

**DETERMINANTS OF BALANCE OF PAYMENTS
DISEQUILIBRIUM IN NIGERIA**

BY

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PG/M.SC/10/57317

**AN M. SC PROJECT SUBMITTED TO THE
DEPARTMENT OF ECONOMICS, UNIVERSITY OF
NIGERIA, NSUKKA, IN PARTIAL FULFILMENT FOR
THE AWARD OF MASTER OF SCIENCE (M.Sc.)
DEGREE IN ECONOMICS**

SUPERVISOR: PROF. N.I. IKPEZE

JUNE, 2013

TITLE PAGE

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M.SC. THESIS

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**DEPARTMENT OF ECONOMICS, UNIVERSITY OF
NIGERIA, NSUKKA**

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CERTIFICATION

This is to certify that Okoli Tochukwu Timothy, and an M.Sc. Student of the University of Nigeria Nsukka with registration number PG/M.Sc/10/57317 has successfully completed the research required for the Award of Master of Science (M.Sc.) Degree in Economics in the aforementioned institution.

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APPROVAL

The research work titled: "Determinants of Balance of payments disequilibrium in Nigeria" by Okoli Tochukwu Timothy has followed due process and has been approved to have met the minimum requirement for the award of the Master of Science degree in the Department of economics, University of Nigeria Nsukka.

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ACKNOWLEDGEMENT

Indeed, I lack the exact words to use in thanking the ALMIGHTY GOD, THE ROCK OF MY SALVATION and my PRINCE OF PEACE for all HE has done for me particularly in this M. Sc. Degree program. First, He put the desire to pursue this degree even against all odds and saw me through it, FATHER, I say a big thank you; indeed great is your faithfulness. Moreover, enormous debt is owed to the following people: My parents Mr and Mrs T. A. N. Okoli for their support, prayers, understanding and patience towards me all through the program. Also my profound gratitude goes to my God given supervisor: Prof. N. I. Ikpeze who gave his time to go through my work despite his tight schedules, and also stood and made sure that I am not left by the way side. Furthermore, I also appreciate Mr Ephraim Ugwu, Mr Denis Yuni, Mr Chuks Ferguson E. who also gave ample time to read my work vividly, effect the necessary corrections in order to make this work to come out better, I say thanks to you all. I am most grateful to all the Lecturers in the Department of Economics, University of Nigeria Nsukka for their input to fine tune this work, as well as my discussants, Ngozi Okenwa and Bamidele, all my friends within and outside the Department. I pray that God will reward your labour of love adequately, and your expectations will not be delayed.

I also want to appreciate GOD so much for all my siblings for their understanding, prayers, support and advice to me in ensuring that I got to this level. Even when the going gets tough, they never give up in giving me all the support I needed to continue making progress. I am happy I have you. Thanks a lot.

I am deeply indebted to my brother and friend Tobeckukwu Enem for his sacrifice, commitment and love towards me in that he relinquished his laptop to me for a space of one year and always go to places wherever I demand to ensure that I have this success. My GOD shall supply all your needs according to HIS riches in GLORY through CHRIST JESUS AMEN, thank you very much.

Again, I want to honestly thank God and appreciate the support of all my Leaders in the church such as Pastor G. Ochi, Pastor V. I. Ani, Brother Remy Enem, Brother Peter Amune, Brother F. Akande and a host of others whose prayers, advice and financial support really helped me survive the challenges I faced in the course of running this my program. GOD bless everyone of

you. My gratitude also goes to my beloved youths such as Nneoma Oyia, Chidinma Ochi, Dayo Pelenjo and the entire Liberty group of districts youths that stood by me, praying and fasting to see that I come to this height, truly I lack the exact words to use and thank GOD for everyone of you but I pray the blessings of the LORD will never cease in your lives, I am grateful.

DEDICATION

This research study is dedicated to the Glory of God for his unusual favour upon my life, during this period of study.

ABSTRACT

This study investigates the macroeconomic determinants of Balance of Payments dynamics in Nigeria between 1970-2011, using econometric method of cointegration and Error correction mechanism. It found that Balance of Payments cointegrated with all the identified explanatory variables, suggesting that Balance of Payments disequilibrium in Nigeria could be caused by naira/dollar nominal exchange rate, interest rate differential, external debt growth and Government spending. Again the dummy variable approach to chow test was conducted to check whether there is a structural break between the pre-SAP and post-SAP periods in the naira/dollar exchange rate. The test reveals that there is evidence of structural instability during the period under consideration. The result equally reveals that the coefficients of most of the variables under consideration confirms to the aprori expectation of economic theory. The researcher therefore concludes that a reduction in government spending, increased domestic production through private investment, effective capital movement, effective expenditure switching policy and an implementation of fixed naira/dollar nominal exchange rate system are the solution to the negative stance of the Nigerian Balance of Payments.

Keywords: Determinants, Balance of Payment, Disequilibrium, SAP

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CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Many developing countries have deficit Balance of Payments (BOP) account and face many troubles in monetary actions which raise many questions for monetary authorities. Like many other developing Countries, Nigeria also aims to stabilize the BOP account which strengthens the macroeconomic environment. One of the major purposes of International Monetary Fund [IMF 2000] is to stabilize the balance of payment position of developing countries.

Over the last-three decades, there has been an increasing trend in the fluctuations of the Nigeria BOP. BOP crisis distorts the workings of the entire system (economy) because it creates disequilibrium between the supply and demand for money. BOP disequilibrium is a reflection of disequilibrium in the money market (IMF, 2000). Monetary disequilibrium produces adverse effect on the aggregate expenditure for goods and services (absorption) in the sense that, if the public has an excess supply of money it gets rid of it by passing its excess cash balance to foreign countries in exchange for goods and services. If the public desires to keep more money than it has in stock, it achieves it by reducing absorption.

Disequilibrium in balance of payment occurs when, over a particular period of time, a country is recording persistent deficits or surpluses in its balance of payments. As a consequence, it has to be recognized that the exchange rate is either overvalued or undervalued on the foreign exchange market. In such situations, particularly in the case of a deficit, corrective action is required in order to prevent the economy draining its foreign currency reserves or ending hopelessly in debt. With this in mind, disequilibrium in the balance of payments can arise where: The imports of goods and services exceed exports and the financial account is in deficit; exports of goods and services may just exceed imports but there is a persistent surplus on the financial account; exceptionally, there is a large surplus on the current account, generating an overall balance of payments surplus. Japan is a pertinent example of such an economy.

At 1964, fifty years after amalgamation of Nigeria in 1914, Nigeria was at the height of her promise; among other promising trends, it was the world's largest producer of groundnuts, palm oil and petroleum was making its debut in the national accounts. In the early 1980s, the oil

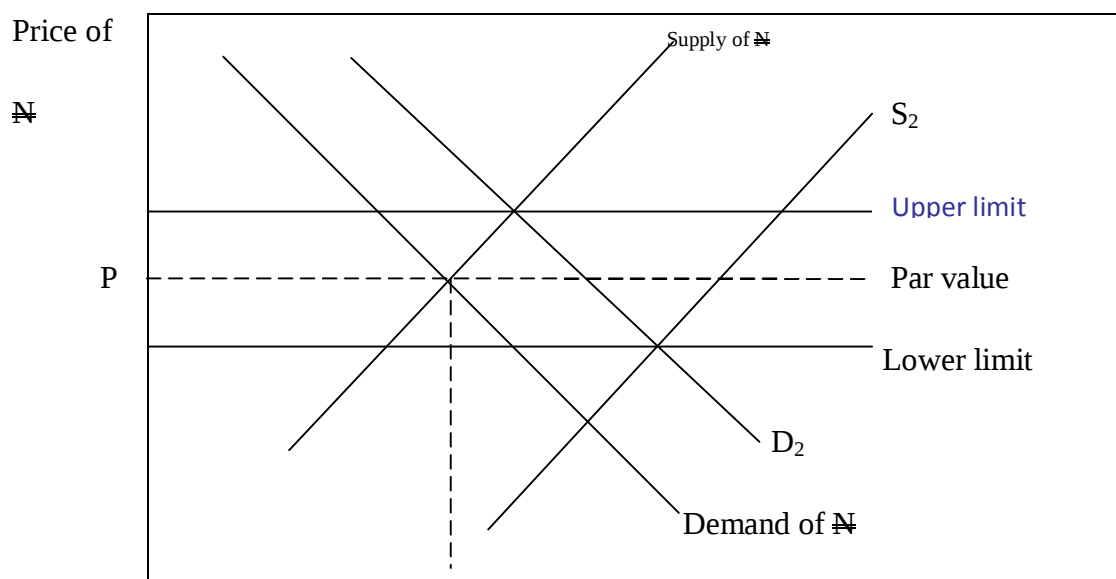
market weakened, substantial external and fiscal imbalances emerged. These were financed by public sector borrowing, depleting international reserves and large accumulation on payment arrears on external trade credits and as such created problems in the Nigerian Balance of payments. In 1984, austerity measures were introduced to redress the nagging deficits in the country's balance of payments, these included; slashing of budgetary expenditures, administrative control for import licenses, increase and upward review of tariffs. In 1986, the Structural Adjustment Programme (SAP) was introduced, which amongst other things, combined exchange rates and trade policy reforms to promote economic efficiency and long term growth in the stabilization policies designed to restore balance of payments equilibrium and price stability.

