technical Guide", *Journal of International Economics*, 7, 251-68.

45. Johnson, H. G. (1972). The monetary theory of balance of payments theory. *Journal of Financial and Quantitative Analysis*, March:1555 – 1572.

46. Kennan, R. (1989). Monetary approach to balance of payments: A Case Study of India, 1968-1985. *Economic and Political Weekly*.15(4): 627-636.

47. Kreinin, M.E. & L.H. Officer. (1978). The monetary approach to balance of payments: A Survey". *International Finance*. No. 43. Princeton University, Princeton.

48. Tija. Julius O. (2014) Empirical analysis of balance of payment adjustment mechanisms: Monetary Channel in Nigeria, 1970– 2010. *Mediterranean Journal of Social Sciences .MCSER Publishing, Rome-Italy.*

49. Tobin J (1969). A general equilibrium approach to monetary theory. *Journal of Money. Credit and Banking. February 19(61): 16.*

50. Taylor, J. B. (1995). The monetary transmission mechanism. an empirical framework. *Journal of Economic Perspectives. Pg 15-18.*

51. Tobin J. (1956). The interest elasticity of transaction demand for cash. *Review of Economic and Statistics. Sept. 19(56): 12-15.*

52. Library of Congress Country Studies & the CIA World Factbook (2014) *https://photius.com/countries/nigeria/economy/nigeria_economy_balance__of_payments.html Revised 27-Mar-05 Copyright © 2004 Photius Coutsoukis (all rights reserved).*

53. Leeper, E., Sims, C. & Zha, T. (1996). What does monetary policy do? *Brookings Paper on Economic Activity 10(92): 1 -63.*

54. Kreinin, M.E. & L.H. Officer. (1978). The monetary approach to balance of payments. A Survey. *International Finance*. No. 43. Princeton University, Princeton.

55. Mundel, R. A. (1971). *Monetary Theory*", Pacific Palisades, California: Good Years.

56. Mishkin, F. S. (1996). The channels of monetary transmission lessons for monetary policy. *National Bureau of Economic Research Centre.*

57. Mishkin, Frederick (2002). The role of output stabilization in the conduct of monetary policy, *Working Paper No. 929L NBER.*

58. Nwani V. M.(2003) Determinants of balance of payment fluctuation In Nigeria(1981-2002). *Journal of Economic Studies.*

59. Nyong, M. O. & Obafemi, F. N. (1995). Exchange rate policy and macroeconomic adjustment in Nigeria. A theoretical and empirical.

60. Odusola A. F. & Emmanuel Onwioduokit (2005). Monetary aggregate targeting and inflation in Nigeria. *West African Monetary Journal of Economic Integration* 7(5): 67-87.

61. Obinna, O. E. (1982). *An introduction to Nigerian budget policy*.

62. Obioma, E. C. (1998). Balance of payments and exchange rate management in nigeria: empirical evidence from the monetary approach. *NCEMA Policy Analysis Series*.Vol. 4; No. 2.Technical Guide. *Journal of International Economics*. 7: 251-68.

63. Ojo M.O (1993). A review and appraisal of Nigeria's experience with financial sector reform. *CBN Research Department, Occasional Paper No. 8*, Lagos.

64. Owoye, O, & Onafowora A.O. (2007). M2 targeting, money demand and real gdp growth in Nigeria: do rules apply? *Journal of Business and Public Affair*, 1(2): 25-34.

65. Patinkin. D. (1965). *Money, interest and Prices*. 2nd edition.

66. Polak J (1957). Monetary Analysis of Income Formation and Payments Problems', IMF Salin, P. Selected Readings, Harmonsworth: Penguin, 22-37.

67. Rafiq, M. S. & Mallick, S. K. (2008). The effect of monetary policy on output in emu: a Sign Restriction Approach". *Journal of Macroeconomics 24*(30): 1756-1791.

68. Sims, C. & Zha, T. (2005). Does monetary policy generate recessions? *Research Paper, Federal Reserve Bank of Atlanta.*

69. Starr, Martha (2005). Does money matter in the city? Effects of monetary policy on output and prices, *Journal of Comparative Economics 45*(33): 441-461.

70. Todaro, C. B. (1994*). Economic development 5th edition P, 11 -23.*

71. Udude Celina C. (2015). *Monetary policy and balance of payment in Nigeria. Journal of Policy and Development Studies Vol. 9, No. 2, February 2015.*

72. Uchendu, O. A. (1996). The transmission of monetary policy in Nigeria. *Economic & Financial Review CBN 34(8): 600 – 612.*

73. Ugwuanyi, C. U. (2004). *Intermediate macroeconomic theory*. Great Ap-Express Publication Ltd Nsukka 24PP.