The cardinal aim of every government in Nigeria from the regime of Tafawa Balewa up till date had been to get the balance of payments position right. This cardinal aim has inspired every major turn of policy; setting of bank rates, changes in taxes, regulation of incomes, the restructuring of industry, introduction of export rebates, control of money supply, level of local government expenditure, etc. The Current Account Deficit (CAD) in the balance of payments has been a problem for Nigeria because it adds to the already large indebtedness of Nigeria to the rest of the world. International credit is like an important drug to Nigeria. This is accepted by Nigerians even though the harm it does is known. If the credit supply that funds our current account deficits and add to our national debts dries up, we would go cold turkey. The Balance of Payments disequilibrium has reached an unviable proportion and has become a binding constraint in the realization of the government objectives. It has been undermined by a relatively poor non-oil export performance, high import bill, stagnated agriculture, high taste for foreign goods and services, continuous fall in the country's foreign exchange, inflationary pressure, inefficient manufacturing sector and mishandling of the oil boom.

In an attempt to identify the long-term causes of BOP fluctuation in Nigeria, the vulnerability of the economy to external shocks, external debt burden and debt servicing issues, inflationary effects, trade openness, capital liberalization and exchange rate movement etc, have remained the focal issues. BOP adjustment through exchange rate changes relies upon the effect of the relative prices of domestic and foreign goods on the flows with the rest of the world (Thrillwall, 2004). This relative prices is defined by the ratio of export and import prices in domestic currency from the point of view of the country as a whole, it represents the amount of imports that can be

obtained in exchange for a unit of export. The terms of trade may vary both because of changes in the prices expressed in the respective national currencies and because of exchange rate changes. Thrill wall (2004) noted that depreciation in the exchange rate at unchanged domestic and foreign prices in the respective currencies makes domestic goods cheaper in the foreign markets and foreign goods more expensive in the domestic market. This has been the case in the Nigeria exchange rate, therefore it is expected that the demand for goods and services from Nigeria will increase both domestically and internationally hence, a balance of payment surplus but why Nigeria still experiences a BOP deficit is an issue of concern. It's not only an issue of deficit that is the problem but the rate at which this deficit is increasing every year with all the exportable natural endowment in the country. Hence, this work also wants to investigate whether there is a correlation between the different types of exchange rate system such as floating and fixed exchange rate systems and BOP stability. Exchange rate arrangements in Nigeria have undergone significant changes over the past four decades. It shifted from a fixed regime in the 1960s to a pegged arrangement between the 1970s and the mid-1980s, and finally, to the various types of the floating regime since 1986, following the adoption of the Structural Adjustment Programme (SAP). A regime of managed float, without any strong commitment to defending any particular parity, has been the predominant characteristic of the floating regime in Nigeria since 1986 even till date. I must quickly add that these changes are not peculiar to the Naira as the US dollar was fixed in gold terms until 1971 when it was de-linked and has since been floated.

Figure 1.1 A Managed exchange rate system using foreign reserve



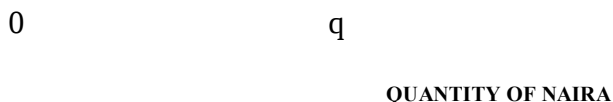


Figure 1.1 shows the principles of a managed exchange rate system, whereby the currency has a par value of 0P, with an upper and lower limit. If there is an increase in the supply of naira, for example due to an increase in import of goods and services, then the supply curve shifts to S_2 . This will reduce the value of the naira in a free market to below its agreed lower limit. To maintain the currency at its lower limit, the demand for naira has to shift to the right, an action requiring the use of foreign exchange reserves by the government. If it wishes to return the naira to its par value, then even greater reserves are needed to bring it back to (0P).

The fixed exchange rate regime induced an overvaluation of the naira and was supported by exchange control regulations that engendered significant distortions in the economy. That gave vent to massive importation of finished goods with the adverse consequences for domestic production, balance of payments position and the nation's external reserves level. Moreover, the period was bedeviled by sharp practices perpetrated by dealers and end-users of foreign exchange. These and many other problems informed the adoption of a more flexible exchange rate regime in the context of the SAP, adopted in 1986.

Soderstan (1989) contends that devaluation tends to make imports more expensive in domestic currency terms, which are not matched by corresponding rise in export prices. This implies that the terms of trade will deteriorate. Deterioration in terms of trade represents a loss of real national income and can lead to BOP crisis because more units of exports have to be given to obtain one unit or lesser unit of imports. Hence, the terms of trade effects caused by devaluation lowers income. A devaluation of currency causes an increase in the import prices and general price level. This initiates reduction in the real value of wealth held in monetary form such that the real value of cash balance is reduced leading to unfavourable BOP.

Chacholiades (1978) maintained that money illusion and expectation effects can induce BOP fluctuation because real income does not change due to proportionate increase of price and money income. The direction of the change depends on the type of money illusion. Money illusion inhibits real activities though these effects are significant only at the short run. Therefore, if people are unconscious of the working of money illusion, they will likely change their absorption. It is possible that economic agents in Nigeria regard the increase in price

induced by currency devaluation as likely to spark further price rises. This has consequently resulted to an increase in direct absorption which is capable of worsening the country's balance of payments.

Nigeria external debt burden and external debt servicing over the last three decades has been blamed by several authors for the negative profile of the country's BOP. Dell and Lawrence (1980) stressed that a potential and increasing significant source of demand deflection, which might be induced by currency depreciation in developing countries, arises from its effects on debt servicing. Clearly, the Nigerian external debt obligation is large and the interest payable keeps rising over the years. The implication of this circumstance is that debt service expenditure reduces wealth and the resource available to improve the country's real activities and this is detrimental to BOP.

Inflationary effects caused by currency depreciation might be expected to have an expenditure reducing impact (Dornbusch 1992). Reduction in real expenditure will occur only if the appropriate monetary policy is simultaneously pursued (Fakiyesi, 1996). But over the years, inflation policies and targets in Nigeria has failed to achieve its desired objective of correcting BOP disequilibrium due to miss-specification of macroeconomic policies and insufficient time lag. The monetary approach to the balance of payment sees the monetary implications of exchange rate depreciation as being absolutely crucial. But depreciation becomes unnecessary provided sufficient time (that is financing) is available for automatic correction to occur. According to this approach the mechanism by which depreciation affects the BOP is by raising the domestic price level and thereby increasing the demand for nominal money balances (Ikihi, 1993).

These and many more could be the reasons behind the negative profile of the Nigerian Balance of Payments as should be revealed by this work. This is the gamut of this research work.

1.2 STATEMENT OF THE PROBLEM

Every society desires growth which could be achieved in various ways among which balance of payments stability is one of the ways. This is so because fluctuation in exchange rate will distort not only international transactions but also domestic prices of goods and services. In reality, BOP stability is more or less a mirage. However, fluctuation in BOP which can either be a surplus or deficit comes with varying benefits and harm. For instance, a BOP surplus entails that sources of

funds (such as exported goods and services sold and bonds sold) exceed uses of funds (such as paying for imported goods and paying for foreign bonds purchased). There is a balance of payments deficit if the former are less than the latter.

In theory and practice, a prolonged misalignment of the exchange rate in the foreign exchange market will, in the medium term, tend to impact adversely on economic performance. Consequently, the authorities should always provide a timely intervention to ensure that the exchange rate is in equilibrium. The monetary authorities usually intervene through its monetary policy actions and operations in the money market to influence the exchange rate movement in the desired direction such that it ensures the competitiveness of the domestic economy. In Nigeria, maintaining a realistic exchange rate for the naira is very crucial, given the structure of the economy, and the need to minimize distortions in production and consumption, increase the inflow of non-oil export receipts and attract foreign direct investment. Moreover, the persisting problems of import dependency, capital flight, and lack of motivation for backward linkages in the production process need to be addressed, amongst others.

Under a fixed exchange rate system, the Central Bank accommodates those flows by buying up any net inflow of funds into the country or by providing foreign currency funds to the foreign exchange market to match any international outflow of funds, thus preventing the funds flows from affecting the exchange rate between the country's currency and other currencies. Then the net change per year in the Central Bank's foreign exchange reserves is sometimes called the balance of payments surplus or deficit. Alternatives to a fixed exchange rate system include managed float where some changes of exchange rate are allowed, or at the other extreme a purely floating exchange rate (also known as a purely flexible exchange rate). With a pure float, the central bank does not intervene at all to protect or devalue its currency. Central bank's foreign exchange reserves do not change.

Exchange rate appreciation arises due to BOP surplus which creates an increase in the demand of a country's currency and a fall in the supply of their currency due to the fact that BOP surplus always go with increase in export and a fall in import. However, this effect will make the goods and services of the country to be expensive in international market and foreign goods to be cheaper relative to domestic ones because the currency is overvalued. If this is not put in check, unemployment will rise, leading to fall in output and GDP per head. On the other hand, if a country experiences a BOP deficit (BOP

negative), the reverse will be the case, leading to inflationary tendencies. The Current Account Deficit (CAD) in the balance of payments has been a problem for Nigeria because it adds to the already large indebtedness of Nigeria to the rest of the world. International credit is like a drug to us. We accept it indeed grave it even though we know the harm it does to us. If the credit supply that funds our current account deficits and add to our national debts dries up, we would go cold turkey. The balance of payments problem has reached an unviable proportion and has become a binding constraint in the realization of the government objectives. It have been undermined by a relatively poor non-oil export performance, high import bill, stagnated agriculture, high taste for foreign goods and services, continuous fall in the country's foreign exchange, inflationary pressure, inefficient manufacturing sector and mishandling of the oil boom.

1.3 RESEARCH QUESTIONS

The above problem statement therefore leads us to the following specific questions of the study:

- What are the macroeconomic determinants of Balance of payments in Nigeria?
- Do the type of exchange rate system affect balance of payment disequilibrium in Nigeria?

1.4 OBJECTIVES OF THE STUDY

The broad objective of this work is to examine the long run determinants of balance of payment disequilibrium, drawing evidence from Nigeria.

The specific objectives are:-

- To investigate the macroeconomic determinants of on Balance of Payments in Nigeria.
- To examine whether the type of exchange rate system has any impact on balance of payments disequilibrium in Nigeria.

1.5 STATEMENT OF HYPOTHESES

In line with the preceding objectives, the hypotheses for the study are developed thus:

- There exist no significant macroeconomic determinants on balance of payments in Nigeria.
- The exchange rate systems do not have significant effect on balance of payments disequilibrium in Nigeria.

1.6 SIGNIFICANCE OF THE STUDY

This research would contribute to the ongoing policy by identifying growth patterns of the Nigerian economy and to what extent will BOP stability achieve economic growth. Owing to the vision 2020(making Nigeria one of the largest (20) economies in the world in the year 2020), the identification of BOP fluctuation in Nigeria is necessary because this will help to model the economy and control the variable such that it does not trigger other un-wanted disturbances that will hinder the economic growth of the country. Take for instance if the BOP of the economy is in disequilibrium, say deficit to be precise the exchange rate will be undervalued on the foreign exchange market. In such situations, particularly in the case of a deficit, corrective action is required in order to prevent the economy draining its foreign currency reserves or ending hopelessly in debt. The main reason for Nigeria's BOP deficits is the way in which Nigeria consumers have increased their demand for imported manufactured goods such as food stuffs, capital equipment, etc. This equally implies that there is a net outflow of currency than the inflow of foreign reserve. If this lingers, it can lead to inflationary pressure and unwanted distortions in the system. Therefore, in order to correct that, the country might increase domestic interest rate to act as an incentive for foreign direct investment in anticipation of a high returns. Other things being equal, the high interest rate will lead to foreign inflow of capital, hence a BOP current account deficit will be corrected by BOP capital account surplus.

However, the high interest rate will act as a disincentive for domestic investment, leading to unemployment and can equally bring about high prices of goods and services in the long run due to fallen investment which will in turn make the country's goods and services to become less price competitive in the international market, hence, the demand for net exports (export-import)

has fallen. Although a vicious cycle may eventually arise but BOP fluctuation if not controlled very well may lead to policy conflict and conflict in macroeconomic objectives.

The significance for the balance of payments of many developing economies like Nigeria is that large sums of capital were borrowed from commercial banks in the 1970s and early 1980s to fund development projects from which it was expected future income streams would be generated (CBN 2000). Many such projects have turned out to be very poor investments. In other cases the money has been spent on other things or has been used corruptly by recipients. The legacy is one of chronic balance of payments deficits. The problem for many developing countries like Nigeria is that a very substantial part of their export earnings has to be paid annually in order to service this debt.

1.7 SCOPE OF STUDY

This work use secondary data spanning a period of 41 years (1970 to 2011). The choice of this study period is because of the availability of data. The study also considers the Nigerian economy as the study area.

1.8 LIMITATION OF THE STUDY

This research work is limited by two major factors which are inability to obtain the fund to facilitate the work and non availability of data.

1.9 STRUCTURE OF THE STUDY

The work is organized into five different chapters. Chapter one is made up of the motivations to the study and the general conceptual framework. It also includes the research questions, objectives of the study, hypotheses, etc. Chapter two is made up of the theoretical framework under which the model was built; chapter three displays the models and methodology; while chapters four and five showed the result presentation and analysis, and summary of the results respectively.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Literature

2.1.1 The Absorption or Keynesian Approach

Sydney A. (1952) developed the Absorption or Keynesian approach. The theory states that if a country has a deficit in its Balance of Payments, it means that people are absorbing more than they can produce and if they have surplus in the balance of Payment, it means they are absorbing less. Expenditure on consumption and investment is less than national income. Here, BOP is defined as the difference between national income and domestic expenditure thus:

$$B = Y - A$$

This means that balance of payment (B) on current account is the difference between national income (Y) and total absorption (A). BOP can be improved by either increasing domestic income or reducing the absorption level. Sydney Alexander advocates devaluation because it acts both ways. Devaluation increases exports and reduce imports, thereby increasing the national income through the multiplier effect.

2.1.2. THE CURRENT ACCOUNT AND PRODUCT MARKET

In the product market equilibrium equation, export and import enter as analogous to government purchases and saving. For a given level of aggregate foreign demand and prices, real exports (X) will depend on the Nigeria price level (P) and the exchange rate (e) which is measured in units of foreign currency per naira. The foreign price of Nigeria goods is given by $P_f = P.e$, where (P) is the price level and (e) is the exchange rate. if the price of N150 is equivalent to \$1US dollar so that the exchange rate $e = \frac{1}{150}$ a good that sells for N3000 in Nigerian economy will sell for \$20 in US economy. Thus for a given level of foreign demand and prices, our export function can be written as:

$X = x(p, e)$. An increase in either the Nigerian price (P) or the exchange rate (e) will raise the foreign price of Nigeria goods and reduce exports. Thus, $\frac{\partial X}{\partial P} < 0$ and $\frac{\partial X}{\partial e} < 0$.

Imports (m) will depend on the Nigeria level of income (y), the exchange rate (e) which translates foreign prices into Nigeria prices and the price of competing Nigeria goods. An increase in the exchange rate (e) will raise the Nigeria price of foreign goods at a given foreign price level, tending to decrease imports. An increase in the Nigeria price level (P) will raise the

price of Nigeria goods that competes with imports, tending to raise imports. Thus the import function is:

$$M = m(y, p, e)$$

$$\text{Hence, } \frac{\partial M}{\partial y} > 0 \text{ and } \frac{\partial M}{\partial p} < 0$$

2.1.3 THE CAPITAL ACCOUNT AND BALANCE OF PAYMENT EQUILIBRIUM

International Capital flow results from the international sale and purchase of assets. According to Tobin's portfolio distribution view of the demand for money, persons with a given amount of Liquid assets split their holdings between money and bonds as a function of the level of the interest rate. Hence, people will divide their holdings of assets between foreign and domestic assets depending on the level of interest rates at home and abroad. At any given asset level, a change in interest rates will produce a redistribution of assets, creating capital flows.

As total assets grow, the allocation of additions to portfolios among foreign and domestic assets will depend on interest rate levels. Thus, as Nigeria wealth grows, Nigerian citizens will put a bigger fraction of additions to their portfolios into foreign assets, the higher the level of foreign interest rates relative to Nigeria rates. And as foreign wealth grows, foreign investors will put a smaller fraction of increments to their portfolios into Nigeria assets; the higher are foreign rates relative to Nigeria rates. Thus at any given foreign interest rate levels, the net outflow of capital (F-net Nigeria purchases of foreign assets less net foreign purchases of Nigeria assets) will be a decreasing function of the Nigeria interest rate, hence $\frac{\partial F}{\partial i} < 0$. As the Nigeria rate rises, the equilibrium net outflow from additions to portfolios falls.

2.1.4 FLOATING EXCHANGE RATES WITH RELATIVE CAPITAL MOBILITY: THE MUNDELL-FLEMING MODEL

Now consider an economy in equilibrium where absorption is equal to aggregate output i.e $B = Y - A$ since $Y=A$; $B = 0$ and/or money supply equals the demand for money so that balance of payment is zero (i.e. $M_s=M_d$; $B = 0$). Suppose the monetary authority increases the money supply so that money supply is greater than money demand ($M_s > M_d$) and there is a BOP deficit. The LM curve shifts to the right and people having additional cash balances buy more goods thereby raising prices of domestic and imported goods. Moreover, interest rate falls leading to capital outflow. The increase in the demand for foreign currency brings about a fall in

the exchange rate depreciation. This increases exports and decreases imports causing the IS curve to shift to the right, BOP improves and both external and internal balances are attained but at a higher output level.

2.1.5 CAPITAL ACCOUNT LIBERALIZATION

Capital account liberalization is a parameter used in measuring the degree of openness of an economy, signaling the rate of inflow and outflow of capital from one economy to another without undermining its territorial integrity and independence. The greatest challenge facing the country today is how to grow the economy and reduce poverty. Meeting this challenge is particularly difficult, if Nigeria should rely solely on domestic resources, given the low rate of savings and the attendant savings-investment gap. Against this background, it becomes crucial to try and attract foreign resources into the economy. Economic growth and development has remained the focal point of major economic policy of most countries of the world. Developing countries as well as other member countries of the International Monetary Fund (IMF) have always been encouraged to open up to foreign capital flows through the liberalization of their capital account transactions, (Mailafia, 2006). Capital account liberalization is the process of removing restrictions from international transactions related to the movement of capital. It can involve the removal of controls on both domestic residents' international financial transactions and investments in the home country by foreigners (Odusola, 2006). However, this equally depends greatly on returns on capital, the interest rate compared to what is obtainable in other economies.

The structural adjustment programme (SAP) of 1986 set the pace for capital account liberalization in Nigeria. The liberalization of the financial system in 1987 is believed to have attracted many foreign investors to Nigeria and hence improve the balance of payments position of the country. Obadan (2005) posits that the liberalization of capital account of balance of payments is rooted in economic theory. Not only can it help to bridge the savings and foreign exchange gap in national economies, and hence promote higher economic growth, it can also lead to greater efficient allocation of resources internationally and greater portfolio risk diversification, among others. Odusola (2006) is of the view that liberalization of capital account allows for international portfolio diversification. According to him, domestic market agents have

the opportunity of diversifying country specific risks, which ordinarily cannot be diversified under capital account restriction.

2.1.6 THE IMPACT OF DEPRECIATION AND AN APPRECIATION IN THE EXCHANGE RATE ON BALANCE OF PAYMENTS

A balance of payments deficit will cause depreciation in a country's currency, which will mean that import prices will rise. This will have a number of consequences. Locally made goods will become more competitive compared to imported ones. Domestic manufacturers will want to expand production to meet increasing demand locally and internationally by employing more factors of production including labour provided that there is lot of spare capacity with lot of labour unemployed, we would expect unemployment to fall. As full employment is approached however, labour becomes increasingly scarce and, as a result, will ask for higher wages. Manufacturers will be prepared to pay the higher wages and pass this on to the consumer in form of higher prices leading to cost push inflation. Inflationary pressure will also arise from the supply side of production when a currency depreciates. This is because any imported raw materials will become more expensive when the exchange rate falls especially if there is no domestic supplies of raw material then manufacturers have no alternative but to pay the increased price if they wish to respond to the increase in sales. Again they will try to pass the increase in cost on to the consumer so prices will tend rise.

On the other hand, when a country experiences a balance of payments surplus this will cause a rise in that country's exchange rate. This will have the following consequences. Import prices will fall and export prices will rise. Domestic consumers will switch to imported goods and services while foreign consumers will turn to their own country's products in preference to imports. Import volume will rise and export volume will fall depending on the price elasticity of demand for both imports and exports. There will be a decline in demand from both domestic and foreign purchasers of goods and services produced in the country with the appreciating currency, which may well lead to unemployment as producers face declining sales both at home and abroad.

2.1.7. EXPENDITURE SWITCHING AND EXPENDITURE DAMPENING POLICIES

An expenditure switching policy is any action taken by a government which is designed to persuade purchasers of goods and service both at home and abroad to purchase more of that country's goods and services and less of the goods and services produced by others. It involves the devaluation or revaluation of a country's currency in order to switch its expenditure from foreign to domestic goods or vice versa.

They aim at correcting BOP disequilibrium. According to Johnson two typed of expenditure switching policies includes, devaluation and the use of direct controls to restrict imports and to correct BOP deficit. Devaluation means a reduction in the external value of a currency in term of other currencies. But there is no change in the internal purchasing power of the currency. Thus, when a country with BOP deficit devalues its currency, the domestic price of its imports increases and the foreign price of its exports falls. This makes its exports cheaper and imports dearer. Now the foreigners can buy more goods by paying less money than before devaluation. This encourages exports and causes expenditures to be switched from foreign to domestic goods as the country's exports increase and the country produces more to meet the domestic and foreign demand for goods. On the other hand, with imports becoming dearer than before, they decline. Thus with the rise in exports and fall in imports, BOP deficit is corrected.

The second type of expenditure switching policy is the use of direct controls to restrict imports of goods in order to correct a BOP deficit. This can be done by levying heavy import duties fixing of quotas, etc. The government may also give domestic producers production and export subsidies. In this way, imports are reduced and exports are encouraged in order to correct an adverse balance of payments problem. The government also adopts financial controls to reduce a BOP deficit. They operate through exchange controls over the use of money by restricting the freedom of the use of money either through regulation of certain uses or by making some uses of money more expensive than others.

However, a major disadvantage of direct controls is that it deals with only the deficit and fails to come to grips with the basic cause especially when the deficit is due to capital flight. This is why monetary - fiscal measures are considered better than direct controls in correcting a BOP deficit.

2.1.8 EXPENDITURE REDUCING MONETARY AND FISCAL POLICIES

Suppose there is a BOP deficit in an economy. This implies an excess of expenditure over income. To correct it, the monetary authority reduces the money supply which increases interest rates thereby reducing investment and output. This in turn, reduces income and aggregate demand for imported goods. There is also a reduction in the domestic price level which may lead to switching of expenditure from foreign to domestic goods. Consequently, the country's imports are reduced and exports are increased. Thus the current account trade deficit is reduced. Moreover, a rise in domestic interest rates increases the inflow of capital, thereby completely eliminating the BOP deficit. The reverse is the case when the monetary authority adopts an expansionary monetary policy to correct a BOP surplus.

On the other hand, an expenditure reducing fiscal policy relates to cut in government expenditure and/or increase in taxes. This measure will reduce disposable incomes meaning that less will be available to spend on imports. In addition, the reduced government spending will lead to a downward multiplier effect which will depress income further. If the balance of payment curve is less elastic, a contractionary fiscal policy will lead to the correction of BOP deficits.

2.2 EMPIRICAL LITREATURE

Enormous empirical literatures exist on the determinants of balance of payment fluctuation. Some of them are given below:

Umer, M; Muhammad S. (2010) studied the monetary approach to balance of payment for Pakistan for the period 1980 - 2008. They confirm that the role of monetary variables for Pakistan's balance of payment do not determine empirically. They also found that between Gross Domestic product Growth Rate (GDPG) and net foreign assets (NFA) is considered as a positive relationship while between Domestic Credit extension and net foreign assets (NFA) is considered as a negative relationship, and the relationship between interest rate and net foreign assets is considered as negative relationship as mentioned by the monetary approach to balance of payments. Some variables propose that monetary approach plays a significant role but monetary actions are not the only options for authorities to correct the balance of payments disequilibrium.

Jimoh (1990) worked for Nigeria and verified the monetary approach to balance of payment. His implication was that monetary authorities in Nigeria must pay adequate attention to domestic credit creation in any of their attempts to control balance of payments disequilibrium in Nigeria.

Aghevli and Khen (1977) examined monetary approach to balance of payment in 39 developing countries and found evidence in favour of monetary Approach to Balance of payment. Lachman (1975) explored monetary approach to balance of payment in South Africa and suggested that monetary establishment is responsible to control the money supply for enhancing imports.

Nwani, V. M. (2003) investigates the long-run determinants of balance of payment dynamics in Nigeria between 1981 and 2002, he found that all the variables which includes: GDP, external debt growth, trade openness, terms of trade, etc, exhibited non-stationarity except Balance of Payments. The results also indicate that balance of payment cointegrated 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 concluded 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.

Coppin (1994) examined that the degree of openness of an economy and expansionary fiscal policy are the essential factors in shaping foreign reserves. Moreover, his arguments were in favour of monetary approach to balance of payment. Empirically, it is argued that monetary approach to Balance of Payment justifies in open small economies with fixed exchange rates. Leon (1988) also justifies monetary approach to Balance of Payment in case of Jamaica. He explored the implication of reserve flow of sterilization equation in Jamaica.

Watson (1990) investigated the model of Trinidad and Tobago's balance of payments for the period 1965 - 1985 and examined that all other variables show reliable results except dependent variable "the change in international reserves"¹ that is against monetary approach to balance of payment.

Knight and Scacciavillani (1998) worked on the relevance of current accounts for Economic policymaking. They surveyed the main theoretical approaches for analyzing movements in the

current account of the balance of payments, from the Mundell-Fleming paradigm to modern intertemporal approaches. It then explains their implications for the behavior of the current account. Subsequently, their work considers the relevance of these theories to the real world and the practical guidance they provide to the authorities in shaping their analyses and in setting their policy stance. Looking at three different countries, Italy during 1992-95 shows the current account impact of deviations of exchange rates from fundamentals because of fiscal and other fundamental uncertainties. That of Israel in 1990-96 reflects the impact of a major demographic shock, in this case a massive immigration flow, on the current account. Finally, the study of Pakistan in 1993-96 explores the implications of a binding external financing constraint faced by a developing country with only limited access to international financial markets.

Bentum-Ennim (2008) adopted a modified version of the monetary approach to balance of payments in analyzing the link between Ghana's balance of payment and macroeconomic performance. For him to avoid spurious regression results, he subjected the time series data to stationarity tests. He used the Johansen's co-integration procedure to examine the long run relationships that existed among the variables. The short run dynamics was examined by using an error correction model. It is found that an improvement in macroeconomic performance bring about an improvement in the BOP position of a country; increase in domestic credit also has a negative effect on BOP but, increased openness to trade and increased tourism receipts have positive impacts on BOP, while higher interest rate differential and exchange rate volatility have negative impacts on BOP.

Choi and Baek (2004) use a new classification of exchange rate arrangements developed by Reinhart and Rogoff (2004) to test whether balance of payments fluctuates with increasing exchange rate flexibility. Using pooled data for 137 countries over the period 1980-2000, the study uses regressors such as per capita GDP, trade openness(measured as the ratio of exports plus imports to GDP), financial openness (defined as the ratio of gross private capital flows to GDP), interest rate , export volatility and exchange rate. The study finds that the degree of exchange rate flexibility has an inverted U-relationship with the country's BOP. Regarding the other determinants of the BOP fluctuation, country size, real openness and financial openness all raise BOP while the opportunity cost and export volatility are not significant variables. Finally,

per capita GDP and reserves holdings also have an inverted U-relationship, thereby, showing that their correlation is negative for industrialized countries, but positive for developing countries.

2.3 LIMITATIONS OF PREVIOUS STUDIES

There is no research work that does not have some element of weakness. The limitations of these literatures reviewed above includes; the period when most of these research works were done (1981-2002) precedes the time when real financial crises took place in Nigeria (2003-2011) following the fluctuations in oil prices which is a major source of foreign reserve to Nigerian government, as such could not actually account for or capture what determines the balance of payment fluctuation. This time gap is one of what this research work wants to fill (1980-2011).

Moreover, attention was not given to the different systems of exchange rate namely: floating exchange rate, pegged exchange rate, managed exchange rate systems adopted at different times in Nigeria in the previous works done reviewed. The literature reviewed all laid emphasis on the naira/dollar nominal exchange rate not minding the fact that the different systems of exchange rate could have impact on BOP. This present study will account for this by taking into consideration the different exchange rate regimes adopted in Nigeria and finding out their impact on how it fared with the Balance of Payments position using dummy variable.

Again, most of the research works done under balance of payments, all used monetary variables. It has been criticized many times because MABP considered by only monetary variables and ignoring real factors which also play an important task will not be able to capture the real determinants of BOP fluctuation, hence other important factors cannot be ignored. (Howard & Mamingi, 2002). Other factors i.e. the current account balance, trade imbalances, and the external debt are not viewed lightly with respect to real factors, which play an important role in balance of payment. "Net errors and omissions" are involved in balance of payments, which further unnoticed in MABP equation.

CHAPTER THREE

METHODOLOGY

3.1 THEORETICAL FRAMEWORK: Monetary Approach to Balance of Payments and Exchange Rate Determination.

The central idea of the monetary approach is that any balance of payments disequilibrium, that is, any persistent deficits or surpluses in the Balance of Payments is because of monetary disequilibrium; its inflow and outflow depend on the international reserves. It states that if the monetary policy is stabilized then a fixed exchange rate system might apply. The assumption here is that if the balance of payment is not in equilibrium which is a short-term phenomenon then it is adjusted by itself with the passage of time (Du Plessis et al. 1998).

In a more precise form, if people demand more money than is being supplied by the Central Bank, then the excess demand for money is satisfied by inflows of money from abroad. On the other hand, if the Central Bank is supplying more than is demanded, the excess supply of money is eliminated by outflows of money to other countries. Thus the monetary approach analysis emphasizes the determinants of money demand and money supply, since these will also determine the balance of payments and exchange rate.

In a small open economy the demand for money is given as

$$L = F(Y, P, R_d, E) \quad (i)$$

Where L = demand for Money

Y = real domestic income

P = domestic Price Level

R_d = interest rate differentials

E = nominal exchange rate

Economic theory suggests that the level of income and the amount of money people will hold to buy more goods and services are directly related, hence, $\frac{\partial L}{\partial Y} > 0$; a positive relationship between money held and the price level ($\frac{\partial L}{\partial P} > 0$); and a negative relationship between money held and interest rate ($\frac{\partial L}{\partial R_d} < 0$). The demands for money should therefore, rise with an increase in either P or Y and fall with a rise in domestic interest rate. Moreover, if the domestic currency

depreciates may be as a result of domestic inflation, the demand for money (domestic currency) will fall and vice versa.

The money supply relationship is thus:

$$MS = g(D) \quad (ii)$$

Where MS = Money Supply
 D = domestic reserves

The law of one price becomes:

$$P = EP_f \quad (iii)$$

Where P = domestic price level
 E = exchange
 P_f = foreign price level

The money market equilibrium (LM) equation is the form:

$$L = M \quad (iv)$$

Consequently, the balance of payments can be defined as:

$$CA + KA = BOP \quad (v)$$

Where CA = Current account, and
 KA = Capital account.

It is pertinent to note here that, if $BOP < 0$, then $CA + KA < 0$, the nation is running a balance of payments deficit. However, the adjustment mechanism that ensures equilibrium in equation (iv) depends on the exchange rate regime.

With fixed exchange rates, money supply adjusts to money demand through international flows of money via balance of payment imbalances. But with flexible exchange rate, money demand will be adjusted to a money supply set by the central bank via exchange rate changes.

In the case of a managed float, where theoretically we have floating exchange rates but the Central banks intervene to keep exchange rates at desired levels, we have both international money flows and exchange rate changes.

Substituting, we have;

$$G(D + F) = f(EP^f Y) \quad (vi)$$

Under fixed exchange rate regime, where the exchange rate is not allowed to vary, the balance of payments must adjust to any monetary disequilibrium through the foreign reserve flow in order to maintain the parity value of the exchange rate. If the Central bank raises the domestic credit

(D), money supply will exceed money demand and there will be pressure on the exchange rate to deteriorate. In order to maintain the exchange rate at its par value, the monetary authority must sell foreign reserve until money supply equals money demand. This is given thus:

$$g(D\dot{Z} + F\dot{Z}) = f(EP^f Y)$$

Here, there is no net impact on the monetary base and money supply as the change in foreign reserve offset the change in domestic credit.

Under a flexible exchange rate regime, the foreign reserve component of the monetary base does not change. Therefore, exchange rate, E, will adjust to eliminate any monetary disequilibrium. With an increase in domestic credit, money supply will exceed money demand. Now the domestic currency must depreciate to balance money supply and money demand, thus:

$$g(D\dot{Z} + F) = f(E\dot{Z} P^f Y)$$

However, under a managed float system, we have both international money flows and exchange rate changes. Thereby leading to;

$$g(D\dot{Z} + F\dot{Z}) = f(E\dot{Z} P^f Y).$$

Moreover, this research will adopt the modified version of monetary approach to balance of payments. The monetary approach to balance of payment posits that the overall balance of payments is influenced by imbalances between the demand for and supply of money stock. However, the basic conclusion of the monetary approach is that starting from an initial equilibrium position, an increase in the demand for money or an increase in its supply will lead to a balance of payments surplus or deficit and vice versa. In addition to this excess money supply induces increased expenditure which is directed at foreign commodities. These purchases of foreign commodities by domestic residents have to be financed by running down foreign exchange reserves reduces money supply until it is equal to money demand, thereby restoring monetary equilibrium and halting an outflow of foreign reserves. Thus, an excess demand for money leads to an opposite adjustment which in turn induces foreign exchange reserves inflow, domestic monetary expansion and eventually a restored balance of payments equilibrium position.

3.2 MODEL SPECIFICATION

Adopting the general framework of BOP, the simple open-economy, equilibrium in the money market (LM) requires that supply of money equals demand of money thus:

$$Ms = Md \dots\dots\dots (1)$$

Where the variables under Ms and Md remain as defined above.

On the other hand, the product market is in equilibrium where a given level of government spending, relative prices of goods and services, income in the previous years and domestic interest rate interacts to determine the level of income. Hence, the product market equation is given thus:

$$Y_t = f(G_t, P_t, Y_{t-1}, Rd_t) \dots\dots\dots (2)$$

Equation (2) is the commodity market equilibrium, this is assumed to depend on the naira/dollar interest rate differential ($Rd_t = INTDIFRE$), level of government spending ($G_t = SPENDING$), relative prices of goods and services ($Price_t$) and the real gross domestic income (GDP_{t-1}) of the previous year. Combining equations (1) and (2), yields equation (3), a balance of payment equation:

$$BOP = h(Y_{t-1}, P, G, E, Rd, D) \dots\dots\dots (3)$$

The variables are described thus:

BOP = Balance of Payments

Y_{t-1} = Previous Years Gross Domestic Product (GDP)

P = Price

G = Spending

E = Naira/Dollar Nominal Exchange Rate (Exchange)

Rd = Interest Rate Differential (INTDIFRE)

D = Dept Growth

h = Functional Notation

MODEL 1: MACROECONOMIC DETERMINANTS OF BALANCE OF PAYMENTS

To investigate the relationship between balance of payments and macroeconomic variables, and account for objective one, equation (2) and (3) is transformed into their logarithmic forms thus:

$$BOP_t = \theta_0 + \theta_1 Y_{t-1} + \theta_2 P_t + \theta_3 E_t + \theta_4 Rd_t + \theta_5 G_t + \mu \dots\dots\dots (4)$$

$$(\theta_1, \theta_2, \theta_3, \theta_6 > 0; \theta_4, \theta_5 < 0)$$

Where $r_d = f(r)$

(ie r is domestic Interest rate)

MODEL 2: STRUCTURAL STABILITY-DUMMY VARIABLE APPROACH TO CHOW TEST

In order to capture objective two, we test for the structural changes of different exchange rate regimes, the pre and post-1986 SAP periods on balance of payments: when the exchange rate is fixed and when the country adopted the managed float regime. The researcher has to adopt the Dummy Variable Alternative to the Chow Test. The effect and source of the structural change can be pinned down with the use of the equation below:

$$BOP_t = \beta_1 + \beta_2 D_t + \alpha_1 E_t + \alpha_2 (D_t E_t) + \mu_t \dots \dots \dots (5)$$

Where: BOP = Balance of Payments for Nigeria

E = Naira/Dollar Nominal exchange rate

t = time

D = dummy variable for nominal exchange rate

$D = 1$ for fixed exchange regime observations in 1970-1986

$D = 0$, otherwise.

Assuming that $D = 0$, and that $E(\mu_i) = 0$, we obtain from equation (5):

$$BOP_t = \beta_1 + \alpha_1 E_t \dots \dots \dots (6)$$

and $D = 1$:

$$BOP_t = (\beta_1 + \beta_2) + (\alpha_1 + \alpha_2) E_t \dots \dots \dots (7)$$

The search for a reliable BOP function continues to be an intensive activity. In Nigeria very little is known about the contemporary relationship between BOP and other macroeconomics variables. The BOP function adopted in this study; therefore combines the structuralist, monetarist and fiscal approaches. Given the structure of the Nigerian economy since financial

deregulation and trade liberalization, (1985 - 1986) as well as voluminous empirical evidence on Nigerian and other nations of the world, we specify equations four and five as the BOP function.

The main question here is whether Macroeconomic variables such as BOP, government spending, interest rate differentials, external debt growth, exchange rate, price level and so on, maintain a long-run trend following a shock or do they follow a random walk? The essence of this question is that if these variables follow random walk or have different orders of integration, a regression of one variable against other variables can lead to spurious results since the OLS estimates would definitely not yield consistent parameter estimates. Therefore, the requirement, in modeling BOP, is an approach that captures the long run relationship between the variables while avoiding spurious interferences.

The Augmented Dickey Fuller (ADF) unit root tests will be employed to determine the order of each series. The critical t value ADF tests will be chosen by the Akaike (AIC) final prediction error (FPE) criterion.

In the event of non-stationarity in the series we then conduct co-integration tests. The implication behind this series of tests is that if each time series is non-stationary, linear combinations of such time series that are stationary might exist. A time series can however, only be cointegrated if it is integrated of the same order (Engle and Granger 1987). The fact that variables are cointegrated implies that there is an adjustment process which prevents errors in the long-run, relationship from becoming larger and larger. Therefore, co-integration is a necessary condition for an error correction model (ECM) to hold and this is the model we will be making use of in this research work.

3.2 THE ERROR CORRECTION MODEL (ECM)

The starting point of ECM is a test against the null hypothesis that the residuals of the long run (static) model are non-stationary. Here we apply ADF tests to the residuals of the static co-integration regressions. The evidence of stationarity of the residual indicates that the variables in the model are indeed cointegrated. The next move is to switch to a short run model with an error correction mechanism. Adopting the Engel-Granger representation, we employ an error correction dynamic specification of the form:

$$\Delta BOP_t = \alpha_0 + \alpha_1 L(\Delta Z) + \alpha_2 ECM_{t-1} + e_t \dots\dots\dots (xi)$$

Where Z is the vector of variables that cointegrate with BOP, L is a general lag operator and ECM is the time series of residuals from the cointegrating vector.

3.3 PRE-ESTIMATION TESTS

3.3.1 Unit-Root test

In empirical research on time series data, there always exist problem of nonstationarity which renders the traditional tools of econometrics (like OLS and 2SLS) inappropriate. To overcome this problem **of Unit-Root**, the first strategy here will be to test for the stationarity of the series since time-series data will be used. There are many tests that have been developed to test for stationarity. These include the Dickey Fuller test. Augmented Dickey-Fuller test, Phillips-Perron test, Sarghan Bhangra Dubbin Watson (SBDW). Among all, the Augmented Dickey-Fuller test, denoted conventionally as ADF is widely regarded as the most efficient test for integration and it is at present the most widely used in practice.

A unit root test tests whether a time series variable is non-stationary using an autoregressive model. A well-known test that is valid in large samples is the Augmented Dickey ñFuller (ADF) developed by Dickey and Fuller (1979) in their work titled óDistribution of the Estimators for Autoregressive Time Series with a Unit Root. The optimal finite sample tests for a unit root in autoregressive models were developed by Sargan and Bhargava (1983) published in their work titled õTesting residuals from least squares regressions for being generated by the Gaussian random walkô. Another test is the Philips-Peron test. These tests use the existence of a unit root as the null hypothesis. We therefore adopts ADF test for this analysis. Thus, the ADF test will be used applying Johansen test of co-integration method in this research work and this can be specified as follows:

$$\Delta Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \sum_{i=1}^k b_i Y_{t-i} + \mu_t \dots \dots \dots (8)$$

Where,

Y_t = a vector of all variables of the model.

α_i and b_i = parameters of the model

μ_t - white noise error term

k and ϵ remain as defined above.

The null hypothesis here is that Y_t has a unit root (that is, nonstationary) and the alternative is that there is no unit root (that is, stationary). If the variables turn out to contain unit roots it implies they are non-stationary. Stationarity could however be achieved by first differencing of the levels if the series are integrated of order one or $I(1)$.

3.3.2 Johansen's Procedure

The Johansen test is a test for co-integration that allows for more than one cointegrating relationship, unlike the Engle-Granger method. Johansen's procedure builds cointegrated variables directly on maximum likelihood estimation instead of relying on OLS estimation. This procedure relies heavily on the relationship between the rank of a matrix and its characteristic roots. Johansen derived the maximum likelihood estimation using sequential tests for determining the number of cointegrating vectors. His method can be seen as a secondary generation approach in the sense that it builds directly on maximum likelihood instead of partly relying on least squares. He proposes two different likelihood ratio tests namely

• The trace test

• The maximum eigenvalue test.

This procedure is a vector co-integration test method. It has the advantage over the Engle and Granger and the Phillips-Ouliaris methods in that it can estimate more than one co-integration relationship. According to Johansen (1988; 1995), the advantage of this method is that it prevents substantial bias that takes place in OLS estimates of co-integration relations when the Engle-Granger two step procedure is used.

Co-integration is often used for two $I(1)$ series, but it is more generally applicable and can be used for variables integrated of higher order (to detect correlated accelerations or other second-difference effects). Multico-integration extends the co-integration technique beyond two variables, and occasionally to variables integrated at different orders.

3.3.3 Co-integration test

Further, the next step will be to test for the existence of a stable long-run relationship among the variables. The concept of **co-integration** can be used to test for the existence of a stable or, as is sometimes claimed, long run equilibrium relationship among economic variables.

The co-integration test examines whether some linear combination of the non-stationary series in the regression produces a white noise process or not. The ADF co-integration test will be utilized in this study. Hence, once a long-run relationship is shown to exist, the short run dynamics will be examined by means of an error-correction model given in equation above.

3.4 STATISTICAL TESTS

3.4.1 R^2 : This is used to measure the goodness of fit of the estimated regression models. R^2 (which is adjusted to the degrees of freedom) can also be used for this purpose.

3.4.2 The F - test: This will be used to test the significance of the individual parameter estimates of the model.

3.4.3 The F - test: This will be used to test the overall significance of all the parameter estimates of the model.

3.5 Econometric Tests

3.5.1 Test for Multi colinearity

This is used to test for the linear collinearity among the explanatory variables. Therefore, the Correction Matrix will be used for this test.

3.5.2 Test for Autocorrelation

This is used to test whether the errors corresponding to different observations are uncorrelated. This means testing for the randomness of the error term. Hence, the Durbin - Watson (DW) method will be used for testing this. Koutsoyiannis (1977) posits that this provides estimates which have asymptotic properties and are more efficient for samples of all size.

3.5.3 Test for Normality

The Jarque - Bera (JB) test of normality will be employed here to test whether the residuals are normally distributed.

3.5.4 Test for Heteroscedasticity

This will be used to test whether the variance of the error term is constant. Heteroscedasticity can arise because of the presence of outliers, incorrect data transformation, incorrect functional form, incorrect specification of the regression model, etc. Therefore, the White Heteroscedasticity test will be adopted for this purpose

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS OF RESULTS

4.1 DATA PRESENTATION AND ANALYSIS

In this chapter, the data result would be analyzed based on apriori expectations of the economic theory. The statistical and econometric analyses on macroeconomic determinants of Balance of Payments disequilibrium would equally be conducted and analyzed.

The relationship between Balance of Payments (BOP), exchange rate(E), Gross Domestic Product(GDP), Government Spending(G), price level(P), interest rate differential(R_d) and the Growth rate of Domestic Debt(D) in Nigeria during the period under review (1970-2011) is presented in Table 1. From the Table 1, we can see that during the 1970s in the Nigerian economy, the country was experiencing a favourable condition in her balance of payments position; this is as a result of the increase exports especially in agricultural products, a stable interest rate and external debt, growth in GDP, stable exchange rate and price level. This increase in exports provided adequate foreign exchange for the country and improved her balance of payments. But during the 1980s, we noticed that deficits started appearing in the country's balance of payments position. The deficits experienced in the country's balance of payments, was as a result of the crash in the international market for crude oil, which was the major source of exports for the Nigerian economy. Also, during this period, the country started importing virtually everything ranging from machineries and consumable goods that could be manufactured in the country if properly managed. Since the 80s till date, the country's balance of payments position have been unfavourable due to some factors such as high demand for foreign goods and services, porous manufacturing sector high inflation rate, dependence on a single commodity for export, neglect of the agricultural sector, etc.

4.2 DATA PRESENTATION AND INTERPRETATION OF RESULT

TABLE 4.1 DATA AND RESULT PRESENTATION

THE DATA RESULT

Dependent Variable: BOP

Method: Least Squares

Date: 05/10/13 Time: 23:39

Sample(adjusted): 1971 2009

Included observations: 39 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	222928.3	177126.5	1.258583	0.2173
GDP	0.079772	0.082848	0.962868	0.3428
PRICE	-3701.996	4306.902	-0.859550	0.3964
EXCHANGE	12392.20	2911.178	4.256765	0.0002
INTDIFRE	-47704.31	23354.18	-2.042645	0.0494
DEBTGROWTH	2524.150	1136.358	2.221264	0.0335
SPENDING	-1.928576	0.681152	-2.831343	0.0079
R-squared	0.841410	Mean dependent var	-341224.3	
Adjusted R-squared	0.811674	S.D. dependent var	935618.0	
S.E. of regression	406026.1	Akaike info criterion	28.82737	
Sum squared resid	5.28E+12	Schwarz criterion	29.12596	
Log likelihood	-555.1337	F-statistic	28.29627	
Durbin-Watson stat	2.813838	Prob(F-statistic)	0.000000	

4.3 ECONOMIC CRITERION

The economic criterion is interpreted based on the apriori expectations of the economic theory. It is expected that the coefficients of the variables under consideration will exhibit various characteristics in sign and sizes that conforms to the apriori expectations of the economic theory. This study finds that the main significant determinants of the balance of payments are the GDP, price level, exchange rate interest rate differential, debt growth and Government spending. The regression result obtained indicate that the coefficients of GDP, exchange rate and debt growth shows a positive sign indicating a positive relationships to the balance of payment during the periods under review. Equally, the coefficients of the price level, government spending and interest rate differential indicate a negative sign. The implication is that these variables during the period under review negatively affected on the balance of payments. This means that interest rate differential should not be used as a policy tool to when trying to ensure a favourable capital account balance. The relationship between interest rate is considered as a negative relationship as mentioned by the monetary approach to balance of payments (Aghevli and Khan, 1977). Some variables propose that monetary approach plays a significant role but monetary actions are not only options for authorities to correct the Balance of payments disequilibrium.

In similar studies, Nwani (2005) finds that balance of payment cointegrated 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. Eitan and Gaomab(2012) in study of the determinant of BOP for Namibia find that the main significant determinants of the balance of payments are the fiscal balance, interest rate and GDP growth. The study further found that the exchange rate seem not to be playing a direct role to the determination of BOP in Namibia and ascribed it according to empirical and theoretical analysis to other institutional and economic factors. The results show that there are macroeconomic determinants such as the fiscal balance, interest rate and GDP growth that have a strong bearing on the movement of balance of payments in Namibia.

4.4 STATISTICAL CRITERION

Statistically, the t-statistic of the variable under consideration is interpreted based on the following decision rule: If the t-values of the variables under consideration is greater than positive two or less than negative two ($\leq -2 \geq 2$), it shows that the variable is statistically significant otherwise it is not. For the variables under consideration,

GDP=0.962868

PRICE= -0.859550

EXCHANGE= 4.256765

INTDIFRE= -2.042645

DEBTGROWTH = 2.221264

SPENDING =-2.831343

The t-statistics results show that GDP and PRICE are insignificant while EXCHANGE RATE, INTDIFFRE, DEBTGROWTH and SPENDING are statistically significant.

The F-statistic is interpreted following these decisions: if F-cal is greater than the F tabulated = if $F_{cal} > F_{tab}$ reject otherwise accept. It follows the following assumptions:

K = number of parameters =6

N = number of observation =41

$V_1 = K - 1 = 6 - 1 = 5$

$V_2 = N - K = 41 - 6 = 35$

The $F_{cal} (5,35) = 28.29627$ while the $F_{tabulated} (5,35) = 3.75$.

Decision: Since the F-calculated is greater than the F- tabulated, it shows that the overall estimate of the regression has a good fit and is statistically significant.

The R^2 - (R-squared) which measures the overall goodness of fit of the entire regression shows the value as follows: $0.841410 = 84\%$. It shows that the independent variables explain the

dependent variable to the tune of 84%. Also the Durbin Watson (DW) statistics $DW = 2.813838$, which is greater than the R^2 shows that the overall regression is statistically significance.

4.5.1 ECONOMETRICS CRITERION

TABLE 4.2 : UNIT ROOT OF THE VARIABLES

Variables		Unit Root Tests		Conclusion
		ADF	PP	
BOP	Level	-1.5304	-3.0170	I(1)
	1 st Diff	-6.9855	-8.5670	
DEBTGRTH	Level	-3.9005	-5.0077	I(1)
	1 st Diff	-6.6571	-9.0757	
GDP	Level	7.9424	7.2553	I(0)
	1 st Diff	1.7857	-3.3700	
INTDIFRE	Level	-2.2783	-4.4981	I(1)
	1 st Diff	-6.2768	-11.6866	
SPENDING	Level	6.9439	7.2159	I(2)
	1 st Diff	-1.1711	-4.6640	
	2 nd Diff	-8.7175	-19.8656	
PRICE	Level	-3.7518	-4.0265	I(0)
	1 st Diff	-5.0446	-7.5179	
EXCHANGE	Level	0.4115	0.5071	I(1)
	1 st Diff	-3.9144	-5.8666	
CRITICAL VALUE	1%	-3.6019	-3.6019	
	5%	-2.9358	-2.9358	
	10%	-2.6059	-2.6059	

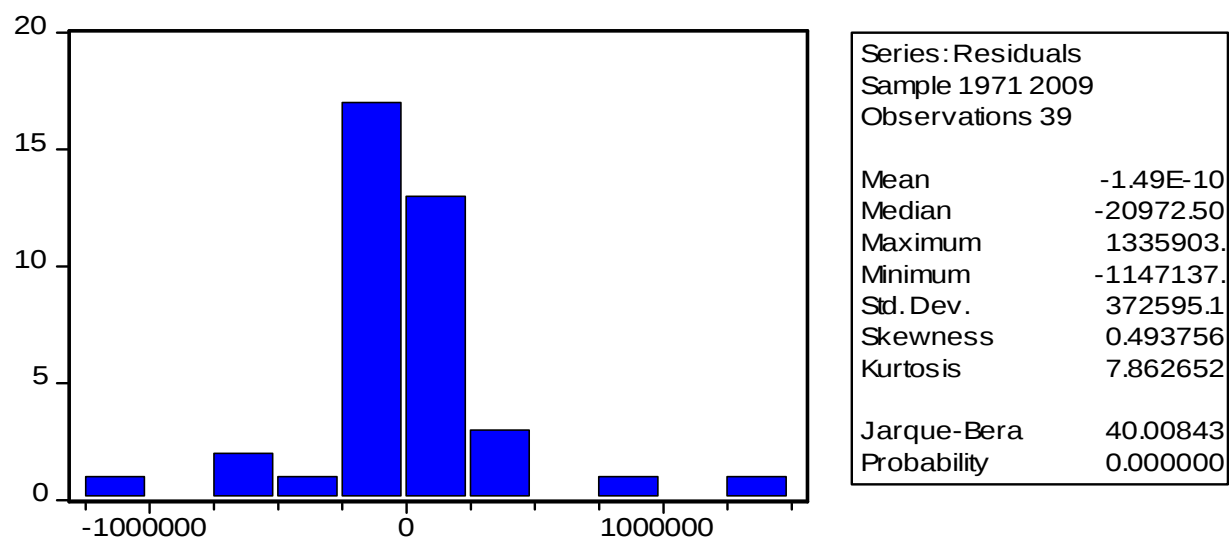
The stationarity or otherwise of a series can strongly influence its behaviour and properties -e.g. persistence of shocks will be infinite for nonstationary series. If two variables are trending over time, a regression of one on the other could have a high R^2 even if the two are totally unrelated. If the variables in the regression model are not stationary, then it can be proved that the standard assumptions for asymptotic analysis will not valid. In other words, the usual t -ratios will not follow a t -distribution, so we cannot validly undertake hypothesis tests about the regression parameters. If the absolute value of the Augmented Dickey Fuller (ADF) test is greater than the critical value either at 1%, 5%, or 10% level of significance at order zero, one or two, it shows that the variable under consideration is stationary otherwise it is not. For the regressed result, the following values were obtained: The results of the Augmented Dickey Fuller (ADF) for the variables in table 4.1 are as follows:

TABLE 4.3 AUGMENTED DICKEY FULLER (ADF)

VARIABLE	t-Statistic	P.value
D(GDP(-1),2)	-1.986057	0.0547
D(PRICE(-1),2)	-6.615164	0.0000
D(EXCHANGE(-1),2)	-7.088294	0.0000
D(INTDIFRE(-1))	-6.288708	0.0000
D(DEBTGROWTH(-1),2)	-8.658234	0.0000
D(SPENDING(-1),2)	-8.601206	0.0000
D(BOP(-1),2)	-8.805127	0.0000

Table 1: Augmented Dickey-Fuller Test Equation 5% Critical Value-1.9498

Since the computed ADF test-statistics is greater than the critical values --" τ "(-2.6243 , -1.9498, and -1.9498 at 1%, 5% and 10% significant level, respectively), we cannot conclude to reject H_0 . The tests indicate that that all the variables are integrated of order one at 1%, 5% and 10% level of significance

FIGURE 4.1: NORMALITY TEST

Under the normality test, we test the variables to ascertain whether the error terms were normally distributed. The decision rule is as follows: If the chi-square calculated is less than the chi-square tabulated, we conclude that the error term is normally distributed otherwise it is not normally distributed. From the normality test result obtained, the chi-square under 2 degree of freedom = 40.00843, while the chi-square tabulated under 2 degree of freedom = 5.99147. Decision: Since the chi-square calculated is greater than the chi-square tabulated, we conclude that the error term is not normally distributed.

4.5.3 MULTICOLLINEARITY TEST

In the multicollinearity test, we test the variables to ascertain the degree of relationship that exist between the independent variables and the dependent variable. For the variables under consideration, the values obtained are as follows:

TABLE 4.4 MULTICOLLINEARITY TEST

	BOP	GDP	PRICE	EXCHANGE	INTDIFRE	DEBTGROWTH	SPENDING
BOP	1.000000	-0.850021	-0.122088	-0.603181	-0.599084	0.399751	-0.837586
GDP	-0.850021	1.000000	0.059389	0.857167	0.599684	-0.419199	0.986958
PRICE	-0.122088	0.059389	1.000000	-0.061401	-0.243479	-0.207695	0.023892
EXCHANGE	-0.603181	0.857167	-0.061401	1.000000	0.528518	-0.349701	0.883588
INTDIFRE	-0.599084	0.599684	-0.243479	0.528518	1.000000	-0.231677	0.591826
DEBTGROWTH	0.399751	-0.419199	-0.207695	-0.349701	-0.231677	1.000000	-0.325427
SPENDING	-0.837586	0.986958	0.023892	0.883588	0.591826	-0.325427	1.000000

GDP= -0.85%, PRICE=-0.12%, EXCHANGE=-0.60%, INTDIFRE= -0.59%, DEBTGROWTH = 0.39% and SPENDING -0.83%

From the results obtained, we can conclude that there is no multicollinearity among the variables.

TABLE 4.5 HETROSCEDASTICITY TEST**4.5.4 Heteroscedasticity Test**

White Heteroskedasticity Test:

F-statistic	3.447585	0.003992
	Probability	
Obs*R-squared	23.94902	0.020668
	Probability	